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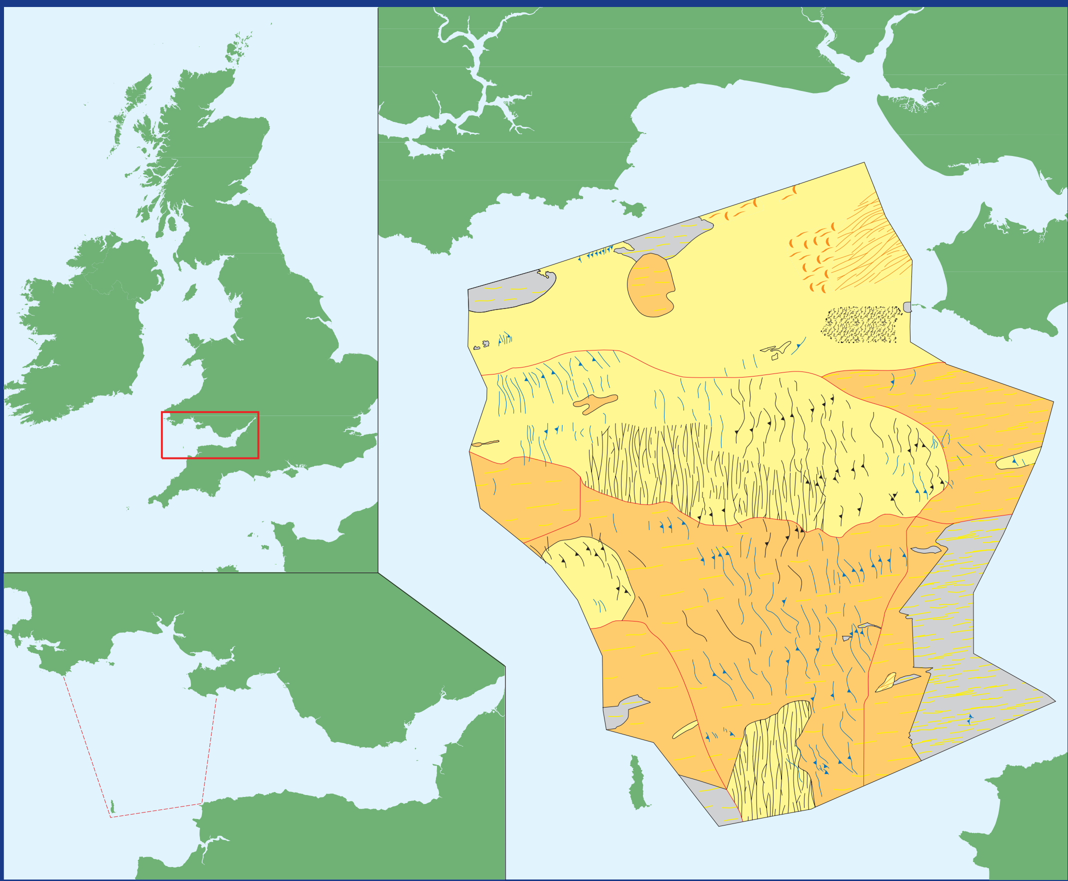
BIOMÔR 4

The Outer Bristol Channel Marine Habitat Study

A. S. Y. Mackie, J. W. C. James, E. I. S. Rees, T. Darbyshire, S. L. Philpott, K. Mortimer, G. O. Jenkins & A. Morando



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Front Cover illustrations: *Top left* Location of Bristol Channel in the UK; *Bottom left* Extent of Outer Bristol Channel Marine Habitat Study area; *Right* Sediment Character and Bedforms map (see Figure 4.1)

Back Cover (top to bottom): R.V. *Prince Madog*; R.V. *Noctiluca*; Retrieving grab sample on R.V. *Noctiluca*; Sea bed photo from Video tow V6; Beam trawl; Multibeam image from Corridor 2

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'Explore the Sea Floor' CD-ROM

Produced as both a free-standing educational CD-ROM and as part of a full version DVD-ROM containing the report, searchable data utility and all associated data. Designed to disseminate information on the marine environment and the purpose and results of the OBC project to all members of the public from primary schoolchildren to the scientific community.

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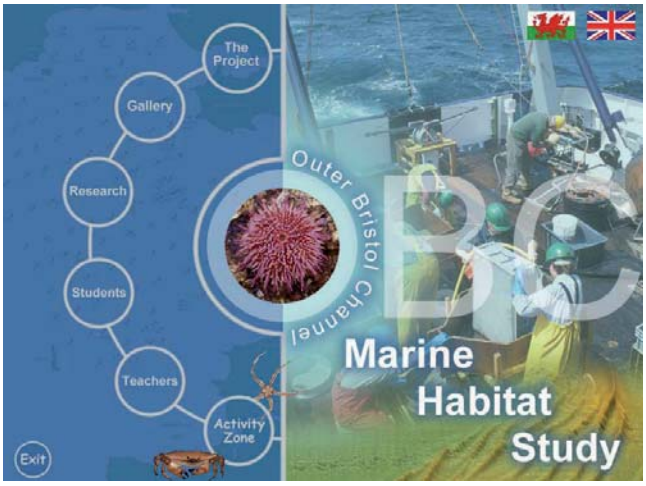

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Touring exhibition promoting the geological and biological diversity of the Outer Bristol Channel and the role of marine exploration in the conservation and use of the marine environment.

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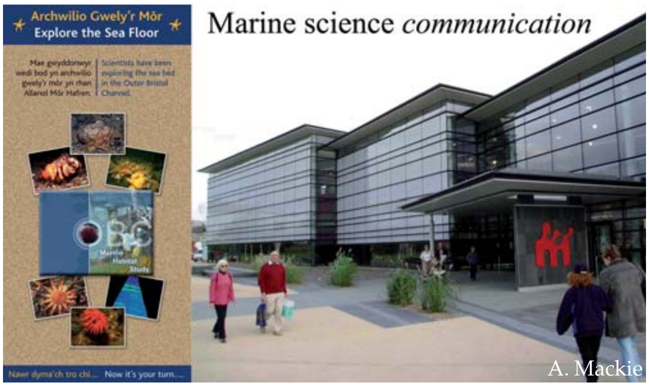

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Project amlweddog oedd yr Astudiaeth o Gynefin Morol Môr Hafren Allanol (OBCMHS) a oedd yn cynnwys gwaith ymchwil, dehongli ac addysg mewn ardal â photensial o adnoddau agregau morol. O ganlyniad i'r gwaith ceir adroddiadau ymchwil manwl ar yr arolygon ac amrywiaeth o gynlluniau maes sy'n ymwneud â'r arolwg o wely'r môr a'r diwydiant agregau morol. Mae'r rhain yn cynnwys CD-ROMau aml-gyfrwng rhyngweithiol, gwefan, arddangosfa a swyddog maes arbennig sy'n darparu gweithgareddau perthnasol i ysgolion.

Mae'r adroddiad hwn, sydd wedi'i rannu'n ddwy gyfrol (y prif destun ac atodiadau), yn cynnwys manylion y canlyniadau a dehongliadau cyfunedig sy'n deillio o ddata a gafwyd ar bum mordaith ymchwil geoffisegol a biolegol (2003-2005). Oddeutu 2400 km^2 oedd maint yr ardal a astudiwyd. Archwiliwyd un ar ddeg o goridorau 30-40 km x 1 km o led, sef 15% o'r ardal, drwy ddefnyddio proffiliau aml-donfedd, pysgodyn tynnu a phroffiliau is na gwely'r môr. Cadarnhawyd y rhain drwy ddadansoddi macroffawna o 137 lleoliad lle defnyddiwyd crafanc a 13 o leoliadau treilliwr, gwaddod o 141 o orsafoedd a delweddau o 20 o haliadau fidio a chamera.

Rhannwyd Môr Hafren Allanol yn bedair prif ranbarth ffisegol. Yn y gogledd, roedd gwely'r môr â thywod gweddol wastad, ar y cyfan, yn nodweddiadol o Fae Caerfyrddin a'r Cyffiniau. Roedd Tywod Gogleddol Môr Hafren Allanol (Tywod NOBel) a oedd ymhellach o'r glannau wedi'i orchuddio â chyfres helaeth o donnau tywod mawr. Roedd rhai o'r tonnau hyn ag uchder o 19m, ac roeddent yn anghymseur â llethrau mwy serth a wynebai'r gorllewin. Roedd gan Dywod Deheuol Môr Hafren Allanol (Tywod SOBel) donnau tywod unigol ar balmant o waddod graeanog. Mae'n ymddangos bod y gwaddod ar wyneb y tonnau mawr o dywod yn symudol, ond ar y cyfan mae isadeiledd a lleoliad y tonnau mawr yn sefydlog.

Yn hanner deheuol yr ardal, mae palmant graeanog y Tywod SOBel yn ymestyn i'r dwyrain ac i'r gorllewin ar blatfformau Lundy a Morte. Mae cerrig brig hefyd i'w gweld yn amlwg ar y platfformau hyn. Cofnodwyd 948 o rywogaethau yn yr ardal gyfan. Cafwyd y mwyaf o amrywiaeth o safbwynt rhywogaeth yn y gwaddod graeanog a'r cerrig brig yn Nhywod SOBel ac ar Blatfformau Lundy a Morte.

Wrth ddadansoddi clystyrau, cafwyd pum prif gasgliad o filod dyfnforol, gyda'r tri chasgliad mwyaf yn dod o ranbarthau ffisegol Bae Caerfyrddin a'r Cyffiniau, Tywod NOBel a Thywod SOBel. Roedd y casgliadau a'u hisgrwpiau'n cyfateb ag wyth bïotop isfilodaidd a thri bïotop arfilaidd, gyda'r bïotopau arfilaidd yn ymddangos mewn haenau uwch ben y bïotopau isfilodaidd. Ystyriwyd bod sefydlogrwydd y gwaddod yn ffactor bwysig a oedd yn dylanwadu ar y milod. Cafodd y dosbarthiadau o filod eu cymathu â'r dyfnder a phriodoleddau gwaddod amrywiol er mwyn creu offeryn rhagfynegi (ymarfer LINKTREE) y gellid ei ddefnyddio wrth ymchwilio ymhellach i gynefinoedd Môr Hafren Allanol.

Abstract

The *Outer Bristol Channel Marine Habitat Study* (OBCMHS) was a multifaceted project involving scientific investigation, interpretation and education in an area with potential marine aggregate resources. The outputs include detailed research reports on the surveys coupled with a range of outreach measures concerned with sea bed survey and the marine aggregate industry. These comprise interactive multimedia CD-ROMs, a website, an exhibition and a dedicated outreach officer providing relevant activities for schools.

This two-volume report (text & appendices) details the results and integrated interpretations arising from data obtained on five geophysical and biological research cruises (2003-2005). The study area was approximately 2400 km^2. Eleven 30–40 km x 1 km wide corridors, covering 15% of the area, were examined using multibeam, sidescan and sub-bottom profiling. These were ground-truthed with the analysis of macrofauna from 137 grab and 13 trawl locations, sediments from 141 stations, and images from 20 video and camera tows.

The Outer Bristol Channel was divided into four main physical regions. In the north, Carmarthen Bay and Approaches was characterised by a generally low relief sandy sea bed. The North Outer Bristol Channel Sands (NOBel Sands) further offshore was covered by an extensive field of large sand waves. Some of these were up to 19 m high and asymmetrical with steeper west facing lee slopes. The South Outer Bristol Channel Sands (SOBel Sands) had isolated sand waves on a pavement of gravelly sediment. Sediment on the surface of the large sand waves is mobile but overall the structure and position of these large sand waves appears to be in a state of *in situ* equilibrium.

In the southern half of the area the gravelly pavement of the SOBel Sands extends east and west on to the Lundy and Morte Platforms. Rock outcrops are also significant on these platforms. In the area as a whole 948 taxa were recorded. The highest species diversities were associated with the coarse sediments and rock outcrops in the SOBel Sands and Lundy and Morte Platforms.

Cluster analysis identified five main benthic faunal assemblages, the three largest mostly coinciding with Carmarthen Bay & Approaches, NOBel Sands and SOBel Sands physical regions. The assemblages and their subgroups corresponded to eight infaunal and three epifaunal biotopes, with the latter occurring as overlays on the former. Sediment stability was considered a major factor influencing the fauna. The faunal distributions were correlated with depth and various sediment attributes, and these were used to produce a predictive tool (LINKTREE procedure) that could be utilised in future habitat research in the Outer Bristol Channel.

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Fig. 1.1: Map showing the location of the Outer Bristol Channel within the Bristol Channel / Severn Estuary region and the British Isles as a whole

1. Introduction

The *Convention on Biological Diversity* (www.biodiv.org), signed by 150 government leaders at the 1992 *Earth Summit* in Rio, was a landmark for conservation and the sustainable use of natural resources. It called on the signatories to adopt an 'Ecosystem Approach' to the use of resources and management of the environment.

The twelve principles of the Ecosystem Approach (e.g., see RMNC 2004; app. 5b) recognised the place of people, societal choice and economics, in conjunction with biodiversity, ecosystem functioning, scale, and resource use. They also acknowledged that change was inevitable, ecosystem management should be long term, and that an appropriate balance be sought between use and conservation of biodiversity. Further, the principles emphasised the importance of using all relevant information (scientific, indigenous and local) and called for the involvement of all relevant sectors of society and scientific disciplines.

The Ecosystem Approach and Sustainable Development now implicitly or philosophically underpin many national and international strategies and policies concerning biodiversity and natural resources (e.g., 1994 *UK Biodiversity Action Plan*: www.ukbap.org.uk; Kullenberg 1995; Ledoux & Turner 2002; Hanson 2003; Fraser *et al.* 2006). Section 121 of the *Government of Wales Act* 1998 places a duty on the National Assembly Government to promote sustainable development in the exercise of its functions, and this includes its obligations within the marine environment.

In recent years, the UK Government has produced a series of publications as part of its commitment to biodiversity conservation and sustainable development in the marine environment:

2002 First marine stewardship report, *Safeguarding our Seas* (DEFRA *et al.* 2002a), followed by the *Seas of Change* consultation document (DEFRA *et al.* 2002b)

2004 Review of Marine Nature Conservation, Working Group report to Government (RMNC 2004)

2005 *Charting Progress* report (DEFRA *et al.* 2005a) and *Safeguarding Sea Life* (DEFRA *et al.* 2005b), the response to the 2004 RMNC report.

2006 Draft Marine Bill

The Bristol Channel and Severn Estuary (Figure 1.1), bordered by Wales and England, has the largest tidal range in UK waters and is a multiple-use environment. Natural resource activities include aggregate extraction, fisheries, wind-farm developments and, for the future, tidal barrages and turbines are potential sources of renewable energy. The area has cable routes, military ranges, and a number of major ports servicing commercial shipping, ferries, fishing vessels, and pleasure boats and yachts. Recreational fishing is very popular, and watersports such as wind-surfing and SCUBA diving attract many – particularly toward the outer areas.

Marine nature conservation is prominent with Lundy Marine Nature Reserve in the south and Skomer Marine Nature Reserve to the west. In a European context, the 1992 EC 'Habitats Directive' has developed further with the establishment of marine Special Areas of Conservation (SACs). There are three SACs in the Outer Bristol Channel area: Carmarthen Bay & Estuaries, Pembrokeshire Marine, and Lundy (Figure 1.2). Carmarthen Bay (www.carmarthenbaysac.org.uk) is also a Special Protection Area (SPA) for the Common Scoter, *Melanitta nigra*, and is included in the 'Natura 2000' network of protected sites.

The *Outer Bristol Channel Marine Habitat Study* (OBCMHS) was initiated within this framework relative to the potential use of aggregate resources from this area. Marine aggregate extraction is an important industry in the Bristol Channel with over 85% of the sand and gravel dredged destined for the South Wales market (Welsh Assembly Government 2004; James *et al.* 2005).

The study was undertaken to collect and provide data and interpretations on the current physical state of the sea bed environment in terms of its biology, sediments, geology and morphology. The *Bristol Channel*

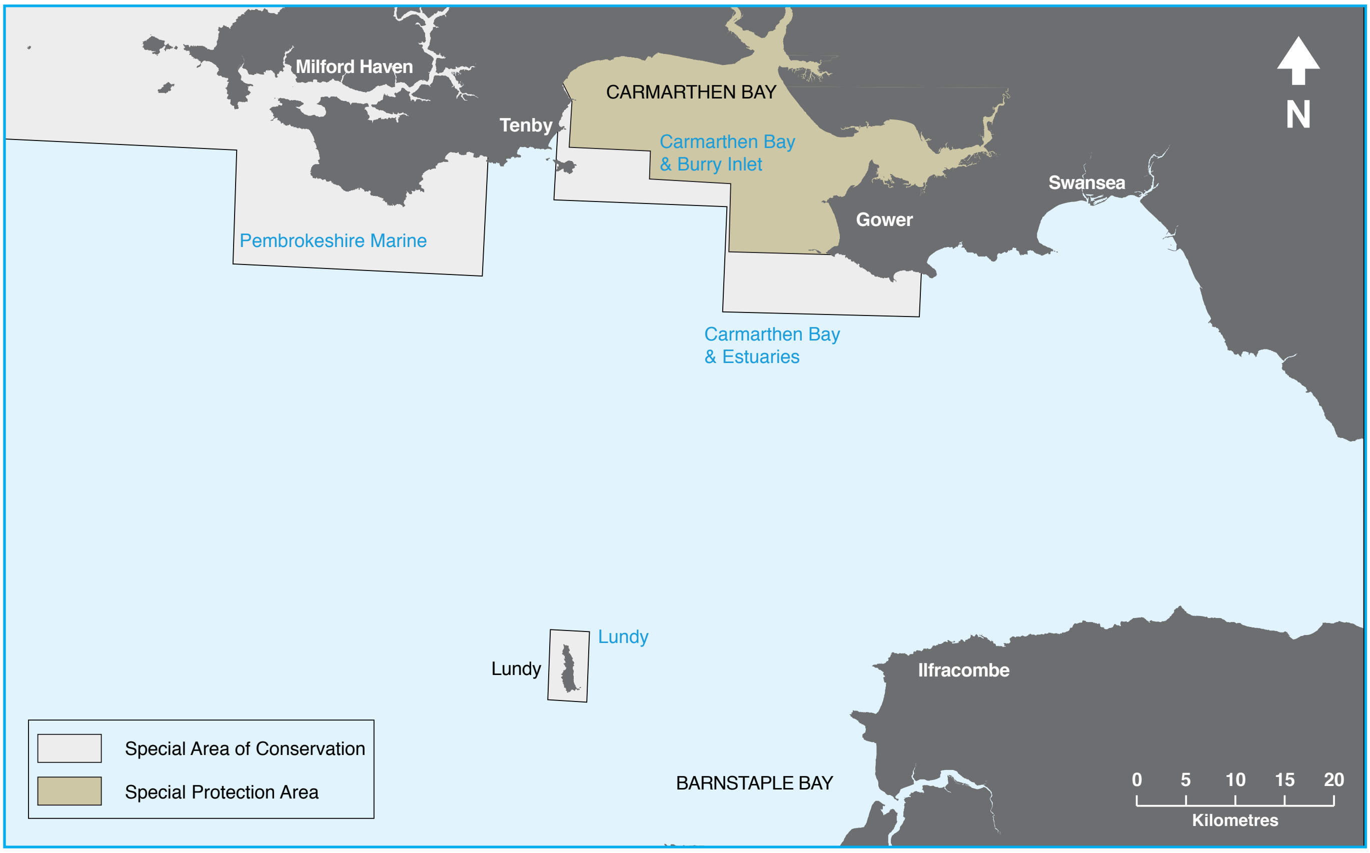


Fig. 1.2: Map showing the current Special Areas of Conservation (SAC) and Special Protection Areas (SPA) within the Outer Bristol Channel area

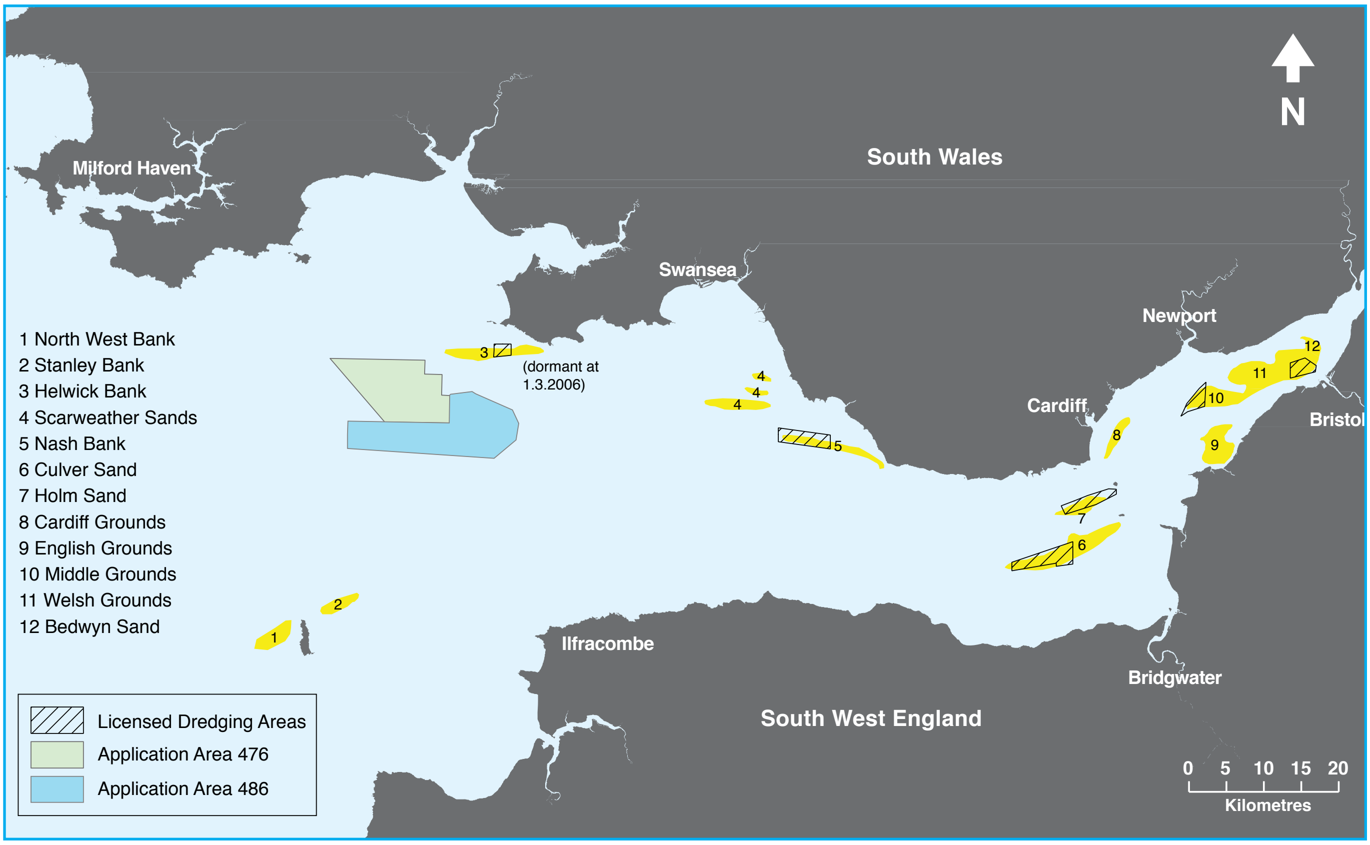


Fig. 1.3: Sand banks, licensed dredging areas and application areas in the Bristol Channel and Severn Estuary at March 2006. (Source: BGS 1:250,000 map series; the Crown Estate website - www.thecrownestate.co.uk)

Marine Aggregates: Resources and Constraints Research Project (Posford Duvivier & ABP Research 2000a, b) had previously indicated significant gaps in the biological and geological data available for the Outer Bristol Channel area. The only comprehensive study of the benthic invertebrates (Warwick & Davies 1977) was carried out in 1972-1973, and published 1:250,000 British Geological Survey geological and sediment maps of the area were based on surveys undertaken from 1971 to 1976. There was also a need to investigate how the biological and geological elements interact, and relate to each other and the natural processes affecting the sea bed environment.

The study was led jointly by the British Geological Survey (BGS) and Amgueddfa Cymru — National Museum Wales (NMW) and supported by core funding from the Aggregate Levy Sustainability Fund (ALSF) in Wales and England. Additional primary support came from the partner organisations (BGS & NMW), The Crown Estate and the British Marine Aggregate Producers Association (BMAPA).

This was timely since the *Interim Marine Aggregates Dredging Policy* (Welsh Assembly Government 2004), launched by Carwyn Jones (Minister for the Environment, Planning and Countryside) on 3 November 2004, included progressively focussing aggregate dredging in areas further offshore. With its large sand wave fields, the Outer Bristol Channel is a possible area for development. Currently there are two marine aggregate licence applications in the NOBel Sands sector of the Outer Bristol Channel (Figures 1.3 & 4.1). The Crown Estate, in whom the sea bed is vested, issues aggregate extraction licences following a review procedure which includes environmental impact assessment.

The interim policy is comprehensive and forms part of an integrated strategy for the supply of fine aggregates to South Wales. However, informing the policy and decision-making process requires knowledge of the current state of the marine environment (Peters & Hulscher 2006; Sutherland *et al.* 2006). This includes the morphology, geology, biology and sediments of the sea bed. Baseline information on these is essential for strategic management and the conservation of biological diversity. This was also highlighted in *A Development Plan for Marine Aggregate Extraction in England: A Scoping Study* prepared for the Office of the Deputy Prime Minister (Posford Haskoning *et al*. 2004). Recently, Gubbay (2005) reviewed marine aggregate extraction in England and Wales for The Crown Estate. Boyd *et al.* (2006) provided much useful advice on sea bed mapping techniques in environmental monitoring and management studies, including those involving aggregates.

Responsible stewardship requires an understanding of the way the marine environment functions and how the sea may respond to human activity. In addition, the Ecosystem Approach requires the involvement of "all relevant sectors of society". The importance of involving the public and local communities is increasingly recognised worldwide (Suman 2001; Gilman 2002; Hartley & Wood 2005; Doelle & Sinclair 2006) — as is the dissemination of freely available information, creation of partnerships and engagement with education (Evans & Birchenough 2001; Wescott 2002; Ducrotoy 2003). In December 2002, the United Nations General Assembly adopted a resolution on a *Decade of Education for Sustainable Development* (2005-2014) to be led and promoted by UNESCO (portal.unesco.org/education).

The *Outer Bristol Channel Marine Habitat Study* (OBCMHS) seeks to address the lack of recent broad-scale biological and geological data for the Outer Bristol Channel. It was designed to provide up-to-date, robust, and independent science for the policy-making process — and disseminate information, through innovative media and an education outreach programme, to the public at large and all other stakeholders in the marine environment.

Aims and Objectives

The principal original objectives of the study were:

• To undertake a marine geophysical survey utilising multibeam, sidescan sonar and sub-bottom seismic reflection systems in 2003

• To undertake a sediment, benthic fauna and video survey in 2003

• Through co-operation with other organisations, actively seek to include within the study any multibeam, geophysical and biological data within the Outer Bristol Channel

• Integrate new and archive geophysical, geological and biological survey data to produce comprehensive interpretations of marine species, habitats and biodiversity distributions within the study area

• Provide geophysical, geological and biological data as baseline criteria for the sustainable development of sea bed resources including fisheries, aggregates and wind farms, and to inform the planning and regulatory process with regard to marine conservation, and national and EU legislation.

• In addition to providing data and interpretations through maps, reports and scientific publications, the project aims to make its results available to a wider audience through a bilingual multimedia CD-ROM, web pages, museum exhibition, and outreach awareness sessions at schools, colleges, societies and interest groups.

The study began in June 2003 and was completed in March 2006. During this period the principal aims remained, though some of the original objectives and resources were modified in response to circumstances, events and opportunities subsequently arising. These modifications were mainly allied to additional resources being made available to the project.

The major changes were:

• Two additional geophysical surveys in August 2004 and May 2005

• Two additional benthic surveys in July 2004 and May 2005

• An additional trawl, video and camera survey in May 2005

As well as producing the scientific results published in this report for a primarily technical audience, an important element of the study has been the dissemination to a wider public, young and old. This included not only the results of the study, but also much basic generic information on the sea bed — including how we investigate it, what it is made of, what lives there, how we use its resources, how we protect it, and why it is important to us.

This wider dissemination included direct interaction with the study's dedicated marine interpretation officer, and other Museum education and scientific staff. Murphy (2006) reported on the education and outreach programme. Some 170 workshops and events were scheduled in the Museum and 70 different schools in 2005-2006. Other activities included science festivals, education fairs, talks, demonstrations and collaborative workshops (e.g., with the Marine Conservation Society). In total, these are estimated to have directly reached over 8000 people, excluding the 4000+ who received the education version of the bilingual CD-ROM. This interactive multimedia CD, entitled 'Explore the Sea Floor', was distributed to all schools in Wales and many in the Bristol area. The inaugural display of the exhibition of the same name was displayed at the National Waterfront Museum in Swansea from October 2005 to July 2006.

Information on the study, and its results and interpretations were also made available on the following websites:

• Amgueddfa Cymru — National Museum Wales (www.museumwales.ac.uk)

• British Geological Survey (www.bgs.ac.uk)

• Marine Life Information Network for Britain & Ireland (www.marlin.ac.uk).

Funding & Contributions

The Outer Bristol Channel Marine Habitat Study (OBCMHS) project area lies within Welsh and English jurisdiction. An offshore boundary has been defined between both jurisdictions under the National Assembly for Wales (Transfer of Functions) Order, 1999. The results of the study are therefore of interest to both sides of the Bristol Channel and hence the two principal funding bodies for the study are from Wales and England:

• The Aggregate Levy Sustainability Fund, administered in Wales by the Welsh Assembly Government

• The Sustainable Land Won and Marine Dredged Aggregate Minerals Programme of the Office of the Deputy Prime Minister, administered by the Minerals Industry Research Organisation (MIRO). This is one of the distributing bodies for the Aggregate Levy Sustainability Fund in England.

Both the National Museum Wales and the British Geological Survey contributed from their own research programmes and datasets, and made funding available for:

• The first biological research cruise in July 2003

• Additional geophysical survey in May 2005 and processing of data.

The British Geological Survey was also successful in applying to the Natural Environment Research Council (NERC) for ship time on the RV *Prince Madog* to undertake the additional geophysical survey cruise in August 2004.

At the initiation of the study, The Crown Estate and the British Marine Aggregate Producers Association pledged support with additional funding. Contributions of data were made by CEMEX, Hanson Aggregates Marine and United Marine Aggregates.

The Maritime and Coastguard Agency kindly provided access to multibeam survey data east of Lundy Island, and Llanelli Sand Dredging Ltd. made contributions of biological sample data.

Steering Group

The study has benefited from the advice and help provided by a broad-based steering group involving the participation of the Welsh Assembly Government, Office of the Deputy Prime Minister, Mineral Industry Research Organisation, The Crown Estate, British Marine Aggregate Producers Association, Countryside Council for Wales, South Wales Sea Fisheries Committee, Marine Conservation Society, Marine Life Information Network, Centre for Environment, Fisheries & Aquaculture, Gower Society, City & County of Swansea, University of Wales Swansea, CEMEX, Llanelli Sand Dredging Ltd, Hanson Aggregates Marine Ltd, United Marine Aggregates and Marine Ecological Surveys Ltd.

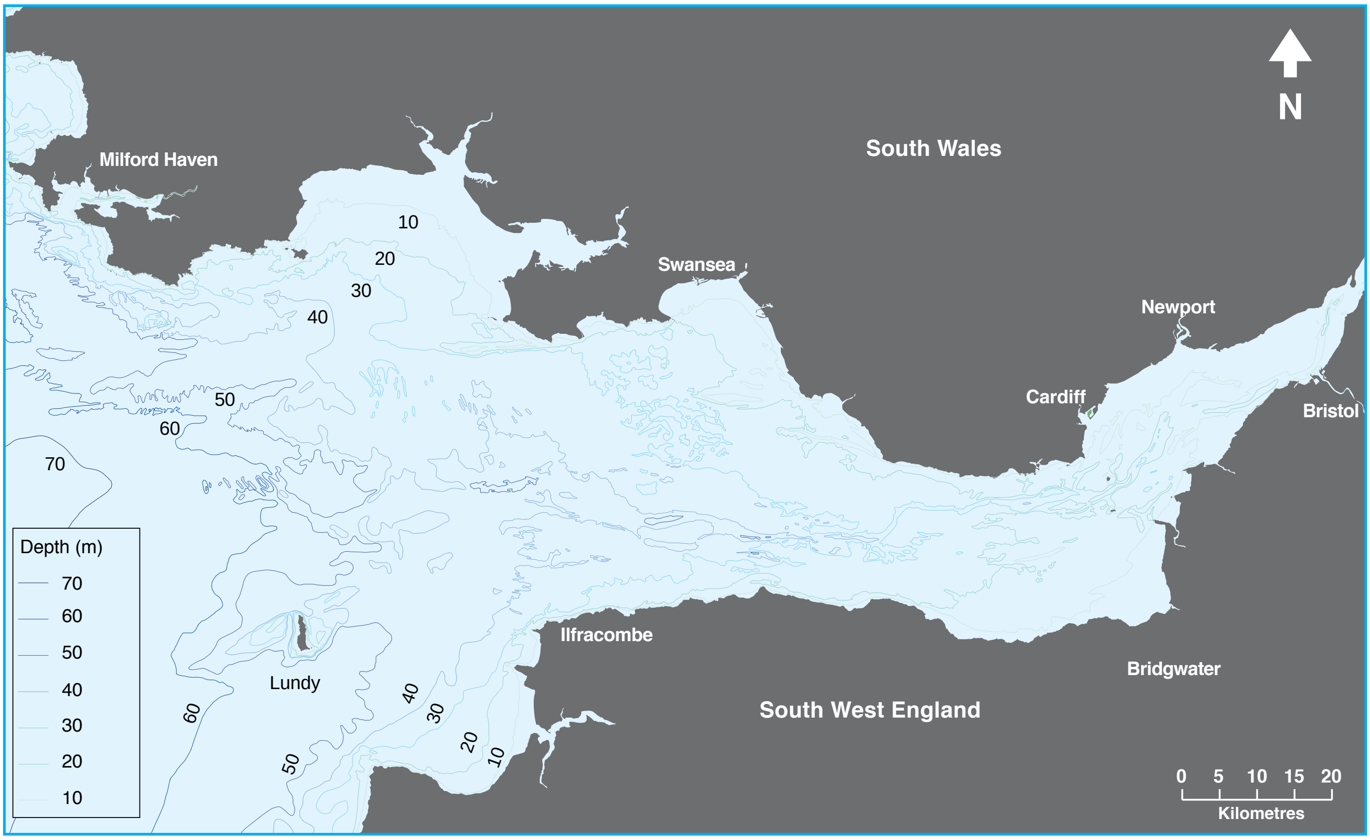


Fig. 2.1: Bathymetry of the Bristol Channel and Severn Estuary (Source: BGS DigBath250, www.bgs.ac.uk/products/digbath250/home.html)

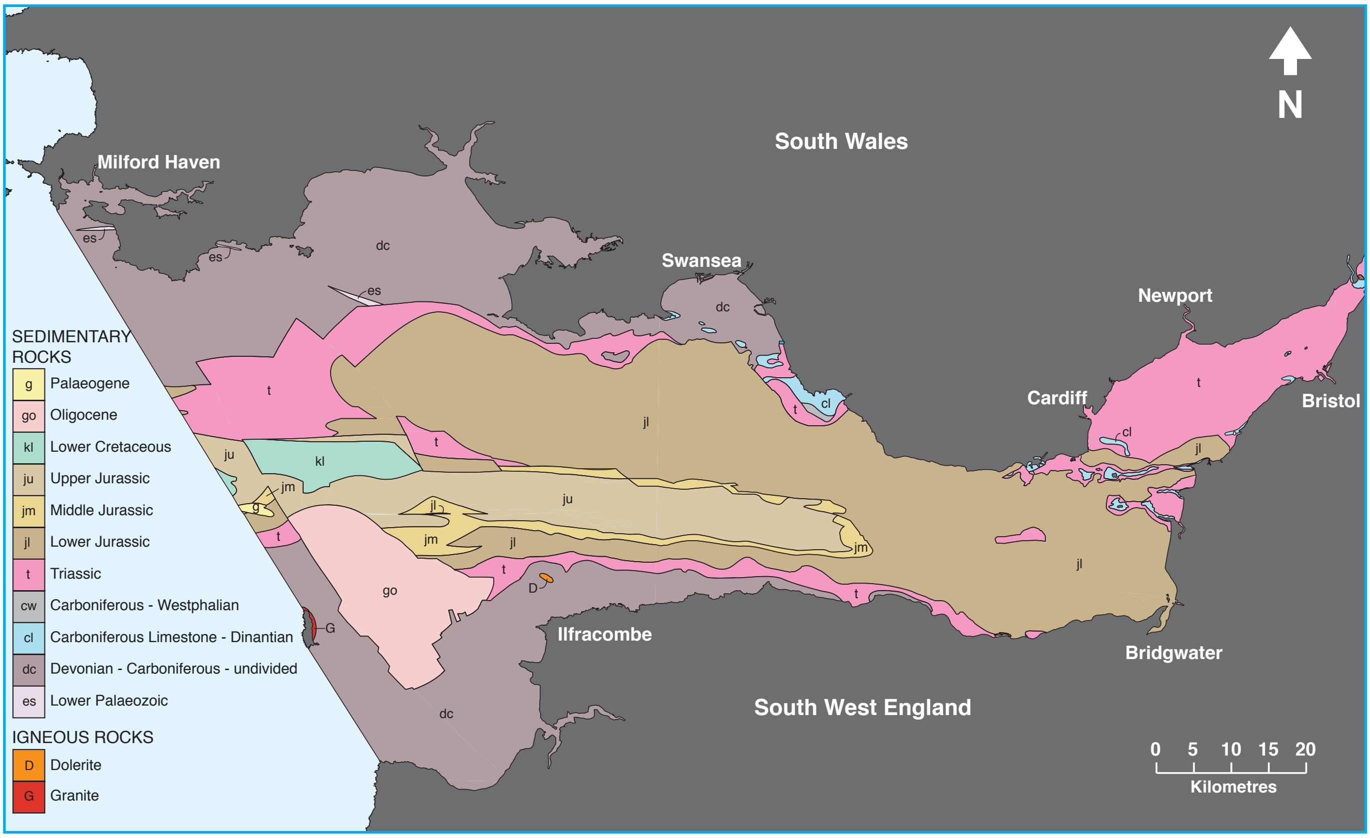


Fig. 2.2: Solid Geology distribution (Source: BGS 1:250,000 map series)

2. Regional Perspective

2.1 Physical Setting

The Outer Bristol Channel lies at the western end of the Bristol Channel (Figure 1.1). From where it merges into the Celtic Sea, southeast of Milford Haven, the Bristol Channel extends eastwards for around 160 km to Chepstow in the Severn Estuary. At Avonmouth, near Bristol, the Severn Estuary is about 8 km wide. West of the islands of Flat Holm and Steep Holm the Bristol Channel opens out to a width of 20 to 25 km, this gradually increases to 40 km between Gower and the north Devon coast at Ilfracombe and reaches a width of over 70 km south of the Pembrokeshire coast.

The margins of the Bristol Channel include a number of large embayments. Two of these are on its southern side at Barnstaple Bay and Bridgwater Bay with a further two on its north side at Swansea Bay and Carmarthen Bay. The margins are also characterised, in part, by extensive stretches of rocky cliffed coast and prominent headlands, some of which are associated with offshore sand banks.

The central axial floor of the channel gradually deepens from east to west (Figure 2.1). In the Severn Estuary there are large areas with water depths of less than 10 m. It has extensive shoals, commonly known as Grounds, and these can be emergent during low tides. The Inner Bristol Channel has wide areas with depths of 10 to 30 m. These deeper waters become more extensive in the Central Bristol Channel and further west reach 50 to over 60 m in the Outer Bristol Channel.

Geology and Sea Bed Sediments

The central floor of the Bristol Channel comprises a submarine valley system, which extends up into the Severn Estuary. This system was incised during the late-Tertiary – early Quaternary and modified to some extent during subsequent Quaternary glaciations and inter-glaciations (Evans 1982). The evidence for the extension of glacial ice across the Bristol Channel during the Quaternary and impinging on to the coast of the southwest peninsula remains uncertain (Harrison & Keen 2005). There is strong evidence of ice flow across the granite surface of Lundy Island although when this occurred during the Quaternary cannot be determined. During the last Glaciation the Bristol Channel was not heavily glaciated, with Welsh ice sheets only impinging on its northern margins. Therefore glaciofluvial processes may have been influential during the final development stages when sea level was low, not only in erosion but also in supplying sediment to the valley system.

The solid rocks that underlie the floor of this valley system (Figure 2.2) are predominantly Jurassic in age and sit within the central east-west fault controlled axis of the Bristol Channel (Tappin *et al.* 1994). These Jurassic rocks also impinge onshore in South Glamorgan and areas of the Somerset coast. The northern and southern margins of the Bristol Channel, and its coastal fringe, are chiefly underlain by Devonian and Carboniferous limestone and sandstone, and some narrow linear areas of Triassic rocks. Triassic mudstones and siltstones underlie much of the Severn Estuary with some small outliers of Carboniferous Limestone, including the islands of Flat Holm and Steep Holm (Evans 1982; BGS 1988). Further west along the central axis, faulted Cretaceous rocks also occur (BGS 1983a). Lundy Island in the Outer Bristol Channel is part of a Tertiary igneous intrusion formed mainly of granite. There are numerous dolerite dykes on the island and also in the surrounding offshore area, including the prominent shoal of Horseshoe Rocks, north of Ilfracombe (Figure 2.3). Immediately to the northwest of Lundy the Stanley Bank Basin comprises a small faulted Oligocene basin with clay, lignite and interbedded sandstone.

The form and morphology of the present-day sea bed includes elements which are directly related to the erosional and depositional events associated with the

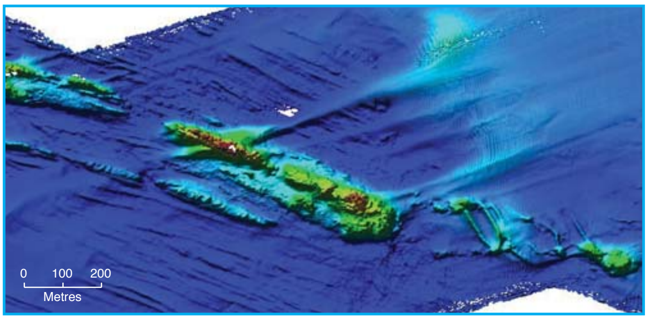


Fig. 2.3: Multibeam image of Horseshoe Rocks

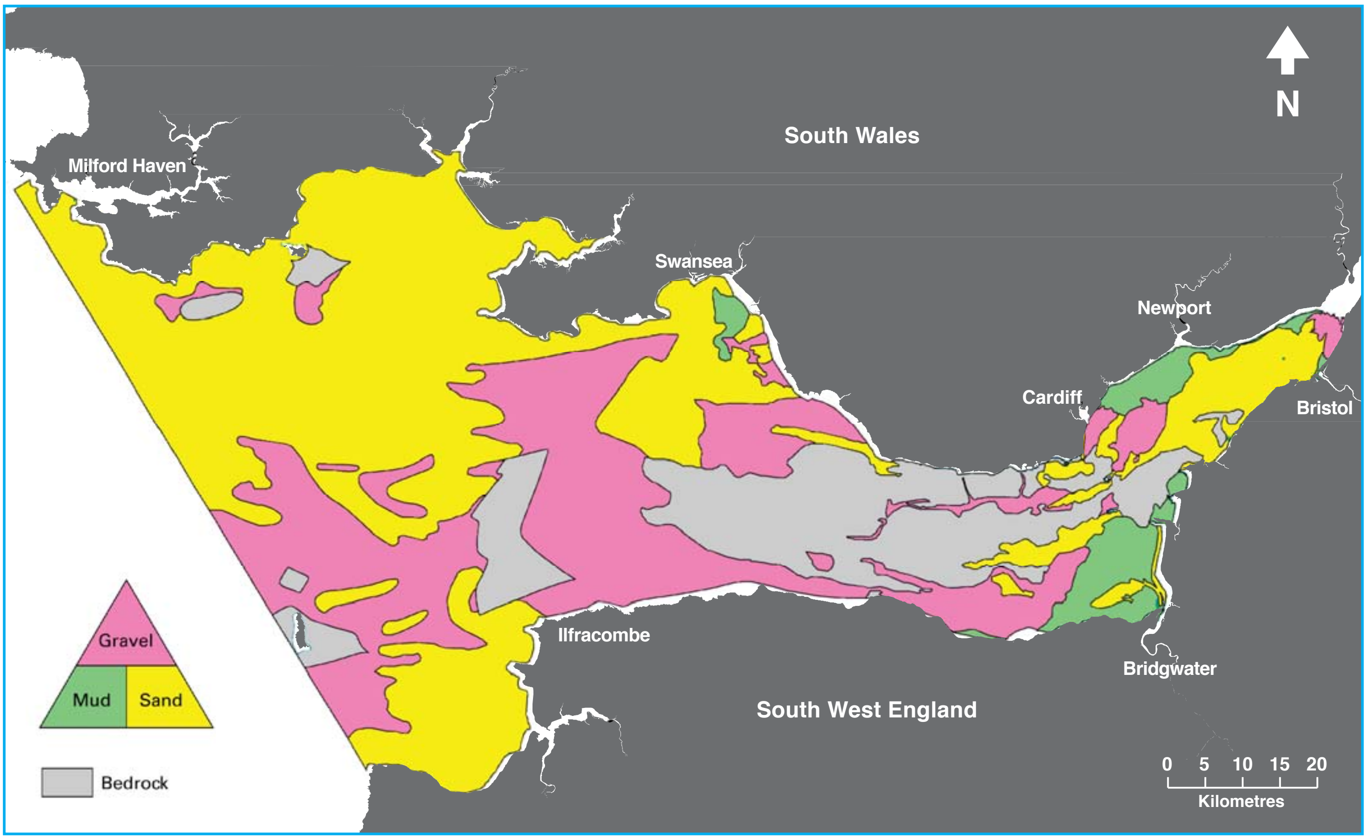


Fig. 2.4: Simplified sea bed sediment and bedrock distribution (Source: BGS 1:250,000 map series and OBCMHS data)

formation of the submarine valley, for example, rock platforms and glacial deposits such as tills. However, the sea bed also includes morphological features which are related to the submergence of the Bristol Channel by rising seas after the last Glaciation, and the deposition and re-working of sediment, some of which may have been of fluvial and glacial origin, during and after this marine transgression. A particularly significant element is the fashioning of sea bed sediments into major large scale bedforms such as sand banks, and relatively smaller bedforms like sand waves and sand ribbons by marine processes including tides, currents and waves.

The sediments lying at the sea bed in the Bristol Channel and Severn Estuary include a variety of lithologies based on mud, sand and gravel but there are also very extensive and significant areas of rock exposed at the sea bed (Figure 2.4) (BGS 1983b, 1986). Sand and mud covers much of the Severn Estuary. These sediments are generally less than 10 m thick but in the extensive banks at Middle Grounds and Welsh Grounds they are greater than 10 m with large tracts over 20 m thick (Evans 1982). The major embayments of Carmarthen Bay, Swansea Bay and Bridgwater Bay also include extensive areas of sandy and muddy subtidal and intertidal sediments. The embayments and Grounds are major sediment stores and sinks within the Bristol Channel and Severn Estuary system.

Elsewhere, in the Inner and Central Bristol Channel, the sea bed is predominantly a rock platform with some lag gravels and thin sand ribbons, streaks and patches, and occasional small groups of sand waves and isolated sand waves. Sitting on this rock and thin gravel substrate are a number of large sand banks (Figure 1.3). Three of these are on the Welsh side of the Central Bristol Channel including Helwick Bank off the western end of Gower, Scarweather Sands west of Porthcawl and Nash Bank to the south of Porthcawl. In the Inner Bristol Channel two sand banks sit further offshore in the axis of the Channel. These are Holm Sands, which lies to the west of the island of Flat Holm, and Culver Sand, which lies west of Steep Holm. With the exception of Scarweather Sands, all these banks have some areas of their deposits that are either licensed or under review (June 2006) for aggregate dredging.

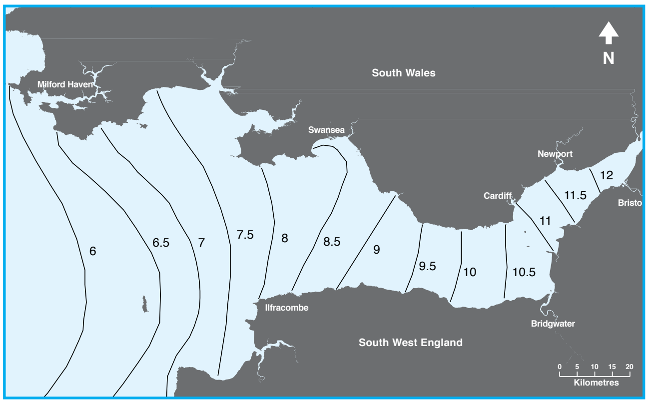


Fig. 2.5: Mean spring tidal range in metres

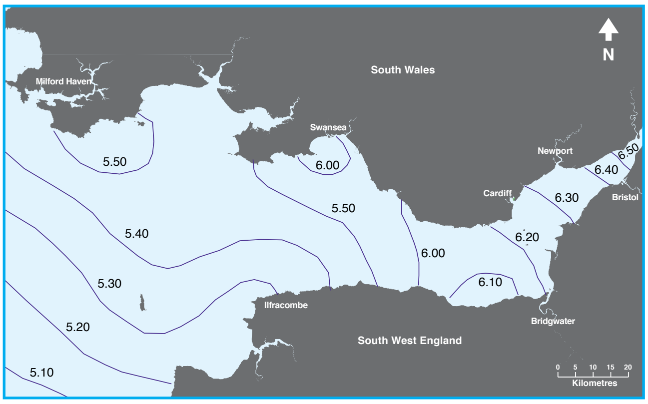


Fig. 2.6: Co-tidal lines in hours after the moon's meridional passage at Greenwich

Further west in deeper water in the Outer Bristol Channel, which is the area covered by this study, there is an extensive sand wave field south of Carmarthen Bay. Two small sand banks stream off the northern end of Lundy Island and there are small sand wave and megaripple fields and isolated sand waves to the east of Lundy.

Hydrodynamics

The Bristol Channel and Severn Estuary is noted for its significant tidal range, one of the largest recorded in the world (Figure 2.5 & 2.6). In the Severn Estuary at Avonmouth, the range of the spring tide is greater than 12 m, and on neap tides the range is 6 m. In the Central Bristol Channel at Swansea the tidal range is over 8 m on spring tides and 4 m at neap tides. The tidal range remains significant further west in the Outer Bristol Channel with a mean spring range around 7 m. Allied to these high tidal ranges are strong rectilinear currents which are predominantly aligned along the central axis of the channel (Figure 2.7). In the Outer Bristol Channel these can reach depth averaged velocities of 1.2 ms^{-1}, while in the narrower Inner Bristol Channel they can exceed 2.4 ms^{-1} (Figure 2.8). At these velocities, sediment up to sand grade is likely to be mobile over much of the lunar tidal cycle between neap tides and spring tides (Dyer 1984).

Tides are semi-diurnal, producing two high and low waters every day (Uncles 1984). During each cycle between ebb and flood, tidal currents can move water large distances, between 10 and 22 km up and down the Channel (Shaw 1980). However, although the gross distances are large, the long oscillation of the tides mean that net movement of water is relatively small (IMER 1974).

Tidal asymmetry is an important control on net sediment transport. In the Severn Estuary the ebb tidal flows are longer and weaker than the flood flows, which are shorter and stronger. The latter are dominant and net sediment transport is into and up the estuary. However in the Bristol Channel, tidal residual modelling (Uncles 1982) indicates an ebb-dominant westward flow down and out of the channel.

The results of the modelling of sea bed stress generated by currents (Uncles 1984) have correlated well in a number of areas with the distribution of sediment and character of the sea bed. For example, areas of high sea bed stress in the Central Bristol Channel are co-incident with the extensive areas of exposed rock at the sea bed (Figure 2.4); mobile sediments are unable to settle in these areas of strong currents. The major bays, which are infilled with sediment, are areas of relatively low sea bed stress with residual currents which point into the bays and have a rotational motion within them.

Sedimentation Processes

A substantial body of research has been conducted in the Bristol Channel and Severn Estuary with regard to sedimentation processes including sediment transport and modelling over the last 30 to 40 years (Stride 1963; Culver 1980; Parker & Kirby 1982; Harris & Collins 1985, 1988, 1991; Collins 1987; Stride & Belderson 1990; McLaren *et al.* 1993; Posford Duvivier & ABP Research 2000). The investigations for the Severn

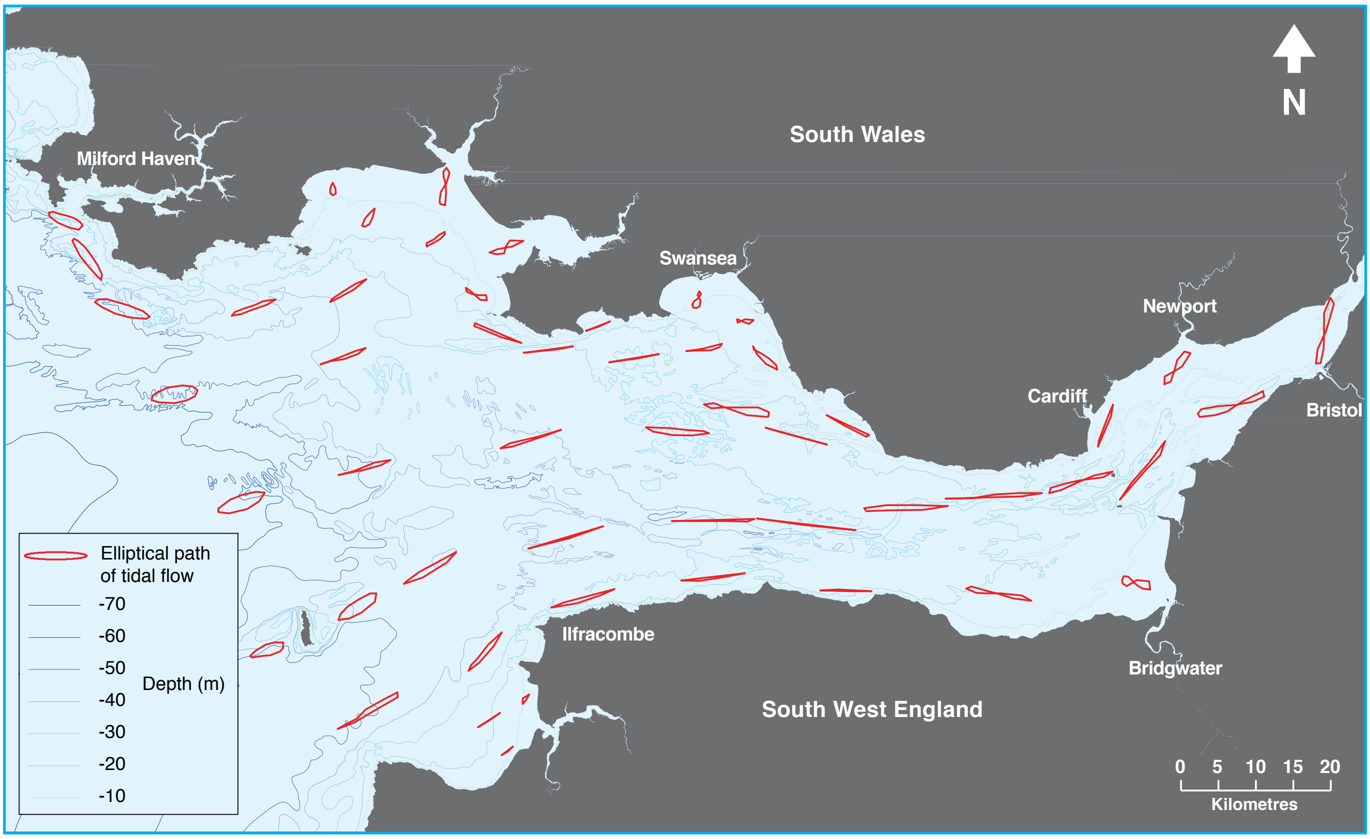


Fig. 2.7: Spatial variation of tidal ellipses (Source: Posford Duvivier and ABP Research 2000)

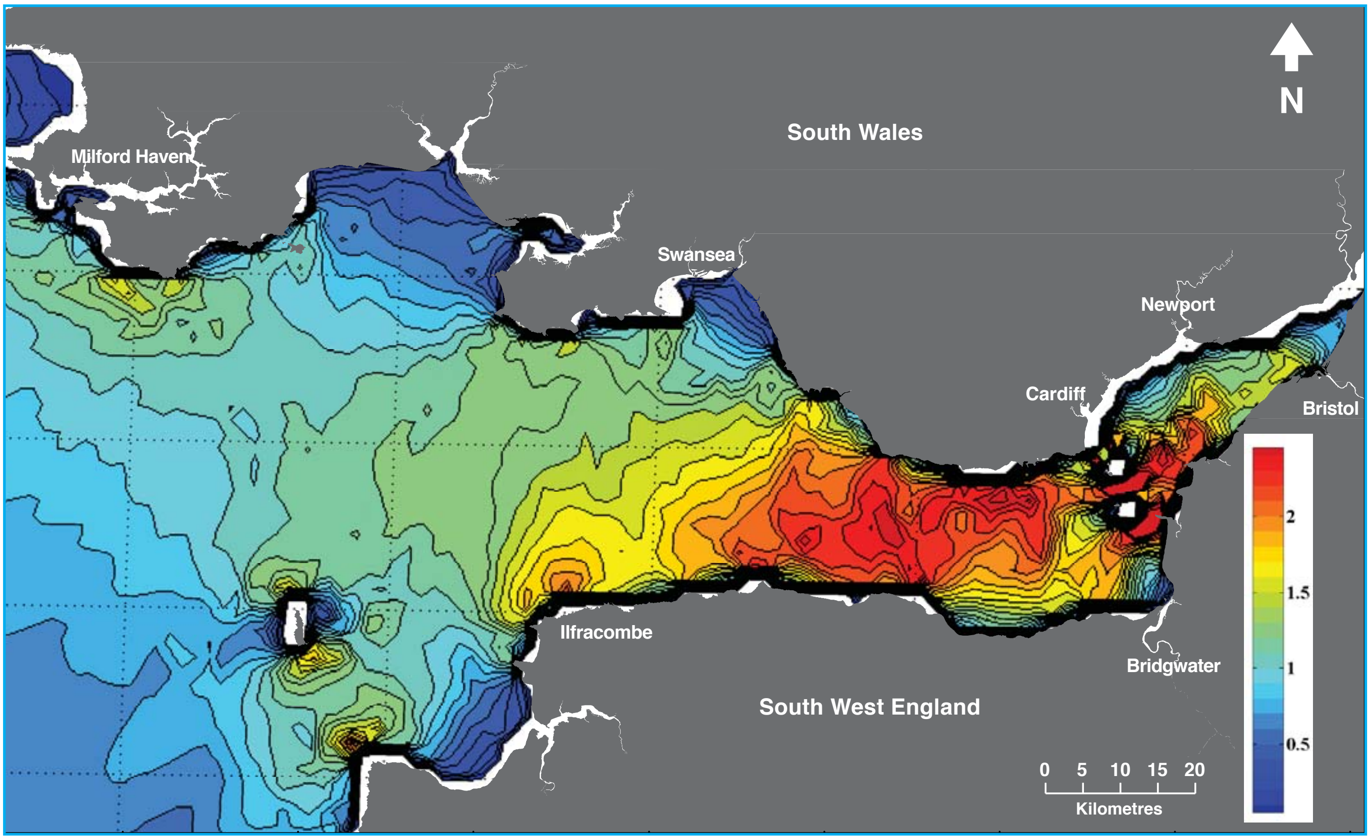


Fig. 2.8: Maximum amplitude of the depth averaged mean spring tidal current. Contour interval 0.1 ms^{-1}.
(Source: Data supplied under licence agreement by Proudman Oceanographic Laboratory - M.J. Howarth, pers.comm.)

Barrage in the late 1970's and early 1980's produced a considerable volume of data and results (Jones *et al*. 1982), as did the IOS SKER project in Swansea Bay (Collins *et al*. 1980). HR Wallingford has produced many coastal impact study reports related to aggregate licence applications over a number of years, and these have included descriptions of sedimentation processes and modelling (e.g., HR Wallingford 1997). Pethick & Thompson (2002) also undertook a review of some aspects of the geomorphology and sediment dynamics of the coast of southeast Wales.

However, although there is a large body of research, opinions can differ, especially on a local scale with regard to issues such as sediment transport pathways, sediment budgets and mobility and stability of bedforms. Much of the basic research and results in the Bristol Channel was conducted in the 1970's and 1980's using the tools available at the time. There are limitations with the survey techniques and methods adopted and also there are limitations and variations in coverage and density of data, especially when compared with modern digital systems.

Mapping of the sea bed using geophysical records including echo sounder and sidescan sonar enabled the interpretation of bedforms such as sand waves, pinpointed the location of rock outcrops and enhanced our knowledge of the morphology of sand banks. This gave primary physical data for sediment transport modelling. Belderson & Stride (1966) used this type of sea bed geophysical data to provide evidence of bedform asymmetry as an indication of net sediment transport direction. They postulated a sediment bedload parting in the Inner Bristol Channel with ebb dominated net sediment transport to the west of the bedload parting down the channel. On the east side of the parting, net sediment transport is flood dominated into the Severn Estuary. The physical evidence for a bedload parting in this area fits well with the results of modelling (Uncles 1982; Pingree & Griffiths 1979), with tidal residuals and asymmetry indicating an ebb dominant system to the west of this parting zone and a flood dominant system to the east. The bedload parting zone is co-incident with the area of highest bed sheer stress.

Harris & Collins (1985) also interpreted sidescan sonar records in the Bristol Channel. From the evidence they gathered, including bedform asymmetry, they proposed a 'mutually evasive' sediment transport model for the Bristol Channel with an ebb dominated system down the central axis of the channel and a narrow flood dominated system adjacent to the northern and southern coastlines indicating net sediment transport eastwards up the channel margins. The two models have stimulated further debate (Stride & Belderson 1990; Harris & Collins 1991). There are elements that are common to both models and they are not exclusive of each other, the principal difference being sediment transport pathways in the marginal coastal areas. The conceptual sediment transport model outlined in Posford Duvivier & ABP Research (2000) also includes easterly-orientated sediment transport confined to the shallow coastal margins of the Bristol Channel and driven by storm events (Figure 2.9).

Major linear sand banks have formed at a number of localities along the north coast of the Bristol Channel. These are at Helwick Bank, Scarweather Sands and Nash Bank (Figure 1.3). They are banner banks (Dyer & Huntley 1999) and are associated with adjacent coastal headlands. The disruption of current flows by these coastal headlands initiated eddies and flows in which mobile sand was deposited and enabled sand banks to develop and subsequently be maintained. The sand banks are large structures, ranging in length from 9 to over 12 km with widths of 1 to 2 km. Their crests are all in less than 10 m of water and shallow to a few metres or less in low tides. Wave energy is a significant process impacting on the banks, which absorb

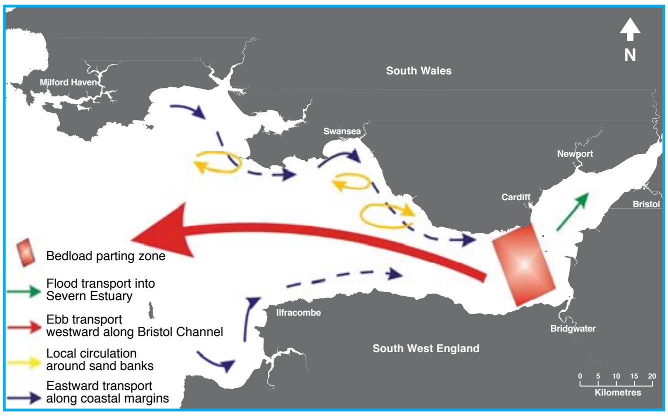


Fig. 2.9: Simplified conceptual model of sand transport in the Bristol Channel and Severn Estuary (Source: Posford Duvivier and ABP Research, 2000)

energy and can act as barriers to wave movement onshore. They appear to be aligned at a slight angle to the peak tidal current direction. They all predominantly comprise fine to medium sand, with coarse sand in some areas. Sand waves and megaripples are common on the flanks and crests of the banks. The asymmetry of these sand waves plus textural analysis and current modelling indicates that all three banks have a clockwise sediment bedload circulation pattern, with flood dominant movement on their northern inshore side and ebb dominant movement on their southern offshore side. This circulation pattern is important in maintaining the form of the bank, and is a significant mechanism in sustaining the morphology of sand banks that are dredged for aggregates.

Two other sand bank areas occur further east in the Inner Bristol Channel at Holm Sands and Culver Sand (Figure 1.3). These have a mid-channel setting, with Holm Sands lying to the west of Flat Holm Island and Culver Sand to the west of Steep Holm Island; both are generally in less than 20 m of water. The islands are obstacles to current flows and appear to have been influential in the formation of the banks and in maintaining their form and character. The principal bank at Culver Sand is relatively small with a length of about 5 km and a width of less than 800 m. A narrower belt of sand, about 10 km long, joins it to Steep Holm. Holm Sands includes two banks, Mackenzie Shoal and One Fathom Bank (Davies 1980). These lie on either side of the kilometre wide tidal channel which flows between Flat Holm and Steep Holm.

The banks and Grounds in the Severn Estuary are broad sediment bodies; many are interconnected and also merge into coastal intertidal flats. Their surfaces are commonly covered by small sand waves and megaripples which are emergent at low tides. The major tidal channels in the Estuary focus currents and maintain fine sediment in suspension, their floors can be scoured, with rock and gravel exposed at the sea bed.

Modern input of sediment into the Bristol Channel is primarily fine-grained sediment from rivers and minor contributions from coastal erosion. The rivers with the greatest input are the Wye, Avon and Severn, which discharge into the Severn Estuary. This sediment input contributes to the considerable volume of mobile and potentially mobile mud in the Severn Estuary. Approximately 10 x 10^6 tonnes have been estimated to be in suspension at spring tides. The mobile population is about 20 times greater than the annual river supply (Dyer 1984). Research for the Severn Barrage estimated annual sediment input from coastal erosion into the Bristol Channel as 300,000 tonnes. Mud is the dominant sediment and makes up about 200,000 tonnes, with approximately 50,000 tonnes of sand and a similar amount of gravel. Some exchange of sediment has been postulated between the Celtic Sea and the Bristol Channel, however this is only likely along the coastal margin and would only be a minor contribution. Therefore, there appears to be no major substantial source of sand feeding into the modern Bristol Channel system.

2.2 Benthic Biology

In common with many other areas around the United Kingdom, marine studies increased markedly in the Bristol Channel during the Victorian era. The naturalist Phillip Gosse described many new species from his studies around our shores, but is undoubtedly better known for his books popularising marine biology — notably his book describing the marine aquarium (Gosse 1854). However, for the Bristol Channel, his books on the marine life on the Devon coast and at Tenby have particular relevance (Gosse 1853, 1856).

Although the Victorians enjoyed investigating the sea bed fauna through the work of various dredging committees, there does not appear to have been much carried out in the Bristol Channel. Forbes (1851) listed only four 'dredging papers'; three from Milford Haven and one east of Lundy. The dredging at Lundy took place on sand and gravel at 13-46 m depth, 0.5-2 miles offshore, and yielded 49 species of living mollusc. Bassindale (1946) carried out some dredging at Skomer Island, but Purchon (1947) gives one of the earliest accounts from the Severn Estuary and Inner Bristol Channel. Dredging was limited to a relatively small area off Cardiff, Penarth and Barry. The intertidal was better studied and much of the earliest work detailing the flora and fauna was carried out through Bristol University (Yonge 1937; Purchon 1937, 1957; Yonge & Lloyd 1938; Bassindale 1941, 1942, 1943).

Thorough accounts of the intertidal and sublittoral life in the Bristol Channel were provided by Davies (1991, 1998). There have been a number of other reviews published on the area (e.g., NERC *et al.* 1972; Shackley 1978; Smith *et al.* 1995) and, more recently, Voisey (2004). In 1984, an issue of *Marine Pollution Bulletin* was devoted to the Bristol Channel relative to a Severn Barrage as a potential source of tidal power (e.g., Glover 1984). Another multidisciplinary publication concerning the same subject followed a decade later (Crothers *et al.* 1994; see also Holbrook 1991). On a wider scale, information on the Bristol Channel was included in the 'Celtic Seas Quality Status Report' (Rees 1996), 'Quality Status Report 2000 Region III Celtic Seas' (OSPAR 2000) and the report by the 'Irish Sea and Bristol Channel QSR team' (Law & Jones 2000).

The following text considers sublittoral benthic studies only — with respect to coverage, locality and sampling methodology.

The Bristol Channel & Severn Estuary

The most comprehensive study of the benthic fauna was carried out under an integrated research programme by the Institute for Marine Environmental Research (IMER 1975). Some 40 research cruises took place between 1971 and 1975, collecting data on water circulation, chemistry, plankton and benthos. A data CD-ROM is available (BODC 2001). The broad benthic survey took place in 1972-1973 and 155 stations were sampled using a 0.07 m^2 Day grab and 0.5 mm mesh sieve, and a rectangular Naturalist's Dredge with a 1.3 cm mesh net (Warwick & Davies 1977). Sediments were assessed visually.

The 294 species identified were analysed using a semi-quantitative abundance scale and five Petersen-type 'communities' recognised (Petersen 1918, 1924; Thorson 1957). The communities (Figure 2.10), primarily named after their prominent bivalve mollusc species, were:

- *Venus* community
- *Abra* community
- *Modiolus* community
- Reduced hard-bottom community
- Reduced soft-bottom community

The *Venus* community was described as having two sub-communities, *Tellina* and *Spisula*. Transitions between the communities were also noted.

1. *Venus* community

Occurring in shallow hard-packed sands, the *Tellina* sub-community, was characterised by the bivalve molluscs *Fabulina* (as *Tellina*) *fabula*, *Pharus legumen* and *Donax vittatus*, opisthobranch mollusc *Philine aperta*, amphipods *Bathyporeia guilliamsoniana* and *Pontocrates arenarius*, cumacean *Iphinoe trispinosa*, polychaete worms *Magelona mirabilis*/*M. johnstoni* (as *Magelona papillicornis*), *Lagis koreni*, and *Aphelochaeta marioni*, brittle star *Ophiura ophiura*, and starfish *Astropecten irregularis* and *Asterias rubens*.

The *Spisula* sub-community occurred in a variety of sandy sediments in the sand waves of the offshore NOBel Sands. Characteristic species were the bivalve *Spisula elliptica*, polychaetes *Nephtys cirrosa* and *Paradoneis lyra*, mysid *Gastrosaccus spinifer*, and cuttlefish *Sepiola atlantica*.

2. *Abra* community

This was found in silty or mixed sediments and was characterised by the bivalves *Abra alba* and *Nucula nitidosa*, polychaetes *Scalibregma inflatum*, *Lagis koreni* and *Nephtys hombergii*, and amphipod *Ampelisca spinipes*.

Four areas of *Abra* community were delineated: just south of Carmarthen Bay, between the *Venus* and *Modiolus* communities in the SOBel Sands, and in Barnstaple Bay and Swansea Bay.

3. *Modiolus* community

The least well-defined community found, this occurred on a variety of hard bottoms (gravels to rock), particularly in the central channel between Gower and north Devon. The characterising species were the hermit crab *Pagurus bernhardus*, crabs *Pisidia longicornis* and *Ebalia tuberosa*, polychaetes *Lepidonotus squamatus* and *Syllis armillaris*, amphipod *Gammaropsis maculata*, chiton *Leptochiton asellus*, brittle stars *Ophiothrix fragilis* and *Ophiura albida*, starfish *Asterias rubens* and sea urchin *Psammechinus miliaris*. The horse mussel *Modiolus modiolus* was relatively infrequent in the samples.

There was an indication of subdivision within the community. Stations with mixed sand, silt and gravel had many species also found in the *Venus* and *Abra* communities. Conversely, the harder rockier substrata associated with the Morte and Lundy platforms supported more crevice dwelling or attaching species.

4. Reduced Hard-Bottom Community

Found on rocky hard-bottoms subject to strong tidal scour in the Central and Inner Channel. Characteristic species were predominantly encrusting or crevice-dwelling: the polychaetes *Syllis armillaris, Eulalia tripunctata, Sabellaria alveolata* and *S. spinulosa*, bivalve *Sphenia binghami*, amphipods *Unciola crenatipalma*, *Gammarus zaddachi* and *Janira maculosa*, starfish *Henricia sanguinolenta*, and anemone *Sagartia troglodytes*.

5. Reduced Soft-Bottom Community

A reduced soft-bottom association was found in fluid mud in the Inner Channel and Severn Estuary. The fauna was sparse and characterised by the polychaetes *Aphelochaeta marioni* and *Nephtys hombergii*, and a small oligochaete, *Tubificoides* sp. (as *Peloscolex* sp.).

In a later analysis of the same data, Warwick & Uncles (1980) used all 9 communities, sub-communities or groups previously delineated and showed that the sediment and faunal distributions were directly related to tidal bed stress as derived from a hydrodymamic model. Benthic productivity in the Carmarthen Bay *Venus* (*Tellina*), Swansea Bay *Abra* community, and Ilfracombe hard-bottom communities were described in Warwick *et al.* (1978), Warwick & George (1980) and George & Warwick (1985). Warwick (1984) reviewed the benthos relative to the possible building of a Severn Barrage.

In 1988 the benthic macrofaunal assemblages of the Inner Bristol Channel and Severn Estuary were investigated by Mettam *et al.* (1994). Sampling involved 0.1 m^2 Day grab samples and a 0.5 mm mesh sieve. The hardness of much of the substrata made sampling difficult and the removal of up to 50% of the sample for sediment analysis reduced the quantitative value of the sampling.

A total of 112 taxa were identified from the 136 samples containing fauna; 33 samples contained no animals. The data was analysed using cluster analysis and TWINSPAN (Hill 1979b). Ten faunal groups were identified (Figure 2.11) using the former technique and 9 identified using the latter. After considering both sets of results together, the authors recognised 8 faunal groups — each occupying different sediment types and depths.

The linear sand banks in the Bristol Channel were investigated by Tyler & Shackley (1980). Faunal diversity in the medium sands of the Helwick Bank and the Scarweather, Hugo, Nash and Culver Banks to the east was considered to be low near the crests. *Gastrosaccus spinifer, Pontocrates arenarius* and *Nephtys cirrosa* were the dominant species present. More recently Darbyshire *et al.* (2002) surveyed the Helwick along with Turbot

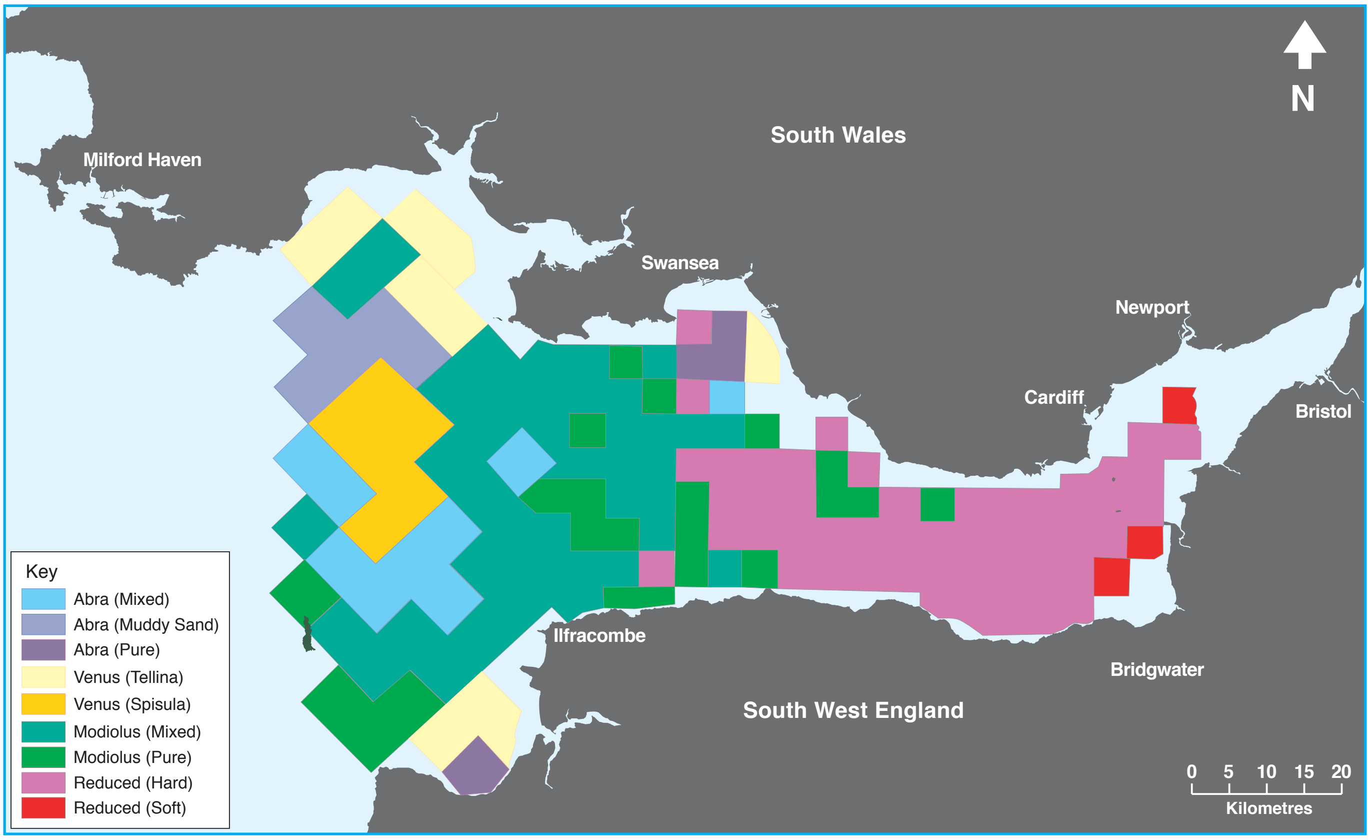


Fig. 2.10: Distribution of benthic faunal assemblages in the Bristol Channel (after Warwick & Uncles 1980; Warwick 1984)

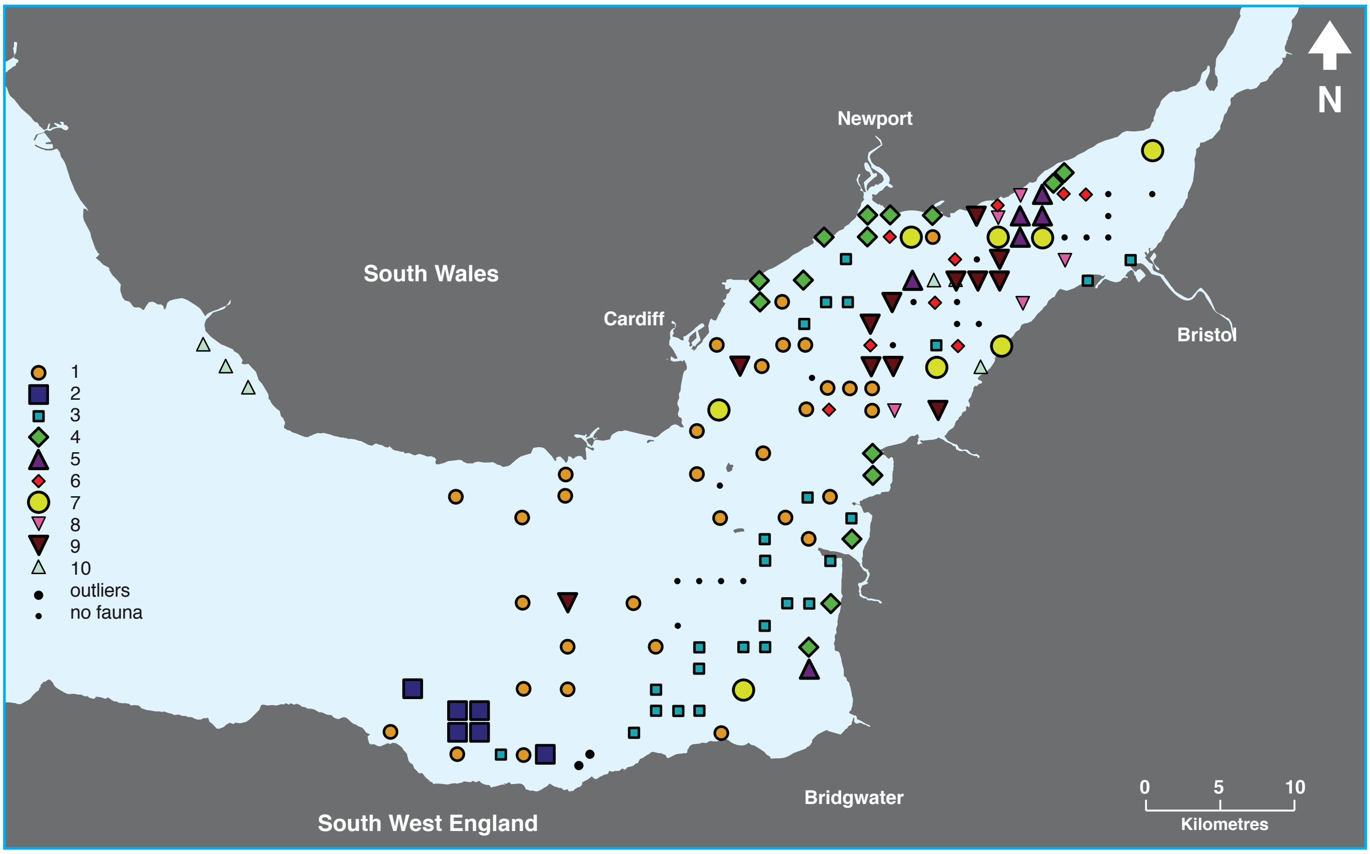


Fig. 2.11: Distribution of benthic faunal groups in the Inner Bristol Channel and Severn Estuary (after Mettam et al. *1994)*

Bank to the west, south of the entrance to Milford Haven. A 0.1 m^2 modified L-frame Van Veen grab (Mackie, in prep.) and 0.5 mm mesh sieve were used. The two banks had a similar fauna, dominated by the small phyllodocid polychaete *Hesionura elongata*, *Nephtys cirrosa* and the tiny 'archiannelid' *Protodriloides chaetifer*. *Gastrosaccus* showed a preference for these banks when compared with others in west and north Wales. Diversity was found to decrease at the shallower stations near the crests, and increase in the more stable and generally gravelly off-bank ones.

Rees *et al.* (1999) reported on the faunal affinities of 26 grab and 69 trawl stations sampled under the UK National Monitoring Programme (NMP). Two stations were sampled in the Bristol Channel; one off Swansea by 0.1 m^2 Day grab and 2 m beam trawl, the other in mid-channel south of St Govan's Head by grab alone. The trawl cluster analysis classified the Swansea station as 'Estuarine (*Pandalus montagui, Crangon crangon*)' and the outer station as 'W Channel/W Coast gravelly (*Adamsia carciniopados, Psammechinus miliaris*)'. Only the Swansea station was included in the grab analysis. The fauna, screened on a 1 mm mesh sieve, was described as impoverished. The polychaete *Ophelia borealis* was dominant with *Nephtys* spp. prevalent, and the bivalve *Spisula elliptica* and amphipod *Bathyporeia elegans* present at lower densities. All were considered indicative of mobile sands in areas of relatively high tidal current velocity.

The epibenthic invertebrate and fish assemblages of the Outer and Central Bristol Channel were examined in more detail by Ellis & Rogers (2000) and Ellis *et al.* (2000). A 4 m beam trawl was used with a 40 mm mesh cod-end. In the latter publication, five faunal assemblages were identified from these areas:

1. *Pleuronectes-Limanda* assemblage
Characterised by flatfish, including Plaice (*Pleuronectes platessa*) and Dab (*Limanda limanda*), and scavenging invertebrates such as crabs (*Liocarcinus* spp., *Pagarus bernhardus*), Common Whelk *Buccinum undatum* and Common Starfish *Asterias rubens*. This assemblage occurred on the sands of Carmarthen Bay and its approaches.

2. *Maja* assemblage
Characterised by the spider crab *Maja squinado*, flatfish (sole, *Solea solea*) and the small gadoid, Bib (*Trisopterus luscus*). The assemblage also had the large starfish *Marthasterias glacialis* and attached colonial epifauna such as hydroids and soft corals. Although the authors were cautious about this assemblage since *Maja* is known to migrate inshore in Spring and Summer, the other taxa seem indicative of the harder substrata found off south Gower, Swansea Bay, Barnstaple Bay and on the Morte Platform.

3. *Microchirus-Pagurus* assemblage
Characterised by Thickback Sole (*Microchirus variegatus*) and the hermit crab *Pagurus prideaux*, this too had an abundance of Common Starfish, Sole and Common Dragonet (*Callionymus lyra*). This assemblage occurs on the coarser mixed sediments found offshore.

4. *Echinus-Crossaster* assemblage
Characterised by large echinoderms, the Common Sea Urchin *Echinus esculentus* and Common Sunstar *Crossaster papposus*, with the Common Starfish again abundant too. This assemblage occurred widely throughout the offshore gravelly sediments of the Irish Sea, but was only found once in the mid Central Bristol Channel. However, this lack of representation may simply be due to the low level of sampling carried out in this part of the Channel.

Ellis *et al.* (2000) considered this assemblage, plus the *Microchirus-Pagurus* assemblage, to equate to the *Adamsia carciniopados-Psammechinus miliaris* one described by Rees *et al.* (1999). The anemone *Adamsia* is a commensal on *Pagurus prideaux*.

5. *Alcyonium* assemblage
Characterised by Dead-man's Fingers, the soft coral *Alcyonium digitatum*, this assemblage also included Dab, Plumose Anemone (*Metridium senile*), Velvet Swimming Crab (*Necora puber*) and the urchin *Psammechinus miliaris*.

The assemblage was infrequent in the study and, in the Bristol Channel, only occurred southeast of Caldey Island. This, and the four Irish Sea localities which are mostly off headlands, are likely to have a stony substratum.

Ellis *et al.* (2000) carried out a species-environment analysis using the BIO-ENV routine in the PRIMER computer program (Clarke & Ainsworth 1993). Depth, surface water temperature and weight of rocks collected were the variables best 'explaining' the faunal assemblages (r_w= 0.46).

Swansea Bay & Gower

The University of Wales Swansea has produced many studies on the sediments, oceanography and biology of Swansea Bay and nearby locations (e.g., see Shackley 1978). For the benthos, key works include Warwick & Davies (1977), Warwick & George (1980), Harkantra (1982), Shackley (1982) and Shackley & Collins (1984).

During the 1980s, the Welsh Water Authority embarked on a multifaceted investigative programme in the bay. A total of 272 benthic stations were sampled using a 0.1 m^2 Day grab, with fauna being obtained from 176 stations (WWA 1986; Conneely 1988). The faunal assemblages described were similar to those described by Warwick & Davies (1977).

Tyler (1977) examined the benthic assemblages of Oxwich Bay, south Gower, in relation to the sedimentological and hydrodynamic environment. Faunal samples were collected using a Shipek grab, bucket dredge and Agassiz trawl. A 2 mm mesh sieve was used and *Abra* and *Spisula* assemblages identified. However, Tyler considered the hydrodynamic regime more influential than sediment type in determining the species distributions.

The shallow nearshore hard substrate and sedimentary habitats off Gower were documented by Hiscock (1979) and Hiscock *et al.* (1980).

Carmarthen Bay

Surprisingly, until recently, relatively little study has been made of the sublittoral sediments in Carmarthen Bay. Warwick & Davies (1977) categorised the bay itself as having a shallow fine sand *Tellina* assemblage (see above), with the siltier sediments of the approaches supporting an *Abra* assemblage.

The *Sea Empress* oil spill at the entrance to Milford Haven, in February 1996, resulted in oil contamination of the bay and the deaths of over 4000 Common Scoter ducks (Moore 1996). This was followed by strandings of bivalve molluscs, crabs and starfish (Dyrynda 1996; Rutt *et al.* 1998). A small series of benthic stations in Carmarthen Bay were subsequently monitored (Hobbs & Smith 1998a).

In June 1998, a joint National Museum Wales-Countryside Council for Wales survey of Carmarthen Bay sampled 60 benthic stations using an L-frame 0.1 m^2 Van Veen grab. Almost half (29) were screened through a 0.5 mm mesh sieve, the remainder through a 1 mm sieve. Eight 3 m beam trawl tows were taken to assess the epifauna. The samples were worked up and analysed by Woolmer (2003). Two assemblages were delimited (Figure 2.12). Assemblage A to the south, along the outer 'edge' of the bay, and assemblage B in the shallower sediments to the north. The latter showed signs of subdivision into two sub-groups.

All three assemblage components were attributed to variations within a *Tellina* assemblage. Assemblage A was regarded as transitional between the *Tellina* and *Spisula* sub-groups of Warwick & Davies (1977). It was distinguished from assemblage B by having much lower abundances of bivalves *Fabulina fabula* and *Mysella bidentata,* and polychaete *Magelona* sp. Assemblage groups B1 and B2 were distinguished by higher abundances of bivalves *Thracia phaseolina, Chamelea gallina* and *Mysella bidentata*, and polychaete *Chaetozone setosa* in B1. Conversely, B2 had more *Nephtys cirrosa, Pontocrates arenarius* and bivalve *Tellimya ferruginosa*.

The groups inhabited slightly different sediments; B1 stations having about 2.5 times the mud content (mean 0.66%; range 0.37-2.62% mud) of the cleaner fine sand B2 stations (0.26%; 0.09-0.58% mud). A BIO-ENV analysis indicated mud, median grain size and wave height 'best explained' the overall faunal distribution (r_w= 0.795).

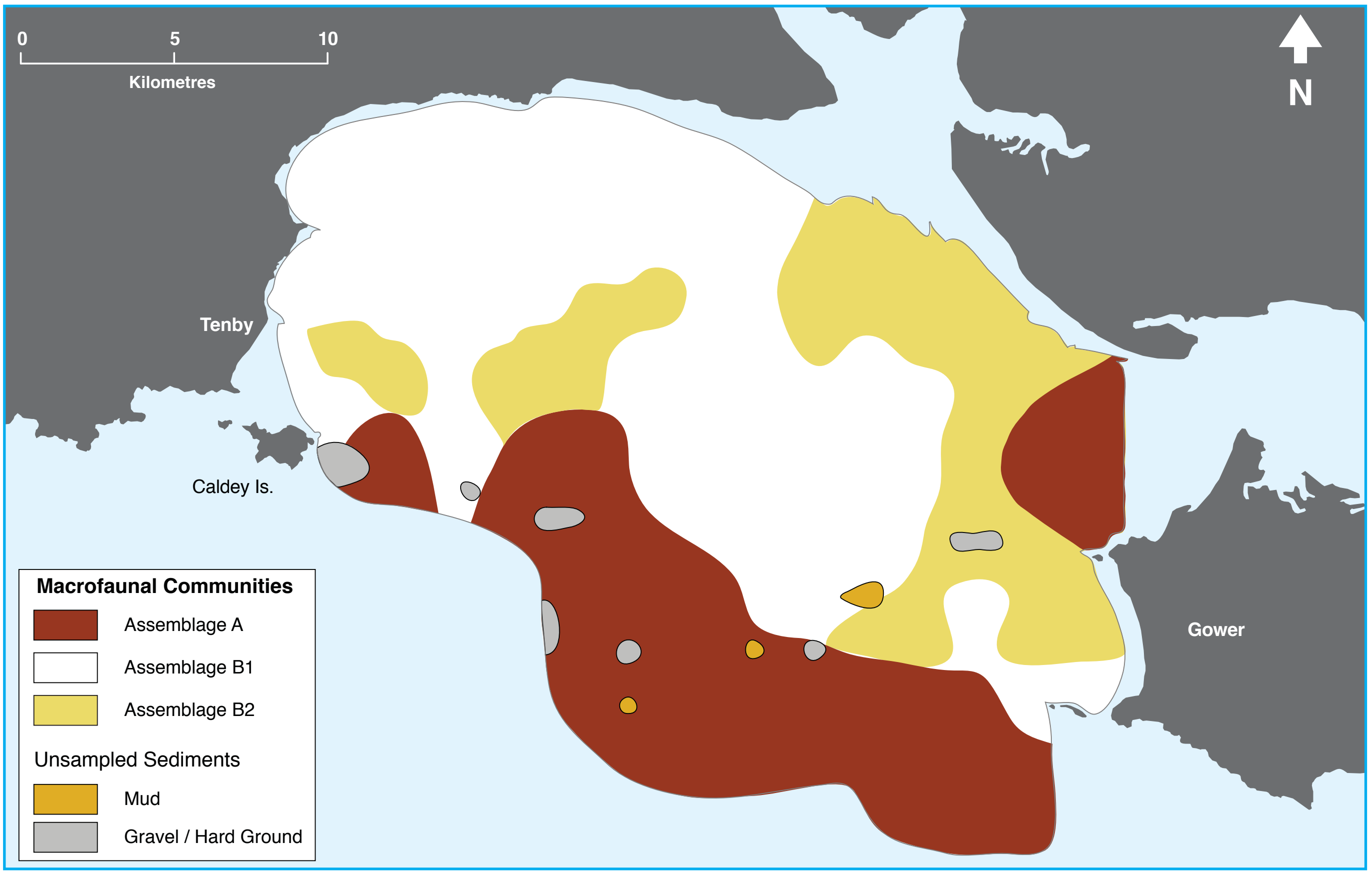


Fig. 2.12: Distribution of benthic faunal assemblages in Carmarthen Bay (after Woolmer 2003)

In addition, Woolmer (2003) studied temporal variability within the *Tellina* assemblage (B1) over a two-year period. A 0.3 mm mesh sieve was used to capture recent recruits and juveniles. It was concluded that the assemblage was subject to recruitment driven short-term variability, though it had a relatively stable species composition over longer time periods.

Outer Bristol Channel

The only broad-scale information on the benthic assemblages of the Outer Bristol Channel is that provided by Warwick & Davies (1977). Details on the assemblages (*Venus*, *Abra* & *Modiolus*) identified are given above.

There have, however, been a number of more localised studies. Darbyshire *et al.* (2002) carried out a survey of the Helwick Bank in the summer of 2001 (see above). At approximately the same time, an industry commissioned survey of the bank was carried out using a 0.1 m^2 Hamon grab and 0.5 mm mesh sieve (Environmental Resources Management 2003).

A total of 30 stations were sampled and four benthic assemblages (A-D) were recognised. Assemblage D was the most distinct and had the richest fauna. It occurred in the deeper water (>30 m) off the bank and had the most varied sediment with the highest silt content. As in assemblages A & B, *Hesionura elongata* dominated, though polychaete species such as *Mediomastus fragilis* and *Lanice conchilega* suggested more stable conditions.

Assemblages A-C grouped together as one large cluster at 30% similarity. The three assemblages seemed to have species components indicative of different levels of sediment stability. Assemblage C, dominated by *Nephtys cirrosa* and *Paraonis fulgens*, occurred in fine sand/medium sand at the shallowest depths (<10 m), had an impoverished fauna, and was adjudged physically disturbed.

Licence Application Area 476 in the NOBel Sands has also been subject to an industry commissioned benthic survey using the same methodology (Environmental Resources Management 2002). Four faunal assemblages were determined from the cluster analysis of the 44 stations sampled in June 2001. Assemblages A and B, comprising 9 and 22 stations respectively, clustered together at about 34% similarity and were considered to represent the same biotope. The remaining stations clustered progressively with these indicating a gradation of faunal change. However, assemblages C and D, with 4 and 5 stations respectively, were delineated at around 29 and 18% similarity.

Assemblages A and B occurred in medium sands with mixed sediments (≥30m) and had large numbers of mobile polychaetes and juvenile bivalves. *Hesionura elongata* and *Nephtys cirrosa* were present. The biotope (MNCR 2002) was adjudged to be *Nephtys cirrosa* and *Bathyporiea* spp. in infralittoral sand (**IGS.Ncir.Bat**).

Assemblage C was located in mixed sediments to the east of the study area, southwest of the Helwick Bank. The fauna was rich with more sedentary sessile tube-dwelling species (*Lanice conchilega*, *Pomatoceros lamarcki*), reflecting a more varied but stable sedimentary habitat. The polychaetes *Mediomastus fragilis, Scalibregma inflatum* and *Protodorvillea kefersteini*, and the amphipod *Ampelisca spinipes* were common. Epifauna, such as the hydroid *Sertularia cupressina*, were recorded more frequently than in other groups. The biotope was identified as circalittoral gravels and sands (biotope complex) in semi-stable conditions (**CGS**).

Assemblage D to the northwest of the area had three species of the polychaete genus *Magelona* (*M. mirabilis, M. johnstoni* & *M. filiformis*) among the dominant species. The biotope was identified as *Fabulina fabula* and *Magelona mirabilis* with venerid bivalves in infralittoral compacted fine sand (**IGS.FabMag**).

An area of the NOBel Sands was recently sampled by 2 m beam trawl (22 mm mesh) in a survey designed to evaluate the distribution of the Common Whelk *Buccinum undatum* (Henderson *et al.* 2005). Five tows were taken from 'open sand' toward the northwest of Area 476 (Figure 1.3). Of the 10 tows taken toward the east, two tows were made on (or near) the tops of sand waves and the remainder taken from the 'deeper mixed' sediments in between.

A DECORANA (Hill 1979a) ordination analysis showed that the 'open sand' fauna was distinct from the 'mixed' sediments, and that whelks were absent from the former. However, the tow from the top of a sand wave had a fauna closer to those from the 'mixed' sediments, though it collected no whelks. Conversely, another from the top and slope had a clear affinity with the 'open sand' assemblage and caught five whelks (Henderson *et al.* 2005: fig. 4).

Lundy

Lundy has been a popular haunt for naturalists since at least the mid 1800s (Hiscock 1994). The island has a wide range of well-documented habitats and is known as a refuge for a number of rare species. Hiscock (1997) summarised the work of the Lundy Field Society. The island became Britain's first statutory Marine Nature Reserve in 1986, and is managed by English Nature.

There is much information published on the intertidal and sublittoral habitats around Lundy (e.g., Hoare & Wilson 1976; Hiscock 1981; Fowler & Pilley 1992; Munro 1995). Much of the sublittoral information comes from diver survey. Davies (1998) provides a good overview of the marine environment around Lundy. Tony Holbrook's Lundy bibliography is available at www.lundy.org.uk/bibl/index.html. Sotheran and Walton (1997) used the RoxAnn acoustic system, a Remote Operated Vehicle (ROV) and a towed video camera to map the sublittoral biotopes within the reserve. Hiscock (2002) recently drew attention to long-term changes in the distribution of a number of species including the Pink Sea Fan *Eunicella verrucosa.*

Milford Haven

Milford Haven is host to a diverse range of usage — from recreational diving, sailing and marine education (at Dale Fort and Orielton) to fishing, port and oil industry activity. The benthic sublittoral fauna of the waterway has received much attention (e.g., Addy 1976; Rostron *et al.* 1986; Levell *et al.* 1997; Hobbs & Smith 1998b). A detailed description will not be included here. Davies (1998) provides a good overview.

However, while the inner areas are subject to much terrestrial influence and generally become muddier toward the east, the sediments in the entrance area are coarser and cleaner. As such, its fauna has similarities with areas outside in the approaches to the Bristol Channel. The small bays in the entrance area offer different degrees of shelter from the wind and waves and their benthic faunas reflect these differences. For example, the most exposed bay near St Ann's Head has clean coarse sand ripples supporting a sparse fauna that includes the small bivalve *Goodalia triangularis* (NMW, pers. obs.). Conversely, the sediment off Dale is varied and a much richer fauna is present.

Bristol Channel Approaches

Skomer Marine Nature Reserve off the Marloes Peninsula forms another focus for sublittoral study (see Davies 1998). A number of benthic surveys have been carried out on both soft (e.g., Rostron 1994, 1997; Barfield 1999) and hard bottoms (Hiscock 1980; Hiscock & Bunker 1984; Bunker & Hiscock 1987).

Mackie *et al.* (1995) examined the offshore benthic fauna of the southern Irish Sea and northern Celtic Sea. This included a transect of 7 grab stations leading from the Celtic Deep (mud 130 m) toward the Bristol Channel. The two eastern stations (78-88 m depth), southwest of Milford Haven, each had a sandy sediment and a fauna including the polychaetes *Magelona mirabilis, Magelona filiformis,* the brittle star *Amphiura filiformis* and gastropod mollusc *Cylichna cylindracea*. The two stations were adjudged to have an intermediate fauna, but showed a clear affinity with inshore *Tellina* assemblages.

3. Survey Methods and Procedures

The study area was bounded by Worms Head — St Govan's Head in the north, and Lundy — Morte Point in the south. The original survey plan called for the geophysical survey to take place a month before the biological one. The location of the biological stations would then be planned on the initial geophysical results. However, due to ship-time availability and funding constraints, the biological survey preceded the geophysical. With financial support from the Museum, biological work was able to commence shortly after the Aggregate Levy Sustainability Fund (ALSF Wales) committee gave provisional approval for the study (Dolgellau, 6 June 2003). The geophysical research cruise began when suitable ship-time became available.

A total of five research cruises took place within the 2003-2006 timescale of the study (Table 3.1). Originally, only two cruises were planned — one geophysical survey, the other primarily for the collection of biological and sediment samples. The biological cruise additionally involved acquiring photographs and video footage of the sea bed at a series of pre-determined locations spread throughout the study area. The three additional cruises were designed to provide a more complete coverage of the area, as well as targeting additional locations (Cruises 3 & 5) or deploying different equipment (Cruise 5: trawls) to enhance the data collected.

Station locality data, related physical and sediment data and the unique BGS sample station number for each OBCMHS station are listed in Appendix 1. Details of the grab and dredge sampling operations are provided in Table 3.4 and in the survey logs (Appendix 2). Metadata associated with video and trawl sampling are given in Appendix 3 and 4 respectively.

Geophysical (multibeam, sidescan, boomer) images, sediment statistics, macrofaunal data (rank lists, diversity indices, biotopes), and photographs/video are available for each station (where possible) on the interactive data utility on the DVD-ROM accompanying this publication.

3.1 Geophysical Data Acquisition and Processing

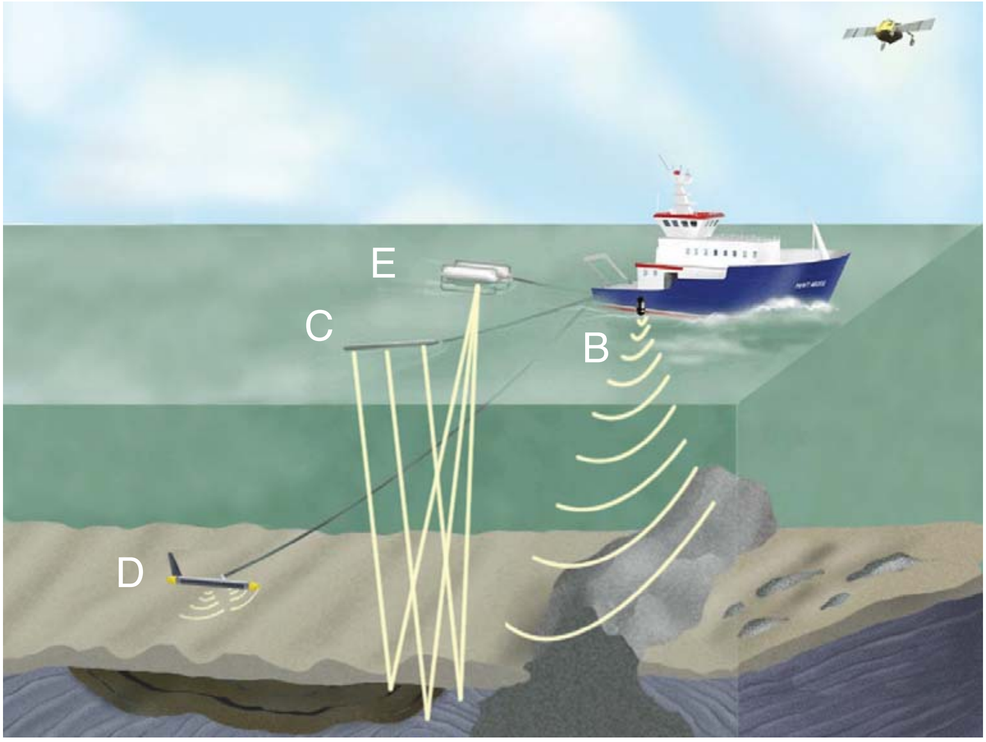
Ideally the study area would have been surveyed to produce complete sea bed coverage with multibeam and sidescan sonar. This would be prohibitively expensive and beyond the study's resources. Therefore, a geophysical survey strategy was devised based on eleven parallel survey corridors aligned generally along the direction of the peak tidal currents. Each corridor was to be surveyed using a suite of three geophysical systems (Plate 1A): multibeam echo sounder (MBES), sidescan sonar (SSS) and sub-bottom seismic reflection profiling (surface tow boomer). The multibeam and sidescan coverage was aimed to make each corridor up to a kilometre wide. Only a single surface tow boomer survey line was planned to run down the centre of each corridor.

Due to weather constraints, it took three surveys (cruises 2, 4 & 5) to acquire the geophysical data, although originally only one geophysical survey was planned. The surveys took place during November 2003, August 2004 and May 2005 using the R.V. *Prince Madog*. During the first two surveys, data were acquired from all three systems. Only surface tow boomer data were acquired during the third survey.

Cruise & Date		Duration	Sampling
1	July 2003	13 days	Benthic grabs, sediments, underwater video & photography
2	November 2003	16 days	Multibeam sonar, sidescan sonar, boomer seismic reflection
3	July 2004	4 days	Benthic grabs, sediments
4	August 2004	10 days	Multibeam sonar, sidescan sonar, boomer seismic reflection
5	May 2005	7 days	Benthic trawls, underwater video & photography, boomer

Table 3.1: Summary of Outer Bristol Channel research cruises (2003-2005)

Plate 1
Equipment & Surveying: Geology



A. Survey equipment deployment from the Prince Madog *with depiction of multibeam echosounder, sidescan sonar and surface tow boomer acoustic sources and sea bed coverage (labels refer to other photos in plate). (Illustration by K. Anderson)*

B. Reson 8101 multibeam transducer

D. Klein 5000 sidescan sonar towfish

E. Surface tow boomer: sound source

C. Surface tow boomer: hydrophone streamer

The following geodetic parameters were used for the geophysical surveys:

• Ellipsoid WGS84
• Semi major axis 6 378 137 m
• Projection UTM Zone 30N
• Central Meridian 3° W

Multibeam

Multibeam systems have arrays of transducers, sometimes up to 120 of them, arranged in a precise geometric pattern. They are usually attached to a survey ship, either mounted on poles or directly on to the hull. The swath of sound they send out covers a distance on either side of the ship that is equal to about two to three times the water depth. The sound bounces off the sea floor at different angles and is received by the ship at slightly different times. All the signals are then processed by computers on board the ship, converted into water depths, and automatically plotted as a bathymetric map.

NetSurvey Ltd was commissioned to provide the multibeam system, data acquisition and processing for the study (NetSurvey 2003). The acquisition suite comprised a pole mounted Reson SeaBat 8101 multibeam echosounder system (Plate 1B), QPS QINSy 7.0 navigation and multibeam acquisition software, CARIS HIPS multibeam processing and Fledermaus multibeam visualisation software and an Applanix POS/MV heading and motion sensor. Velocity profiles were carried out using a SVP-15 sound velocity probe.

Prior to commencing survey work, a full calibration of the multibeam system was undertaken in a series of stages. The POS/MV was calibrated as the vessel left the pier at Menai Bridge through a simple process of the vessel turning a series of figures of eight. Calibrations for pitch, roll, navigation time error, static yaw and heave were undertaken near the survey area after deploying the transducer pole (NetSurvey 2003).

All bathymetry were initially reduced to Lowest Astronomical Tide (LAT) using predicted tides from Swansea Standard Port. On completion of cruise 2, predicted tides from Ilfracombe, Milford Haven and Mumbles were applied using the algorithm within CARIS HIPS, which takes any number of tidal stations and calculates the correct tidal level for each individual sounding. Following completion of cruise 4, actual tides from each of the ports mentioned above were applied to the data. The data from both surveys were combined to give one dataset for each corridor.

Sounding accuracy was specified in accordance with Land Information NZ (LINZ) MB-2 requirements (LINZ 2001). The sounding density throughout the surveys was well within these requirements, both in the horizontal and vertical directions. Throughout both surveys, at least a 20% overlap was required to enable the outer beams to be edited out of the data and still achieve 100% coverage within the data corridors. The only areas in which the overlap fell short was in the northeast sections of Corridors 10 and 11 in Carmarthen Bay where the water depth was less than 10 m, resulting in a narrower swath. In total, 2177 line km of multibeam data were acquired during the two surveys (Figure 3.1).

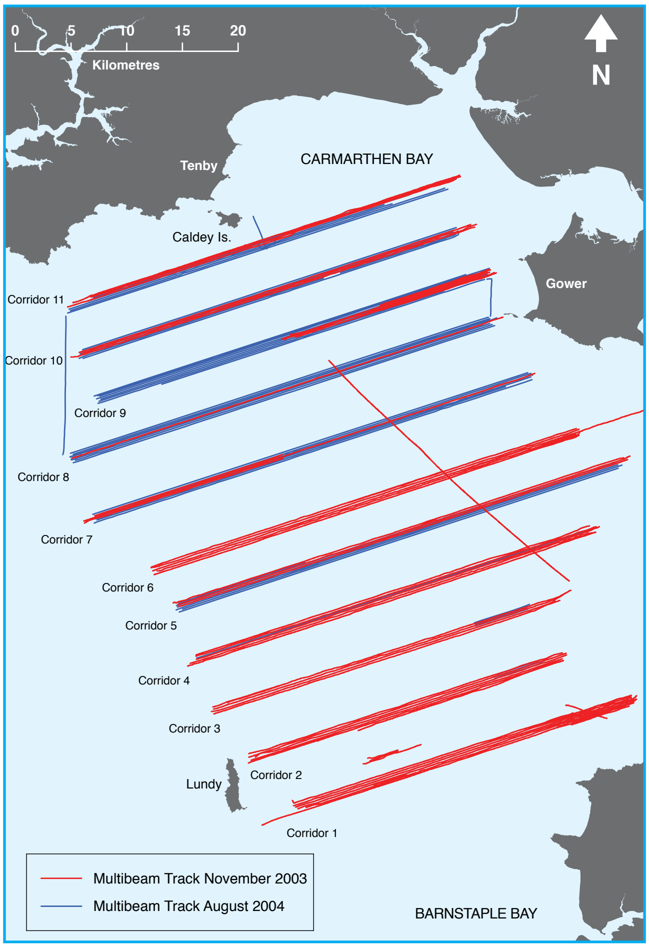


Fig. 3.1: Track plot of lines where multibeam data were acquired

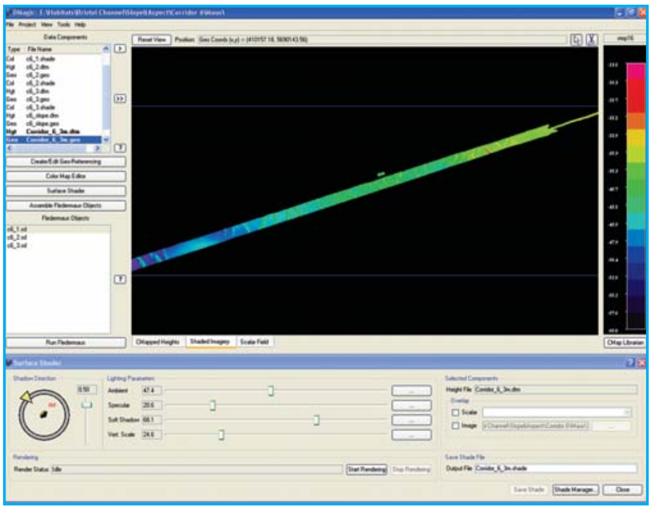


Fig. 3.2: Multibeam data processing screen in DMagic, a component of Fledermaus

The data were processed by NetSurvey Ltd using CARIS HIPS and SIPS software, and supplied as gridded XYZ files and processed .SD files for use in Fledermaus visualisation software (Figure 3.2). Geo-Tiff images were exported from Fledermaus for each corridor and these were imported into ArcGIS to aid interpretation.

The functionality within ArcGIS enabled a number of variables, in particular slope and aspect, to be calculated using the multibeam data. The software enabled the change in slope along each corridor to be identified and displayed in degrees by identifying the maximum rate of change in depth value from each cell (the data were gridded at 4 m intervals) to the neighbouring cells. This is a particularly useful way of displaying position of the sand waves, and the steepness of the stoss and lee slopes relative to one another (Figure 3.3). The second variable, the aspect, relates to the direction in which the slope faces. The values have been displayed relative to compass directions. This enables the direction of the lee and stoss slopes of the sand waves to be identified, which is a useful indicator in sediment transport directions (Figure 4.30D).

Sidescan Sonar

Sidescan sonars measure the strength of the reflected acoustic sound at the receiver. The intensity of sound (backscatter) received by the sidescan sonar fish from the sea bed provides information as to the general distribution and characteristics of the sea bed sediments. Strong

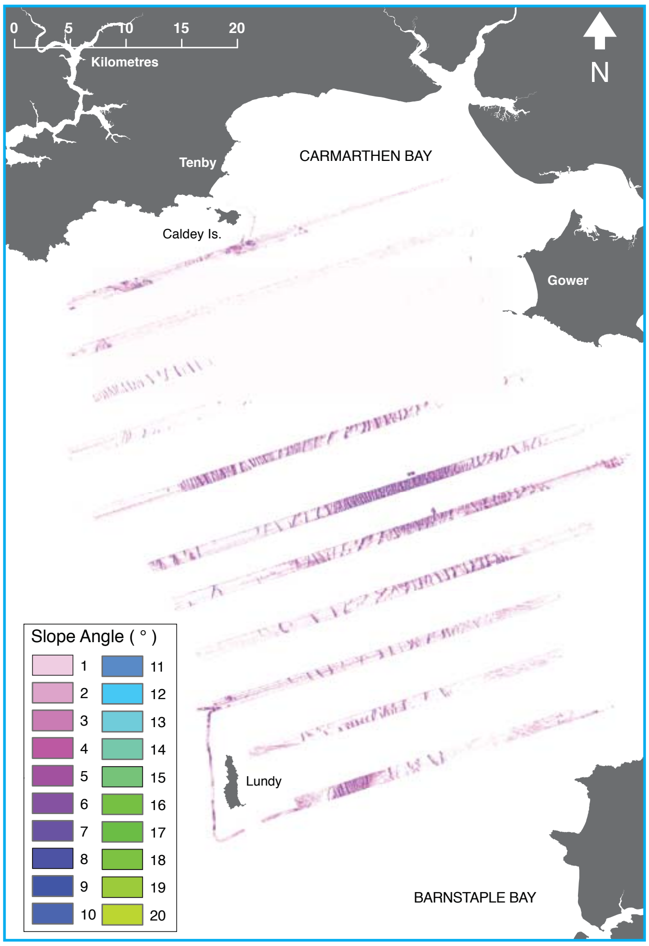


Fig. 3.3: Slope angle (degrees) of sea bed computed from multibeam data (see fine scale figures for detail e.g., Fig. 4.30)

reflections (high backscatter) are gained from boulders, gravel and vertical features facing the sonar transducers, and these are traditionally displayed as darker tones on the records collected; weak reflections (low backscatter) result from finer sediments or shadows behind positive topographic features and are generally displayed as lighter or white tones on the records.

The sound received and recorded by a sidescan sonar system is a function of two primary mechanisms which enable sound to return from the sea bed.

These are:

1. Reflection: Direct returns of sound bouncing back off features on the sea bed such as rock outcrops, sand waves and wrecks.

2. Backscatter: This is a diffuse and weaker process based on the interaction of sound energy with the ambient texture and character of the sea bed. The intensity of the backscattered sound is a function of

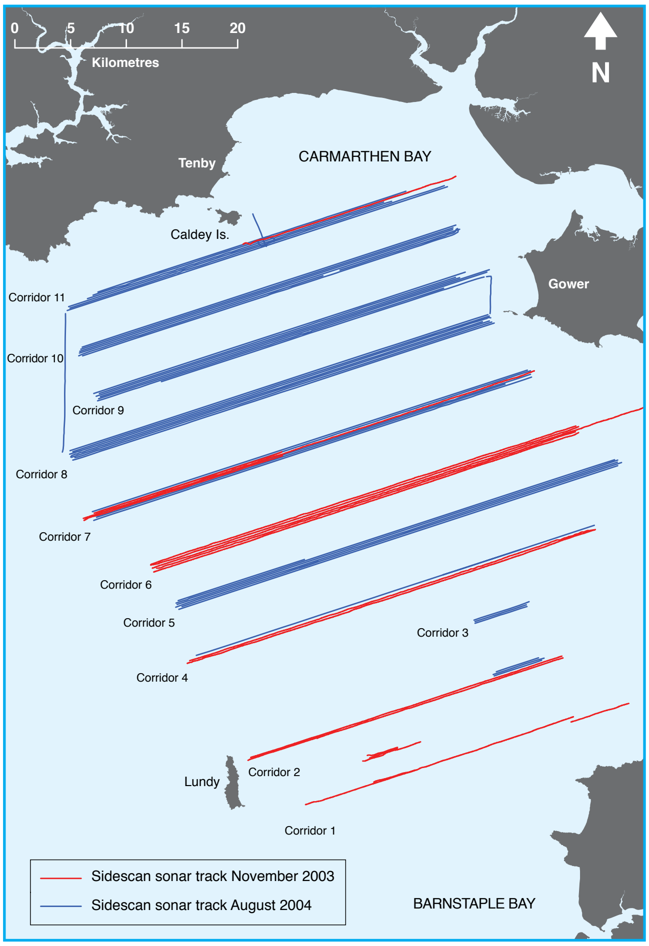


Fig. 3.4: Track plot of lines where sidescan sonar data were acquired

bottom roughness and angle of incidence. The rougher the sea bed, the stronger the backscatter, the darker the tone on a sidescan record. Gravels, rock pavements and some glacial sediment will produce good backscatter. The shallower the angle of incidence, the weaker the backscatter. This is a limiting factor in setting the range of a sidescan because angle of incidence decreases with increasing range.

An Edgetech MP-X digital multipulse sidescan towfish was used during the November 2003 survey, with positioning of the fish calculated using cable out and layback. These data were recorded using Coda DA200 acquisition software with a digital MP-X interface. Due to weather constraints and equipment failure, only 489 line kilometres of sidescan data were collected. During the second survey, sidescan data were acquired using a digital Klein 5000 multibeam sidescan towfish (Plate 1D). As for the first survey, the acquisition software comprised a Coda DA200 system. 1436 line km of data were acquired during this second phase, giving a total of 1935 line km of sidescan data (Figure 3.4).

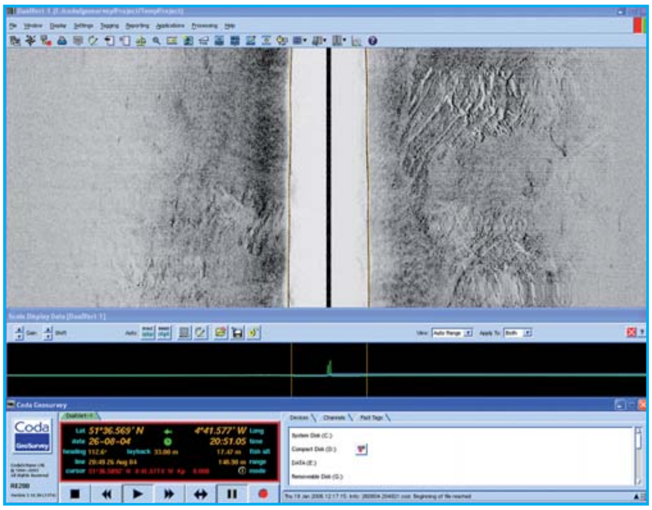


Fig. 3.5: Sidescan sonar data processing screen in Coda

The raw sidescan data were processed using the Coda Geosurvey processing software suite (Figure 3.5). The sea bed was tracked for each line and parameters such as Time Variable Gain (TVG) applied to the data to ensure visual consistency across the dataset. After smoothing the navigation data, mosaics were produced for each corridor which were exported as Geo-Tiffs. These were imported into ArcGIS and used to form the basis of the interpretation of sea bed character and bedforms.

Boomer (seismic reflection profiling)

Seismic reflection devices and techniques vary widely but all have three similar basic components: a sound source that emits acoustic energy; a hydrophone that receives the reflected acoustic signals to electrical signal and a display that makes a permanent record of the reflected signals.

High resolution seismic reflection profiling, or "Sub-Bottom Profiling" as it is often referred to, consists of a towed sound source which transmits sound energy towards the sea bed. This sound energy, formed by different frequencies (typically between 2 kHz and 400 kHz) is partly reflected from the sea bed but in some measure also penetrates below the sea bed. The signal travelling through different media beneath the sea bed is then partially reflected and partially refracted every time a change on the acoustic impedance occurs. In this way acoustic discontinuities are highlighted and can be correlated to geological features. The reflected signal then travels back through the water column to

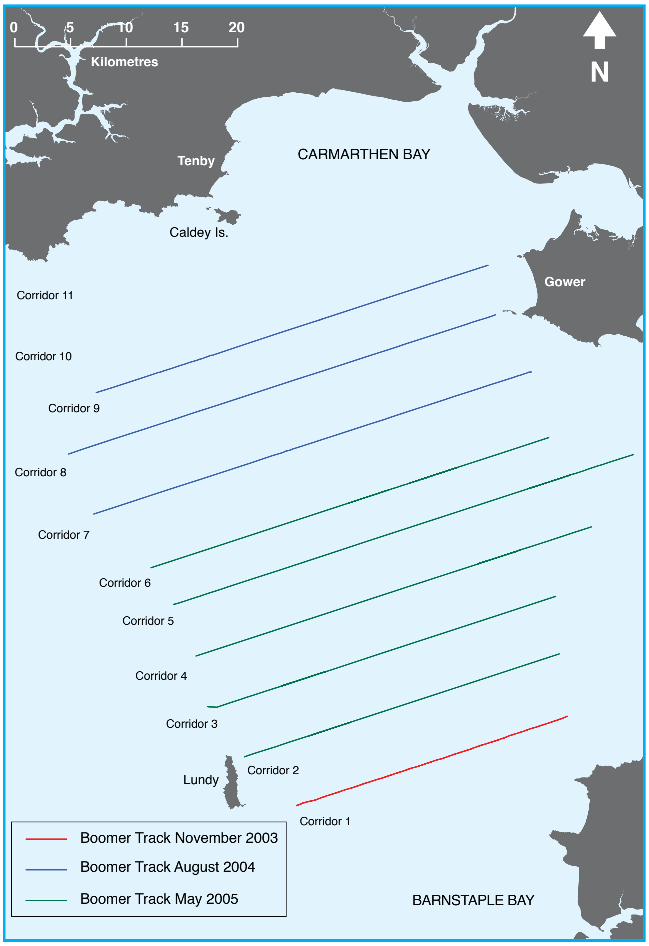


Fig. 3.6: Track plot of lines where boomer data were acquired

the hydrophone (Plate 1C) which is towed on the sea surface. The received signals are returned to the vessel where they are processed and displayed.

An Applied Acoustics surface tow boomer (Plate 1E) was used to acquire data on the shallow geology along the centre line of each corridor. Due to the weather conditions experienced, it took three surveys to collect the data required, and even then no boomer data were collected for Corridors 10 or 11 (Figure 3.6). The data were recorded using Coda DA200 acquisition software, and processed using the Coda GeoSurvey software suite.

The GeoSurvey software suite enables playback of previously recorded seismic data and provides automated interpretation tools and interactive enhancement of the image (Figure 3.7), which are designed to improve the data reading and to produce final report outputs. With this software the interpreted features can be interactively marked and they are automatically logged in an events database for reporting and charting.

The raw data were first processed using Coda mosaic to correct any navigational errors caused by noise in the acquisition positioning system. The corrected navigation data files were then applied to the playback files. Using an automated location of the sea bed first return, the bottom position was identified for each line and this was recorded in the Coda database.

The appearance of the signal was ameliorated using image enhancement and time-varying gain and time-varying filters. Once the processing was finished, Coda Geokit software was used to tag reflectors and generate an ASCII report output, with the geo-interpretation, for each line. The report file is essentially an XYZ file where the Z value represents the depth from the sea bed of a particular feature.

These files were then used to calculate the thickness of the superficial sediment units, and in correlation with datasets such as the sidescan and multibeam data and the sample data, these reports were used in a GIS package to map particular geological features.

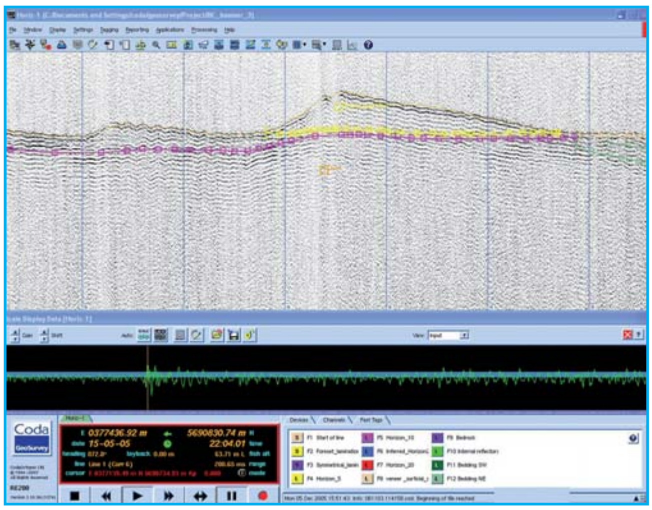
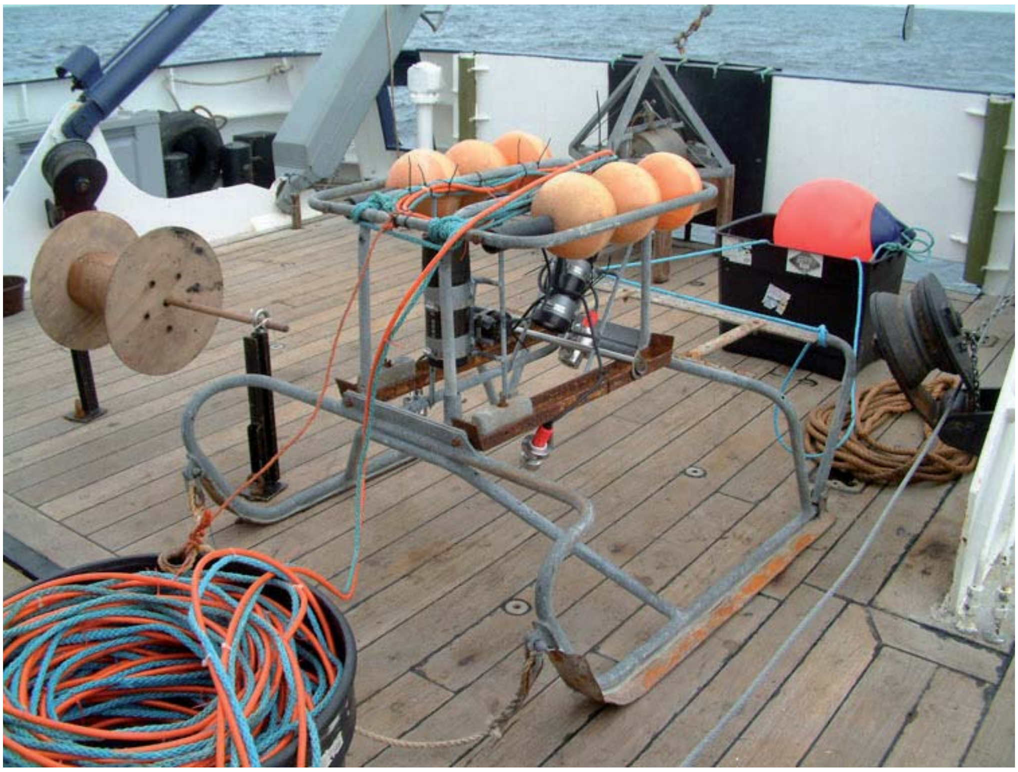


Fig. 3.7: Boomer data processing screen in Coda

Plate 2
Equipment & Surveying: Imaging



A. Camera sledge with Photosea still camera system (black housings), and video camera and lights (red plug retainers). The umbilical cable is coiled in the tub on the left and the tail rope buoy is to the right.

B. Deploying the camera sledge. Note the yellow USBL range locating acoustic transducers attached to the sledge on the May 2005 cruise.

3.2 Sea Bed Imaging by Video & Photography

For the study, video and still film cameras were mounted together on a sledge (Plate 2). The still camera was a Photosea 1000 system. This comprises a 35 mm camera with a Nikor water corrected lens. The still camera housing was mounted vertically on the forward part of the sledge frame. In this position the lens would have been 0.7 m above the sea bed when the skids of the sledge were flat on the bottom. The 150 watt strobe was mounted behind the camera and at an angle of 60° to the camera. Photographs were taken at 42 second intervals using an electronic timer mounted on the sledge frame in a separate housing. The film used was Fujichrome Sensia 200 daylight transparency film in 36 shot cassettes. Owing to the configuration by which the film runs though the special underwater camera, more frames are exposed on the leader than with conventional 35 mm film cameras. With automatic firing at 42 second intervals, 2 or 3 exposures were also taken in mid water during deployment. The number of interpretable sea bed images from each successful deployment was usually about 25 to 31. It varied slightly with the depth and time taken to reach the bottom after switching on the camera, strobe and timer. Sometimes multiple shots of the same part of the sea bed were taken at the start of a tow before the slow forward movement of the ship had stretched the towing wire.

The video system used a Rovtech SeaCam colour camera which was mounted behind and below the Photosea strobe so as to view obliquely forward towards the same part of the sea bed as the still camera. Lighting for the video was from two 20 watt 12 volt lights mounted to either side of the forward part of the sledge. A 200 m long umbilical cable carried the power for the UWTV camera and lights as well as bringing the video signal to the surface. The video signal was recorded on the ship using a Sony digital recorder with digital 8 mini 60 minute tapes.

Towing was on a 12 mm diameter wire with a ball swivel between the sledge bridles and the wire. Towing wire lengths used were about 1.6 to 2 times the water depth. The 200 m umbilical cable was supported on a braided rope and handled separately from the towing wire. A tail rope with a surface buoy was streamed behind the sledge. The tail rope served the purpose of providing extra drag to pull the sledge clear of the ship in a stable manner and to provide a back-up means of recovery should the tow have broken.

The sledge was towed over the bottom with the ship heading into the tidal current mainly at times near to slack water. The speeds over the ground aimed for were around 0.2 to 0.4 knots. An extra TV monitor linked to the UWTV system was rigged up in the wheelhouse to assist in adjusting the ship's speed over the ground at such slow speeds. Heading into the current helped to maintain steerage for the ship at such slow speeds and helped ensure that most of any fine sediment cloud stirred up by the sledge was carried away from the field of view of the cameras. Tow durations were arranged so as to get at least 20 minutes of sea bed record at each of the chosen locations. In practice the gear was usually on the ground for 22 to 25 minutes. Typically the distance covered by the sledge in this time was about 160 - 220 metres.

Position fixing was by Differential GPS (DGPS) and was recorded on the ship to 3 decimal places of a Minute. When interpolating between positions recorded on the ship and actual positions of the sledge it should be noted that the A frame gantry, from which the gear was towed, is about 14 metres astern of the GPS aerial on top of the ship's superstructure. Layback from the ship's stern to the sledge would have been about 1.6 times the water depth, but slightly less than this when the sledge first landed on the bottom. The sledge usually descends steeply when lowered to the bottom but more wire then has to be put out to limit the lifting of the front of the sledge as it is towed forward. After this initial phase of the tow, the cameras would therefore have been about 70 metres behind the DGPS aerial when the depth was about 35 metres and about 95 metres behind in depths of 50 metres.

During the May 2005 cruise only, USBL acoustic beacons were attached to the sledge as a trial (Plate 2B). This system, linked via a transducer on a pole over the ship's side and with links to the DGPS is designed to give the actual positions for the sledge every few seconds. It appeared to give very good results up to the point where the sledge was about 1.8 times the water depth away while on the bottom. Beyond that an increasing number of erratic readings were obtained.

For archiving purposes the still photographs, as 35 mm colour slides, were coded to each tow and numbered in the sequence they were taken, as soon as they came back from processing. Thus for example, "OBC 3.04" was the fourth photograph taken after the sledge landed on the sea bed at Outer Bristol Channel Video Station 3. Images taken while the gear was being lowered to the bottom were not included in the code numbering. Subsequently, the still photograph slides have routinely been digitally scanned at 705 dpi resolution, using a dedicated slide scanner (Minolta Dimage Scan Dual III). The images were then imported into Photoshop Elements, where sometimes brightness needed adjustment to allow for differing reflectivity of the sea bed. Over exposure occurs if there are many white shells on the sea bed. The codes for tow and image numbers were applied to the digital images before saving as JPEG files. Parts of the 35 mm slides showing particularly good examples of the epifauna were also scanned as cropped images but at a higher resolution (2820 dpi).

The original video tapes were copied to SVHS and DVD formats, leaving out only the mid-water sections of the records. This was done to back-up the records for archiving. Some still frame grabs have also been taken off the digital video records where particularly interesting features were missed by the still camera.

In total, 20 of the 24 video/camera tow deployments were successful, yielding interpretable images. Locations of the tows are shown in Figure 5.1. Metadata tables for the video tows are available in Appendix 3.

3.3 Analysis of Sea Bed Sediment Grab Samples

In total, 1591 sediment samples were included in the analysis of sea bed sediment in the study area (Figure 3.8). 140 samples were collected specifically for the *Outer Bristol Channel Marine Habitat Study* (OBCMHS) and 1451 samples in Carmarthen Bay were taken as part of a Sediment Transport Analysis (STA) study in 1999 (Posford Duvivier & ABP 2000).

Sea bed sediment samples were collected on two OBCMHS cruises. 132 sample stations (Figure 3.9) were visited during the July 2003 cruise aboard the R.V. *Prince Madog* of which 4 were found to be hard ground and no sample could be taken. Cruise 3, undertaken in July 2004 aboard the R.V. *Noctiluca*, targeted specific areas of interest highlighted by the interpretation of multibeam and sidescan data from the November 2003 geophysical survey. 13 sample stations were visited (stns 136-148, Figure 3.9), of which one was found to be hard ground.

The OBCMHS samples were collected using a 92 kg $0.1m^2$ modified Van Veen grab. Three samples were taken from each site, with the third, or smallest, intact sample used for Particle Size Analysis (PSA). A representative sample was taken from the Van Veen grab and transferred into labelled 1.5 litre plastic sampling jars. The samples were briefly described on deck and registered in the onboard lab on the evening of collection.

The 140 OBCMHS samples were processed by John Malcolm of Sediment Analysis Services. PSA was carried out by wet-sieving the samples using the sieve mesh sizes stated in Table 3.2.

The divisions are based principally on the Wentworth scale at 0.5 phi intervals. Three sieve divisions at 20, 10 and 5 mm respectively have been added from BS 882:1992 to enable comparison with marine aggregate datasets.

The sand and gravel fractions were also analysed for their carbonate ($CaCO_3$) content. This was achieved by acid digestion of the sand fraction, and hand picking of

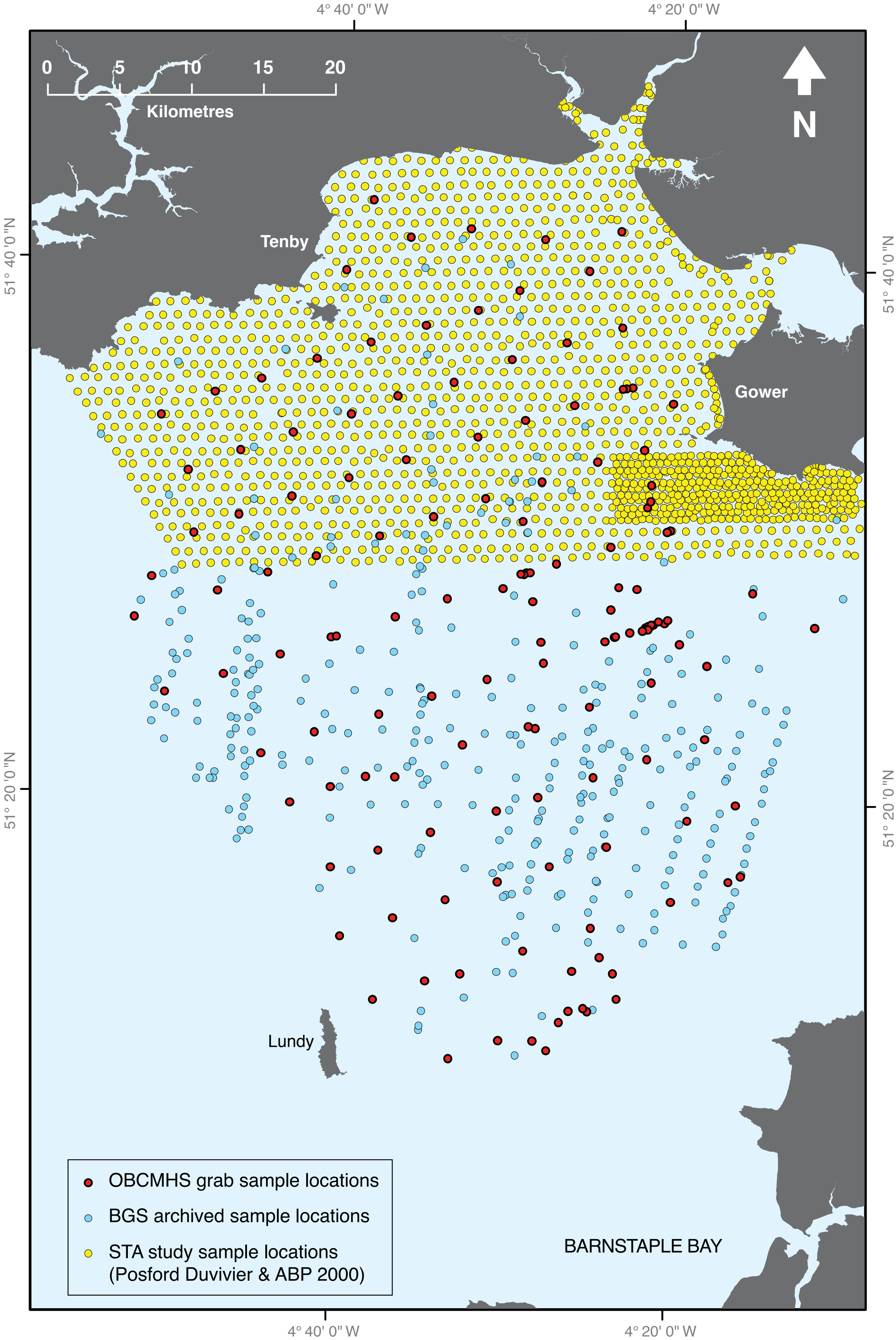


Fig. 3.8: Locations of all grab samples used for map compilations

Millimetres	phi	Wentworth Scale	BS 882:1992
64	-6		
20			
16	-4		Gravel
		Pebble	
10			
5			
4	-2		
		Granule	
2.00	-1		
1.41	-0.5	Very coarse sand	
1.00	0.0		
0.71	0.5	Coarse sand	
0.50	1		Sand
0.35	1.5	Medium sand	
0.25	2		
0.177	2.5	Fine sand	
0.125	3		
0.088	3.5	Very fine sand	
0.0625	4		
		Mud	Mud

Table 3.2: BGS Marine & Coastal – Modified grain size scale (Numbers in bold are taken from BS 882:1992)

the gravel fraction, with the carbonate content deduced from the weight difference before and after processing. The purpose of assessing the carbonate content of sediment is not only to derive its origin, but also for aggregate purposes. $CaCO_3$ is prone to dissolution, and is therefore not desirable in large quantities for use in construction. The upper limits for shell in British Standards (BS 882) are 20% in the 5-10 mm range and 8% in fractions above 10 mm. There is no specification for the shell content of aggregate finer than 5 mm (sand).

The 1451 samples from the sediment transport analysis in Carmarthen Bay were analysed using a Malvern 2600L laser particle sizer. This is a different method of grain size analysis to the wet sieving technique adopted for the OBCMHS samples. The difference in techniques may account for variations in sediment statistics where the STA results were observed to differ quite significantly from the OBCMHS results in certain areas.

Statistical Analysis

Simple statistical techniques were used in order to characterise the grain size distribution data, allowing comparisons to be made between samples (Table 3.3). The parameters used fall into four principal groups:

- measures of average size
- spread of the sizes about the average
- symmetry of preferential spread to one side of the average
- kurtosis or degree of concentration of the grains to the central size

Measures of Average Size

Median (d_{50}): This is the value at which half of the grains are coarser and half are finer than the median diameter. It is derived from the 50% line of the cumulative distribution curve.

Mean (M): The mean is calculated from sizes of particles spread through a range of percentile values. The Graphic Mean (Mz – as used by Folk and Ward) is calculated thus:

(Folk & Ward 1957)

$$Mz = \frac{\phi 16 + \phi 50 + \phi 84}{3}$$

The Inman mean (Mϕ) is calculated using only the 16th and 84th percentiles:

(Inman 1952)

$$M\phi = \frac{\phi 16 + \phi 84}{2}$$

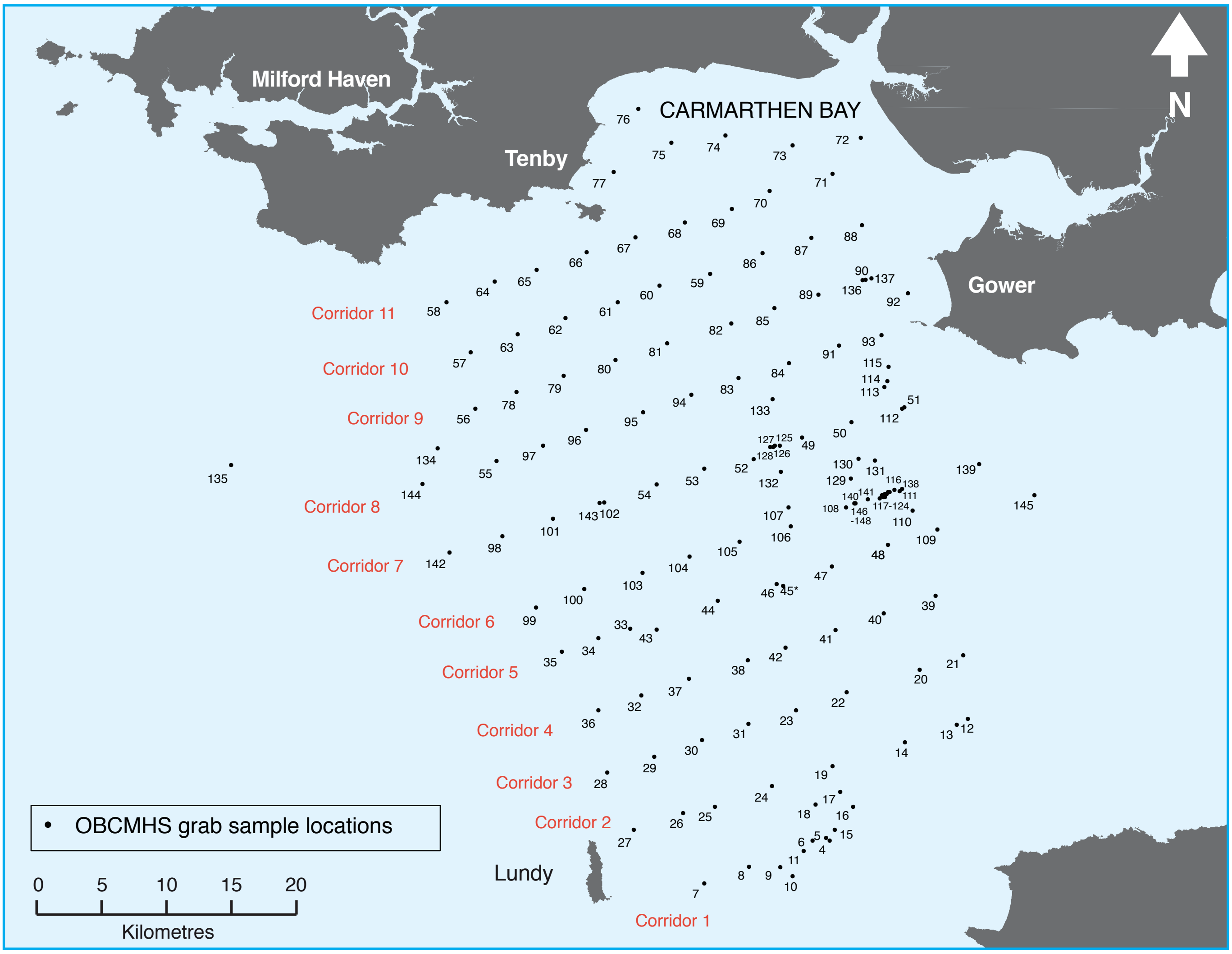


Fig. 3.9: OBCMHS grab sample locations (Stations 1-3 not located in OBCMHS study area: stn 1 located in Red Wharf Bay; stns 2&3 located south of Cardiff)

Spread About the Average

Sorting (σ): This relates to the spread of particles about the average, defining the dispersion or sorting of the sediment, as represented by the shape of the cumulative frequency distribution. Fundamentally it is a measure of the standard deviation. Two methods have been used to calculate sorting:

Folk & Ward formula:

$$\sigma_1 = \frac{\phi 84 - \phi 16}{4} + \frac{\phi 95 - \phi 5}{6.6}$$

This considers 90% of the frequency curve, and is best suited to well-sorted sediments with a high sand content. However, due to the heterogeneous nature of sea bed sediments, often containing a large percentage of mud or gravel, the upper and lower percentiles cannot always be calculated. In this case the Inman formula is used, which only considers the 16th and 84th percentiles, therefore providing a measure of the spread of size of 68% of the population (one standard deviation either side of the mean).

Inman formula:

$$\sigma\phi = \frac{\phi 84 - \phi 16}{2}$$

The best sorted sediments approximate to a single size and have low σ values. Sorting is one of the most useful parameters as it gives an indication of the effectiveness of the depositional environment in separating grains of different classes.

Preferential Spread

Skewness (α): In a normal distribution with a bell-shaped frequency curve the median and mean values coincide. Any tendency for a distribution to lean to one side leads to differences between the median and mean values. These variations are used to characterize the asymmetry or skewness of the curve. The skewness has a positive or negative value when more fine or more coarse sediment is present than in a normal distribution. Skewness is a positively or negatively signed dimensionless number; it has neither metric nor phi value and lies within the range –1 to +1 (McManus 1988).

Folk & Ward formula:

$$SK_1 = \frac{\phi16 + \phi84 - 2\phi50}{2(\phi84 - \phi16)} + \frac{\phi5 + \phi95 - 2\phi50}{2(\phi95 - \phi5)}$$

Concentration or Peakedness of the Distribution

Kurtosis: This refers to the dispersion and the normality of the distribution. Very flat curves of poorly sorted sediments or those with bimodal frequency curves are platykurtic. Strongly peaked curves, in which there is exceptionally good sorting of the central part of the distribution are leptokurtic. The measure of kurtosis, which is a ratio of the spreads of the tails and centre of the distribution (and is therefore dimensionless) is calculated using the following formula:

$$K_G = \frac{\phi95 - \phi5}{2.44(\phi75 - \phi25)}$$

Kurtosis has the same limitations as the Folk & Ward method for calculating sorting, in that it can only be calculated in sediments with low percentages of mud and gravel, where the upper and lower percentiles are not "hidden" by the abundance of very fine or coarse sediment content.

Sorting (σ_1)		Skewness (SK_1)		Kurtosis (K_G)	
Very well sorted	<0.35	Very positively skewed	+0.3 to +1.0	Very platykurtic	<0.67
Well sorted	0.35-0.50	Positively skewed	+0.1 to +0.3	Platykurtic	0.67-0.90
Moderately well sorted	0.50-0.70	Symmetrical	+0.1 to -0.1	Mesokurtic	0.90-1.11
Moderately sorted	0.70-1.00	Negatively skewed	-0.1 to -0.3	Leptokurtic	1.11-1.50
Poorly sorted	1.00-2.00	Very negatively skewed	-0.3 to -1.0	Very leptokurtic	1.50-3.00
Very poorly sorted	2.00-4.00			Extremely leptokurtic	>3.00
Extremely poorly sorted	>4.00				

Table 3.3: Descriptive terms applied to sediment statistical analysis

Plate 3
Equipment & Surveying: Biology

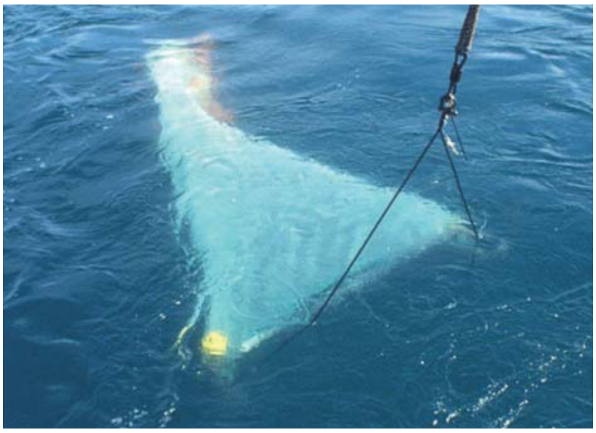
A. Deployment of Van Veen grab

B. Washing sample out of grab

C. Deployment of Tjärnö dredge

D. Deck of the Prince Madog *showing sieving teams and grab preparation*

E. Emptying sample from dredge



F. Beam trawl in water

G. Typical trawl sample in crate

3.4 Biological Sampling, Processing and Data Analysis

The first biological research cruise took place in July 2003 and 135 stations were sampled for benthic fauna by grab or dredge (Table 3.4). The supplementary grab sampling (13 stations) in July 2004 was designed to examine gaps in the original station coverage and to investigate small-scale variation across a sand wave. Summary information for all grab stations is provided in Table 3.5, with additional detail available in the chronological cruise logs (Appendix 2). A series of beam trawls were taken at 13 selected locations in May 2005 (Figure 3.10) to increase our knowledge of the benthic epifauna throughout the study area.

Most sample stations (Figure 3.10) were located at regular intervals along the 11 geophysical corridors (Figure 3.1). Additional stations were located in several additional locations of geological interest — between corridors 1 and 2 and in the NOBel Sands (on and north of corridor 6).

As the study area has been sampled previously, for example, by the Museum and the Countryside Council for Wales (Helwick Bank, Carmarthen Bay: Darbyshire *et al.* 2002, Woolmer 2003) and Plymouth Marine Laboratory (Bristol Channel survey: Warwick & Davies 1977), a number of coincident stations were selected to provide some degree of reference and perhaps allow examination of temporal change.

Research Ship & Cruise Dates	Grab Stations				Video locations	Trawl locations (tows)
	Quantitative	Qualitative	Sediment	Total		
Cruise 1: R.V. *Prince Madog*						
6 July 2003	1	—	(1)*	1	—	—
8 July 2003	4	(1)*	4	5	2	—
9 July 2003	17	3	19	20	2	—
10 July 2003	14	2	15	16	3	—
11 July 2003	15	1	16	16	3	—
12 July 2003	7	—	7	7	2	—
13 July 2003	3	2	3	5	—	—
14 July 2003	21	—	21	21	—	—
15 July 2003	20	—	20	20	—	—
16 July 2003	14	—	24	24	—	—
Total	**116**	**8**	**128**	**135**	**12**	**—**
Cruise 3: R.V. *Noctiluca*						
26 July 2004	3	—	3	3	—	—
27 July 2004	4	—	4	4	—	—
28 July 2004	3	—	3	3	—	—
29 July 2004	3	—	2	3	—	—
Total	**13**	**—**	**12**	**13**	**—**	**—**
Cruise 5: R.V. *Prince Madog*						
15 May 2005	—	—	—	—	—	1 (3**)
16 May 2005	—	—	—	—	5	4 (16)
17 May 2005	—	—	—	—	3	5 (20)
18 May 2005	—	—	—	—	4	3 (12)
Total	**—**	**—**	**—**	**—**	**12**	**13 (51)**
Overall	**129**	**8**	**140**	**148**	**24**	**13 (51)**

*Table 3.4: Summary of sampling carried out on the three biological cruises (2003—2005); * Not analysed; ** 4th tow failed*

Station No.	Latitude	Longitude	Depth, m	Sediment Summary [Visual Observations]
OBC1	53° 19’ 29.50” N	4° 08’ 60.80” W	**6***	[muddy sand]
OBC2	51° 21’ 36.00” N	3° 10’ 01.20” W	**25***	Sandy gravel [coarse sandy shelly gravel]
OBC3	51° 20’ 49.20” N	3° 13’ 37.20” W	**16***	[no sample due to cobbles catching in jaws of grab]
OBC4	51° 12’ 10.80” N	4° 24’ 46.80” W	40	Sandy gravel [coarse sandy gravel. Some shell and shell fragments]
OBC5	51° 12’ 18.00” N	4° 25’ 01.20” W	39	Gravelly sand [Coarse sandy gravel (granules). Some sand]
OBC6	51° 12’ 10.80” N	4° 25’ 55.20” W	**42***	Sandy gravel [Gravelly sand. Some mud/silt]
OBC7	51° 10’ 19.20” N	4° 33’ 0.00” W	48	Sandy gravel [Medium to coarse gravelly sand. Some shells/fragments]
OBC8	51° 11’ 02.40” N	4° 30’ 03.60” W	41	Sand [Medium sand. Shelly]
OBC9	51° 11’ 02.40” N	4° 28’ 01.20” W	45	Slightly gravelly sand [Coarse sand]
OBC10	51° 10’ 40.80” N	4° 27’ 10.80” W	**44***	Sandy gravel [Coarse shelly sand (pebbles caught in jaws of grab)]
OBC11	51° 11’ 45.60” N	4° 26’ 27.60” W	43	Gravelly sand [Medium to coarse shelly sand]
OBC12	51° 17’ 20.40” N	4° 15’ 46.80” W	39	[Till with thin gravel veneer (poor recovery due to cobbly nature of till)]
OBC13	51° 17’ 06.00” N	4° 16’ 30.00” W	38	Muddy sandy gravel [Till with thin gravel veneer. Some shells (poor recovery due to cobbly nature of till)]
OBC14	51° 16’ 19.20” N	4° 19’ 55.20” W	44	Sandy gravel [Sandy gravel]
OBC15	51° 12’ 39.60” N	4° 23’ 02.40” W	42	Sandy gravel [Medium to coarse sand. Shells and shell fragments]
OBC16	51° 13’ 37.20” N	4° 23’ 16.80” W	**41***	Sandy gravel [Sandy gravel]
OBC17	51° 14’ 13.20” N	4° 24’ 07.20” W	**41***	Sandy gravel [Sandy gravel]
OBC18	51° 13’ 40.80” N	4° 25’ 44.40” W	**41***	Sandy gravel [Gravelly sand]
OBC19	51° 15’ 18.00” N	4° 24’ 39.60” W	42	Sandy gravel [Muddy gravelly sand]
OBC20	51° 19’ 22.80” N	4° 19’ 01.20” W	41	Sandy gravel [Muddy gravelly sand]
OBC21	51° 19’ 58.80” N	4° 16’ 08.40” W	42	Sandy gravel [Muddy sandy gravel (poor recovery due to armoured sea bed - seen in video)]
OBC22	51° 18’ 21.60” N	4° 23’ 49.20” W	40	Gravelly sand [Muddy sandy gravel. Shells and fragments]
OBC23	51° 17’ 34.80” N	4° 27’ 10.80” W	44	Sandy gravel [Muddy sandy gravel. Shelly]
OBC24	51° 14’ 24.00” N	4° 28’ 40.80” W	45	Gravelly sand [Muddy sandy gravel. Shells and fragments]
OBC25	51° 13’ 30.00” N	4° 32’ 24.00” W	44	Gravelly sand [Muddy sandy gravel. Shells and shell fragments]
OBC26	51° 13’ 12.00” N	4° 34’ 30.00” W	40	Slightly gravelly sand [Muddy sandy gravel]
OBC27	51° 12’ 28.80” N	4° 37’ 33.60” W	39	Slightly gravelly sand [Very coarse shelly sand.
OBC28	51° 14’ 49.20” N	4° 39’ 36.00” W	48	No sediment recovered]
OBC29	51° 15’ 32.40” N	4° 36’ 28.80” W	49	Sandy gravel [Muddy sandy gravel. Some shells]
OBC30	51° 16’ 15.60” N	4° 33’ 21.60” W	44	Sandy gravel [Coarse sandy gravel]
OBC31	51° 16’ 58.80” N	4° 30’ 18.00” W	43	Gravelly sand [Coarse gravelly sand]
OBC32	51° 18’ 03.60” N	4° 37’ 26.40” W	47	Sandy gravel [Coarse sandy gravel]
OBC33	51° 20’ 49.20” N	4° 38’ 16.80” W	50	Sandy gravel [Muddy sandy gravel. Shells common (cobbles frequently caught in jaws of grab - recovery difficult)]
OBC34	51° 20’ 24.00” N	4° 40’ 22.80” W	46	Sandy gravel [Sandy gravel]
OBC35	51° 19’ 48.00” N	4° 42’ 46.80” W	55	Gravelly sand [Gravelly sand]

Table 3.5: Summary of all benthic research stations in the OBCMHS area

Station No.	Latitude	Longitude	Depth, m	Sediment Summary [Visual Observations]
OBC36	51° 17' 24.00" N	4° 40' 15.60" W	49	Sandy gravel [Muddy sandy gravel. Shells common]
OBC37	51° 18' 46.80" N	4° 34' 19.20" W	46	Sandy gravel [Sandy gravel]
OBC38	51° 19' 37.20" N	4° 30' 25.20" W	45	Gravelly sand [Gravelly sand]
OBC39	51° 22' 26.40" N	4° 18' 03.60" W	42	Sandy gravel [Gravelly sand (several attempts to recover material - cobbly ground)]
OBC40	51° 21' 39.60" N	4° 21' 28.80" W	46	Gravelly sand [Muddy (black anoxic) gravelly sand - possible coarse sediment veneer]
OBC41	51° 20' 56.40" N	4° 24' 39.60" W	43	Gravelly sand [Gravelly sand. Clasts well rounded]
OBC42	51° 20' 09.60" N	4° 27' 57.60" W	44	Sandy gravel [Muddy gravelly sand]
OBC43	51° 20' 49.20" N	4° 36' 32.40" W	52	Gravelly sand [Well sorted medium quartz sand, moderate pebbles up to 70mm. Shells]
OBC44	51° 22' 04.80" N	4° 32' 31.20" W	46	Sandy gravel [Well sorted medium-coarse sand underlain by pebbly gravel (70mm)]
OBC45	51° 22' 44.40" N	4° 28' 12.00" W	42	Gravelly sand [Well sorted medium sand overlaying hydroid-bound pebbles (50mm)]
OBC46	51° 22' 48.00" N	4° 28' 37.20" W	41	Gravelly sand [Moderately sorted gravelly sand]
OBC47	51° 23' 34.80" N	4° 24' 57.60" W	40	Sandy gravel [Moderately sorted coarse gravelly sand (50mm)]
OBC48	51° 24' 32.40" N	4° 21' 18.00" W	43	Sand [Well sorted medium to coarse sand. Rare shells. Some black anoxic mud]
OBC49	51° 28' 55.20" N	4° 27' 07.20" W	35	Gravelly sand [Moderately well sorted coarse sand and granules]
OBC50	51° 29' 34.80" N	4° 23' 52.80" W	35	Sandy gravel [Poorly sorted coarse sandy gravel. Subangular clasts]
OBC51	51° 30' 14.40" N	4° 20' 20.40" W	36	Sandy gravel [Coarse sand underlain by pebbles (50mm), sub-rounded. Common shells]
OBC52	51° 27' 57.60" N	4° 30' 18.00" W	42	Sandy gravel [Coarse sandy gravel. Common shells]
OBC53	51° 27' 32.40" N	4° 33' 36.00" W	43	Gravelly sand [Well sorted coarse shelly sand]
OBC54	51° 26' 49.20" N	4° 36' 43.20" W	42	Sand [Well sorted medium to coarse sand. Rare shells. Some black anoxic mud]
OBC55	51° 27' 39.60" N	4° 47' 24.00" W	52	Sand [Fine to medium, well sorted sand underlain by smelly black anoxic clay]
OBC56	51° 29' 49.20" N	4° 48' 54.00" W	46	Sand [Well sorted fine to medium sand underlain by black anoxic clay]
OBC57	51° 32' 09.60" N	4° 49' 19.20" W	34	Sand [Well sorted fine to medium sand underlain by black anoxic clay]
OBC58	51° 34' 12.00" N	4° 51' 00.00" W	38	Sandy gravel [Shelly gravelly muddy sand]
OBC59	51° 35' 38.40" N	4° 33' 28.80" W	29	Slightly gravelly sand [Moderately sorted medium sand. Moderate shell content]
OBC60	51° 35' 06.00" N	4° 36' 50.40" W	36	Slightly gravelly sand [Moderately sorted medium sand. Moderate shell content]
OBC61	51° 34' 22.80" N	4° 39' 36.00" W	39	Muddy sandy gravel [Muddy sandy gravel (sub-angular to sub-rounded clasts). Shells]
OBC62	51° 33' 39.60" N	4° 43' 04.80" W	38	Muddy sand [Dark brown cohesive mud (dredge spoil?)]
OBC63	51° 32' 56.40" N	4° 46' 12.00" W	34	Sand [Dark brown muddy sand]
OBC64	51° 35' 06.00" N	4° 47' 49.20" W	28	Sandy gravel [Coarse sandy gravel (sub-angular to sub-rounded). Moderate shells]
OBC65	51° 35' 38.40" N	4° 45' 03.60" W	31	Slightly gravelly sand [Moderately sorted very coarse sand. Moderate shell content]
OBC66	51° 36' 25.20" N	4° 41' 45.60" W	31	[Rock platform (no sediment recovered)]

Station No.	Latitude	Longitude	Depth, m	Sediment Summary [Visual Observations]
OBC67	51° 37' 04.80" N	4° 38' 31.20" W	29	[Rock platform overlain by thin gravelly shelly mud (no sediment recovered)]
OBC68	51° 37' 44.40" N	4° 35' 13.20" W	25	Sand [Dark greyish very fine muddy sand]
OBC69	51° 38' 20.40" N	4° 32' 06.00" W	18	Gravelly sand [Very coarse shelly sand]
OBC70	51° 39' 07.20" N	4° 29' 38.40" W	16	Sand [Dark brown sandy mud. Quartz rich]
OBC71	51° 39' 54.00" N	4° 25' 26.40" W	8	Sand [Brown, quartz rich muddy sand]
OBC72	51° 41' 24.00" N	4° 23' 34.80" W	**8***	Sand [Brown, quartz rich muddy sand]
OBC73	51° 41' 02.40" N	4° 28' 08.40" W	**8***	Sand [Brown, quartz rich muddy sand]
OBC74	51° 41' 24.00" N	4° 32' 38.40" W	**9***	Sand [Brown muddy sand]
OBC75	51° 41' 02.40" N	4° 36' 14.40" W	**9***	Sand [Brown muddy sand]
OBC76	51° 42' 25.20" N	4° 38' 31.20" W	**6***	Sand [Grey-brown sandy mud]
OBC77	51° 39' 46.80" N	4° 40' 04.80" W	**9***	Gravelly sand [Dark grey-brown muddy shelly sand]
OBC78	51° 30' 32.40" N	4° 46' 12.00" W	45	Slightly gravelly sand [Coarse shelly sand and soft grey mud beneath (two units)]
OBC79	51° 31' 15.60" N	4° 43' 04.80" W	42	Sand [Slightly muddy coarse quartz sand]
OBC80	51° 31' 58.80" N	4° 39' 39.60" W	38	Gravelly sand [Slightly muddy very coarse gravelly sand]
OBC81	51° 32' 42.00" N	4° 36' 14.40" W	35	Slightly gravelly sand [Well sorted medium to coarse quartz sand]
OBC82	51° 33' 36.00" N	4° 31' 58.80" W	31	Sand [Fine sandy mud underlain by soft grey clay]
OBC83	51° 31' 19.20" N	4° 31' 26.40" W	28	Sand [Well sorted quartz sand underlain by soft grey clay]
OBC84	51° 31' 58.80" N	4° 28' 04.80" W	25	Sand [Well sorted medium sand]
OBC85	51° 34' 15.60" N	4° 29' 09.60" W	28	Sand [Slightly muddy dark brown well sorted fine sand]
OBC86	51° 36' 32.40" N	4° 30' 00.00" W	24	Sand [Dark brown slightly muddy fine to coarse sand]
OBC87	51° 37' 12.00" N	4° 26' 45.60" W	20	Slightly gravelly sand [Shelly coarse sand with rare mud clasts]
OBC88	51° 37' 48.00" N	4° 23' 24.00" W	11	Sand [Dark brown very fine well sorted muddy sand]
OBC89	51° 34' 51.60" N	4° 26' 13.20" W	23	Sand [Medium to coarse slightly muddy sand
OBC90	51° 35' 31.20" N	4° 23' 06.00" W	17	Slightly gravelly sand [Slightly muddy medium sand]
OBC91	51° 32' 45.60" N	4° 24' 46.80" W	21	Sand [Well sorted medium sand]
OBC92	51° 34' 58.80" N	4° 20' 16.80" W	**12***	Sand [Well sorted medium quartz sand]
OBC93	51° 33' 14.40" N	4° 21' 57.60" W	19	Sand [Well sorted medium quartz sand with rare mud clasts and granules]
OBC94	51° 30' 36.00" N	4° 34' 33.60" W	29	Sand [Muddy fine to coarse sand]
OBC95	51° 29' 49.20" N	4° 37' 44.40" W	32	Sand [Muddy medium quartz sand (well sorted)]
OBC96	51° 29' 02.40" N	4° 41' 31.20" W	46	Muddy sand [Very dark grey slightly sandy organic mud]
OBC97	51° 28' 22.80" N	4° 44' 24.00" W	50	Gravelly muddy sand [Poorly sorted dark grey gravelly sandy mud]
OBC98	51° 24' 32.40" N	4° 46' 55.20" W	56	Sandy gravel [Very poorly sorted shelly gravelly sandy mud]
OBC99	51° 21' 36.00" N	4° 44' 34.80" W	55	Gravelly sand [Coarse to very coarse shelly sand]
OBC100	51° 22' 26.40" N	4° 41' 24.00" W	49	Sandy gravel [Coarse shelly pebbly sand]
OBC101	51° 25' 19.20" N	4° 43' 33.60" W	49	Sand [Well sorted medium sand]
OBC102	51° 26' 02.40" N	4° 40' 12.00" W	41	Sand [Very well sorted-medium sand]

Station No.	Latitude	Longitude	Depth, m	Sediment Summary [Visual Observations]
OBC103	51° 23' 09.60" N	4° 37' 33.60" W	49	Gravelly sand [Very well sorted medium to coarse quartz sand. Rare granules]
OBC104	51° 23' 52.80" N	4° 34' 26.40" W	46	Slightly gravelly sand [Very well sorted medium to coarse quartz sand]
OBC105	51° 24' 32.40" N	4° 31' 08.40" W	43	Sand [Very well sorted medium quartz sand]
OBC106	51° 25' 12.00" N	4° 27' 46.80" W	40	Sand [Very well sorted medium to coarse quartz sand]
OBC107	51° 25' 58.80" N	4° 27' 57.60" W	39	Sand [Very well sorted medium to coarse quartz sand]
OBC108	51° 26' 02.40" N	4° 24' 07.20" W	43	Slightly gravelly sand [Moderately sorted medium to coarse quartz sand. Rare mud clasts]
OBC109	51° 25' 12.00" N	4° 18' 00.00" W	39	Gravelly sand [Very coarse, poorly sorted shelly pebble sand]
OBC110	51° 25' 58.80" N	4° 19' 40.80" W	**40***	Sandy gravel [Very coarse shelly gravelly sand]
OBC111	51° 26' 45.60" N	4° 20' 34.80" W	36	Gravelly sand [Moderately sorted coarse shelly gravel]
OBC112	51° 30' 10.80" N	4° 20' 31.20" W	36	Gravelly sand [Moderately sorted very coarse shelly gravel]
OBC113	51° 31' 04.80" N	4° 21' 43.20" W	**29***	Sand [Well sorted very coarse shelly sand]
OBC114	51° 31' 19.20" N	4° 21' 32.40" W	**9***	Sand [Well sorted medium sand]
OBC115	51° 31' 55.20" N	4° 21' 28.80" W	**9***	Sand [Well sorted medium quartz sand]
OBC116	51° 26' 49.20" N	4° 20' 56.40" W	39	Gravelly sand [Moderately sorted very shelly coarse sand. Sand wave transect #1]
OBC117	51° 26' 42.00" N	4° 21' 14.40" W	34	Gravelly sand [Well sorted shelly very coarse sand. Moderate pebbles (30mm). Sand wave transect #2]
OBC118	51° 26' 38.40" N	4° 21' 25.20" W	40	Gravelly sand [Moderately sorted pebbly (10mm) very coarse sand. Sand wave transect #3]
OBC119	51° 26' 38.40" N	4° 21' 32.40" W	40	Sandy gravel [Moderately sorted very coarse pebbly (20mm) shelly sand. Sand wave transect #4]
OBC120	51° 26' 34.80" N	4° 21' 43.20" W	39	Sandy gravel [Well sorted medium to coarse shelly quartz sand. Sand wave transect #5]
OBC121	51° 26' 27.60" N	4° 21' 54.00" W	43	Sandy gravel [Slightly muddy coarse to very coarse shelly quartz sand. Sand wave transect #6]
OBC122	51° 26' 31.20" N	4° 21' 39.60" W	41	Gravelly sand [Well sorted very coarse sandy gravel. Additional station at OBC120]
OBC123	51° 26' 31.20" N	4° 21' 32.40" W	37	Sandy gravel [Very coarse pebbly gravelly sand. Crest of sand wave]
OBC124	51° 26' 42.00" N	4° 21' 21.60" W	39	Gravelly sand [Very coarse pebbly gravelly sand]
OBC125	51° 28' 33.60" N	4° 28' 40.80" W	36	Sandy gravel [Moderately sorted pebbly very coarse sand. Sand wave transect (2) #1]
OBC126	51° 28' 33.60" N	4° 28' 55.20" W	27	Sand [Poorly sorted medium to very coarse shelly quartz sand. Sand wave transect (2) #2]
OBC127	51° 28' 30.00" N	4° 29' 02.40" W	38	Slightly gravelly sand [Well sorted medium to coarse Quartz sand. Sand wave transect (2) #3]
OBC128	51° 28' 30.00" N	4° 29' 13.20" W	38	Sand [Well sorted medium to coarse quartz sand. Sand wave transect (2) #4]
OBC129	51° 28' 01.20" N	4° 22' 15.60" W	**41***	Sand [Medium to very coarse sand. Some pebbles]
OBC130	51° 28' 04.80" N	4° 23' 20.40" W	**41***	Gravelly sand [Slightly muddy fine to medium sand]
OBC131	51° 27' 14.40" N	4° 23' 49.20" W	**38***	Sand [Moderately sorted coarse to very coarse sand]

Station No.	Latitude	Longitude	Depth, m	Sediment Summary [Visual Observations]
OBC132	51° 27' 28.80" N	4° 28' 30.00" W	**40***	Sandy gravel [Moderately sorted coarse sandy gravel]
OBC133	51° 30' 28.80" N	4° 29' 09.60" W	**27***	Slightly gravelly sand [Poorly sorted muddy fine to medium sand]
OBC134	51° 28' 08.40" N	4° 51' 21.60" W	**52***	Slightly gravelly sand [Poorly sorted sandy gravelly mud]
OBC135	51° 27' 10.80" N	5° 05' 02.40" W	**52***	Sand [Dark greyish brown muddy sand]
OBC136	51° 35' 29.70" N	4° 23' 19.08" W	17	Sand [muddy sand & shell]
OBC137	51° 35' 33.60" N	4° 22' 43.86" W	16	Sand [fine sand & shell; razor shells]
OBC138	51° 26' 52.32" N	4° 20' 23.82" W	37	Sand [medium-coarse sand]
OBC139	51° 27' 56.34" N	4° 15' 18.48" W	36	Sandy gravel [stones, gravel, medium sand]
OBC140	51° 26' 12.96" N	4° 23' 32.04" W	34	Sand [medium shelly sand, some coal particles]
OBC141	51° 26' 23.46" N	4° 22' 39.48" W	43	Gravelly sand [medium-coarse sand (clay lumps in A)]
OBC142	51° 23' 49.68" N	4° 50' 24.54" W	57	Gravelly sand [medium shelly sand]
OBC143	51° 26' 00.42" N	4° 40' 31.32" W	35	Sand [clean coarse sand]
OBC144	51° 26' 37.68" N	4° 52' 19.14" W	55	Sand [muddy sand]
OBC145	51° 26' 41.40" N	4° 11' 35.40" W	35	[fine-medium sand & stones (no sediment recovered)]
OBC146	51° 26' 13.02" N	4° 23' 34.14" W	40	Sand [medium sand, little shell, coal particles]
OBC147	51° 26' 12.96" N	4° 23' 31.26" W	33	Gravelly sand [medium shelly sand]
OBC148	51° 26' 13.50" N	4° 23' 28.74" W	37	Gravelly sand [medium sand, coal particles, shell]

Notes

Station Positions
Station positions are those recorded for the grab from which sediment samples were taken. At those stations where no sediment sample was recorded, the first grab position was taken.

Depths
Depths have been corrected to chart datum at all stations. Those depths marked with * were corrected using a tidal model (Admiralty TotalTide: www.ukho.gov.uk).

Sediment Assessments
These are Folk classifications. Visual observations are those recorded *in situ* on the ship.

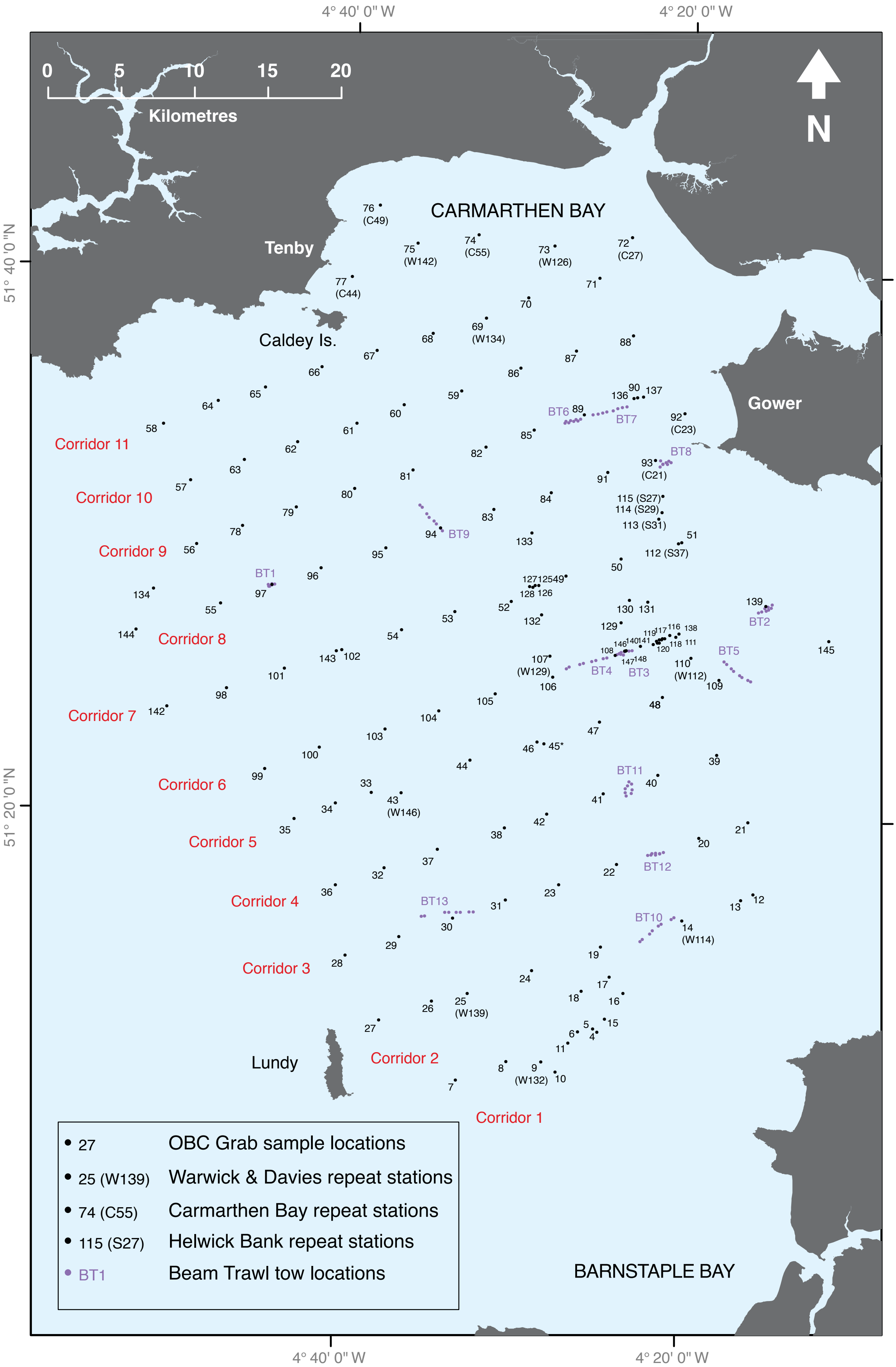


Fig. 3.10: Map of all benthic stations within the OBCMHS area, indicating which stations are repeated from previous studies. Beam trawl start & haul positions are also plotted (4 trawls at each location)

These stations (Table 3.6) were:

• 9 stations in common with the Warwick & Davies Bristol Channel survey (W-prefix)
• 6 stations in common with the Museum-CCW Carmarthen Bay survey (C-prefix)
• 4 stations in common with the Museum-CCW Sandbanks survey (Helwick: S-prefix)
• 1 station outside the area (Red Wharf Bay, Anglesey) in common with the BIOMÔR 1 study (Mackie *et al.* 1995).

OBC station	Previous survey
1	BIOMÔR Stn 34
9	W132
14	W114
25	W139
43	W146
69	W134
72	C27
73	W126
74	C55
75	W142
76	C49
77	C44
92	C23
93	C21
107	W129
110	W112
112	S37
113	S31
114	S29
115	S27

Table 3.6: Outer Bristol Channel stations coincident with other surveys (see text)

In addition to the Red Wharf Bay station (OBC 1), three other out-of-area stations were sampled; two to the east, OBC 2 & 3 (off Cardiff) and one to the west, OBC 135 (SW of Stackpole Head). Station OBC 3 was difficult to sample and only some small qualitative material was obtained.

In anticipation of the difficulties presented by sieving (0.5 mm mesh) the predominantly coarse sediments of the study area, two sieving teams of 4-5 scientists were used simultaneously on cruise 1, working in parallel (Plate 3D). Sampling was restricted to no more than 13 hrs per day. On cruise 3, sampling was conducted on a day-to-day basis with the research vessel returning to Swansea each afternoon.

The grab was deployed some 509 times over the two benthic cruises. The overall success rate was 75.6% for grabs adjudged 'good' (volume ≥5 litres). A further 5.1% also collected intact samples, however, their volumes only averaged 4 litres (range: 2.5-4.5 litres). These were recorded as 'poor'. Failures arose primarily because of difficulties in obtaining samples on the harder substrates; either no sample was obtained or stones kept the grab jaws open, resulting in various degrees of leakage. Of the 19.3% failure rate, 1.8% was due to the grab triggering before reaching the sea bed.

On cruise 1, the maximum number of grabs taken in a single day exhibited a bimodal distribution (Fig. 3.11), mainly due to the reduced sampling time either side of the mid-cruise port visit. The higher failure rate at the first sample peak of 70-80 grabs/day can be attributed to the harder sediments being sampled in the early part of the cruise (see below).

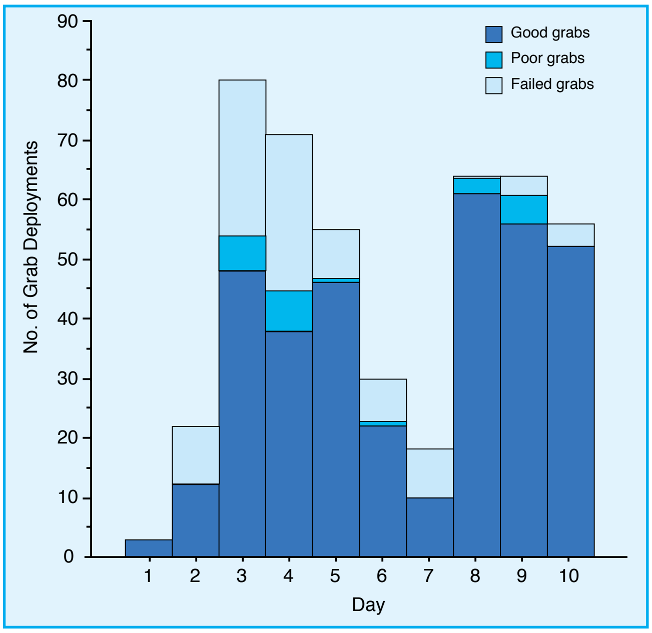


Fig. 3.11: Number of grab deployments on cruise 1

Quantitative Grab Sampling

For the fauna, duplicate 92 kg 0.1 m^2 modified Van Veen grab (Mackie, in prep) samples were taken at each quantitative station. The sample volume for each grab was determined, with the aim of obtaining (where possible) at least 5 litres of sediment – equivalent to a sampling depth of 5 cm across the subrectangular grab bite (Riddle 1989). A further grab sample was collected for sediment analysis. Where noticeably different sediments were obtained from the three grabs, attempts were made to collect additional samples to try and achieve uniformity (see Appendix 2 sampling logs).

This L-frame Van Veen (Plate 3A) was designed to improve the digging efficiency and to correct the known operational instability of this type of sampler on the sea bed (Riddle 1984, 1989). The new grab, used successfully in four previous surveys — Irish Sea (1997: Wilson *et al.* 2001), southwest Wales bays (1998; Woolmer 2003), Welsh sandbanks (2001; Darbyshire *et al*. 2002), and in the Seychelles (2000; Mackie *et al*. 2005) — also made deployment and retrieval safer for the personnel involved.

All sampling deployments, retrievals and related data were recorded on deck. Ship positional data, depth and weather conditions were recorded on the bridge. These two sources of information were merged onto the same logsheets daily; one logsheet per sampling station (Appendix 2.4). Logsheets were also transferred into a FileMaker Pro v5 relational database for easy access and later use with specimen archiving in the Museum collections.

Sampling Efficiency

The success of benthic grab sampling is dependent on many factors including design and weight of the grab, winch operation, 'hardness' of the sediment, and weather (see Mackie *et al.* 2006). Strangely, there have been few recent studies of grab performance or comparative efficiency, though Cefas have conducted trials comparing two sizes of Hamon grab (Boyd pers. comm.). Eleftheriou & McIntyre (2005: preface) noted that there has been little change in macrofaunal sampling methodology in 20 years. The sampling efficiency data gathered in the OBCMHS is therefore worth commenting on in advance of a wider analysis.

The grab success rate on different sediments (Figure 3.12) showed almost 100% success across all sand categories. However, the presence of >5% gravel (lower boundary of gravelly sand category) reduced this, markedly so in sediments with >30% gravel (muddy sandy gravel, sandy gravel). No viable samples were obtained from very hard rock/stony ground.

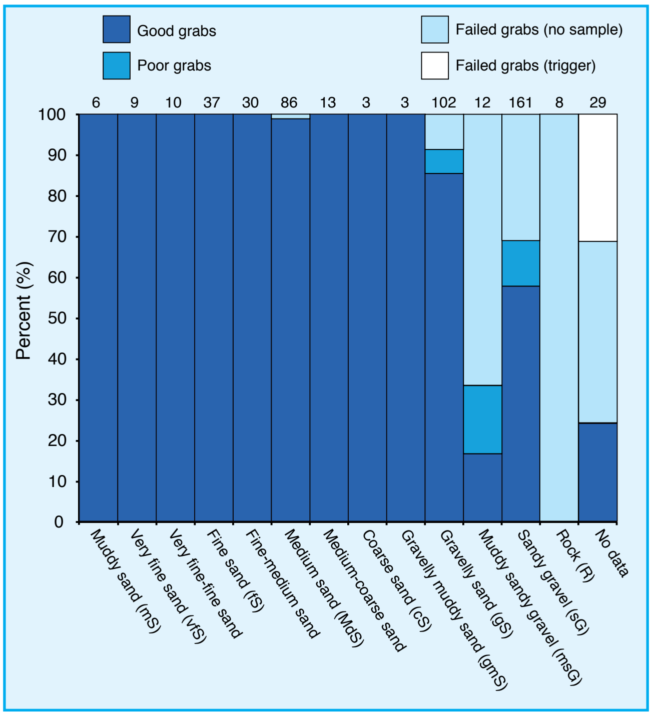


Fig. 3.12: Grab success relative to sediment category

The bimodal pattern of volume of sediment collected (Figure 3.13) agreed with our other studies in Welsh, Irish and Seychelles waters (Mackie, in prep.). The grab operates at its best in the finer muddy sediments and the looser, coarser sands. Conversely, it does not dig so deeply in either very fine/fine sands or gravelly sediments. The former are more difficult to sample because these fine grain sizes tend to be hard-packed and there is little 'give' in the sediment to aid the penetration of the grab buckets.

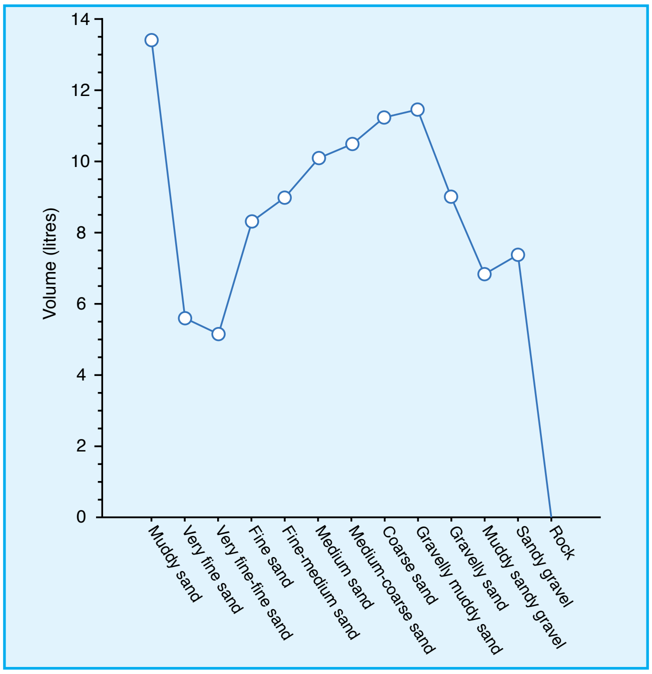


Fig. 3.13: Mean volume collected by L-framed 0.1m² Van Veen grab relative to sediment category (see Table 3.7)

Volumes were recorded for 276 grab samples from stations where sediment samples were also obtained. The sediment sample grabs were not measured. A further 7 grabs were measured from stations lacking sediment samples. The mean volumes of the 250 good and 18 poor grabs measured were 9 and 4 litres respectively. The variability in volume collected was highest for the gravelly sediments (Table 3.7).

Sediment	Volume (Litres)			Number of Samples
	Mean ± 1 S.D.	Minimum	Maximum	
mS	13.40 ± 1.34	11.0	14.0	5
vfS	5.58 ± 0.80	5.0	7.0	6
vfS-fS	5.17 ± 0.41	5.0	6.0	6
fS	8.32 ± 2.05	5.0	13.0	25
fS-MdS	9.03 ± 2.27	6.0	13.0	20
MdS	10.10 ± 1.64	5.0	13.5	54
MdS-cS	10.50 ± 3.11	6.0	14.0	8
cS	11.25	10.0	12.5	2
gmS	11.50	11.0	12.0	2
gS	9.02 ± 2.52	3.0	14.0	60
msG	6.83 ± 3.25	3.5	10.0	3
sG	7.39 ± 2.68	2.5	13.0	77
R	0	0	0	8

Table. 3.7: Volume of sediment captured from 276 grab samples (abbreviations as in Fig. 3.12)

Sample Processing

Onboard sieving, fractionation procedures and sample treatments were as detailed for previous Museum surveys (e.g., Mackie & Darbyshire 2001, Mackie & Oliver 1996), but are summarised again here with some additional information.

Grabs were landed onto the custom-built chute and frame, and the sample quantity and quality visually assessed on opening the doors on the grab top. Each acceptable faunal grab was carefully opened and the sample washed directly into a volume-marked 25 litre white plastic bin with seawater. Sample volumes were recorded (to nearest 0.5 litre) by visual assessment through the semi-transparent bin walls.

Placing the bins in water-filled trays helped keep the samples cool and allowed the natural movement of the ship to initiate the gentle break-up of the surface sediment prior to processing. The macrofauna were removed from the sediment as soon as was practicable, with respect to the operation of the sampling gear and the sieving process.

Briefly, each sample was individually placed in a large wooden tray and gently washed with copious amounts of seawater. Once the tray was about half full, the water was released through the exit chute and sieved using 45 cm diameter 0.5 mm mesh sieves. The procedure was repeated a number of times, gradually breaking up the sediment, until the majority of the mud and suspended animals were removed (Figure 3.14). The material retained by these initial washings contained most of the delicate worms and crustaceans, as well as the smaller Mollusca, but relatively little sediment. This was placed in a labelled container and fixed in a sample concentration of 6-8% formaldehyde (equivalent to 15-20% formalin) in seawater. Sample containers were labelled internally with a waterproof paper label and externally by permanent pen on both sides and lids.

The remaining unsieved sample fraction contained only the coarser sediment particles and the larger macrofauna, and could therefore be sieved with more vigour. This material itself was often further fractionated (when appropriate) by placing a 1 and/or 2 mm mesh sieve above the finer one, each fraction being separately fixed in a sample concentration of about 12% formaldehyde (equivalent to 30% formalin). The stronger formalin was used to ensure good fixative penetration – particularly in large bulky samples or where tube-dwelling organisms may be abundant. To aid later sorting, most of the formalin was strongly stained with Rose Bengal, though certain selected specimens were fixed unstained. Once the fixative was added, each sealed sample container was gently upturned and rotated to distribute the formalin evenly throughout the sieved sediment.

A sample from a sandy gravel station could therefore be fixed as three (or more) separate fractions: washings, sand and gravel. Such fractionation greatly improves the quality of the sieved specimens and aids the later sorting phase in the laboratory. Many of the sandier stations proved particularly difficult to efficiently fractionate due to the sheer volume of sand >0.5 mm collected. The infauna of mobile sands may

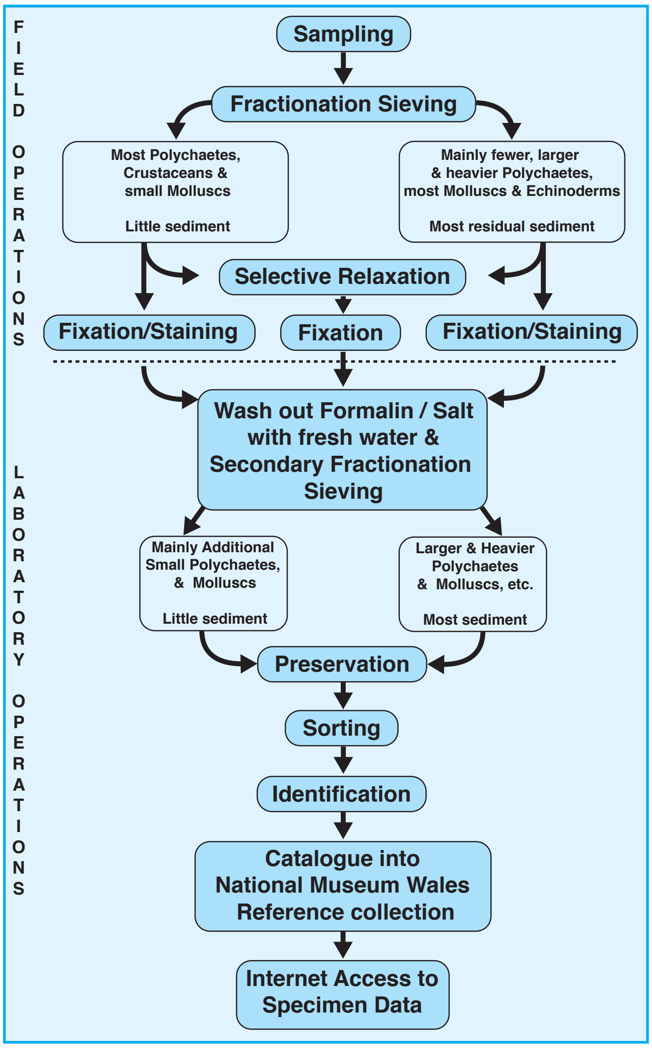


Fig. 3.14: Sample treatment procedure for OBCMHS benthic invertebrates (adapted from Mackie & Oliver 1996)

also be adept at coping with natural resuspension processes, rapidly re-burrowing into the sediment, and hence be less successfully elutriated.

At all stages of the sieving procedure care was taken to individually remove noticeably fragile animals (e.g., scaleworms, phyllodocids, terebellids, nudibranchs, echinoids). If time allowed, these were then relaxed (menthol or magnesium chloride) prior to fixation with unstained formalin.

Once back at the laboratory, the sieved samples were gently, but thoroughly, washed with freshwater in a less intense repeat of the onboard sieving. This removed the formalin and salt, preventing the former from dissolving the shells of delicate molluscs and permitted a further fractionation step. The samples were then preserved in 80% alcohol containing 2% propylene glycol.

Sorting, Identification & Enumeration

The specimen-rich fractions from the initial field, and subsequent laboratory, washings were sorted into phyla under the dissection microscope. The remaining fractions were sorted by eye using a well-lit white tray. Pliable stork-bill forceps were used throughout to prevent damage to the delicate forms, such as thin-shelled molluscs. All fully sorted samples were re-checked for missed specimens prior to disposal of the residues.

For each quantitative replicate, all specimens were enumerated and identified to the most advanced level possible, relative to the available taxonomic literature and the timescale for completion of the project. Colonial organisms such as hydroids and bryozoa were assessed according to a 6-point SACFOR scale (Superabundant, Abundant, Common, Frequent, Occasional, Rare) as developed by the UK Marine Nature Conservation Review (www.jncc.gov.uk/default.aspx?page=2684). Sometimes a simpler 4 point scale was used (Table 3.8).

For each grab or dredge sample, specimens of each identified taxon were placed in separate vials and individually labelled for later incorporation into the Museum collections.

Qualitative Sampling

Where grab sampling proved ineffective, the macrofauna were only examined from a qualitative point of view. In situations where a number of small or unsuccessful grabs had together produced a 'reasonable' amount of sediment this was often sieved as a qualitative sample. Alternatively, a Tjärnö dredge was deployed (Plate 3C & 3E) to collect a representative sample.

Of the 138 biologically sampled stations only 9 were qualitative. Three were sampled with the dredge (OBC 21, 28, 66). The other qualitative stations were OBC 12, 13, 33, 45 & 67. Station OBC3 consisted only of some stones and a *Sabellaria* lump. It was not included in the analyses.

Samples were processed as for the quantitative samples.

Epifaunal and Fish Sampling

The gear used on the R.V. *Prince Madog* cruise in May 2005 was a 2 m wide beam trawl with chain matrix ticklers (Plate 3F). This had a 10 mm diamond mesh and a 4 mm knotless net cod-end liner. The gear conformed to the ICES standard for small mesh sampling beam trawls. It was deployed using 18 mm diameter trawl wire with a length about 3 times the water depth.

Tows at about 1.5 knots were of 5 minutes duration with the gear on the bottom. This was timed from when the trawl wire finished being let out, to the start of hauling. Ship positions were logged at these two times. In total, 51 tows were completed at thirteen locations (Figure 3.10; Appendix 4). As the gear would have been moving very little over the bottom while the wire was still being let out and it would have quickly lifted off bottom when hauling began, the difference between the two positions gives a reasonable estimate of the distance over the ground sampled. These figures allowed data on catches to subsequently be standardised to tow distances of 250 m. Actual geographic positions would have depended on the length of wire out and the water depth, thus in 40 m of water the gear would have been running over the bottom about 90-100 m behind the GPS aerial on top of the ship's superstructure. Positions given here are ship's position by DGPS.

The 2 m beam trawl cod-end was opened into large plastic trays (Plate 3G). At the start of the sorting process the larger organisms, such as larger fish, crabs and starfish, were picked from the mass of each catch. Then, if the catch contained very large quantities of smaller organisms, random sub-sampling took place. The 'large' and sub-sample sub-divisions of the catch were separately counted and weighed after sorting to species or the nearest higher taxonomic category (Figure 3.15). Identifications were based on recognition in the ship's wet laboratory at sea by three people who were each familiar with the Irish Sea / Bristol Channel fauna. Only occasional recourse was made at sea to reference books such as Hayward & Ryland (1995). Colonial groups such as sponges, hydroids and bryozoans had to be treated in bulk, and not all the smaller encrusting species on stones and shells were

Fig. 3.15: Examples of sub-division of a trawl catch. Left: hermit crabs & brittle stars; Right: starfish

noted. As the aim on this cruise was mainly to compare catches from differing habitats / biotopes, hermit crabs were weighed with the shells they inhabited. Thus the biomass figures overestimate the weight of hermit crabs by a factor of about two. Weighing at sea was with a motion compensated balance and to the nearest gram.

Count and weight data from each sample was subsequently entered into a spreadsheet after corrections were made for sub-sampling and combination with the amounts of large organisms that had been picked from the whole samples (Appendix 5). The figures were later standardised in another spreadsheet copy as if each tow had run 250 metres over the sea bed.

Data Analyses

Initial analyses were carried out using the **P**lymouth **R**outines in **M**ultivariate **E**cological **R**esearch (PRIMER v5) computer program (Clarke & Gorley 2001; Clarke & Warwick 2001) on a Toshiba Satellite 5100-603 laptop. Following the release of PRIMER v6 (Clarke & Gorley 2006) in January 2006, some analyses were re-run to take advantage of several newly included analytical routines and graphic output options.

Meiofaunal taxa (e.g., nematodes, ostracods, copepods) and possible pelagic organisms (crab zoea, megalopa, fish larvae) were not included in the analyses. Taxa such as *Nephtys* juveniles and *Nephtys* sp. indet. were merged as single entities for the computer analyses. Including colonial epifaunal species, 948 taxa were included in the semi-quantitative and qualitative analyses (see below). A total of 812 taxa were included in the quantitative analyses.

Other statistical analyses and graphs were carried out using StatView®4.5 (Abacus Concepts Inc., Berkeley) on an Apple G4 15” Powerbook. All graphs, computer generated figures and faunal distribution maps were finalized using Adobe Illustrator® CS2 on two Apple Power Mac G5 Dual computers. Spreadsheet re-arrangements and some basic analyses were done using Microsoft Excel (Microsoft Office X suite for Macintosh).

Multivariate Analyses

Multivariate analyses generally fall under two collective terms, classification and ordination. Classification analyses seek to assign entities to groups by some sequential additive or divisive procedure, whereas ordinations attempt to place these spatially so that all similar entities are close and dissimilar ones distant. Commonly used classification methods include cluster analysis and two-way indicator species analysis (TWINSPAN; Hill 1979b). Ordination techniques include principal components analysis (PCA), detrended correspondence analysis (DECORANA; Hill 1979a; CANOCO; ter Braak 1987-1992) and multidimensional scaling (MDS; see Kruskal & Wish 1978). In this study both cluster and MDS analyses were carried out using PRIMER v6.1.5.

In cluster analysis samples are sequentially linked together according to their faunal similarity (or dissimilarity) producing a two dimensional hierarchical tree-like structure (dendrogram). Clusters result where two or more distinct groupings are present. Where the differences between entities are small, but incremental, ‘chaining’ may occur and sometimes no clusters will be found.

Quantitative analyses employed the Bray-Curtis similarity coefficient as this has been shown to accurately reflect true similarity (Bloom 1981; but see also Clarke *et al.* 2006). Numerical abundances in particular analyses were globally scaled by a square root or $\log_{10}(x+1)$ transformation in order to limit the influence of species respectively exhibiting high, or very high, numerical dominance. The hierarchy of the dendrograms was determined by group average fusion.

The qualitative (presence/absence) analysis used the Czekanowski similarity coefficient, which is algebraically identical to the Bray-Curtis.

One problem encountered in benthic studies is how to reconcile elements of the fauna that have been measured in different ways. Animals that occur as individuals are counted, but this is not possible with colonial organisms such as hydroids and bryozoans. The simplest approach is to merely record them as present, scored as 1. However, this is unsatisfactory because these may actually be quite prevalent – sometimes obviously so (e.g., see Chapter 5: Video Tow 23 photos). Further, large conspicuous forms have often been used in biotope classification schemes (Connor *et al.* 2004). A possible solution to this conundrum is to employ a semi-quantitative approach.

The semi-quantitative analysis carried out here uses a modified SACFOR scale (see above) developed by Steve Jarvis at EMU Ltd (Hayling Island, Hampshire). In this modification, the SACFOR scale is converted into numerical ‘equivalents’ (Table 3.8) based on an inverse log transformation (Thomas 2001).

The new SIMPROF permutation procedure in PRIMER was used to test the significance (at 5% level) of the clusters. For convenience groups showing no statistical evidence of sub-structure ($p<0.05$) were highlighted in orange or red. For presentation purposes, such groups were also collapsed to single lines — a useful option when very high numbers of stations or samples are involved.

After all the analyses were carried out it was discovered that 10 individuals of *‘Mysella’ obliquata* had been omitted from grab OBC96a. Re-analyses revealed that

Scale (6 point)	Scale (4 point)	Description	Numerical Conversion
P	p	Rare	1
P1	p1	Occasional	3
P2		Frequent	7
P3	p2	Common	20
P4		Abundant	54
P5	p3	Super-Abundant	148

Table 3.8: Conversion values for qualitatively assessed fauna

their inclusion only slightly changed the similarity between OBC96a and 96b (from 69.63 to 68.98%) and stations 96 and 97 (from 70.01 to 70.85%). However, no other results were affected, except diversity calculations. The spreadsheets and diversity results were corrected accordingly.

In multidimensional scaling (MDS) the same inter-station similarities used in the cluster analyses are used to produce a 'map' that, ideally, will show the inter-relationships of all — in either 2 or 3 dimensions. The goodness-of-fit is measured by the stress value, an ideal representation having zero stress. Relative stress values increase with increasing number of entities and decreasing dimensions.

Generally, for two dimensional plots, a stress below 0.1 is good and below 0.2 is useful (see Clarke 1993). A value greater than 0.3 indicates that an ordination is little better than a random representation. In 3D analyses, the extra dimension facilitates better inter-station similarity configurations and the stress values are correspondingly lower than the 2D ones. The MDS plots in this study were obtained using 50 iterations and all minimum stress values were numerously derived, suggesting optimal configurations had been achieved.

A 2nd stage MDS analysis was carried out to examine whether the different faunal components (Annelida, Mollusca, Arthropoda, others) exhibited different distributions throughout the Outer Bristol Channel area. The RELATE routine was used to test whether the inter-station relationship patterns between each component pair were different.

Species Similarity Contributions

The species contributing most to the assemblages or groups identified in the log-transformed semi-quantitative cluster analysis were examined using the SIMPER routine in PRIMER. Species contributing to the dissimilarities between clusters were also examined, though as SIMPER can only compare two groups at any one time, the numerous comparisons obtained are not reproduced herein.

Species-environment Relationships

The environmental factors having potential influence on the quantitative faunal distributions were investigated using the BIO-ENV routine (Clarke & Ainsworth 1993) in the new PRIMER BEST procedure. BIO-ENV sets out to measure the agreement between the rank correlations of the biological (Bray-Curtis similarity) and environmental (Euclidean distance) matrices. The Spearman coefficient (p) was used to determine the rank correlations between the biological matrix and all possible combinations of the environmental variables.

The following variables were examined: depth, gravel (%), sand (%), mud (%), total carbonate (%), gravel carbonate (%), sand carbonate (%), mean grain size (phi), median grain size (d_{50}), Inman Sort, and slope angle (°). Following preliminary assessment, all but depth, sand and d_{50}, were $\log_e$ (x+0.1) transformed to reduce skewness in the data. All variables were then also normalised

Where variables were strongly correlated (sand & gravel, sand carbonate & total carbonate, and mean phi & d_{50}) only the first mentioned was selected in the BIO-ENV analysis. As the data for the environmental variables was not available at all stations, two BIO-ENV runs were carried out. The first included 110 stations and slope was excluded. The second used the 88 stations where information on slope was available.

The statistical significance of the variable combination 'best' explaining the faunal similarity matrix was examined using the Global BEST match permutation test.

The species-environment relationships were also examined using LINKTREE, a new technique available in PRIMER v6. LINKTREE uses the variables that, in combination, were identified as 'best' in the BIO-ENV together with the faunal inter-station similarities. The stations are then successively divided according to one of the variables such that the separation between the 2 groups at each split is maximised (ANOSIM R statistic) in multidimensional space. Sometimes more than one variable is determined at a split if each gives the same result.

This is divisive clustering, as opposed to agglomerative in cluster analysis, and inversions can sometimes occur in the clustering pattern. Unlike BIO-ENV the environmental variables are non-additive and one advantage is that a variable can be identified as important in part of the overall faunal distribution, yet not so in other parts. Conversely, BIO-ENV examines the overall wider situation.

The procedure also has potential for prediction. If the environmental conditions are known for a new station, then the LINKTREE results may allow it to be assigned to a particular assemblage or group of sites.

In the Outer Bristol Channel analysis, the default conditions (min group size 1, only groups of 4 or more considered for further division, minimum split R=0) were used. The SIMPROF test was used to examine the significance (5% level) before each split, with division stopped when non-significant.

Univariate Analyses

A variety of diversity and evenness measures were calculated for each station (replicates combined) and for each grab sample using PRIMER DIVERSE. The diversity measures of Fisher (α), Margalef (d), Simpson (1-λ) and Shannon-Wiener (H′), and the evenness measures of Heip (N10′) and Pielou (J′) were selected. Shannon-Wiener, Heip and Pielou indices were calculated using $\log_2$ values. Diversity was additionally compared using the rarefaction methodology to interpolate species richness for a range of different abundances, though the curves were not drawn.

Fisher	α	$\dfrac{S}{\log_e\left(1+\dfrac{N}{\alpha}\right)}$
Margalef	d	$\dfrac{S - 1}{\log_e N}$
Simpson	D	$1 - \sum \dfrac{n_i\,(n_i - 1)}{N\,(N - 1)}$
Shannon -Wiener	H'	$-\sum \dfrac{n_i}{N} \log_2 \dfrac{n_i}{N}$
Pielou	J	$\dfrac{H'}{\log_2 S}$
Heip	E	$\dfrac{2^{H'} - 1}{S - 1}$
Where	S = Total Number of Species N = Total Number of Individuals n_i = Number of individuals of the i^{th} species	

Table 3.9: Diversity and evenness indices.

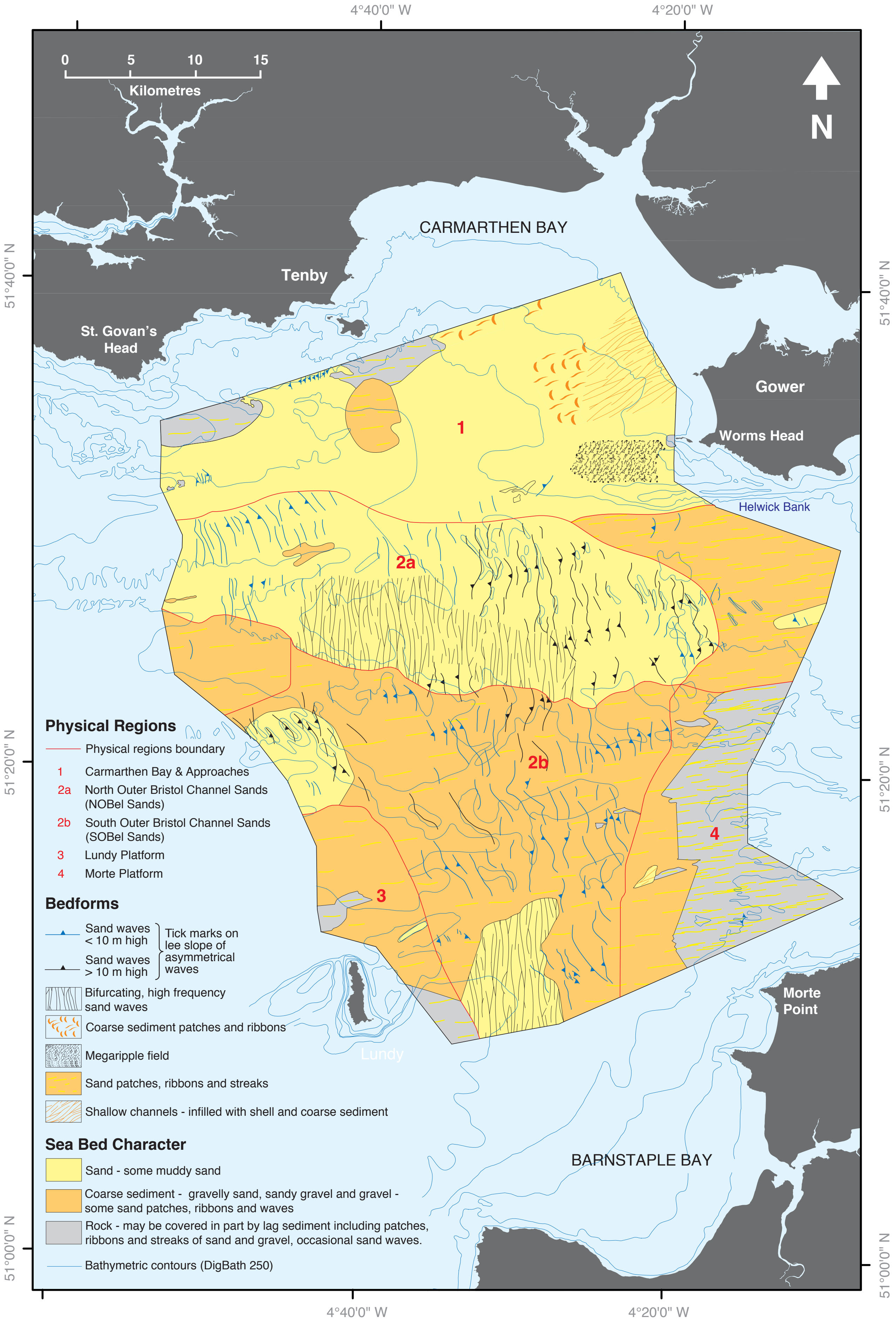


Fig. 4.1: Sea bed character and bedforms. (also reproduced at a larger scale in Map 1)

4. Geology

Physical Regions

The area covered by the *Outer Bristol Channel Marine Habitat Study* (OBCMHS) includes approximately 2400 km^2 of the sea bed from Carmarthen Bay in the north to Lundy Island 60 km to the south (Figure 1.1). Its east-west extent along the Channel is about 35 to 40 km with its western limit on a line drawn from St Govan's Head in Pembrokeshire to Lundy Island. The eastern limit extends from Worms Head on Gower to Morte Point on the North Devon coast. Helwick Bank, which is just offshore and to the south of Worms Head has not been included in the geological part of the study.

The study area has been divided into four physical regions (Figure 4.1, Map 1):

1. Carmarthen Bay and Approaches
2. Outer Bristol Channel Sands (OBel Sands)
    - a North sector (NOBel Sands)
    - b South sector (SOBel Sands)
3. Lundy Platform
4. Morte Platform

1. Carmarthen Bay and Approaches

Carmarthen Bay forms the northern margin of the study area. It is a south-west facing embayment, which extends from Tenby and Caldey Island across to Gower, a distance of about 27 km. The estuaries of the Gwendraeth, Taf and Tywi rivers merge together and discharge into the centre of the Bay. Further to the east, the larger Loughor estuary enters the Bay along the north coast of the Gower Peninsula.

The sea floor of the Bay deepens gradually to the south-west and reaches maximum depths of 25 to 30 m across its mouth. The Approaches to the Bay include the sea bed south of the coast from St Govan's Head to Caldey Island out to a depth of about 40 m and eastward across the entrance of the Bay to Helwick Bank.

2. Outer Bristol Channel Sands (OBel Sands)

The Outer Bristol Channel Sands lie at the heart of the study area. It is a sand wave field which stretches westward for over 40 km along the southern margin of Carmarthen Bay and Approaches. Although it narrows to the south it extends for over 37 km to the southern boundary of the study area, where it is around 12 km wide. In total it covers an area of at least 900 km^2.

The Outer Bristol Channel Sands have been divided into north and south sectors.

2a: The North Outer Bristol Channel Sands (NOBel Sands) are characterised by a high density of large and small sand waves on a predominantly sandy sea bed. From east to west it extends for over 40 km and at its maximum is about 12 km wide. The ambient sea bed declines to the west from a depth of about 37 m at the eastern margin of the area to below 55 m.

The NOBel Sands includes within its area two marine aggregate licence applications at Areas 476 and 486 (Figure 1.3). A licence has been granted within Area 476 and dredging commenced in July 2006. The marine aggregate industry have designated the sand wave area covered by these applications as the Nobel Banks. We prefer to use the noun Sands rather than Banks because the NOBel area does not contain any sand banks; it is dominated by sand waves. This distinction is important because the major banks in the Bristol Channel, such as Helwick Bank and Nash Bank, are generally singular, long linear features in relatively shallow water whose crests are aligned along the dominant path of the tidal currents which ebb and flow through the Bristol Channel. Sand wave crests are normally aligned across the path of tidal currents, they are generally numerous and form sand wave fields, as is the case in the NOBel Sands area. Sand banks and sand waves are unique and distinctive features with their own particular modes of formation and responses to the processes that control them.

2b: The South Outer Bristol Channel Sands (SOBel Sands) are characterised by numerous isolated sand waves on a dominantly coarse substrate of gravelly sands to gravels. Sand wave frequency decreases to the south, with a relatively flat sea bed at around 45 m at its southern margin.

3. Lundy Platform

Lundy Island lies at the southwest corner of the study area. It is surrounded by a sea bed platform of rock and predominantly coarse sediment but also includes Stanley Bank, a sand bank which streams northeastward off the northern tip of the island. The Lundy Platform is mainly in water depths of 10 to 20 m but extends north towards the centre of the Channel into water depths of over 40 m with its eastern boundary against the SOBel Sands.

4. Morte Platform

The eastern border of the study area stretches for over 37 km across the Bristol Channel from Gower to Morte Point, in water depths of 20 to 35 m and varies in width from 7 to 15 km. The southern half of this border area has been designated the Morte Platform and has extensive areas of rock exposed at the sea bed.

The northern half of the eastern border area has not been named as a physical region. It comprises a sea bed dominated by a coarse substrate which extends westward in a narrow corridor to the south of Helwick Bank in water depths of around 30 m. A similar area of coarse substrate, which has not been named, lies in deeper water, 40 to 50 m, at the southwest margin of the NOBel Sands.

4.1 Solid Geology & Quaternary Sediments

In terms of marine habitat, the primary geological control on the biology of the sea bed is the physical nature of the sea bed itself and the metre or so of geology that underlies it. It could comprise sediment which is being moved every day by tidal currents and waves, or solid rocks which are tens or hundreds of millions of years old, and during this long period of geological time have been folded and displaced by major tectonic events and eroded into their current position in the Outer Bristol Channel. However, the present sea bed will only have been exposed to sea water and associated marine processes in the past 5,000 to 10,000 years as sea level rose after the last Devensian Glaciation. A very short period in geological time.

To help in our understanding of sea bed habitat we investigated the geology beneath the sea bed, primarily for evidence of superficial Quaternary sediments associated with glaciations, particularly the Last Devensian Glaciation, and post glacial Quaternary sediments. We also studied the solid, bedrock geology immediately beneath these sediments and outcropping at the sea bed.

We used boomer sub-bottom seismic reflection data to interpret the sub-sea bed geology (Figure 3.6). Corridors 1 to 9 have a single boomer seismic line running along the centre of each corridor and these have been correlated with information from 38 BGS boreholes drilled in the Outer Bristol Channel in the 1970's, BGS published maps and reports, and academic and industry papers and reports.

In order to define the nature, extent and thickness of the Quaternary sediments, and the surface of the solid geology beneath these Quaternary sediments the seismic lines were processed with Coda GeoSurvey software. The top and bottom bounding reflectors of the Quaternary stratigraphic units and the surface of the solid geology sub-crop beneath these units were digitised within the Coda software. The results were then filtered and processed and the digitised surfaces interpolated between the survey corridors to create outcrop and isopach maps. The interpreted boomer data were correlated with multibeam and sidescan data and loaded into a geographical information system (GIS). This enabled all the study's different datasets to be overlain and cross-correlated to provide an integrated interpretation of the area's sub-sea bed geology.

In total the boomer survey in the nine corridors completed 330 km of survey lines and the area covered by the analysis of the boomer was about 1,750 km^2. However, it should be noted that the survey lines are around 5 km apart and there are no cross lines to enable interpreted reflectors to be tied and cross matched between lines. Also, no boomer lines were run in corridors 10 and 11, which cross Carmarthen Bay, therefore the sub-sea bed geology interpretation for the study area does not extend north of corridor 9 into Carmarthen Bay.

The lines were surveyed with general orientation of WSW-ENE, and despite the fact that the quality of the record was weather dependent, the penetration of the boomer signal was reasonable for the majority of seismic lines, although some are of poor quality.

A sound speed of 1600 ms^{-1} has been used and the sections have been analysed up to 50 milliseconds under the sea bed, with a maximum vertical resolution of about 1 metre.

With a distinction based on acoustic character and morphology elements a four-fold stratigraphy has been created from the boomer interpretation, which comprises:

- **Quaternary Sediments**

1. Sand Waves
2. Basal Sand and Gravel
3. Late Pleistocene Sediments

- **Solid Geology**

4. Bedrock – undifferentiated

The location of the outcrops and sub-crops of the lower three, sub-Sand Waves units in the boomer interpreted area is shown on Figure 4.2. The location of the principal sand waves can be seen in Figure 4.1.

Solid Geology

Bedrock

The sea bed of the Outer Bristol Channel mainly comprises superficial, mobile and immobile sediments. However, rock is exposed extensively in the southern part of the study area on the Lundy and Morte Platforms, and also to the south and west of Caldey Island in Carmarthen Bay and Approaches (Figure 4.2). There are also a number of smaller rock outcrops around Worms Head and in the southeast of the SOBel Sands.

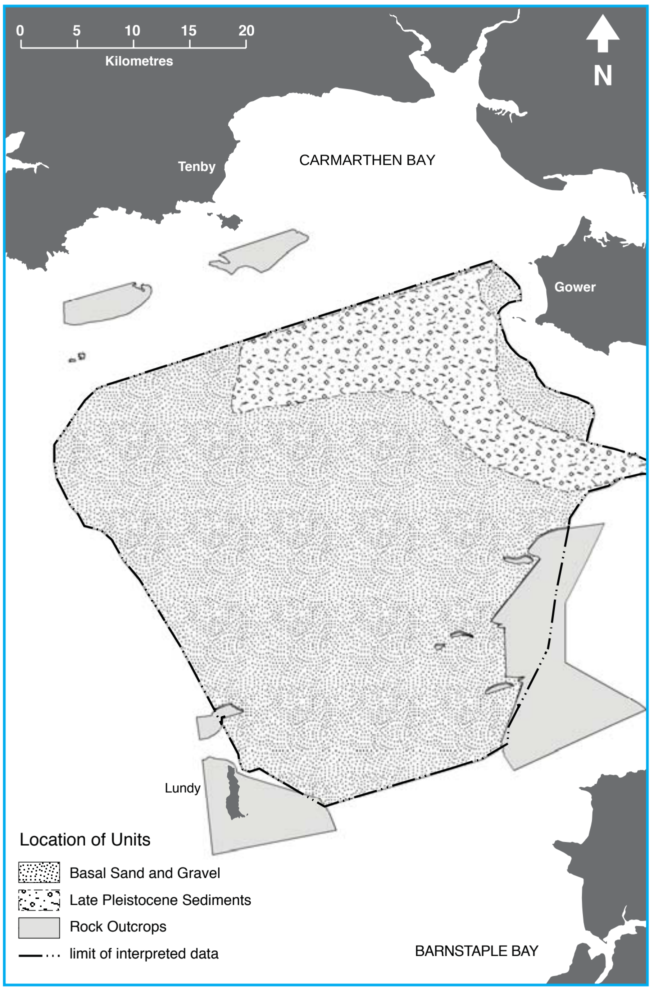


Fig. 4.2: Location of the outcrops and sub-crops of the sub-Sand Waves units

Correlation of the multibeam and sub-bottom data has given good resolution of the solid outcrops position and extent. However, the lithology and nature of the solid geology has not been defined purely from the boomer interpretation. The acoustic signature on the boomer records, the resolution of the signal and the level of noise has not enabled us to distinguish the different types of bedrock geology on all records. Correlation with BGS Boreholes and published geological maps has allowed designation of the different lithologies on the boomer data (BGS 1983a; Tappin *et al.* 1994).

In the areas where Quaternary sediment overlies bedrock, the top surface of solid bedrock is generally in a relatively shallow position, i.e. < 20 m beneath the ambient sea bed (excluding sand waves), and the bedrock surface is recognisable in every one of the nine boomer records.

The solid geology of the study area has three principal components (Figure 2.2):

• The most extensive is associated with a Mesozoic east-west trending fault controlled synclinal basin which underlies the Bristol Channel. This covers much of the sea bed between the southern margin of Carmarthen Bay and Lundy Island and is dominated by Lower, Middle and Upper Jurassic limestones and sandstones with a small area of Cretaceous rocks at its core. The margins of the synclinal basin are marked by outcrops of Triassic mudstones and siltstones. Some of these rocks occur at the sea bed on the Morte Platform.

• Older Devonian and Carboniferous sandstones and limestones outcrop to the south and north of the Mesozoic basin. In the north they cover Carmarthen Bay and Approaches, to the south they lie around Lundy Island and off Morte Point. They extend on to the coast of Somerset and Devon, and in South Wales on to Gower and the South Pembrokeshire coast. These rocks outcrop at the sea bed on both the Morte and Lundy Platforms, and to the south and west of Caldey Island (Figure 4.3).

• The Stanley Bank Basin is a Tertiary age basin to the east of Lundy which underlies much of the western and southern parts of the SOBel Sands. It comprises Oligocene clays, lignites and sandstones and some may outcrop at the sea bed on the western margin of the Morte Platform.

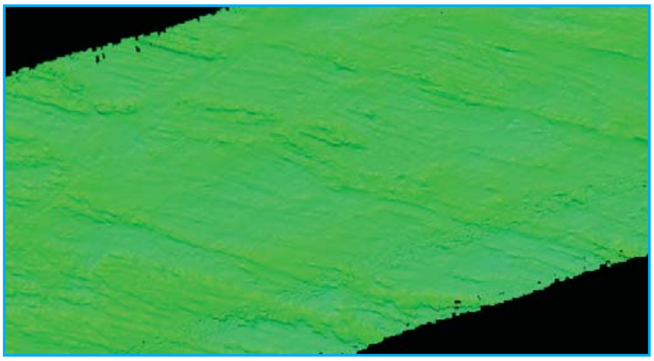


Fig. 4.3: Well-bedded Devonian rocks exposed at the sea bed on the Morte Platform

Lundy Island which lies at the southwest corner of the study area is primarily composed of granite. It is an igneous intrusion of Tertiary age (50 – 55Ma). There are over two hundred NW-SE trending dolerite dykes of the same age associated with the granite (Edmonds *et al.* 1979) and many of these dykes have intruded into the Devonian and Carboniferous rocks of the Lundy Platform. Horseshoe Rocks (Figure 2.3), a prominent shoal on the Morte Platform, is a dolerite intrusion in well bedded Devonian sandstones, slates, shales and mudstones.

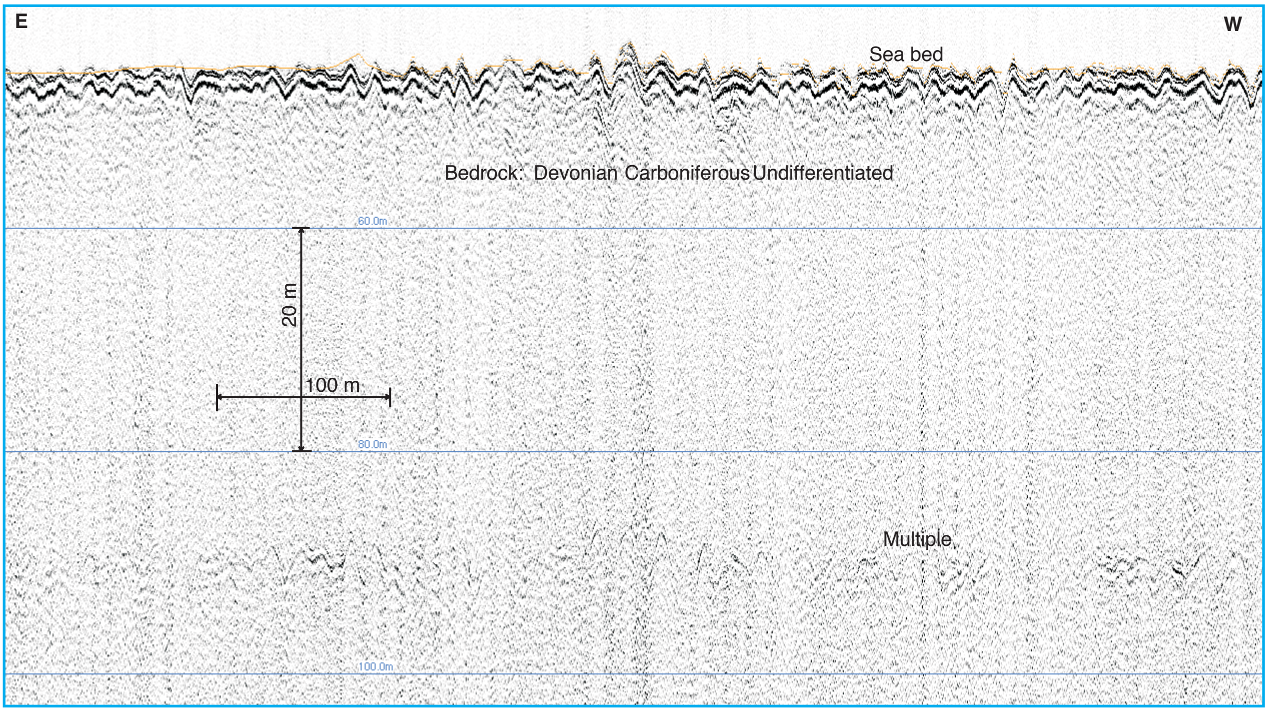


Fig. 4.4: Boomer Line 28, Corridor 1: acoustic signature of Devonian bedrock on the Lundy Platform area. Poor weather during the survey has affected the quality of the record.

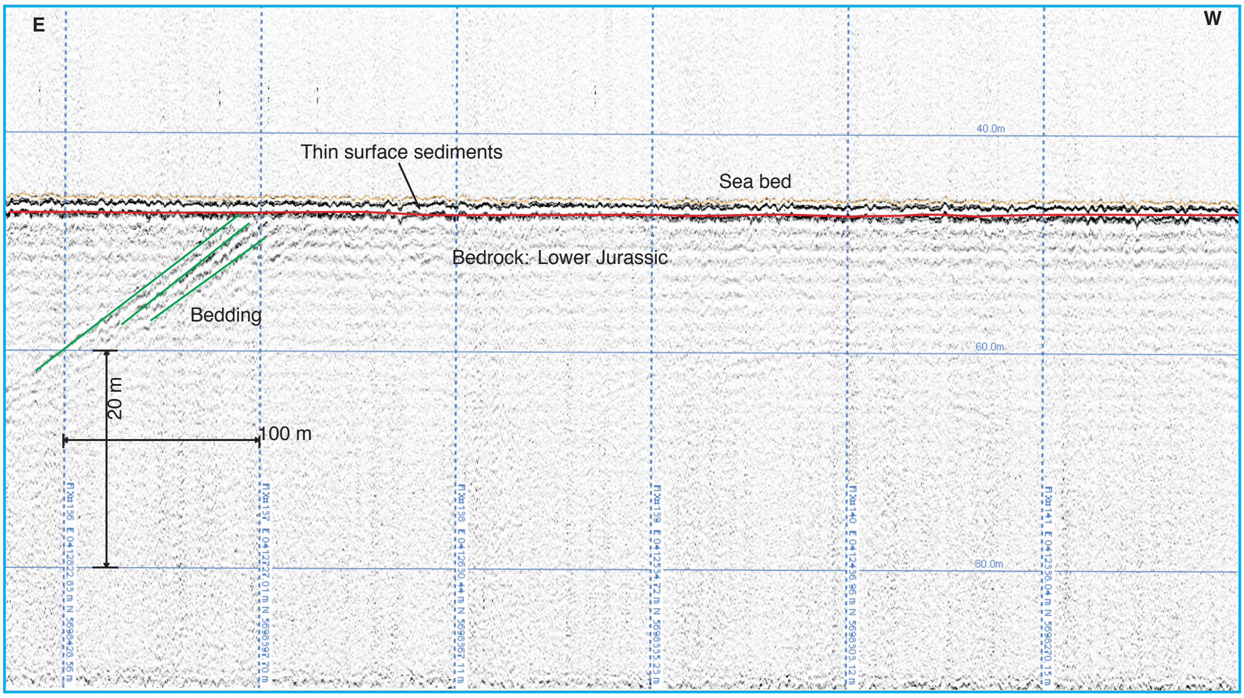


Fig. 4.5: Boomer Line 3, Corridor 5: Dipping Jurassic bedrock underlying a thin veneer of surface sediments

Figure 4.4 is a boomer seismic record through an area on the Lundy Platform where Devonian-Carboniferous rocks outcrop at the sea bed. The signature of the seismic record is massive and does not allow any discernment of structure in the bedrock.

Elsewhere, bedding and folding is apparent in the acoustic signature of the boomer records (Figures 4.5 & 4.6). This has enabled characterisation of the major bedrock types based on comparison with BGS maps and data. However, the resolution of the boomer records did not enable us to establish the precise position of the lateral contacts between the major solid geology rock types or geological structures such as faults or lineations. The expression of faults, folds and lineations at the sea bed are well seen on some of the multibeam data (Figure 4.3).

The top reflector of the undifferentiated bedrock unit represents the rock head. It is an erosion surface which

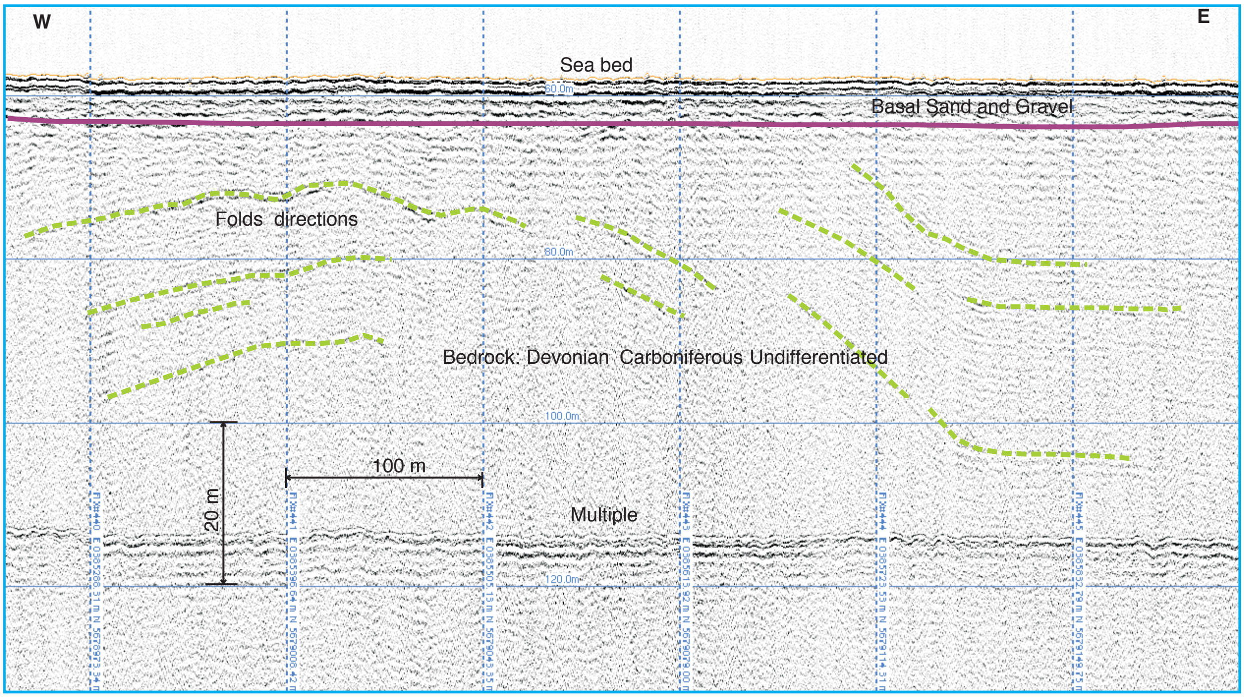


Fig. 4.6: Boomer Line 3, Corridor 5: Gently folded bedrock underlying the Basal Sand and Gravel unit

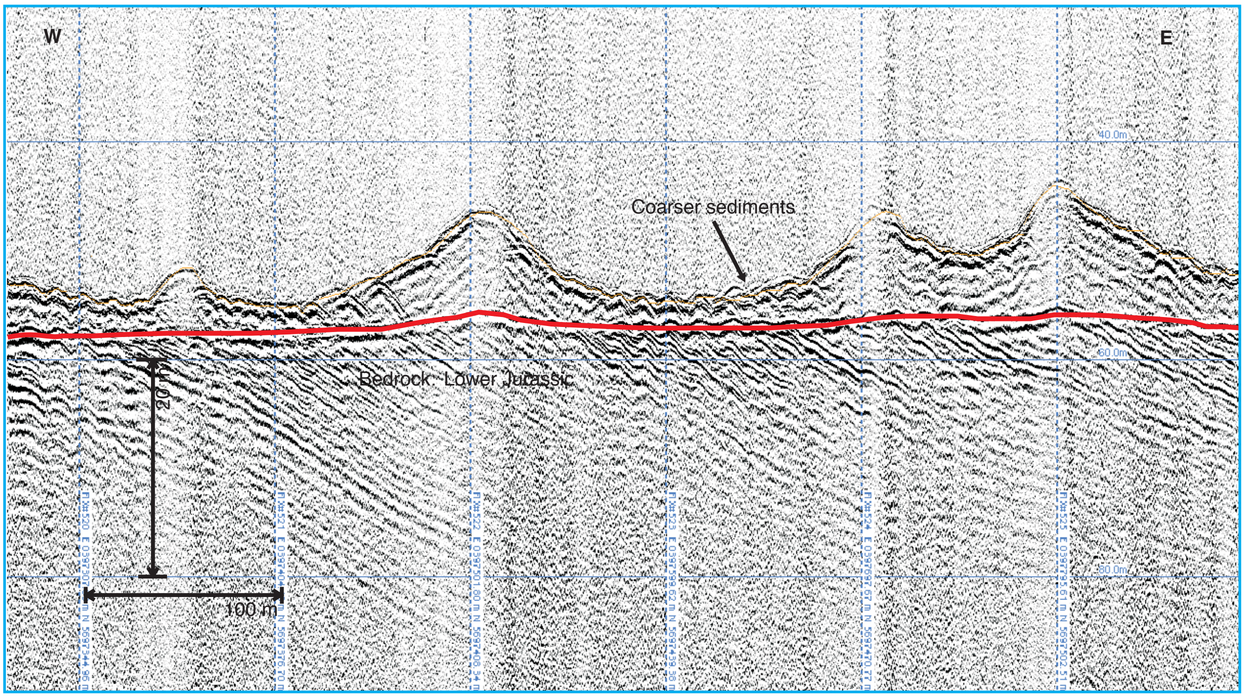


Fig. 4.7: Boomer Line 2, Corridor 6: Sand waves and Basal Sand and Gravel on a planar erosion surface cutting dipping Jurassic bedrock

cuts with discontinuity the bedding and layering of the older sedimentary rocks beneath the Quaternary sediments (Figure 4.7). The rock head surface across the study area is dominantly a planar erosion surface with some small hollows and palaeo-channels (Figure 4.8) which appear to lie within a greater north-south depression in the rock head surface that extends across the Bristol Channel from Carmarthen Bay to just east of Lundy Island (Figure 4.9)

Quaternary Sediments

The Quaternary covers the last 2 million or so years in geological time, up to the present day. It is a period characterised by cycles of Glaciations and Inter-Glaciations and major changes in sea level. However, because these glacial cycles are generally superimposed on each other, each succeeding event tends to erode and rework the sediments deposited in the previous event leaving little or no evidence of their

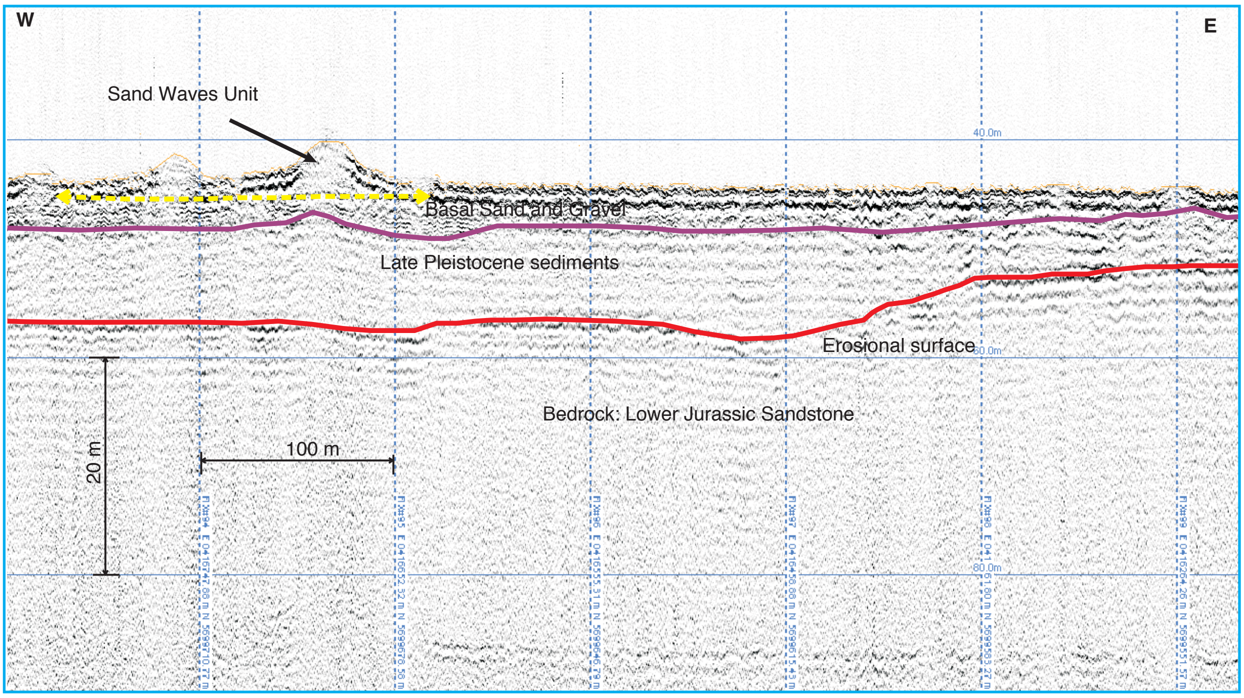


Fig. 4.8: Boomer Line 3, Corridor 5: Mutual positions of the Quaternary Sediment Units above a small palaeo-channel on the Lower Jurassic Sandstones

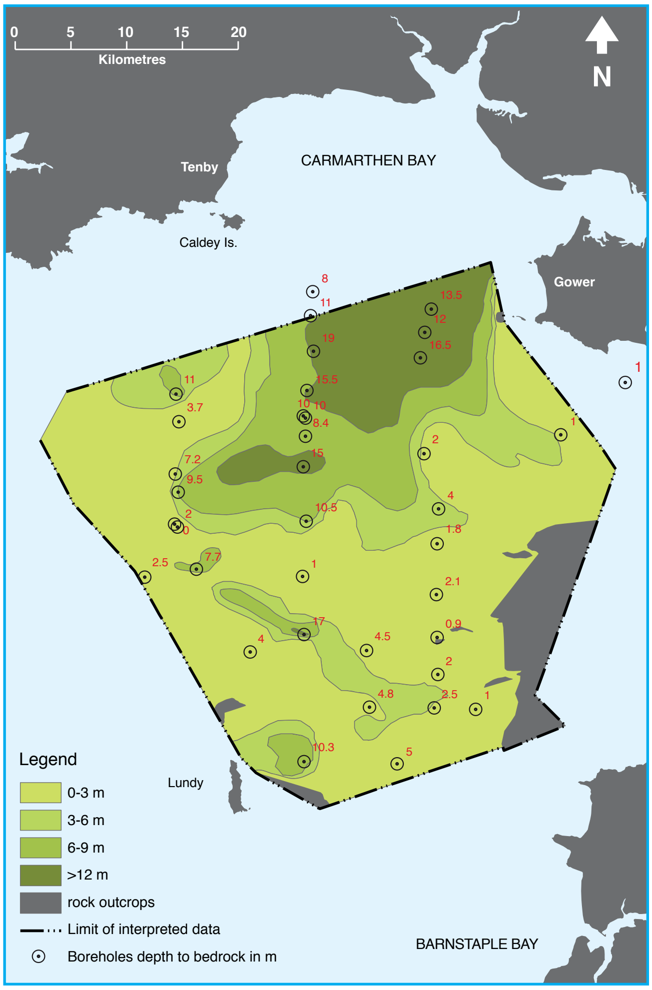


Fig. 4.9: Late Pleistocene Sediments and Basal Sand and Gravel combined: extent and isopach map of thickness

passing across the ground they have covered. The type of sediments associated with these events are a complete range from those which are directly deposited from contact with ice such as till (boulder clay) to sand, gravel and mud in fluvial, lacustrine and marine environments. Quaternary sediments can be a heterogeneous mixture but the youngest and most recent cycles and events do produce sedimentary units with distinctive seismic characteristics which can be interpreted and delineated on seismic records. Within the Outer Bristol Channel, Quaternary sediments include all the sediments which are deposited on the rock head surface and these have been divided into three stratigraphic units.

Late Pleistocene Sediments

The Late Pleistocene Sediments are the oldest of the Quaternary sediment units. They occur to the west of Gower across the southern margin of Carmarthen Bay for a distance of about 25 km. They do not extend westward beyond 4° 40′ W. To the south their occurrence narrows to a width of about 5 km and turns into an east-west alignment facing up the Bristol Channel (Figure 4.10). The thickness and style of the unit across Corridor 9 suggests that it extends north into Carmarthen Bay and other studies in the area (Al-Ghadban 1986) have indicated that relatively thick Quaternary sediments lie beneath Carmarthen Bay.

The internal acoustic character of this unit is not distinctive and makes it difficult in places to discern its occurrence simply by its acoustic character. However, it has been possible to map the Late Pleistocene Sediments from the occurrence of the seismic reflectors that mark the top and bottom of the unit. The basal reflector is rock head and the top reflector comprises the base of the overlying Basal Sand and Gravel unit. Both are strong reflectors and distinctive. The base of the Late Pleistocene Sediments is an erosion surface, but it is not clear whether the upper surface is erosional. The internal reflectors in both the Late

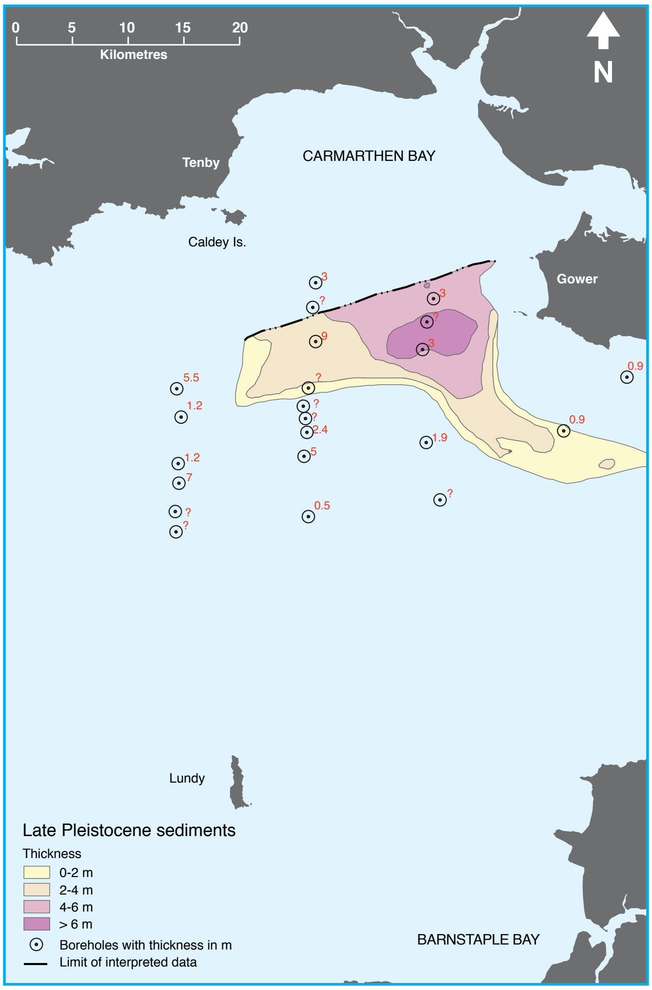


Fig. 4.10: Late Pleistocene Sediments: extent and isopach map of thickness

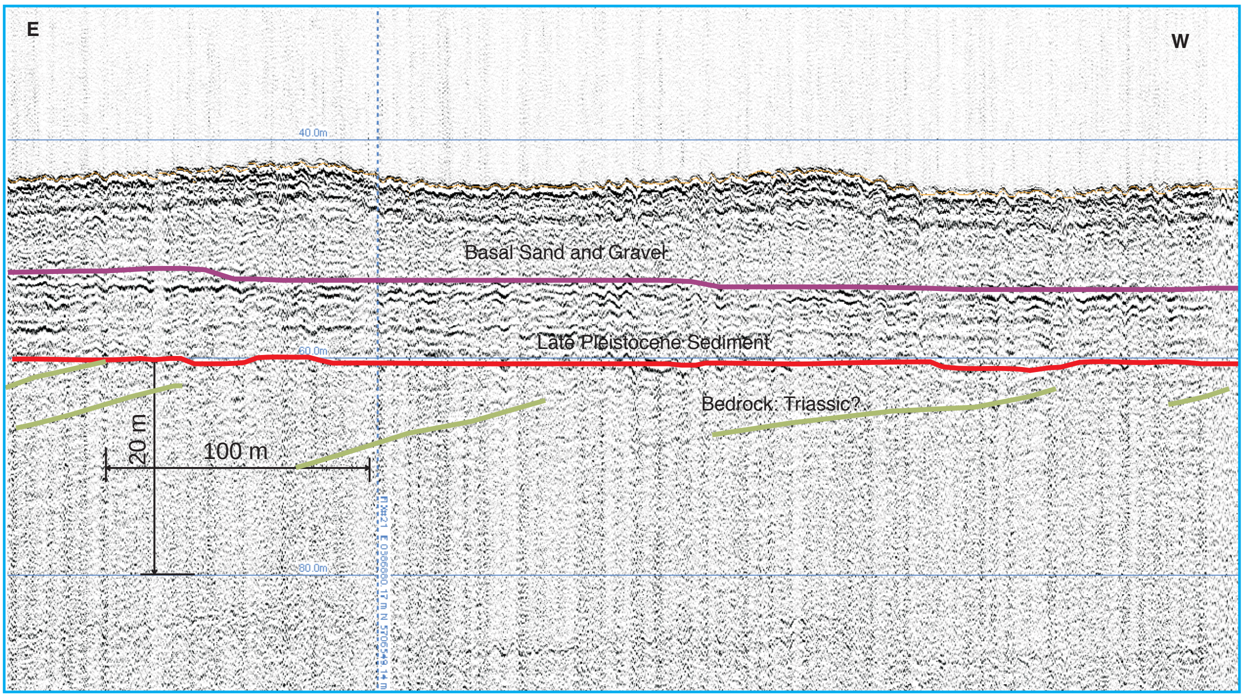


Fig. 4.11: Boomer Line BC8L10, Corridor 8: Late Pleistocene Sediments Unit defined by the top and basal reflectors and its high amplitude sub-horizontal reflector character

Pleistocene sediments and the overlying Basal Sand & Gravel are sub-horizontal and only very rarely has it been possible to discern onlap or truncation at the interface between the two units.

The internal seismic character of the unit is often massive and chaotic with no recognizable sedimentary structures. This may indicate the sediments are composed of massive, unsorted sediment such as Glacial Till. On most of the boomer records the seismic character is defined both by high amplitude sub-horizontal reflectors (Figure 4.11) and thin sub-horizontal low amplitude reflectors (Figure 4.12). These suggest both fine-grained sandy sediments and coarse gravelly sediments.

Twenty one BGS boreholes lie within and adjacent to the outcrop of the Late Pleistocene Sediments. Table 4.1 lists these boreholes with a summary description

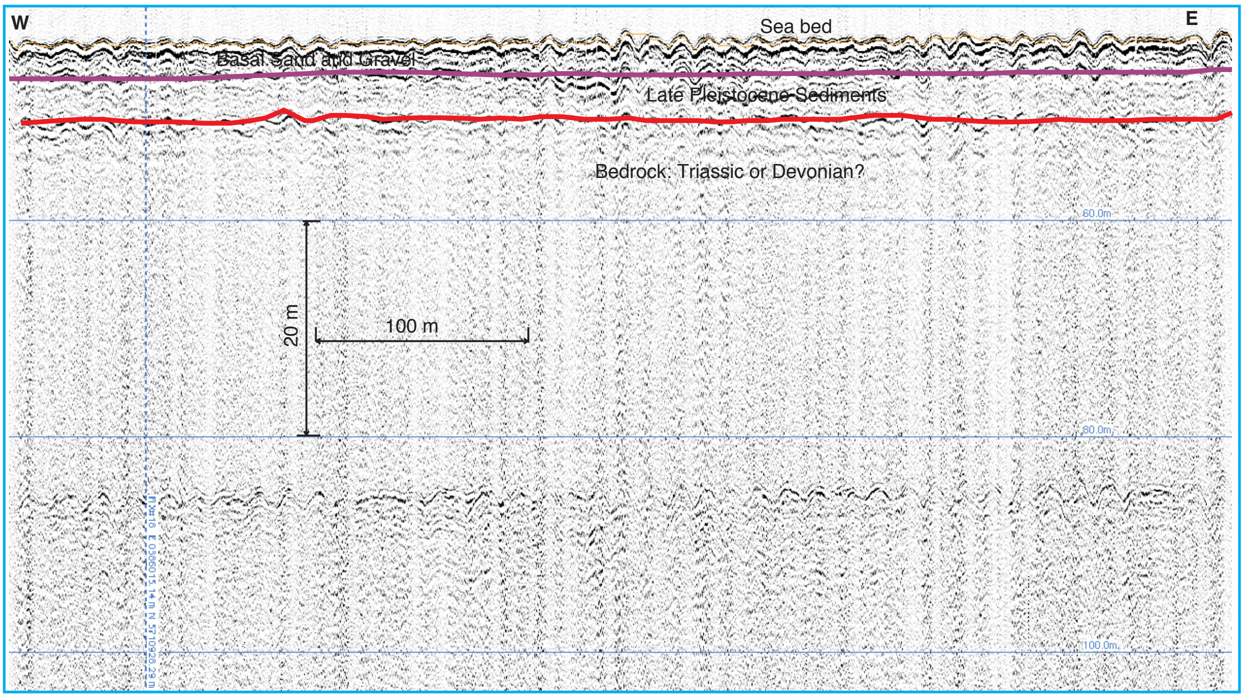


Fig. 4.12: Boomer Line BCL07, Corridor 7: Thin sub-horizontal low amplitude reflector character of Late Pleistocene Sediments Unit

of Late Pleistocene Sediments and include, where they occur, their thickness in metres. The borehole evidence indicates the Unit is composed mainly of clay, laminated clay and boulder clay/till but is also notable for the presence of gravel and some sand.

The reflectors which have been interpreted as the base and top of the unit have been digitized using Coda GeoSurvey software. The thickness and extent has been extracted, interpolated and filtered with a contouring program. The results have been edited and finalized in a GIS to produce a simplified isopach map of the unit (Figure 4.10).

The unit varies in thickness from <1m to a maximum of 7 metres. It infills a low depression or palaeo-channel 5 to 20 km wide which appears to be the continuation of a channel feature with its origin to the north in Carmarthen Bay. The unit narrows and thins to the southeast and terminates about 10 km south of the Gower Peninsula.

The seismic signature and lithologies of the sediments indicate a glacial or possibly fluvio-glacial origin. The maximum extent of Welsh ice associated with the Last Devensian Glaciation is believed to have occurred around 22,000 years ago. In this part of South Wales the Devensian ice limit crosses Swansea Bay to the Mumbles (Price & Brooks 1980) and follows a line along the south Gower coast and across Carmarthen Bay towards Caldey Island (Bowen *et al*. 2002). The valleys which lead into Carmarthen Bay from the north and northeast were the focus of an ice lobe which stretched out across Carmarthen Bay. This lobe is interpreted as the source of the glacial sediments found in the Late Pleistocene Sediments. Welsh ice is not thought to have crossed the Preseli Mountains into South Pembrokeshire and no Irish Sea ice is believed to have entered the Bristol Channel during the Last Devensian Glaciation.

BGS Sample Station No.	BGS Borehole No.	Depth to Bedrock (m)	Latitude	Longitude	Thickness of Late Pleistocene Sediments (m)	Description
+51-05/449	73/59	2	51° 23’ 15.00” N	4° 44’ 51.61” W	?	
+51-05/55	72/56	7.2	51° 25’ 53.40” N	4° 45’ 00.00” W	1.2	Clay, grey brown, sandy gravel
+51-05/56	72/57	11	51° 29’ 44.99” N	4° 45’ 12.60” W	5.5	Gravel, cobbles increasing downwards
+51-05/57	72/60	8	51° 34’ 48.00” N	4° 34’ 42.60” W	3	Clay, stiff brown
+51-05/73	72/67	1	51° 30’ 44.39” N	4° 10’ 21.61” W	0.9	Clay, silty plastic
+51-05/74	72/68	2	51° 27’ 07.20” N	4° 25’ 54.01” W	1.9	Gravel, shelly
+51-05/337	73/34	13	51° 34’ 05.38” N	4° 25’ 31.80” W	4	Clay, grey, silty, peat layers. Boulder clay
+51-05/340	73/37	12	51° 32’ 57.59” N	4° 25’ 59.99” W	?	
+51-05/342	73/39	19	51° 31’ 52.79” N	4° 34’ 36.01” W	9	Clay, grey and sandy, gravel and sand
+51-05/446	73/56	3.5	51° 26’ 45.02” N	4° 06’ 56.99” W	1.5	Sand, medium with gravel
+51-05/447	73/57	1	51° 28’ 06.60” N	4° 15’ 16.20” W	0.9	Clay, grey
+51-05/449	73/59	2	51° 23’ 15.00” N	4° 44’ 51.61” W	?	
+51-05/450	73/60	9.5	51° 24’ 55.80” N	4° 44’ 48.01” W	7	Till, red brown, stiff with small red pebbles
+51-05/454	73/64	16.5	51° 31’ 40.80” N	4° 26’ 17.99” W	3	Cobbles, angular to sub-rounded
+51-05/456	72/40	11	51° 33’ 37.80” N	4° 34’ 50.41” W	?	
+51-05/468	74/27	10	51° 28’ 44.33” N	4° 35’ 17.48” W	?	
+51-05/469	74/28	10	51° 28’ 38.39” N	4° 35’ 08.99” W	?	
+51-05/494	74/44	10.5	51° 23’ 43.19” N	4° 34’ 52.21” W	0.5	Sand, pebbles, cobbles
+51-05/501	75/04	8.4	51° 27’ 47.41” N	4° 35’ 09.60” W	2.4	Gravel, sandy, well sorted
+51-05/515	75/08	15.5	51° 29’ 53.99” N	4° 35’ 01.79” W	?	
+51-05/524	75/12	15	51° 26’ 19.82” N	4° 35’ 15.61” W	5	Gravel
+51-05/595	75/23	4	51° 24’ 25.20” N	4° 24’ 38.41” W	?	
+51-05/597	75/24	3.7	51° 28’ 24.60” N	4° 44’ 55.21” W	1.2	Clay, laminated

Table 4.1: Possible Late Pleistocene Sediments recorded in BGS Boreholes with thickness and description

Basal Sand and Gravel

The Basal Sand and Gravel is the most extensive of the three Quaternary units (Figure 4.2). It overlies the Late Pleistocene Sediments and where this is absent it sits directly on rock head. The base of the Basal Sand and Gravel is therefore relatively well defined.

In the area of the Outer Bristol Channel Sands (NOBel and SOBel Sands) there are extensive occurrences of large sand waves both as isolated sand waves and fields. Some of these have strong horizontal basal reflectors indicating that the sand waves sit on an erosive surface or a surface indicating a hiatus in deposition before the sand waves were formed. This reflector at the base of the sand waves marks the top of the Basal Sand and Gravel. However, this reflector is not present at the base of all the large sand waves and in these areas the top of the Basal Sand and Gravel has been picked across the base of the sand waves. Where large sand waves are not present the Basal Sand and Gravel extends to the sea bed and can include small sand waves.

The acoustic character of the Basal Sand and Gravel can be well layered with parallel sub-horizontal and inclined reflectors (Figure 4.13) but there are areas with steeply inclined short reflectors. The acoustic signature can be diffractive near the sea bed surface implying the presence of coarse sediment, for example in the troughs of sand waves (Figure 4.14). The seismic character of the unit is typical of a sedimentary body formed primarily of sand and gravel, varying from fine sediment and sand when the signal is transparent, to coarser sand and gravel when the signal is more diffractive.

In some areas where the Basal Sand and Gravel is relatively thin and underlain by dipping bedrock, small scarps in the bedrock surface are mirrored in the overlying sediments as small positive features at the sea bed (Figure 4.15).

A total of 37 BGS boreholes have been drilled in the area. Table 4.2 shows the description and the interpreted thickness of the Basal Sand and Gravel in each of the boreholes. The boreholes indicate a unit which is mainly formed of sand, gravelly sand and gravel.

The horizon that defines the base of the Basal Sand and Gravel unit is generally well defined and it overlies both the Late Pleistocene Sediments Unit and the Bedrock. The depth of this horizon from the sea bed and from the base of the overlying Sand Waves unit, has been digitised using Coda GeoSurvey software. The thickness values have been contoured to produce a simplified isopach map for the Basal Sand and Gravel (Figure 4.16).

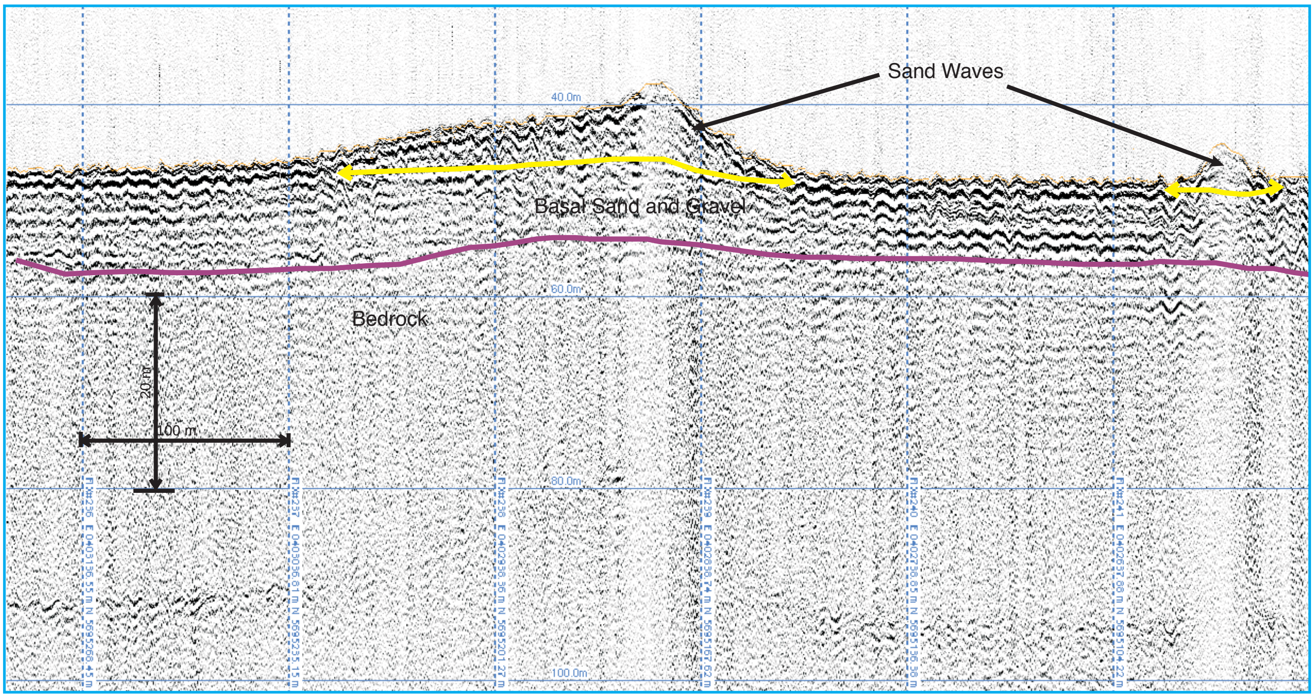


Fig. 4.13: Boomer Line 3, Corridor 5: Basal Sand Gravel over bedrock and its typical well-layered acoustic signature

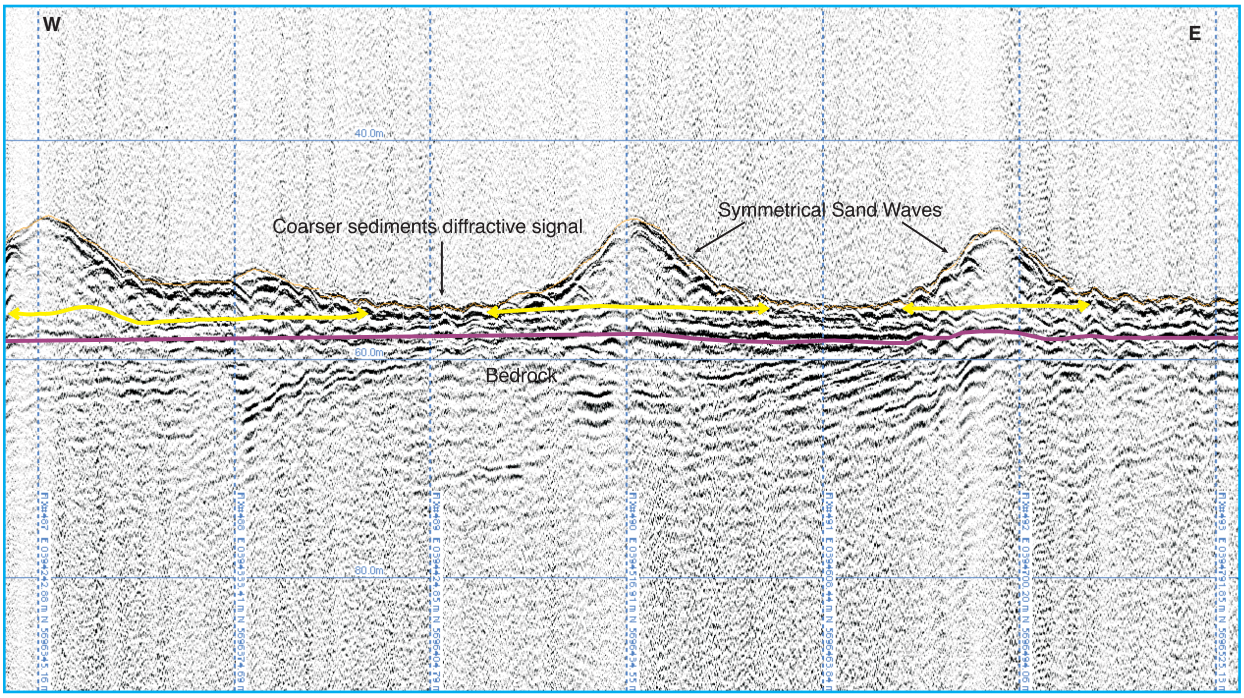


Fig. 4.14: Boomer Line 2, Corridor 6. Basal Sand and Gravel: Diffractive signature for coarse sediment in sand wave troughs

The thickness of the Basal Sand and Gravel varies from <1 m up to a maximum of 12 m on the boomer lines. The deposits reach a maximum recorded thickness of 15.5 m in Borehole 75/08, although in the majority of boreholes they are <10 m thick. Davies (2005) interpreted over 17 m of sand in a seismic profile just to the north of Helwick Bank and found a substantial thickness of Quaternary sediment in this area.

The depositional form of the Basal Sand and Gravel is similar in style to the underlying Late Pleistocene Sediments although the former covers a larger area. They are thicker within a NE-SW trending axis which extends into Carmarthen Bay and down to the east of Lundy. The unit becomes thinner to the east and to the west, and towards the areas where rock outcrops at the sea bed.

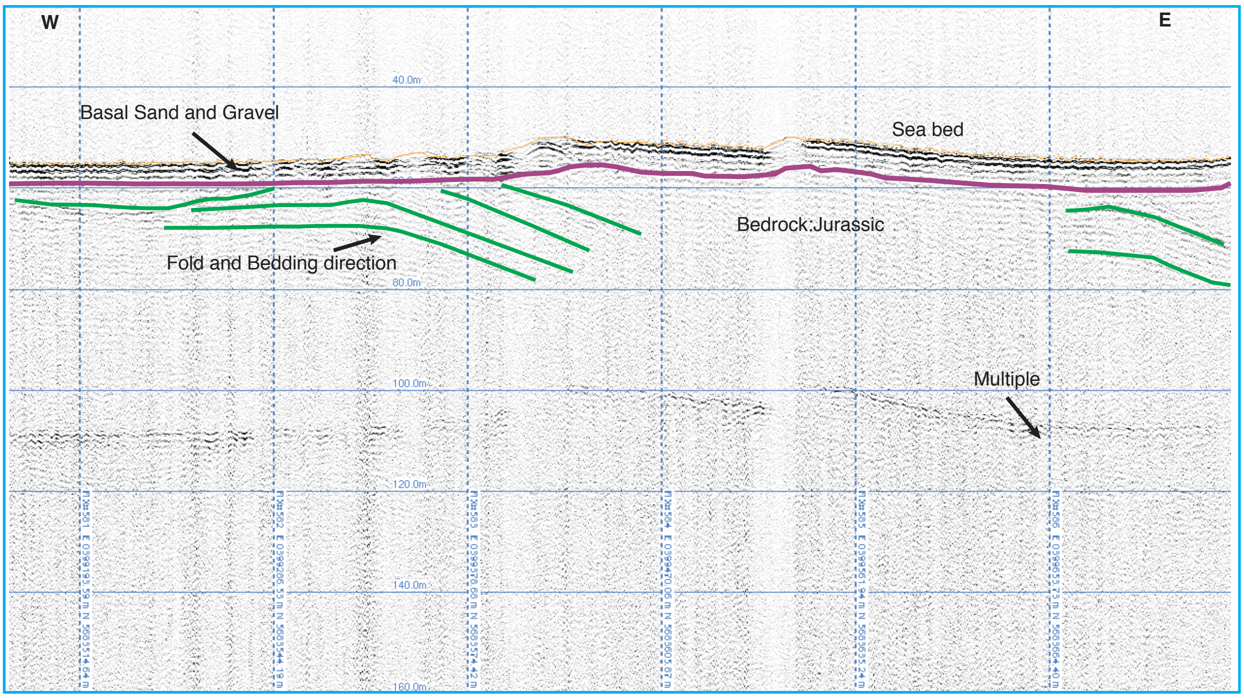


Fig. 4.15: Boomer Line 5, Corridor 3: Positive sea bed features in Basal Sand and Gravel over scarps in dipping Jurassic bedrock

BGS Sample Station No.	BGS Borehole No.	Depth to Bedrock (m)	Latitude	Longitude	Thickness of Basal Sand and Gravel (m)	Description
+51-05/449	73/59	2	51° 23' 15" N	4° 44' 51" W	2	Gravel
+51-05/17	72/43	2	51° 16' 23" N	4° 24' 31" W	2	Sand and gravel, coarse-fine with shell debris
+51-05/18	72/44	2.5	51° 14' 46" N	4° 24' 46" W	2.5	Sand and gravel, poorly sorted with shell debris
+51-05/53	72/54	2.5	51° 20' 52" N	4° 47' 19" W	2	Gravel, sandy, poorly sorted
+51-05/54	72/55	7.7	51° 21' 11" N	4° 43' 16" W	7.7	Sand, medium to coarse, passing down into well sorted gravel
+51-05/55	72/56	7.2	51° 25' 53'" N	4° 45' 00" W	6	Sand, fine – medium, well sorted
+51-05/56	72/57	11	51° 29' 44" N	4° 45' 12" W	5.5	Sand, medium – coarse, well sorted
+51-05/57	72/60	8	51° 34' 48" N	4° 34' 42" W	5	Sand, shelly, gravelly, passing down into fine sandy gravel
+51-05/73	72/67	1	51° 30' 44" N	4° 10' 21" W	0.1	Clay, silty, plastic
+51-05/74	72/68	2	51° 27' 07" N	4° 25' 54" W	0.1	Gravel, shelly
+51-05/337	73/34	13	51° 34' 05" N	4° 25' 31" W	9	Sand, fine to medium with shell debris
+51-05/338	73/35	5	51° 11' 58" N	4° 27' 27" W	4	Sand and gravel with traces of clay. Fine sand
+51-05/339	73/36	4	51° 17' 17" N	4° 39' 01" W	4	Gravel, fine and shelly. Medium sand
+51-05/340	73/37	12	51° 32' 57" N	4° 25' 59" W	12	Sand, fine - medium with local shell fragments
+51-05/342	73/39	19	51° 31' 52" N	4° 34' 36" W	10	Sand and gravel, medium - coarse sand, fine gravel with shell fragments
+51-05/447	73/57	1	51° 28' 06" N	4° 15' 16" W	0.1	Clay
+51-05/448	73/58	1.3	51° 12' 05" N	4° 34' 40" W	9	Gravelly and shelly medium sand
+51-05/449	73/59	2	51° 23' 15" N	4° 44' 51" W	2	Gravel
+51-05/450	73/60	9.5	51° 24' 55" N	4° 44' 48" W	2.5	Sand and Gravel
+51-05/454	73/64	16.5	51° 31' 40" N	4° 26' 17" W	13.5	Sand, medium - fine
+51-05/456	72/40	11	51° 33' 37" N	4° 34' 50" W	11	Sand, gravel and gravelly sand, with gravel and clay at depth
+51-05/467	74/26	1	51° 14' 47" N	4° 21' 31" W	1	Sandy gravel
+51-05/468	74/27	10	51° 28' 44" N	4° 35' 17" W	4	Sand, gravelly, slightly muddy
+51-05/469	74/28	10	51° 28' 38" N	4° 35' 08" W	10	Sand, gravelly and silty
+51-05/471	74/43	4.8	51° 14' 45" N	4° 29' 42" W	4.8	Sand, shelly, pebbles of igneous rock
+51-05/494	74/44	10.5	51° 23' 43" N	4° 34' 52" W	10	Sand, pebbles and cobbles. Gravel
+51-05/501	75/04	8.4	51° 27' 47" N	4° 35' 09" W	6	Sand, fine - medium with some mud clasts
+51-05/515	75/08	15.5	51° 29' 53" N	4° 35' 01" W	15.5	Sand and gravel with shell fragments and abundant pebbles
+51-05/524	75/12	15	51° 26' 19" N	4° 35' 15" W	10	Sand passing down into gravel
+51-05/525	75/13	1	51° 20' 58" N	4° 35' 03" W	1	Sand and gravel
+51-05/526	75/14	6	51° 18' 11" N	4° 34' 53" W	6	Sand, coarse
+51-05/552	75/16	2.1	51° 20' 15" N	4° 24' 40" W	0.5	Clay, brown, firm with small pebbles
+51-05/584	75/18	1.8	51° 22' 48" N	4° 24' 43" W	1.8	Gravel, very shelly with medium sand
+51-05/585	75/19	4.5	51° 17' 31" N	4° 30' 01" W	4.5	Gravel with medium to coarse sand
+51-05/593	75/21	0.9	51° 18' 13" N	4° 24' 34" W	0.9	Gravel and sand
+51-05/595	75/23	4	51° 24' 25" N	4° 24' 38" W	4	Sand, medium - coarse passing down into a thin coarse gravel layer
+51-05/597	75/24	3.7	51° 28' 24" N	4° 44' 55" W	2.5	Sand, coarse, with gravel

Table 4.2: Possible Basal Sand and Gravel sediments recorded in BGS Boreholes with thickness and description

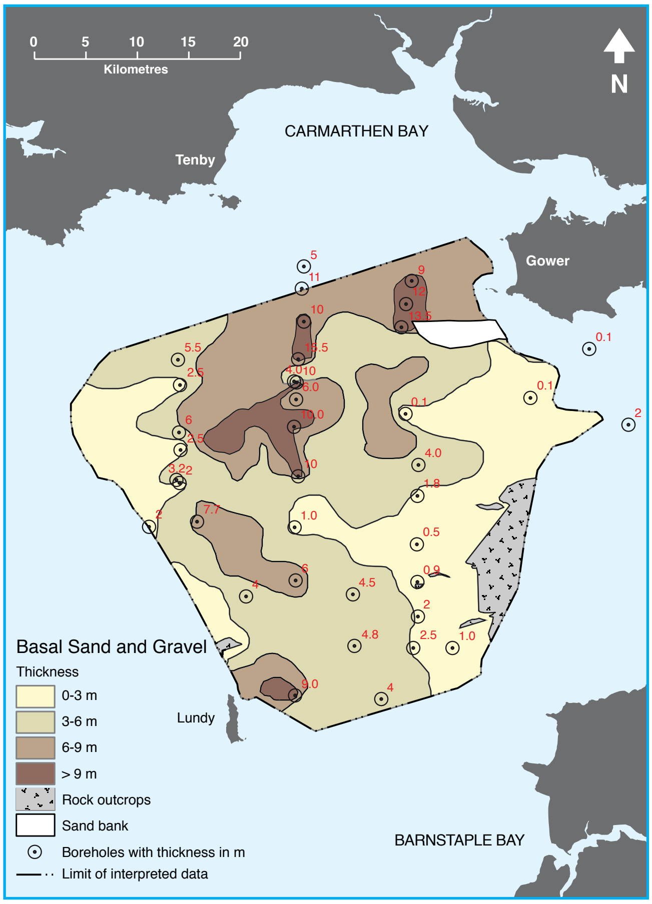


Fig. 4.16: Basal Sand and Gravel: extent and isopach map of thickness

The thicker deposits of the Basal Sand and Gravel generally overlie the thicker deposits of the underlying Late Pleistocene Deposits and together they widen northward into Carmarthen Bay (Figure 4.9). Certainly the deeper sediments of the Basal Sand and Gravel are likely to be of fluvio-glacial origin associated with outwash from an ice lobe retreating northward from Carmarthen Bay at the end of the Last Glaciation. There is evidence from the relatively thin deposits in the SOBel Sands area of small channels in the Basal Sand and Gravel, possibly indicative of deposition in a fluvial system prior to the marine transgression.

However, the deposits in a significant number of boreholes are characterised by sands and gravels which have a substantial shell content, pointing towards the influence of marine processes in their development. The shelly sediment could have been formed during the marine transgression as sea level rose up the Bristol Channel, possibly driving sediment into the area from the west. Culver (1980) suggests the sea had reached –35 m Ordnance Datum (OD) by 10,000 yrs BP and –16 m OD by 8,900 yrs BP. Therefore much of the Outer Bristol Channel was under marine influence by this time. Alternatively the shelly material may have been incorporated into *in situ* fluvio-glacial sand and gravel which has been reworked by marine processes including tide and wave action. Certainly the sub-sea bed deposits of Basal Sand and Gravel, where not overlain by sand waves, would have been re-worked by marine processes.

Sand Waves

The Outer Bristol Channel Sands comprises a sand wave field which includes the NOBel Sands and the SOBel Sands. They are described in more detail in section 4.2. Sea Bed Character and Bedforms.

The sand waves are substantial physical features, significant numbers of them are over 10 m in height; the largest recorded reaches a height of 19 m. Over extensive areas they are thicker than the underlying Late Pleistocene Sediments and Basal Sand & Gravel. They have been defined as a unit within the Quaternary sediments because of their physical significance (Figure 4.17).

The Sand Waves unit is formed mainly of sand and gravelly sand. Many sand waves have strong basal reflectors and in these cases the base of the unit is easily defined. However, in a number of areas there is no distinctive reflector at the base of the sand waves to distinguish them from the sediments of the underlying Basal Sand and Gravel. This reflector is often unclear due to the attenuation of the signal by coarser or more reflective material overlying it. In these cases the base of the Sand Waves unit has been picked on the seismic record as a line drawn between the base of the sand wave lee slope and stoss slope (Figure 4.17 & 4.18).

The internal acoustic signature of this unit is commonly transparent indicating fine sandy sediment, but in places it can be also be diffractive and highly reflective indicating the possible presence of coarse sediment at the sea bed.

The sand waves can be asymmetric or symmetric and some may have double crests (Figure 4.18 & 4.19). Some sand waves have strong internal foreset

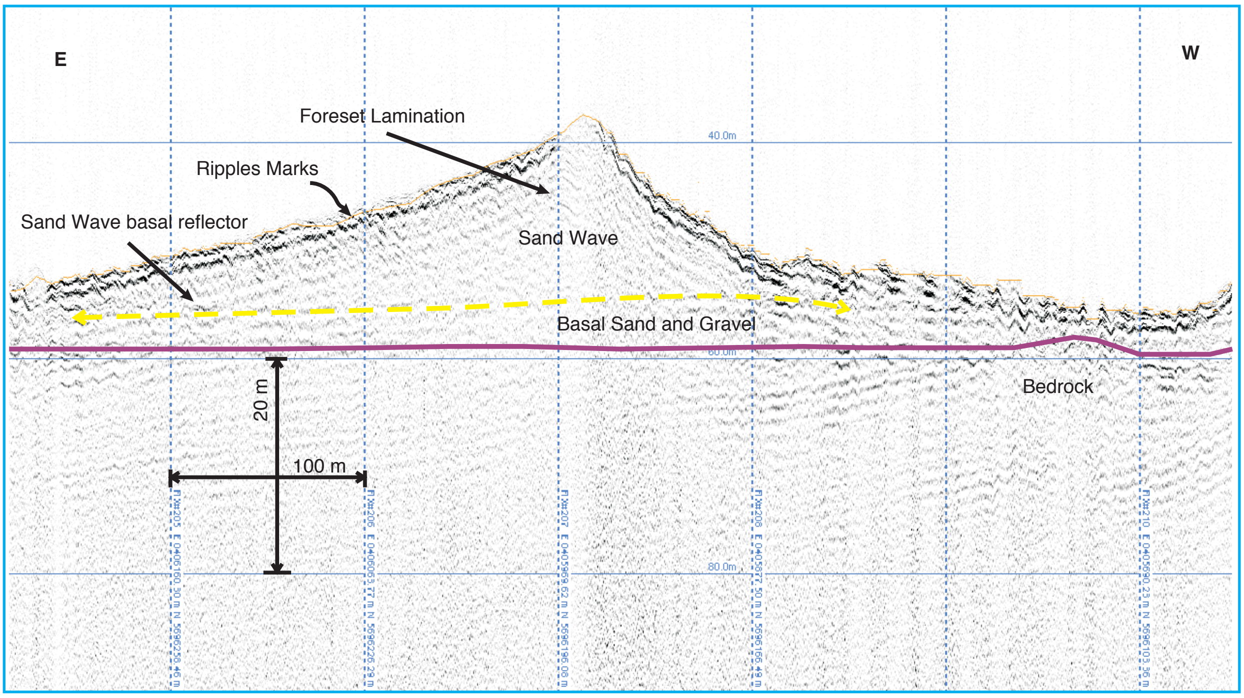


Fig. 4.17: Boomer Line 3, Corridor 5: characteristic signature of the Sand Waves Unit and its morphologies

reflectors indicating the direction of progradation and growth of the sand waves. Megaripples can be seen on the stoss slope of some sand waves (Figure 4.17).

The lack of a strong reflector at the base of many sand waves which overlie the Basal Sand and Gravel indicates that there was probably no hiatus between the deposition of the more widespread underlying sand and the fashioning of the overlying sand waves by tidal currents. The latter is likely to have begun once full tidal circulation was established in the Bristol Channel. At the latest this would have been at least 5000 years ago. The tidal regime is an ebb dominant system with net sand transport to the west and this appears to have been in place throughout the development of these sand waves. Some sediment will have been swept into the area from the east. Currently much of the sea bed to the east is a sediment starved platform and is unlikely to be contributing much, if any sediment to the sand wave fields. Whether this

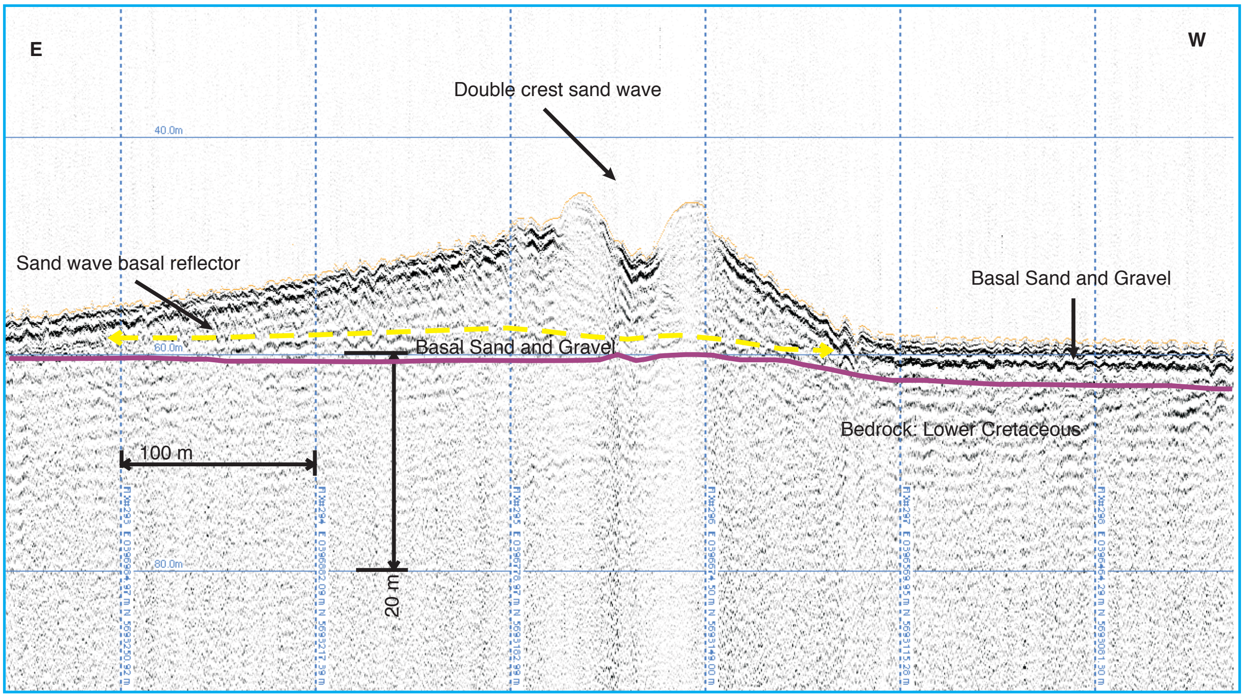


Fig. 4.18: Boomer Line 3, Corridor 5: Double crest sand wave and its internal structure

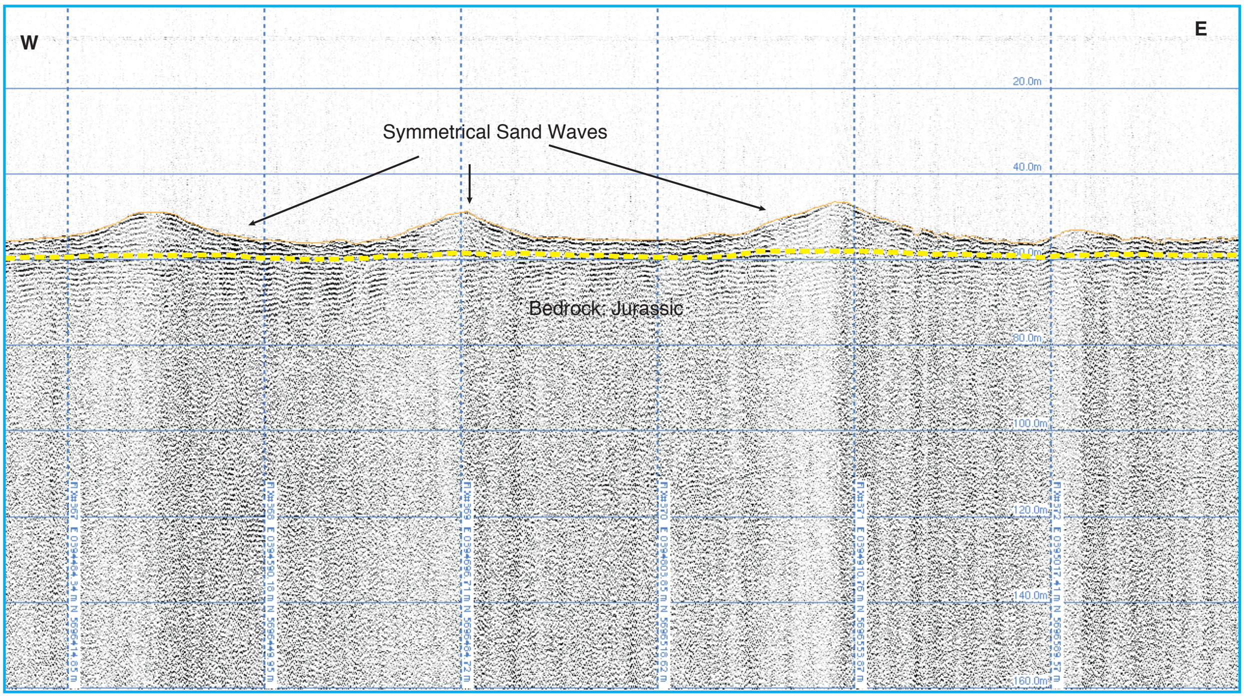


Fig. 4.19: Boomer Line 1, Corridor 6: Symmetrical sand waves over bedrock

has been the situation for a significant period during the last 5000 years is not known.

4.2 Sea Bed Character and Bedforms

The sea bed of the Outer Bristol Channel is a diverse mix of sediment and rock whose distribution and outcrop is the result of physical processes both ancient and recent in geological time. However, the sea bed has been subjected to marine processes over at least the last 5000 years including currents, driven primarily by tides but also by waves. These marine processes have fashioned mobile, mainly sandy, sediments into distinctive bedforms over large parts of the study area. The Sea Bed Character and Bedforms map (Figure 4.1, Map 1) is designed to indicate the dynamic, current driven nature of the sea bed through superimposing the distribution of the principal bedforms and features of sea bed morphology on to a characteristic substrate of sediment and rock.

The map is primarily based on interpretation of the geophysical data comprising multibeam, sidescan sonar and boomer acquired in the eleven survey corridors, and the video and camera surveys undertaken for the study. However the interpretation has been supplemented by a number of other datasets, including:

• UKHO single beam echo sounder data from a survey run in the Outer Bristol Channel in 1977 (Figure 4.20). The survey sheet soundings from this survey were digitised and supplied under licence in XYZ format. Using Fledermaus visualisation software, the soundings were gridded at 5 m bin sizes and converted to provide a 3D surface of the sea bed. These data were imported into ArcGIS and overlain for comparison with the OBCMHS multibeam survey corridor data

• Data from a multibeam trial conducted by the Maritime & Coastguard Agency (MCA) in 2002 over an area of 50 km^2 between Lundy and Morte Point (Figure 4.20)

• The Folk classified sea bed sediment interpretation based on 1591 samples (Figure 4.21) was simplified to a three fold classification of sand, coarse sediment including gravelly sand to gravel, and rock, and used to inform the delineation of sea bed character. As the sea bed sediment and sea bed character and bedforms interpretations are based on different methods and data they are not wholly compatible in all parts of the study area

• Archive BGS geophysical and sediment data, and interpretations.

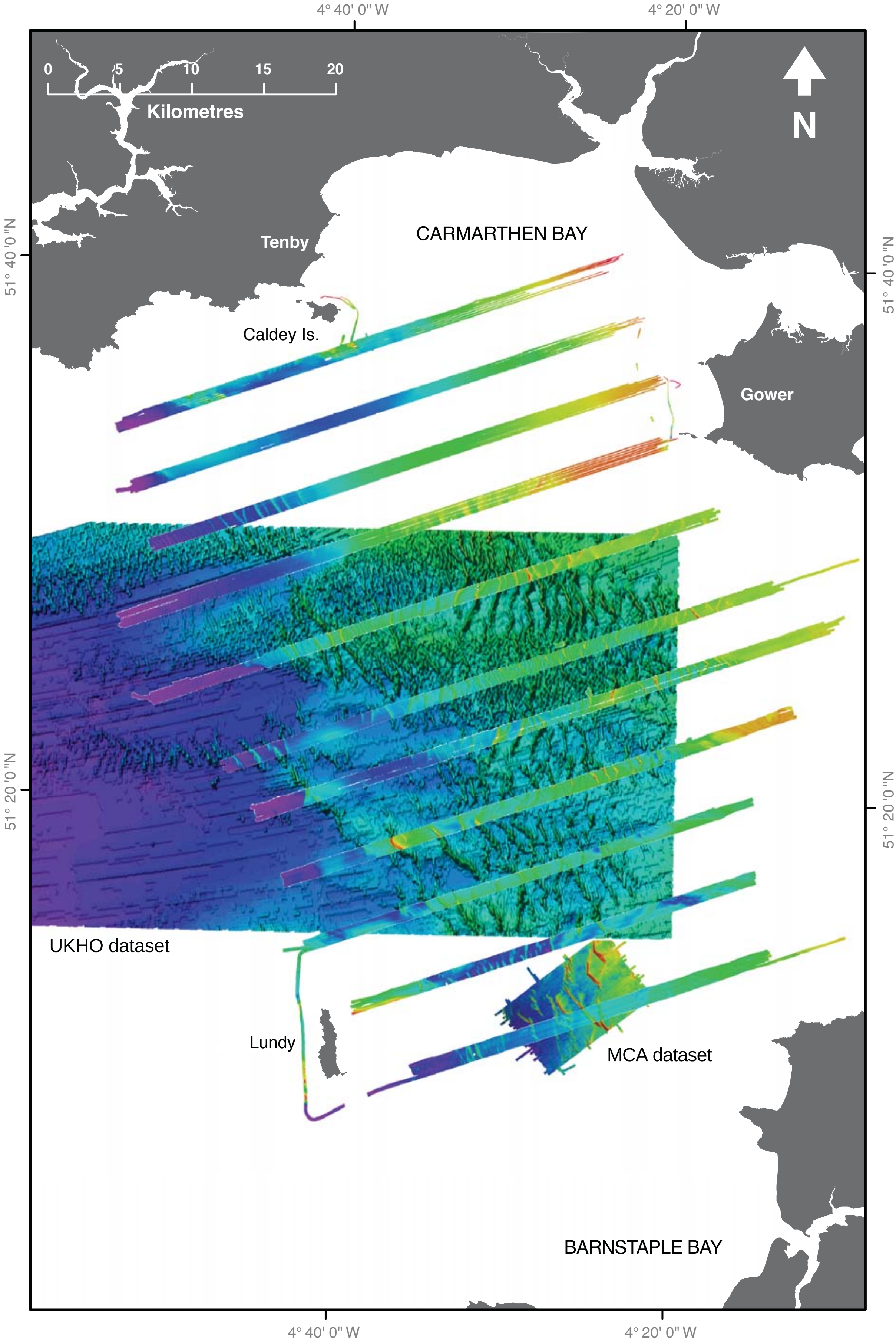


Fig. 4.20: Sea bed morphology processed from multibeam and single beam data. (Source: 1. OBCMHS corridor multibeam. 2. Maritime & Coastguard Agency (MCA) multibeam trial. 3. UKHO single beam data derived in part from material obtained from the UKHO with the permission of the Controller of Her Majesty's Stationery Office and UKHO. © British Crown & SeaZone Solutions Ltd. 2004. All rights reserved. Data Licence No. 112005.006.

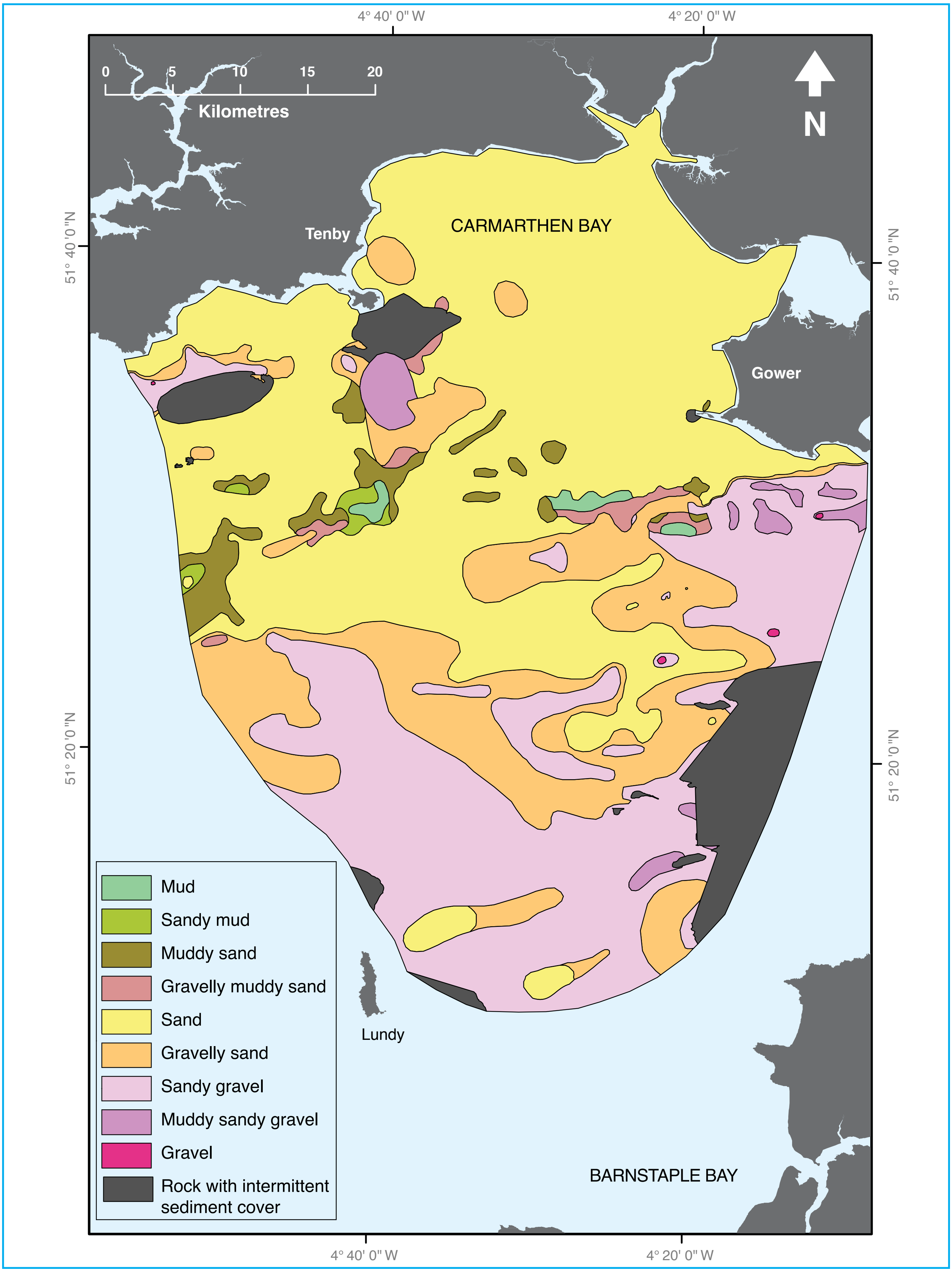


Fig. 4.21: Distribution of sea bed sediments (based on the samples in Fig. 3.8)

These data were particularly useful in allowing correlation and extrapolation of the interpretation between the survey corridors.

As well as being based on sea bed sample data the sea bed character areas are also delineated by their characteristic pattern of acoustic reflectivity, backscatter and morphology. For example, coarse sediment areas generally have a higher reflectivity and backscatter on sidescan records than areas of sand. To complete the map, the bedform interpretation is superimposed on to the sea bed character background as a series of symbols which illustrate their form and position and other characteristics of sea bed morphology. The majority of bedforms in the area are flow transverse in their orientation, i.e. they generally lie across the path of the principal currents. Some are linear, flow parallel. Some may contain elements of both types. For example, sediment ribbons are linear narrow bedforms aligned parallel to current flows that may be superimposed with sand or gravel ripples, which are flow transverse bedforms.

The principal bedforms noted in the study area are:

Transverse bedforms
- Sand waves >10 m high
- Sand waves < 10 m high
- Bifurcating, high frequency sand waves
- Megaripple fields

Linear parallel bedforms
- Coarse sediment patches and ribbons
- Sand patches, ribbons and streaks
- Shallow channels infilled with shell and some coarse sediment
- Sand banks

Carmarthen Bay and Approaches

The evidence from the study's sidescan and multibeam records indicates there are few large-scale mobile bedforms in this area. It is primarily a smooth mainly sandy sea bed. There are extensive rock outcrops to the south of Caldey Island and also further west on Corridor 11. Between these two rock outcrops is one of the rare occurrences of relatively large sand waves in the area with southern tails of nine west facing sand waves exposed on the sea bed. They range in height from 2 to at least 7 m with wavelengths of 150 to 350 m.

There are a few isolated sand waves along the boundary with the Outer Bristol Channel Sands, but the only other sand waves lie at the western margin of the Carmarthen Bay and Approaches at around 51° 31.5'N, 4° 51'W on Corridor 10 (Figure 4.22). These sand waves are exceptional because they are the only significant occurrence of east facing sand waves found during the geophysical surveys conducted for the *Outer Bristol Channel Marine Habitat Study*. They are in a unique position, lying on a west facing slope about 13 m high and over 1000 m long, which appears to mark the western limit of the thick Pleistocene and Holocene sediments beneath Carmarthen Bay. Rock is exposed on the sea bed near the base of this slope at a depth of 45 m. East flowing flood currents are dominant on this slope and in cross-section (Figure 4.22) the sand waves have a climbing profile up the slope. There are a couple of small sand waves about a metre high just to the east of the slope crest, and the crest is elevated about 3 to 4 m above the sea bed to the east along a slope about 500 m long. Overall the slope appears to be a zone of convergence with the crest profile being maintained by both flood and ebb dominant currents.

In the eastern part of Carmarthen Bay the sea bed sediments generally comprise medium to coarse grained, generally well-sorted sand. However, there are exceptions to this where there appear to be low relief patches, ribbons and streaks of coarser sediment, as indicated by higher reflectivity on the sidescan sonar records. Some of these patches span the width of the corridors, indicating that they are at least 1000 m across (Figure 4.23). A camera tow was run

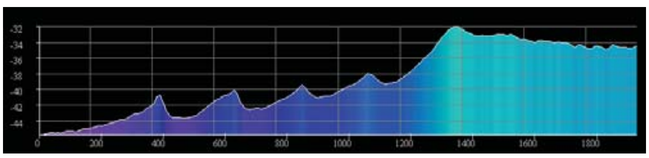


Fig. 4.22: East facing sand waves, 2 – 3 m high, on 13 m high slope at western margin of Carmarthen Bay and Approaches (51° 31.5'N, 4° 51'W – Corridor 10)

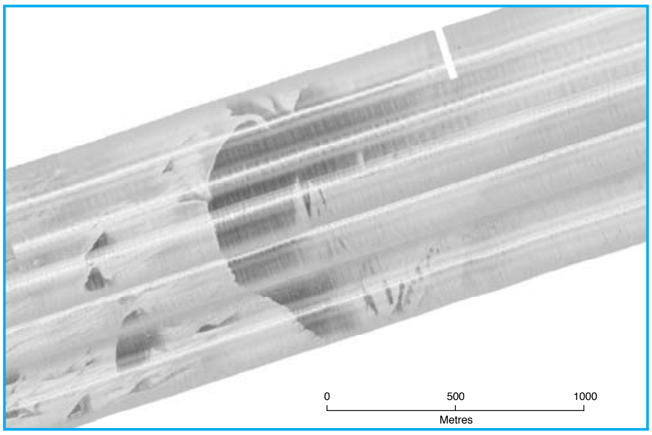


Fig. 4.23: Sidescan sonar image illustrating coarse sediment patches

across one of these patches. However, at the time of the tow there was an intense phytoplankton bloom which made it difficult to get clear views of the sea bed. Shells were observed at the location where higher reflectivity patches are noted on the sidescan data. It is likely that these shells are the cause of the high reflectivity seen on the sidescan data. The lack of obvious relief suggests that the shells may be a lag layer. The lunate shape to some of these patches and the orientation of ribbons and streaks indicates that net sediment transport is towards the northeast. In these relatively shallow water depths and exposed positions, wave processes are likely to have an impact on bedforms and sediment distribution, and these bedforms are aligned either transverse or parallel to the dominant wave direction in this area.

Further evidence of coarse shelly sediment in the eastern part of Carmarthen Bay is provided by the exposure of linear, shallow channels or grooves on corridors 9 and 10 off the mouth of the Loughor Estuary (Figure 4.24A & B, Map 1). These occasionally bifurcating and slightly sinuous channels are oriented northeast-southwest, roughly in the direction of the dominant wave direction and tidal flows in and out of the Loughor Estuary. The channels are 20 m to 50 m wide and have depths of approximately 0.05 m to 0.35 m. They range from 100 m to over 1600 m long. The channels do not extend into water depths greater than 23 m. Their shallow inshore limit was not seen on the multibeam data but is less than 10 m.

On sidescan data the sea bed surrounding the channels is characterised by low reflectivity, indicating fine grained sediments. This is confirmed by particle size analysis on grab samples which confirm the sediments as sand. However, within the channels the sidescan returns a higher reflectivity similar to the reflectivity displayed by the dark patches and ribbons in the adjacent sea bed to the west on these corridors. These are thought to be shelly. Therefore these channels are likely to be floored by shell and many have rippled surfaces, indicating the shelly sediments are mobile. Shells are known to be abrasive when mobile and they may be the agent that has eroded these channels, driven by wave and tidal currents.

In the southeast corner of Carmarthen Bay and northwest of Helwick Bank, the sea bed changes from a relatively smooth surface to an area covered by ripples, and megaripples with heights of less than 0.5 m and wavelengths of approximately 5-10 m (Figure 4.25). The megaripples show strong asymmetry; with NE-SW crest orientation. There is evidence from the sidescan records (Figure 4.26) of megaripple asym-

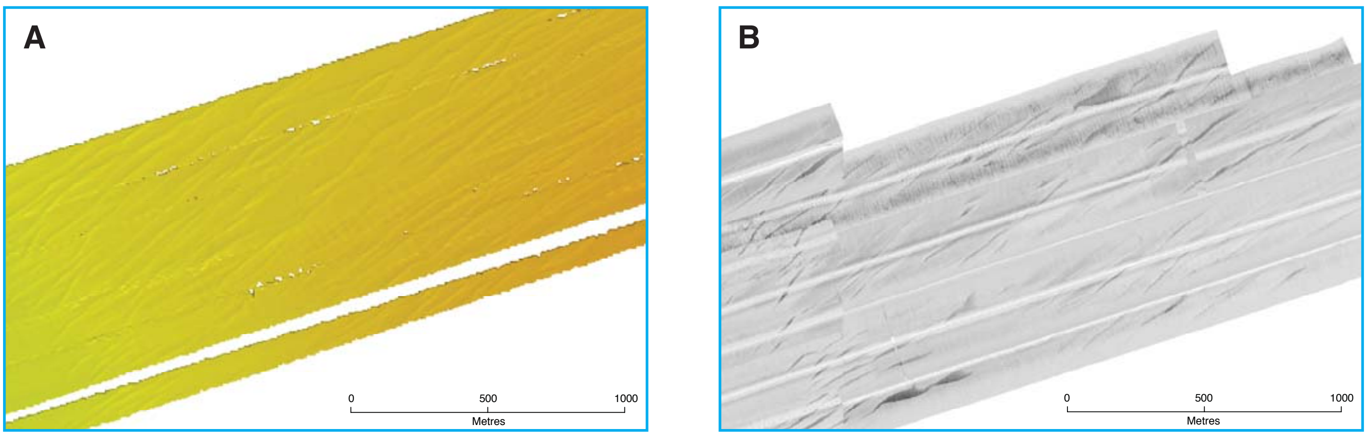


Fig. 4.24: Multibeam (A) and sidescan sonar (B) data illustrating shallow channels on corridor 9 (51°34′N, 4° 23′W)

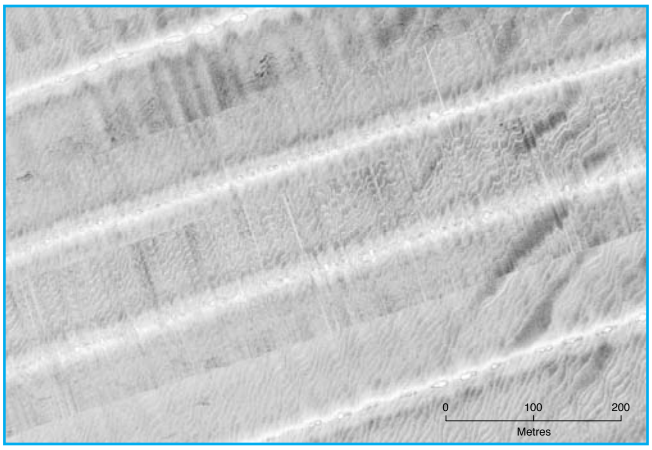


Fig. 4.25: Megaripple field southwest of Worms Head with dark elongate transverse patches

metry reversal associated with ebb and flood tidal currents, with the lee slopes facing northwest during ebb tides and southeast during flood tides. The asymmetry reversal suggests the ebb and flood currents are equally strong with no dominant tidal residual or net sand transport direction.

Within the field of megaripples there are elongate transverse patches of dark higher reflectivity on the sidescan records (Figure 4.25). They are aligned parallel to the megaripple crests and can be up to 300 m long and 60 m wide. They appear to form small depressions, generally < 1.0 m deep. Some of these patches have a fine rippled surface whose crests are aligned at right angles to the surrounding megaripple crest lines, suggesting that sediment within these elongate patches is moving along their axis rather than across them. This direction is contradictory to the sediment movement on the adjacent sandy ripples and megaripples.

The dark reflectivity of these elongate transverse patches is very similar to the channels seen off the Loughor Estuary (Figure 4.24) and these are believed to be covered with shell material. This may indicate that these patches are also covered by shell material. The dissimilarity of shell from sand in terms of its density, shape and hydraulic properties might account for the difference in crest orientation between the two bedforms.

The megaripple field stretches from about 3 km west of Worms Head and extends southeast towards Helwick Bank. Davies (2005) describes a study on sediment exchange between Helwick Bank and the surrounding sea bed. This included a sidescan survey which covered the sea bed between Helwick Bank and Worms Head and westwards for 7 km. It includes some of the megaripple field described above. It indicates that the megaripple field and the elongate transverse patches extend to the southeast into the Helwick Channel towards Helwick Bank and merge with a number of individual sand waves, 4 – 7.5 m high with crests up to 1300 m long and aligned just east of north. These sand waves are asymmetric and east facing and run into the north flank of Helwick Bank.

Outer Bristol Channel Sands (OBel Sands)

Sand waves are the dominant bedform in the Outer Bristol Channel Sands.

Sand waves > 10 m in height are found principally in the North Outer Bristol Channel Sands (NOBel Sands), although waves of similar sizes are occasionally found in the eastern part of the Southern Outer Bristol Channel Sands (SOBel Sands). The crests of the sand waves in the western and central part of NOBel Sands lie in water depths between 25 m and 40 m, whereas those further to the west have crests in water depths of 40 m to 60 m. The distance between the individual waves varies on average from 1000 m to 1500 m, though the lower and upper ranges observed are 600 m to 3000 m. The sand waves are laterally exten-

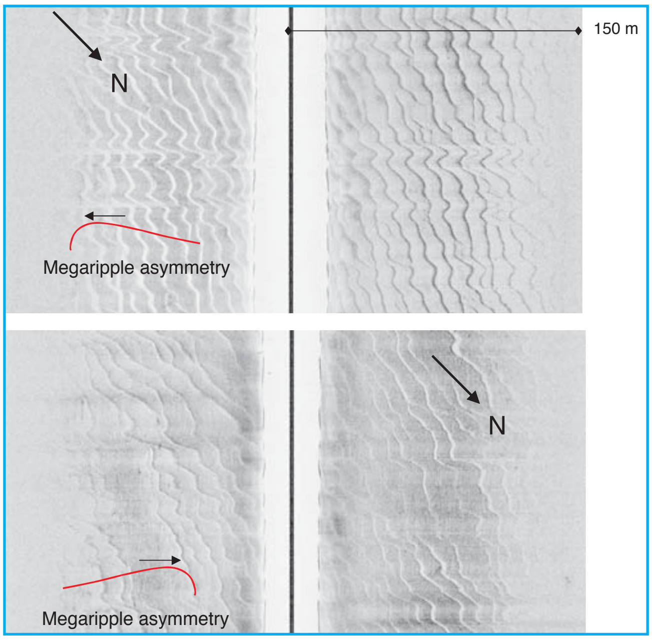


Fig. 4.26: Megaripple asymmetry on adjacent sidescan sonar lines

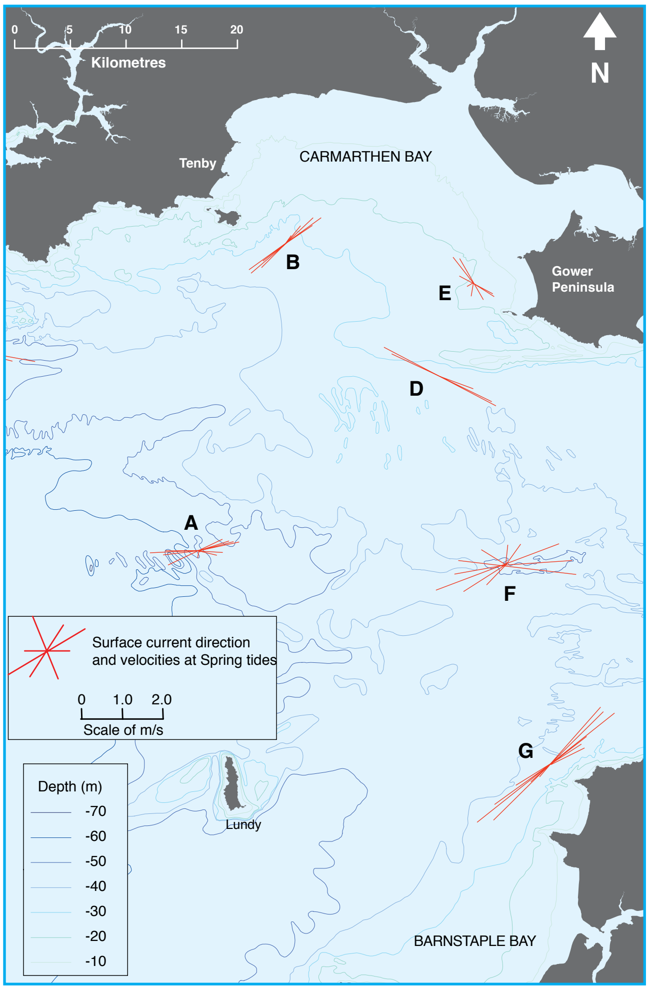


Fig. 4.27: Surface current direction and velocities at Spring Tides (Source: Admiralty Chart 1179, 2001. UKHO Licence No. 1083)

sive and continuous, with crest lengths ranging from 1 km to 7 km long. Although the sand waves themselves comprise medium to coarse grained sand, the sea bed surrounding these features tends to be slightly coarser consisting of gravelly sand or sandy gravel. Between the sand waves, the overall topography of the sea bed tends to be relatively flat.

The maximum wave height observed in the NOBel Sands is 19 m, though more commonly heights are of 12-14 m. The sand waves crests are oriented with a regular sinuosity aligned on two principal trends NNW (330°/340°) to SSE (150°/160°) and NNE (10°/20°) to SSW (190°/200°). The former is the dominant trend. Both these trends may be a product of the slight variation seen in the direction of the principal ebb and flood currents. The two surface current tidal stream roses in the centre of the Channel, and west and east of the Outer Bristol Channel Sands, are not wholly rectilinear (Figure 4.27). The eastern rose is more elliptical but with a dominant vector for the flood current around 65° to 95° at a speed of 1.2 ms^{-1} and the ebb current around 250° at 1.4 ms^{-1}. The western rose indicates a decrease in current speed westward across the OBel Sands although the rose is more linear with peak flood direction around 72° to 76° at 0.8 ms^{-1} and the ebb current around 262° to 267° at 0.9 ms^{-1}. The two principal sand wave crest trends are transverse or nearly transverse to the principal vectors of these ebb and flood currents suggesting there is a relationship between these parameters.

The sand waves display a strong asymmetry, with lee slopes facing west to southwest. The angle of the lee slopes generally range between 5° and 10°, although upper crest sections of the lee slopes on some waves may be much steeper, with angles of up to 24°. The stoss slopes are much gentler, and have angles generally less than 3°. Asymmetries of active bedforms are indicative of migration in the direction of the steeper slope, i.e. the lee slopes. However, active bedforms usually have lee slopes closer to the angle of repose of sand, which is typically 20-30° (HR Wallingford 2002). This suggests that the larger waves could be immobile as the lee slope angles are, in general, less than 10°, however the upper parts of the lee slopes are steep enough to allow sediment to avalanche down the slope.

Figure 4.28A and B, illustrates a large west facing sand wave up to 18 m high. The crest is at a minimum depth of 30 m with the trough at the base of the lee slope at a depth of 48 m. The sidescan mosaic has been draped over the multibeam sea bed surface to produce a 3D image of the sand wave. The stoss slope is covered by sand ripples which are tens of centimetres high and some megaripples around 0.5 m high. These are being driven westward up the stoss slope by ebb currents and cut across the large NNE-SSW trending sand wave crest at a slight angle to the southwest (Figure 4.28B).

Megaripples up to 0.5 m high are also well-developed on the steep lee slope. However, these are aligned across the slope and face northeast indicating that sediment on the lee slope is mobile and being transported to the northeast along the lee slope driven by

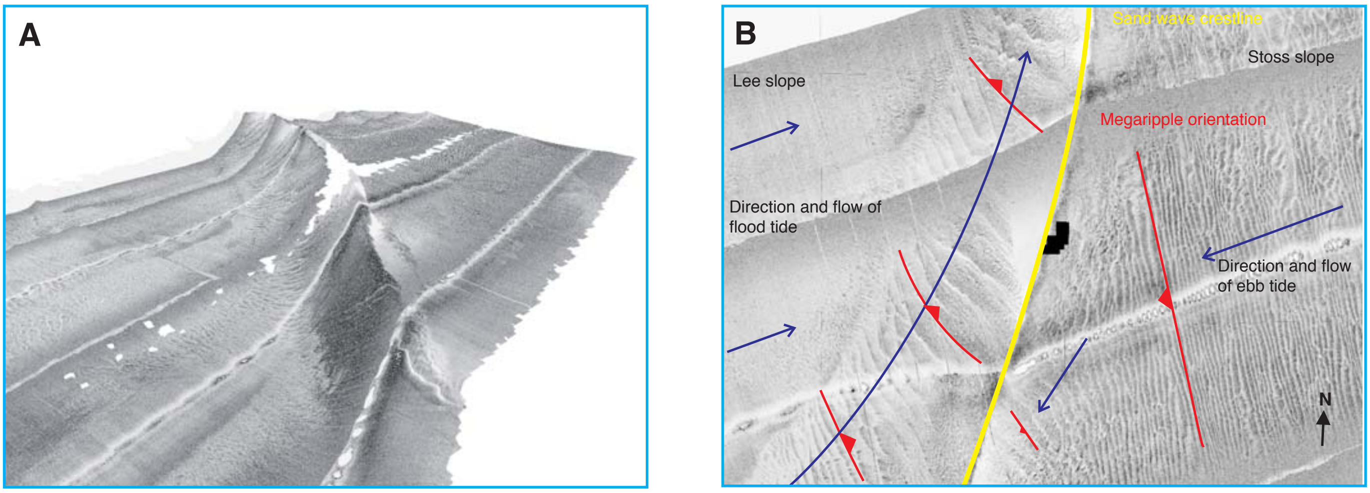


Fig. 4.28: Sidescan data overlain on multibeam data illustrating changing megaripple orientation on a sand wave. A: 3d image of an 18 m high sand wave; B: Plan view of the sand wave in figure A.

eastward flowing flood tidal currents. The form of the large sand wave appears to be maintained by the interaction of both ebb and flood currents which have produced a pseudo-clockwise motion of sediment movement around the sand wave crest. This is not the classic scenario of sand waves being built up by sediment moving up a stoss slope and then simply avalanching down a lee slope and moving in the direction of the dominant current.

Although sand ripples and megaripples indicate that sediment within the top 0.5 to 1.0 m surface of the sand wave is mobile, their opposing alignments suggest that the overall structure and position of the large sand wave is being maintained by the interaction of ebb and flood currents, and these large sand waves are not moving westward but are in a state of *in situ* equilibrium.

To test whether these large sand waves are mobile or immobile requires a comparison to be made of sand wave position and orientation over as long a time period as possible. The most common method is to compare bathymetric surveys and data. The study contracted UKHO to digitise soundings from survey sheets produced from a single beam echo sounder survey run across the area of the OBel Sands in 1977 (Figure 4.20). These soundings are at 50 m spacing but the crest lines of the large sand waves have been preferentially targeted with soundings (C. Howlett, UKHO pers. comm.) so each large wave is within the dataset. The XYZ 1977 data was processed using Fledermaus visualisation software to produce a sea bed morphology (Figure 4.20) which indicates the extent, position and orientation of the large sand waves. This data was loaded into ArcGIS in their georectified positions for comparison with the multibeam corridor data collected by the OBMHS in 2003 and 2004. Although the latter is a higher resolution dataset, valid comparisons can be made and examples of the two datasets overlain on each other are shown in Figure 4.29A & B.

The indications of this comparison are that over the 26 years between 1977 and 2003 :

• The number of large sand waves in the area has not increased or decreased

• The position and orientation of the large sand waves appears to have remained stable with no significant movement of the crest lines

• There appears to be no growth in sand wave development at the western end of the sand wave field. This might be expected if sediment was being transported across the OBel Sands by the ebb dominant currents from east to west

• Unfortunately the 1977 survey does not cover the eastern margin of the OBel Sands, therefore we cannot see whether there is a loss of sediment at this eastern margin. This might be the case if there is no sand being supplied from further east where the Bristol

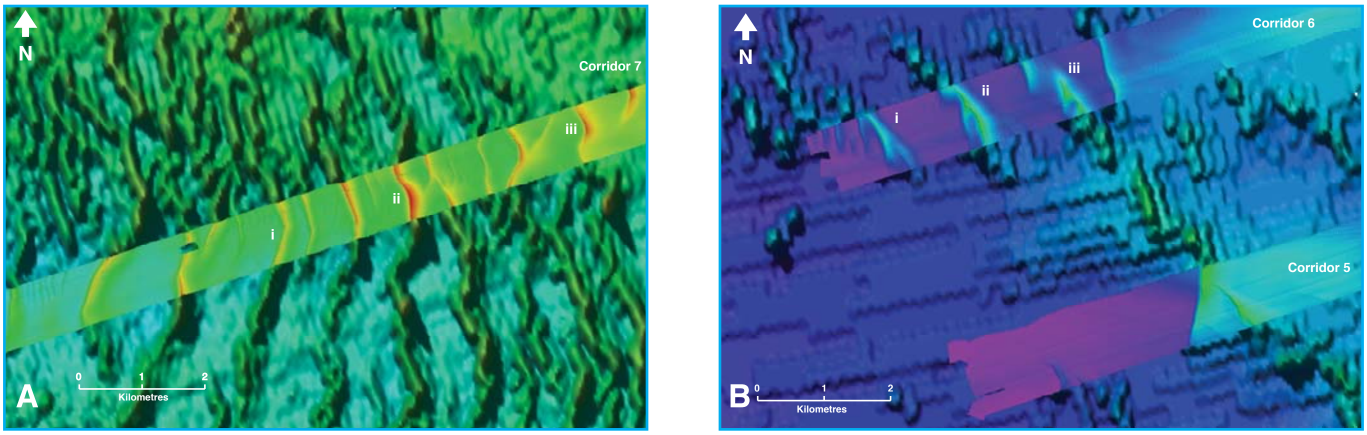


Fig. 4.29: UKHO bathymetric data from 1977 survey overlain with OBCMHS 2003 multibeam data.
A: OBCMHS data from corridor 7 overlain on UKHO 1977 data
B: OBCMHS data from corridors 5 and 6 overlain on UKHO 1977 data

Channel is covered by a sediment starved sea bed of rock and lag gravel.

• Sand wave heights show only minor variations. At the locations marked i, ii and iii on Figure 4.29A the heights were recorded as 14 m, 16 m and 12 m respectively for 2003, compared to 16 m, 17 m and 12 m for 1977. Similarly, on Figure 4.29B the heights at i, ii and iii were recorded as 12 m, 17 m and 14 m respectively for 2003, and 12 m, 16 m and 15 m for 1977.

In both the NOBel and SOBel Sands the large sand waves generally have sinuous single crest lines but some branching and truncation does occur (Figure 4.30 & 4.31). For example, there are branching waves at the western end of corridor 6. In the NOBel Sands the sand waves are more extensive and numerous whereas in the SOBel Sands their frequency decreases and they are commonly isolated individual sand waves on a coarser substrate.

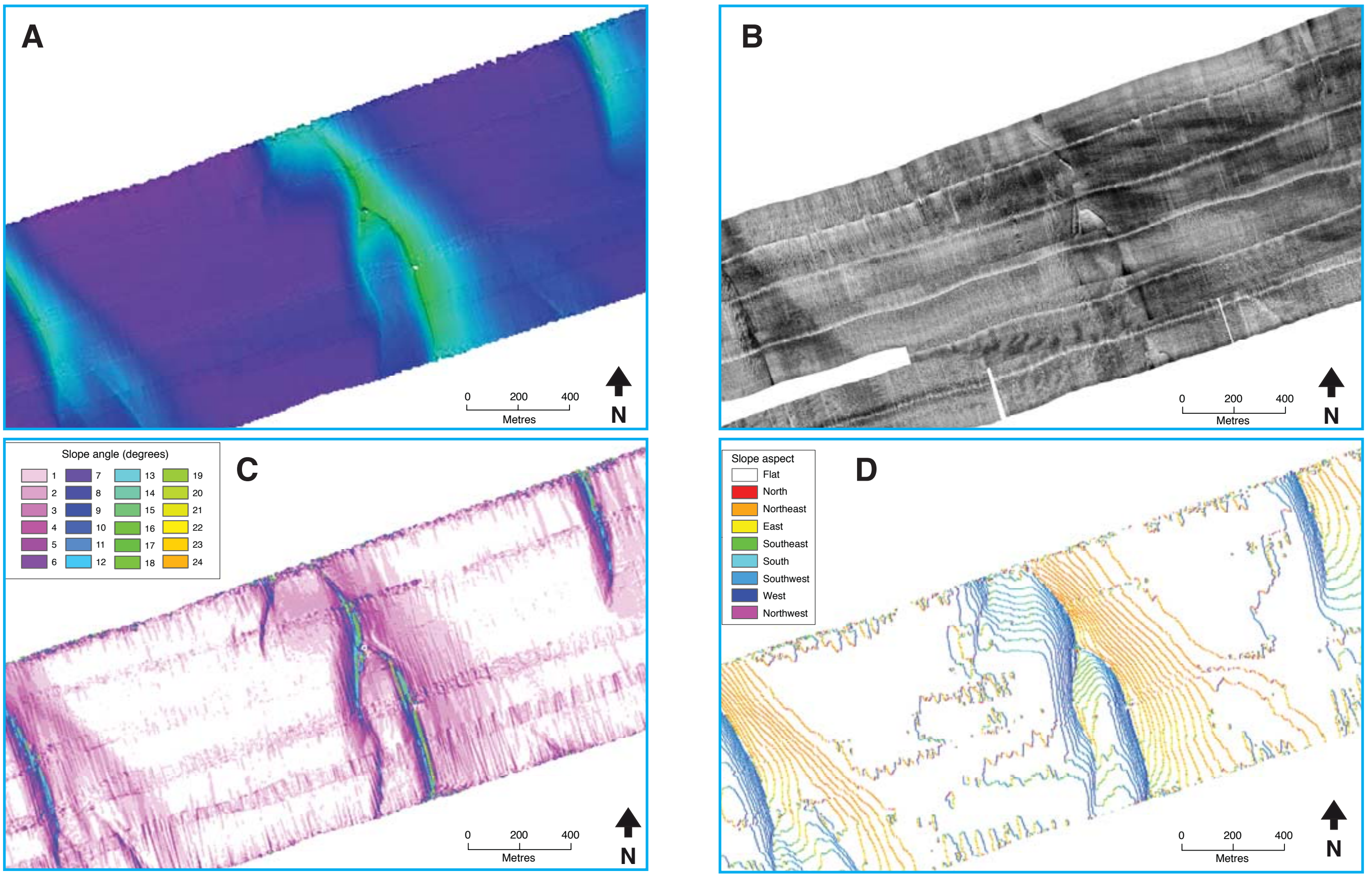


Fig. 4.30: Branching sand waves greater than 10 m high
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

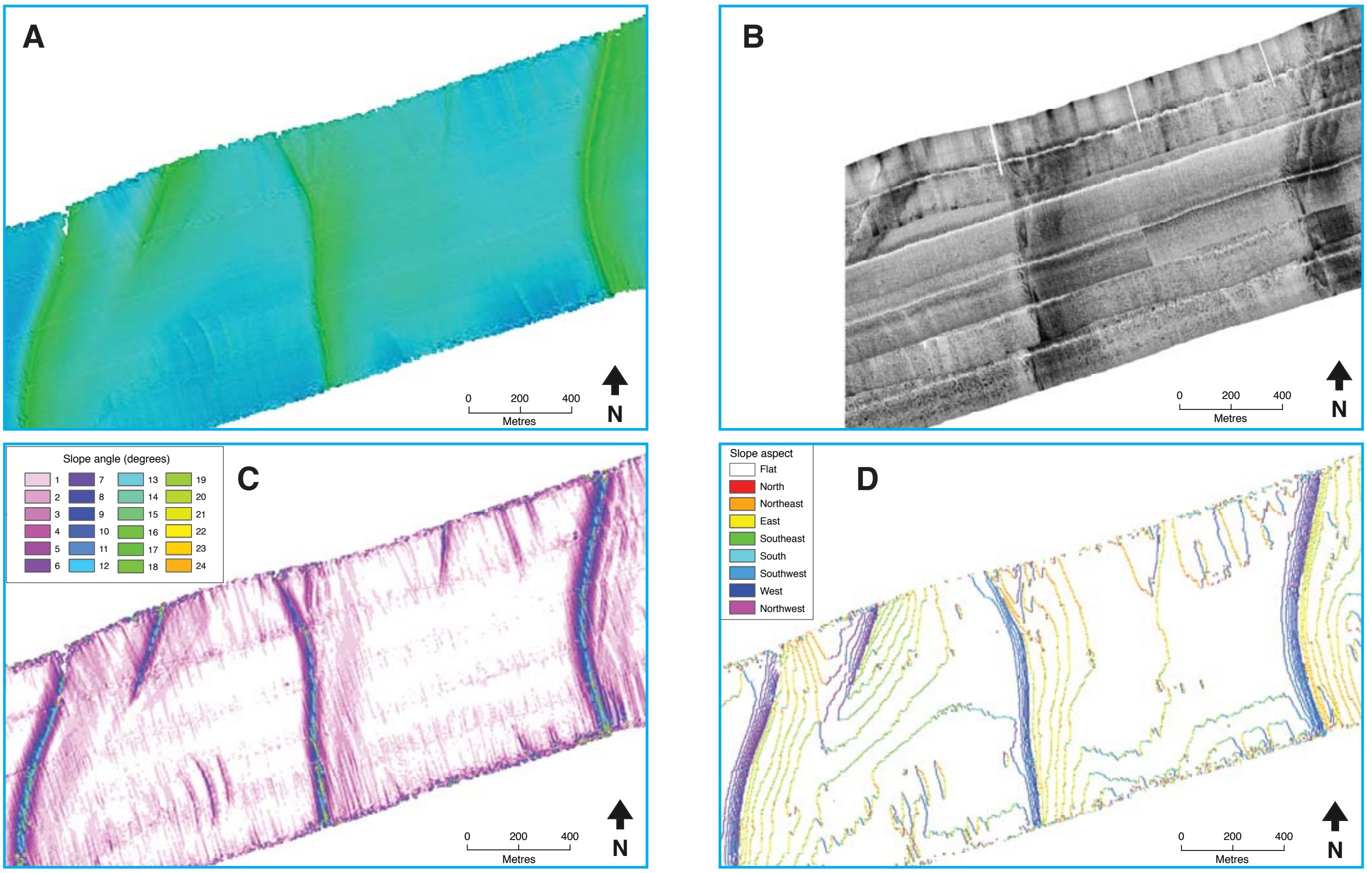


Fig. 4.31: Sinuous sand waves greater than 10 m high
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

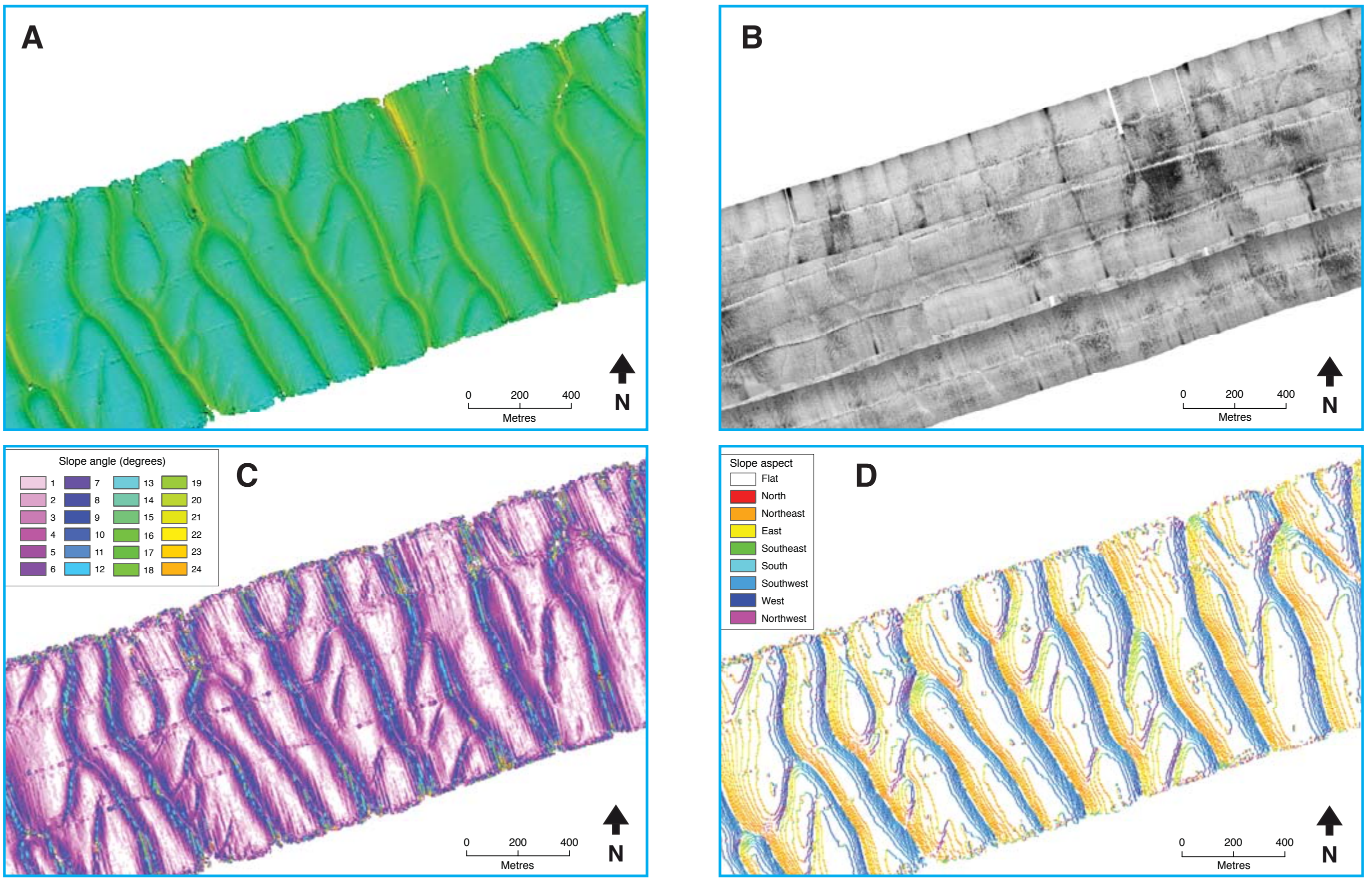


Fig. 4.32: Bifurcating, high frequency sand waves within the NOBel Sands
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

The NOBel Sands include not only an extensive area of large sand waves in its east and northeast quadrants but also an area of bifurcating high frequency sand waves along its south and southwest margin. These cover an area of approximately 160 km^2 (Figure 4.32). Sand wave heights tend to vary between 4 and 10 m, although occasional heights of up to 16 m are observed. The bifurcating nature of these waves results in a variable orientation of the crest lines. The orientation of the primary waves within this group varies from approximately northwest-southeast to north-south with the lee slopes facing towards the west to southwest, and with slope angles of between 5° and 15°. The wavelength between the crests of the primary waves varies between approximately 100 m to 500 m, and they exhibit both symmetry and asymmetry. Where asymmetrical, the stoss slopes display angles of 5° to 10°. Truncating from the primary waves are smaller, secondary waves which have an orientation varying between NW-SE to NNE-SSW. The secondary waves are smaller in height, ranging from 1 m to 4 m, and tend to be more symmetrical in nature.

The sidescan data indicate that megaripples occur on both the flanks of the sand waves, and within the troughs between the waves. The megaripples are often oriented obliquely to parts of the sand wave crests, caused by the oscillation between the ebb and flood tides and the local flow conditions encountered over the wave; this is described further in the section below. The megaripples between the waves tend to be oriented normal to the peak tidal current flows.

Sand wave size and frequency also decreases to the northwest of the central patch of bifurcating sand waves, with average wave heights of 2 m – 5 m and wavelengths of 250 m – 1000 m.

In the SOBel Sands the commonly isolated sand waves are generally less than 10 m high with wavelengths ranging from 150 m to 1800 m. The majority of sand waves crests lie in water depths of 40 m, with a relatively flat sea bed between the waves at around 45 m (Figure 4.33 & 4.34).

The sand waves are oriented approximately normal to the peak tidal currents (ranging from NNW-SSE to north-south) and have a strong asymmetry, with the lee slopes facing west to southwest. The angle of the lee slope ranges between 5° and 10°, although smaller sections of the lee slopes on some waves have steeper slopes, with angles of up to 18°. The stoss slopes are much gentler with angles of less than 3°.

As seen on the sand waves >10 m, the sidescan data indicate that megaripples occur on both the stoss and lee slopes of the < 10 m sand waves. These megaripples are often oriented obliquely to parts of the sand wave crests, suggesting that the orientation of the megaripples is determined by the local flow conditions over the larger waves and not solely by the residual tidal currents.

A number of sand waves have developed double crests that have an elliptical plan along sand wave crests. They are most common on individual waves in the SOBel Sands. They can be found in various stages of development with numerous individual ellipses aligned along crests. Some are not fully developed and may be an indication of restricted sediment supply (Figure 4.35).

The sea bed between the isolated sand waves in the SOBel Sands is covered by predominantly coarse sediment with thin sand which can be seen in patches or as sand ribbons and streaks. These may have rippled or megarippled surfaces. In some areas isolated outcrops of rock may appear at the sea bed.

At the southern margin of the SOBel Sands to the east of Lundy there is an area of bifurcating high frequency sand waves (Figure 4.36). Sand is the principal sediment type within this area, and in particular the sand waves dominantly comprise well-sorted medium to coarse grained sand. However, coarser sediments may accumulate in the troughs between the waves. This is illustrated on the sidescan data where the patches of higher reflectivity represent coarser sediments.

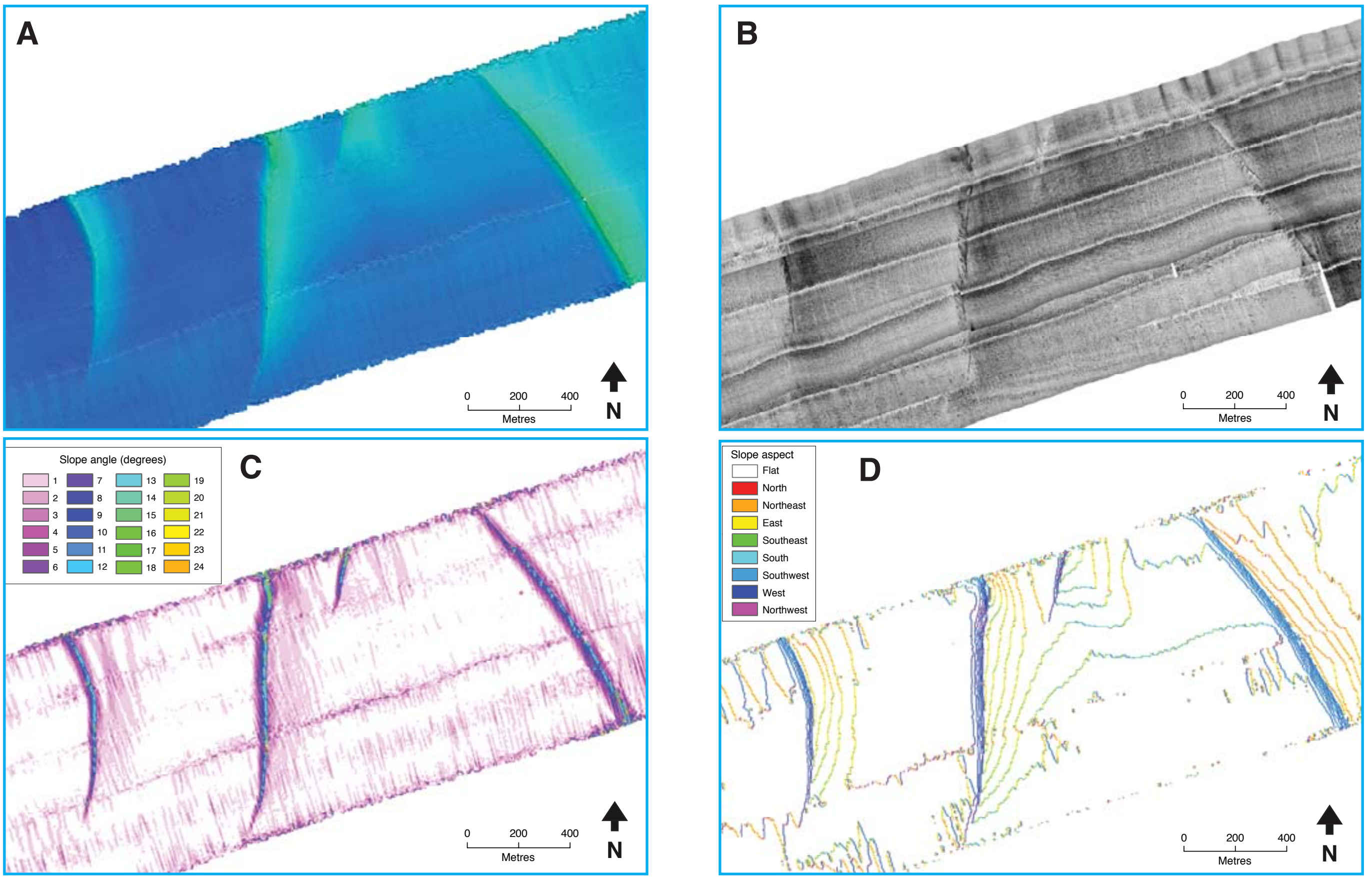


Fig. 4.33: Sinuous sand waves less than 10 m high
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

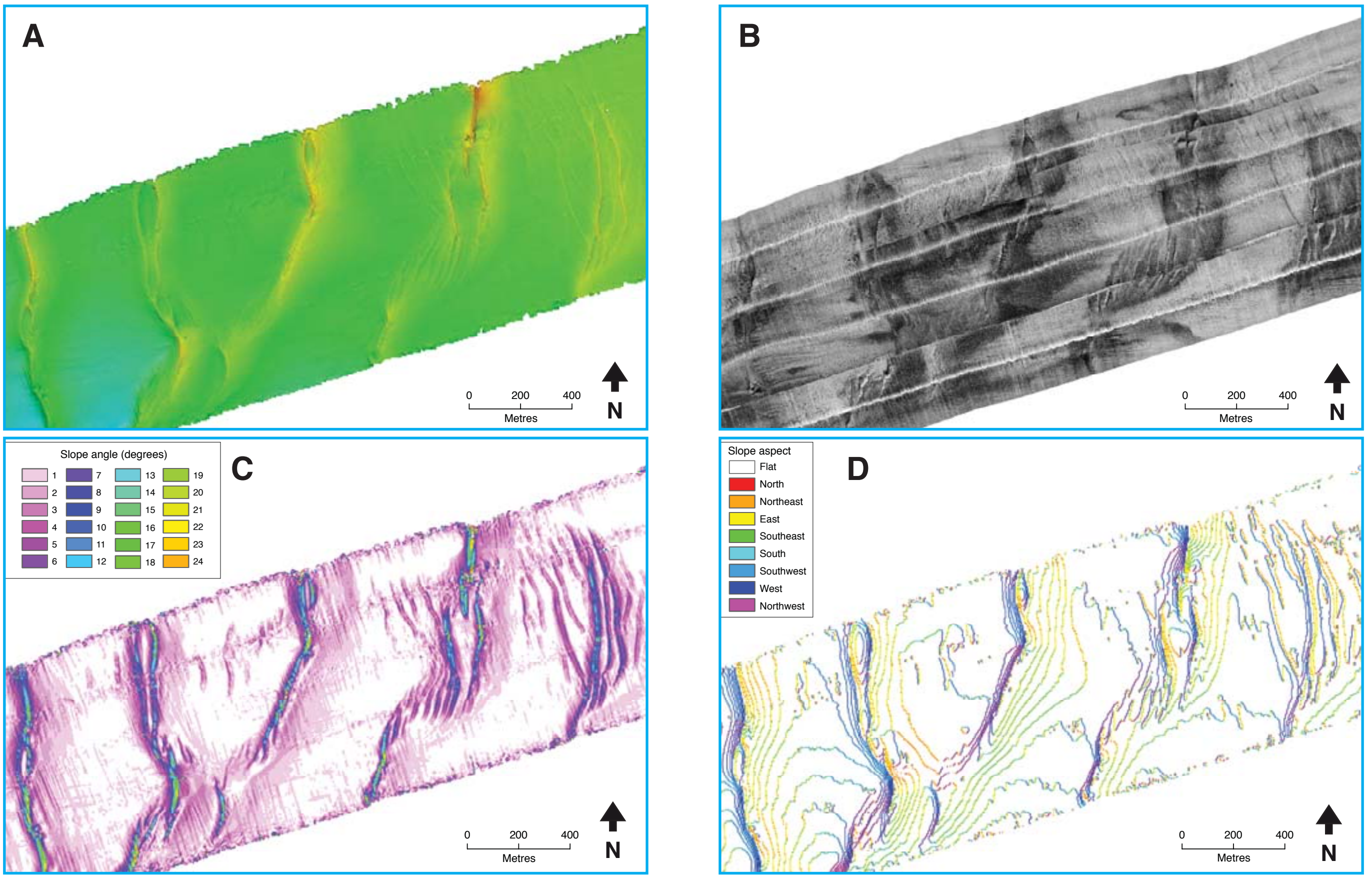


Fig. 4.34: Branching sand waves less than 10 m high
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

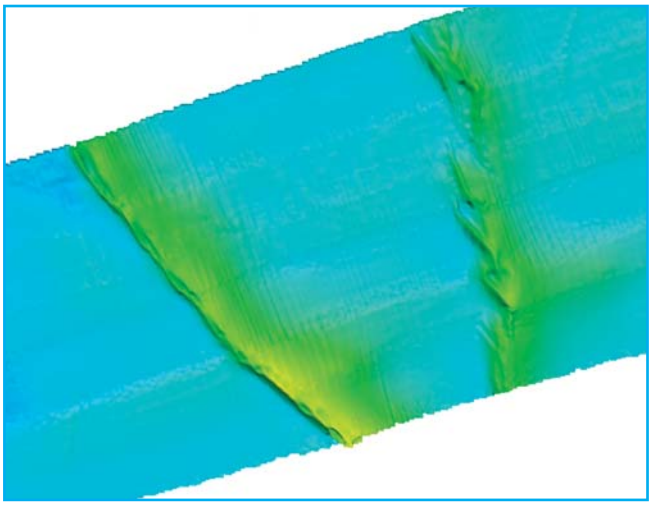


Fig. 4.35: Double crested sand waves

Lundy Platform

The Lundy Platform is characterised by a coarse sediment substrate of gravelly sand, sand gravel, and gravel with patches and streaks of thin sandy sediment. Rock is exposed on the sea bed to the east and northeast of Lundy. The form of the rock exposures are mainly individual masses. There is some structure and lineation in the outcrops, but bedding is not well-developed. Stanley Bank, which is a linear sand bank 2 - 3 km long, sits on the coarse sediment substrate and extends northeastward adjacent to the northern tip of Lundy. There is also a small isolated coarse substrate area northwest of the SOBel Sands in the deeper centre of the Channel.

Morte Platform

The Morte Platform is dominated by well-bedded rock outcrop exposed at the sea bed in water depths of 20 to less than 40 m in the centre of the Channel. The rock outcrops have formed a very frequent, dense series of small scarps and troughs up to a metre or two high; the majority are <0.5 m high (Figure 4.3). The rocks have been subject to ancient tectonic movement and the bedding exposed on the sea bed can be linear and sinuous, and disrupted by faults and folds. Sediment is commonly restricted to the troughs and can include gravel and sand. There are a few small isolated sand waves as well as occasional sand ribbons and sand patches. Horseshoe Rocks (Figure 2.3) is a dolerite intrusion > 1 km long, which forms a prominent shoal rising over 15 m above the surrounding sea bed to the north of Morte Point.

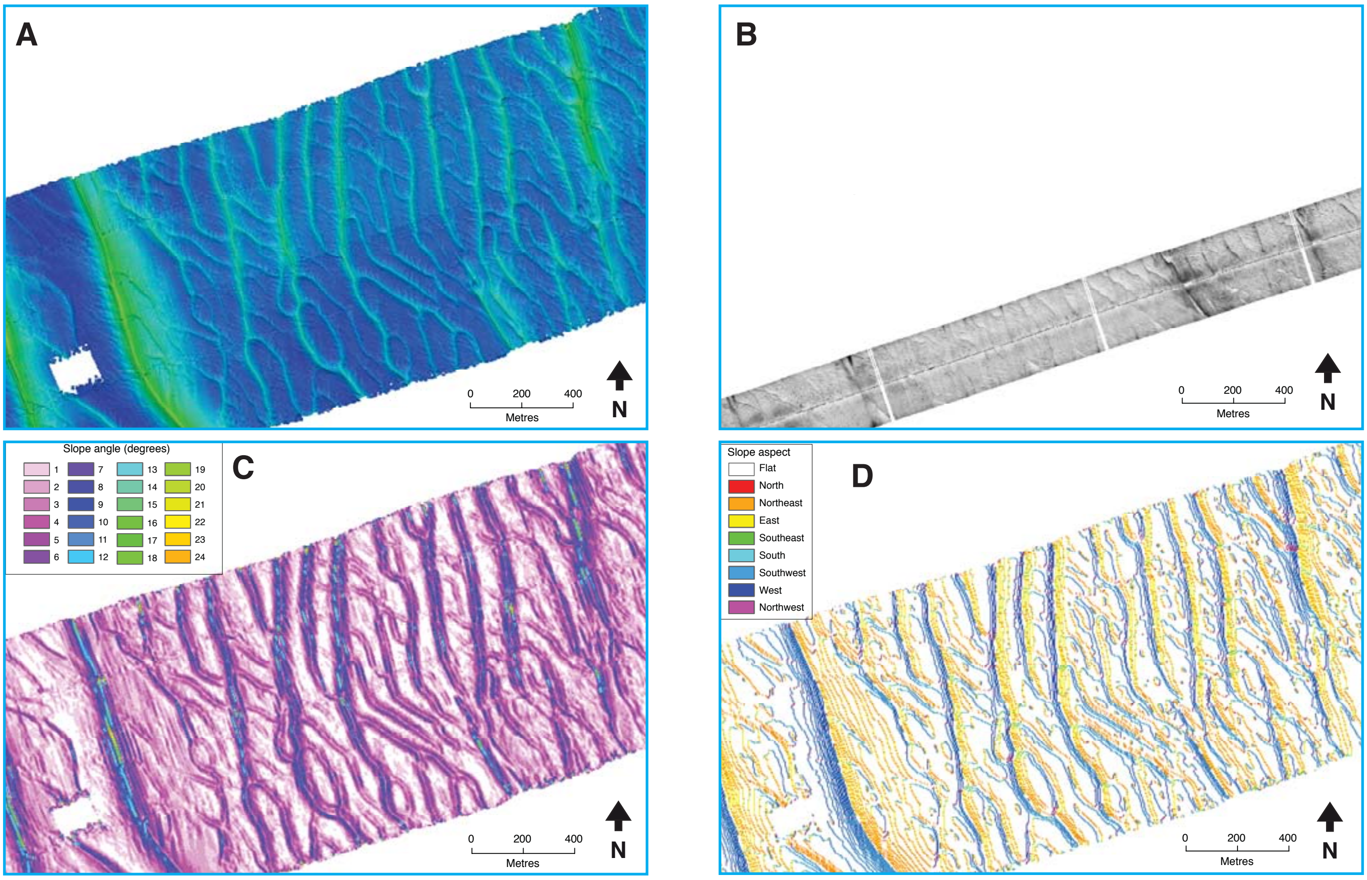


Fig. 4.36: Bifurcating, high frequency sand waves at the southern end of the SOBel sands
A: Multibeam data; B: Sidescan data; C: Slope angle (degrees); D: Slope aspect

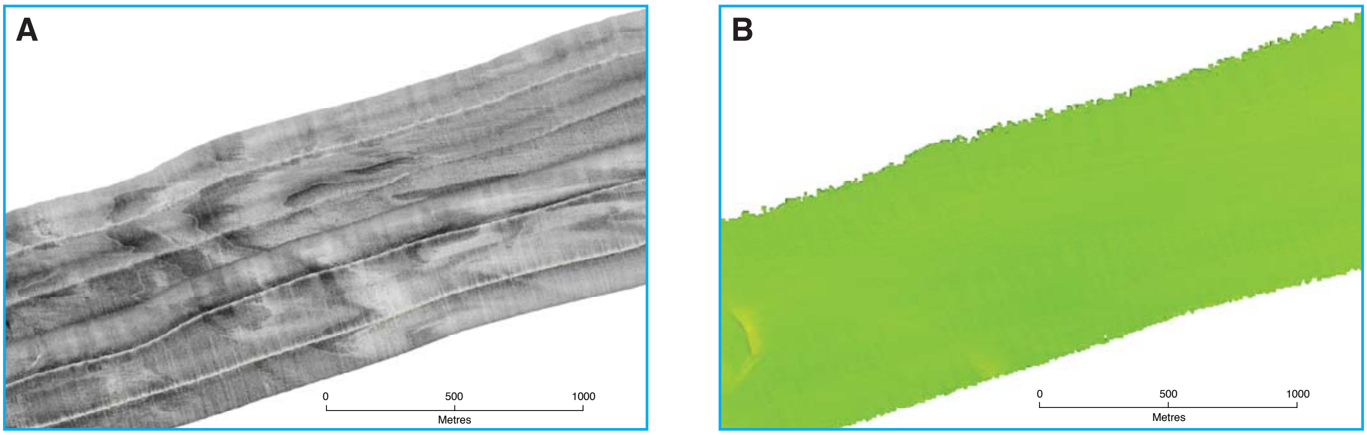


Fig. 4.37: Geophysical data from corridor 6 illustrating sand streaks and patches overlying coarser sediments. A: Sidescan image; B: Multibeam image.

Coarse sediment becomes dominant in the northern half of the Channel and also in a narrow corridor to the south of Helwick Bank, where there are a few isolated west facing lunate - barchanoid sand waves 2 to 8 m high. The coarse sediment is generally thin, <1 m, and covered in part by sand ribbons, sand patches and streaks (Figure 4.37).

4.3 Sea Bed Sediments

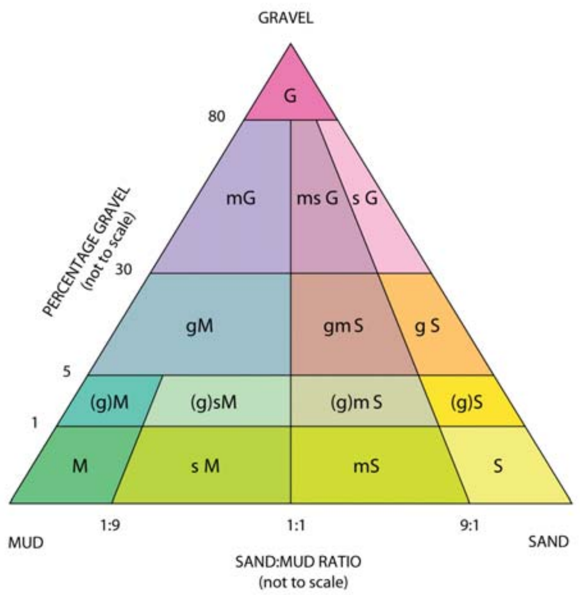
The description of sea bed sediments in this section is based on the analysis of sediment obtained by grab sampling the top 20 cm of sediment beneath the sea bed (Figure 3.9). Each sample has been classified by grain size with the Folk classification system (Folk 1954) using the relative proportions of gravel, sand and mud (Figure 4.38). The distribution of sediment sampled across the study area and based on Folk classes is shown in Figure 4.21. Apart from areas of rock outcrop, no account is taken in the Folk sediment interpretation of evidence from multibeam, sidescan, video or camera data. For example, individual sand waves on gravel which can be mapped by multibeam and sidescan may not have been grab sampled and will not be shown on Figure 4.21. Similarly, muddy floc seen at the sea bed in photographs may be disturbed during grab sampling and therefore will not have been incorporated in the grab sample for analysis (e.g.,Video Tow V7, Photos 7.07, 7.16 & 7.21).

The sea bed character and bedform interpretation (Figure 4.1) provides a broader picture of the sea bed because it incorporates sample and geophysical data to produce a more comprehensive analysis and coverage than the simple extrapolation of point source grab data seen in Figure 4.21. There are some differences and contradictions between the sediment distributions shown in Figures 4.21 and 4.1 and these are due to the different datasets and methods employed in producing the two interpretations. However, both approaches are complementary.

The large density of samples in Carmarthen Bay and Approaches (Figure 3.9) provides a greater degree of detail in this region for the Folk sea bed sediment map (Figure 4.21) and the mean grain size distribution (Figure 4.39) compared to the regions to the south. Although about 1600 samples were used to produce the Folk sediment distribution (Figure 4.21), the results on carbonate content (Figure 4.40, 4.41 & 4.50) and grain size statistics (Figure 4.42-4.47) are based solely on the 140 samples collected by the OBCMHS.

Sediment Distribution

The simple picture of sea bed sediment distribution in the study area is a northern half, including Carmarthen Bay and Approaches and the NOBel Sands, which is dominated by sand, and a southern half comprising the SOBel Sands, Lundy and Morte Platforms where gravelly sediments are common, and sand, although present, is less significant, especially on the Platforms. This distribution is also reflected in the sample station statistics. Within the 140 samples taken specifically for the study, which are relatively evenly spaced along the survey corridors and across the study area, 49% were sands, 22% gravelly sands



M .... Mud
sM .... Sandy mud
(g)M .... Slightly gravelly mud
(g)sM .... Slightly gravelly sandy mud
gM .... Gravelly mud
S .... Sand
mS .... Muddy sand
(g)S .... Slightly gravelly sand
(g)mS .... Slightly gravelly muddy sand
gmS .... Gravelly muddy sand
gS .... Gravelly sand
G .... Gravel
mG .... Muddy gravel
msG .... Muddy sandy gravel
sG .... Sandy gravel

Fig. 4.38: Classification of sea bed sediments based on Folk 1954

and 29% sandy gravels (Figure 4.43). In Carmarthen Bay and Approaches the dominance of sand is confirmed by the fact that over 95% of the dense grid of samples were sandy (Sediment Transport Analysis (STA) study in Posford Duvivier & ABP 2000).

Rock outcrops are a feature of the southwest and southeast of the study area in the Morte and Lundy Platforms. They are also present in the Carmarthen Bay and Approaches region south of Caldey Island, southeast of St Govan's Head and around Worms Head. Geophysical and video evidence shows that thin sediment does occur within rock outcrops, although sediment sampling by grab in areas of rock outcrops was often unsuccessful. The distribution of rock outcrop shown in Figure 4.21 is based primarily on geophysical interpretation.

Although Carmarthen Bay is dominantly sand it does include areas where muddy sediment and gravelly sediment have been sampled. The gravelly areas are adjacent or close to the rock outcrops south of Caldey Island and southeast of St Govan's Head. Their proximity to rock outcrop might indicate that older, possibly glacial deposits have been protected in the lee of these rocks and the gravelly sediments are the winnowed lag surface of these deposits. McLaren in Posford Duvivier & ABP (2000) postulated that the area of gravelly sediment south of Caldey Island was the site of a parting zone with sediment transport pathways radiating sediment away from this point, leaving a relatively coarse substrate.

Of the 140 OBCMHS sample stations only four contained >10% mud. Two of these, OBC61 and 62, are in or adjacent to the gravelly area south of Caldey Island and the other two, OBC96 and 97, appear to be within a muddy extension of this gravelly area in the western part of the NOBel Sands (Figure 4.21). This latter muddy area is also apparent in the STA sample stations. The STA sampling also indicates extensive muddy sediment immediately south and southwest of Helwick Bank, as well as hard ground, which the relatively light and small Shipek grab used by the STA could not penetrate and sample. The three OBCMHS samples in this area south of Helwick Bank were gravelly.

It is possible that the presence of muddy sediments is the expression of a narrow residual jet of turbid, sediment charged water, near the sea bed, coming out of the Inner Bristol Channel and/or Swansea Bay. Turbid water coming out on the ebb could settle on neap tides and become cohesive enough to produce local deposits and clasts. There is photographic evidence of mud flocs settling (Video Tow V7) at the sea bed. During the CCW Sandbanks cruise (Darbyshire *et al.* 2002) clasts of black mud were recovered in beam trawls on the south side of Helwick Bank. Alternatively they could indicate the presence of fine Late Pleistocene sediments at the sea bed, similar to sediments found further east in Swansea Bay.

Mean Grain Size and Sorting

Medium sand (1-2 phi: 0.25-0.5mm) is the dominant mean and median (d_{50}) grain size sediment and occurs in about 70% of OBCMHS samples (Figure 4.44

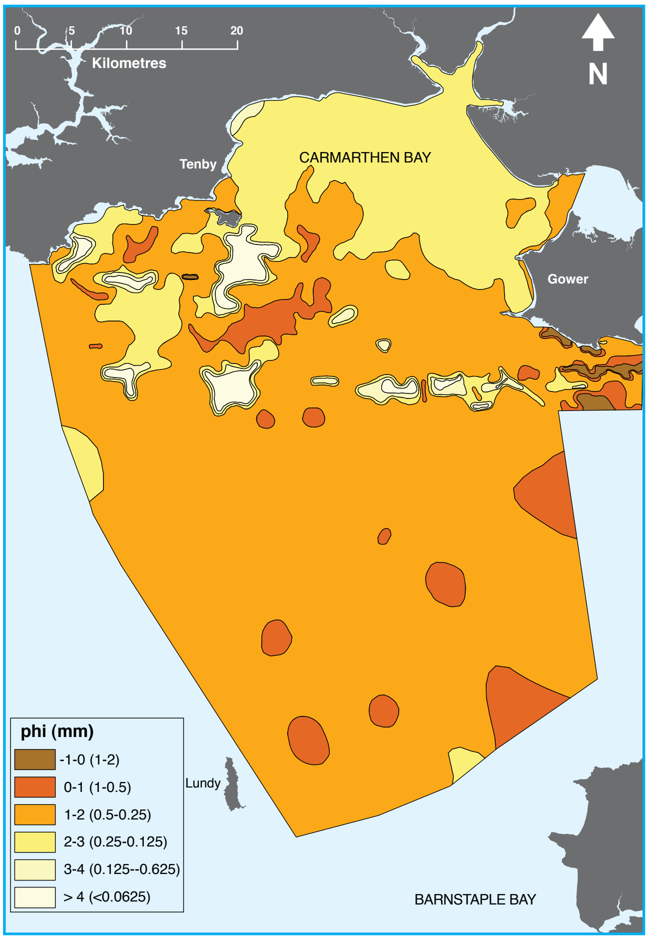


Fig. 4.39 Mean grain size of sand fraction

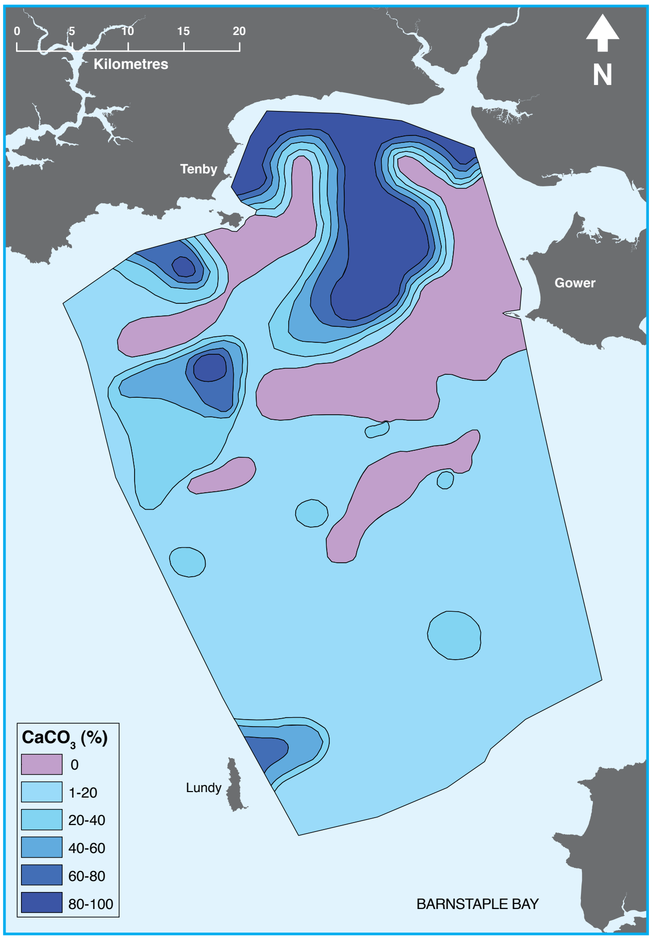


Fig. 4.40: Carbonate content ($CaCO_3$) of gravel fraction

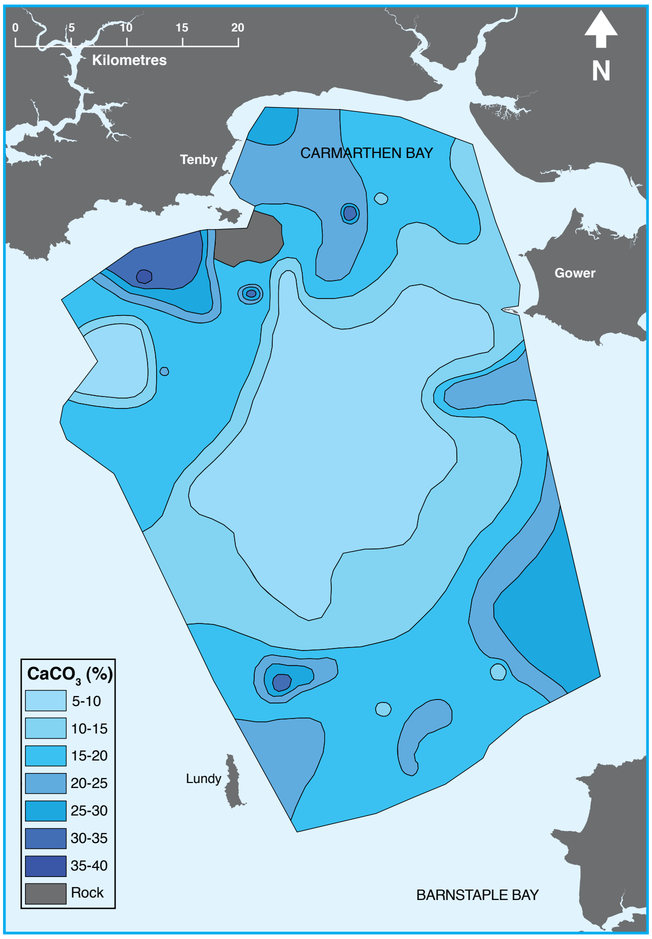


Fig. 4.41: Carbonate content ($CaCO_3$) of sand fraction

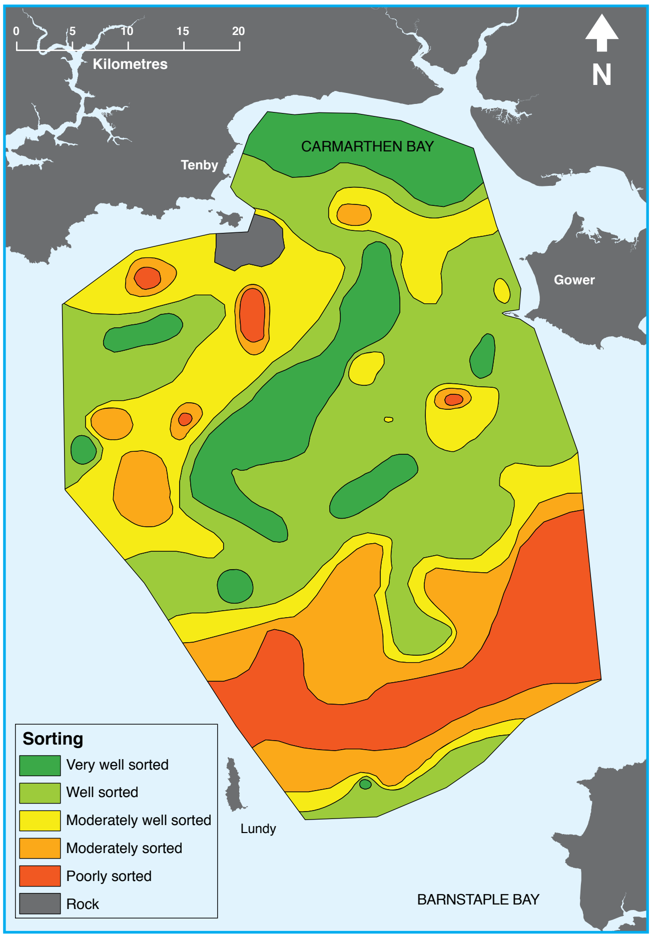


Fig. 4.42: Sorting of sea bed sediments

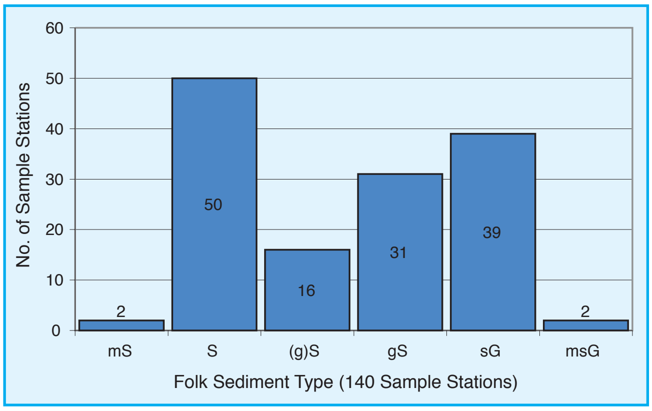


Fig. 4.43: OBCMHS samples – Folk sediment type

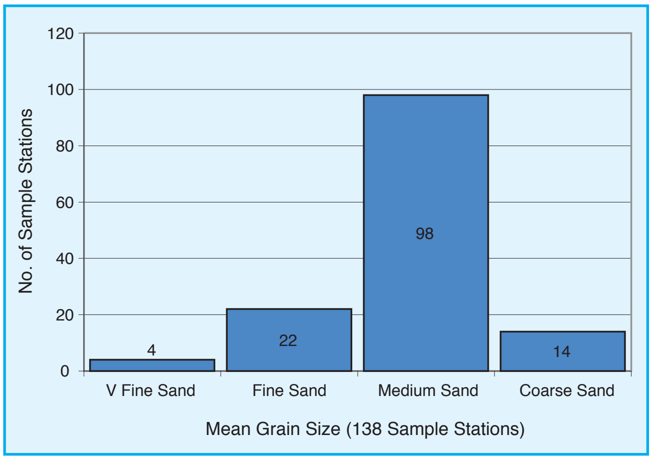


Fig. 4.44: OBCMHS samples – mean grain size

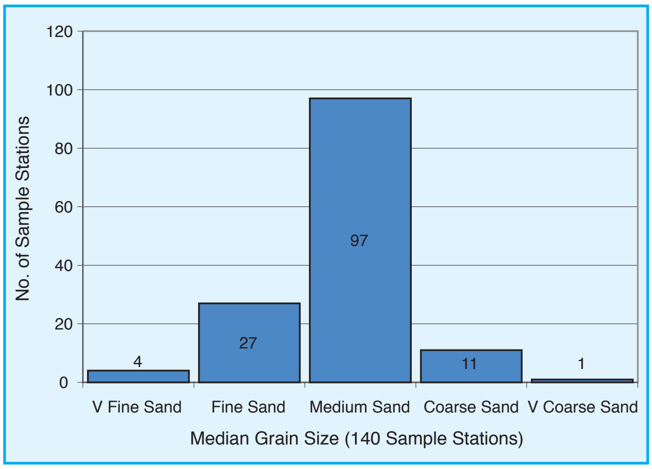


Fig. 4.45: OBCMHS samples – median (d_{50}) grain size

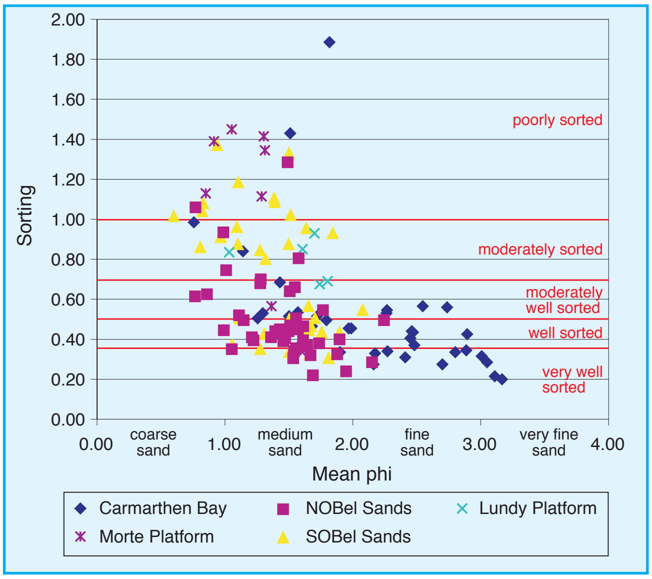


Fig. 4.46: OBCMHS samples – sorting versus mean grain size

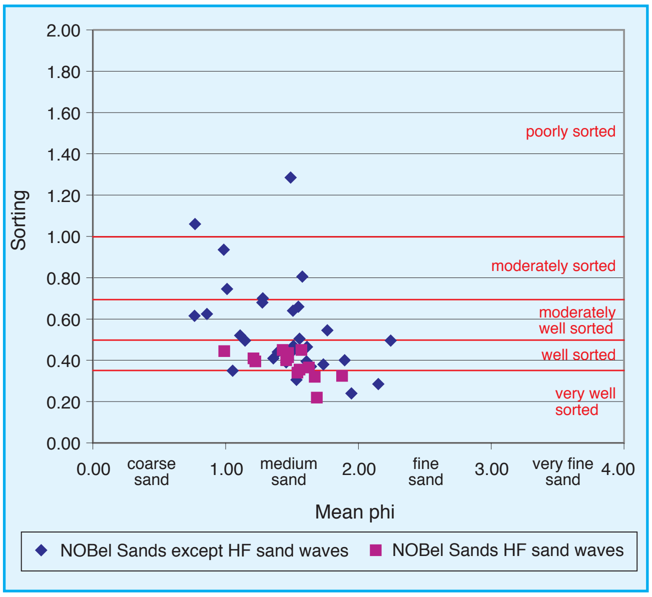


Fig. 4.47: NOBel Sands samples – sorting versus mean grain size

& 4.45). Its distribution is also the most extensive and includes the NOBel and SOBel Sands, and the Lundy and Morte Platforms (Figure 4.39). In the approaches to Carmarthen Bay the medium sand is broken by patches of coarse and fine sand because of the incidence of gravelly and muddy sediment.

About 16 – 19% of OBCMHS samples have a mean and median grain size of fine sand (2-3 phi: 0.125 – 0.25 mm). They cover most of inner Carmarthen Bay north of a line from Caldey Island to Worms Head on Gower. Only four OBCMHS samples (OBC 71-73 & 76) were very fine sand and these were in the northwest and northeast of Carmarthen Bay confirming that the sediments become progressively finer into the back of the Bay. A narrow band of medium sand is found along the nearshore of Rhossili beach and shallows in the Loughor Estuary where fine sand is winnowed by wave action.

Carmarthen Bay is a store of fine grained sandy sediment driven across the bay, predominantly by strong southwesterly waves. Jago (1980) provides evidence of marine sediment accretion in the Taf estuary, which is at the northern end of Carmarthen Bay. Over a ten year period sand was accumulating in the Taf estuary at a mean vertical rate of at least 0.13 m per annum with sediment pushed into the estuary from Carmarthen Bay by storm waves.

Coarse sand (0–1 phi: 0.5 – 1.0 mm) comprises the mean and median grain size of around 10% of OBCMHS samples. The majority of them are in the NOBel and SOBel Sands, which confirms the video and geophysical evidence of coarse sediment occurring in wide sand wave troughs and across the flatter areas of sea bed. Coarse sand appears to be relatively uncommon on the platforms, although this might be a function of low sampling density, and the only occurrence in Carmarthen Bay is in gravelly sand adjacent to the NOBel Sands.

The sorting of the sediments (spread of the grain size distribution, Figure 4.42) mirrors to some extent, although not wholly, the sediment distribution (Figure 4.21). Very well sorted sands are associated with the fine sands in the inner part of Carmarthen Bay and also in some parts of the NOBel Sands which have extensive well sorted sands. The fine and very fine sands with mean grain size of 2 - >3 phi are predominantly very well to well sorted as are significant numbers of medium sand samples in the NOBel Sands (Figure 4.46). However across the whole OBCMHS area, medium sands have a much wider range from very well to poorly sorted.

The increased heterogeneity of sediment in the SOBel Sands compared to the NOBel Sands is highlighted by the occurrence of larger numbers of moderately to poorly sorted sediments in the former (Figure 4.46). It also has a wider range of skewed sediments from positive to very negative (Figure 4.48) indicating an excess of both finer and coarser sandy sediment.

Within the NOBel Sands there are two distinctive areas of sand waves. One area includes extensive high frequency sand waves and the other has larger but less frequent waves (Figure 4.1). The samples

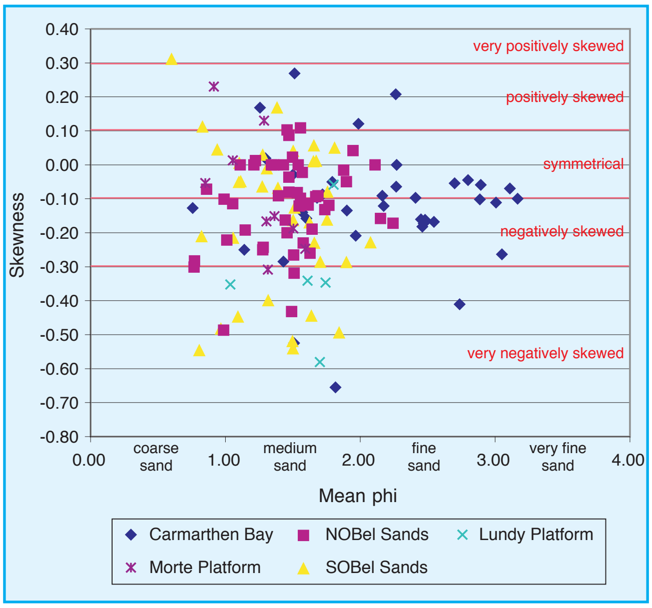


Fig. 4.48: OBCMHS samples – skewness versus mean grain size

within the high frequency sand waves are predominantly well sorted and symmetrical medium sands whereas the rest of the NOBel Sands, although still dominated by medium sand, has a much wider range of sorting from well to poorly sorted (Figure 4.47) and also skewness (Figure 4.49) from symmetrical to very negative. The distinctiveness shown by the bedforms appears to be mirrored in the sediments with the ordered pattern of the high frequency sand waves associated with a more uniform sediment than the area of larger sand waves. The overall lack of relatively coarse sandy sediment in the NOBel Sands is highlighted by the fact none of the samples in this region are positively skewed.

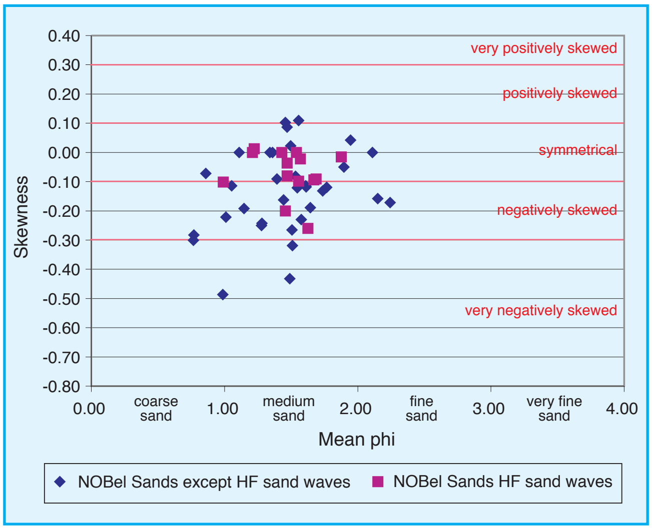


Fig. 4.49: NOBel Sands samples – skewness versus mean grain size

The sediments associated with the Morte and Lundy Platforms appear as two distinctive clusters in Figure 4.46. The Morte Platform sediments are generally poorly sorted and slightly coarser in mean grain size than the sediments sampled on the Lundy Platform, which are slightly finer in mean grain size although still a medium sand, and better sorted. The Morte Platform is on the east side of the study area and the Lundy Platform is on the west. This evidence of slight fining and improved sorting of sediment from east to west is consistent with ebb dominance of the tidal currents and the western orientation of bed-forms in the area.

Carbonate Content

Within the sand fraction of the sediments in the Outer Bristol Channel, the areas of highest carbonate content are in Carmarthen Bay and Approaches, the SOBel Sands, and the Morte and Lundy Platforms (Figure 4.41). Sediments in the NOBel Sands contain the lowest carbonate content (5-10%).

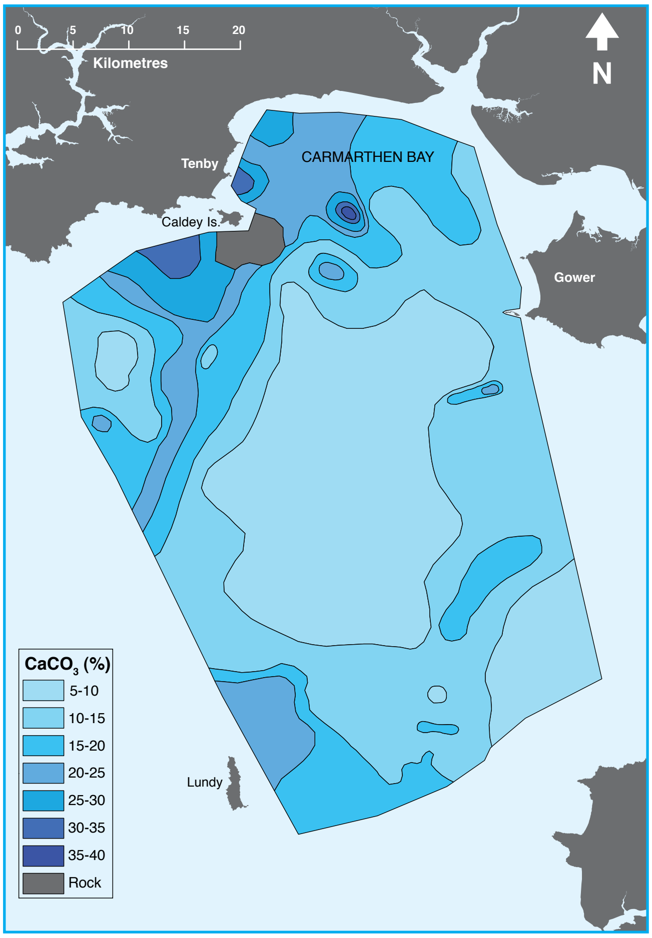


Fig. 4.50: Total carbonate ($CaCO_3$) content of sediments

The small percentage of gravel in the sands of Carmarthen Bay is primarily composed of carbonate shell material (Figure 4.40). High concentrations of carbonate within the gravel fraction are also present to the southwest of Caldey Island, and to the north-east of Lundy Island. Within Carmarthen Bay and Approaches there are also extensive areas of no gravel carbonate. However, the lack of carbonate in some of these areas seems to contradict the geophysical and video evidence in eastern Carmarthen Bay which show patches of shell rich sediment.

Despite much of SOBel Sands being dominated by gravel-rich sediments, only a low proportion of the gravel is of biogenic origin.

The total carbonate content of the sediments (Figure 4.50) in the study area shows a similar pattern to that of the sand carbonate content map (Figure 4.41). The gravel fraction in the southern part of the OBCMHS has little influence on the overall carbonate content of the sediments. Elsewhere in the study area, high carbonate content in the gravel fraction coincides with high carbonate content in the sand fraction. The highest proportion of carbonate material in sediments is in the area east of Caldey Island, with a maximum carbonate content of 40%. Here the sediment is gravelly sand with high shell content. Sediments in the NOBel Sands have the lowest amount of carbonate content (typically 5-10%). This may be due to the fact that this area is the furthest from potential sources of carbonate input e.g., eroding cliffs, shell populations that favour shallower water and coarser substrates. It also has mobile sandy bedforms which are a slightly hostile environment for shell material which can be abraded and transported in these conditions.

4.4 Sedimentation Processes

The sedimentation processes within the OBCMHS area are described in this section on the basis of the evidence provided by the geophysical, biological, sediment and video and camera surveys conducted by the study. Current and wave modelling have not been conducted within the OBCMHS. Sedimentation processes include not only the present-day modern conditions in terms of tides, currents, waves, sea bed morphology, sediment type and bedforms, but also previous older conditions and environments in geological time which have had fundamental influences and effects on the present-day sea bed. For example, when climate was colder during glacial periods, sea level was lower and the Bristol Channel was not covered by sea, the sedimentation processes impacting on the area were dominantly glacial and fluvial in a terrestrial environment; very different to the marine conditions prevalent today.

Sedimentation processes have a primary control on sea bed marine habitat through their impact on parameters including sediment distribution, grain size, mobility, stability and bedforms. Each of these parameters has a range of type, size and form that can be mirrored in distinctive, typical habitats. For example, flat immobile gravel with tidal and wave conditions of low bed shear stress produce a sea bed stable enough to support epifaunal growth. A contrast to this would be a sandy sea bed in tidal conditions with currents strong enough to mobilise sand during each daily tidal cycle and fashion sediment into ripples and waveforms. Epifauna would not be able to flourish in this mobile environment and the habitat would be confined to organisms adapted to stressful, unstable sea bed conditions.

The previous sections on Quaternary Sediments, Sea Bed Character & Bedforms and Sea Bed Sediments have indicated the thickness, extent, nature, character and form of the unconsolidated sediments that lie on bedrock across the study area. The sea bed in the northern half of the study area, including Carmarthen Bay and Approaches and the NOBel Sands is dominated by sand. In the southern half, including SOBel Sands, and the Lundy and Morte Platforms, gravelly sediments are common, although sand is present (Figure 4.21).

Sediment Sources

This present-day distribution of sediments appears to be the product of sedimentation processes associated with two major geological environments. The first is glacial and glaciofluvial associated with the Last Devensian Glaciation when an ice lobe extended out into Carmarthen Bay and deposited Late Pleistocene Sediments and Basal Sand and Gravel within the Bay and out across the axial centre of the Outer Bristol Channel. These deposits appear to have remained in relatively close proximity to their original depositional source, although some reworking and transport has occurred subsequently. At the glacial maximum, around 22,000 years ago, sea level would have been at least 100 m lower than the present day with the Outer Bristol Channel a terrestrial environment at the margins of a glaciated landscape. The subsequent amelioration of climate brought on the development of the second major geological environment with the gradual rise in sea level culminating in a fully marine environment by around 5000 years ago.

During the glacial and glaciofluvial environment of the Last Glaciation the Bristol Channel was at or beyond the southern margin of South Wales ice. During this period it is likely that the Bristol Channel would be the receptacle and conduit for glacial deposits and run off of glacial melt water and associated sediments, not only from South Wales but also Mid Wales and the West Midlands via the River Severn. However, the evidence for glacial deposits in the Bristol Channel is sparse and confined principally to Swansea Bay and Carmarthen Bay and Approaches. Fine grained sediments are trapped within Bridgwater Bay and the Severn Estuary. Most of the Inner and Central Bristol Channel is a current swept rocky sea bed and devoid of significant sediment deposits.

Although sand grade sediment has been fashioned into a number of sand banks within the Inner and Central Bristol Channel and the Severn Estuary (Figure 1.3), the largest and most extensive deposits of sandy sediment in the Bristol Channel lie within the Outer Bristol Channel regions of Carmarthen Bay and Approaches, NOBel Sands and SOBel Sands. How much of the sand deposit in the Outer Bristol Channel is of glacial and glaciofluvial origin and what proportion has been re-worked *in situ* by marine processes cannot be readily estimated. Another imponderable is how much of the sand has been swept into the Outer Bristol Channel from the Inner and Central Bristol Channel to the east. The tidal currents are strong enough, >1.5 ms^{-1} over much of the Inner and Central Bristol Channel (Figure 2.8), to entrain and transport sand as bedload with a westward ebb dominant residual current towards the Outer Bristol Channel. However, possible sources of glaciofluvial sediment into the Inner and Central Bristol Channel are relatively few between Penarth and Port Talbot. The bulk of sediments deposited by the rivers entering Swansea Bay are likely to have remained entrapped within the Bay. Similarly, sediments entering the Severn Estuary at Cardiff, Newport and Bristol are likely to have predominantly remained within the Severn Estuary and Inner Bristol Channel.

This leads to the conclusion that much of the sand currently in the regions of the Outer Bristol Channel was in place as deposits of Basal Sand and Gravel and Late Pleistocene Sediments (Figure 4.2). Further, during the period of transition from the glacial environment of the Late Devensian to the fully marine environment of today, the morphology of the Outer Bristol Channel underwent a considerable metamorphosis as sea level rose and wave and tidal currents began to fashion mobile sandy sediments into major waveforms producing one of the most significant sand wave fields on the UK continental shelf.

Tides and Tidal Currents

Although not as large as further east in the Bristol Channel, the tidal range in the Outer Bristol Channel is significant with a mean spring tidal range varying from around 6.5 m to 8 m (Figure 2.5). The tidal wave emanating from the Atlantic enters the study area from the southwest (Figure 2.6) and swings round into the Central Bristol Channel. The earlier and quicker onset of the tidal wave in the southern half of the study area is also matched by the strongest tidal currents within the study area occurring on the Morte Platform with depth averaged mean spring tidal current amplitudes of over 1.8 ms^{-1} (Figure 2.8; M.J. Howarth, pers. comm.). Over both the NOBel and SOBel Sands the tidal currents remain relatively strong with values of between 1.0 and 1.3 ms^{-1}. It is only within Carmarthen Bay and the lee of Lundy Island that tidal currents decrease to <0.5 ms^{-1}.

Figure 4.27 indicates surface tidal current directions and velocities plotted as vectors at six stations (A, B, E, D, F & G) in the study area. The vectors are at hourly intervals before and after high tide. Although the tidal streams are all generally rectilinear, their orientations vary. The two within the central part of the area (A & F) are orientated east–west, parallel to the east–west axis of the Bristol Channel. Although the eastern station (F) has a more orbital motion, it still has a dominantly east–west trend. The two stations on the west (B) and east (E) sides of Carmarthen Bay are aligned almost at right angles to each other, with station B at NE–SW and station E at NW–SE, both are shore parallel and suggest a circular motion to tidal currents within Carmarthen Bay. Station D immediately to the southwest of Helwick Bank is strongly rectilinear and aligned WNW–ESE, this slight offset to the north and south is probably influenced by the proximity of Helwick Bank and the movement of tidal currents around the bank. Off Morte Point the NE-SW orientation of the tidal streams at Station G is synonymous with the tides running across the front of Barnstaple Bay, again basically shore parallel.

Waves

Waves can be significant in their impact on the sea bed, especially with regard to entraining and transporting sediment in the littoral zone and shallow nearshore, and particularly in water depths of less than 20 m. Wave processes can also amplify, reduce or even negate sediment processes associated with tidal currents.

There is a decrease in wave influence on the sea bed with depth below the sea surface (Huntley & Bowen 1989). Although longer period waves impact the sea bed to greater depths; the effect of shorter period waves, which are the most common, are dissipated with depth. HR Wallingford (2002b) indicate in their modelling that wave effects on the sea bed in the Outer Bristol Channel are only likely to be significant in water depths <20 m.

The Outer Bristol Channel is open to the west and southwest. This is the source direction of the strongest and most frequent winds (Figure 4.51). It also equates with the direction of the longest fetch out into the

Atlantic. From this direction winds have a substantial sea surface, hundreds of kilometres long, over which to generate waves. An Atlantic swell is also propagated into the Outer Bristol Channel from this direction. The greatest potential impact of waves is therefore on the north coast, and west and southwest facing shores and bays, especially Carmarthen Bay.

There is not a great deal of data on wave conditions in the Outer Bristol Channel. The nearest long term record is from the St Gowan meteorological buoy at 51.5° N, 4.9° W (Figure 4.51). Between 1992 and 1996 wave periods were typically between 5 and 7 seconds for >70% of measured events, with wave heights up to 1.5 m for 65% of all waves (Posford Duvivier & ABP Research 2000). Carter (1999) also analysed this buoy data and found the largest value of significant wave height was 8.5 m with a wind speed of 32 knots (16.5 ms^{-1}). The largest wave recorded was 10 m.

The coastal impact study for Area 476 in the NOBel Sands (HR Wallingford 2002) includes predicted values for wave climate based on numerical modelling using synthetic data. The model predicts significant wave height in the NOBel Sands exceeding 1.0 m for more than 50% of the time, and for >11% of the year wave heights are over 2.5 m. The largest waves enter the area from the west to southwest and are over 4 m high.

Sediment Transport and Bedforms

The asymmetrical cross-profiles of sand waves have been observed to indicate net sediment transport directions, with sand waves migrating in the direction of the relatively steeper lee slope (Stride 1982). In relatively shallow tidal seas, such as the Bristol Channel, the oscillating ebb and flood tidal currents are generally unequal and asymmetrical in terms of their peak current speeds and duration at any given location. Thus areas can be either ebb current dominant or flood current dominant. Net sediment transport is generally in the direction of the dominant residual current direction and this has also been correlated with the facing direction of lee slopes on asymmetrical sand waves at numerous locations on European shelf seas.

The NOBel and SOBel Sands are within an area of west flowing ebb current dominance (Figure 2.9). The peak surface tidal stream velocities at spring tides are greater

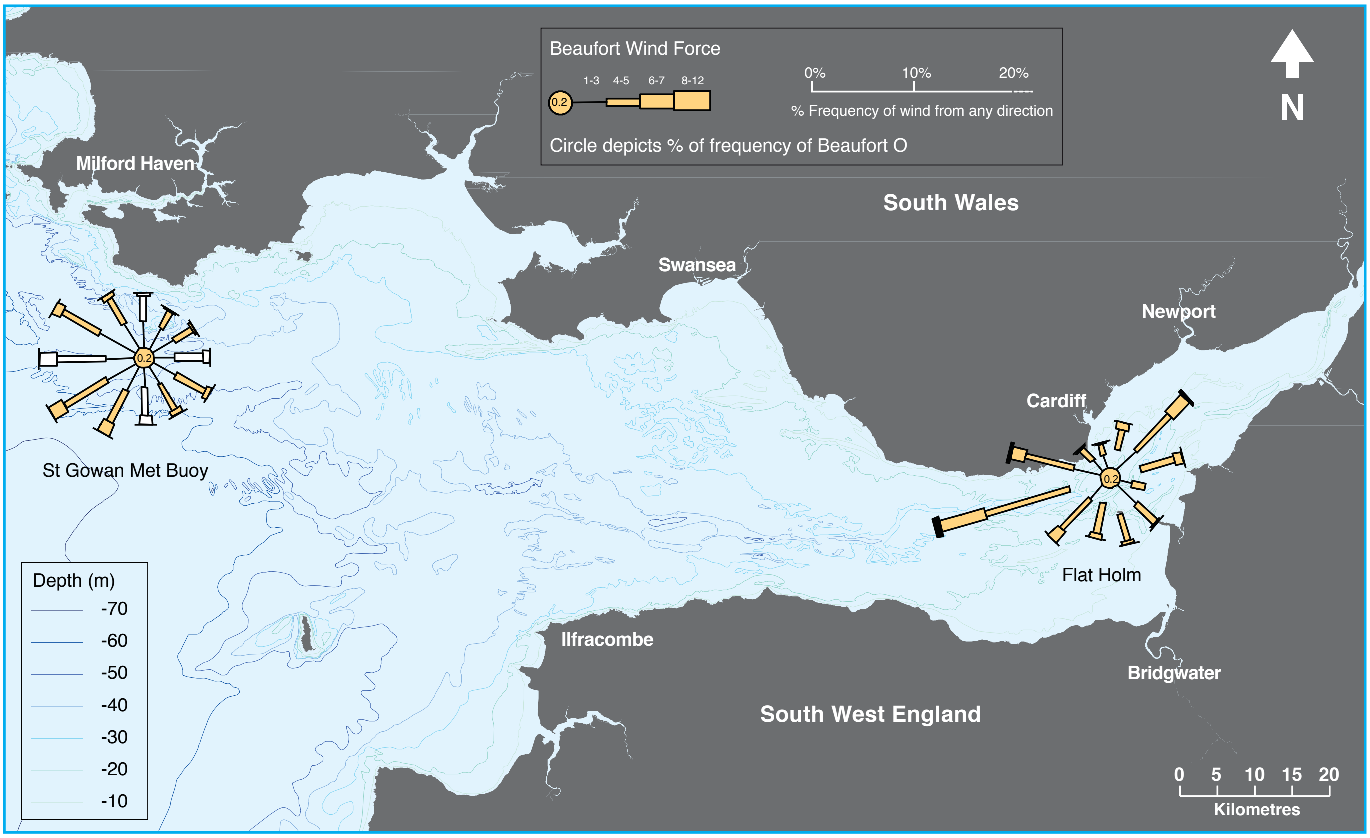


Fig. 4.51: Wind Distribution at St Gowan meteorological buoy and Flat Holm. (Source: Posford Duvivier & ABP Research, 2000)

on the ebb than the flood tide at stations A, D, F and G (Figure 4.27), and ebb dominance is also confirmed in tidal current modelling (Uncles 1984; Posford Duvivier & ABP Research 2000; HR Wallingford 2002). The principal sand waves (~5 – 20 m high) within the NOBel and SOBel Sands are generally asymmetrical with west facing lee slopes (Figure 4.1 & 4.52). The east facing shallower and generally longer stoss slopes of these large sand waves are commonly covered by megaripples up to 1 m high and smaller sand ripples (Figure 4.28 & 5.9). The sand waveforms covering stoss slopes are also asymmetrical in cross-section with steeper lee slopes facing west. These megaripples and ripples seem to be one of the principal mechanisms of sediment transport across the NOBel and SOBel Sands as they move westward up the stoss slopes of the major sand waves under the influence of the ebb dominant residual currents and avalanche over the steeper west facing lee slopes. The tidal current and bedform evidence appear therefore to be complementary and indicate net sand transport in the NOBel and SOBel Sands to be in a westerly direction.

The long-term response of the large asymmetrical sand waves should therefore be a steady growth and migration westward. The evidence from seismic reflection records illustrates foreset development in the internal structure of many of the large sand waves (Figure 4.17) and indicates they have undergone steady growth and westward build up of their lee slopes during formation to their current height and position. Their growth is a response to the tidal current conditions and sediment supply prevalent during the last 5000 years, the period since sea level reached its present level in the Bristol Channel. During this period these large sand waves and associated bedforms have been fashioned into their current forms.

Although there is seismic evidence of growth in height and volume of these large asymmetric sand waves, the evidence for their continuing westward migration in present-day conditions is inconclusive. They are large structures which are major obstacles to current flows, both ebb and flood currents. Those sand waves that are greater than 10 m in height have crests in water depths of about 25 to 35 m. The height to water depth ratio of these large sand waves is relatively small and their physical impact is therefore relatively great. In section 4.2 of this report the processes which control the present-day structure of one large 18 m high sand wave are described. These include both ebb and flood currents (Figure 4.28), and although the surface of the sand wave is mobile, the structure and position of the large sand wave is being maintained by the opposing tidal currents suggesting that the large sand waves are not moving westward under the influence of ebb tidal dominance but are in a state of *in situ* equilibrium.

Further evidence from the comparison of bathymetric data collected in 1977 and 2003 (Section 4.2, Figure 4.29) indicates the large sand waves in the NOBel and SOBel Sands have remained stable during this 26 year period. This is a relatively short period in terms of geological time but, in a dynamic environment such as the Outer Bristol Channel with strong currents and well-developed ebb tidal asymmetry, some indication of sand wave migration, growth or loss should be evident. The fact that the available evidence suggests the large sand waves appear to be stable, over at least recent decades, is therefore significant. The turbulence, change in current speed and modification to flow conditions caused by these large sand waves is of such magnitude to have been visible and recorded by SEASAT (synthetic aperture radar) satellite imagery (Harris *et al*. 1986).

Both the NOBel and SOBel Sands have a train of sand waves up to 5 km wide, which extend westward for over 15 km beyond the OBCMHS area (Figure 4.20). These may be evidence of westward movement of sediment from the main sand wave fields since their inception or reworking of *in situ* outwash sediments

Sand waves are not substantial features in Carmarthen Bay and Approaches. Those that are present are confined to the southern margin with the NOBel Sands and there is also a small occurrence of sand waves southwest of Caldey Island (Figure 4.52). These are all west facing ebb dominant asymmetrical waves. The only major occurrence of east facing flood dominant sand waves in the OBCMHS area occurs at the western margin of Carmarthen Bay and Approaches (Figure 4.22 & Section 4.2). They occur on a west facing slope of sediment whose form is maintained by east flowing flood currents. This area is about 6 km south of a current meter deployment off St Govan's Head (Posford Duvivier & ABP Research, 2000) that measured residual near-bed currents to the south-south-east and flood dominant asymmetry. The study associated with this current meter also indicated the principal direction of sediment movement in the area is west to east and tidally driven, and wave energy increases mobilisation of sediment without altering the net direction of movement.

Wave energy is a significant force within Carmarthen Bay, especially in the shallower areas where tidal current velocities are <0.5 ms^{-1} and the circulatory shore parallel tidal currents are transverse to the principal wave direction from the southwest. Wave energy appears to be a major control on southwest to north-east trending patches, ribbons and streaks (Figure 4.23) in the eastern half of the Bay (Figure 4.52) with net sediment transport to the northeast. These patches and ribbons are also adjacent to a series of shallow channels off the mouth of the Loughor Estuary (Figure 4.24 & Section 4.2). The channels are believed to be floored by shelly material and their form is shaped by wave and tidal currents. The channels are bifurcating and sinuous and orientated northeast to southwest. At their deeper end they curve round south of southwest, indicating they may be principally controlled by tidal current flows out of the estuary. This southerly trend is also evident off the nearby Rhossili Bay in the models of residual tidal currents and littoral drift (Uncles 1984; Posford Duvivier & ABP Research 2000; HR Wallingford 1997; Davies 2005).

McLaren undertook a sediment transport analysis of Carmarthen Bay based on over 1450 sediment samples (in Posford Duvivier & ABP Research 2000). The study concluded that the Bay is characterised by radiating transport pathways, which emanate from three major sediment-parting zones and converge at three major meeting zones. Extreme events (i.e. major storms) are required to load up the parting zones with sediment and these extreme events also remove the build up of sediment in meeting zones. The Bay contains a fairly constant volume of sediment that is periodically reworked and recycled by extreme events. The bedforms seen on the OBCMHS geophysical survey records do not provide any conclusive evidence to support these radiating transport pathways, the dominant bedform trend appears to be southwest to north-east across the Bay. One of the exceptions to this trend is the megaripple field to the southwest of Worms Head (Figures 4.1 & 4.25), where tidal currents sweep round the headland in a northwest to southeast orientation in the direction of Helwick Bank.

Helwick Bank has been the subject of numerous studies in terms of hydrodynamics and sediments including Britton (1977), Britton & Britton (1980), HR Wallingford (1997 & 2002), Posford Duvivier & ABP Research (2000) and Davies (2005). Although Helwick Bank is not part of the OBCMHS area it is relevant to place it in the context of the study. There is a clockwise gyre of residual circulation around Helwick Bank with eastward transport of sand along the northern flank of the bank and westward transport of sand along the southern flank of the bank. The evidence for this gyre includes current modelling and physical proof such as sand wave asymmetry.

There has been some speculation as to a link in terms of sediment transport between Carmarthen Bay and Helwick Bank with an eastward net flow of sediment out of Carmarthen Bay driven by the combined action of waves and tides (Pethick & Thompson 2002). The megaripple field southwest of Worms Head is directly on this pathway (Figure 4.25). However, the sidescan evidence from this megaripple field is contradictory, with megaripple asymmetry reversing between ebb and flood tides and no dominant sediment transport direction evident (Figure 4.26).

South of Helwick Bank the sea bed is a swept coarse sediment floor with isolated west facing asymmetrical sand waves. Further west this coarse substrate merges into the NOBel Sands and also the southeast margin of Carmarthen Bay and Approaches. The sand wave forms continue to be west facing in the NOBel Sands and turn slightly to the northwest at the southeast margin of Carmarthen Bay and Approaches (Figure 4.52). In both areas, the bedform data currently availa-

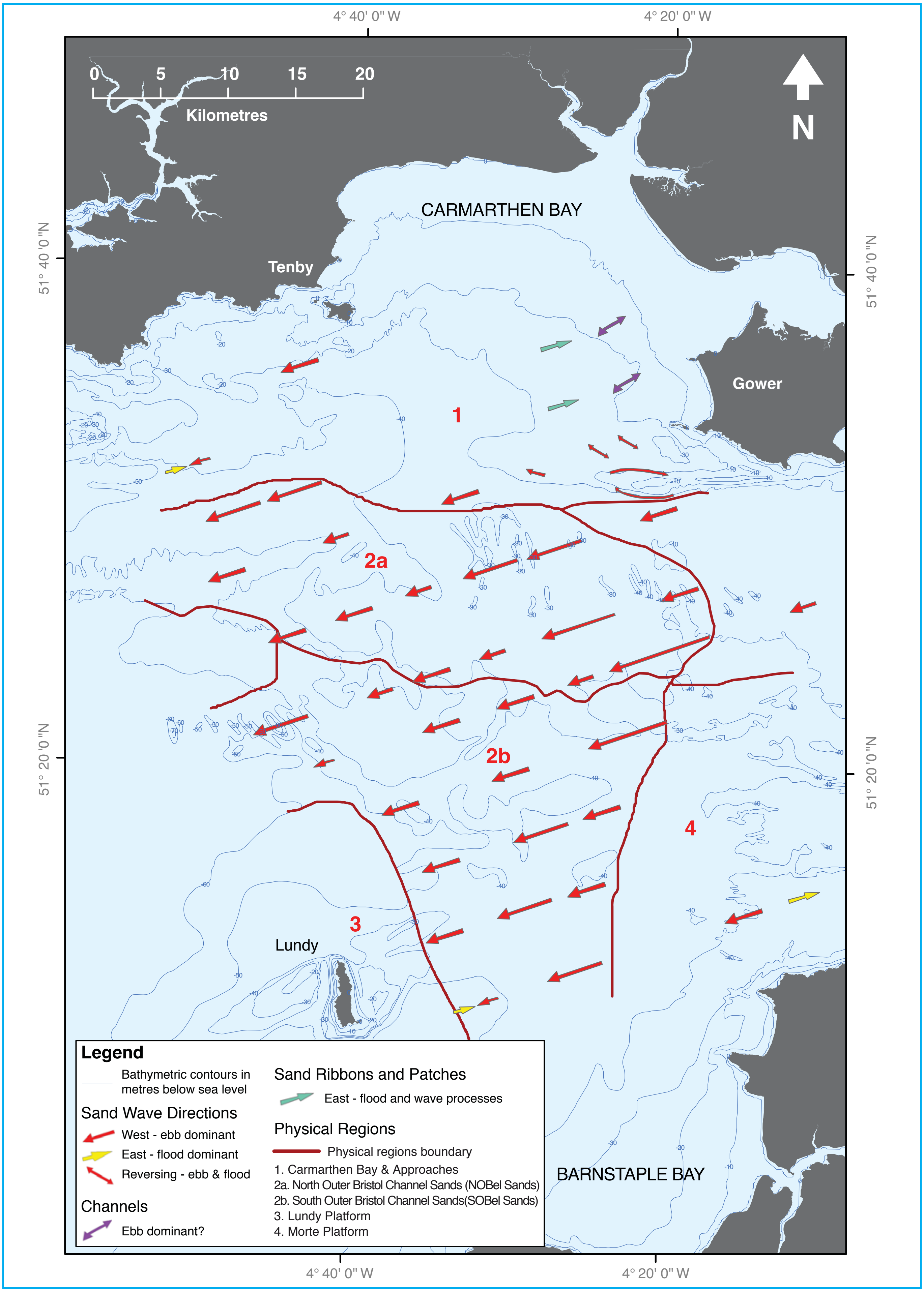


Fig. 4.52: Bedform asymmetry and direction (based on OBCMHS multibeam and sidescan records)

ble does not provide conclusive evidence for sediment exchange with Helwick Bank.

On the Morte Platform the evidence from the isolated bedforms indicate ebb dominant sediment transport is to the west. The only exception is at Horseshoe Rocks (Figures 2.3 & 4.52), close to the coast northeast of Morte Point, where sand is streaming eastward from the rocks indicating flood dominant transport. This is rare bedform evidence for eastward coastal sediment transport in the Outer Bristol Channel, although this is contradicted by west facing sand waves a few kilometres to the west of Horseshoe Rocks.

To summarise, in terms of sedimentation processes and hydrodynamics, the study area has two principal cells.

The first is Carmarthen Bay and Approaches. This is influenced by both wave and tidal current processes, with the latter becoming dominant in shallower water as tidal current velocities decrease. There is evidence for sediment being driven across the bay to the north and northeast. Large-scale sand bedforms are not common. The relatively thick sediment beneath the Bay extends southward into the NOBel Sands.

The second includes the NOBel Sands, SOBel Sands, Morte Platform and Lundy Platform. These are dominated by strong tidal currents with ebb tidal asymmetry. The Sands have well-developed large sand waves both in fields and as isolated forms. These large sand waves appear to be in a state of *in situ* equilibrium in present-day hydrodynamic conditions, although their slopes are covered by mobile sediments. Both Platforms have large current swept areas of lag coarse sediment and rock outcrops.

5. In situ *Visual Appearance of Bedforms, Sediments and Epifauna*

Introduction

This chapter deals with the evidence from the series of camera sledge tows which were made to view representative parts of Outer Bristol Channel sea bed habitats. The camera tows can be considered as short transects over selected features. The primary aims were to provide a source of ground truth information to support the multibeam and sidescan sonar data. The images provide some *in situ* context for the sediment particle size analyses based on samples collected by grabs, even though the photos only show the bed surface. Relatively little fauna, other than colonies of hydroids, was actually visible. Nevertheless, the images help ecological interpretations of infaunal benthos samples. The ephemeral deposits of organic matter as flocs of 'marine snow' were a feature not easily detected by other means. These camera sledge studies continued a series of collaborative projects in the Irish Sea and elsewhere around Wales, between National Museum Wales and School of Ocean Sciences, University of Wales Bangor. In the earlier studies photography was an adjunct to benthos descriptions from grab and dredge sampling (Mackie *et al.* 1995; Wilson *et al.* 2001).

Even in the outermost parts of the Bristol Channel, tidal conditions, bedforms and water quality are strongly influenced by proximity to the funnel shaped Severn Estuary. As well as being noted for the abnormally large tidal range, the water in the inner parts of the Bristol Channel is known to carry a high suspended sediment load. There have been reports from the inner channel of patches where fluid mud several metres thick sometimes settles on neap tides and is then re-suspended again on springs (Dyer 1984). As the Outer Bristol Channel study area is at the interface between the comparatively clear water of the Celtic Sea and the very turbid water of the Inner Bristol Channel, there was concern at the outset of this project that few interpretable sea bed images might be obtained, even during neap tides in summer.

For this reason it was planned initially to try to deploy the camera equipment during a neap tide period in mid summer 2003. Ideally the main multibeam and sidescan survey would have been done prior to the camera tows and benthic fauna sampling. This would have allowed the camera tows in 2003 to be targeted specifically at the most interesting and representative features on the geophysical records. Regrettably there were administrative delays of several months in approval being given for the entirety of the joint BGS/NMW project. The 2003 season of lower turbidity would have been lost and, to allow enough time for laboratory benthos sorting, the initial cruise went ahead before the geophysical cruise. Targeting of features was based largely on information from earlier surveys used for the published BGS "Lundy" Sea Bed Sediment sheet and Tappin *et al.*(1994). This proved to be the right decision in that good clear conditions were encountered at most camera stations during neap tides in July 2003. In many places, 'marine snow' and other fine particulate material was seen to have formed patchy ephemeral deposits in the lows between the sand ripples or was trapped amongst the fauna attached to gravel and other stones. A second set of camera tows was run in mid-May 2005, when attempts were made to target some additional interesting features which had been picked up by the geophysical surveys. However, this last cruise coincided with a dense phytoplankton bloom west of Gower, so at this time interpretable images could not be obtained at some locations on the Welsh side of the area.

Results

Twelve camera tows (codes V1 to V11) were made in the period 6th to 12th July 2003 from R.V. *Prince Madog*, during a cruise that was primarily directed to grab sampling. A further 12 targeted camera tows (codes V13 to V23) were done between 15th and 18th May 2005 on another cruise when small mesh beam trawls and additional boomer lines were also run. Background metadata for each of the camera sledge tows is set out in Appendix 3. This gives timed positions of deployment and recovery of the gear and the numbers of sea bed photographs taken, together with weather and other related notes. The locations of the

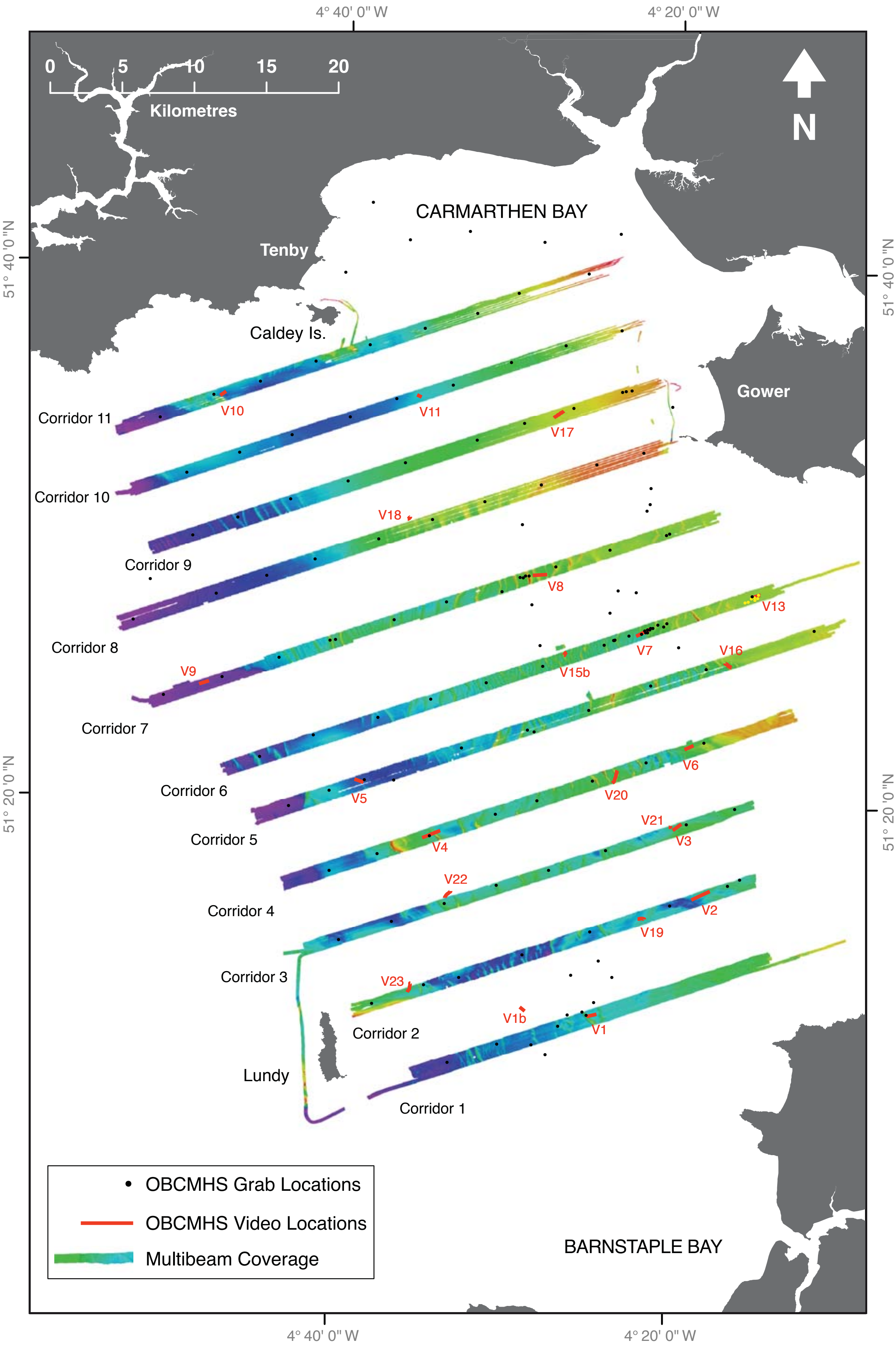


Fig. 5.1: Map showing the locations of all 2003 & 2005 camera tows with the geophysical survey corridors

camera tows spread across the geophysical survey corridors are shown in Figure 5.1.

Taking the two cruises together, the usable videotape records showing the sea bed run to over 400 minutes. In total, 219 still photographs of the sea bed were obtained in 2003 and a further 224 in 2005. At only one of the twelve locations (V10) visited in summer 2003 was near sea bed turbidity so high that interpretation was quite impossible from either of the cameras. At two others (V2 & V11) the images were somewhat obscured, but it was still possible to see what the habitat types were. In early May 2005, due to the intense phytoplankton bloom off Carmarthen Bay, it was virtually impossible even to see the sea bed when the gear was deployed at one location (V18) and another planned location nearby was omitted as the bloom looked even more intense at the surface. At another (V17) it was just possible to see the variable amounts of shell (mainly razor shells) lying exposed on the sand surface at one site. This was the probable reason for patches with more acoustic backscatter on the sidescan record at this location.

During the 2003 cruise a technical problem developed with the motor-wind control mechanism of the Photosea camera. This caused the film to wind on by variable amounts, so although adequate video records were obtained from all but the one very turbid location, fewer good still photos were obtained from three others (V1, V2 & V5). Even where there were partial double exposures it was still possible to see what the general habitat type was. Fortunately the video records also showed that the locations where the still camera malfunctioned had sea bed habitats very similar to others where good series of still photographs were obtained. A couple of camera failures on the 2005 cruise were due to a switch malfunction and a connecting plug pulling out (V14 & V15a).

In summary, 20 of the 24 video / camera tows yielded usable images. Tows V10, V14, V15a and V18 were unsuccessful.

Generalised Descriptions of Camera Tow Transects

As the 2003 work was undertaken over a neap tide period well after the end of the spring plankton blooms, the sea bed was in places heavily coated with 'marine snow'. At some of the gravel and cobble locations where there were also quantities of hydroid / bryozoan turf the epifauna had trapped more of such fine particles. The coating of fines in places made it more difficult to determine whether the superficial lag gravel horizon was composed entirely of gravel, cobbles or shell hash. Indeed, it was sometimes difficult to determine whether there was a dusting of fine sand on the surface as well. Both the deposition of organic floc as 'marine snow' and the scouring effect of sand as bed load will have had important ecological influences. Generally similar impressions were gained from the 2005 tows as from those in 2003, although there were more suspended particles partly obscuring the images.

On the following pages a series of plates show multibeam and/or sidescan images for locations around 19 of the successful camera deployments. Tracks of the camera tows have been overlaid on the acoustic images. On the track lines positions are shown from which the accompanying selection of photographs or video frame grabs came. To allow some comparison with data on sediment grain size distributions and the benthic fauna, the locations of grab samples near to the camera tows are also given.

Over most of the Outer Bristol Channel area the sand has mainly been swept into pronounced but narrow sand waves. Thus more photographs were taken of lag gravel surfaces on the plains between the sand waves and where the sand was only visible as a veneer or virtually absent. A few camera tows, such as V3, which had been specifically targeted at bedrock outcrops, showed the ledges just protruding through mixed gravel sediments. The lag gravel was mostly quite fine and is presumed mainly to have originated as glaciofluvial outwash. Few boulders and larger cobbles were noticed that might have come from erosion of glacial till or locally from the bedrock outcrops.

Video Tow V1, Corridor 1

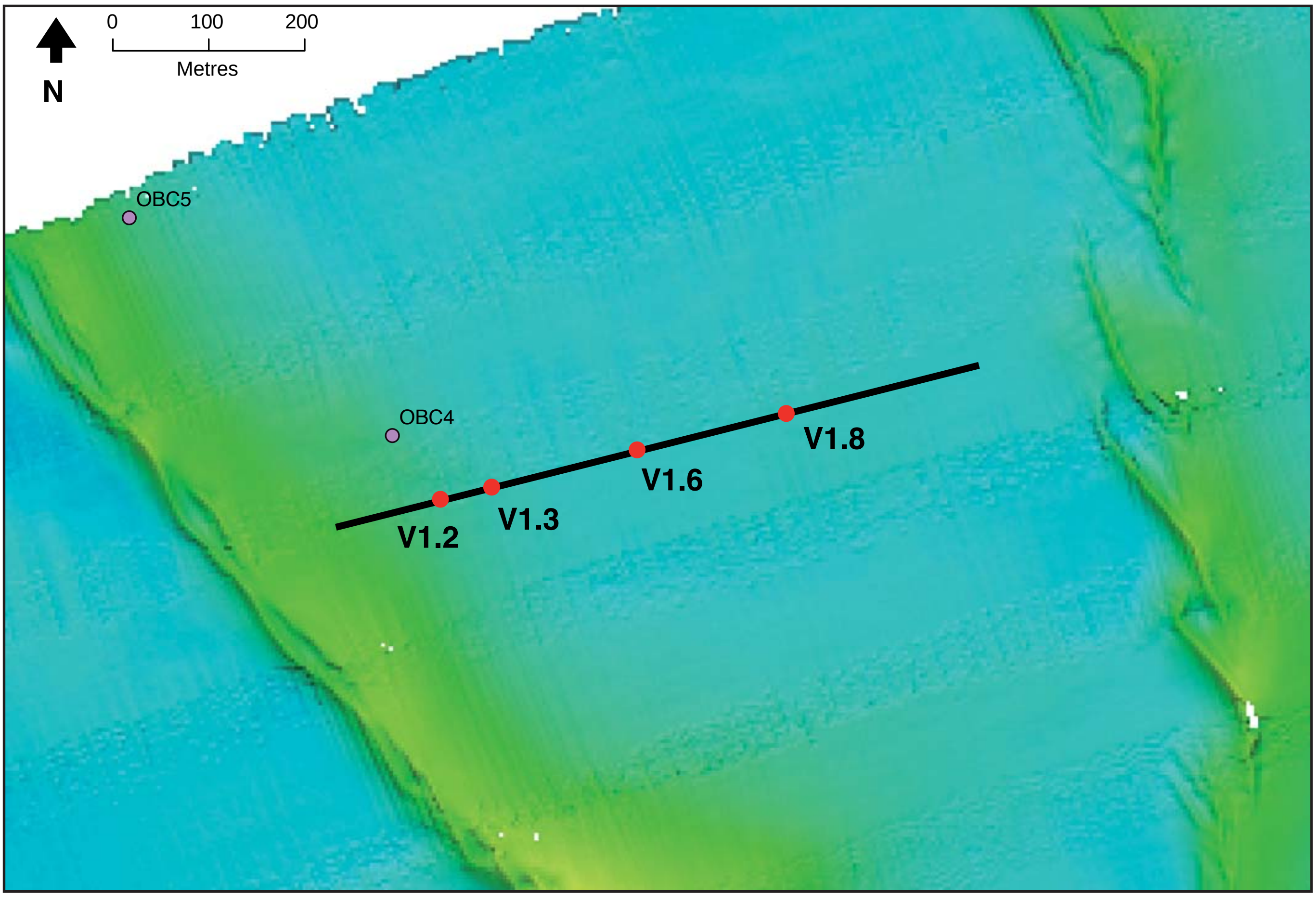
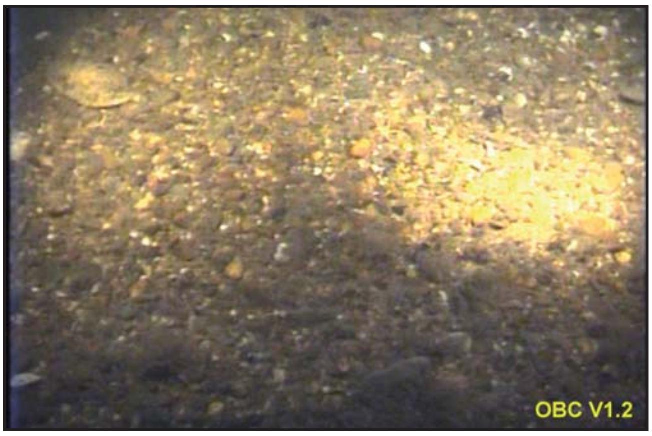


Fig. 5.2: Multibeam image showing Video Tow V1 on Corridor 1



Frame V1.2: approx. 105 m from start of tow. Lag gravel bed surface with hardly any sand visible. There are only a few shells present on the surface. The rather even sized gravel is partly obscured by numerous small and short hydroid turf colonies.

Frame V1.3: approx. 155 m from start of tow. Similar lag gravel bed but with some longer colonies of hydroids and with some superficial sand particularly trapped around some of the hydroid clumps.

Video Tow V1, Corridor 1

Start position: 51° 12.13′ N, 004° 24.83′ W

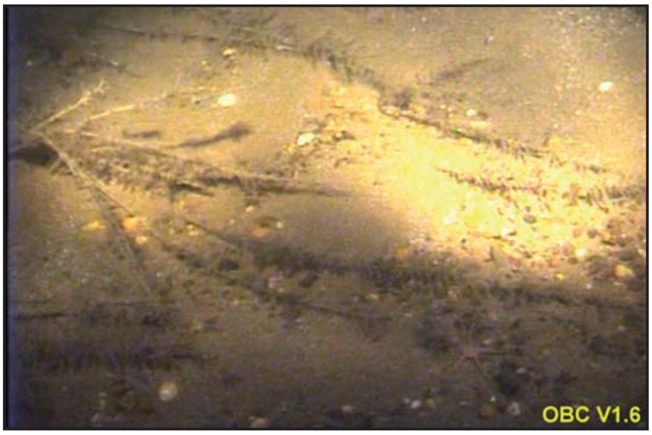
Depth: 39 m

Region: SOBel Sands

The series of images for locality V1 on Corridor 1 are made up of representative frames grabbed from the video record. The still camera failed to wind on correctly on this deployment. For the images grabbed from the video the upper side of each picture is towards the direction of travel (NE) and the field of view is about 60 cm across.

In the supplementary still camera photos from V1b, the direction of travel is towards the bottom of the images, that is to the SW. Tow V1b was outside the multibeam corridor, to the northwest, so there are no acoustic images available. However, this tow crossed a sand wave ridge similar to the one shown in Figure 5.2.

The field of view for the photos is about 45 cm across. This is the common field of view for all photos taken by the still camera. Frame grabs from the video footage have a field of view approximately 60 cm across.



Frame V1.6: approx. 315 m from start of tow. Lag gravel horizon is 70% covered by an irregular veneer of sand, with numerous rather straggling colonies of hydroids.

Frame V1.8: approx. 470 m from start of tow. Larger amount of the hydroids which appeared to be influencing bed load transport enough to produce an irregular surface with small mounds of sand that were large enough to recognise from the way the sledge moved over them. The gravel horizon patchily showed through the sand between the hydroid clumps.

Photo 1b.08 In this photo the sledge was on the crest of a sand wave and was crossing it obliquely so that the steeper face was shaded from the strobe.

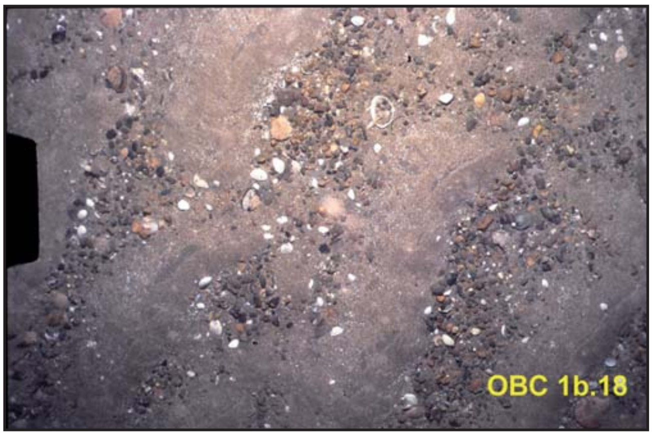


Photo 1b.18 was in a plain between sand waves and shows the lag gravel horizon part covered by veneer sand ripples.

Video Tow V2, Corridor 2

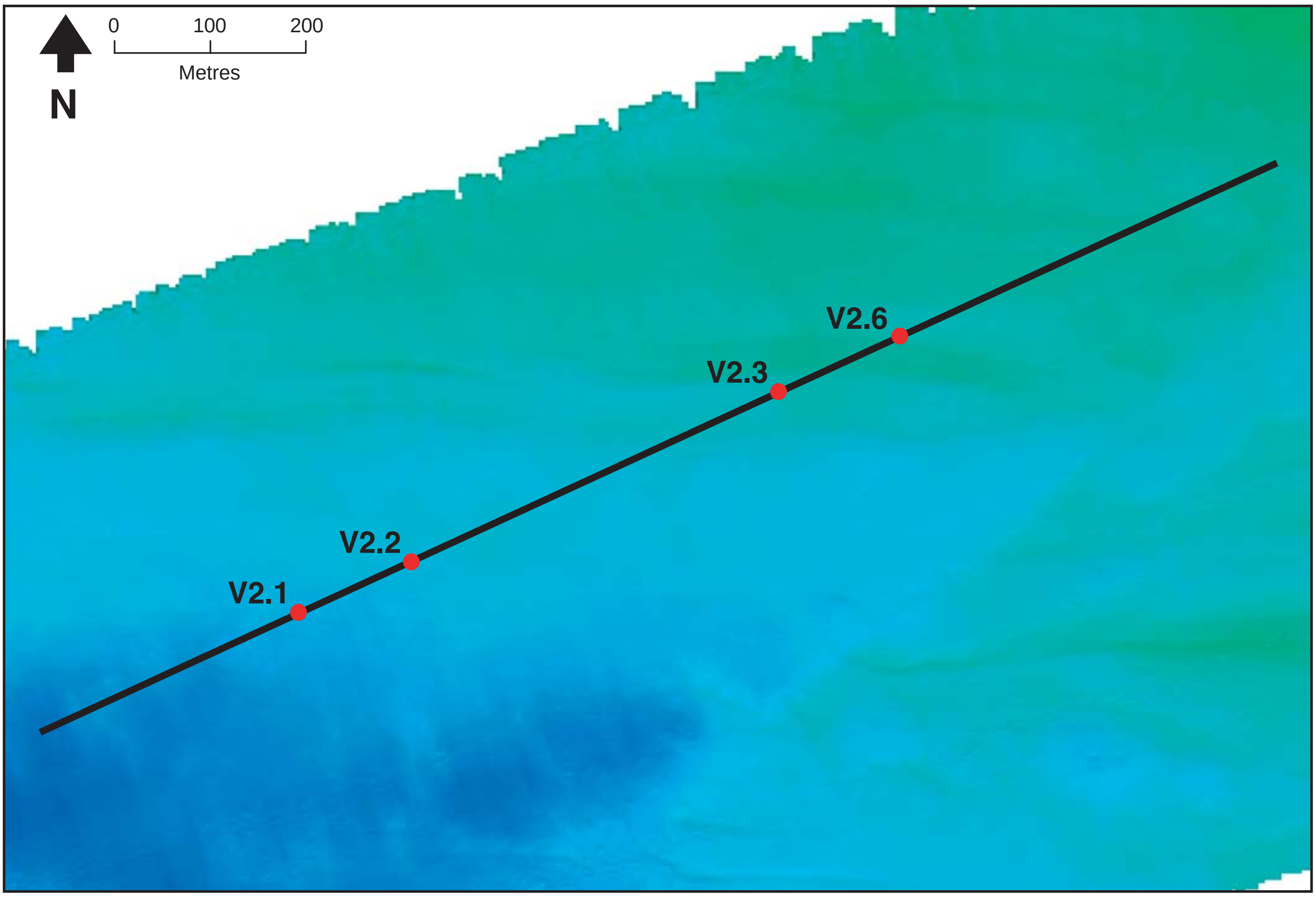


Fig. 5.3: Multibeam image showing Video Tow V2 on Corridor 2

Video Tow V2, Corridor 2

Start position: 51° 16.56′ N, 004° 18.73′ W

Depth: 43 m

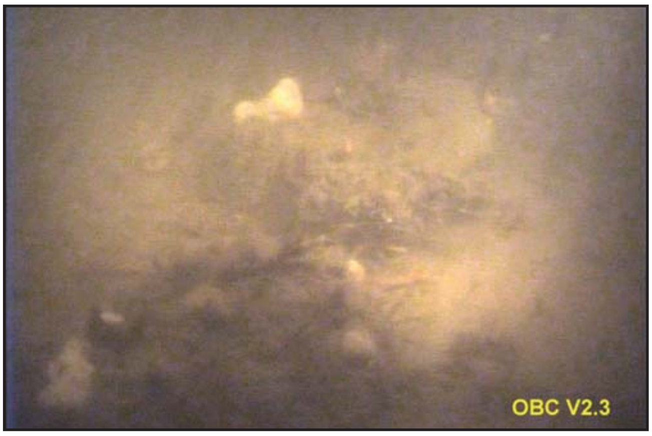
Region: Morte Platform

Camera tow V2 was in an area with outcrops of well-bedded Devonian/Carboniferous rocks which form small east-west trending scarps or ledges parallel to the strike of the bedding. These scarps are well-defined on the multibeam. Owing to rather turbid water and failure of the still camera, only poor quality video frame grabs can be shown here. In spite of the turbidity it was possible to identify substantial boulders and rock outcrops. Some of the rocks had white colonies of *Alcyonium digitatum* on them.

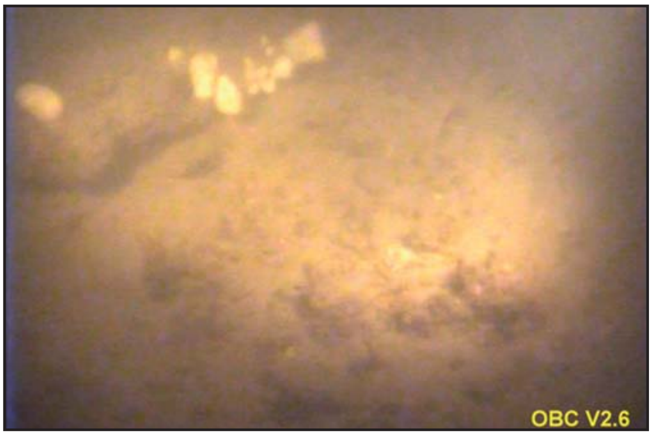
The boulders and rocks appeared to have a substantial coating of hydroid / bryozoan turf on them which seemed to be trapping mud. This particular tow was on the eastern / inner side of the study area and was carried out towards the time of low water — which might explain the higher turbidity of the water passing over it at the time. Sea bed roughness inducing turbulence over the rocky ground could also have played a part.

Frame V2.1: approx. 300 m from start of tow. Taken from just after the deeper ground at the start of the tow. It shows a bed of gravel and sand.

Frame V2.2: approx. 430 m from start of tow. Boulder on the right side of the image with much epifauna on it.



Frame V2.3: approx. 850 m from start of tow. Rocks which might be part of the bedrock, again carrying much epifauna.



Frame V2.6: approx. 990 m from start of tow. Edge of a rock ledge, with several *Alcyonium digitatum* colonies on it, and with sandy gravel in the foreground.

Video Tow V3, Corridor 3

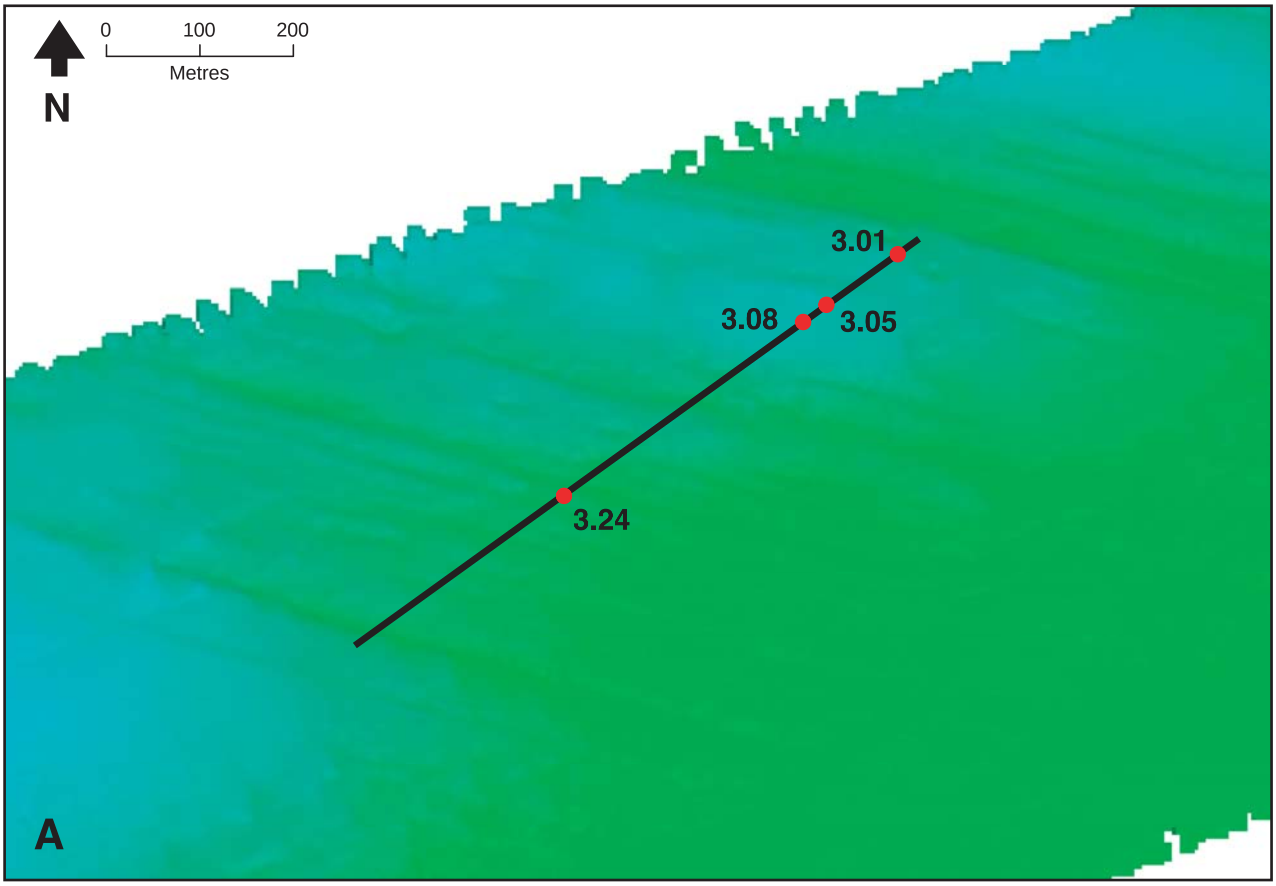
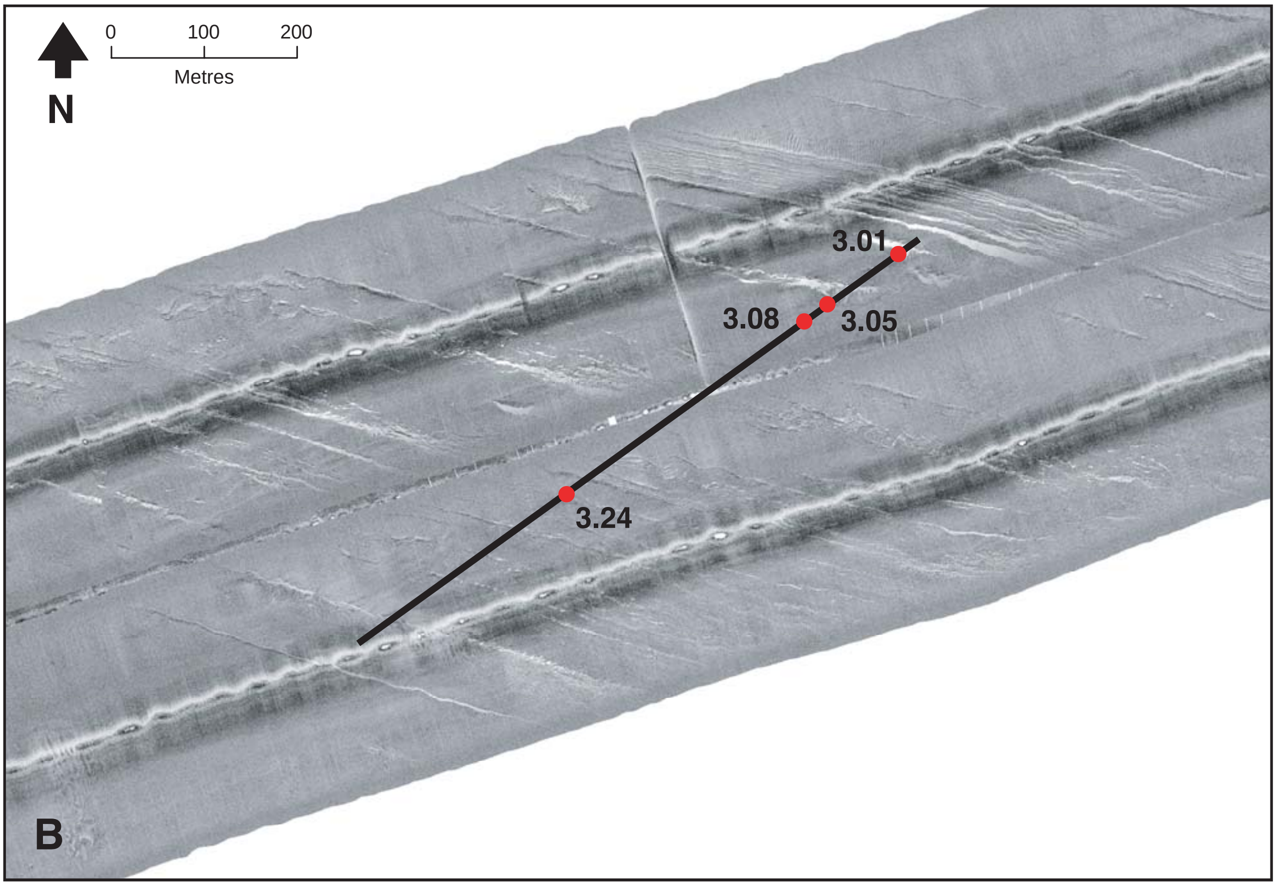


Fig. 5.4: (A) Multibeam and (B) Sidescan image showing Video Tow V3 on Corridor 3



Video Tow V3, Corridor 3

Start position: 51° 19.33′ N, 004° 19.52′ W

Depth: 49 m

Region: Morte Platform

Camera tow V3 was across a heterogeneous area where the bedrock was exposed at the sea bed as a series of ledges or scarps. Between the ledges of northeast dipping sedimentary rock, there was gravel with a few larger cobbles and boulders. Due to mud coating the stones, together with hydroid and bryozoan turf, it was seldom possible to see the lithology of the boulders and hence whether they were detached pieces of the adjacent bedrock or possibly derived from glacial till. There was little superficial sand in this area. Most of the visible sand was found lying in the scour hollows on the steeper southwest side of the rock ledges. The tow direction was to the southwest and hence approaching the rock scarps on their less steep dip slope. On the sidescan mosaic there are sharply defined acoustic shadows indicating the scarps on the southwest side of most of the rock outcrops. There are also patches of irregular material between some ridges which may represent small amounts of cobbles and boulders.

Photo 3.01: approx. 30 m from start of tow. Relatively clean gravel surface near the start of the tow. There was almost complete sand cover in the next frame.

Photo 3.05: approx. 110 m from start of tow. Heterogeneous muddy gravel with a few cobbles that was typical of the sea bed between the rock ledges here.

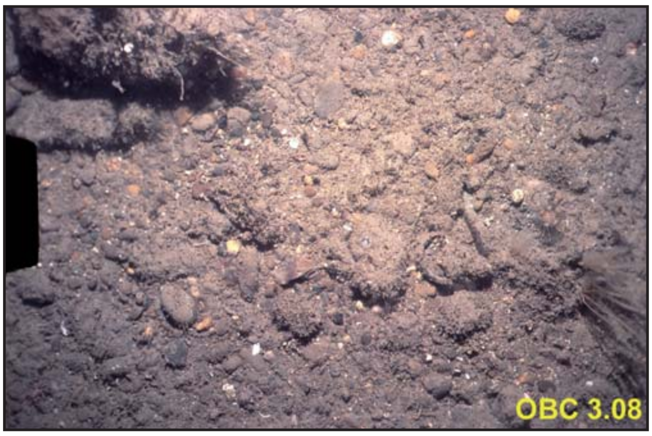


Photo 3.08: approx. 145 m from start of tow. More of the muddy gravel with hydroid/bryozoan turf on some of the boulders. The superficial mud coating was probably ephemeral.

Photo 3.24: approx. 450 m from start of tow. Edge of a rock ledge/scarp with sand in the deep scour hollow adjacent to it.

Video Tow V4, Corridor 4

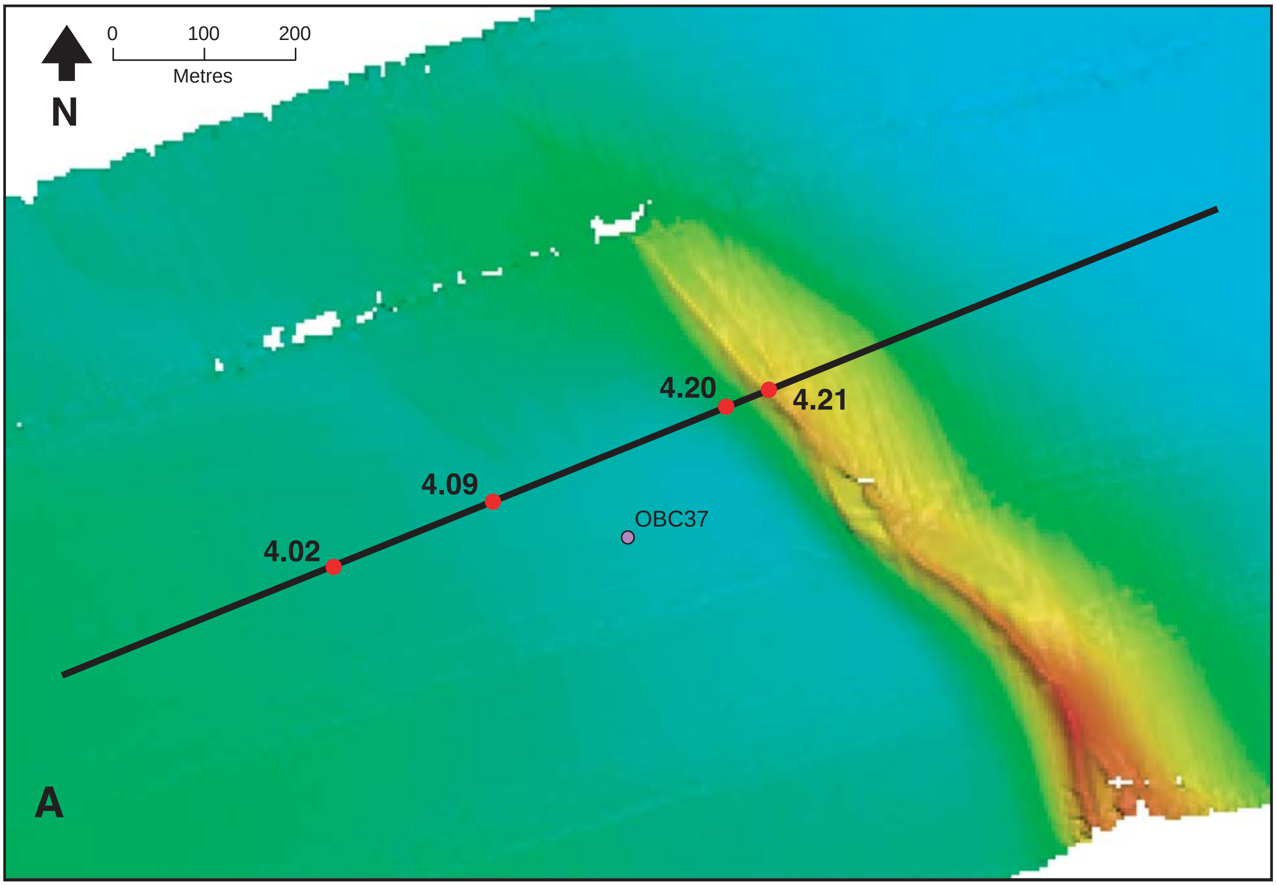
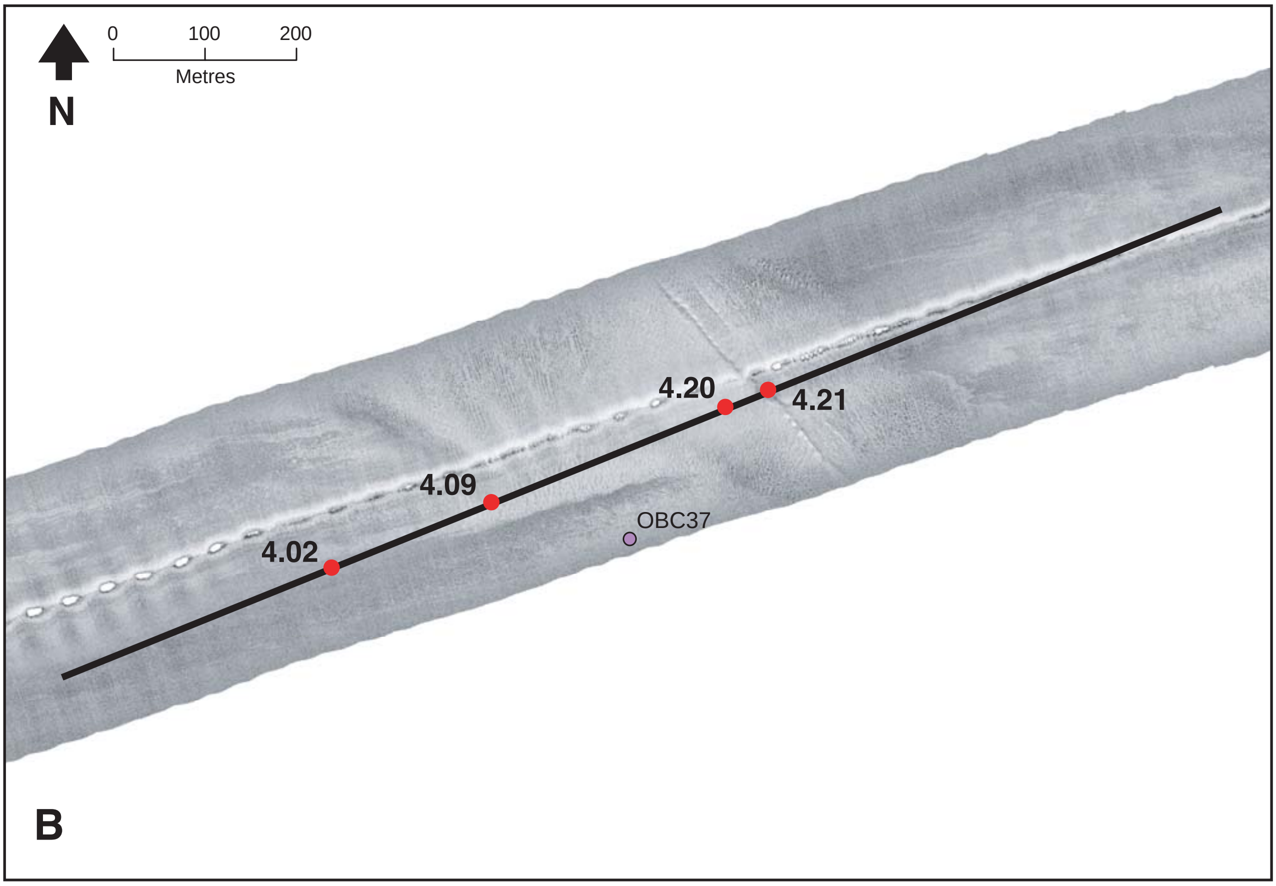


Fig. 5.5: (A) Multibeam and (B) Sidescan image showing Video Tow V4 on Corridor 4



Video Tow V4, Corridor 4

Start position: 51° 18.69′ N, 004° 34.85′ W

Depth: 43-50 m

Region: SOBel Sands

Camera tow V4 on Corridor 4 ran across a relatively flat sea bed before crossing an isolated southwest facing sand wave which was several metres high where it was crossed by the video tow. The track then ran back onto the plain to the east.

The sidescan image indicates that the flat sea floor comprises areas of rippled sand which are aligned transverse to the peak tidal currents and also longitudinal streaks and patches of thin sand parallel to the peak tidal currents. These sandy features are lighter reflective tones on the sidescan image. The darker reflective patches of sea bed are predominantly gravel. The video images capture the sediments associated with some of these bedforms.

Photo 4.02: approx. 310 m from start of tow. From near the western end of the tow showing an example of the lag gravel horizon overlain by rippled sand veneer. There is not enough sand to hide the gravel which is seen to have varying lithologies. The few shells appear worn and may be archaic.

Photo 4.09: approx. 500 m from start of tow. An area where there is no sand veneer over the lag gravel. This type of sediment is typical of darker reflective patches on the sidescan. These patches have no relief compared to the adjacent sea bed and therefore are not apparent on the multibeam image.

Photo 4.20: approx. 780 m from start of tow. Sand with lingulate ripples on the southwest facing lee slope of the sand wave.

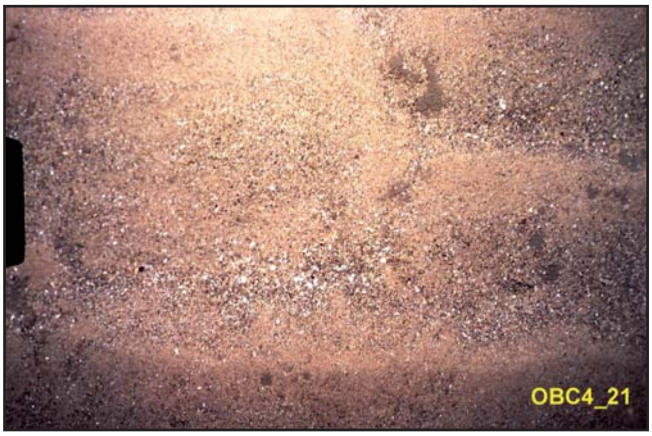


Photo 4.21: approx. 820 m from start of tow. From near the crest of the sand wave. It shows sand with some comminuted shell fragments. The sledge runners may have dug into the loose sand so that the camera lens was closer to the sea bed. There is a small amount of aggregated marine snow as patches in the troughs of the minor ripples.

Video Tow V5, Corridor 5

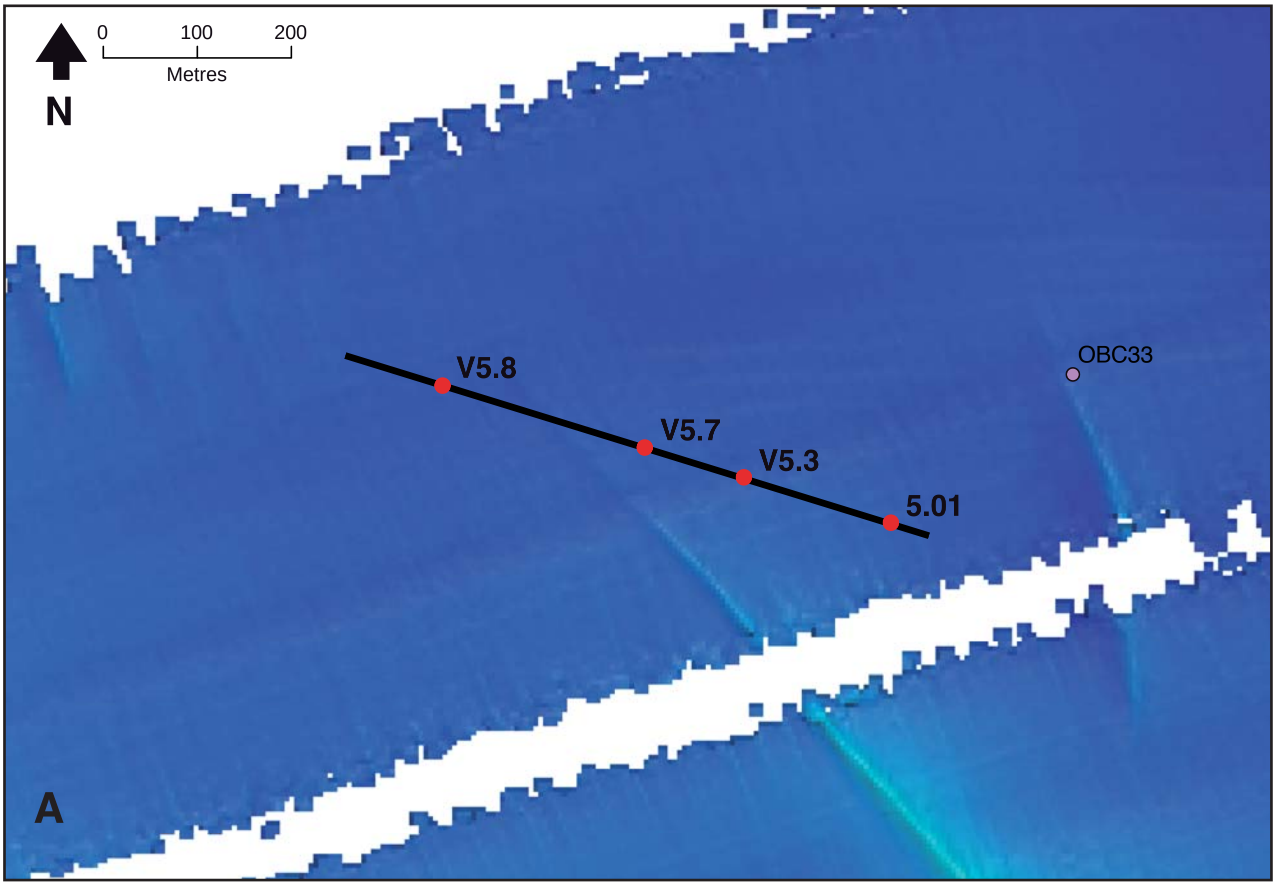
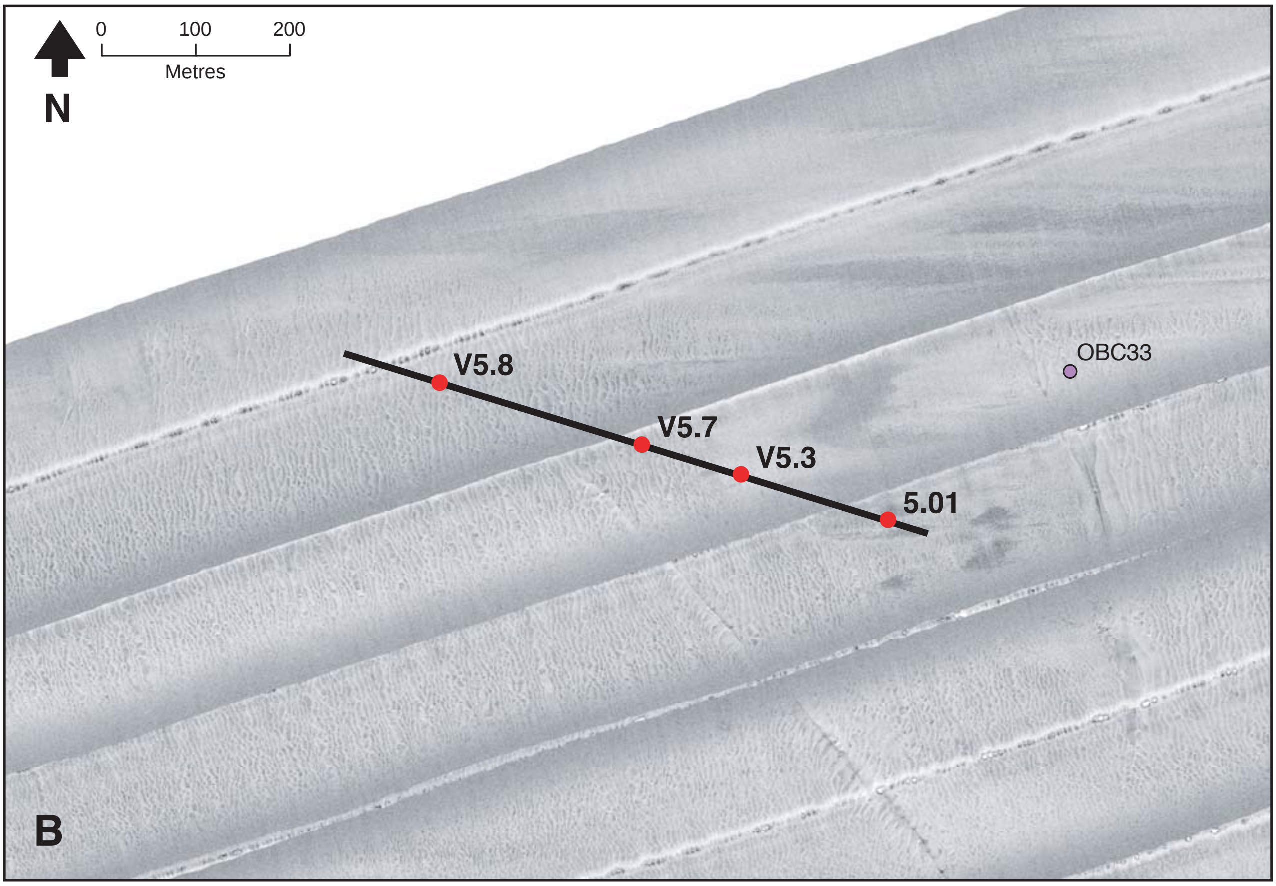


Fig. 5.6: (A) Multibeam and (B) Sidescan image showing Video Tow V5 on Corridor 5



Video Tow V5, Corridor 5

Start position: 51° 20.73′ N, 004° 38.41′ W

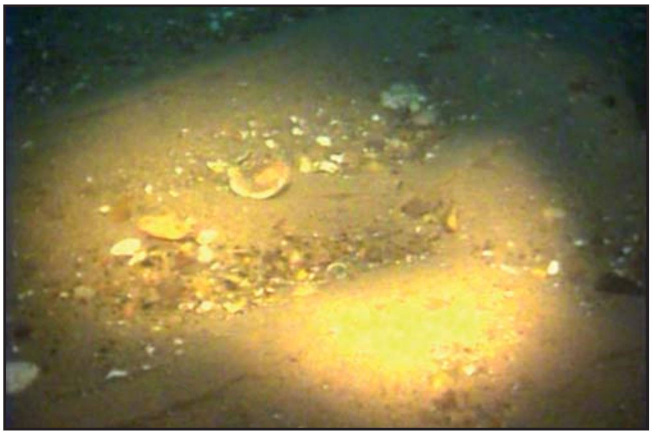
Depth: 53 m

Region: SOBel Sands

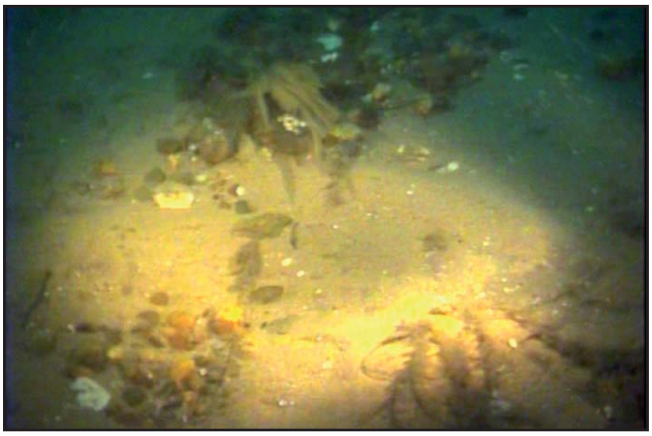
Camera tow V5 on Corridor 5 yielded only one still photo, but in clear water conditions the video gave a good impression of the types of ground. In spite of the depth there was enough light reaching the sea bed on a bright summer day for the video camera to show more than just the patch illuminated by the lights. Thus in the second half of the tow when passing over the crests of the series of megaripples, the next megaripple could sometimes be discerned. Looking down from the crests it was clear that the underlying gravel horizon was exposed very close to the steeper lee side of each megaripple. Some of the pattern seen on the sidescan was probably due to the gravel showing in the lows between the megaripples.

The coarse material showing in the lows between the megaripples was seen to be composed mainly of pebbles with some nearly intact shells and shell fragments. The sidescan record appears to show two types of meso-scale habitat in this locality. On the western side there are obviously megaripples while on the northeast the area seems to have larger patches of the lag exposed with sand veneer that lacks relief at the scale detectable by sidescan. The series of images reflect these subtle but ecologically relevant differences.

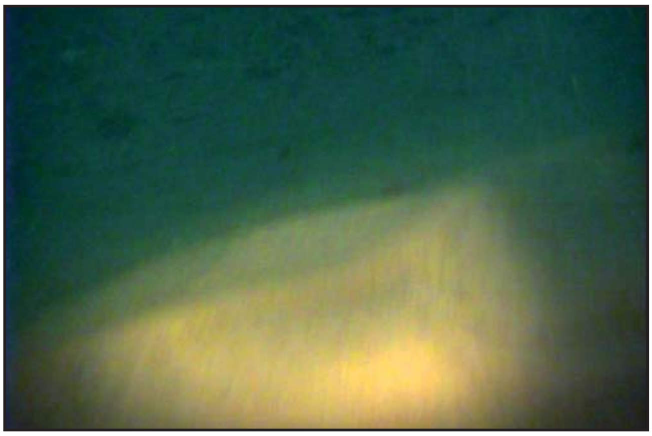
Photo 5.01: approx. 50 m from start of tow. Gravel ground with patchy sand veneer and frequent hydroids.



Frame V5.3: approx. 205 m from start of tow. Gravel with rippled sand veneer and much shell hash.



Frame V5.7: approx. 310 m from start of tow. Gravel that is almost up to cobble sizes, again with some sand veneer and hydroids, including a clump of *Nemertesia antennina*.



Frame V5.8: approx. 540 m from start of tow. The sharp crest of a megaripple. Just visible in the unilluminated area beyond, there is gravel visible in the low.

Video Tow V6, Corridor 4

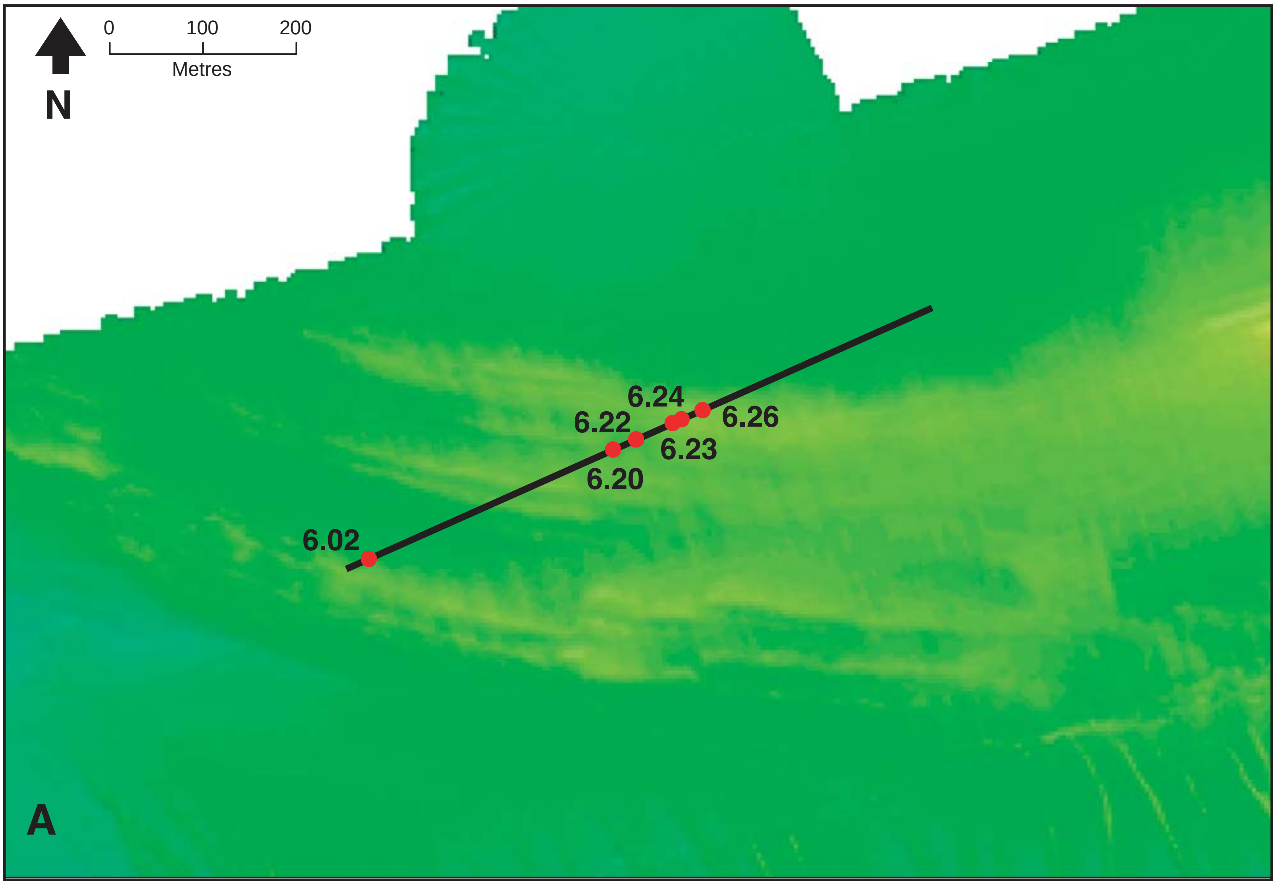
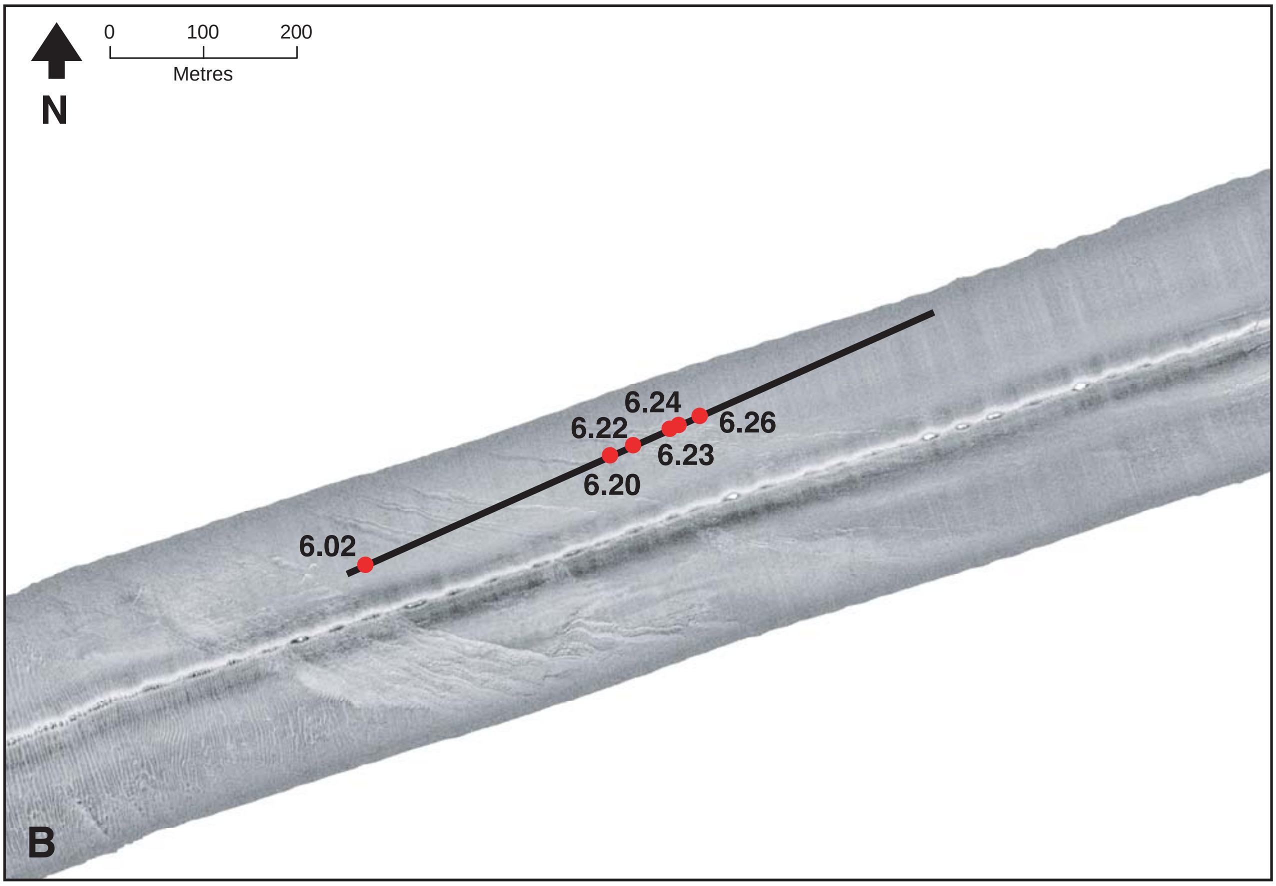


Fig. 5.7: (A) Multibeam and (B) Sidescan images showing Video Tow V6 on Corridor 4



Video Tow V6, Corridor 4

Start position: 51° 22.30′ N, 004° 18.87′ W

Depth: 50 m

Region: Morte Platform

Camera tow V6 on Corridor 4 was targeted at an area with exposures of well-bedded sedimentary rock whose strike bends from the northwest around to the east. The run began on a lag gravel plain and met several rock outcrops in the later third of the tow. It did not reach westwards beyond the rock where the multibeam and sidescan showed a field of sand megaripples.

Photo 6.02: approx. 25 m from start of tow. Lag gravel plain with some ephemeral mud deposited on it.

Photo 6.20: approx. 310 m from start of tow. More of the gravel plain.

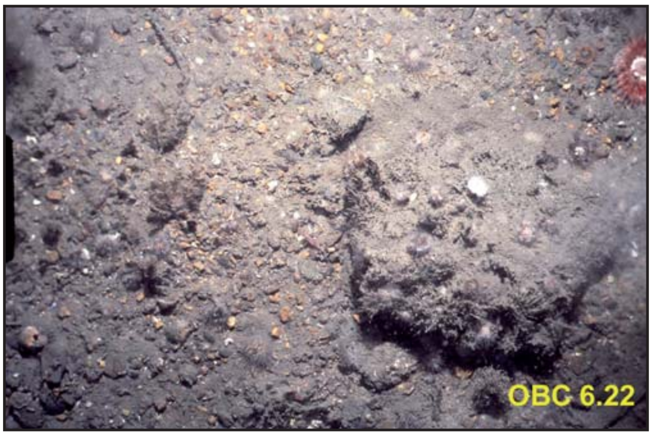


Photo 6.22: approx. 355 m from start of tow. Small rock outcrop surrounded by gravel.

Photo 6.23: approx. 370 m from start of tow. Edge of one of the rock outcrops with some sand in the lee of it.

Photo 6.24: approx. 380 m from start of tow. The flatter surface of a rock outcrop with a cover of hydroid / bryozoan turf that has trapped fine particles.

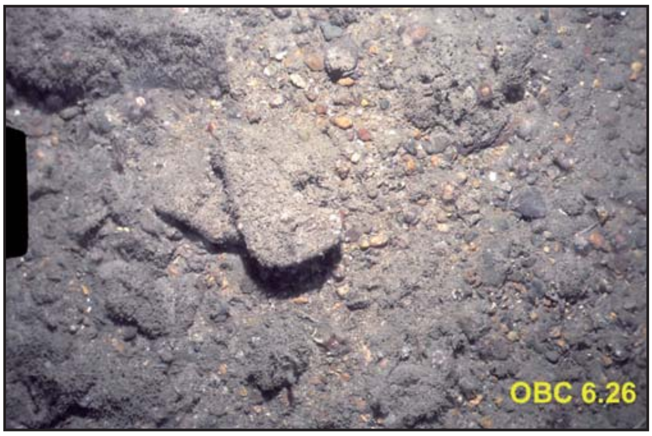


Photo 6.26: approx. 410 m from start of tow. Similar to 6.24 but with more gravel.

Video Tow V7, Corridor 6

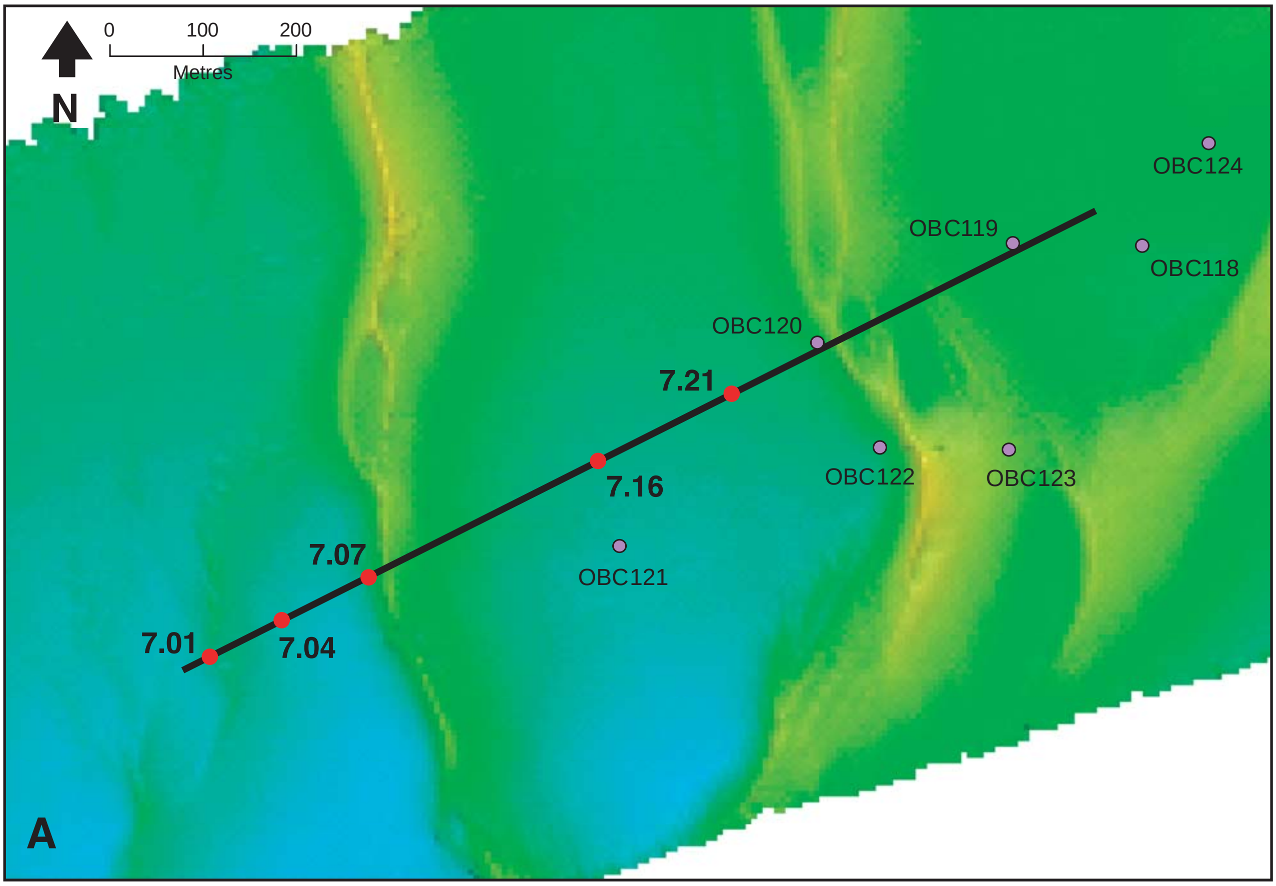
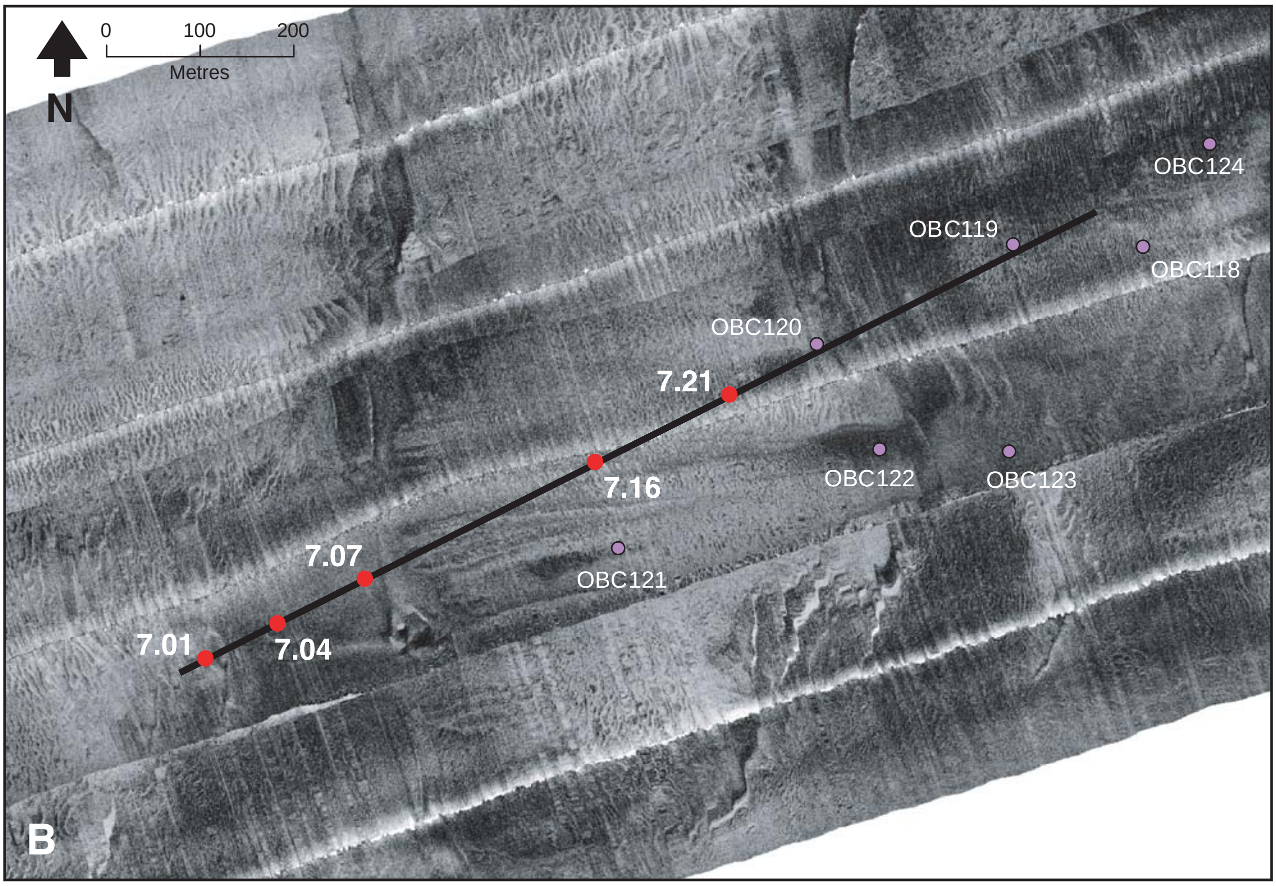


Fig. 5.8: (A) Multibeam and (B) Sidescan images showing Video Tow V7 on Corridor 6



Video Tow V7, Corridor 6

Start position: 51° 26.38′ N, 004° 22.30′ W

Depth: 46 m *Region: NOBel Sands*

The area of this tow has two major sand waves which are about 500 m apart. Both sand waves are complex with lunate double crests and bifurcation. The sledge initially landed on a minor sand wave which just shows on the multibeam. The tow then crossed a plain before reaching the westernmost major sand wave. The wide plain between the sand waves had a patchy rippled sand veneer over the gravel. Very prominent during this tow were the ephemeral deposits of 'marine snow' flocs lying in the lows of the minor sand ripples. There were also particularly large numbers of worn and probably archaic shells lying on the lag gravel horizon.

Photo 7.07: approx. 220 m from start of tow. A complex of minor sand ripples, picked out by ephemeral floc deposits, near the crest of the western major sand wave.

Photo 7.01: approx. 30 m from start of tow. Sand with irregular ripples on the minor sand wave where the sledge first landed.

Photo 7.16: approx. 490 m from start of tow. The plain between the two major sand ridges. It shows rippled sand veneer partly covering the lag horizon.

Photo 7.04: approx. 115 m from start of tow. The plain west of the western major sand wave with particularly large numbers of worn *Ensis* and *Spisula* shells lying on the lag gravel horizon.

Photo 7.21: approx. 650 m from start of tow. A part of the intervening plain where there was enough sand to cover the lag horizon. The minor ripples picked out by the ephemeral floc are irregular.

Video Tow V8, Corridor 7

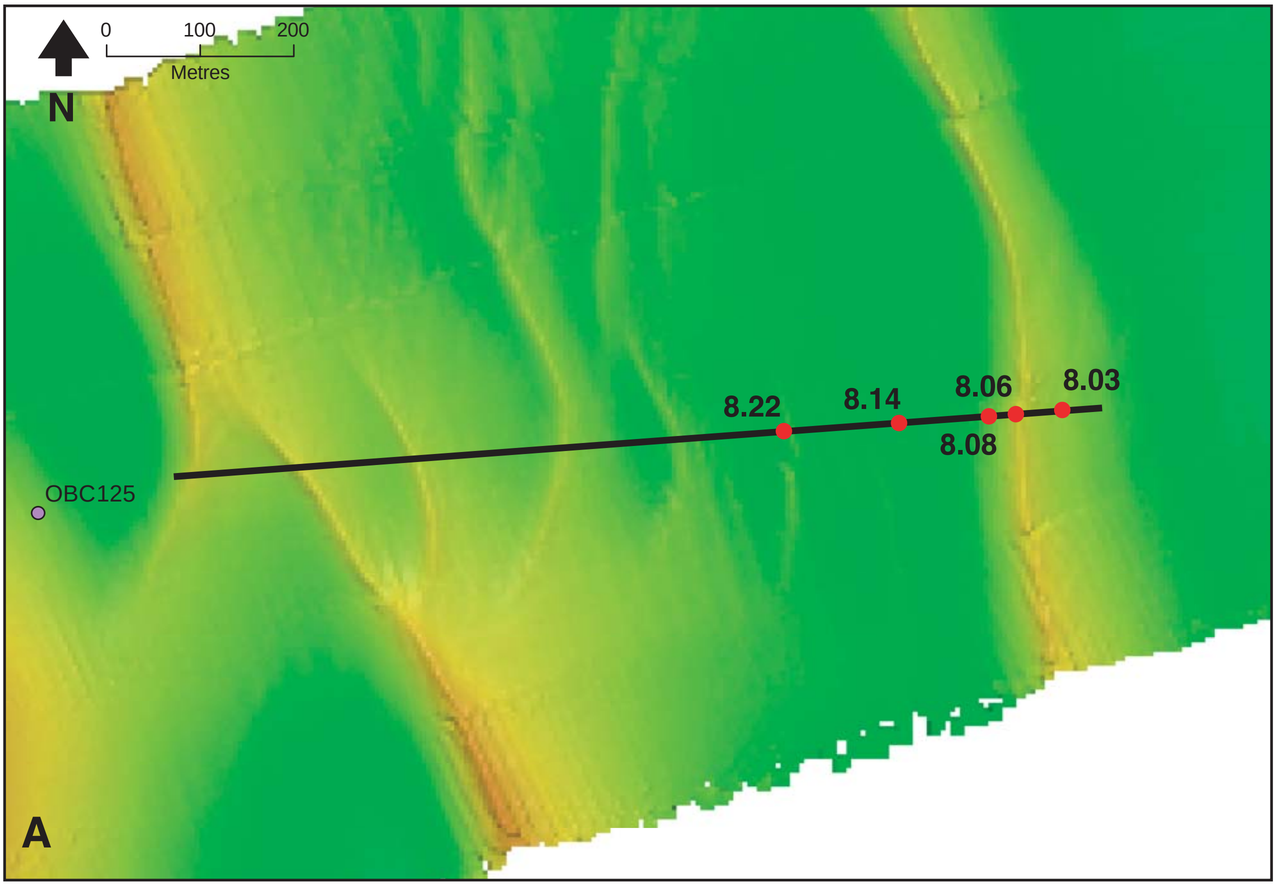
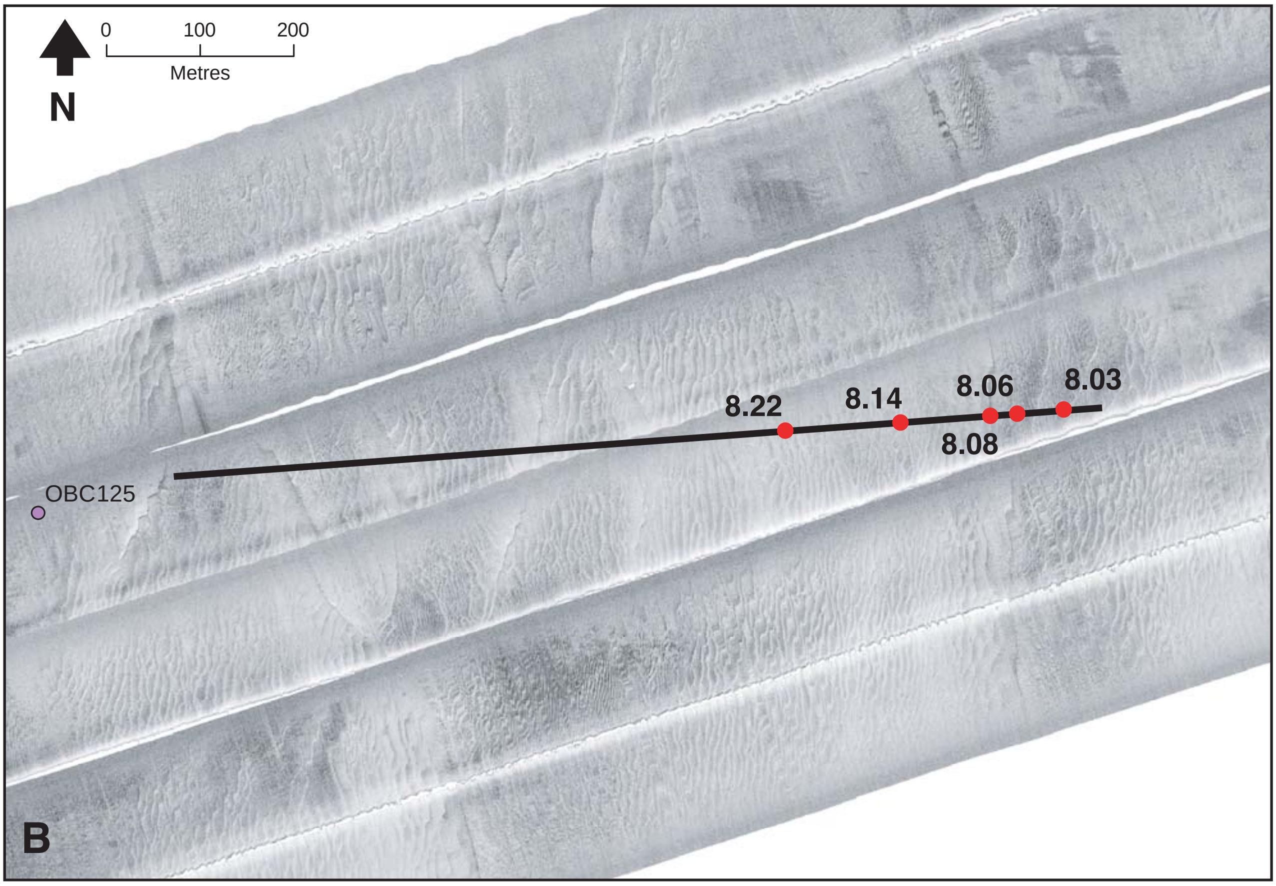


Fig. 5.9: (A) Multibeam and (B) Sidescan images showing Video Tow V8 on Corridor 7



Video Tow V8, Corridor 7

Start position: 51° 28.63′ N, 004° 27.97′ W

Depth: 40 m

Region: NOBel Sands

Camera tow V8 on Corridor 7 ran westwards across two large sand waves and several smaller sand waves associated with the larger waves. The sidescan shows extensive fields of megaripples between the large sand waves. On the photos and video gravel lag was partially exposed between the minor ripples. This was probably in the troughs between the megaripples.

Photo 8.08: approx. 120 m from start of tow. Appears to have coincided with the crest of one of the many megaripples between the large sand waves.

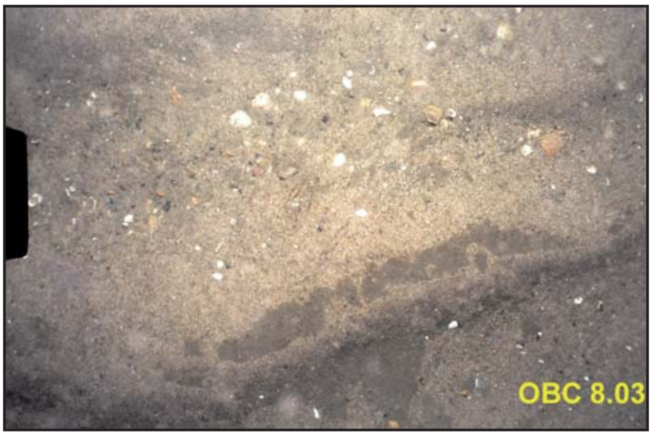


Photo 8.03: approx. 45 m from start of tow. Quite sharp minor ripples with worn *Spisula* shells lying on the gravel which just exposes between the ripples. There are ephemeral floc deposits on either side of the crests of the minor ripples.

Photo 8.14: approx. 215 m from start of tow. Another crest where the sledge has paused before tipping and sliding down the west facing steeper lee slope of a sand wave.

Photo 8.06: approx. 90 m from start of tow. A herring bone pattern in the small patches of settled floc. This implies that before slack water the near bed current was running along the line of the sand ridges rather than east-west across them.

Photo 8.22: approx. 335 m from start of tow. Minor ripples that appear active and with fine gravel just showing in the lows.

Video Tow V9, Corridor 7

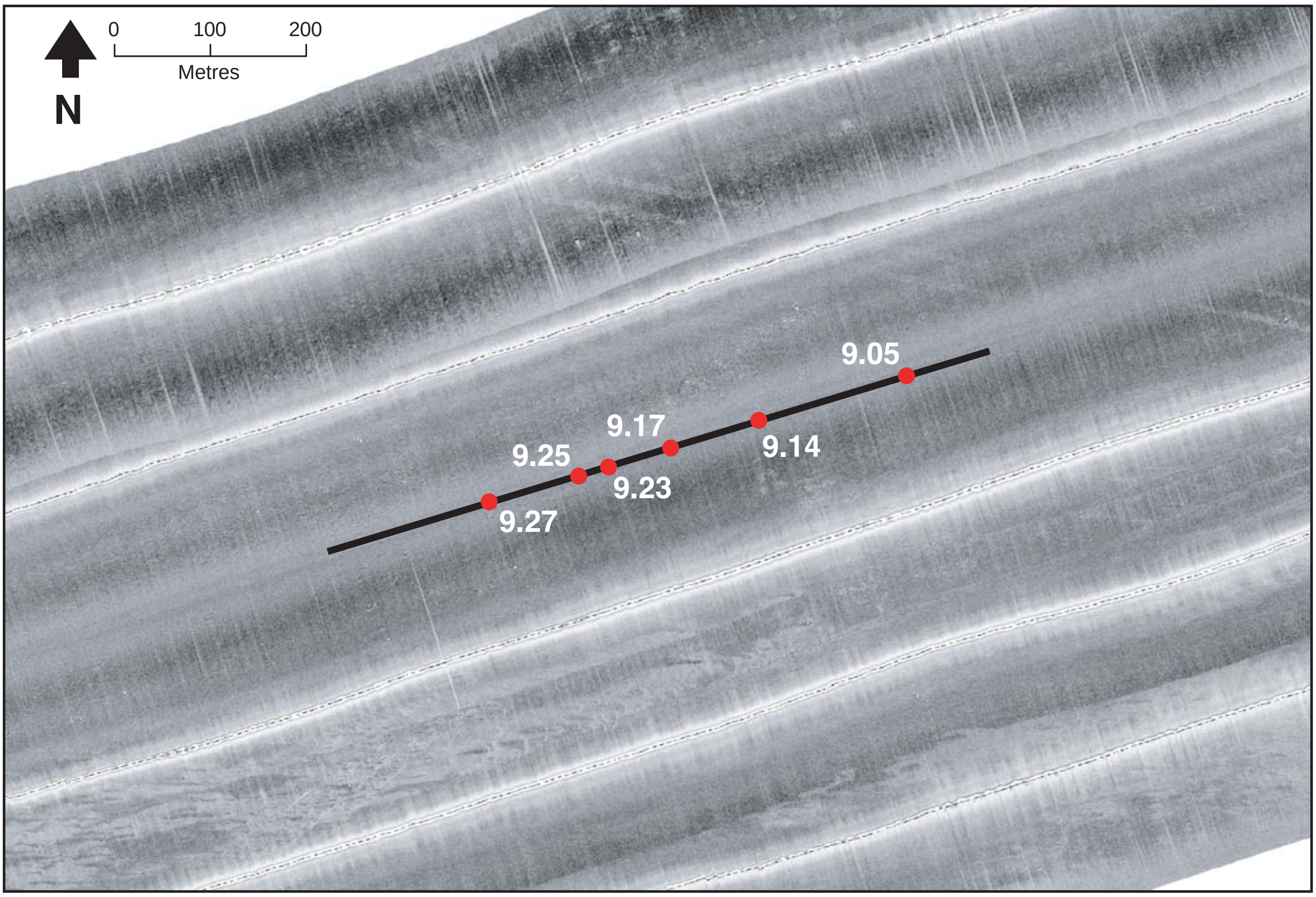


Fig. 5.10: Sidescan image showing Video Tow V9 on Corridor 7

Photo 9.05: approx. 90 m from start of tow. Muddy gravel with frequent worn shells on the surface. Owing to the deposit of fine floc on the surfaces it is difficult to be certain how much of the small roughness is due to hydroid / bryozoan turf. The rough surface with some old shells not in the natural resting position may be evidence that in the past the bed surface may have been influenced by the passage of fishing gear.

Photo 9.14: approx. 250 m from start of tow. A small boulder partly embedded in the muddy gravel. On the boulder there are clumps of the hydroid *Nemertesia antennina* and a crust of barnacles.

Video Tow V9, Corridor 7

Start position: 51° 24.35′ N, 004° 47.92′ W

Depth: 63 m

Region: northwest of SOBel Sands

Camera tow V9 on Corridor 7 was the deepest and furthest west of the tows undertaken in this study area. The sea bed here was a heterogeneous muddy gravel throughout the tow. No features showed on the multibeam record, but some of the sidescan tracks show streaks and patches with subtle differences in reflectivity indicating some areas of thin sand occur although none were crossed by the video tow. Across the NE corner of the sidescan record there are two parallel lines which were probably made by a fishing vessel towing twin beam trawls. On this apparently stable ground fishing gear marks are likely to remain visible for a long time so it may be of note that more were not seen.

Photo 9.17: approx. 345 m from start of tow. A typical example of the surface of the heterogeneous mixed sediment here.

Photo 9.23: approx. 410 m from start of tow. The one image on this tow that showed some better sorted finer gravel apparently overlying the heterogeneous lag.

Photo 9.25: approx. 445 m from start of tow. An old oyster shell shows in the bottom left corner. *Ostrea edulis* shells appearing to be archaic were quite common at this site.

Photo 9.27: approx. 540 m from start of tow. A slightly higher proportion of sand on the heterogeneous gravel than most of the images from here.

Video Tow V11, Corridor 10

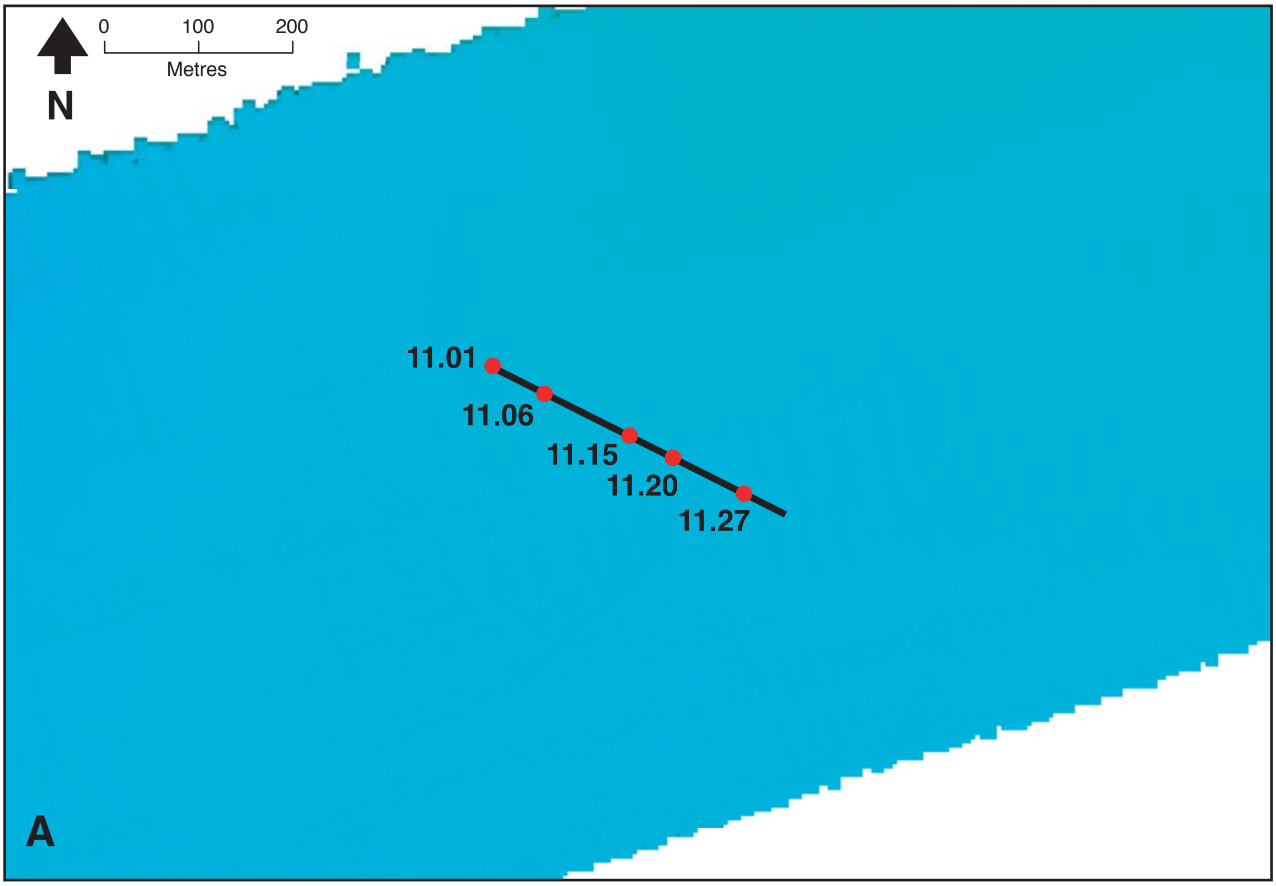
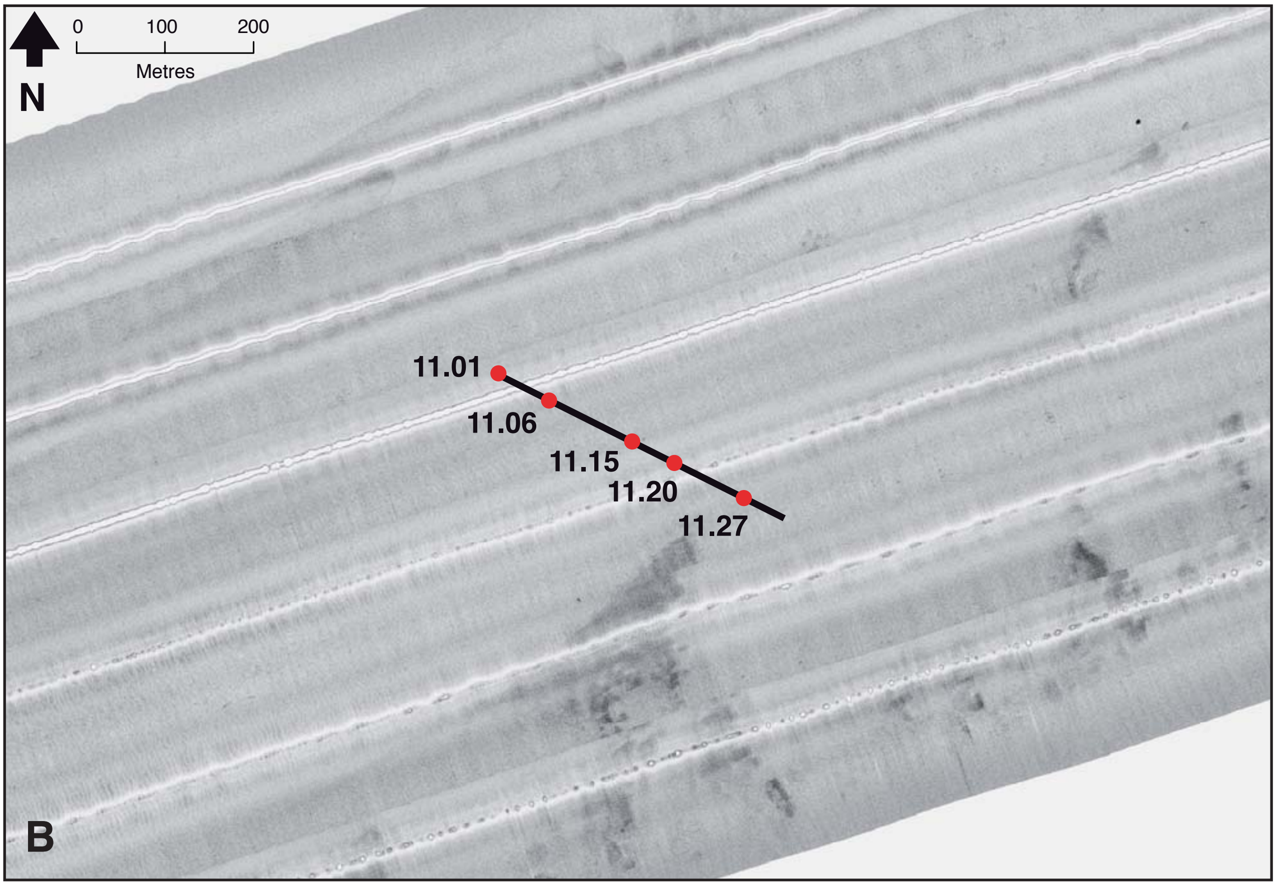


Fig. 5.11: (A) Multibeam and (B) Sidescan images showing Video Tow V11 on Corridor 10



Video Tow V11, Corridor 10

Start position: 51° 36.25′ N, 004° 35.73′ W

Depth: 37 m *Region: Carmarthen Bay & Approaches*

The whole of V11 on Corridor 10 off Carmarthen Bay was on rippled sand but there was not enough relief here to be detected on the multibeam. The overlying water was fairly turbid but because of the angle between the strobe and the camera, backscatter did not totally obscure views of the sea bed. Close examination of the better photos showed that there was mud or organic floc settled amongst the ripples. Of particular note was the presence of mud clasts in the ripple troughs. These form when mud becomes partly cohesive on neap tides. In this condition the mud can be slightly more cohesive than surrounding sand. Mud clasts of this sort are usually seen on sands from turbid areas where the spring /neap tidal cycles allow settlement and partial cohesion of the fines. Such features are often seen off turbid macrotidal estuaries or near dredge spoil dumping grounds. The camera tow was done towards the end of a series of neap tides and the occurrence of surface clasts may be ephemeral. Particle size analyses will normally show the fines as if they were dispersed throughout the samples, though *in situ* much of the fines may have been in clasts.

Photo 11.01: approx. at start of tow. Pronounced minor ripples in irregular and lingulate shapes, with some fine floc settled on the bed as well as suspended particles.

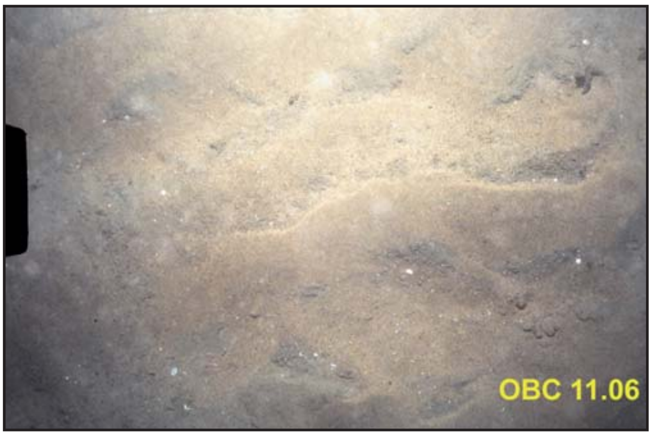


Photo 11.06: approx. 60 m from start of tow. Mud and fine floc on the surface of the rippled sand. Looking closer, some of the fines have become more cohesive than the sand and were starting to form small clasts.

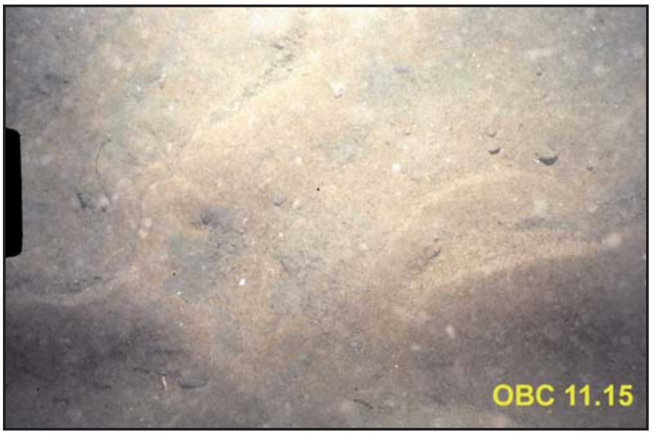


Photo 11.15: approx. 155 m from start of tow. More of the rippled sand with cohesive fine sediment forming clasts.

Photo 11.20: approx. 210 m from start of tow. The sand ripples are slightly smoothed and with settled fines forming pellet sized clasts on the surface.

Photo 11.27: approx. 295 m from start of tow. Settled floc and clasts on the rippled sand.

Video Tow V13, Corridor 6

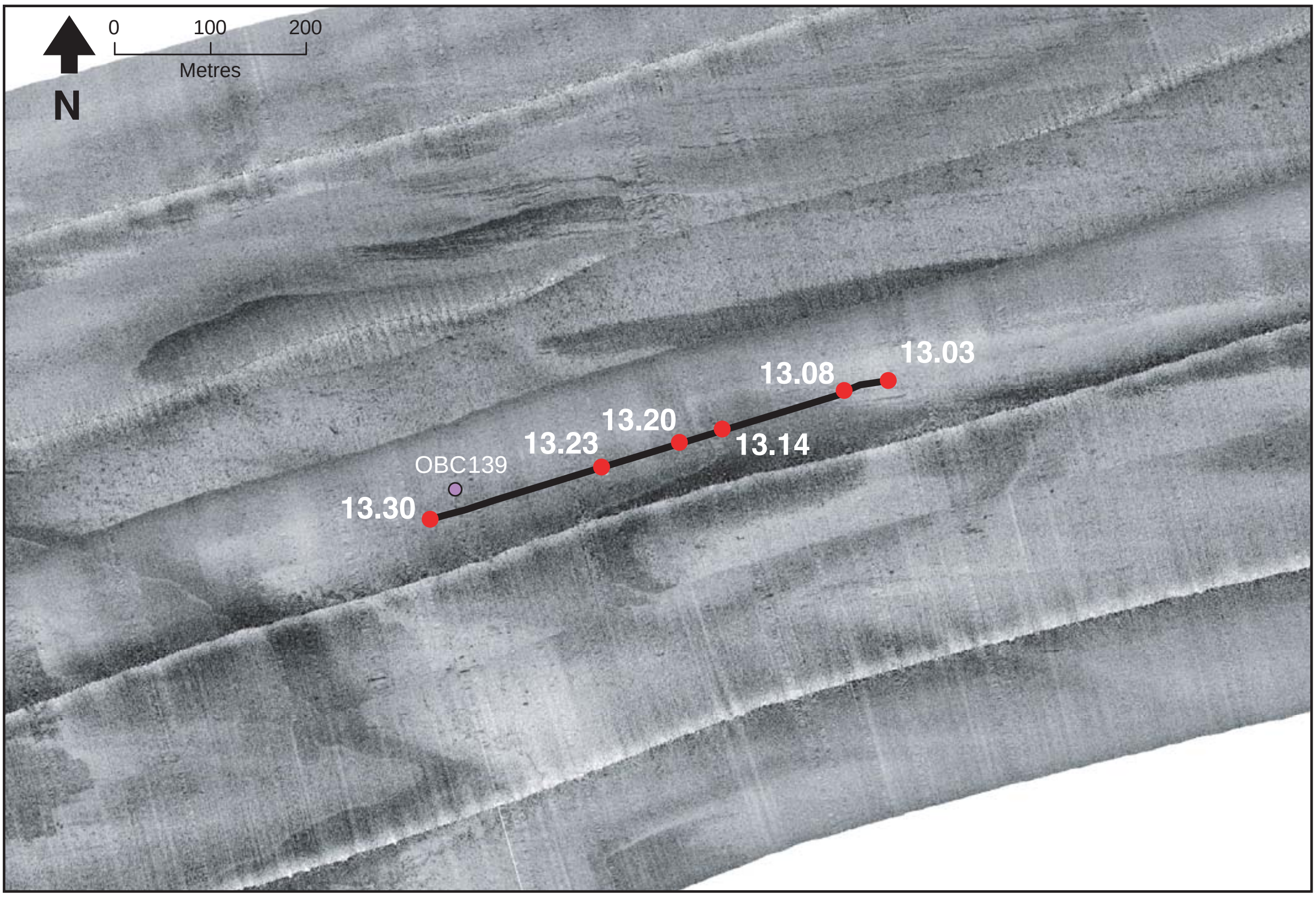


Fig. 5.12: Sidescan image showing Video Tow V13 on Corridor 6

Photo 13.03: approx. at start of tow. The bed where the sledge first landed during deployment and before the towing bridle was stretched out of the field of view. As there are hydroids visible the sand cover over the lag was probably less than about 50 mm. There are paired valves of *Spisula solida* also in view.

Photo 13.08: approx. 50 m from start of tow. The rippled sand with hydroids coming through.

Video Tow V13, Corridor 6

Start position: 51° 27.99′ N, 004° 15.04′ W

Depth: 40 m

Region: east of NOBel Sands

Around the location of V13 on Corridor 6 the multibeam showed the sea bed to be flat. The sidescan indicated differences in bed texture with longitudinal patches of dark high reflectivity indicative of gravel and extensive areas of lighter reflectivity associated with sands although these areas have a mottled tone which suggests that the sand cover may be thin. The video and photos appear to confirm this analysis with a variable sand veneer, mediated partly by growths of hydroids, overlying the lag gravel horizon. Photo quality was not good at this site due to plankton.

It is apparent that while on some photos there were frequent hydroid colonies attached to the pebbles and aligned with the current, on others the stones look bare. The difference may reflect differences in the fluctuating patterns, including depths and durations of exposure and coverage by superficial sand. It may also reflect the linear streaking indicative of sand ribbons to be seen on the sidescan record.

Photo 13.14: approx. 180 m from start of tow. Shows some of the larger stones in the lag showing through the superficial sand.

Photo 13.20: approx. 230 m from start of tow. Numerous hydroids coming through an almost complete sand cover over the lag to which they were attached.

Photo 13.23: approx. 310 m from start of tow. The lag gravel horizon with very thin and patchy sand on it.

Photo 13.30: approx. 500 m from start of tow. The lag gravel surface with very little sand on it. The gravel had pieces of sedimentary rock up to cobble size and was generally more heterogeneous than at some of the other locations where the lag horizon was exposed.

Video Tow V15b, Corridor 6

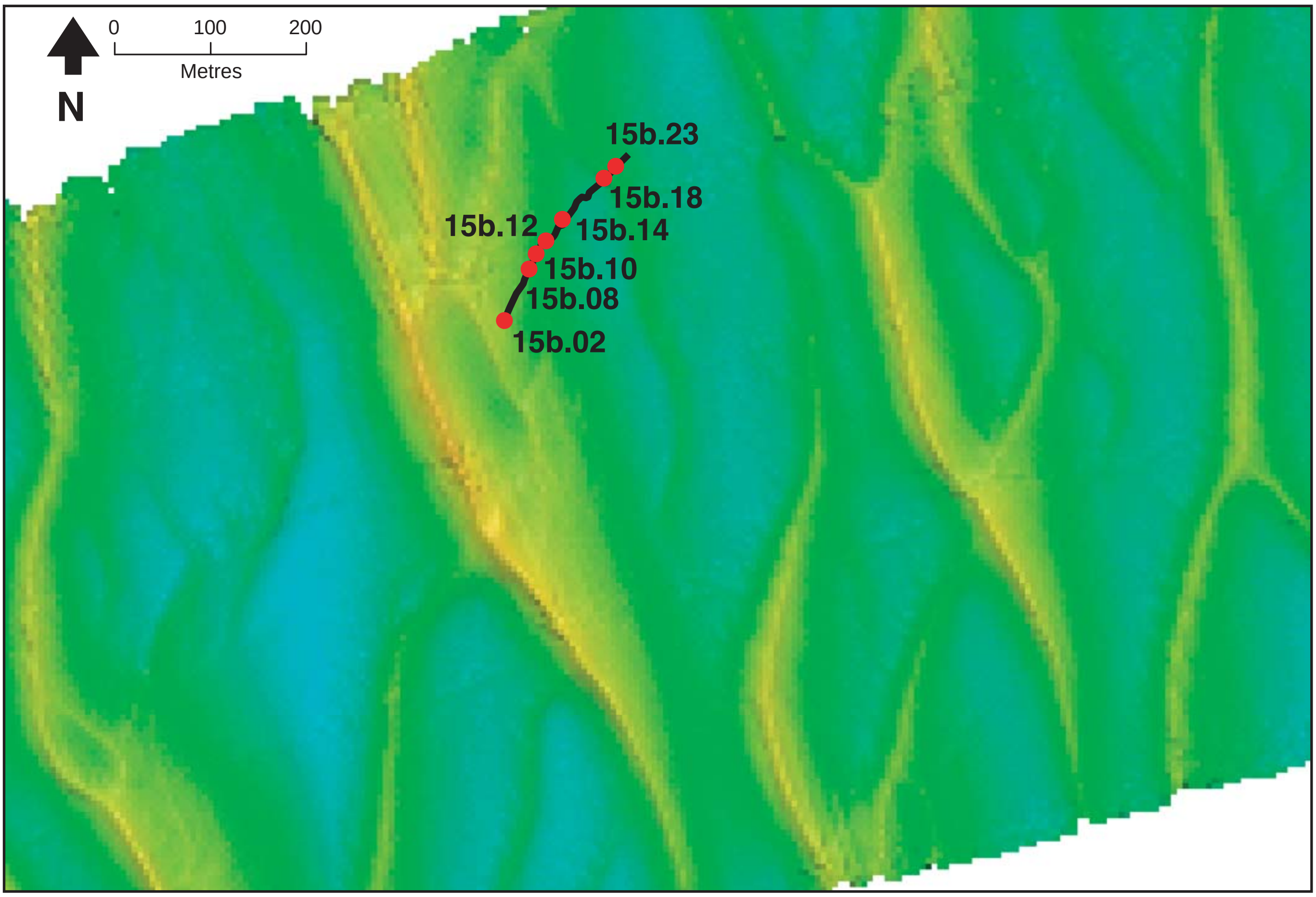


Fig. 5.13: Multibeam image showing Video Tow V15b on Corridor 6

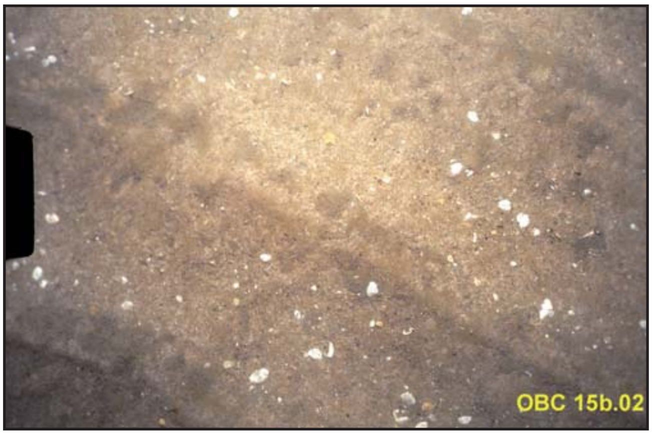


Photo 15b.02: approx. 10 m from start of tow. Straight minor sand ripples with frequent shell fragments in one of the plains between the sand waves.

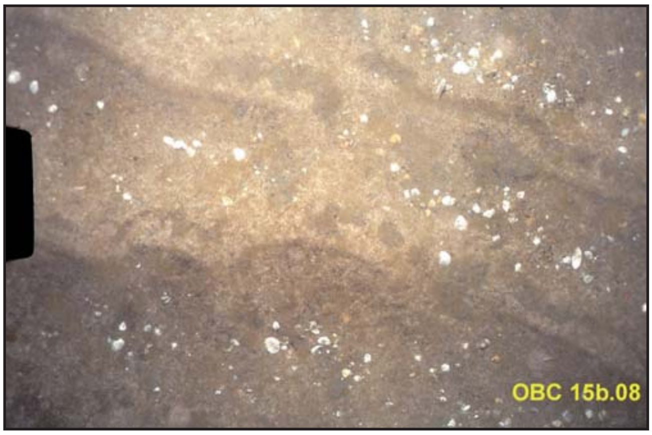


Photo 15b.08: approx. 70 m from start of tow. Appears to be from a low in the megaripple field and shows a horizon with many worn shell fragments. The straight minor ripples have lines of ephemeral floc deposits on either side of the crests.

Video Tow V15b, Corridor 6

Start position: 51° 25.6′ N, 004° 26.6′ W

Depth: 45 m

Region: NOBel Sands

The area around camera sledge tow V15b was seen on the multibeam record to comprise bifurcating, high frequency sand waves. It is a sea bed dominated by sandy waveforms, with megaripples between the larger waves. The tow is within a trough between sand waves which is predominantly sand. There are very few signs on the photos of any underlying lag gravel horizon. On the sidescan record there are fields of megaripples in the troughs between the sand waves.

Photo 15b.14: approx. 130 m from start of tow. Differs from others in this tow in the orientation of the sand ripples.

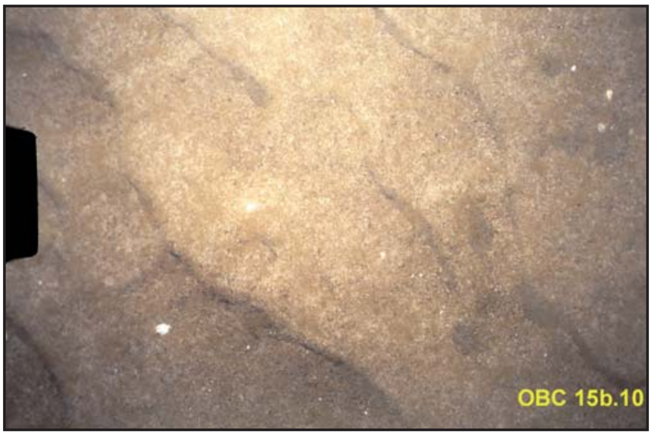


Photo 15b.10: approx. 90 m from start of tow. Rippled sand with some settled 'marine snow'.

Photo 15b.18: approx. 190 m from start of tow. Shows irregular minor ripples on the sand near the crest of one of the bifurcating sand waves.

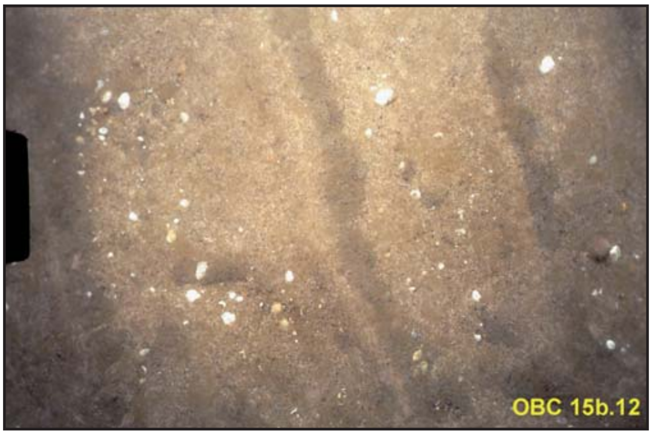


Photo 15b.12: approx. 110 m from start of tow. Another example of ground with shell fragments in the lows and settled floc next to the crests of the minor ripples.

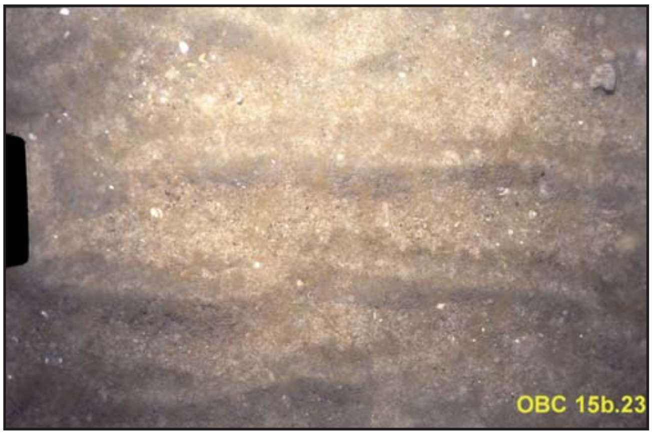


Photo 15b.23: approx. 210 m from start of tow. Small area (top right) where the underlying lag horizon is just showing.

Video Tow V16, Corridor 5

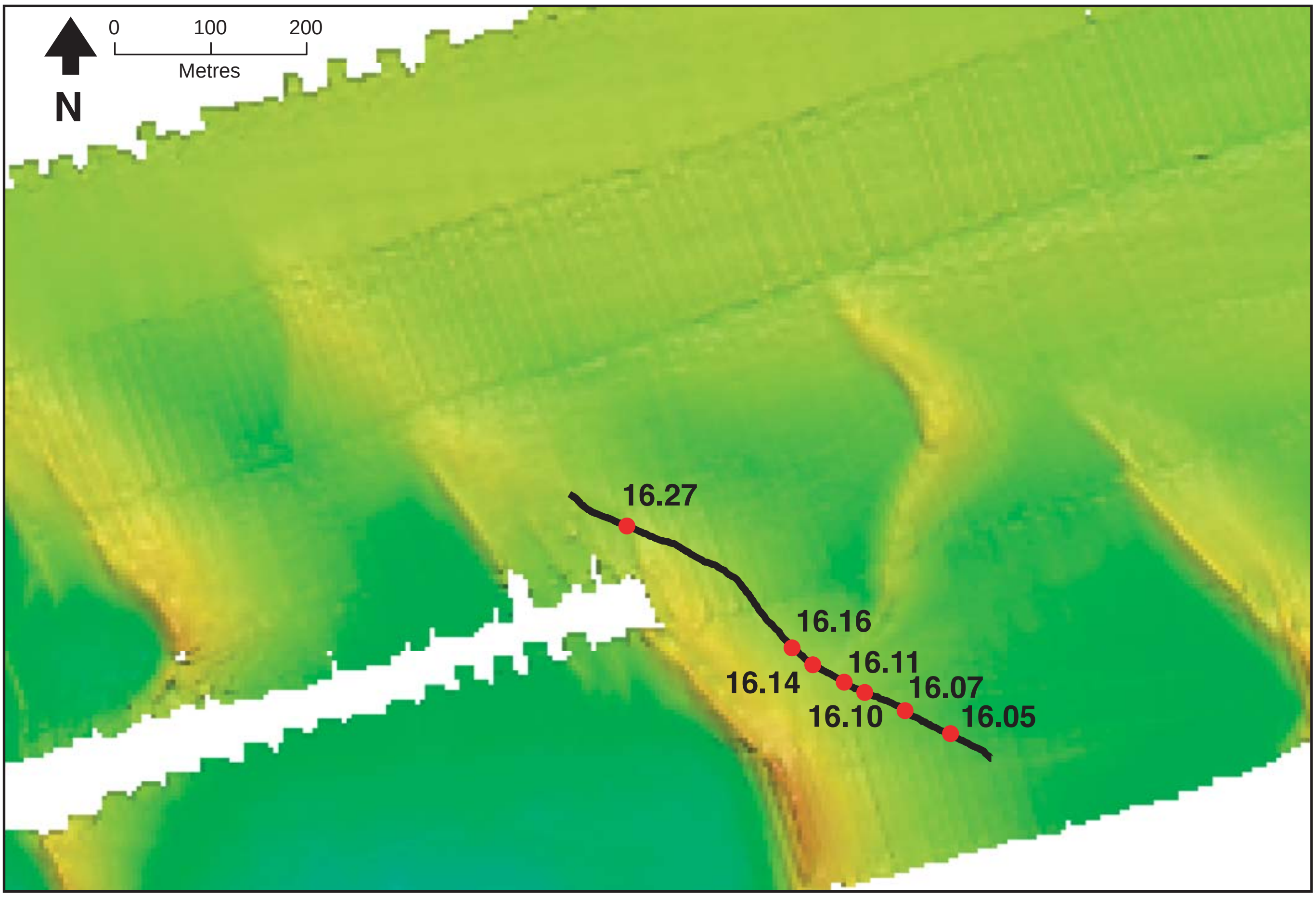


Fig. 5.14: Multibeam image showing Video Tow V16 on Corridor 5

Photo 16.05: approx. 60 m from start of tow. Sand veneer over the lag gravel horizon with abundant trailing hydroid colonies.

Photo 16.07: approx. 110 m from start of tow. Regular sand ripples on the lag gravel horizon.

Video Tow V16, Corridor 5

Start position: 51° 25.3′ N, 004° 16.6′ W

Depth: 38 m

Region: NOBel Sands

The multibeam image for the area of camera tow V16 on Corridor 5 shows four sand waves on a planar sea bed. Some of the sand waves are isolated and have a barchan shape with the outer 'horns' of their crests stretched forward to the west. This orientation implies net sand transport to the west as does the fact that the lee slope facing direction of all four waves is to the southwest. On the sidescan record the detail shows extensive fields and ribbons of megaripples on the plains and building onto the eastern stoss slopes of the sand waves. On several of the steep west facing lee slopes of the sand waves, larger megaripples are aligned at a sharp angle to the main wave crests indicating sediment transport along the line of the ridges. The series of photos showed that the plains have lag gravel with variable overlays of sand which may explain the pattern on the sidescan. Even in the plains the sand often had strong minor ripples.

Photo 16.14: approx. 215 m from start of tow. Sand largely covering the gravel but it is a thin enough veneer for hydroids attached to the gravel or shells to come through.

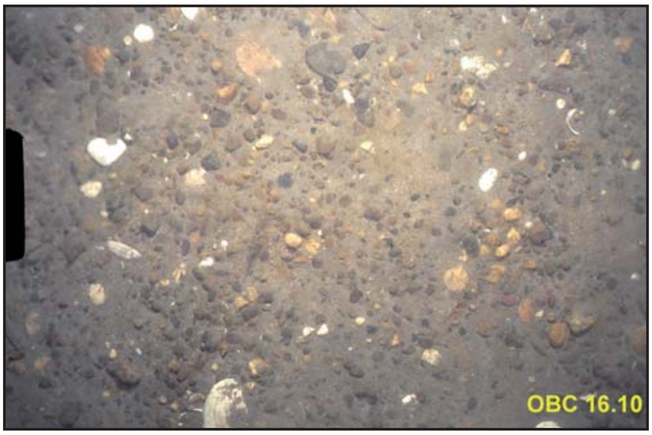


Photo 16.10: approx. 155 m from start of tow. Patch where the lag gravel horizon was almost clear of sand.

Photo 16.16: approx. 245 m from start of tow. Sharp crested minor ripples of sand overlying gravel with numerous worn *Spisula* shells.

Photo 16.11: approx. 170 m from start of tow. Thin sand veneer over gravel to which the trailing hydroids are attached.

Photo 16.27: approx. 455 m from start of tow. Coincides with the edge of a sand wave and apparently shows loose sand with irregular ripples.

Video Tow V17, Corridor 9

Fig. 5.15: Sidescan image showing Video Tow V17 on Corridor 9

Start position: 51° 34.5′ N, 004° 27.5′ W

Depth: 30 m Region: Carmarthen Bay & Approaches

The area of camera tow V17 on Corridor 9 in Carmarthen Bay had a nearly level sea bed but the sidescan record showed pronounced dark patches and streaks. The patches were more reflective to acoustic energy at low angles of incidence. They have small ripples on their surface which are aligned roughly NNW-SSE. The ripples are too small to indicate the lee slope facing direction but the linearity of the streaks and the barchanoid shape of some of the patches points to an ENE direction of net sand transport towards Rhossili Bay.

The camera tow was run over this area in May 2005, at a time when there was an intense phytoplankton bloom which made it difficult to get clear views of the sea bed with either the video or film cameras. The images obtained were not good enough to reproduce in this report, but the sea bed was sufficiently visible to make an approximate interpretation. Most of the sea bed appeared on the video to be smooth sand without ripples. The starfish *Asterias rubens* was quite common, implying that this was a stable area with populations of their bivalve mollusc prey. In the later part of the camera tow there appeared to be large quantities of elongate shells (*Ensis* and/or *Pharus*) lying on the sea bed. This part of the tow would have coincided with one of the more acoustically reflective (darker) patches seen on the sidescan. Shells, especially if randomly arranged with some on edge or with the concave side uppermost will be more reflective acoustically than a flat surface of slightly muddy fine sand. Some margins of the reflective patches could just be detected on the multibeam image. The implication is that this sandy sea bed has a distinctive accumulation of shells as a lag layer. The lack of obvious relief suggests that the shells were patchily exposed by slight winnowing away of the superficial sand. The shells noticed on the video and later picked up in beam trawl tows are of species expected here. However, it is impossible to indicate whether they were merely exposed in windows through the sand or whether there was some extra wave mediated accumulation in slight channels. It is notable that although the sidescan was run 18 months before the cameras, the shelly area was encountered in roughly the same place.

Nemertesia antenina (Cnidaria)

Possible Chaetopterid tube (Polychaeta)

Anemone (Cnidaria)

Alcyonidium spp. (Bryozoa)

Fanworm tube (Polychaeta)

Urticina sp. (Cnidaria)

Callionymus reticulatus (Pisces)

Diverse photo showing Bryozoa - *Flustra foliacea* (centre & right) & *Alcyonium digitatum* (white, bottom right); Crustacea - *Cancer pagurus* (top centre under *Flustra*) & prawn (bottom centre); Cnidaria - anemones (on sea bed surface, left); Porifera - sponge (bottom right)

Aequipecten opercularis (Mollusca)

Ophiura albida (Echinodermata)

Asterias rubens (Echinodermata) & *Alcyonidium* spp. (Bryozoa)

Pagurus bernhardus with commensal anemone *Hydractinia echinata*

Maja squinado (Crustacea)

Atelecyclus rotundatus (Crustacea)

Fig. 5.16: Identifiable fauna seen in sea bed photos

Video Tow V19, Corridor 2

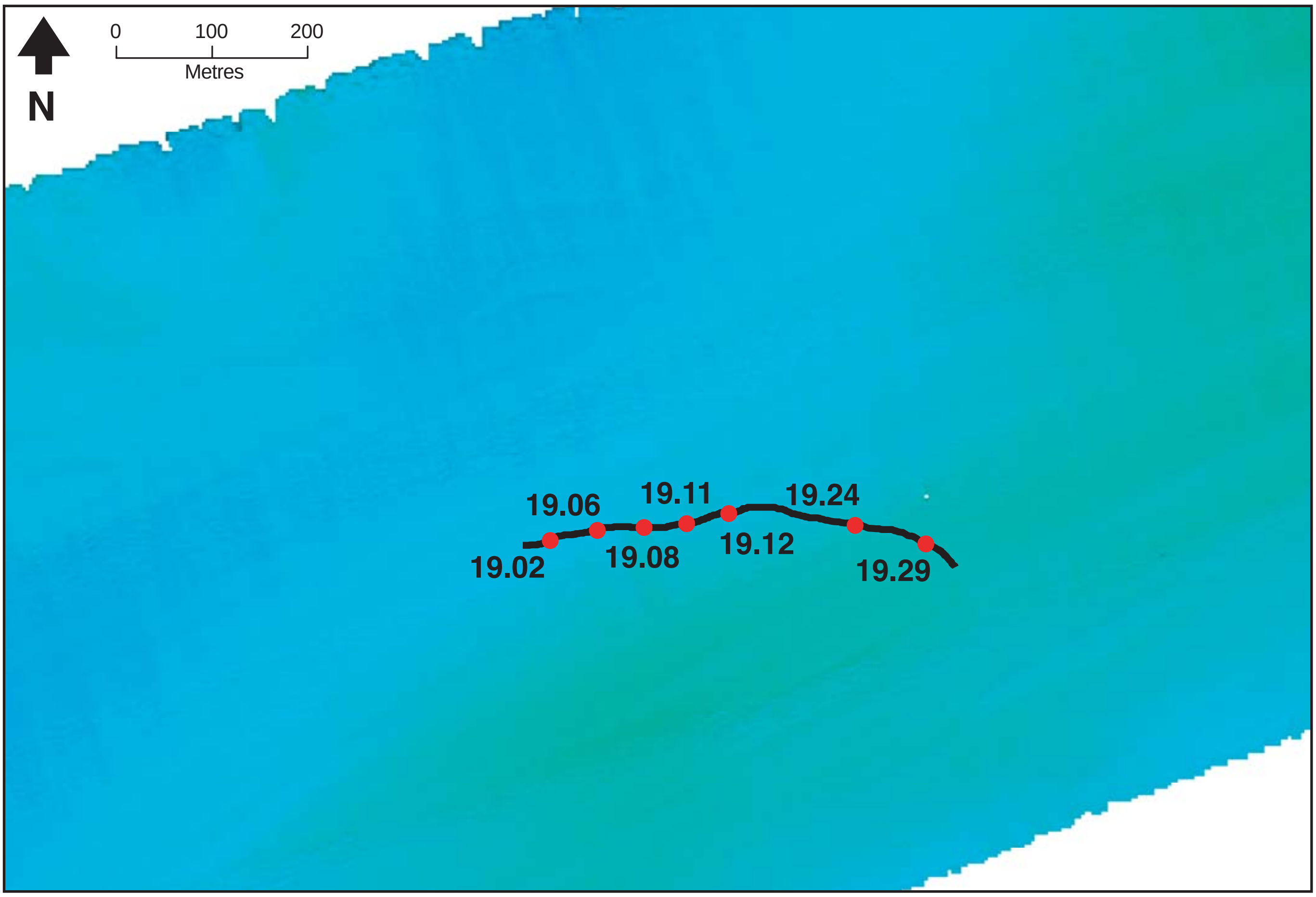


Fig. 5.17: Multibeam image showing Video Tow V19 on Corridor 2

Photo 19.02: approx. 30 m from start of tow. Flat sea bed of embedded lag gravel with much mud that was easily disturbed. This photo was typical of much of the sea bed on this tow.

Photo 19.06: approx. 90 m from start of tow. Embedded lag gravel with a few stones almost of cobble sizes.

Video Tow V19, Corridor 2

Start position: 51° 15.8′ N, 004° 21.8′ W

Depth: 43 m

Region: SOBel Sands

Camera sledge tow V19 on Corridor 2, lies in the southern sector of the Outer Bristol Channel Sands, where the multibeam showed a flat sea bed with little obvious relief. However, there appear to be very shallow depressions (5-20 cm deep and 25-35 m across) trending roughly in the dominant tidal stream direction.

The photos showed a rather uniform sea bed of gravel with indications in places of some finer gravel that might have been overlying the heterogeneous coarser gravel. In none of the photos was there any obvious sand.

Photo 19.12: approx. 225 m from start of tow. Moderately sorted gravel on the surface with very little mud deposit.

Photo 19.08: approx. 120 m from start of tow. Embedded gravel.

Photo 19.24: approx. 350 m from start of tow. Gravel with some mud accumulations, particularly where hydroids appear to have interfered with current flow at the sea bed.

Photo 19.11: approx. 180 m from start of tow. Fine deposit nearly covering the gravel in a slight groove.

Photo 19.29: approx. 425 m from start of tow. Typical sea bed of the embedded gravel along this tow.

Video Tow V20, Corridor 4

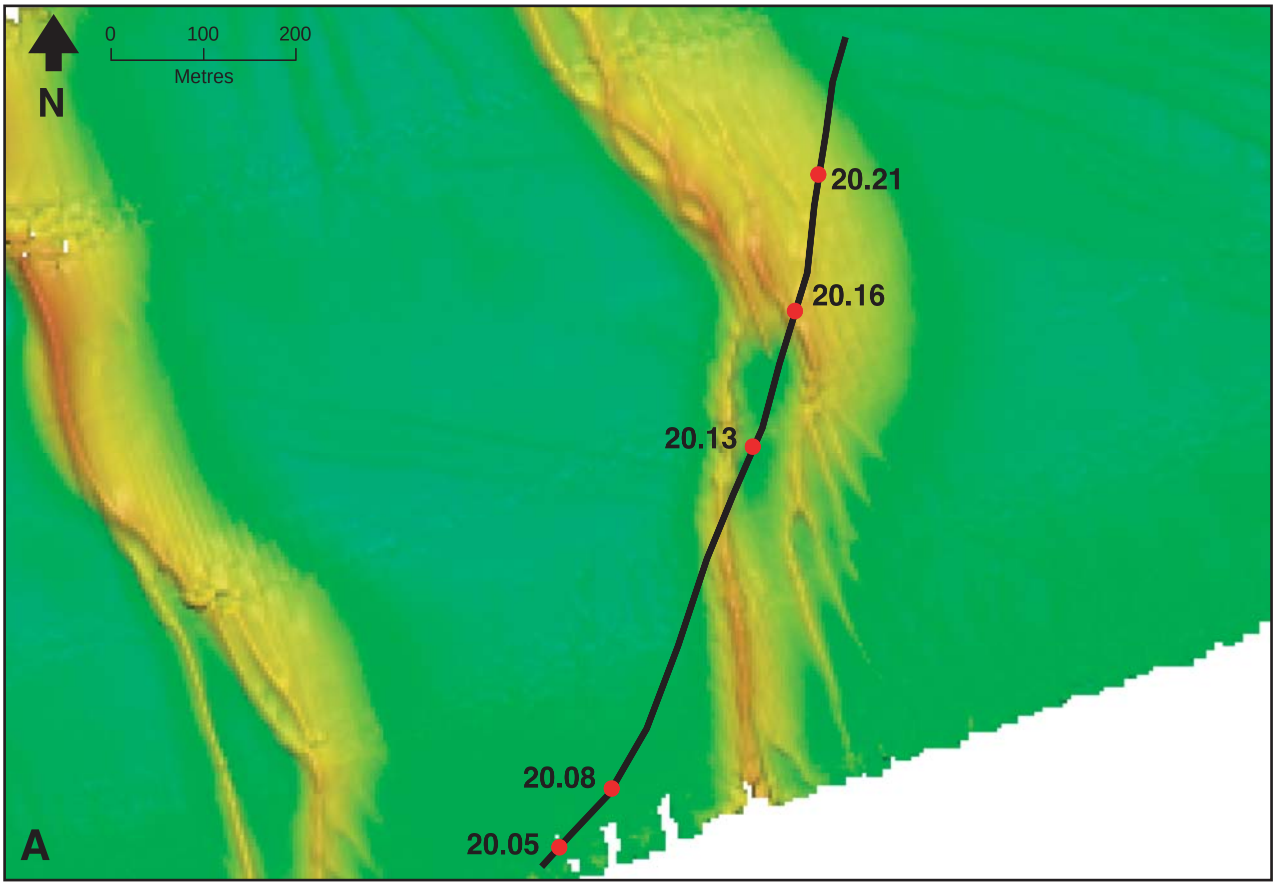
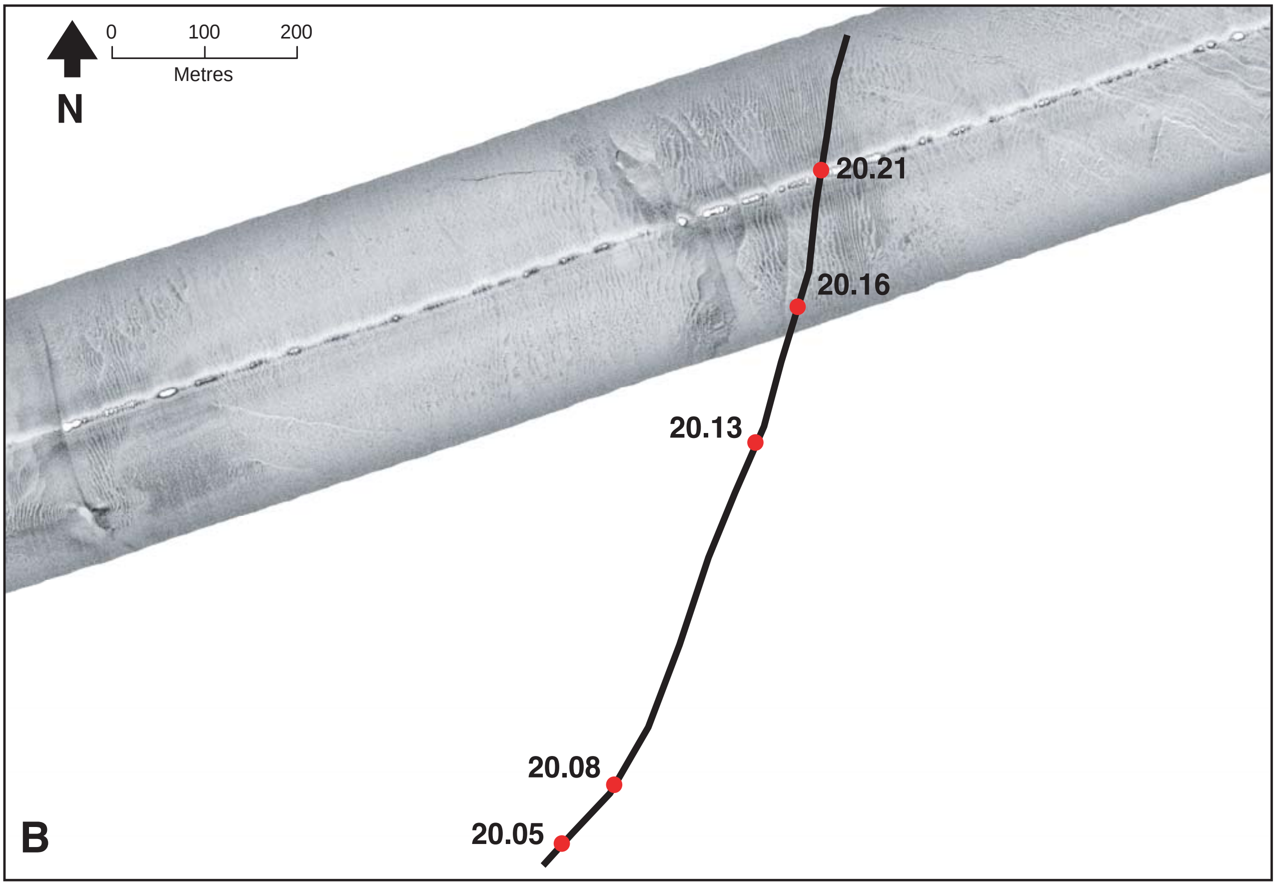


Fig. 5.18: (A) Multibeam and (B) Sidescan images showing Video Tow 20, Corridor 4



Video Tow V20, Corridor 4

Start Position: 51° 21.0′ N, 004° 23.4′ W

Depth: 48 m

Region: SOBel Sands

The multibeam image for the area of V20 shows two isolated, primary, west facing sand waves which have associated smaller sand waves and megaripples. They also include lunate double crests. The sidescan coverage was narrower than the multibeam, but the megaripples on the stoss slopes of the sand waves was very well imaged by the sidescan. Megaripples were also apparent on the flat sea bed between the two primary sand waves implying that sand rather than gravel mainly covers the flat sea bed. Elsewhere in the southern sector of the Outer Bristol Channel Sands, the flat sea bed plains between isolated sand waves are commonly gravel with patches and streaks of sand veneer.

In the northeast corner of both Figure 5.18A & B there are outcrops of dipping bedrock.

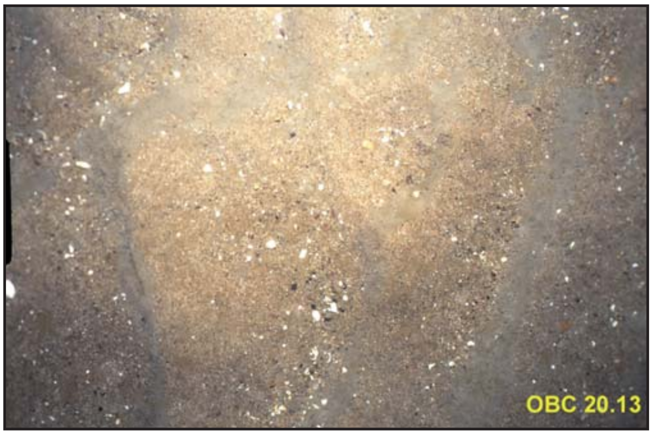


Photo 20.13: approx. 490 m from start of tow. From the low lying sea bed where the major sand wave has bifurcated. The sand in the low has a relatively high proportion of shell fragments.

Photo 20.05: approx. 30 m from start of tow. On flat sea bed between the two sand waves. One of the few images on this camera tow where there were cobbles just showing through the sand.

Photo 20.16: approx. 640 m from start of tow. Near the crest on the steep west facing lee slope of the sand wave. It appears that the sledge runners have dug into the loose sand so that the camera lens was closer to the ground.

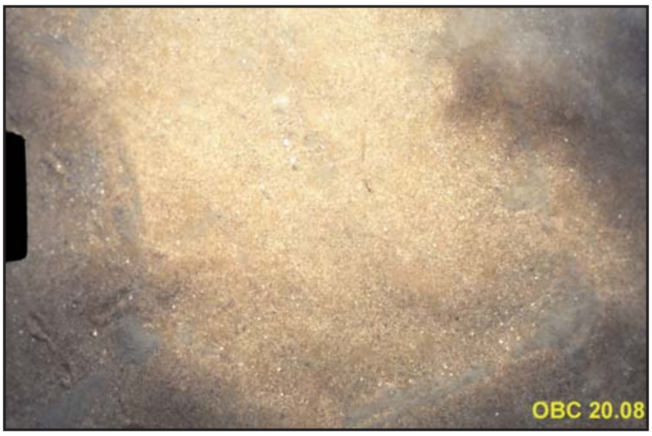


Photo 20.08: approx. 110 m from start of tow. Sand on flat sea bed. Possibly in megarippled sand field between the two sand waves.

Photo 20.21: approx. 780 m from start of tow. Typical of sand on the megarippled eastern stoss slope of the sand wave.

Video Tow 21, Corridor 3

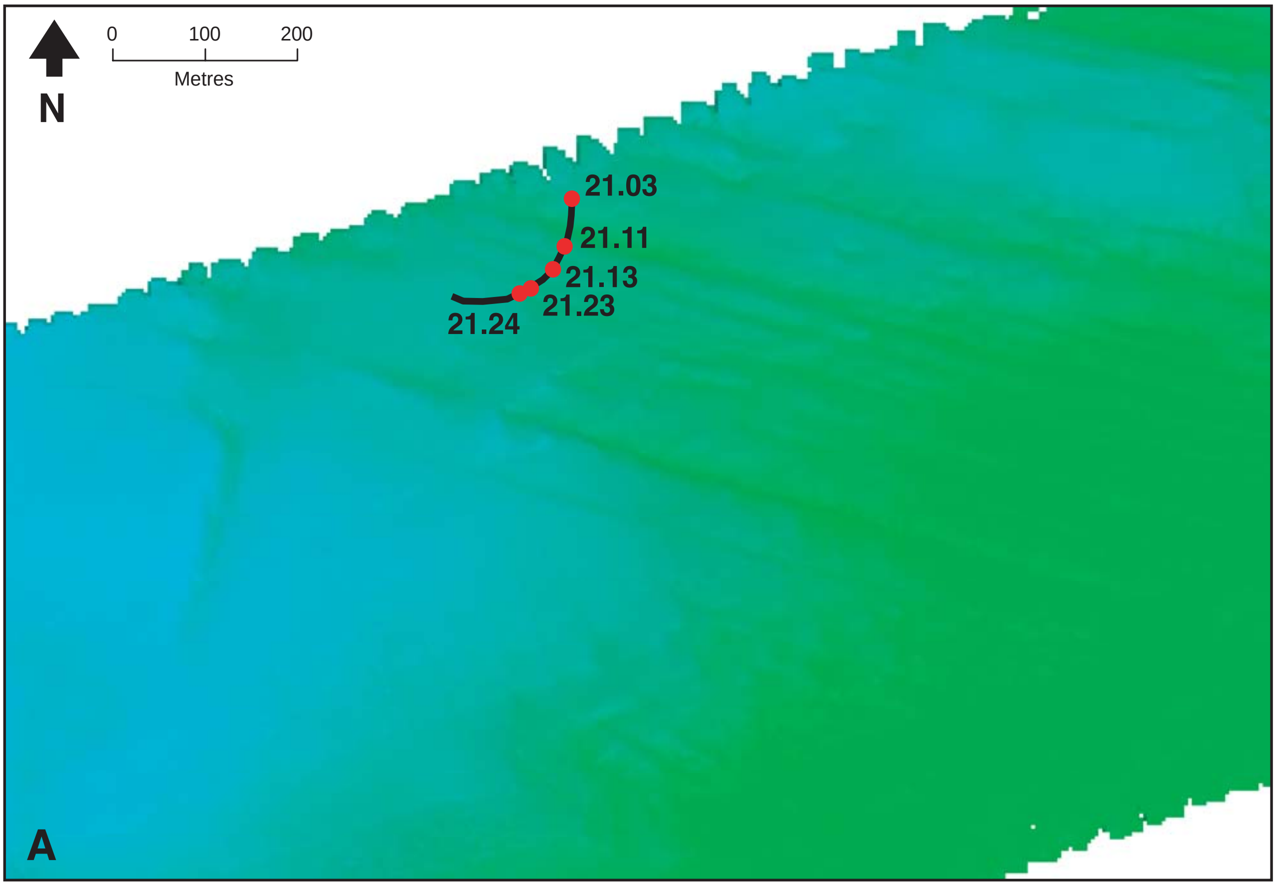
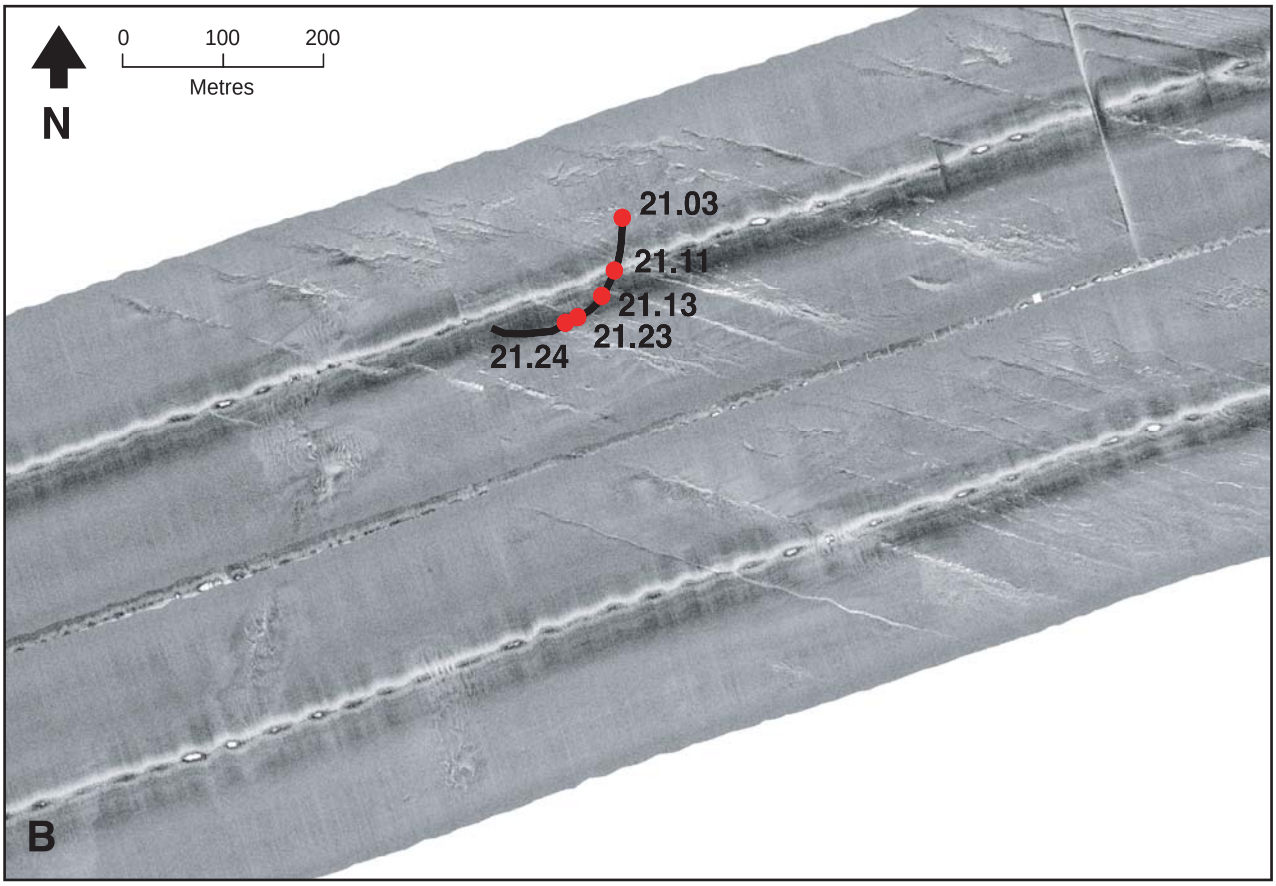


Fig. 5.19: (A) Multibeam and (B) Sidescan images showing Video Tow 21 on Corridor 3



Video Tow V21, Corridor 3

Start Position: 51° 19.3′ N, 004° 20.0′ W

Depth: 50 m

Region: Morte Platform

The multibeam on Corridor 3 here shows a series of bedrock ridges with a northwest-southeast orientation along the strike of the rock. At the western end of the rock outcrops a N-S trending sand wave runs on to the rock outcrop.

With the ship steaming slowly into the tide and wind, the sledge became static for several minutes at the start of the tow and again towards the end of the tow. This is the explanation for the short and curved track.

Photo 21.13: approx. 75 m from start of tow. An area where a fine deposit seems to be thinly overlying the gravel horizon. Unlike locations where the overlying sand veneer was rippled, this fine deposit lacked ripples.

Photo 21.03: approx. from start of tow. Surface of embedded lag gravel with some cobbles. Seems to have muddy deposits in the interstices.

Photo 21.23: approx. 120 m from start of tow. Sand, probably from a location between rock outcrops.

Photo 21.11: approx. 50 m from start of tow.
Some finer gravel overlying coarse gravel.

Photo 21.24: approx. 135 m from start of tow. Rock outcrop in the top left corner with sand and gravel over the rest of the photo.

Video Tow V22, Corridor '3'

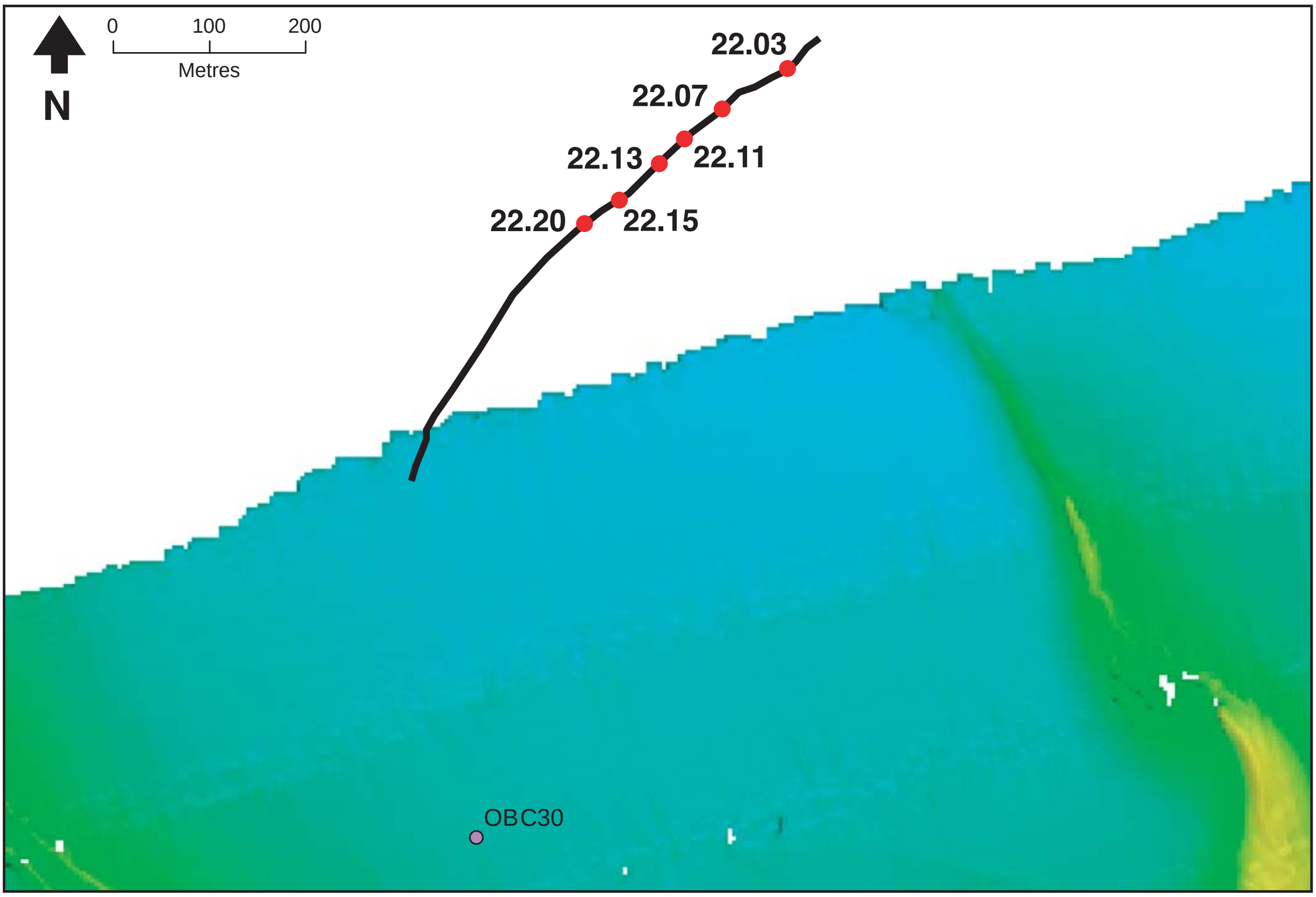


Fig. 5.20: Multibeam image showing Video Tow 22 near to Corridor 3

Photo 22.03: approx. 50 m from start of tow. A bed surface of embedded lag gravel with numerous worn and probably archaic shells lying on the surface.

Photo 22.07: approx. 120 m from start of tow. More of the lag gravel surface with archaic shells, in this case including a *Laevicardium crassum*. From their colour, some of the gravels have the appearance common to flint.

Video Tow V22, Corridor '3'

Start Position: 51° 16.7′ N, 004° 33.1′ W

Depth: 53 m

Region: SOBel Sands

The multibeam shows a single isolated sand wave. Although most of this camera tow was off the line of multibeam corridor 3 it did run over a sand wave at a position in keeping with an extension of the same sand wave to the northwest. The rest of the sea bed covered by the tow was lag gravel with little sand veneer. Of particular note here was the high frequency of shells of *Aequipecten* and *Ensis* lying on the gravel surface. Moreover these shells had calcareous crust epifauna growing on them. This growth implies they had not been covered by sand for a considerable time.

The visible encrustation on the shells appears to be mainly the calcareous tubes of polychaete worms, probably *Pomatoceros* spp. Although there are deposits of fines visible between the shells and pebbles, at the time the photos were taken these deposits were not cloaking the whole sea bed. There is a clear contrast in local habitats between that with sand shown in Photo 22.13 and the others where there is no obvious sand present.

Photo 22.11: approx. 165 m from start of tow. Appears to show some finer gravel overlying the usual lag gravel and possibly in low relief ripples. The implication is that there may have been some bed load transport of fine gravel near the base of the steeper western slope of the sand wave.

Photo 22.13: approx. 210 m from start of tow. Sand with irregular ripples on the isolated sand wave. There appears to be some comminuted shell in the sand.

Photo 22.15: approx. 270 m from start of tow. Shows fine gravel with shells, close to the western slope of the sand wave

Photo 22.20: approx. 305 m from start of tow. Lag gravel with frequent shells lying on the surface. As with the shells seen on photos to the east of the sand ridge they carry calcareous tubes of *Pomatoceros.*

Video Tow 23, Corridor 2

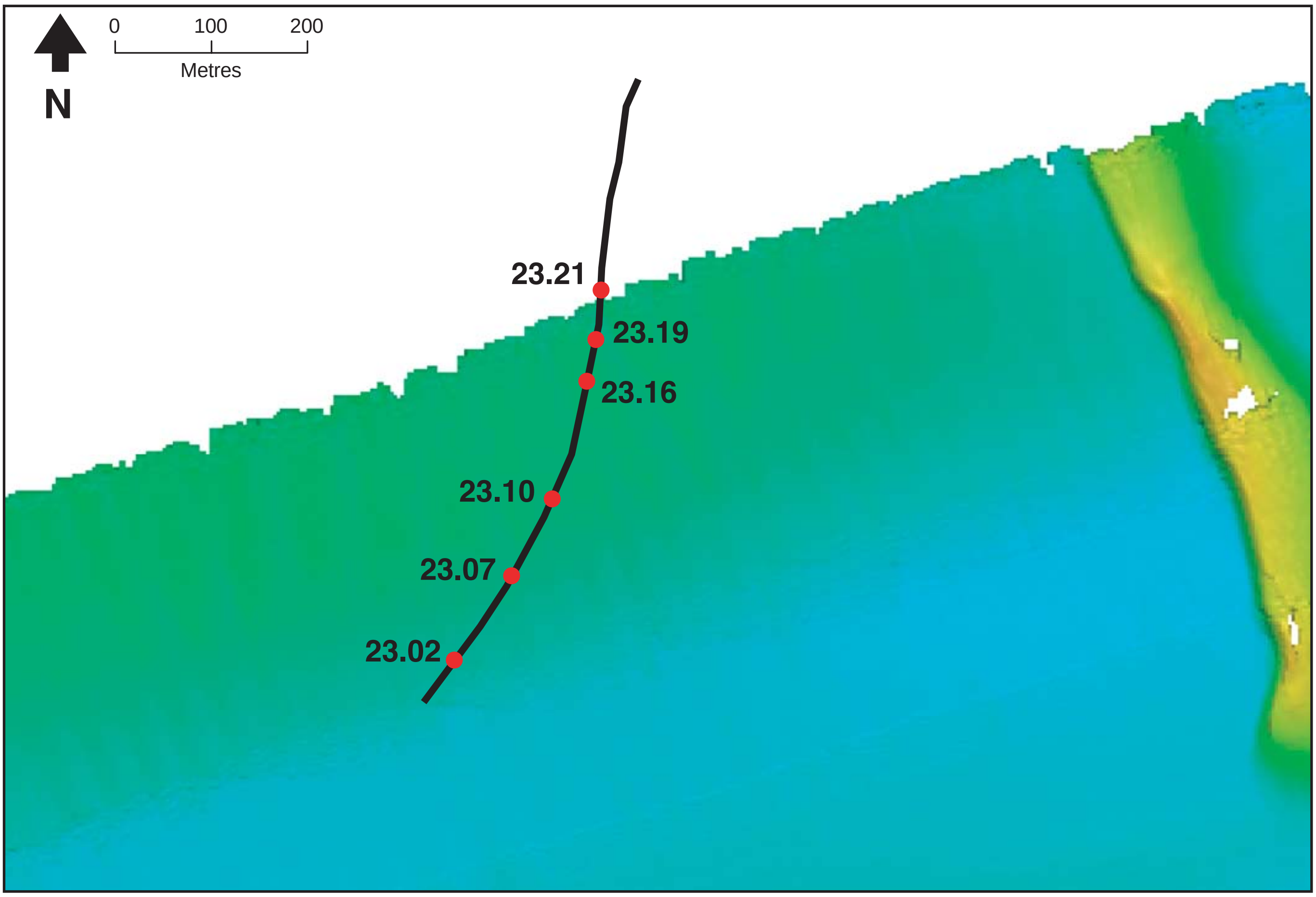


Fig. 5.21: Multibeam image showing Video Tow 23 near to Corridor 2

Photo 23.02: approx. 50 m from start of tow. Embedded gravel surface with frequent hydroids and no superficial sand.

Photo 23.07: approx. 150 m from start of tow. Embedded gravel with some sand veneer and hydroids.

Video Tow V23, Corridor 2

Start Position: 51° 12.9′ N, 004° 35.5′ W

Depth: 43 m

Region: Lundy Platform

Owing to tide and wind conditions this camera sledge tow on Corridor 2 did not reach the single sand wave seen on the eastern margin of the multibeam image. The only variations seen on photos and video from the plain west of the sand wave were small fluctuations in the amounts of sand veneer over the gravel.

For example Photo 23.02 has almost no superficial sand veneer though there is clearly sand between the small pebbles. By contrast Photos 23.16 and 23.19 seem to show a thin veneer of superficial sand almost covering the pebbles. The shifting sand, even if only a few grains thick, will have an effect on the ability of organisms to colonise the pebbles. Growth rates will have to be fast enough for the colonial hydroids to keep above the sand, thus the species occupying this habitat may be limited. The superficial veneer plus the attached hydroids and their orientation to the current will probably have some influence on the acoustic backscatter picked up by the multibeam and sidescan sonars.

Photo 23.10: approx. 240 m from start of tow. Sand veneer partly covering gravel. Unlike other camera tows the veneer sand lacks obvious ripples. Well-developed hydroids.

Photo 23.16: approx. 360 m from start of tow. The sand veneer almost totally covers the gravel horizon. Some hydroids.

Photo 23.19: approx. 410 m from start of tow. Sand veneer with the underlying gravel showing through with hydroids attached.

Photo 23.21: approx. 460 m from start of tow. Patch with abundant hydroids attached to the gravel.

Conclusions

In spite of initial misgivings about expected turbidity levels, it was possible to make useful observations of the sea bed in the Outer Bristol Channel using video and photographic methods. The area lies at the interface between the persistently turbid Central and Inner Bristol Channel and the usually clear water of the Celtic Sea. Thus it will not always be possible to use visual methods in this area, so if there is further work or monitoring following aggregate extraction care will be needed to optimise the chances of getting reasonable images by choosing neap tide periods outside the phytoplankton bloom and winter storm seasons. Owing to the strength of the tidal currents, times near to slack water will assist camera work, and there were some indications that better images could be obtained nearer high water than low. A further complication when trying to target particular features is that at times in the tidal cycle the currents flow roughly S-N and may be different at the bottom from the surface. This adds to the difficulties of slow speed towing of camera sledges.

A notable feature of the visual observations was the large extent of the SOBel Sands and Platforms that appeared 'sand starved', with either no sand on the bed surface or with merely a patchy veneer covering a lag horizon of gravel and shell hash. From the multibeam records it was clear that the sand had nearly all been swept into a complex of sharp sand waves lying across the main tidal axis with broader plains in between where the gravel horizon is frequently exposed. Inevitably more photographs were taken of the plains than on the sand waves. Minor sand ripples on centimetre scales showed up well on sea bed photos but were too small to be detected by sidescan or multibeam. Although precise orientations of the towed sledge were not possible it was possible to see that in places there were minor ripples at two overlapping orientations and sometimes at oblique orientations to the adjacent major sand waves. The photographs also showed that on top of the sand wave ridges the minor ripples were irregular and the sand appeared loose. In places where there was a sequence of megaripples the videos showed the sledge tipping at the crests. From the shadows cast, the megaripples had quite sharp crests. On some photographs it was even possible to gain some impression of slight variations in the grain size distributions and to see that comminuted shell fragments tended to accumulate in the lows of the minor sand ripples on top of the sand waves. There was thus plenty of evidence for the ongoing processes of sorting in constantly varying current regimes. These are liable to be partly obscured when the evidence has to be derived only from grain size analyses and sorting coefficients based on bulk samples.

Another notable visual feature was the amount and distribution of ephemeral deposits of 'marine snow' lying in the lows of the sand ripples and elsewhere. The input of this material to the bed, whether trapped by hydroids or filtering into the interstices, is likely to be a key factor influencing the benthos. It was apparent from the way this material came up in flakes when disturbed that combining into aggregations while deposited would have influenced the subsequent behaviour of these complexes of organic matter, silt and clay. In turn this would influence transport of such material through cyclic deposition and resuspension. It is usual for any sediment bound pollutants such as heavy metals or synthetic organic compounds to be disproportionately found in the fine fractions of sediment, so the behaviour of ephemeral 'marine snow' deposits can be relevant to pollutant dispersal, retention or even accumulation. Off Carmarthen Bay there was visual evidence that the deposits of fines settling onto rippled sand during neap tides was sufficient for small cohesive clasts to form. Clasts are a feature commonly found where very turbid water flows over rippled sand off macro-tidal estuaries and currents are slack enough on neaps for deposition to occur.

Photographs of the superficial lag horizon show that it appears to be composed of gravel with a wide range of lithologies including material resembling that likely to have come from Devonian strata and from more remote sources including flints. Much of it seemed to be of a relatively narrow range of gravel sizes, suggesting that it might have derived from glacial outwash deposits. This would be in keeping with most of the Bristol Channel having been just beyond the icesheet margins during the last glaciation and likely to have been a sandy gravel plain with complex braided rivers. Larger stones in the cobble and boulder size classes were rather rare, being mainly seen adjacent to the planed down outcrops of bedrock. Because of the amounts of marine growth and silt on the rocks and boulders it was not possible to see which of the loose boulders seemed of local origin and which might have been residues from erosion of till deposits from earlier glaciations. A few photos seemed to show slight accumulations of finer and better sorted gravel in low waves on the more heterogeneous lag horizon suggesting some recent reworking, sorting and transport under storm wave and extreme tide conditions. In other places the gravel horizon seemed to cap a heterogeneous deposit of muddy sandy gravel, with the small stones embedded in the deposit.

The lag horizon visible on the photographs often had numerous relatively intact bivalve shells lying on the surface. The most common were *Spisula solida* and *Ensis* spp.. *S. solida*, in particular, has a fairly heavy and long lasting shell. It occurred live in the loose sands of the sand waves. Because of relative rates of breakdown *S. solida* may be over-represented in the shell residues compared to less robust species. Such shells can be centuries or even millennia old, so they may not truly reflect recent populations of the species where they are found and shells are subject to redistribution. In the example from off Rhossili (V17) it appeared that exposure of a lag horizon composed largely of shells was sufficient to markedly change the acoustic backscatter as displayed on the sidescan record.

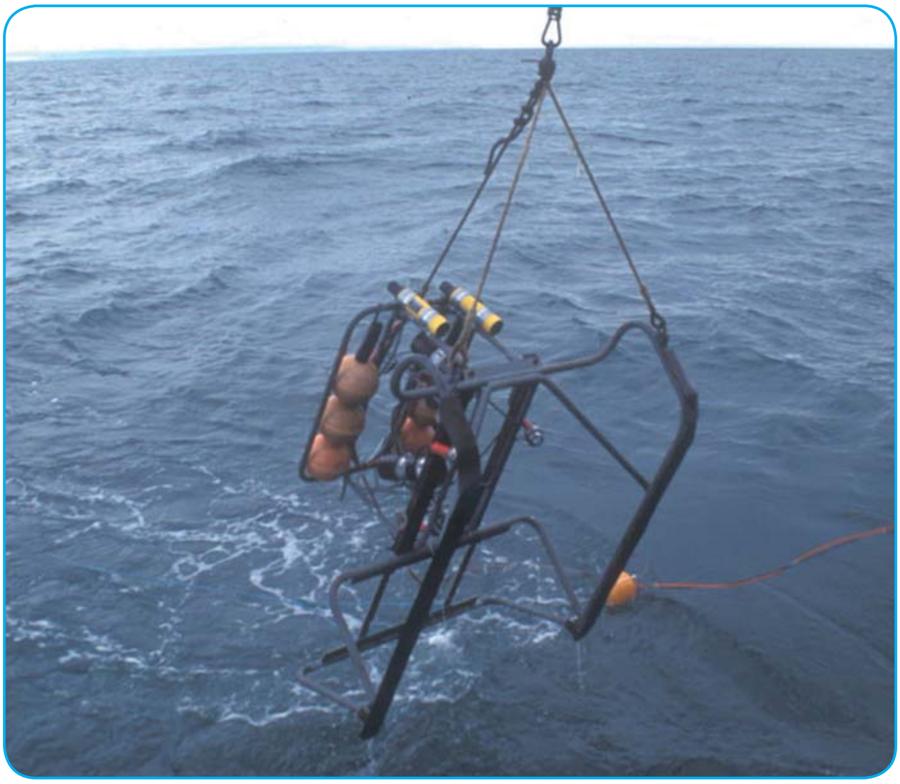


Fig. 5.22: Retrieval of camera sledge after a tow

6. Benthic Biology

The *Outer Bristol Channel Marine Habitat Study* (OBCMHS) area has sediments that are predominantly sandy. These range from muddy sand through to sandy gravel with well sorted loose sand in large sand waves. There are limited areas of cobble and bedrock exposures. While the number of taxa present at each station varied considerably, the area taken as a whole was species rich, bearing in mind the fairly narrow range of depths and habitat types sampled.

There were 948 taxa recorded across all the grab stations and 812 of these were found in the quantitatively assessed stations. This compares favourably with the 1045 recorded from 73 stations over a greater spread of habitats in the southeast Irish Sea and northeast Celtic Sea areas (Mackie *et al.* 1995). The fauna could be considered as having approximately 82% infaunal and 18% epifaunal species (Table 6.1), though some (e.g., brittle stars, crabs) in the first category could be described as semi-infaunal since they may only temporarily bury themselves within the sediment.

As generally found in northern European soft-bottom habitats (Mackie *et al.* 1995; Mackie & Oliver 1996), the Annelida (mostly polychaetes) dominated the fauna with about 38% of the species (46% of the infauna). The Crustacea and Mollusca comprised almost 25% and 14% respectively, with echinoderms contributing less than 4%. The Bryozoa was the most prevalent epifaunal taxon, accounting for 47% of that component (8% of the total), followed by the Hydrozoa with 27% (~5% of total). Thus, these six taxonomic groups collectively accounted for about 93% of the benthic grab fauna.

The 51 trawl tows from 13 locations (Section 6.4) collected 130 taxa, based on notes at sea rather than detailed laboratory studies. This included 50 species not recorded in the grab survey. The additional species comprised one sponge, two polychaete worms, one isopod, one shrimp, seven crabs, eight molluscs, three starfish and 27 fish (Appendix 6).

The full numerical data from the 129 quantitative and 8 qualitative grab stations are given in Appendix 7.

Taxonomic Group	Number of Taxa
'Infauna'	
Annelida	356
Mollusca	130
Crustacea	235
Pycnogonida	11
Arachnida (Acari)	1
Echinodermata	35
Sipuncula	4
Echiura	1
OTHERS	9
TOTAL	**782**
'Epifauna'	
Porifera	4
Hydrozoa	45
Bryozoa	78
Tunicata	17
Entoprocta	8
OTHERS	9
Fish	5
TOTAL	**166**

Table 6.1: Taxonomic composition of the benthic fauna from 137 Outer Bristol Channel grab stations

6.1 Benthic Macrofauna

In July 2003, when the main series of grabs were taken, juveniles of many different species predominated at many stations. Tiny mytilid bivalves and the polychaete *Lagis koreni* were particularly abundant and widespread. Their vast number resulted in the sorting and identification phases of the project taking far longer than had originally been anticipated.

All marine benthic habitats experience natural fluctuations in species numbers and diversity throughout the year relative to recruitment, growth and mortality. Nevertheless, the quantity of juvenile specimens across the different faunal groups was surprising. Not all of these animals, retained on 0.5 mm sieves, would establish adult populations and remain long-term.

For example, at Red Wharf Bay (Stn 1, Anglesey) only a single individual of *Lagis koreni* was recorded at the time of the same cruise. Populations in this and other nearby bays have been sampled many times (e.g., Eagle 1975; Nicolaidou 1983; Mackie *et al.* 1995; Darbyshire *et al.* 2002). Large numbers have been recorded there in the past and it can be one of the main species in silty

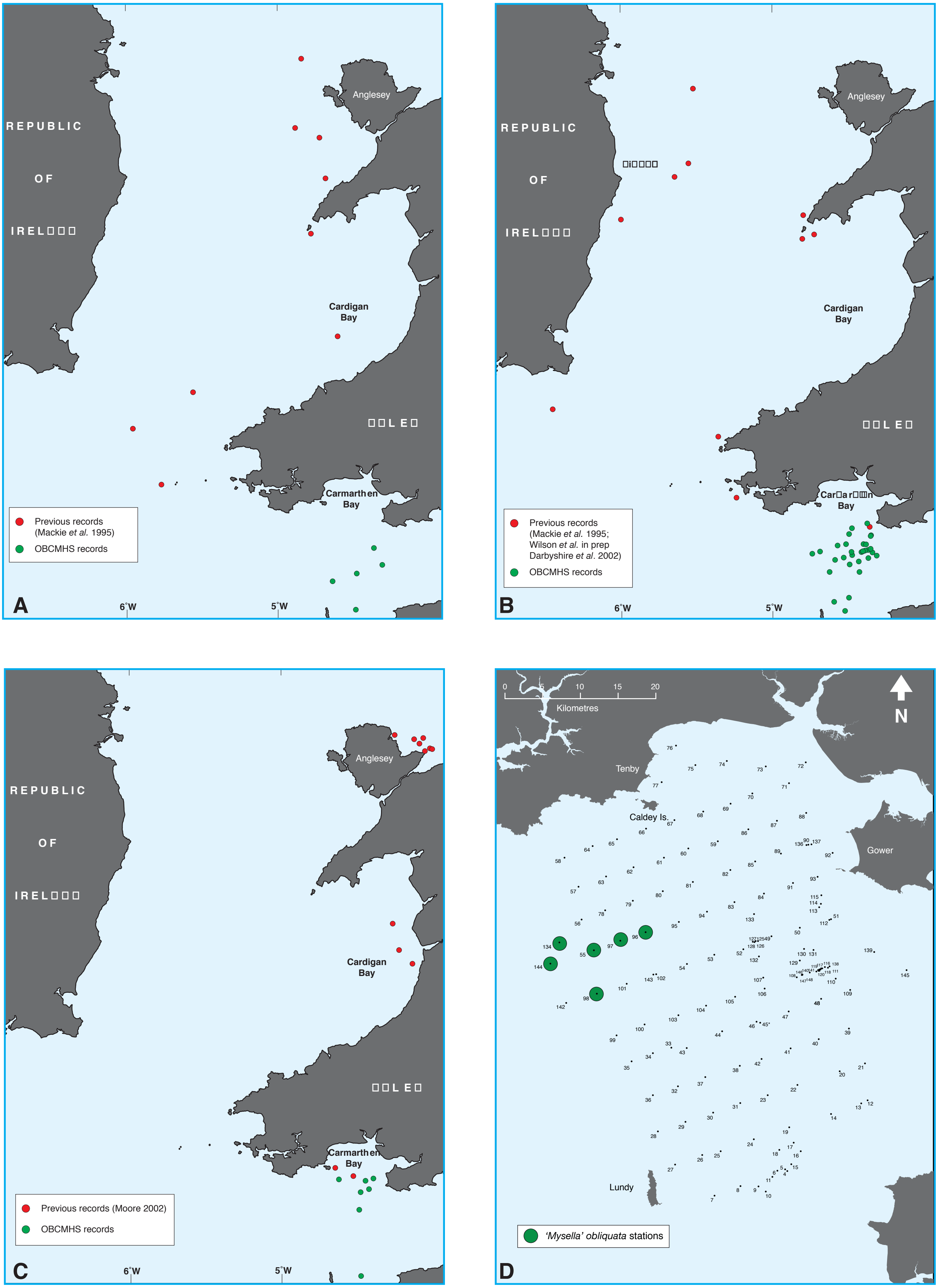


Fig. 6.1: Distribution of Ophelia celtica *(A),* Streptosyllis *sp.n. (B),* Thia scutellata *(C), and* 'Mysella' obliquata *(D) in the Outer Bristol Channel and nearby areas*

sand habitats that are often referred to as hosting *Abra* or *Amphiura* communities (Mackie *et al.* 1995). *Lagis koreni* is known to vary temporally off North Wales (Eagle 1975; Nicolaidou 1983; Rees & Walker 1983; Rees 2004), but its 'rarity' at the Red Wharf Bay station was notable given the contrastingly high abundance of juveniles in the Outer Bristol Channel samples. When the species is abundant it is an important food species for flatfish (Carter *et al.* 1991).

Annelida

There were 356 annelid taxa recorded for the survey, 351 of which were polychaetes. The highest number of species were associated with the heterogeneous gravelly sediments in the SOBel Sands, and this was consistent for the other faunal groups also. The majority of species were ones well-known and frequently encountered elsewhere. However, there were also a number of species worthy of note.

Sabellaria reefs are included on a list of Habitats and Species of Principal Importance that appears in Moore (2002), although no specific sites are listed for Wales. *Sabellaria spinulosa* was recorded from many stations; mostly in small numbers and as juvenile specimens. Large numbers of adults occurred at several stations. For example, at OBC16 pieces of 'reef' were recorded in the cruise log. *Sabellaria* clumps were also recorded from one of the beam trawls (BT1) in the northwest of the study area (Figure 3.10). Hendrik & Foster-Smith (2006) discuss criteria for assessing whether *S. spinulosa* aggregations are likely to qualify as 'reefs' under the 'Habitats Directive'. It is unlikely that any true 'reefs' were encountered in the present study. No specimens of *Sabellaria alveolata* were recorded, although it is known to occur on sublittoral rocky substrata from the Central Bristol Channel to the Severn Estuary (Warwick & Davies 1977; Mettam *et al.* 1994). *Sabellaria spinulosa* sometimes occurs alongside *S. alveolata*, but it becomes scarce toward the estuary. *Sabellaria alveolata* is however abundant on a number of South Wales' shores (e.g., between Nash Point and Swansea Bay).

Ophelia celtica is a northern European species first described from the Roscoff and Celtic Sea region (Amoureux & Dauvin 1981), but this species does not appear to have been illustrated previously. The species is characterised as having 10 anterior chaetigers, followed by 16 chaetigers with gills, and 3 posterior chaetigers (Figure 6.2). Six specimens were recorded at five stations in the OBCMHS area (Fig. 6.1A). The stations were widely spread in the southern region where there were sandy gravel or gravelly sand sediments. The sediment types were similar to previous records from the Irish Sea (Mackie *et al.* 1995). Three of these stations were the same as for *Goniada emerita*, but this was most likely a coincidence due to habitat preferences.

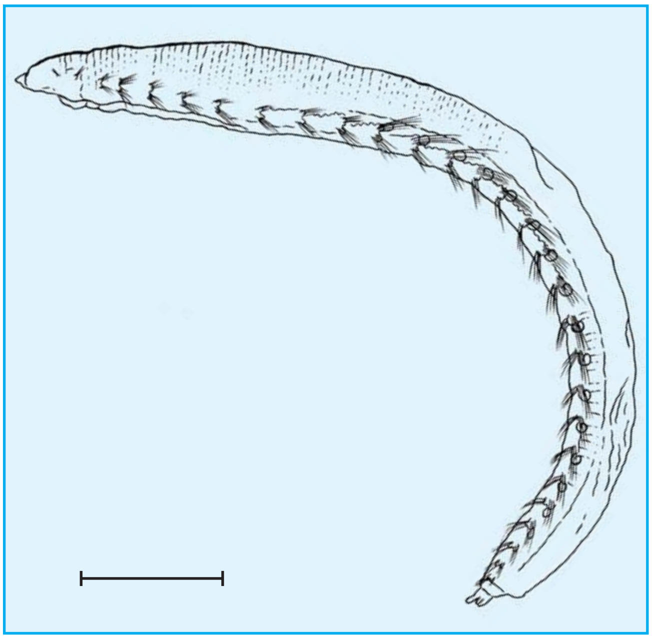


Fig. 6.2: Ophelia celtica*, lateral view (C. Meechan)*
Scale bar = 2 mm

The syllid *Palposyllis prosostoma* Hartmann-Schröder, 1983 is an infrequently encountered species. Originally described from southwest of Portugal, the species is known from the Canary Islands and Spain (see San Martín 2003), and the southern Irish Sea (Mackie & Garwood 1995). The earlier Welsh records were from gravelly sediments in Cardigan Bay, Caernarfon Bay and to the west of Anglesey (Mackie *et al.* 1995). In the Outer Bristol Channel, the species was found in similar sediments at four stations in the SOBel Sands area, mainly to the north or northeast of Lundy (OBC30, 32, 36 & 46).

Another interesting syllid, *Streptosyllis* sp. A, was first recorded from the southern Irish Sea area (Wilson *et al.* in prep.) by Dr Peter Garwood (Identichaet).

Darbyshire *et al.* (2002) subsequently found the species associated with certain sand banks around the Welsh coast. It was found at over 30 stations across the OBCMHS area, confirming its preference for mobile sands (Figure 6.1B). The species appears to be new to science and will be described by Garwood & Mackie. Other undescribed species found included Questidae sp. and *Eulalia* sp. Both of these were also recorded previously from the southern Irish Sea (Mackie & Garwood 1995; Mackie *et al.* 1995).

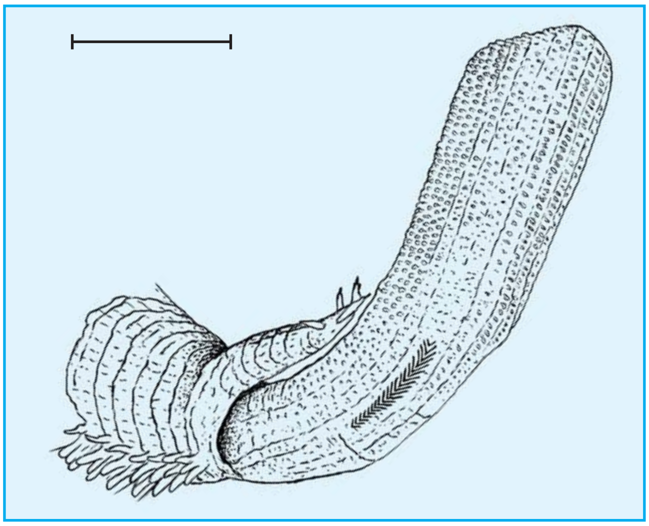


Fig. 6.3: Goniada emerita, *anterior showing everted proboscis (C. Meechan). Scale bar = 1 mm*

Goniada emerita (Fig. 6.3) has been recorded in Europe from Scotland, and the English Channel to the Mediterranean. The Scottish record was from a depth of 37 m off Millport (Gemmill 1901; Clark 1960) and is somewhat doubtful as the single specimen had been described as *Goniada* (prob.) *emerita*. The species was confirmed from the Bristol Channel during the 1980s (Grist pers. comm.; Mackie pers. obs.). It was included in the Marine Conservation Society-Ulster Museum checklist (Mackie & Erséus 1997), though no UK records appear on the distribution map in the European Register of Marine Species (http://www.marbef.org/data/erms.php). Recently, the species was recorded in Environmental Statements (Environmental Resources Management 2002, 2003) for the NOBel Sands (1 specimen) and Helwick Bank (2 specimens). In the OBCMHS area, 10 specimens were taken at eight stations in the SOBel Sands area (Appendix 7). All the stations had either sandy gravel or gravelly sand sediments.

The tiny 'oligochaetoid' questid was recorded from sandy sediments in Cardigan Bay (Mackie *et al.* 1995) and additionally occurred at four sand banks there, being most abundant (28-40 individuals/0.2m^2) at Bastram Shoal and north New Quay (Darbyshire *et al.* 2002). Relatively low numbers (1-7/0.2m^2) were found at the Helwick and Turbot Banks. The species was encountered at 24 stations south of Carmarthen Bay, reaching 23-42 individuals/0.2m^2 at three stations (OBC45, 48 & 146) in the southern part of NOBel Sands. Low numbers (1-8/0.1 m^2) of the questid were recorded by Environmental Resources Management (2002, 2003) from one station on the Helwick and five stations in the northern part of NOBel Sands.

The *Eulalia* species was most similar to *E. mustela* Pleijel, 1987 and the two can sometimes be difficult to separate. It was first found in the coarser gravelly sediments of the St George's Channel, and subsequently recorded sporadically from similar substrata in Cardigan Bay (Darbyshire *et al.* 2002). Only 29 specimens were identified from 16 stations in the OBCMHS area, mainly within the NOBel and SOBel Sands sectors.

Arthropoda

There were 247 arthropod taxa recorded, mostly crustacean (Table 6.1). Species of note were the thumbnail crab *Thia scutellata* and *Caprella erethizon*, a small caprellid crustacean.

Thia scutellata (Figure 6.4) is defined as nationally scarce in Great Britain (Moore 2002). It has been recorded previously from various sites around Wales (Figure 6.1C), including records from outer Carmarthen Bay (Woolmer 2003). Rees (2001) states that *Thia* appears to be confined to loosely packed medium sands that allow easy burrowing. The crab was found at seven OBC stations, five of which had fine to medium, or medium sand sediments. The others were sandy gravels, though it should be remembered that sediments were analysed from different grab drops at each station.

Caprella erethizon is a small amphipod (Figure 6.5) that is considered rare (Guerra-García & Takeuchi 2002). In

Fig. 6.4: Thia scutellata (female with eggs)*, lateral view (C. Meechan). Scale bar = 5 mm*

UK waters, it is known only from southwest England and the English Channel, often occurring on bryozoa in the intertidal and shallow sublittoral (Hayward & Ryland 1990). Two specimens were identified from OBC20b, a somewhat deeper sample at 41 m, but one having a large number of epifaunal species (bryozoans and hydroids). Guerra-García & Takeuchi recorded it from 5-45 m at Ceunta in the Strait of Gibraltar, with the highest number (25) obtained from hydroids (including *Sertularella gayi*) collected by divers at 40-45 m.

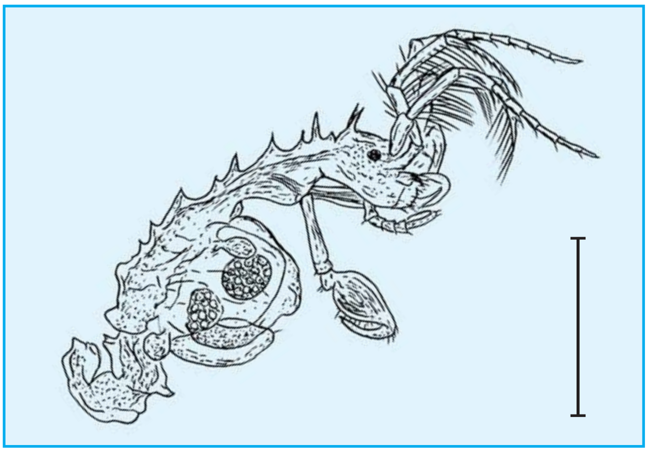


Fig. 6.5: Caprella erethizon, *incomplete specimen, lateral view (C. Meechan). Scale bar = 1 mm*

Mollusca

A number of interesting mollusc species were found among the 130 taxa recorded. Southern species included bivalve molluscs *Diplodonta rotundata, Modiolus adriaticus* (juveniles) and *Rhomboidella prideuxi*, while several small gastropod molluscs were notable since they are infrequently recorded. These included *Tornus subcarinatus, Aclis minor, Ondina diaphana* and others — all thought to be cryptic species. For example, *Noemiamea dolioliformis* and *Graphis albida* are believed to be associated with the honeycomb worm, *Sabellaria* (Killeen & Light 2000). *Sphenia binghami* is a cryptic bivalve that was found living in the confines of old *Sabellaria* tubes. Consequently, its shell exhibited a wide variation in shape (Holmes & Oliver in prep.).

The most interesting find was *'Mysella' obliquata* Chaster, 1897 (Figure 6.6), a tiny bivalve found in a small cluster of stations with somewhat silty sands (Figure 6.1D). These are the first UK records since its original discovery off Rathlin Island (Northern Ireland). *'Mysella' obliquata* has been recorded elsewhere (e.g., Mediterranean), but is possibly under-recorded in Britain because of misidentifications due to its similarity to juveniles of other species (e.g., *Mysella bidentata*). Nothing is known about the ecology of *'Mysella' obliquata*, but other galeommatids are commonly associated with echinoderms or sipunculans. The brittle star *Amphiura filiformis* was found in the same samples, though this could be simply coincidental and some targeted sampling will be required to resolve any possible association with other species. The generic name is also a matter of debate, since it does not conform to the accepted definition of *Mysella*. A paper redescribing the mollusc and discussing the nomenclature has been prepared (Holmes *et al.* in press).

Fig. 6.6: 'Mysella' obliquata *(approx. width 2 mm)*

Other Species

Echinus esculentus, ironically known as the Common Sea Urchin, is included in the 2000 IUCN Red Lists of Threatened Species (www.redlist.org), although categorised as being of 'lower risk' (Moore 2002). A single specimen was identified in a dredge obtained from the rocky station OBC 67. It is, however, not surprising that they were not recorded more often in the OBCMHS area. The bedrock, boulders and cobble habitat they frequent is not as widespread as in the tide swept parts of the Irish Sea where they are common.

6.2 Macrofaunal Assemblages

The quantification of the benthic fauna can be traced back to Petersen (1914, 1915, 1918, 1924) and his pioneering studies concerning the food of fish in Danish waters. Petersen recognised different animal assemblages and characterised them according to the abundance, biomass, occurrence and fidelity of the species present. The communities he recognised were summarised in his 1924 publication, and were subsequently referred to by others as 'Petersen communities'. Each community was named by reference to particular characteristic molluscs or echinoderms. Later workers (Spärck 1937; Thorson 1957) modified and extended Petersen's scheme. Pérès & Picard (1964; see also Pérès 1967) developed a classification for Mediterranean benthic 'biocenoses'.

Jones (1950) took a different approach and described benthic invertebrate 'associations' in relation to their environment (including temperature, salinity etc.), naming them according to their geography, depth and sediment characteristics. For example, his 'Boreal Offshore Muddy Sand Association' occurred in shallow to moderately deep muddy sands and was equivalent to the Petersen (1924) *Amphiura filiformis* community. Glémarec (1973) took this further and adapted the concept of the 'étage' (see Pérès 1957). He considered thermal stability (temperature variation between surface and sea bed) to be of great importance and reassessed previous community designations in northern European waters.

The last 30 years or so have seen a great increase in the number of sea bed studies carried out — often due to programmes associated with potential environmental pollution sources (e.g., sewage) or utilisation of natural resources (e.g., oil, gas, aggregates). Concurrent with this was a need and desire to produce a more comprehensive and unified 'community' classification scheme (e.g., Erwin 1983; Hiscock 1991; Hiscock & Connor 1991). This led to the adoption of the 'biotope' concept of habitats with particular environmental characteristics supporting recurring species assemblages (Connor *et al.* 1997a, b; see also Olenin & Ducrotoy 2006).

Initial iterations of the Marine Nature Conservation Review (MNCR) biotope manual were strong on the intertidal and hard nearshore biotopes frequented by divers, but weak on sublittoral 'soft' sediment assemblages. However, more recent versions are more inclusive and have employed objective multivariate techniques to support the classifications. The latest classification (Connor *et al.* 2004) additionally exhibits convergence (www.jncc.gov.uk/page-3365) with the European Nature Information System (EUNIS) classification system (eunis.eea.eu.int/habitats.jsp).

One problem with all such classification schemes is that the organisms themselves are likely to co-occur due to their overlapping responses to environmental gradients and species 'assemblages' may be better considered as nodes on continua, rather than fixed entities (e.g., see Lindroth 1935; Mills 1971; Manning *et al.* 2004).

Here, the benthic macrofaunal assemblages of the Outer Bristol Channel area were initially investigated by multivariate techniques (cluster analysis and MDS). The species characterising the cluster groups discerned were then determined through the use of computer assessment methodologies (SIMPER analysis & ranked abundance tabulations) and manual examinations of species assemblage fidelity. The findings were subsequently interpreted relative to published biotope descriptions (Connor *et al.* 2004a) with the assistance of Harvey Tyler-Walters (Marine Life Information Network: *MarLIN*).

Multivariate Analyses

The benthic macrofaunal assemblages were examined through quantitative, semi-quantitative and qualitative analyses. For clarity, groups that were not significantly different ($p<0.05$) were collapsed to single lines on the cluster analysis dendrograms. Dendrograms, maps and tables not included here are provided in Appendices 8-12 and are referenced with the prefix 'A'.

Both the quantitative (Figures 6.7 & A8.1) and qualitative (Figures A8.3 & A8.4) cluster analyses revealed four main groups, designated as assemblages I-IV. The semi-quantitative analysis (Figures 6.9 & A8.2) identified a fifth assemblage (V). All three main assemblages (II-IV) each revealed signs of subdivision, the other assemblages having only a small number (3-6) of stations. For convenience, the distribution of the assemblages and their respective subgroups were superimposed on maps of the study area (Figures 6.8, 6.10 & A8.5).

There was good general agreement of the distribution of the assemblages in the OBCMHS area across all three analyses. However, the qualitative (presence-absence) analysis showed more differences relative to the other two. Assemblage I was larger with the three Helwick stations (OBC 113-115) augmented by three nearby stations, but the subgroup delineations within assemblages III and IV showed the largest differences. Nevertheless, it was notable that assemblage II had the most consistent internal structure in all three analyses.

The quantitative and semi-quantitative data was treated with the same logarithmic transformation to prevent extremely high abundance species dominating the analysis. The two analyses differed only through the inclusion of the colonial epifauna, plus eight qualitatively assessed stations from hard substrata (gravel, stones, rock), in the semi-quantitative study. Logarithmic transformation exerts quite a strong scaling effect on abundance (see Clarke & Warwick 2001) and therefore we do not anticipate any disproportionate influence on the analysis through the inclusion of the qualitative data.

The numerical contributions of the colonial species were derived from conversion factors applied to subjective SACFOR scale assessments (Table 3.8). It could be argued that these species were either over- or under-valued, though as far as we are aware no examination of this has been published. We have applied the conversion factors simply in order to include an important macrofaunal component in the overall analysis. Bradshaw *et al.* (2003) found species richness and abundance to be enhanced when hydroids were present. This was directly due to an increased presence of associated species and no enhancement, or decrease, of the infauna was detected between samples with or without hydroids.

The differences between the assemblages from the quantitative and semi-quantitative analyses were relatively small (Table 6.2). The most noticeable changes concerned assemblages III and IV, particularly the latter. Five stations in the quantitative assemblage III collectively became a subgroup (IVd) within the semi-quantitative IV. The semi-quantitative assemblage III otherwise closely resembled its quantitative counterpart, but had four rather than five subgroups. The inclusion of the eight qualitative stations also contributed to increasing the subgroups within IV from two to six, and added a potential fifth assemblage (V).

In addition, cluster analyses of the four major macrofaunal components of the Outer Bristol Channel benthos were carried out (Figures A8.6, A8.8, A8.10 & A8.12). The intra-assemblage ‘subgroups’ showed considerable variation (Figures A8.7, A8.9 & A8.11). A simple comparison of the quantitative assemblage distribution patterns for the whole fauna (Figures 6.11) and the four main animal groups (Figure 6.12) indicated a close relationship between the annelid distributions and those relating to the whole fauna.

While none of the assemblage distributions were identical, the overall trends in each were the same. The northernmost assemblage II occurred in Carmarthen Bay and Approaches. Assemblage III was predominantly present in the NOBel Sands, including the high frequency bifurcating sand wave field and a similar sand wave area just east of Lundy. Assemblage IV was largely confined to the SOBel Sands and to the south-west of the NOBel Sands. Interestingly, assemblage I (Helwick Bank) was only delineated by the annelids and there were virtually no infaunal ‘other phyla’ present there.

The two-dimensional MDS plots of the Outer Bristol Channel benthic fauna (Figures 6.13, A8.13 & A8.14) and the four component groups (Figures A8.15-A8.18) all showed a close relationship between the assem-

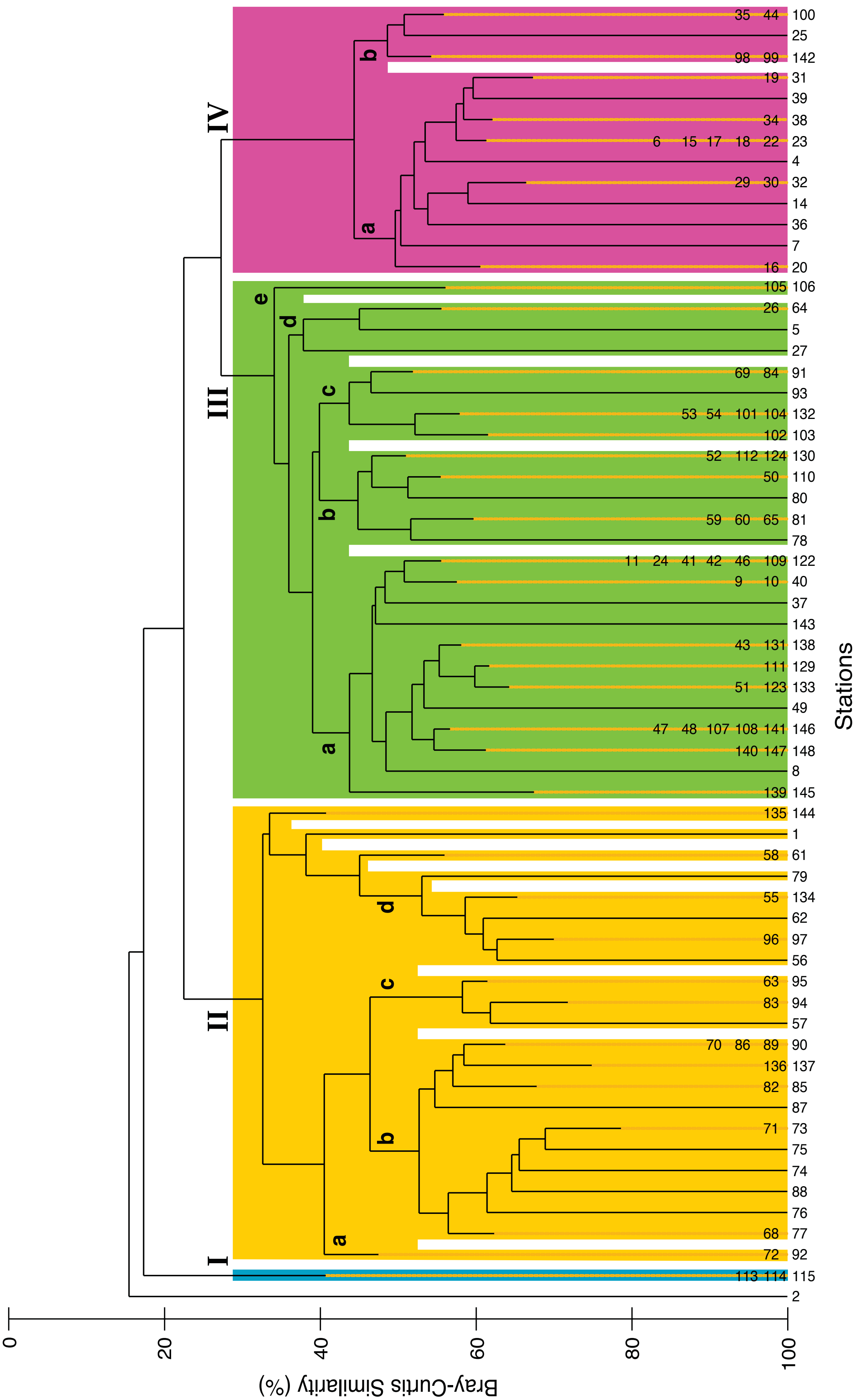


Fig. 6.7: Quantitative Bray-Curtis classification of the Outer Bristol Channel benthos (log transformed data; non-significantly differing groups (p<0.05) merged)

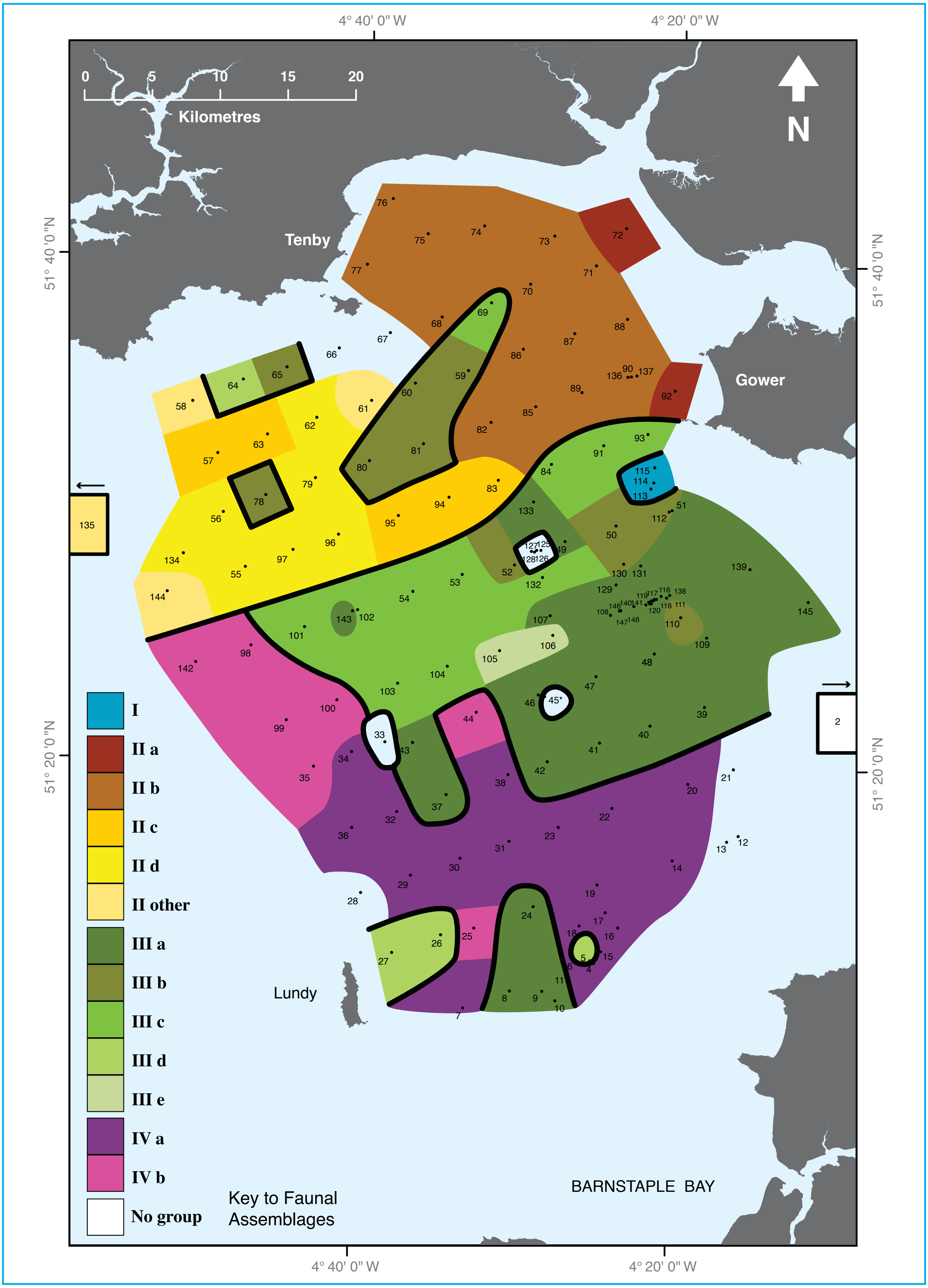


Fig. 6.8: Benthic macrofaunal assemblages and subgroups in the Outer Bristol Channel as determined by quantitative cluster analysis

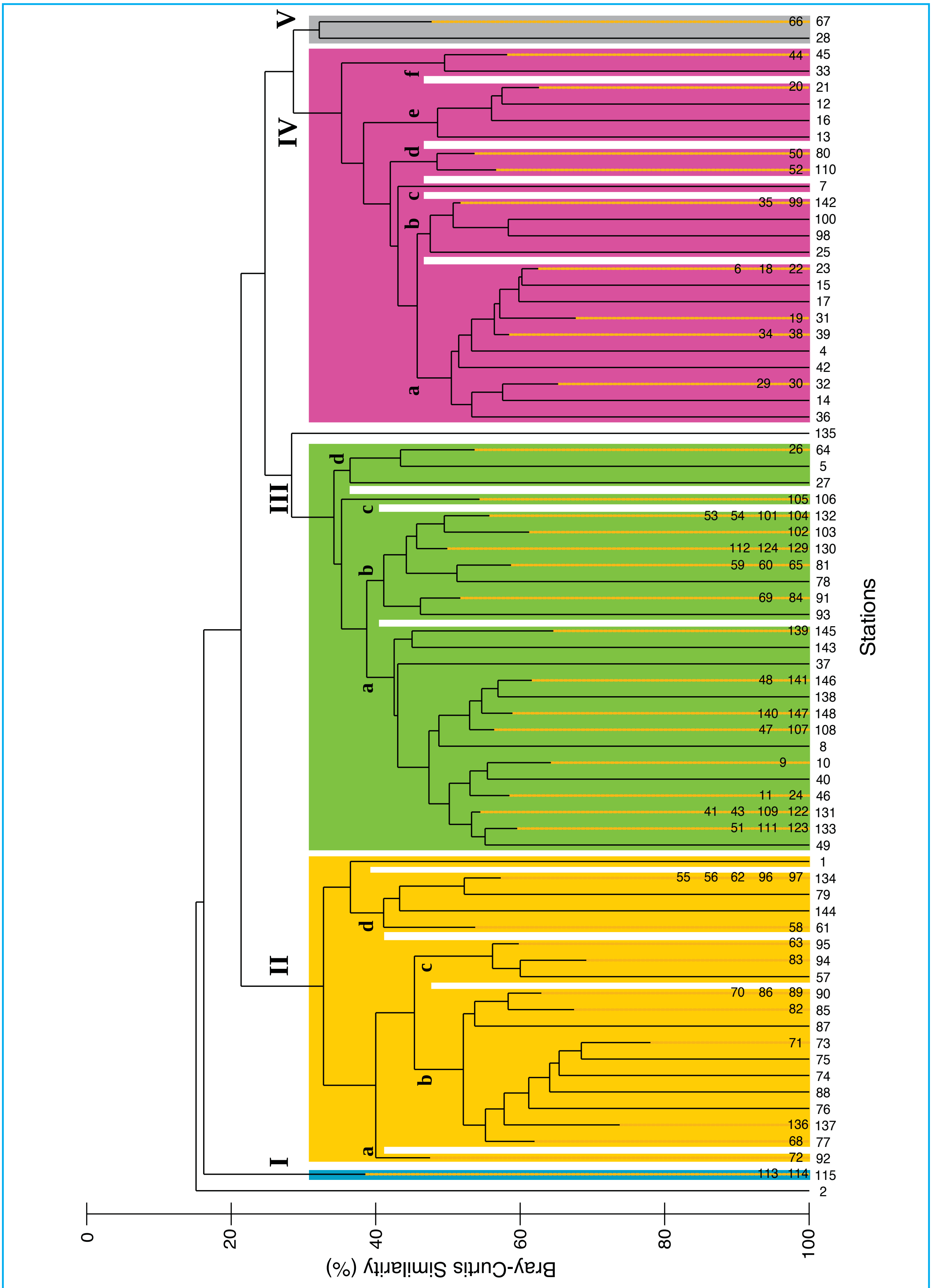


Fig. 6.9: Semi-quantitative Bray-Curtis classification of the Outer Bristol Channel benthos (log transformed data; colonial taxa converted from SACFOR scale to numerical 'equivalents'; non-significantly differing groups (p<0.05) merged)

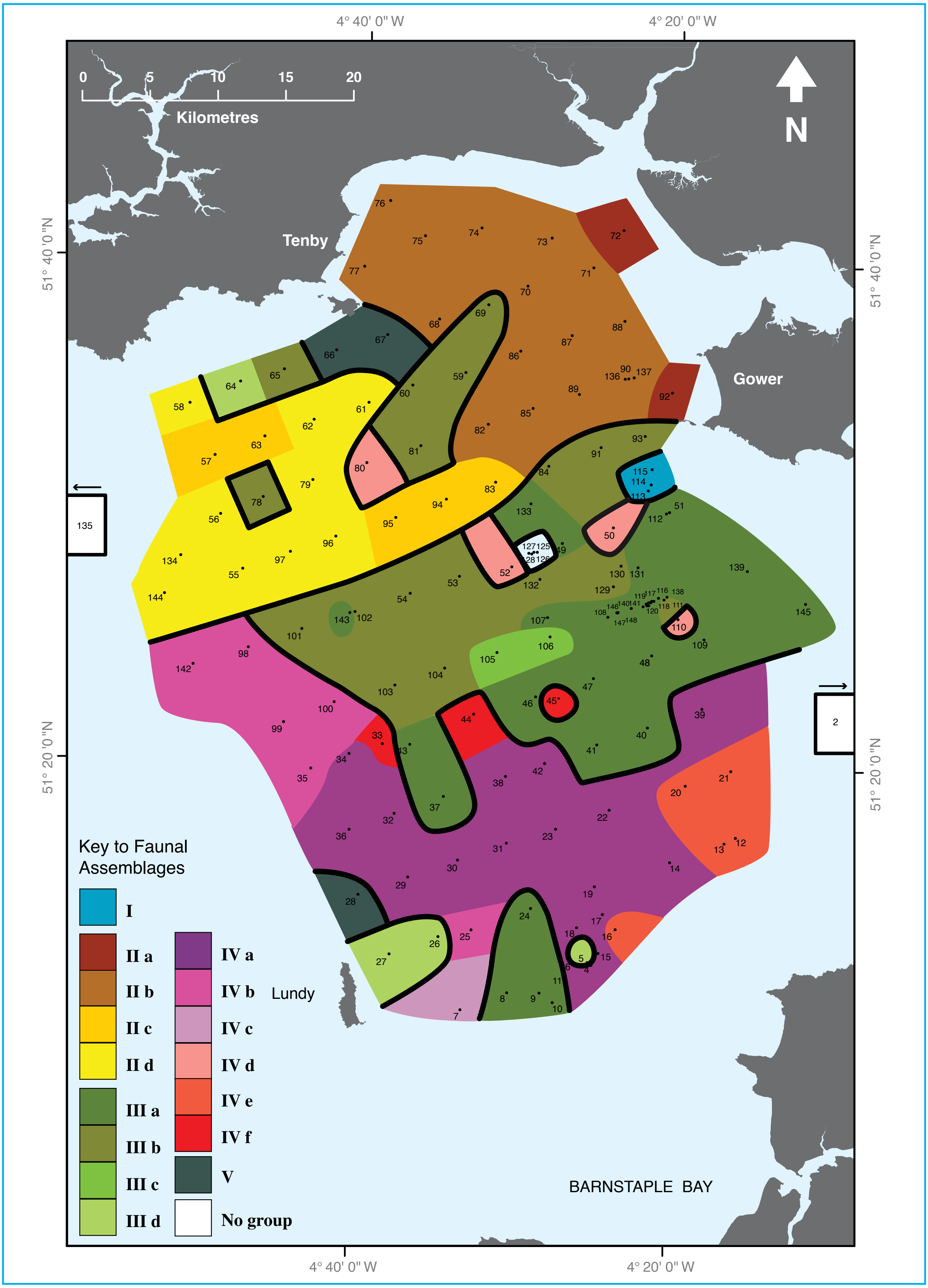


Fig. 6.10: Benthic macrofaunal assemblages and subgroups in the Outer Bristol Channel as determined by semi-quantitative cluster analysis

	Semi-Quantitative Analysis				Quantitative Analysis			
Assemblage	**No.**	**Part**	**No.**	**Stations**	**No.**	**Part**	**No.**	**Stations**
I	3		3	113, 114, 115	3		3	113, 114, 115
II	35	a	2	72, 92	36	a	2	72, 92
		b	17	68, 70, 71, 73, 74, 75, 76, 77, 82, 85, 86, 87, 88, 89, 90, 136, 137		b	17	68, 70, 71, 73, 74, 75, 76, 77, 82, 85, 86, 87, 88, 89, 90, 136, 137
		c	5	57, 63, 83, 94, 95		c	5	57, 63, 83, 94, 95
		d	10	55, 56, 58, 61, 62, 79, 96, 97, 134, 144		d	7	55, 56, 62, 79, 96, 97, 134
		other	1	1		other	5	1, 58, 61,135, 144
III	57	a	31	8, 9, 10, 11, 24, 37, 40, 41, 43, 46, 47, 48, 49, 51, 107, 108, 109, 111, 122, 123, 131, 133, 138, 139, 140, 141, 143, 145, 146, 147, 148	62	a	33	8, 9, 10, 11, 24, 37, 40, 41, 42, 43, 46, 47, 48, 49, 51, 107, 108, 109, 111, 122, 123, 129, 131, 133, 138, 139, 140, 141, 143, 145, 146, 147, 148
		b	20	53, 54, 59, 60, 65, 69, 78, 81, 84, 91, 93, 101, 102, 103, 104, 112, 124, 129, 130, 132		b	12	50, 52, 59, 60, 65, 78, 80, 81, 110, 112, 124, 130
						c	11	53, 54, 69, 84, 91, 93, 101, 102, 103, 104, 132
		c	2	105, 106		e	2	105, 106
		d	4	5, 26, 27, 64		d	4	5, 26, 27, 64
Other	1		1	135				
IV	37	a	18	4, 6, 14, 15, 17, 18, 19, 22, 23, 29, 30, 31, 32, 34, 36, 38, 39, 42	27	a	20	4, 6, 7,14, 15, 16, 17, 18, 19, 20, 22, 23, 29, 30, 31, 32, 34, 36, 38, 39
		b	6	25, 35, 98, 99, 100, 142		b	7	25, 35, 44, 98, 99, 100, 142
		c	1	7				
		d	4	50, 52, 80, 110				
		e	5	*12, 13*, 16, 20, *21*				
		f	3	*33*, 44, *45*				
V	3		3	*28, 66, 67*				
Other	1		1	2	1		1	2
Total	**137**		**137**		**129**		**129**	

Table 6.2: Comparison of faunal assemblages identified from quantitative and semi-quantitative cluster analyses. Stations with different assemblage designations marked in red; wholly qualitative stations (assemblages IV & V) in italic

blages. The stress values (0.11) for the quantitative and semi-quantitative analyses for 129 and 137 stations respectively indicated that the configurations were good. However, the 'interlinking' of assemblages III and IV was suggestive of a close relationship between the two.

The three-dimensional MDS plots allowed better separation of the assemblages and, for example, the quantitative analysis (Figure 6.14) had a correspondingly lower stress value of 0.08. The three stations of assemblage I (Helwick) formed a distinct line with the innermost station (OBC 113) nearest OBC 93 and 84 of assemblage III (subgroup IIIb). Assemblage II exhibited the largest vertical range with subgroup IIa (OBC 72 & 92) at the top, IIb and IIc in the middle (c distinct, at the lower end of b), and IId well separated at the lowest level. The subgroups of assemblage III were essentially in the one plane with subgroup IIIb more central and the others distributed around this toward the outside. Assemblage IV stations were in a plane just below III, with subgroup IVb inside of IVa.

There has been considerable interest in determining whether parts of a faunal assemblage can be used as surrogates for the whole (e.g., Caro & O'Doherty 1999; Olsgard & Somerfield 2000; Olsgard *et al.* 2003; Mackie *et al.* 2005). Surrogates are attractive since, for example, their use can facilitate rapid assessments of biodiversity or species distributions and this use can be very cost-effective. The PRIMER computer program (Clarke & Gorley 2006) contains routines that permit multiple comparisons of species assemblage patterns (RELATE, 2nd stage MDS), or even the determination of small optimal subsets of species that can reproduce the multivariate pattern of an entire fauna (BVSTEP).

The 2D MDS plots for the four faunal components (quantitative data) revealed the annelid configuration to have the lowest stress (0.12), followed by the mollusc (0.15), arthropod (0.19), and other phyla (0.20). The arthropod plot exhibited the least separation of assemblages III-IV. A RELATE permutation test was carried out to test the hypothesis that no relationship ($\rho \approx 0$) existed between each pair of similarity matrices. The null hypothesis was rejected in every case ($p<0.01$). These results confirmed the earlier observations that the assemblages for each of the four faunal components appeared comparable. However, the strongest relationship was between the annelid and mollusc distributions (ρ_s=0.795). The arthropod and other phyla distributions matched least (ρ_s=0.358).

To examine the relationships between the four faunal ordinations, their respective similarity matrices were compared using the rank correlations between each (Table 6.3). Comparisons with the whole species complement were included for reference. There were some high correlations (in italics) between the configurations for the total fauna and the component taxon groups. This was not surprising since the latter were subsets of the whole. The 2nd stage MDS ordination showed the relationship between the individual MDS plots of all four faunal components (Figure 6.15).

Taxon	All	Annelida	Mollusca	Arthropoda
Annelida	*0.971*			
Mollusca	*0.860*	0.795		
Arthropoda	*0.682*	0.591	0.430	
Other Phyla	*0.557*	0.494	0.422	0.358

Table 6.3: Spearman rank correlations (ρ_s) between the similarity matrices for each faunal component

Studies in the nearby southern Irish Sea area (Mackie *et al.* 1995; Mackie *et al.* 1997) demonstrated that the Annelida (mostly polychaetes), the dominant macrofaunal component, played a large part in determining overall benthic faunal assemblage structure. The high correlation (ρ_s=0.971) between the two, and their consequent closeness in the 2nd stage plot, confirmed this for the Outer Bristol Channel benthos. Olsgard & Somerfield (2000) reported similarly high correlations (0.791-0.989) for the benthic fauna in the Norwegian sector of the North Sea. These authors also examined smaller subgroups of annelids (polychaetes) and other taxonomic groups. As a result, they concluded that good matches with the total species distributions were not simply due to a prevalence of polychaetes in the samples. Rather, they also reflected certain aspects of polychaete biology and ecology. Polychaetes as a group appeared to encompass a greater degree of 'ecological flexibility' compared to the other fauna.

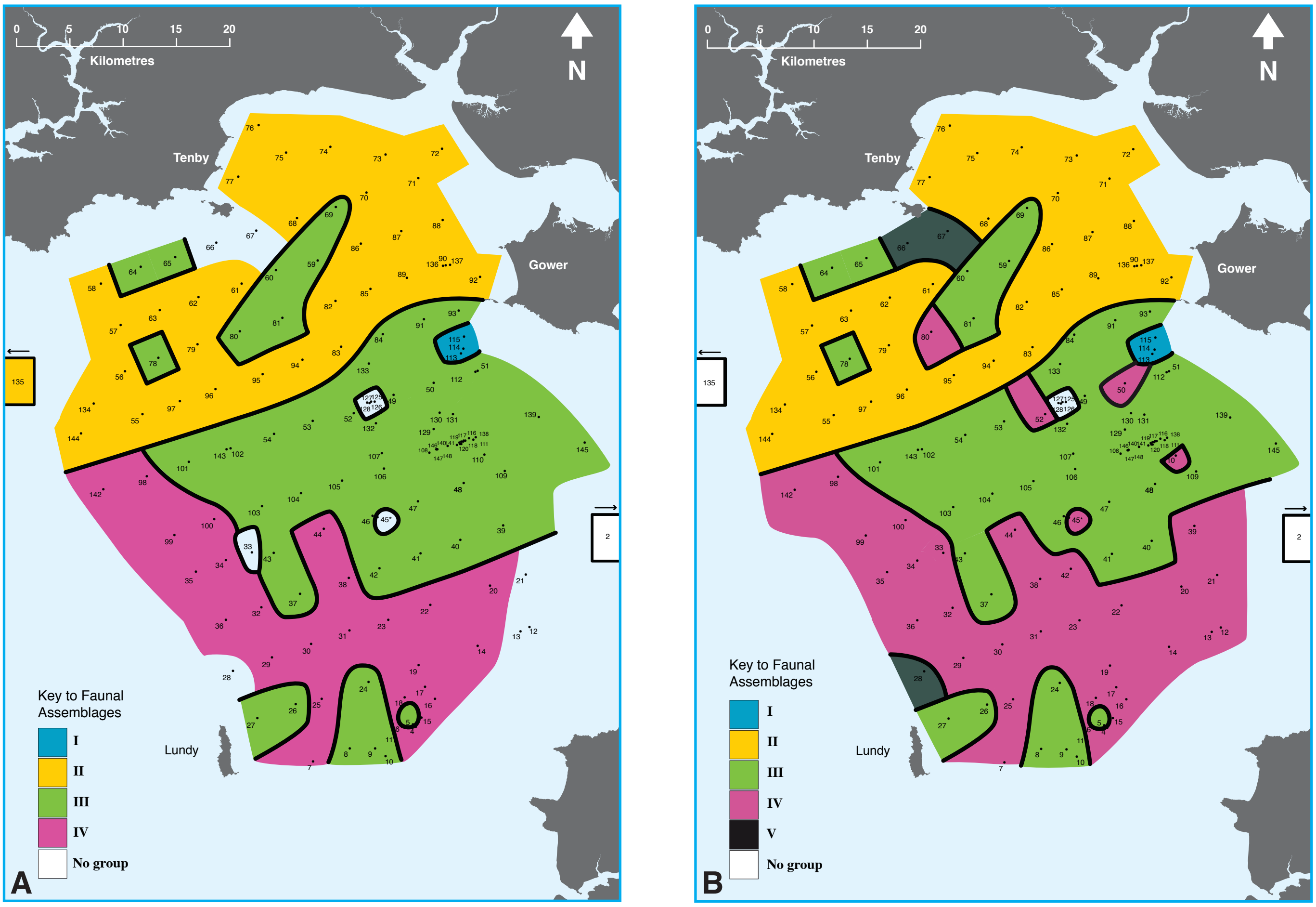


Fig. 6.11: Quantitative (A) and semi-quantitative (B) benthic macrofaunal assemblages in the Outer Bristol Channel

In the descriptions below, all assemblage and subgroup designations refer to the semi-quantitative results. Unless otherwise indicated all discussions regarding species abundances relate to the grab sampling.

As mentioned earlier, the species that characterised the assemblages and subgroups were primarily determined using SIMPER analyses and ranked abundance tabulations. An attempt at defining these groups using the Petersen-style classification scheme successfully employed for the Southern Irish Sea benthic assemblages (Mackie *et al.* 1995) proved unsuccessful. This was because the benthic assemblages in the Outer Bristol Channel occupied a more restricted range of habitats and depths. The sediments were predominantly sandy in nature and the faunal assemblages were largely differentiated by differences in the relative abundances of their constituent species. Many species occurred in two or more assemblages as readily demonstrated by the number of taxa present in each. For example, from a total of 948 taxa, assemblage II contained 430, assemblage III had 491, and assemblage IV, the richest, included 784, or 82.7% of those found at the 137 grab stations.

Defining the assemblages was complicated further by the prevalence of large numbers of juveniles across the survey area. Larvae of species with planktonic modes of dispersal have been shown to be discriminatory in the selection of their settlement habitat (e.g., Wilson 1937; Knight-Jones 1953; Duchêne 2004), though settlement can be influenced by wind, currents and tides (Ellien *et al.* 2000; Lefebvre *et al.* 2003; Olivier *et al.* 1996), as well as biological factors (André & Rosenberg 1991; Toonen & Pawlik 2001; Marshall & Keough 2003). Not all juveniles would survive into adulthood, however settlement in a 'preferred' habitat would be advantageous (Butman 1987). On this basis, it was interesting to examine the relative abundances of the top-ranked species across the survey area (Table 6.4). The highest abundances were often restricted to one assemblage, despite the majority of the species being widespread. This pattern was evident for taxa entirely (e.g., mytilids, including *Mytilus edulis*) or

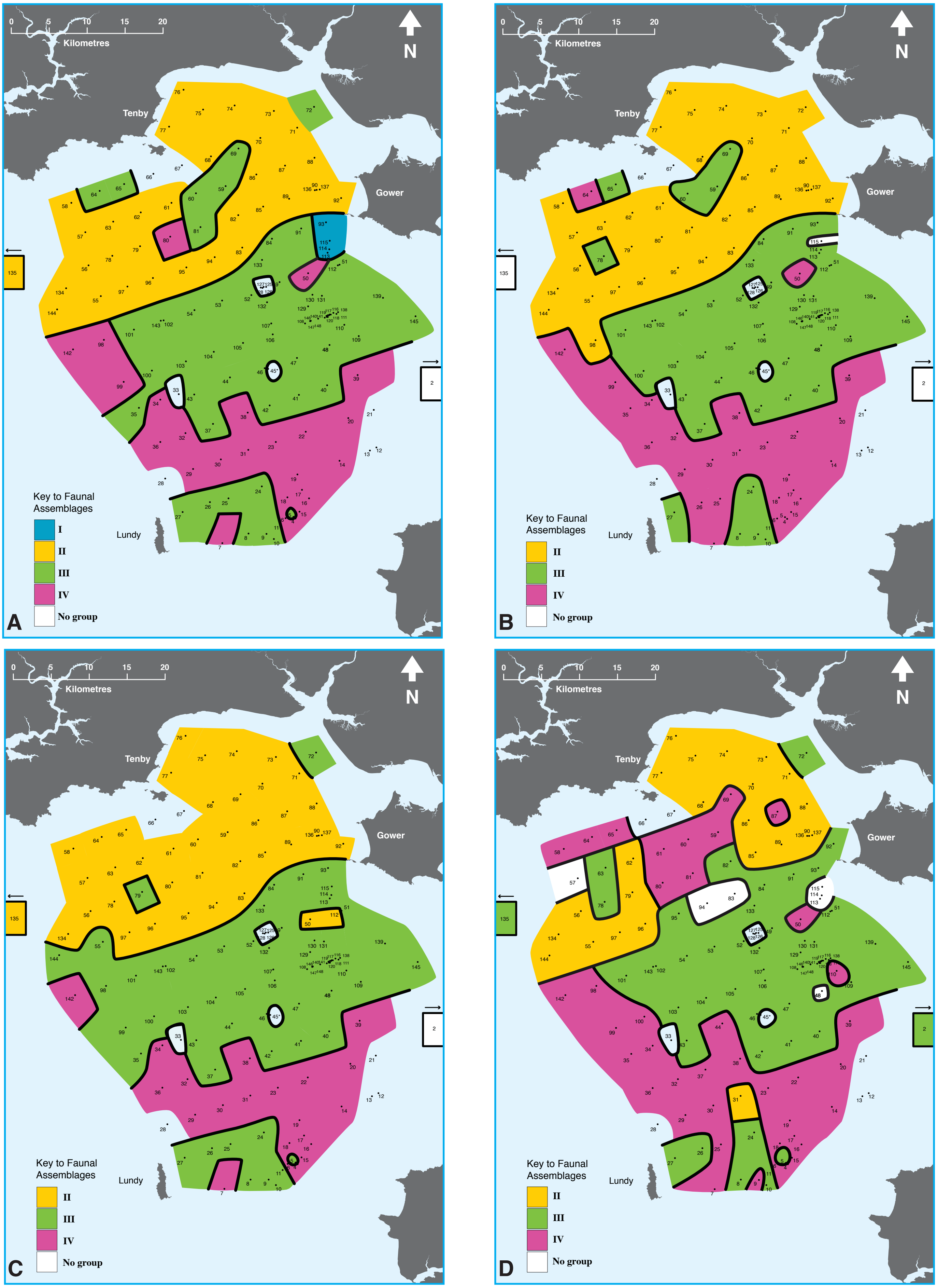


Fig. 6.12: Quantitative annelid (A) mollusc (B), arthropod (C) and other phyla (D) assemblages in the Outer Bristol Channel

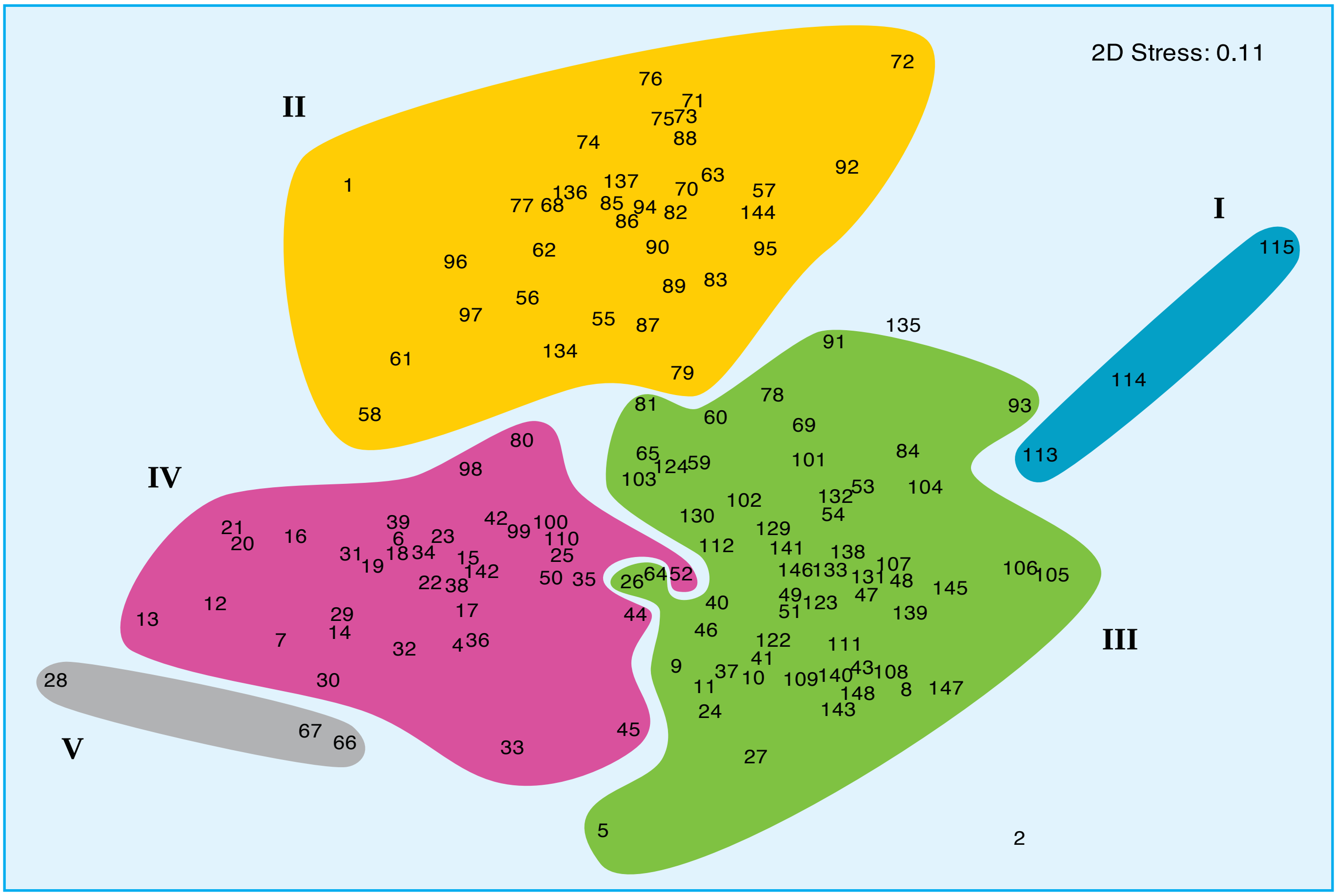


Fig. 6.13: MDS ordination of the semi-quantitative Outer Bristol Channel benthic station data, with cluster groups I-V superimposed

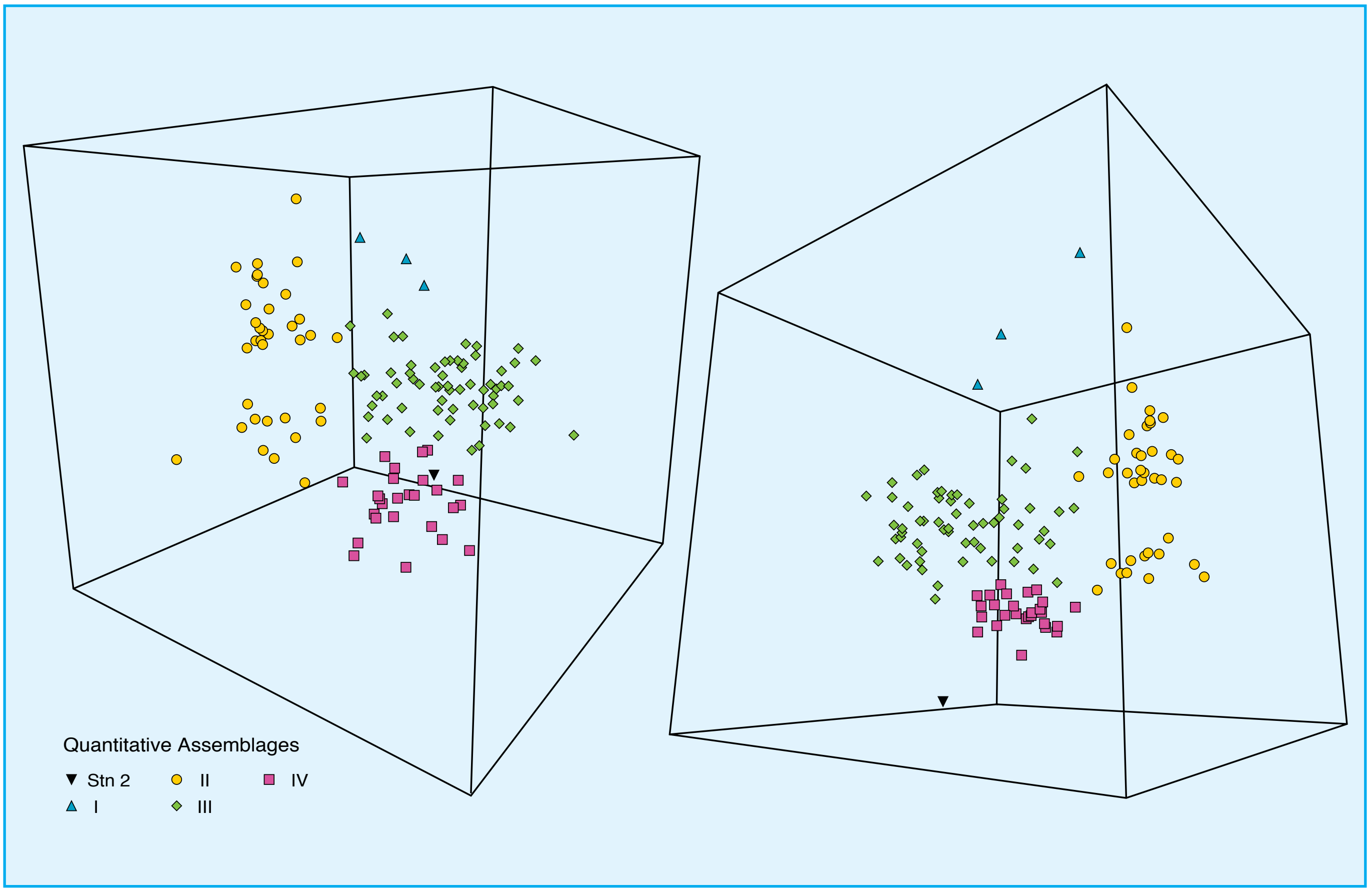


Fig. 6.14: Two views of the 3D MDS ordination of the quantitative Outer Bristol Channel benthic station data, showing cluster groups I-IV

Fig. 6.15: Second stage MDS ordination showing the relationships between the distributions of the main macrofaunal components in the Outer Bristol Channel benthos

predominantly represented by juveniles (e.g., pectinarid polychaete *Lagis koreni*) as well as for those with adults or a range of age groups. This information was used alongside the SIMPER and ranked tabulations in the following assemblage accounts.

Assemblage I

This small assemblage comprised only three stations, all from the Helwick Bank. The assemblage occurred in fine to medium sands, with about 10% carbonate (Table 6.5), in mostly shallow depths. The fauna was sparse with only 45 taxa (including colonial forms) and 560 'individuals' recorded in total.

With the exception of those represented by juveniles, the dominant taxa (Table A9.1a) were indicative of mobile sand habitats. The small interstitial polychaetes *Hesionura elongata* and *Protodriloides chaetifer*, the larger burrowing *Nephtys cirrosa*, and the mysid *Gastrosaccus spinifer* are common in sand bank environments. Tyler & Shackley (1980) recorded increased densities of *G. spinifer* and *N. cirrosa* on the crests of Bristol Channel sand banks. However, in the present study, *G. spinifer*, as well as *H. elongata* and *P. chaetifer*, were most abundant at the deepest station (OBC 113).

Although juvenile mussels (*Mytilus edulis*) were abundant and identified as contributing nearly 15% to the average similarity for the assemblage (Table A9.1b), these would not survive to become adults. Mussels generally require stable hard or mixed substrates in the intertidal or shallow sublittoral. Reference to Table 6.4 showed that, in relative terms, juvenile mytilids (including *M. edulis*) were not common in this assemblage. Their apparent high abundance was due to the natural sparseness of the other fauna. *Nephtys cirrosa* was most abundant in assemblage I, albeit only a little more so than in assemblage III.

Colonial species were infrequent with only four species recorded. This was not unexpected in a predominantly high-energy environment with little or no suitable substratum (e.g., gravel or large shells) for attachment. The hydroid *Obelia dichotoma* was the most prevalent colonial species. The others were sparse and only found at the deepest station (OBC 113) at the southern edge of the bank.

Stations OBC 113-115 had been previously sampled in 2001 as part of a survey of Welsh sand banks (Darbyshire *et al.* 2002: stns 31, 29 & 27 respectively). In that study, the Helwick Bank and the Turbot Bank (south of Milford Haven) were found to have a similar fauna. The shallower stations of these banks were adjudged to agree 'best' with the **IGS.Mob** biotope (sparse fauna in infralittoral mobile clean sand) as described in Connor *et al.* (1997). The deeper stations (including stn 31) were thought to belong to an intermediate biotope, indicative of more stable sand, and having an increased presence of species such as the polychaetes *Magelona mirabilis* and *Lanice conchilega*.

The Helwick area was also sampled in 2001 as part of an industry-commissioned survey (Environmental Resources Management 2003). Some 30 stations were sampled, ten of which occurred on the bank proper and were categorised as having the same biotope (**IGS.Mob**) as above. Other stations at the edge or off the bank had related faunas that were indicative of more stable conditions.

The biotope classification scheme was recently revised and expanded (Connor *et al.* 2004a, b). The direct equivalent of the earlier **IGS.Mob** biotope is now **SS.SSa.IFiSa.IMoSa** (Infralittoral mobile clean sand with sparse fauna). Nevertheless, with only three stations in the assemblage we must be cautious in our assessment. The larger studies indicated that assemblage I could be a composite of two biotopes — one

Rank	Taxon	OBC assemblage					Overall	'Out-of-area' Station		
		I	II	III	IV	V		135	2	1
1	*Lagis koreni*	4	**646**	198	153	6	291	3	1	1
2	MYTILIDAE juv.	—	—	5	68	**7011**	178	—	—	—
3	*Spiophanes bombyx*	1	**201**	23	42	—	73	66	—	235
4	*Hesionura elongata*	41	6	**133**	42	6	71	5	1	—
5	*Mytilus edulis*	37	28	66	**109**	—	66	1	8	19
6	*Spisula elliptica*	1	5	81	**88**	3	60	9	1	—
7	*Scalibregma inflatum*	—	**188**	8	27	3	59	145	—	43
8	*Abra alba*	1	**156**	9	49	3	57	—	—	1269
9	*Ampharete lindstroemi*	—	**98**	1	88	1	49	—	—	19
10	*Mediomastus fragilis*	—	21	7	**93**	7	34	1	17	6355
11	*Goodallia triangularis*	—	1	**46**	12	3	23	—	—	—
12	*Pseudocuma longicornis*	—	**74**	7	—	—	22	10	—	—
	Stenothoe marina	—	—	4	**73**	8	22	—	—	1
14	*Ampelisca spinipes*	—	14	6	**50**	10	20	—	—	1
	Spisula subtruncata	—	**77**	—	—	—	20	—	—	11
	Mysella bidentata	—	**56**	1	19	2	20	2	1	496
17	NEMERTEA indet.	—	19	13	**23**	4	17	10	3	50
18	*Aonides paucibranchiata*	—	1	9	**41**	1	15	2	—	—
	Spio sp. A	1	**37**	8	7	1	15	—	—	1
	Aora gracilis	—	—	—	**52**	14	15	—	—	—
21	*Heteranomia squamula*	—	—	—	42	**115**	14	—	—	—
	Magelona filiformis	—	**54**	—	—	—	14	1	—	—
23	HARMOTHOINAE indet.	—	4	1	39	**51**	13	—	—	4
	Lumbrineris gracilis	—	9	1	**35**	2	13	—	—	—
25	*Phoronis* spp.	1	**36**	1	8	14	12	—	—	2
	Grania spp.	3	3	**19**	10	1	12	4	6	—
27	*Streptosyllis bidentata*	—	—	**17**	13	1	11	—	1	—
28	*Poecilochaetus serpens*	—	**28**	2	6	1	9	—	—	—
	Sabellaria spinulosa	1	—	—	**30**	15	9	—	—	—
	Pseudocuma similis	—	4	**11**	**11**	—	9	—	—	9
	Magelona johnstoni	—	**35**	—	—	—	9	—	—	—
	Phaxas pellucidus	—	**33**	—	1	—	9	—	—	4
33	*Pisione remota*	—	1	**15**	6	—	8	—	—	—
	Timoclea ovata	—	2	1	**27**	1	8	1	—	—
	TEREBELLIDAE juv.	—	—	**16**	6	—	8	—	3	—
	Electra pilosa	P	—	P1	**P3**	P2	P2	—	—	—
	Lutraria lutraria	—	31	1	—	—	8	—	—	—
	Sphenia binghami	—	—	—	**28**	13	8	—	—	—
	Microphthalmus similis	—	1	8	10	**48**	8	—	—	—
	Macrochaeta helgolandica	—	—	**17**	1	4	8	—	10	—
41	*Chaetozone setosa*	—	**29**	—	—	—	7	—	—	—
	Gammaropsis cornuta	—	—	1	**25**	—	7	—	—	—
	Bodotria scorpioides	—	6	1	**18**	1	7	—	—	—
	Gibbula tumida	—	—	—	**25**	3	7	—	—	—
	Pholoe sp. B	—	3	—	19	**38**	7	—	—	—
	Caecum glabrum	—	—	7	**14**	—	7	—	—	—
	Megaluropus agilis	4	**11**	8	1	2	7	3	—	—
	Ampharete sp.	—	**18**	—	7	1	7	—	—	—
49	*Nephtys cirrosa*	**10**	6	8	3	1	6	3	—	—
	Achelia echinata	—	1	—	9	**148**	6	—	—	—
	Caulleriella zetlandica	—	2	—	**19**	—	6	—	—	8
	Urothoe elegans	—	1	1	**18**	1	6	—	—	—
	Amphilochus neapolitanus	—	—	1	**19**	1	6	—	1	—
Overall mean abundance/station		**187**	**2334**	**954**	**2484**	**8450**	**1877**	**570**	**117**	**12966**

Table 6.4: Average abundance (N/0.2 m^2) for the overall top-ranked taxa in each assemblage and individual station. Figures in bold indicate highest values within the Outer Bristol Channel study area; — indicates <0.5

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	16.07±11.55	9	29	9.40	3
Gravel (%)	0	0	0	0	3
Sand (%)	99.96±0.07	99.88	100.00	100.00	3
Mud (%)	0.040±0.07	0	0.12	0	3
$CaCO_3$ (gravel %)	0	0	0	0	3
$CaCO_3$ (sand %)	9.67±0.58	9	10	10	3
$CaCO_3$ (total %)	9.67±0.58	9	10	10	3
Mean Grain (mm)	0.27±0.05	0.23	0.33	0.26	3

Table 6.5: Sediment characteristics of assemblage I stations in the Outer Bristol Channel

associated with the bank and the other at the edge of the bank. Unfortunately the species compositions were rather contradictory (e.g., *Gastrosaccus spinifer* was more common at edge of the bank). The presence of *Hesionura elongata* and *Protodriloides chaetifer* was suggestive of **SS.SCS.ICS.HeloMsim** (*Hesionura elongata* and *Microphthalmus similis* with other interstitial polychaetes in infralittoral mobile coarse sand). However, the sediments of assemblage I stations were finer and *M. similis* was infrequent. Only single specimens of this and the related *M. listensis* were present (OBC 113 only).

Assemblage II

This major assemblage comprised 34 stations in the Outer Bristol Channel area, occupying most of Carmarthen Bay and Approaches, in shallow to moderate depths (Figure 6.10). The fauna was rich with 430 taxa and 79449 'individuals' recorded (including colonial forms) in total. The reference station OBC 1, located in Red Wharf Bay (Anglesey), also had affinities with this assemblage. Cluster analysis of the fauna identified four subgroups (IIa-d) within the assemblage (Figure 6.9); shown superimposed on the corresponding MDS plot (Figure 6.16).

The assemblage predominantly occurred in fine to medium sands, though the sediments ranged from muddy sand through to sandy gravel (Table 6.6). Carbonate was relatively low, averaging about 16%, and was associated mostly with the sand (Table 6.7). The highest carbonate levels in the gravel fraction (>35%) were from 14 stations with very little gravel (<2%). Four stations (OBC 58, 61, 77 and 97) had higher gravel contents (18-59%). The gravel component

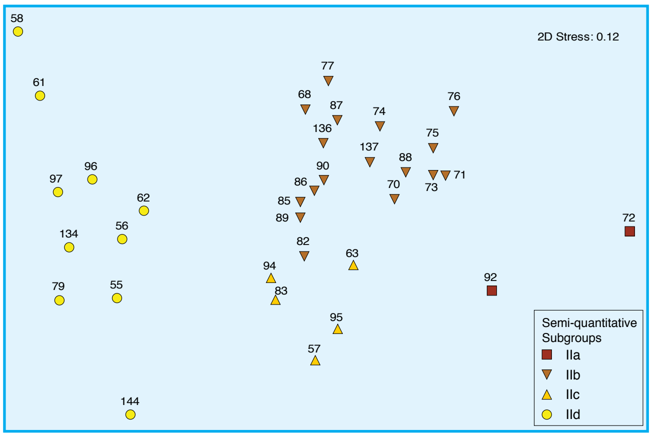


Fig. 6.16: MDS ordination showing the relationships between the macrofaunal subgroups within the Outer Bristol Channel assemblage II

(18%) of one (OBC 77) was almost entirely shell (96% carbonate).

The sediments associated with the subgroups (Tables 6.8-6.11) showed a trend of increasing mean grain size (Figure 4.39) from the shallow Carmarthen Bay (IIa & IIb) to the deeper Approaches (IIc & IId). The sediment mud content was generally low (<5%). Four stations had 5-10% mud; two in subgroup IIb (OBC 75 & 82) and two in IIc (OBC 55 & 56). The highest mud contents (11-36%) were found at four stations in IId (OBC 61, 62, 96 & 97).

The dominant species in assemblage II (Table 6.12 & A9.2a) were all indicative of stable sand or muddy sand habitats. Many of these were more prevalent in this assemblage (Table 6.4) than in others: e.g., polychaetes *Lagis koreni*, *Spiophanes bombyx*, *Scalibregma inflatum*, *Spio* sp. A, *Magelona filiformis*, *M. johnstoni*, *Poecilochaetus serpens* and *Chaetozone setosa*, bivalve molluscs *Abra alba*, *Spisula subtruncata*, *Mysella bidentata*, *Phaxas pellucidus* and *Lutraria lutraria*, crustacean *Pseudocuma longicornis* and phoronids. These same

Subgroup	Sediments
a	very fine sand & fine-medium sand
b	predominantly fine sand (very fine sand to gravelly sand)
c	fine to medium sand
d	mostly fine to medium sands (muddy sand to sandy gravel)

Table 6.6: Sediment types within Outer Bristol Channel assemblage II

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	26.83±15.11	6	55	26.50	34
Gravel (%)	4.64±13.11	0	59.02	0.36	34
Sand (%)	90.34±16.05	30.4	99.96	96.22	34
Mud (%)	5.02±7.76	0.04	36.38	2.44	34
$CaCO_3$ (gravel %)	44.32±45.90	0	100	31	31
$CaCO_3$ (sand %)	15.36±6.04	8	33	15	31
$CaCO_3$ (total %)	15.55±6.19	8	35	15	31
Mean Grain (mm)	0.22±0.08	0.11	0.42	0.21	34

Table 6.7: Sediment characteristics of assemblage II stations in the Outer Bristol Channel

species contributed most to the average similarity of the assemblage (Table A9.2b). Juveniles of *Mytilus edulis* were present at approximately the same abundance level as for assemblage I. However, their contribution toward defining assemblage II was less due to the presence of many more species, a large number of which were present in higher numbers. Again the juvenile mussels would be unlikely to survive in these sandy sediments. *Abra alba* and *Lutraria lutraria* were other bivalves represented by high numbers of juvenile specimens, though adults of the former were present at a number of stations (sometimes in abundance) throughout the assemblage (e.g., OBC 56, 79, 83, 85, 134).

A total of 44 species were exclusive to assemblage II, though the majority were infrequent and sporadic in occurrence. The exclusive species that showed some pattern of occurrence within the assemblage (see below) were polychaetes *Sigalion mathildae*, *Streptosyllis websteri* and *Diplocirrus glaucus*, molluscs *Donax vittatus*, *Pharus legumen* and *Cylichna cylindracea*, crustaceans *Microprotopus maculata* and *Callianassa subterranea* and echinoderm *Amphiura brachiata*. The bivalve *Angulus tenuis* only occurred at OBC 72, but was notable because of its abundance (17 specimens).

Colonial species were more common than in assemblage I, with some 37 species recorded. The hydroid *Lovenella clausa* (rank 86) was the most prevalent. It had a sparse presence in the three larger subgroups, but occurred at most stations in subgroups IIb and IId. All other colonial taxa were sparse and sporadically distributed.

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	9.80	8	12	9.80	2
Gravel (%)	0.22	0	0.44	0.22	2
Sand (%)	99.40	98.83	99.96	99.40	2
Mud (%)	0.39	0.04	0.73	0.39	2
$CaCO_3$ (gravel %)	50.00	0	100	50	2
$CaCO_3$ (sand %)	13.00	12	14	13	2
$CaCO_3$ (total %)	13.00	12	14	13	2
Mean Grain (mm)	0.16	0.12	0.21	0.16	2

Table 6.8: Sediment characteristics of group IIa stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	16.32±7.80	6	31	16.00	17
Gravel (%)	1.58±4.36	0	18.31	0.34	17
Sand (%)	95.82±4.74	80.66	99.93	97.80	17
Mud (%)	2.60±2.77	0.04	9.61	1.76	17
$CaCO_3$ (gravel %)	59.40±50.23	0	100	96	15
$CaCO_3$ (sand %)	15.67±4.87	10	27	15	15
$CaCO_3$ (total %)	16.80±6.72	10	35	15	15
Mean Grain (mm)	0.19±0.08	0.11	0.42	0.18	17

Table 6.9: Sediment characteristics of group IIb stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	31.40±2.79	28	34	32.00	5
Gravel (%)	0	0	0	0	5
Sand (%)	97.96±1.62	95.75	99.50	98.44	5
Mud (%)	2.04±1.62	0.50	4.25	1.56	5
$CaCO_3$ (gravel %)	0	0	0	0	5
$CaCO_3$ (sand %)	10.20±3.83	8	17	9	5
$CaCO_3$ (total %)	10.20±3.83	8	17	9	5
Mean Grain (mm)	0.25±0.07	0.15	0.35	0.26	5

Table 6.10: Sediment characteristics of group IIc stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	45.81±6.35	38	55	46.00	10
Gravel (%)	13.05±22.00	0	59.02	0.93	10
Sand (%)	75.40±23.40	30.40	98.41	81.91	10
Mud (%)	11.56±11.72	0.63	36.38	6.76	10
$CaCO_3$ (gravel %)	42.56±34.55	0	100	35	9
$CaCO_3$ (sand %)	18.22±7.76	10	33	18	9
$CaCO_3$ (total %)	17.00±5.66	10	27	17	9
Mean Grain (mm)	0.27±0.08	0.14	0.36	0.29	10

Table 6.11: Sediment characteristics of group IId stations in the Outer Bristol Channel

Rank	Taxon	IIa	IIb	IIc	IId	II
1	*Lagis koreni*	21	478	**2303**	229	646
2	*Spiophanes bombyx*	15	139	177	**356**	201
3	*Scalibregma inflatum*	—	23	148	**528**	188
4	*Abra alba*	2	71	**306**	258	156
5	*Ampharete lindstroemi*	—	16	4	**304**	98
6	*Spisula subtruncata*	17	**150**	3	2	77
7	*Pseudocuma longicornis*	44	93	**104**	33	74
8	*Mysella bidentata*	—	7	2	**177**	56
9	*Magelona filiformis*	23	**81**	**78**	3	54
10	*Spio* sp. A	23	**51**	19	26	37
11	*Phoronis* spp.	—	35	2	**60**	36
12	*Magelona johnstoni*	**80**	42	59	—	35
13	*Phaxas pellucidus*	2	**58**	19	3	33
14	*Lutraria lutraria*	1	**59**	5	1	31
15	*Chaetozone setosa*	2	**57**	3	—	29
16	*Poecilochaetus serpens*	1	**52**	7	3	28
17	*Mytilus edulis* juv.	10	30	6	**38**	28
18	*Mediomastus fragilis*	—	5	—	**63**	21
19	NEMERTEA indet.	6	**26**	4	18	19
20	*Ampharete* sp.	—	—	—	**59**	18
21	*Pontocrates arenarius*	**51**	25	3	—	16
22	*Ampelisca spinipes*	—	—	—	**48**	14
23	*Pariambus typicus*	—	**17**	**18**	10	14
24	*Capitella capitata*	5	22	7	—	12
25	*Hyala vitrea*	—	—	—	40	12
26	*Magelona* juv.	7	**17**	**15**	—	11
27	*Megaluropus agilis*	10	**15**	7	7	11
28	TUBIFICIDAE spp.	—	8	—	**21**	10
29	*Glycera tridactyla*	**19**	**16**	6	—	10
30	*Owenia fusiformis*	—	**17**	2	3	10
31	*Fabulina fabula*	2	**17**	7	—	10
32	*Eumida bahusiensis*	—	2	2	**28**	9
33	*Lumbrineris gracilis*	—	5	—	23	9
34	SPATANGOIDA juv.	2	**17**	1	1	9
35	OPHIUROIDEA juv.	3	**14**	1	5	9
36	*Bathyporeia tenuipes*	6	**16**	—	—	8
37	*Argissa hamatipes*	2	5	**26**	6	8
38	*Perioculodes longimanus*	2	**14**	1	—	7
39	*Lanice conchilega*	1	**9**	5	6	7

Table 6.12: Average abundance (N/0.2 m^2) for the top-ranked taxa within the Outer Bristol Channel assemblage II. Numbers in bold indicate highest values; — indicates <0.5

Most of the dominant species within the assemblage were found in at least three of the four subgroups though many exhibited larger abundances in only one (Table 6.12). Several had 'similar' average levels across two subgroups: amphipod *Megaluropus agilis*, polychaetes *Glycera tridactyla* (IIa & IIb) and *Magelona filiformis*, cumacean *Pseudocuma longicornis*, amphipod *Pariambus typicus* (IIb & IIc) and bivalve *Abra alba* (IIc & IId). Exclusive species showing similar patterns were *Sigalion mathildae* (IIa & IIb) and, to a lesser extent, amphipod *Microprotopus maculata* (IIa & IIb), gastropod *Cylichna cylindracea* and brittle star *Amphiura brachiata* (both IIb & IId). Although found sporadically elsewhere, the polychaetes *Sthenelais* *limicola* and *Nephtys hombergii* were regularly present in the assemblage (IIb-IId). Likewise, the bivalve *Chamelea gallina* and Sea Potato *Echinocardium cordatum* were more prevalent (both almost entirely IIb), though the latter was very sparse.

The Beam Trawl tows (see Section 6.4) yielded many species that, because of their spatial distributions, were not collected efficiently (or at all) by the grab. On the other hand, trawls are more likely to collect animals from multiple habitats. Hence some caution is required in interpreting the catches.

Four series of trawls were taken in the area covered by assemblage II. Trawl boxes BT6 and BT7 in the south-eastern part of Carmarthen Bay, west of Rhossili, coincided with subgroup IIb. Trawl box BT9 was near grab station OBC 94 in subgroup IIc, south of Carmarthen Bay. Trawls from BT1, near OBC 97 in subgroup IId were however, somewhat variable and some tows collected animals more representative of assemblage IV.

Thus, while only a single specimen of the Sea Mouse *Aphrodita aculeata* was collected from the grab survey (OBC 61; IId), the polychaete was regularly present in trawls from subgroups IIb-d. It was found in assemblage IV (BT10 & 12) as well. The Masked Crab *Corystes cassivelaunus* was collected sporadically across assemblages II-IV (particularly in II) by the grab. It occurred in high numbers in subgroup IIb and IIc trawl boxes. The only other trawl specimen was from BT1. The starfish *Astropecten irregularis* was even more sporadic in the grab sampling. Only three specimens were collected, from two stations in subgroup IIb and one in IVa. However, it was caught in every trawl from subgroups IIb and IIc, but in no other.

In the grab sampling, the brittle star *Ophiura albida* was found (in low numbers) at only two stations in subgroup IId (OBC 56 & 58), and it was much more prevalent in assemblage IV. The trawl survey showed a similar pattern of occurrence, however two tows from assemblage II (BT7c; IIb & BT1a; IId) collected thousands of specimens (Table A5.1), several times the catches from assemblage IV trawls. The congeneric *Ophiura ophiura*, by contrast, was almost exclusive to assemblage II grab stations, particularly subgroups IIb and IId. The trawl survey found additional occurrences in assemblages III and IV, but the higher catches were again in assemblage II. The highest abundances, sometimes in the thousands, were taken at trawl box BT9 in subgroup IIc and in tow BT1a in subgroup IId.

A number of fish species were more frequent in assemblage II trawls. These included Whiting *Merlangius merlangus*, Sand Goby *Pomatoschistus minutus*, Dab *Limanda limanda* and Pogge *Agonus cataphractus* (also BT8; IIIb). Solenette *Buglossidium luteum*, Grey Gurnard *Eutrigla gurnardus* (also BT13; IVa), Scaldfish *Arnoglossus laterna* and Plaice *Pleuronectes platessa* were common in subgroups IIb and IIc.

Subgroup IIa

This small subgroup consisted of only two shallow stations on the east side of Carmarthen Bay. A total of 70 taxa and 1046 individuals were recorded, but no colonial species were encountered.

Species exhibiting higher average abundances in this subgroup included the polychaetes *Magelona johnstoni* and *Nephtys cirrosa*, molluscs *Acteon tornatilis* and *Mactra stultorum*, and amphipod *Pontocrates arenarius*. All were at their maximum survey densities. *Donax vittatus*, an assemblage exclusive species, occurred at both stations (and sporadically in IIb). *Angulus tenuis* was unique to this subgroup, though it was found at OBC 72 only.

The six top-ranked species accounted for just over 50% of the total subgroup abundance (Table 6.12 & A10.1a). *Pontocrates arenarius*, bivalve *Mactra stultorum, Spio* sp. A, *Spiophanes bombyx, Magelona johnstoni* and gastropod *Acteon tornatilis* together were responsible for 45% of the average subgroup similarity (Table A10.1b).

Subgroup IIb

This, the largest subgroup in assemblage II, included 17 stations in Carmarthen Bay and the southern approaches (6-31 m). The sediments were predominantly fine sand, though the sample from one station (OBC 77) was sandy gravel. A total of 280 taxa and 32937 'individuals' were recorded. Only 17 colonial taxa were collected. Almost all were scored as either sparse or rare and hydroids *Lovenella clausa* (rank 66) and *Obelia* spp. (combined) were the only colonial forms occurring at the majority of the subgroup stations.

The cluster analyses (Figures 6.7 & 6.9) showed some evidence for subdivision within this subgroup. Seven outer bay and approach stations (OBC 70, 82, 85-87, 89 & 90) grouped separately from the inner ones. On the MDS plot (Figure 6.16) these stations are (with the exception of OBC 87) positioned between the other IIb stations and subgroup IIc.

Species exhibiting higher average abundances in this subgroup (Table 6.12 in part) included the molluscs *Spisula subtruncata, Phaxas pellucidus, Lutraria lutraria, Fabulina fabula* and *Philine aperta*, polychaetes *Spio* sp. A, *Chaetozone setosa, Poecilochaetus serpens, Capitella capitata* and *Owenia fusiformis*, and amphipods *Megaluropus agilis, Bathyporeia tenuipes, Perioculodes longimanus* and *Synchelidium maculatum*. These, plus *Magelona filiformis, Pseudocuma longicornis* and *Pariambus typicus* (also IIc), and *Glycera tridactyla* (also IIa) were among both the top-ranked species (Tables 6.12 & A10.2a) and those contributing most to the average subgroup similarity (Table A10.2b). However, the top two assemblage dominants, the pectinarid *Lagis koreni* and spionid *Spiophanes bombyx*, together accounted for almost 10% of the subgroup similarity. The next six species (*Phaxas pellucidus, Pseudocuma longicornis, Spio* sp. A, *Lutraria lutraria, Magelona filiformis, Spisula subtruncata*) contributed a further 20%.

Spisula subtruncata, Phaxas pellucidus, Lutraria lutraria, Fabulina fabula, Philine aperta, Spio sp. A, *Chaetozone setosa, Poecilochaetus serpens, Capitella capitata, Owenia fusiformis, Bathyporeia tenuipes, Perioculodes longimanus* and *Synchelidium maculatum* were at their maximum survey densities.

Other species of note included the bivalves *Chamelea gallina* and *Thracia phaseolina*. Both were present in low numbers (5 or 6/station) throughout this subgroup, but only very sporadically elsewhere in the survey area. The cumacean *Iphinoe trispinosa* and *Sigalion mathildae* (both also in IIa), and mollusc *Cylichna cylindracea* (also in IId) occurred in at least half the subgroup stations. The distinctive long-armed brittle star *Amphiura brachiata* (also in IId) was present in low numbers at four stations only, three in the western part of Carmarthen Bay. Assemblage exclusive *Streptosyllis websteri* occurred at six stations (OBC 77, 86, 87, 89, 136 & 137) within this subgroup only.

The bivalve *Pharus legumen*, an assemblage exclusive species, was found only at eight stations in this subgroup. Likewise, it occurred only in half the tows in box BT7 (near OBC 136); as did *Chamelea gallina* also. The burrowing urchin *Echinocardium cordatum*, though sparsely distributed in assemblages II-IV, was more prevalent in this subgroup. It was similarly infrequent in the trawl survey and was restricted to three out of the eight tows from BT6 and BT7. The squid *Alloteuthis subulata* was found uniquely in trawl tows from this subgroup.

Subgroup IIc

This small subgroup consisted of five stations at similar depths (28-34m) in the Carmarthen Bay Approaches; three (OBC 83, 94 & 95) south of the bay and two (OBC 57 & 63) to the west. The sediments ranged from fine to medium sands. A total of 121 taxa and 17462 'individuals' were recorded. Only 12 colonial taxa were collected and most were infrequent and sparse. *Sertularia* spp. were present at three stations, the others at less.

Species exhibiting higher average abundances in this subgroup included *Lagis koreni*, amphipod *Argissa hamatipes* and cumacean *Cumopsis fagei*. In addition, several other species were more prevalent in 'similar' numbers in this and another subgroup: *Magelona johnstoni* (also IIa), *Pseudocuma longicornis, Magelona filiformis* and *Pariambus typicus* (also IIb), *Abra alba* (also IId) and cumacean *Diastylis bradyi* (also IIIb).

The pectinarid polychaete *Lagis koreni* was at its maximum survey density in this subgroup, as was *Abra alba* which was very abundant in IId also (Tables 6.12 & A10.3a). *Lagis koreni* and the second and third dominant species, the polychaetes *Spiophanes bombyx* and *Scalibregma inflatum*, together contributed to 30% of the average subgroup similarity (Table A10.3b). Other much less abundant species at their maximum OBCMHS area densities included *Argissa hamatipes* and *Cumopsis fagei*.

Subgroup IId

This, the second largest assemblage subgroup, consisted of ten stations in the deeper western approaches to Carmarthen Bay (38-55 m). The sediments were mainly between the fine to medium sand grades. Two stations (OBC 62 & 96) were muddy sand and another (OBC 97) gravelly muddy sand. Two other stations were muddy sandy gravel (OBC 61) and sandy gravel (OBC 58). The subgroup was rich with 320 taxa and 27914 'individuals' collected. A total of 32 colonial taxa were present, mostly infrequent and sparse. *Lovenella clausa* (rank 80) was the only colonial form represented in more than half the subgroup stations.

Numerous species exhibited higher average abundances in this subgroup (Table 6.12). These included the polychaetes *Spiophanes bombyx*, *Scalibregma inflatum*, *Ampharete lindstroemi*, *Ampharete* sp., *Mediomastus fragilis*, *Eumida bahusiensis*, *Lumbrineris gracilis* and *Scoloplos armiger*, molluscs *Mysella bidentata* and *Hyala vitrea*, amphipod *Ampelisca spinipes*, cumacean *Pseudocuma similis*, and phoronids. In addition, *Abra alba* was common here, as well as in subgroup IIc. Although most of the *Abra alba* found in the survey area were juvenile, OBC 56, 79 and 134 included adults. Those from OBC 56 were very numerous, while those from OBC 79 were the largest (ca. 15-18 mm long) encountered in the whole survey. *Scalibregma inflatum* and *Spiophanes bombyx* were the top-ranked species (Table A10.4a) and, together with *Mysella bidentata* and *Abra alba*, contributed about 22% of the average subgroup similarity (Table A10.4b).

Polychaetes *Spiophanes bombyx*, *Scalibregma inflatum*, *Scoloplos armiger*, *Aricidea minuta* and *Goniada maculata*, tubificid oligochaetes, molluscs *Mysella bidentata* and *Hyala vitrea*, cumacean *Eudorella truncatula*, and phoronids were all at their maximum survey densities in subgroup IId.

The brittle star *Amphiura filiformis* was consistently present throughout the subgroup. Only one other specimen was collected from assemblage II (OBC 83), though the species also occurred at eight stations in assemblage IV. The assemblage exclusive *Amphiura brachiata* (also in IIb) occurred at three stations in subgroup IId. Two assemblage exclusives, *Diplocirrus glaucus* and *Callianassa subterranea*, were collected in low numbers at three (OBC 58, 61 & 62) and four stations (OBC 79, 96, 97 & 144) respectively, but nowhere else. A single specimen of the pectinarid polychaete *Amphictene auricoma* was collected from all the benthic sampling in 2003-2005. It was taken in a trawl (BT1b) that may have sampled across two assemblage subgroups (IId & IIId?).

There were several other notable species present. The 'rare' bivalve *'Mysella' obliquata* (see section 6.1) occurred at five subgroup stations (OBC 55, 96, 97, 134 & 144) and only one other nearby (OBC 98) in assemblage IV. The cumacean *Eudorella truncatula* was present at nine subgroup stations and at only two other stations (assemblage III) in the study area. The bivalve *Timoclea ovata* occurred in this assemblage II subgroup only, though it was abundant in assemblage IV and was found at a number of stations in assemblage III. *Ampelisca spinipes* was likewise more abundant in assemblage IV.

Assemblage II overview

Warwick & Davies (1977) sampled seven stations in Carmarthen Bay and four in the Approaches as described here. Five of the bay stations and one eastern approach one were classified as belonging to a *Tellina* subgroup of a *Venus* assemblage. The other approach stations were considered to belong to an *Abra* assemblage. Two mid-Carmarthen Bay stations were on more mixed sediments and grouped with a less well-defined *Modiolus* assemblage (see assemblage III below).

The five bay stations formed the most well-defined group within a *Tellina* assemblage characterised by the following species (names updated): *Pontocrates arenarius*, *Bathyporeia guilliamsoniana*, *Perioculodes longimanus*, *Magelona johnstoni*, *Aphelochaeta marioni*, *Nephtys hombergii*, *Glycera tridactyla*, *Iphinoe trispinosa*, *Fabulina fabula*, *Donax vittatus* and *Ophiura*

ophiura. *Pharus legumen, Philine aperta, Lagis koreni* and *Astropecten irregularis* were the least abundant characteristic species (≤5/0.2 m^2).

The *Abra* assemblage was found on a wide variety of sediments and, as a whole, was regarded as a rather heterogeneous grouping dominated by *Abra alba, Scalibregma inflatum, Lagis koreni* and *Ampelisca spinipes*. However, the Carmarthen Bay Approaches stations occurred on flat 'muddy sand' and grouped together in Warwick & Davies' cluster analysis. This grouping included *Ophiura ophiura, Glycera tridactyla* and *Philine aperta*; species more typical of the *Tellina* assemblage.

Although some other benthic work has been carried out in parts of Carmarthen Bay (e.g., Hobbs & Smith 1998), the most comprehensive study of the whole bay was made by Woolmer (2003). Cluster analysis of the 28 quantitative stations sampled in 1998 revealed two main assemblages (A & B), the second having two subgroups (B1 & B2) and one intermediate station (stn C44 in B). There was one ungrouped and impoverished station (C21).

The 14 stations of subgroup B1 formed the most close-knit cluster and covered the majority of the bay. *Spiophanes bombyx, Magelona* spp. and *Fabulina fabula* were the dominant species, however *Thracia phaseolina, Chamelea gallina, Chaetozone setosa, Perioculodes longimanus, Mysella bidentata* and *Sigalion mathildae* were among the characterising species. The smaller subgroup B2, with six stations, was located primarily (five stations) in shallower parts of the eastern bay. Many of the species were shared with subgroup B1 and the dominant species were *Magelona* spp. and *Spiophanes bombyx*. Important characterising species were *Nephtys cirrosa, Pontocrates arenarius* and *Tellimya ferruginosa*. Assemblage A, with six stations, was distributed (five stations) across the southern 'edge' of Carmarthen Bay. *Nephtys cirrosa, Pseudocuma longicornis* and *Spiophanes bombyx* accounted for most of the average assemblage similarity. However, the species that dominated the larger B1 were all greatly reduced in abundance. *Scolelepis bonnieri* was one of the few species with relatively higher densities. This assemblage may be in a more disturbed transitionary zone between the shallow bay and the deeper approaches. Woolmer (2003) considered all three cluster groups to represent series of states within a *Tellina* assemblage.

The Outer Bristol Channel sampling included revisits to stations (Table 3.6) previously investigated by Warwick & Davies (1977) and Woolmer (2003). In the Carmarthen Bay area these were OBC 69, 72-76, 92 and 93. Their species compositions and their associated assemblages or subgroups appeared to correspond reasonably well across the different studies. Thus:

- Woolmer B2 subgroup = OBC subgroup IIa
- Warwick & Davies *Tellina* sub-community = OBC subgroup IIb
- Woolmer B1 subgroup = OBC subgroup IIb
- Warwick & Davies *Abra* community (south of Carmarthen Bay) = OBC subgroup IIc
- Woolmer assemblage A = OBC subgroup IIc (reduced)

However, one conspicuous difference throughout most of assemblage II was an abundance of *Spisula subtruncata* in the OBCMHS samples. This bivalve mollusc was not recorded by Warwick & Davies (1977), Warwick *et al.* (1978) or Woolmer (2003), and Hobbs & Smith (1998) found just one specimen in their three Carmarthen Bay surveys. The species was one of the characterising species for the *Venus* community (Petersen 1924) and has been recorded in shallow sand assemblages from Denmark to the Mediterranean. It was common in parts of the Dogger Bank (Davis 1923, 1925) and off the Dutch coast (e.g., Holtmann *et al.* 1996), where it occurred alongside *Magelona johnstoni/mirabilis(?), Fabulina fabula, Lanice conchilega* and *Echinocardium cordatum*. Its propensity for sudden dramatic changes in abundance has often been noted (e.g., Davis 1925; Amoureux 1974; Ambrogi & Occhipinti Ambrogi 1987; Fraschetti *et al.* 1997), and there was evidence that Dogger Bank and Dutch populations were in decline (Krönke 1992; Holtmann *et al.* 1996, 1998). Jones (1950) included it as a characterising species in his definition of his 'boreal offshore muddy sand association'.

In Welsh waters, *Spisula subtruncata* is known for its ephemeral abundance in the muddy sands of Red Wharf Bay, northeast Anglesey (Rees 2004). A small number of large (~16 mm long) individuals were collected from there (OBC 1) at the start of the first OBCMHS biological cruise. Large numbers of adult *Abra alba* were also present. Red Wharf Bay was the only location to host *S. subtruncata* in the BIOMÔR study of the southern Irish Sea benthos (Mackie *et al.* 1995).

Darbyshire *et al.* (2002) and Rees (2004) found it difficult to categorise the biotope in Red Wharf Bay relative to those described in the MNCR biotope manual (Connor *et al.* 1997a). *Spisula subtruncata* has been shown to be a favoured food for the starfish *Astropecten irregularis* (Christensen 1970; Freeman *et al.* 1999) and *Asterias rubens* (Allen 1983). The former were reported to congregate in Red Wharf Bay to take advantage of recent spatfalls of *S. subtruncata* (Freeman *et al.* 2001), and be capable of almost completely eradicating the prey (Muus 1966). Field observations indicated that 1+ and 2 year old *S. subtruncata* were a probable food of Common Scoter ducks *Melanitta nigra* (Rees 2004). At these ages they would be at least 10–15 mm long. Most of the specimens collected from Carmarthen Bay during the 2003 and 2004 grab sampling were recent recruits (<1-2 mm), and only a very few were as large at 5-7 mm.

Connor *et al.* (2004) described a '*Spisula subtruncata* and *Nephtys hombergii* in shallow muddy sand' biotope (**SSa.IMuSa.SsubNhom**). This biotope was considered intermediate between the sandy **ImuSa.FfabMag** and muddier **CmuSa.AalbNuc** biotopes, the *Tellina* and *Abra* assemblages of many earlier authors. Sometimes the *Spisula* biotope could be a sub-biotope or simply a temporal variant of one of these. The data available, while admittedly sparse at present, would seem to indicate that *S. subtruncata* populations in Carmarthen Bay and other Welsh locations are transient and less persistent than those in the North Sea and Mediterranean. Woolmer (2003) concluded that the Carmarthen Bay *Tellina* community was subject to recruitment driven variability in the short-term, however its composition was relatively stable in the long-term. Consequently, the high abundance of juveniles in the OBC assemblage II was not considered in the following biotope assessments.

The main subgroup (IIb) agreed well with the **SSa.IMuSa.FfabMag** biotope (*Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in infralittoral compacted fine muddy sand). This biotope is common in other shallow sands around the Welsh coast, such as St Bride's Bay (Hobbs & Smith 1998) and Cardigan Bay (Mackie *et al.* 1995). The other subgroups were more difficult to assign; subgroups IIa and IIc partly because of the low number of their constituent stations.

Warwick *et al.* (1978) investigated the annual macrofaunal production at their Carmarthen Bay station 126 (= OBC 73). The bivalve *Pharus legumen* contributed 80% of the total annual biomass and 62% of the total production. The polychaete *Spiophanes bombyx* was the second largest contributor with 13% of the production from 1.5% of the biomass. The total annual production (P) was estimated as 25.8 g/m^2 for a mean biomass (B) of 45.8 g/m^2; P/B ratio 0.56. Woolmer (2003) studied benthic variability at station 49 (= OBC 76). He also examined the population dynamics and growth of the bivalve *Fabulina fabula*.

The shallow water subgroup IIa stations included the bivalves *Angulus tenuis* and *Donax vittatus*, both of which could be regarded (e.g., see Warwick and Davies 1977) as 'intruders' from a low intertidal *Tellina* (=*Angulus*) *tenuis* assemblage (**LSa.FiSa.Po.Aten** biotope; Connor *et al.* 2004). Indeed, both species were found off Pembrey Sands east of OBC 72 (Woolmer *et al.* 2004), and on the Rhossili and Llangennith beaches (Withers 1977), east of OBC 92. However, the Rhossili beach also has areas on the lower shore where the Sandmason Worm *Lanice conchilega* (**LSa.MuSa.Lan** biotope) is more abundant (Mackie pers. obs.). Positioned between these intertidal biotopes and the **FfabMag** biotope (subgroup IIb), subgroup IIa shared elements of all. Considering subgroup IIa alongside the larger Woolmer B2 subgroup, the closest biotope was a sheltered form of the **SSa.IFiSa.NcirBat** biotope (*Nephtys cirrosa* and *Bathyporeia* spp. in infralittoral sand).

Subgroup IIc in the deeper Carmarthen Bay Approaches again had many species in common with the **FfabMag** biotope subgroup IIb. The two most abundant species, *Lagis koreni* and *Abra alba,* would normally be indicative of more muddy sediments such as in parts of subgroup IId and the species complement did not readily fit any described biotope. The subgroup could be thought of as intermediate between the **FfabMag** biotope and a muddier one such as **SSa.CMuSa.AalbNuc** (*Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment), though the sediment mud content was rather low (≤4.3%). Indeed, Warwick and Davies (1977) referred to the area south of Carmarthen Bay as supporting an *Abra* community. *Nucula nitidosa* was virtually exclusive to assemblage II (reaching very high abundances at the out-of-area OBC 1; Table A9.6), but it was sporadic in Carmarthen Bay subgroups IIb-IId, occurring at only three stations in each. It was possible that the high numbers of the dominant species were brought about by the settlement of large numbers of juveniles due to the hydrodynamics of the area and the presence of silty organic depositions ('marine snow') on the surface of these fine to medium sands. Ephemeral marine snow was clearly visible in small sand ripples in other parts of the survey area (see Chapter 5). Unfortunately, poor visibility on video tow V18 (near OBC 94) prevented any photographic or video coverage of the sea bed.

Hobbs & Smith (1998) sampled an '*Abra* community' station (CB27) south of Carmarthen Bay on three occasions: March 1996, October 1996 and April 1997. In cluster analyses involving this and 18 other stations off southwest Wales, CB27 grouped closely with the main Carmarthen Bay stations on the first two occasions. In April 1997 the sediments at CB27 were muddier (April 1997: 35%) than on the first occasion (March 1996: 1.3%) and had a closer affinity with similar sediments in the south of St Brides' Bay, west Pembrokeshire. The dominant species at CB27 were *Nephtys cirrosa*, *Abra alba* and *Scalibregma inflatum* respectively over the sampling period. The authors pointed out that the precision of station positioning relative to the scale of sea bed heterogeneity may have played a part in some of these differences. Alternatively, it is possible that the sediments in this area are changeable.

Work carried out as part of the NOBel Sands Environmental Assessment (Environmental Resources Management 2002) found a low diversity *Magelona* assemblage in the vicinity of OBC subgroup IIc (see Assemblage III overview, below). Therefore, for whatever reason, time-scale or physical extent, the area between Carmarthen Bay and the NOBel Sands has been shown to host a variety of transitional faunal groupings.

The fauna of subgroup IId was the richest within assemblage II. It had greatly decreased numbers of **FfabMag** biotope species (e.g., *Magelona* spp., *Phaxas pellucidus, Poecilochaetus serpens*, *Bathyporeia* spp.) and increased abundances of species more commonly found in muddier sediments. The species composition did not completely match any of the biotopes described in Connor *et al.* (2004). Certain species appeared indicative of **AalbNuc**, or even **SMu.CSaMu.AfilMysAnit** (*Amphiura filiformis*, *Mysella bidentata* and *Abra nitida* in circalittoral sandy mud). There were also similarities with the less muddy **SSa.OSa.OfusAfil** (*Owenia fusiformis* and *Amphiura filiformis* in offshore circalittoral sand or muddy sand). That biotope was not described in much detail in the MNCR biotope manual and *Owenia fusiformis* was not abundant (~3/0.2 m^2), but other 'characteristic' species (*Amphiura filiformis*, *Goniada maculata*, *Pholoe* spp., *Diplocirrus glaucus* & *Timoclea ovata*) were present. Some of these species, and others such as *Ampelisca spinipes*, were more abundant in assemblages III and/or IV.

Assemblage III

This, the largest assemblage with 57 stations, had a total of 491 taxa and 54372 'individuals' (including colonial forms). Cluster analysis of the fauna identified four subgroups (IIIa-d) within the assemblage; shown superimposed on the corresponding MDS plot (Figure 6.17). Station OBC 135, a little further to the east (see Figure 3.9), had affinities with this assemblage (semi-quantitative analysis; Figure 6.9) and assemblage II (quantitative analysis; Figure 6.7).

The majority of the stations occupied the NOBel Sands, largely matching both the large sand wave and high-frequency bifurcating sand wave fields (Figure

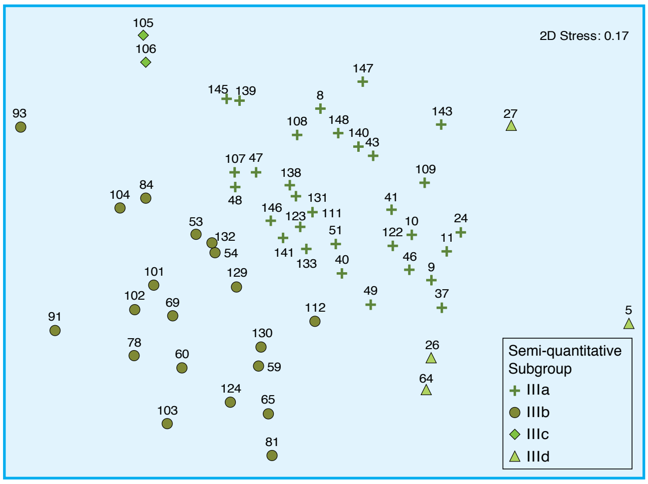


Fig. 6.17: MDS ordination showing the relationships between the macrofaunal subgroups within the Outer Bristol Channel assemblage III

4.1), with a couple of southern intrusions into the SOBel sands (Figure 6.10) associated with large sand waves. Further south, an additional area corresponded well with another bifurcating sand wave field to the east of Lundy. Other locations were two stations northeast of the island (OBC 26 & 27) and one just east of the bifurcating sand waves (OBC 5). North of the NOBel Sands, other assemblage III locations were three stations southwest of Caldey (OBC 64, 65 & 78) and a four-station tongue (OBC 59, 60, 69 & 81) reaching northeastward toward the centre of Carmarthen Bay. The megaripple field to the northwest of Helwick Bank was also part of this assemblage.

The assemblage had 50% of the stations with sand (mostly medium sand), 36% with gravelly sand and 14% with sandy gravel (Table 6.13). Carbonate was relatively low, averaging about 13%, and was associated mostly with the sand (Tables 6.14-6.18). The highest carbonate levels (>32%) in the gravel fraction were from nine stations with very little gravel (<4.5%), though one

Subgroup	Sediments
a	medium sand (27%), medium-coarse sand (10%), gravelly sand (43%), sandy gravel (20%)
b	fine-medium sand (10%), medium sand (55%), gravelly sand (30%), sandy gravel (5%)
c	medium sand
d	medium-coarse sand, coarse sand, gravelly sand, sandy gravel

Table 6.13: Sediment types within Outer Bristol Channel assemblage III

station (OBC 69) had 9.6% gravel entirely made of shell (100% carbonate). Mud content was low (<0.8%) except for two stations (OBC 108 & 133: IIIa) with 1-1.4% and two (OBC 60 & 78: IIIb) with about 4-5%.

Except for the ubiquitous *Lagis koreni* and *Mytilus edulis* juveniles, the other top-ranked species (polychaete *Hesionura elongata*, and bivalves *Spisula elliptica* and *Goodallia triangularis*) were indicative of mobile sand habitats (Table 6.19 & A9.3a). Other such species included small interstitial forms such as oligochaetes of the genus *Grania*, and various polychaetes (*Streptosyllis* spp., *Macrochaeta helgolandica, Protodriloides chaetifer, Polygordius* spp). *Nephtys cirrosa* and *Gastrosaccus spinifer* are similarly indicative of such habitats. A number of other species present were known to prefer more stable sand or silty sands. These included *Spiophanes bombyx*, *Abra alba*, *Scalibregma inflatum* and *Mediomastus fragilis*.

Hesionura elongata, *Goodallia triangularis, Grania* spp., *Streptosyllis bidentata*, *Pisione remota* and *Macrochaeta helgolandica* reached their highest densities in this assemblage. *Hesionura elongata* and *Spisula elliptica* together accounted for 15% of the average assemblage similarity (Table A9.3b). Many species in this assemblage were also found in assemblage IV. Most of these showed higher abundances in the latter, however the polychaetes *Polygordius appendiculatus*, *Streptosyllis* sp. A, Questidae sp. (rank 44) and *Travisia forbesii* (154) were more numerous in assemblage III. The larger polychaetes *Aglaophamus rubella* and *Goniada emerita*, both also present in assemblage IV, were sporadically found. The 'scarce' Thumbnail crab *Thia scutellata* (also found in II) was slightly more prevalent in assemblage III.

Some 33 species were exclusive to assemblage III, and all were sporadic in their occurrence. The exclusive species included the isopods *Eurydice pulchra* (at 7 stations) and *Eurydice spinigera* (10 stations) and the amphipod *Urothoe brevicornis* (5 stations). Infrequent species of interest were the brachiopod *Gwynia capsula*, and polychaetes *Hesionides maxima* and *Euzonus flabelligera;* all found at single stations.

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	38.32±7.00	18	52	40.00	57
Gravel (%)	13.43±18.52	0	80.52	4.76	56
Sand (%)	86.35±18.42	19.43	100.00	93.84	56
Mud (%)	0.27±0.84	0	4.84	0	56
$CaCO_3$ (gravel %)	17.00±26.33	0	100	5.50	48
$CaCO_3$ (sand %)	13.96±6.74	7	37	11	48
$CaCO_3$ (total %)	13.17±6.99	4	39	11	48
Mean Grain (mm)	0.39±0.09	0.23	0.66	0.36	55

Table 6.14: Sediment characteristics of assemblage III stations in the Outer Bristol Channel

Colonial species were more common than in the previous two assemblages, with some 59 taxa recorded. The bryozoan *Electra pilosa* (rank 45) and hydroid *Sertularia* spp. indet. (57) were the most prevalent, occurring sparsely in most subgroup stations (except IIIc). Collectively, *Sertularia argentea*, *Sertularia cupressina* and *Sertularia* spp. indet. occurred at more stations.

Six Beam Trawl locations were sampled within the area covered by assemblage III. Trawl boxes BT2-5 were located in the large sand wave area in the NOBel Sands, while BT11 was further south between grab stations OBC 40 and OBC 41 (see Section 6.4). All five sampled assemblage subgroup IIIa, though some of the catches from BT11 were more representative of subgroup IVa. The sixth location, BT 8, was near OBC 93 (subgroup IIIb) just north of the Helwick Bank.

The robust bivalves *Spisula elliptica* and *S. solida* were collected regularly in small numbers in trawls from assemblages III and IV. *Spisula elliptica* was most commonly taken in subgroup IIIa (BT4) and IIIb (BT8), and occasionally in IVa (BT10a, BT11c). This species was present in the grab samples from every assemblage, but reached its highest densities in assemblages II and IV. By contrast, *Spisula solida* was only collected at two grab stations (OBC 76 & 77) in assemblage II. The trawl tows regularly caught the species in parts of subgroups IIIa (BT3, BT5) and IVa (BT 12, BT11d). Mobile crustaceans such as the shrimps *Crangon crangon* and *Crangon trispinosus* were not efficiently collected in the grab sampling. Only 10 juvenile specimens of *C. crangon* (from IIb-d, IIa, IVa & IVb) and a single specimen of *Pontophilus* sp. (IIb) were collected from the OBCMHS area using the grab. In the trawl survey, *C.*

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	39.67±4.96	27	52	40.00	31
Gravel (%)	17.43±20.85	0	80.52	10.49	30
Sand (%)	82.55±20.77	19.43	100.00	89.51	30
Mud (%)	0.12±0.32	0	1.37	0	30
$CaCO_3$ (gravel %)	11.18±21.37	0	100	4.5	22
$CaCO_3$ (sand %)	12.86±3.86	7	20	11.5	22
$CaCO_3$ (total %)	11.55±3.64	4	18	11	22
Mean Grain (mm)	0.43±0.09	0.30	0.66	0.41	29

Table 6.15: Sediment characteristics of group IIIa stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	36.29±9.55	18	49	39.70	20
Gravel (%)	7.09±11.61	0	43.64	2.28	20
Sand (%)	92.36±11.59	56.07	100.00	97.05	20
Mud (%)	0.55±1.33	0	4.84	0	20
$CaCO_3$ (gravel %)	21.75±30.64	0	100	7.5	20
$CaCO_3$ (sand %)	13.65±7.49	8	32	10	20
$CaCO_3$ (total %)	13.70±8.89	7	39	10	20
Mean Grain (mm)	0.34±0.05	0.23	0.45	0.34	20

Table 6.16: Sediment characteristics of group IIIb stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	41.50±2.12	40	43	41.50	2
Gravel (%)	0.19±0.26	0	0.37	0.19	2
Sand (%)	99.82±0.26	99.63	100.00	99.82	2
Mud (%)	0	0	0	0	2
$CaCO_3$ (gravel %)	0	0	0	0	2
$CaCO_3$ (sand %)	8.00	8	8	8	2
$CaCO_3$ (total %)	8.00	8	8	8	2
Mean Grain (mm)	0.33±0.02	0.31	0.34	0.33	2

Table 6.17: Sediment characteristics of group IIIc stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	36.50±5.69	28	40	39.00	4
Gravel (%)	21.74±24.40	2.53	54.51	14.95	4
Sand (%)	78.05±24.57	45.10	97.36	84.86	4
Mud (%)	0.22±0.20	0	0.39	0.25	4
$CaCO_3$ (gravel %)	33.75±27.43	5	68	31	4
$CaCO_3$ (sand %)	24.50±8.39	19	37	21	4
$CaCO_3$ (total %)	22.00±5.35	15	28	22.5	4
Mean Grain (mm)	0.43±0.11	0.32	0.56	0.42	4

Table 6.18: Sediment characteristics of group IIId stations in the Outer Bristol Channel

crangon was collected from subgroups IIb and IIc, however it was most abundant in IIIb (BT8). *Crangon allmani* was caught in abundance in trawls from throughout the area. *Crangon trispinosus* was most prevalent in IIc (BT9), IIIa (BT3 &4) and IIIb (BT8).

Sand eels were relatively infrequent in the grab sampling. Only four specimens of the Lesser Sand eel *Ammodytes tobianus*, seven of the Great Sand eel *Hyperoplus lanceolatus* and one of the Greater Sand eel *Hyperoplus immaculatus* were collected in assemblages II-IV (mostly IIIa). It was interesting that sand eels were only sporadically collected by the trawls too. *Ammodytes tobianus* was found in seven tows from IIIb (BT8) and IVa (4 trawl boxes), while *H. lanceolatus* occurred in six tows across IIIa (BT4), IIIb (BT8) and IVa (BT13b). It was likely that sand eels would have been more abundant in night-time sampling.

Sole *Solea solea* were regularly caught in most IIIa and IIIb trawls, as well as in IIb (BT6) and IIc (BT9), albeit in low numbers. The Lesser Weaver *Echiichthys vipera* was regularly caught in tows from IIIa (BT4) and IIIb (BT8).

Subgroup IIIa

This was the largest assemblage subgroup with 31 stations (Figures 6.9 & 6.17) and was largely distributed across the southern part of the NOBel Sands and parts of the northern SOBel Sands (Figure 6.10). This was an area of large sand waves. Station OBC 143 to the west also belonged to this subgroup. Another part of subgroup IIIa was coincident with the high-frequency bifurcating sand waves in the southern part of the SOBel Sands, east of Lundy. Sediments were mainly coarse, with 63% gravelly sand/sandy gravel (Table 6.13), in 27-52 m depth. Some 342 taxa and 23167 'individuals' were enumerated. A total of 42 colonial taxa were collected. The bryozoan *Electra pilosa* (rank 52) and the hydroid *Sertularia* sp. indet. (53) were sparsely present at almost half the subgroup stations. All other colonial organisms were sporadically distributed.

Species exhibiting higher average abundances in this subgroup (Table 6.19) included *Hesionura elongata, Spisula elliptica, Goodallia triangularis*, and *Grania* spp. *Hesionura elongata*, *Goodallia triangularis*, and *Protodriloides chaetifer* were at their maximum survey densities. The polychaetes *Pisione remota, Aonides paucibranchiata* and *Microphthalmus similis* were also among the top-ranked species (see also Table A10.5a). All these species featured among those species contributing most to the average subgroup similarity (Table A10.5b). The top three ranked species (*H. elongata, S. elliptica, G. triangularis*) contributed to 21% of the average subgroup similarity.

The assemblage exclusive Questidae sp., was sporadically present in subgroups IIIa and IIb, but was slightly more abundant in IIIa due to larger catches at three stations (OBC 48, 141 & 146; 13-42/0.2 m^2). The undescribed *Streptosyllis* sp. A was most prevalent here and in subgroup IIIc, albeit in low numbers (mean 6/0.2 m^2).

Subgroup IIIb

The second largest subgroup of assemblage III comprised 20 stations (Figures 6.9 & 6.17) in the NOBel Sands, particularly to the west in the high-frequency bifurcating sand wave field (Figures 4.1 & 6.10), plus OBC 124 to the southeast. Other areas of subgroup IIIb were north (OBC 91 & 93), northwest (OBC 84) and south of the Helwick Bank (OBC 112), and station OBC 124 (just east of OBC 118) in the southeast NOBel Sands. Three additional locations were in the Carmarthen Bay Appoaches; two individual stations (OBC 65 & 78) and a SW-NE tongue of four stations (OBC 59, 60, 69 & 81) reaching into Carmarthen Bay. Sediments were predominantly medium sand, with 35% gravelly sand/sandy gravel (Table 6.13), in 18-49 m depth. A total of 318 taxa and 25082 'individuals' were collected. Only 25 colonial taxa were collected. The bryozoan *Electra pilosa* (rank 34), the hydroids *Sertularia* spp. indet. (52) and *Lovenella clausa* (64) were present at almost half (8-11) the subgroup stations. All other colonial organisms were sporadically distributed. *Sertularia argentea* and bryozoan *Alcyonidium parasiticum* were sometimes common or abundant, but the rest were merely occasional.

Excluding *Lagis koreni* and juvenile mussels, the species exhibiting higher average abundances in this subgroup (Table 6.19) included *Spiophanes bombyx, Nephtys cirrosa, Scalibregma inflatum, Abra alba, Pseudocuma simi-*

Rank	Taxon	a	b	c	d	III
1	*Lagis koreni*	16	**536**	2	19	198
2	*Hesionura elongata*	**200**	55	14	58	133
3	*Spisula elliptica*	78	57	11	**263**	81
4	*Mytilus edulis* juv.	42	64	2	**300**	66
5	*Goodallia triangularis*	**61**	28	1	50	46
6	*Spiophanes bombyx*	8	**51**	6	12	23
7	*Grania* spp.	**24**	17	2	2	19
8	*Macrochaeta helgolandica*	**26**	6	1	11	17
9	*Streptosyllis bidentata*	**22**	11	2	6	17
10	TEREBELLIDAE juv.	**16**	**19**	8	—	16
11	*Pisione remota*	14	1	—	**98**	15
12	NEMERTEA indet.	**16**	8	4	**14**	13
13	*Pseudocuma similis*	1	**29**	1	—	11
14	*Protodriloides chaetifer*	**14**	4	11	1	9
15	*Abra alba*	1	**25**	—	2	9
16	*Aonides paucibranchiata*	11	4	1	**18**	9
17	*Microphthalmus similis*	9	5	—	**21**	8
18	*Nephtys cirrosa*	7	**11**	6	5	8
19	*Megaluropus agilis*	3	**16**	2	9	8
20	*Scalibregma inflatum*	1	**21**	—	3	8
21	*Spio* sp. A	9	6	1	**17**	8
22	*Pseudocuma longicornis*	1	**16**	1	**16**	7
23	*Mediomastus fragilis*	7	5	—	**27**	7
24	*Caecum glabrum*	1	1	—	**91**	7
25	*Sphaerosyllis bulbosa*	—	—	—	**94**	7
26	*Polygordius appendiculatus*	6	—	—	**34**	6
27	*Ampelisca spinipes*	1	**14**	—	7	6
28	*Polygordius* sp.	7	—	—	**21**	5
29	*Moerella pygmaea*	7	2	—	**11**	5
30	MYTILIDAE juv.	—	**14**	—	—	5
31	*Protodrilus*? sp.	7	—	—	**19**	5
32	*Gastrosaccus spinifer*	**5**	**5**	1	—	5
33	*Glycera oxycephala*	5	3	**10**	5	4
34	*Nephtys* sp. indet.	2	**8**	2	2	4
35	*Diastylis bradyi*	1	**10**	1	1	4
36	*Unciola planipes*	4	4	3	1	4
37	*Streptosyllis* sp. A	**6**	2	**6**	—	4
38	*Stenothoe marina*	—	**10**	—	—	4
39	*Cumopsis fagei*	2	**6**	1	4	4

Table 6.19: Average abundance (N/0.2 m^2) for the top-ranked taxa within the Outer Bristol Channel assemblage III. Numbers in bold indicate highest values; — indicates <0.5

lis, Pseudocuma longicornis, Diastylis bradyi, Megaluropus agilis, Ampelisca spinipes and *Stenothoe marina*. Except for *Megaluropus agilis* which had a slightly higher density here than in subgroup IIb, none of these were at their maximum survey abundance. Only a few of the less abundant species (2-4/0.2 m^2) were more prevalent in the subgroup. These included the amphipods *Atylus falcatus* and *Bathyporeia guilliamsoniana*, and polychaete *Ophelia borealis*. The last mentioned had its highest survey abundance (17/0.2 m^2) at OBC 65. Two other species were notable for their occurrence, though both were more abundant in other assemblages: *Diastylis bradyi* (at maximum in IIb) and *Abra prismatica* (maximum in IVb).

The three top-ranked species of subgroup IIIa were less dominant in IIIb, with *Spisula elliptica* ranked highest at third (Table A10.6a). Some of the other top-ranked species (*Spiophanes bombyx*, *Abra alba*, *Scalibregma inflatum* & *Mediomastus fragilis*) are perhaps indicative of slightly more stable sediments relative to subgroup IIIa. *Lagis koreni*, *Spiophanes bombyx* and *Spisula elliptica* accounted for 19% of the average subgroup similarity (Table A10.6b).

Subgroup IIIc

This small subgroup consisted of only two stations (OBC 105 & 106) near the centre of the high-frequency sand wave field in the NOBel Sands (Figures 4.1 & 6.10). Sediment analysis revealed both stations to be clean medium sand, with no mud or gravel, in 40-43 m depth. The benthic fauna was poorly represented (Table 6.19), with a total of 52 taxa and 247 individuals recorded. Just three colonial species were encountered, all at OBC 106, and the highest ranked colonial (*Lovenella clausa*) was sparse (Table A10.7a).

The fourth ranked species, the polychaete *Glycera oxycephala*, was at its highest assemblage and survey abundance within this subgroup. However, this was due to a 'high' presence (17 specimens) at OBC 106. *Protodriloides chaetifer* was present at a slightly lower average density than in subgroup IIIa or assemblage I. The small syllid *Streptosyllis* sp. A was at the same abundance level as in IIIa. The top three ranked species (*Hesionura elongata, Spisula elliptica* & *Protodriloides chaetifer*) accounted for 28% of the individuals present and contributed the same amount toward the average subgroup similarity (Table A10.7b). The fauna as a whole appeared indicative of very mobile sand.

Subgroup IIId

The fourth assemblage III subgroup was formed from a less compact cluster of four stations at 28-40 m depth:

- OBC 26 and 27 northeast of Lundy
- OBC 5 east of the SOBel Sands high-frequency sand wave field (east of Lundy)
- OBC 64 (adjacent to OBC65: IIIb) southwest of Caldey

The sediments ranged from medium-coarse sand to sandy gravel. The mud content was consistently low (<0.4%) and the average carbonate level (22%) higher than in assemblage I and assemblage II subgroups (10-17%), and other assemblage III subgroups (8-14%). A total of 214 taxa and 5876 'individuals' were recorded. The colonial epifaunal was represented by 28 species with the bryozoan *Electra pilosa* (rank 40) the most abundant (Table A10.8a) and the only one present at every subgroup station. Six other colonial taxa occurred at two stations: hydroids *Sertularia* spp., *Sertularia cupressina* and *Hydrallmania falcata*, bryozoans *Crisia* spp. and *Scrupocellaria scruposa*, and unidentified sponges (Porifera spp.). Collectively, at least one species of *Sertularia* (including *S. argentea* also) was present at each of the four stations.

The ubiquitous juvenile mussel *Mytilus edulis* and *Spisula elliptica* were the dominant two species and were at their highest densities within assemblage III (Tables 6.19 & A10.8a). Further, these two species were at or near their maximum survey abundances. They had similar average station densities in subgroups IVe and IVd respectively. Other species that were at their maximum survey densities included polychaetes *Pisione remota*, *Sphaerosyllis bulbosa*, and *Protodrilus* sp., and mollusc *Caecum glabrum*.

Six species (*Spisula elliptica, Pisione remota, Caecum glabrum, Hesionura elongata, Goodallia triangularis, Protodrilus* sp.) collectively contributed to 29% of the average subgroup similarity (Table A10.8b). *Mytilus edulis* was only the seventh top contributing species due to its large inter-station variability.

Assemblage III overview

The original faunal assemblage map of Warwick & Davies (1977) showed five major communities (see Section 2.2). The map was later modified by Warwick & Uncles (1980; repeated in Warwick 1984) to delineate the two *Venus* sub-communities as recognised by Thorson (1957), and three forms of the *Abra* community (see Figure 2.10). Most of the NOBel Sands area was categorised as belonging to the *Venus* (*Spisula*) subcommunity. This was separated from the Carmarthen Bay *Venus* (*Tellina*) subcommunity by an *Abra* (muddy sand) zone and two stations categorised as *Modiolus* (mixed). The latter were station 143 (between OBC 59 & 60) near the southern margin to the bay and, north-east of this, station 134 (= OBC 69) within Carmarthen Bay. The eastern NOBel Sands area was part of an extensive *Modiolus* (mixed) zone reaching in to the Central Bristol Channel and south to Lundy.

As pointed out earlier, there was good agreement between OBCMHS subgroups IIb and IIc, and the Warwick & Davies *Tellina* and *Abra* communities in Carmarthen Bay and its southern Approaches. In addition, the four-station tongue pertaining to subgroup IIIb (OBC 59, 60, 69 & 81) closely matched the position of their two-station Carmarthen Bay *Modiolus* zone. However, the *Modiolus* community was the least well-defined and the general species composition was more suggestive of assemblage IV (see below). Indeed, one station (OBC 80) adjacent to OBC 81 was characterised as belonging to subgroup IVd. It should be noted that the definition of a *Modiolus* community by Warwick & Davies was based on the presence of very small numbers of individuals and it should not be confused with true *Modiolus* beds where many large Horse Mussels bind together in clumps.

The simplified sediment map (Figure 4.21) indicated a complex mosaic of sediments and rock to the east of Caldey, though a general SW-NE alignment was apparent. Woolmer (2003) re-interpreted the extensive sediment dataset prepared for Carmarthen Bay as part of the Bristol Channel Marine Aggregates: Resources and Constraints Research Project (Posford Duvivier Environment & ABP Research 2000a). The resulting interpolated sediment maps (Woolmer 2003: figs 2.7-2.10) were not entirely consistent. The maps for sand and mean grain size both indicated coarse sediment patches between OBC 59 and 69, and west to Caldey. Alternatively, the maps for gravel and mud content indicated similar trends parallel to the Carmarthen Bay subgroup IIIb, but a little more to the west. Taken as a whole, these studies indicated that the faunal differences in this area were real and based on sedimentary differences.

The most extensive survey of the NOBel Sands benthos was carried out recently as part of the 'Environmental Statement' for an Aggregate Production Licence Application for Area 476 (ERM: Environmental Resources Management 2002). A total of 44 stations were sampled using a 0.1 m^2 Hamon grab and processed with a 0.5 mm mesh sieve following the removal of a subsample for sediment analysis. Four main station groups were determined from the macrofaunal cluster analysis (Figure 6.18).

Cluster A was the second largest group, comprising 9 stations with medium sand sediments. One station was on the crest of a sand wave, and six were situated between sand waves at 32-42 m depth. The remaining two stations in the northeast of Area 476 were on a flatter shallower bottom (24-28 m). The fauna was of low species richness with an average of 12 macrofaunal taxa (7-18) per station, and few colonial epifaunal species. The dominant macrofaunal species included *Hesionura elongata*, *Nephtys cirrosa*, Enchytraeid oligochaetes, *Grania* spp. and *Ophelia* juveniles.

Cluster B, the largest and most compact cluster, comprised 22 stations with sediments ranging from medium sand to muddy sandy gravel. The cluster was richer with an average of 27 taxa (16-44), including several colonial epifaunal species. There were also more individuals present compared to Cluster A. The macrofaunal species included *Hesionura elongata*, *Spisula* juv., Enchytraeid oligochaetes, *Aonides paucibranchiata*, *Polygordius* spp., *Mediomastus fragilis*, *Pisione remota*, *Microphthalmus* spp., *Protodriloides chaetifer*, *Glycera oxycephala* and *Nephtys cirrosa*.

Cluster C was a small group of four stations with coarse sediments; muddy sandy gravel and sandy gravel. This group was the richest with an average of 64 taxa (37-83) and colonial epifaunal species were at their maximum presence in this group. The dominant species included *Mediomastus fragilis*, *Ampelisca spinipes*, *Scalibregma inflatum*, *Protodorvillea kefersteinia* and *Lumbrineris gracilis*.

Cluster D comprised five stations in the north of the survey area with fine to medium sand sediments.

Species richness and faunal density were very low, with 5-11 taxa recorded per station. The average abundance of *Magelona mirabilis*, the top-ranked species, was only 3/0.1m^2. No colonial species were listed. The fauna was 'dominated' by three species of *Magelona* (*M. mirabilis, M. filiformis, M. johnstoni*), *Nephtys cirrosa* and *Glycera tridactyla*. Other species such as *Fabulina fabula, Goniada maculata* and *Scalibregma inflatum* were sparse.

An unassigned 'group' of four stations was intermediate between the A-B and C clusters. The sediments varied from medium to coarse sand. The fauna was poor with an average of 8 taxa (7-14) per station.

Faunal cluster B was referred to as the '*Hesionura/Spisula*' community, with cluster A representing a reduced variant. Cluster C was considered a '*Mediomastus fragilis/Ampelisca spinipes*' community, and cluster D a '*Magelona*' community.

The fauna associated with each of these clusters was generally species poor when compared with the OBCMHS assemblages. This could be to due several factors including differences in station positions, sampling methodologies, and sampling times. Nevertheless, it was possible to cross-reference the two studies by examining their respective species lists and relative species abundances. The equivalent faunal groups appeared to be as follows (Figure 6.18):

- Cluster group A = OBC subgroup IIIa (impoverished)
- Cluster group B = OBC subgroup IIIa
- Cluster group C = OBC assemblage IVd
- Cluster group D = OBC subgroup IIb/IIc (impoverished)

In summary, the large sand waves in the eastern part of the NOBel Sands supported faunal subgroup IIIa interspersed with patches of subgroup IIIb (slightly more stable sands?) and, on more stable gravelly sediments, subgroup IVd (see below). In addition, the more reduced (disturbed?) subgroup IIIc occurred where the high-frequency sand wave field extended into the large sand wave zone. The high-frequency sand waves that dominated the western part of the

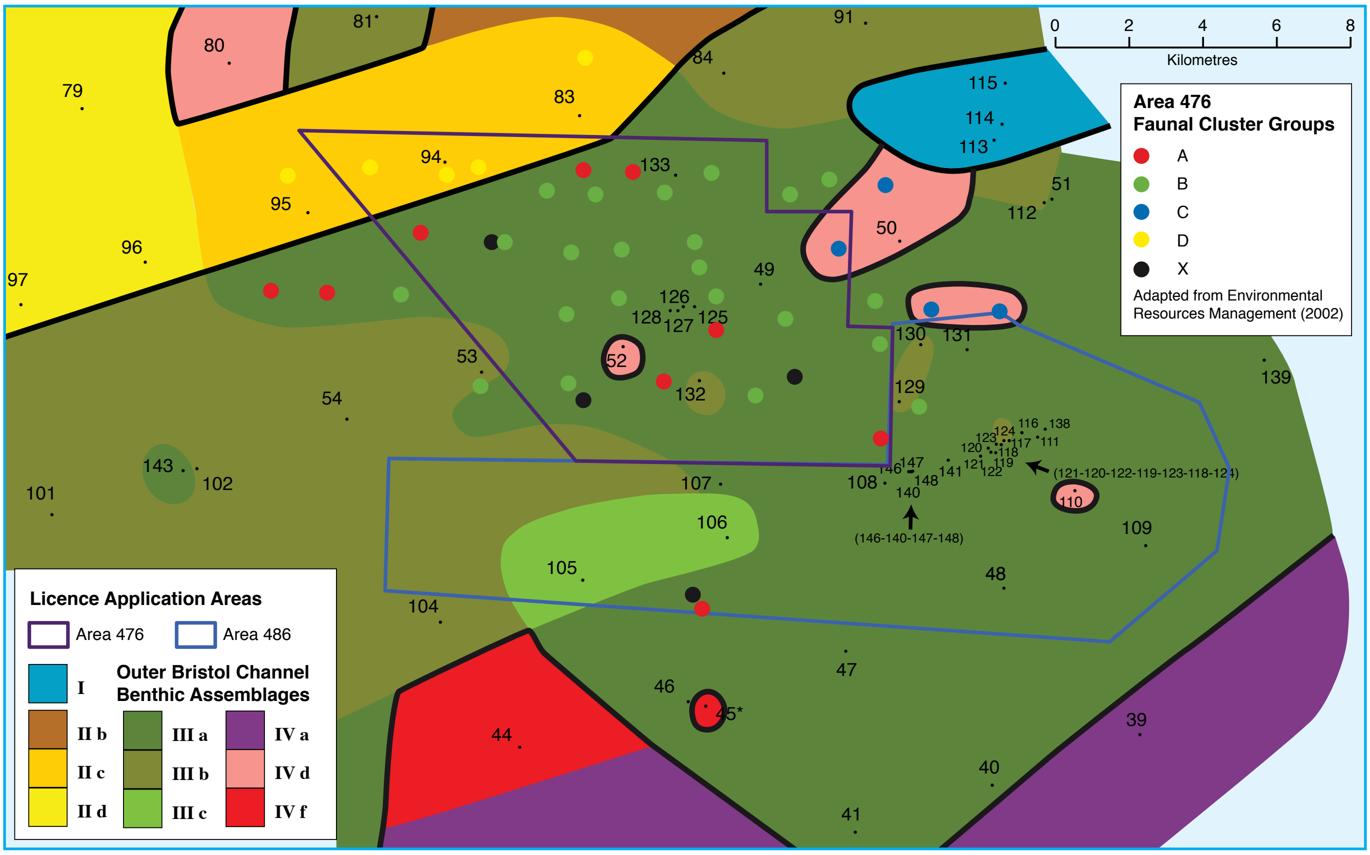


Fig. 6.18: Environmental Resource Management (2002) cluster groups from the Nobel Banks with stations, licence areas and OBCMHS stations/assemblages in the same area (see Fig. 6.10)

NOBel Sands supported subgroup IIIb, with occasional patches of IIIa. The megaripple field north of the Helwick Bank and adjoining area to the west again had a subgroup IIIb fauna.

Subgroup IIIa corresponded well with the **SS.SCS.ICS.HeloMsim** biotope (*Hesionura elongata* and *Microphthalmus similis* with other interstitial polychaetes in infralittoral mobile coarse sand). This biotope is common in the southern North Sea and on the Kwinte Bank off the Belgian coast where Vanosmael *et al.* (1982) recorded *Hesionura augeneri* at densities of 4000-7880/m^2, accounting for up to 55% of the macrofauna. Mackie *et al.* (1995) and Darbyshire *et al.* (2002) pointed out that such high densities of *Hesionura* were not known from the Irish Sea area. This could be, in part, because smaller mesh sieves (0.25 mm) were used in comparison with the Welsh studies (0.5 mm). This small species would be even less efficiently captured using 1 mm mesh sieves (Mackie pers. obs.: southern North Sea). Therefore, it was interesting to note that *Hesionura elongata* reached a maximum density of 960/0.2 m^2 (equivalent to 4800/m^2) at OBC 146. Darbyshire *et al.* (2002) found related assemblages on the Helwick Bank, Turbot Bank (south of Milford Haven) and Bastram Shoal (NW Cardigan Bay). The sea bed in areas with large sand waves was shown well in photographs from Video tows V8 and V20.

Subgroup IIIb was closely related to subgroup IIIa. The two subgroups shared many species, however IIIb had an increased presence of animals likely to prefer more stable sedimentary habitats: *Spiophanes bombyx*, *Abra alba*, *Scalibregma inflatum* and *Mediomastus fragilis*. No separate biotope exists for this subgroup at present. Photographs from Video tows V15b (east of OBC 106) and V11 (between OBC 59 & 60) showed sandy habitats with some shell and 'marine snow', but no exposed gravel (see Chapter 5).

Subgroup IIIc, conversely, exhibited a very sparse fauna more indicative of disturbed conditions. Again, the species composition had much in common with subgroup IIIa and additionally bore some resemblance to assemblage I. No *Microphthalmus similis* specimens were collected at either of the two stations.

Subgroup IIId partially resembled **SS.SCS.OCS.HeloPkef** biotope (*Hesionura elongata* and *Protodorvillea kefersteini* in offshore coarse sand). This biotope was identified off the east coast of the Shetland Islands from a TWINSPAN analysis of the northern North Sea benthic fauna (Eleftheriou & Basford 1989). The OBC subgroup included *Protodorvillea kefersteini* and *Moerella pygmaea*, but lacked *Protomystides bidentata*. Further, it occurred in shallower water, and *Microphthalmus similis* was also present. Unfortunately, the **HeloPkef** biotope currently lacks any additional data. The inshore **SS.SCS.CCS.Pkef** biotope (*Protodorvillea kefersteini* and other polychaetes in impoverished circalittoral mixed gravelly sand) was discounted since subgroup IIId could not be considered impoverished (see section 6.3), and it lacked *Sabellaria spinulosa* and *Prionospio cirrifera*. Subgroup IIId may well be another variant of **HeloMsim**; perhaps somewhat intermediate between that and **SS.SCS.CCS.MedLumVen** (*Mediomastus fragilis*, *Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel). Video tow V23 (east of OBC 26) showed a habitat very reminiscent of assemblage IV, particularly subgroup IVf.

Assemblage IV

The third major assemblage, comprised 37 stations and had a very rich fauna with a total of 884 taxa, including 117 colonial epifaunal forms. Some 91893 'individuals' were enumerated. Cluster analysis identified two assemblage subgroups from the quantitative data (Figures 6.7 & 6.8). By including the colonial taxa in the semi-quantitative analysis, the number of subgroups increased to six (Figures 6.9 & 6.10), shown superimposed on the corresponding MDS plot (Figure 6.19).

It was clear from these analyses that the two major subgroups were IVa and IVb (Table 6.2) and that, collectively, IVc-IVf represented a gradation of groups largely distinguished by their differing colonial epifaunal components. Nevertheless, it was interesting that each subgroup occurred in a particular geographical and physical environment within the study area (see below).

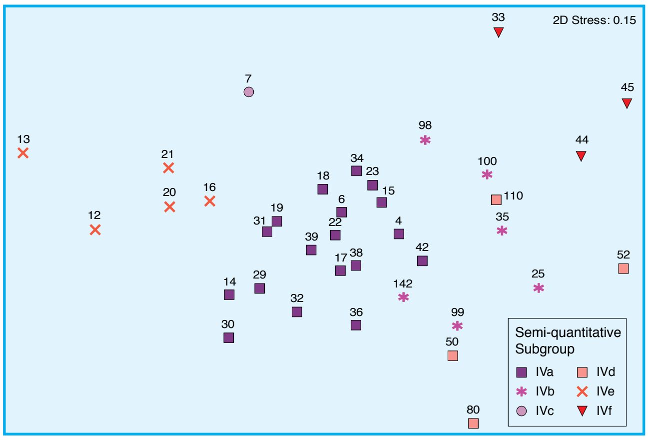


Fig. 6.19: MDS ordination showing the relationships between the macrofaunal subgroups within the Outer Bristol Channel assemblage IV

The largest subgroup (IVa) covered much of the SOBel Sands, an area where 72% of the stations had sandy gravel sediments (Figures 4.1 & 4.21; Tables 6.20-6.26). With the exception of one with muddy sandy gravel (OBC 13; subgroup IVe) and one with a hard stony sediment (OBC 12; IVe), the remaining stations (9) were on gravelly sand; four of which occurred in subgroup IVb. Most of the sediment carbonate was within the sand fraction and the mud content was low (<3%). Once again *Lagis koreni* and *Mytilus edulis* juveniles dominated the assemblage (Tables 6.27 & A9.4a). However, *Mediomastus fragilis* and *Spisula elliptica* contributed most to the average assemblage similarity. The richness of the assemblage meant that a large number of species contributed relatively small amounts to the similarity (Table A9.4b). Other important species included *Stenothoe marina, Spiophanes bombyx, Aonides paucibranchiata, Ampelisca spinipes, Electra pilosa, Aora gracilis, Hesionura elongata, Timoclea ovata, Amphilochus neapolitanus* and *Lumbrineris gracilis*. Except for *Spiophanes bombyx* and *Hesionura elongata*, all of these species were at their maximum average density in this assemblage. Among the many other species well-represented in the assemblage were *Sabellaria spinulosa, Pseudocuma similis, Gammaropsis cornuta, Bodotria scorpioides, Gibbula tumida, Achelia echinata, Caulleriella zetlandica, Echinocyamus pusillus, Protodorvillea kefersteini, Thracia villosiuscula, Sertularia argentea, Glycera lapidum, Anoplodactylus petiolatus, Hydrallmania falcata, Scalibregma celticum* and *Modiolus adriaticus*. Over 200 taxa were exclusively found in assemblage IV, though most were infrequent.

Colonial species were common in this assemblage; 117 taxa were recorded, dominated by bryozoans and hydroids. *Electra pilosa* (rank 21), *Sertularia argentea* (54), *Halecium* spp. (101), *Alcyonidium mytili* (102), *Clytia hemisphaerica* and *Alcyonidium parasiticum* (112) were the most prevalent, occurring in all or most subgroups.

Three Beam Trawl locations sampled within the SOBel Sands area were covered by assemblage IV (BT10, BT12 & BT13). All were within the subgroup IVa area (discussed below). In addition, three out of four tows at BT11 (between OBC 40 & 41) 'in assemblage III' collected a fauna more indicative of assemblage IV (see section 6.4). Other trawls showing similar cross-assemblage sampling were two tows at BT1 (near OBC 97; IId), and two tows at BT2 (near OBC 139; IIIa) in the eastern NOBel Sands.

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	44.40±5.24	35	57	43.00	37
Gravel (%)	43.64±17.76	11.80	74.64	43.82	36
Sand (%)	55.48±18.03	22.97	87.85	54.52	36
Mud (%)	0.88±0.84	0	2.93	0.64	36
$CaCO_3$ (gravel %)	8.14±7.44	0	31	5	35
$CaCO_3$ (sand %)	16.66±6.29	3	35	15	35
$CaCO_3$ (total %)	12.03±4.46	3	21	12	35
Mean Grain (mm)	0.38±0.09	0.24	0.59	0.354	35

Table 6.20: Sediment characteristics of assemblage IV stations in the Outer Bristol Channel

Subgroup IVa

This was the largest assemblage IV subgroup with 18 stations and occupied most of the NOBel Sands area. The predominantly sandy gravel sediment stations supported a very diverse fauna with 559 taxa and 49730 'individuals' present in total. Colonial epifaunal species were very common and 66 such taxa were recorded, with the bryozoan *Electra pilosa* (rank 30) the most abundant and *Halecium* spp. (67) frequent. At least one species of the hydroid *Sertularia* was present at every station, often frequent or common. Other regularly occurring, but less abundant, colonial species were *Clytia hemisphaerica* (99), *Chorizopora brongniartii* (104), *Obelia dichotoma* (113), *Alcyonidium mytili* (116), *Hydrallmania falcata* (127), *Alcyonidium parasiticum* (149), and *Bicellariella ciliata* (169). The remaining colonial taxa occurred sporadically.

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	43.59±2.77	40	49	43.50	18
Gravel (%)	45.23±15.86	12.15	69.86	43.92	18
Sand (%)	53.92±15.92	29.75	87.85	53.88	18
Mud (%)	0.85±0.69	0.00	2.39	0.74	18
$CaCO_3$ (gravel %)	6.67±6.72	2	31	4	18
$CaCO_3$ (sand %)	17.00±6.36	3	35	17	18
$CaCO_3$ (total %)	11.89±4.60	3	20	12	18
Mean Grain (mm)	0.39±0.09	0.24	0.57	0.38	17

Table 6.21: Sediment characteristics of group IVa stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	52.67±5.09	44	57	55.00	6
Gravel (%)	31.54±17.60	11.80	56.96	28.64	6
Sand (%)	67.86±17.52	41.90	86.47	71.08	6
Mud (%)	0.60±0.71	0.00	1.73	0.37	6
$CaCO_3$ (gravel %)	14.00±8.69	5	26	10	5
$CaCO_3$ (sand %)	13.80±2.95	11	18	14	5
$CaCO_3$ (total %)	14.00±4.24	11	21	12	5
Mean Grain (mm)	0.31±0.03	0.27	0.35	0.30	6

Table 6.22: Sediment characteristics of group IVb stations in the Outer Bristol Channel

Excluding the ubiquitous *Mytilus edulis*, *Lagis koreni* and *Abra alba* juveniles (ranked third, fifth & tenth), the top-ranked species were *Mediomastus fragilis*, *Spisula elliptica*, *Stenothoe marina*, *Aonides paucibranchiata*, *Spiophanes bombyx*, *Aora gracilis*, *Gibbula tumida*, *Heteranomia squamula*, *Timoclea ovata*, *Ampelisca spinipes* and *Lumbrineris gracilis* (Table 6.27 & A10.9a). These and many other species including *Amphilochus neopolitanus*, *Gammaropsis cornuta*, *Electra pilosa*, *Glycera lapidum*, *Caulleriella zetlandica*, *Eusyllis blomstrandi* and *Protodorvillea kefersteini* were important contributors to the average subgroup similarity (Table A10.9b). The five highest contributing species accounted for just 10% of the similarity.

Species exhibiting their highest densities for the whole survey included the polychaete *Aonides paucibranchiata*, gastropod *Gibbula tumida*, amphipods *Amphilochus neapolitanus*, *Urothoe elegans* and *Abludomelita obtusata*, and bivalve *Modiolus adriaticus*. The Honeycomb Worm *Sabellaria spinulosa* (rank 35) was present at 67% of the stations.

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	48.00	–	–	–	1
Gravel (%)	35.01	–	–	–	1
Sand (%)	64.14	–	–	–	1
Mud (%)	0.85	–	–	–	1
$CaCO_3$ (gravel %)	12.00	–	–	–	1
$CaCO_3$ (sand %)	19.00	–	–	–	1
$CaCO_3$ (total %)	17.00	–	–	–	1
Mean Grain (mm)	0.29	–	–	–	1

Table 6.23: Sediment characteristics of group IVc (station 7) in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	38.70±2.96	35	42	38.90	4
Gravel (%)	39.21±11.35	29.62	53.08	37.07	4
Sand (%)	60.20±10.74	46.90	69.67	62.12	4
Mud (%)	0.59±1.12	0.00	2.27	0.05	4
$CaCO_3$ (gravel %)	14.50±6.14	7	22	14.5	4
$CaCO_3$ (sand %)	15.25±5.56	10	23	14	4
$CaCO_3$ (total %)	14.25±3.30	10	18	14.5	4
Mean Grain (mm)	0.48±0.11	0.36	0.59	0.48	4

Table 6.24: Sediment characteristics of group IVd stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	40.26±1.69	38	42	41.00	5
Gravel (%)	66.41±14.08	45.35	74.64	72.83	4
Sand (%)	31.34±14.41	22.97	52.87	24.77	4
Mud (%)	2.25±0.53	1.78	2.93	2.14	4
$CaCO_3$ (gravel %)	5.25±6.55	1	15	2.5	4
$CaCO_3$ (sand %)	24.75±4.57	18	28	26.5	4
$CaCO_3$ (total %)	10.75±4.27	8	17	9	4
Mean Grain (mm)	0.39±0.08	0.28	0.48	0.41	4

Table 6.25: Sediment characteristics of group IVe stations in the Outer Bristol Channel

	Mean±1 S.D.	Min.	Max.	Median	No.
Depth	46.00±4.00	42	50	46.00	3
Gravel (%)	36.69±21.61	17.05	59.84	33.19	3
Sand (%)	63.09±21.56	40.08	82.81	66.39	3
Mud (%)	0.21±0.18	0.08	0.42	0.14	3
$CaCO_3$ (gravel %)	1.33±2.31	0	4	0	3
$CaCO_3$ (sand %)	9.67±0.58	9	10	10	3
$CaCO_3$ (total %)	6.67±0.58	6	7	7	3
Mean Grain (mm)	0.36±0.04	0.33	0.40	0.35	3

Table 6.26: Sediment characteristics of group IVf stations in the Outer Bristol Channel

The Beam Trawls (all from this subgroup) regularly collected a number of species that were only, or predominantly, found in assemblage IV. The crab *Eurynome aspera* was an exclusive species (grab and trawl), while the gastropod *Calliostoma zizyphinum* and crab *Ebalia tuberosa* were virtually so. The scallop *Palliolum tigerinum* and brittle star *Ophiothrix fragilis* were only collected in low numbers at BT10 in the southeast of the area. However, both were sporadically collected in grabs from subgroups IVa and IVe, and the brittle star was regularly present throughout assemblage V. Several other species, predominantly found in this assemblage, also occurred mainly in the southeast trawl boxes near the Morte platform. These included the spider crab *Hyas coarctatus* and the Queen Scallop *Aequipecten opercularis*, though the latter was again sporadic in grabs throughout assemblage IV and V. The small sea urchin *Psammechinus miliaris* and Common Whelk *Buccinum undatum* were most common in assemblage IV. The latter was also taken in generally lower numbers in tows from subgroup II, and sporadically in those from subgroup IIIa.

Subgroup IVb

This was primarily located in the northwestern SOBel Sands, on a relatively flat sea bed (OBC 98, 100 & 142), or between large sand waves (OBC 35 & 99). A sixth member station (OBC 25) was near the western margin of the southern high-frequency sand field. Sediments were predominantly gravelly sand. The fauna was rich with 350 taxa and 9219 'individuals' in total. There were 37 colonial taxa and, as for the preceding subgroup, *Electra pilosa* (rank 50) was the most prevalent species. Species of *Sertularia* were present at all stations. *Alcyonidium parasiticum* (rank 36) and *Sertularia argentea* (40) were the most abundant species, but they occurred at only four stations each.

Pseudocuma similis, Spiophanes bombyx, Echinocyamus pusillus, Spisula elliptica, Mediomastus fragilis and *Scalibregma inflatum* were among the dominant species (Table 6.27 & A10.10a) and those contributing most to the average subgroup similarity (Table A10.10b). The five highest contributing species accounted for almost 16% of the similarity. The small urchin *Echinocyamus pusillus* had its highest average density in this subgroup.

Subgroup IVc

The 'subgroup' was a single sandy gravel station (OBC 7) near the edge of the Lundy Platform. The fauna was in many ways similar to subgroups IVa and IVb, but was notable for the dominance of epifaunal species *Electra pilosa* and the hydroid *Hydrallmania falcata* (Tables 6.27 & A10.11). Some 264 taxa, including 54 colonial forms, were recorded and 2520 'individuals' enumerated. High densities of associated species (e.g., *Aora gracilis, Eusyllis blomstrandi*), accompanied the large hydroid presence.

Subgroup IVd

The fourth subgroup comprised four isolated stations (OBC 50, 52, 80 & 110) mostly located in the NOBel Sands. This subgroup had predominantly sandy gravel sediments (OBC 80: gravelly sand). The fauna was less rich than the preceding assemblage subgroups with a total of 239 taxa and 12745 'individuals' present. Only 21 colonial taxa were collected. *Electra pilosa* (rank 24) was again the most abundant colonial form and *Sertularia* spp. (*Sertularia argentea* & *Sertularia* sp. indet) were present at all the subgroup stations. The hydroid *Clytia hemisphaerica*, and bryozoans *Alcyonidium parasiticum,* and *Conopeum reticulum* (all rank 69; occasional), occurred at three stations. All other colonial forms were sporadic at one or two stations only.

The dominant species (Tables 6.27 & A10.12a) included species from stable mixed sediments (polychaetes *Ampharete lindstroemi, Mediomastus fragilis, Scalibregma inflatum, Protodorvillea kefersteini,* amphipod *Ampelisca spinipes*) alongside those more prevalent on mobile sands (polychaetes *Hesionura elongata*, *Microphthalmus similis, Streptosyllis bidentata* and oligochaete *Grania* spp.). Species of the latter group contributed most to the average subgroup similarity (Table A10.12b). The five highest contributing species accounted for almost 19% of the similarity.

The dorvilleid polychaete *Protodorvillea kefersteini* was at its maximum subgroup (and survey) densities due to its higher abundances at OBC 50 & OBC 80. Oligochaetes of the genus *Grania* were present at a higher average station density than subgroup IIIa. In addition, *Hesionura elongata* was near its highest average densities as recorded in subgroup IIIa. *Spisula elliptica* and *Streptosyllis bidentata* were marginally at their highest, being similarly abundant in subgroups IIId and IIIa respectively.

This subgroup had many infaunal species in common with subgroups IIIa and IIIb. In the quantitative cluster analysis (no colonial taxa included) it grouped with subgroup IIIb. Although the subgroup had a low mud content, adult specimens of *Abra alba* were obtained from both grabs at OBC 80.

Subgroup IVe

All the subgroup stations (OBC 12, 13, 16, 20 & 21) were located on, or at the edge of, the Morte Platform; an area of exposed, or thinly covered, rock with pockets of sediment. The sediments obtained at four stations were predominantly sandy gravels, and this was the 'muddiest' of the assemblage IV subgroups (Table 6.25). Quantitative faunal samples were obtained from two of the five stations (OBC 16 & 20). The fauna was rich with 443 taxa, including 61 colonial forms, and 20366 'individuals' collected in total.

Electra pilosa (rank 23) and *Hydrallmania falcata* (24) were the dominant colonial species; both present in abundance (Table 6.27 & A10.13a). The bryozoans *Bicellariella ciliata* (rank 42) and *Alcyonidium mytili* (48) were common at all subgroup stations. At least one species of *Sertularia* (*Sertularia argentea, S. cupressina* or *Sertularia* sp. indet.) was present at every subgroup station. The hydroid *Clytia hemisphaerica* (70; frequent to common), and bryozoans *Bugula plumosa* (139; sometimes frequent) and *Flustra foliacea* (179; rare/ occasional), occurred at all stations also.

Interestingly, the bivalve *Sphenia binghami* and polychaete *Sabellaria spinulosa* featured highly in both the ranked abundance and SIMPER tables (Tables 6.27 and A10.13a & b). As mentioned earlier (Section 6.1) the bivalve occurred in the tubes of the honeycomb worm. Other top-ranked species were those known to occur in mixed muddy sediments (e.g., *Mediomastus fragilis, Lumbrineris gracilis, Caulleriella zetlandica, Terebellides stroemi*), attach to hard substrates (e.g., *Heteranomia squamula, Verruca stroemi, Dendrodoa grossularia, Pomatoceros lamarcki*) or be cryptic occurring in crevices (e.g., *Pisidia longicornis, Lepidonotus squamatus*) or on hydroids (e.g., *Achelia echinata, Eusyllis blomstrandi*).

A large number of species were at their maximum average densities (subgroup and survey) in subgroup IVe. These included the polychaetes *Lumbrineris gracilis, Sabellaria spinulosa, Lepidonotus squamatus, Pholoe* sp. B, *Caulleriella alata, Aurospio banyulensis, Scalibregma celticum, Terebellides stroemi*, bivalves *Sphenia binghami, Nucula nucleus, Parvicardium ovale*, and *Modiolus modiolus,* amphipods *Gammaropsis maculata* and *Unciola crenatipalma,* barnacle *Verruca stroemi*, brittle star *Amphipholis squamata*, tunicate *Dendrodoa grossularia*, and bryozoans *Scrupocellaria scruposa, Alcyonidium mytili* and *Bicellariella ciliata*. Apart from very high abundances at OBC 7 (subgroup IVc) the hydroid *Hydrallmania falcata* was most abundant in subgroup IVe. *Ericthonius punctatus,* a species that lives in tubes attached to hydroid stems (see Bradshaw *et al.* 2003), was also abundant, though most occurred at OBC 21. Some large specimens of *Abra alba* were noted at OBC 13 and OBC 21.

Subgroup IVf

The three stations of subgroup IVf (OBC 33, 44 & 45) were located in the northern part of the SOBel Sands in areas between the sand waves that overlaid the coarser sediments. Quantitative grabs were obtained from OBC 44 only, though three sediment samples were obtained (Table 6.26). A total of 187 taxa, including 30 colonial forms, and 6313 'individuals' were enumerated. *Sertularia argentea* was the most abundant colonial species, even though it was not recorded from OBC 33, though *Sertularia* sp. indet. was present there. *Electra pilosa* was the most abundant colonial species present at every station. Other species of regular occurrence were bryozoans *Alcyonidium parasiticum* (rank 16) and *Bugula avicularia* (57), and hydroids *Diphasia rosacea* (28), *Clytia hemisphaerica* (49) and *Bougainvillia ramosa* (49).

The fauna was dominated by juvenile mytilids (including *Mytilus edulis*). As for subgroup IVd the dominant

Rank	Taxon	a	b	c (7)	d	e	f	IV
1	*Lagis koreni*	72	344	1	**540**	24	7	153
2	*Mytilus edulis* juv.	87	23	32	104	**300**	124	109
3	*Mediomastus fragilis*	**118**	40	50	82	**134**	6	93
4	*Spisula elliptica*	97	40	8	**272**	6	48	88
5	*Ampharete lindstroemi*	30	39	—	**549**	52	—	88
6	*Stenothoe marina*	81	11	82	30	49	**239**	73
7	MYTILIDAE juv.	—	23	11	—	—	**793**	68
8	*Aora gracilis*	49	6	**111**	25	**102**	92	52
9	*Ampelisca spinipes*	33	22	13	**145**	106	—	50
10	*Abra alba*	45	4	2	**107**	**106**	—	49
11	*Heteranomia squamula*	37	1	13	—	**176**	1	42
12	*Hesionura elongata*	24	15	—	**187**	1	98	42
13	*Spiophanes bombyx*	**54**	**52**	**59**	35	9	13	42
14	*Aonides paucibranchiata*	**60**	31	7	44	6	8	41
15	HARMOTHOINAE indet.	32	7	18	20	**138**	11	39
16	*Lumbrineris gracilis*	31	7	48	3	**128**	—	35
17	*Sabellaria spinulosa*	17	9	6	1	**149**	1	30
18	*Sphenia binghami*	2	—	2	—	**198**	—	28
19	*Timoclea ovata*	34	19	**112**	3	30	1	27
20	*Scalibregma inflatum*	19	42	—	**80**	17	1	27
21	*Electra pilosa*	P3	P2	P5	P3	P3/4	P3/4	*25*
	Gibbula tumida	**45**	—	—	—	24	—	25
23	*Gammaropsis cornuta*	28	16	19	**38**	27	—	25
24	NEMERTEA indet.	25	22	8	20	**31**	9	23
25	*Pholoe* sp. B	9	4	13	2	**102**	—	19
26	*Caulleriella zetlandica*	**25**	4	3	5	43	—	19
27	*Amphilochus neapolitanus*	**31**	6	**29**	5	5	13	19
28	*Mysella bidentata*	22	29	**55**	3	9	2	19
29	*Bodotria scorpioides*	**27**	1	4	7	**30**	—	18
30	*Terebellides stroemi*	22	3	1	1	**52**	1	18
31	*Urothoe elegans*	**29**	7	5	1	17	—	18
32	*Balanus crenatus*	**28**	16	—	5	4	—	17
33	*Laonice* sp.	**29**	1	1	1	20	—	17
34	*Erichthonius punctatus*	—	1	3	—	**122**	—	17
35	*Eusyllis blomstrandi*	16	5	41	3	**31**	**36**	17
36	*Echinocyamus pusillus*	14	**47**	**46**	4	—	8	17
37	*Exogone verugera*	**24**	10	4	1	**22**	1	16
38	*Dendrodoa grossularia*	7	—	13	—	**84**	—	15
39	*Protodorvillea kefersteini*	15	3	12	**50**	7	—	15
40	*Clymenura johnstoni*	20	7	**36**	2	16	6	14
41	*Caecum glabrum*	**25**	5	—	5	—	—	14
42	*Verruca stroemi*	1	—	1	—	**97**	—	14

Table 6.27: Average abundance (N/0.2 m^2) for top ranked taxa within Assemblage IV. Numbers in bold indicate highest values; — indicates <0.5

species (Tables 6.27 & A10.14a) included species from stable mixed sediments alongside those more prevalent on mobile sands. Colonial species and species that live on hydroids (e.g., *Stenothoe marina, Aora gracilis, Eusyllis blomstrandi, Autolytus* spp., *Proceraea cornuta*) were, however, more prevalent in subgroup IVf. This indicated that the sediment was relatively more stable in IVf, though *Hesionura elongata* and *Goodalia triangularis* (both indicative of mobile sands) were among the top seven ranked species. *Stenothoe marina, Spisula elliptica, Goodallia triangularis*, *Hesionura elongata* and *Electra pilosa* together accounted for almost 19% of the average subgroup similarity (Table A10.14b). The amphipod *Stenothoe marina* was at its highest survey densities in subgroup IVf.

Overview of Assemblage IV

Warwick & Davies (1977) is the only work providing information on the SOBel Sands area that supports faunal assemblage IV. Their species list for their '*Modiolus* community' has much in common with the OBCMHS assemblage. However, the *Modiolus* community was the "least-defined" of their Bristol Channel communities and this restricted comparison with the subgroups within OBC assemblage IV.

Nevertheless, Warwick and Davies made several points that resonate with the current survey. They noted that their *Modiolus* community included many of the species found in their *Abra* and *Venus* communities. Further, they recognised a dichotomy within their cluster analysis that separated hard rocky areas such as those found north of Lundy and on the Morte Platform from "mixed bottoms of stones, gravel and shells with some fine sediment".

The first group had a fauna dominated by crevice-dwelling or adherent species. These were referred to as ubiquitous species for the community as a whole and included *Lepidonotus squamatus, Ophiothrix fragilis, Pisidia longicornis, Psammechinus miliaris, Calliostoma zizyphium, Amphipholis squamata, Sabellaria spinulosa* and *Modiolus modiolus* among others. These species are those identified herein as partly defining subgroup IVe and assemblage V (see below).

The second group of stations related more to mixed bottom species, such as *Stenothoe marina, Ampelisca spinipes, Spisula elliptica, Nephtys cirrosa, Terebellides stroemi, Ampharete acutifrons, Sphenia binghami, Atelecyclus rotundatus, Echinocyamus pusillus, Pagurus prideaux, Glycera lapidum* and *Anoplodactylus petiolatus*. Such species are among those that characterise various assemblage IV subgroups, particularly IVa and IVb.

The Outer Bristol Channel assemblage IV also showed similarities with the fauna associated with the gravelly sediments in the southern Irish Sea area. Mackie *et al.* (1995) identified two subgroups of their assemblage C:

• Group C1 occupied the St George's Channel and the outer region of Caernarfon Bay. The fauna was very rich and the dominant species included *Modiolus modiolus, Dendrodoa grossularia, Mediomastus fragilis, Aonides paucibranchiata, Echinocyamus pusillus, Lumbrineris gracilis, Scalibregma inflatum, Sabellaria spinulosa, Glycera lapidum, Ampharete* sp. B and *Unciola planipes*. Exclusive species included *Glycymeris glycymeris, Palliolum tigerinum* and *Cressa dubia.* Other important species included *Lepidonotus squamatus, Pisione remota, Protodorvillea kefersteini, Timoclea ovata, Nucula nucleus, Achelia echinata, Anoplodactylus petiolatus, Verruca stroemi, Amphipholis squamata, Dendrodoa grossularia, Aonides paucibranchiata* and *Spisula elliptica*.

• Group C2, with only three stations, was a more inshore unit (27-39 m depth) located in the outer part of Cardigan Bay. The fauna was also rich and the dominant species included *Mediomastus fragilis, Abra alba, Aonides paucibranchiata, Goodalia triangularis, Phaxas pellucidus, Sphaerosyllis taylori, Lagis koreni, Spiophanes bombyx, Lumbrineris gracilis, Scalibregma inflatum, Streptosyllis bidentata, Ampharete* sp. A and *Caulleriella zetlandica*. Exclusive species were *Amphitritides gracilis, Ampelisca typica* and *Nucula hanleyi*. Other important species included *Podarke pallida, Schistomeringos neglecta, Gibbula tumida, Hesionura elongata, Nothria britannica, Caecum glabrum* and *Parvicardium scabrum*.

The OBC assemblage IV was clearly related to the Irish Sea assemblage C, but no subgroup corresponded exactly across the two studies. Elements from both Irish Sea groups were found throughout assemblage IV. Further, some conspicuous (e.g., dog cockle *Glycymeris glycymeris*) or abundant (e.g., *Phaxas pellucidus*) were only sporadically present in assemblage IV.

Similarly, it was difficult to assign the assemblage IV subgroups to the currently recognised biotopes. The subgroups could be understood in terms of their location and perceived stability relative to degree of surface sand movement. Hence, collectively, they appeared to represent variations of one biotope, mosaics of different biotopes or, in some cases, an intermeshing of different biotopes.

The species composition of subgroup IVa, found over most of the SOBel Sands most closely resembled **SS.SCS.CCS.MedLumVen** (*Mediomastus fragilis, Lumbrineris* spp., and venerid bivalves in circalittoral sand or gravel), though there were similarities with **SS.SMx.OMx.PoVen** (Polychaete-rich deep *Venus* community in offshore mixed sediment) as described by Connor *et al.* (2004: 26 & 160 respectively). The infaunal derived **MedLumVen** biotope was overlain in parts by certain epifaunal biotopes e.g., **SS.SSa. IfiSa.ScupHyd** biotope (*Sertularia cupressina* and *Hydrallmania falcata* on tide-swept sublittoral sand with cobbles or pebbles), as shown by the hydroids visible on photographs from Video tows V1 and V19 (see Chapter 5). Patches of **SS.SBR.PoR.SspiMx** (*Sabellaria spinulosa* on stable circalittoral mixed sediment) were probably present as well, since relatively 'high' numbers (114-137/0.2 m^2) of *Sabellaria spinulosa* were present at OBC 34 and OBC 39. Photographs of *Pomatoceros* tubes on shells and stones (Video tow V22, near OBC 30) may be indicative of some **SS.SCS.CCS.PomB** (*Pomatoceros triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles).

Subgroup IVb had generally sandier sediments compared to IVa. There was an increased presence of *Pseudocuma similis, Echinocyamus pusillus* and *Goodalia triangularis*, but the fauna still resembled the **MedLumVen** biotope. Photographs from Video tow V9 near OBC 98 showed evidence of hydroids, albeit sparsely distributed. Estimates from the grab samples indicated that hydroids and bryozoan species were sometimes more common, and OBC 100 yielded 45 *Sabellaria spinulosa*. Therefore, the **ScupHyd** and **SspiMx** biotopes were probably present patchily as overlays on the infaunal biotope.

Subgroup IVc, represented by the single station OBC 7 in the south, was dominated by epifaunal colonial species, particularly *Electra pilosa* and *Hydrallmania falcata* and the infauna was similar to subgroup IVa. Thus station 7 could be considered to represent the **MedLumVen** biotope with a well-developed overlay of **ScupHyd**.

Subgroup IVd comprised four stations, generally situated within the large sand waves of the NOBel Sands. The infauna had much in common with both the **MedLumVen** and **HeloMsim** biotopes. A relatively low number of colonial taxa were present, though the bryozoan *Electra pilosa* and species of the hydroid genus *Sertularia* were present at all stations; both sometimes in abundance. The subgroup therefore appeared to be a **MedLumVen** biotope, overlain with a partial **ScupHyd** biotope, but more heavily influenced by a mobile sand **HeloMsim** biotope (see subgroup IIIa). The subgroup could be considered to represent an intermeshing of biotopes that co-occur in close proximity. Photographs from Video tow V7 (see Chapter 5) showed both the sand wave and between sand wave gravel habitats within the NOBel Sands.

Subgroup IVe had a faunal composition consistent with a mosaic, or intermeshing, of three biotopes linked to the variable characteristics of the sea bed on the Morte Platform. Any moderately successful grab sampling would have been from the mosaic of ground between the bedrock where there may have been detached cobbles mixed with a veneer of sand. Areas of exposed rock showed evidence of the **SS.SMx.CMx. FluHyd** biotope (*Flustra foliacea* and *Hydrallmania falcata* on tide-swept circalittoral mixed sediment). Other areas with pockets of slightly muddy mixed sediments had a fauna that most closely approached the **PoVen** biotope co-occurring with areas of the **SS.SBR. PoR.SspiMx** biotope (*Sabellaria spinulosa* on stable sand circalittoral mixed sediment). The heterogeneity of the sea bed on the Morte Platform was shown in photographs from Video tows V2 (near OBC 13), V3 (near OBC 20) and V6 (near OBC 39). As the exposures of bedrock were in the form of the narrow edges of dipping strata, these were best seen on the video transects. The bedrock ridges themselves were seen to have Hornwrack *Flustra foliacea* as the dominant epifauna, though the soft coral *Alcyonium digitatum* and a range of other hydroids were present as well.

Subgroup IVf with three stations in the northern part of the SOBel Sands was somewhat analogous to subgroup IVd. However, in this case, the **MedLumVen** biotope, overlain with a well-developed **ScupHyd** biotope, predominated and the influence of the sand wave associated **HeloMsim** biotope was lower. Photographs from Video tow V5 (see Chapter 5) near OBC 33 showed the variability of the sea bed well with sandy gravel and hydroids in close proximity to sand megaripples (see also Video tow V16, west of OBC 109).

Assemblage V

This assemblage was a rather loose grouping of three stations (29-38 m depth), OBC 66 and 67 south of Caldey Island and OBC 28 north of Lundy Island. All were associated with hard, stony bottoms with patches of mixed mud, sand and gravel. No sediment samples or quantitative grabs were obtained. A total of 277 taxa and 25349 'individuals' were collected. Colonial taxa were common, with 47 taxa identified. The bryozoan *Alcyonidium parasiticum* was the most abundant.

The Caldey stations were dominated by thousands of juvenile mussels (Table 6.4, & A9.5a). Many of the top-ranked species only occurred at one or two of the three stations. The SIMPER analysis (Table A9.5b) showed that many of the species contributing to the average assemblage similarity were crevice-dwelling (*Pisidia longicornis*, *Lepidonotus squamatus*, *Sphenia binghami*), encrusting (*Pomatoceros lamarcki*, *Verruca stroemi*, *Sabellaria spinulosa*), or epibiotic species (*Achelia echinata*, *Eusyllis blomstrandi*, *Autolytus prolifera*). The presence of *Pomatoceros* spp., barnacles and bryozoans could be viewed as indicative of **SS.SCS.CCS.PomB** (*Pomatoceros triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles). However, the sampling was entirely qualitative and infaunal species were possibly under-collected. Consequently, assemblage V was incompletely known and it could be that the 'assemblage' represented a stonier variant of assemblage IV, or a biotope complex.

Unassigned Stations

Samples were obtained from four out-of-area 'reference' stations. These were:

- OBC 1 in Red Wharf Bay, Anglesey
- OBC 2 south of Lavernock Point, Inner Bristol Channel
- OBC 3 south of Sully Bay, Inner Bristol Channel
- OBC 135 south of Milford Haven

Station OBC 1 has been subject to repeated sampling by some of the present authors (e.g., Mackie *et al.* 1995; Darbyshire *et al.* 2002) and was discussed earlier with respect to assemblage II. The top-ranked species are provided in Table A9.6a.

Station OBC 2 was included in the multivariate and univariate analyses. In the cluster analyses (e.g., Figure 6.9), OBC 2 did not group with any of the OBC main assemblages. The station may be a useful reference for later sampling in the Bristol Channel and Severn Estuary, but was not included in discussions relating to the Outer Bristol Channel benthos. The top-ranked species are provided in Table A9.6b.

Only stones and a clump of *Sabellaria alveolata* tubes were obtained from station OBC 3. The fauna was not identified for the OBCMHS.

OBC 135 was an interesting station, acting as a link between the Outer Bristol Channel and the BIOMÔR 1 survey areas in the Celtic Sea and southern Irish Sea. BIOMÔR station 13 (see Mackie *et al.* 1995: fig. 3.1), a little to the east of OBC 135, was the most eastern station of a transect leading to the Celtic Deep. In the quantitative cluster analysis (Figure 6.7), OBC

135 grouped with OBC 144 as part of assemblage II. However, with the inclusion of the epifaunal taxa, the station showed a closer affinity with assemblage III in the semi-quantitative analysis (Figure 6.9). The top-ranked species are provided in Table A9.6c. In Mackie *et al.* (1995), BIOMÔR stations 12 and 13 formed a small group (B2) showing a relationship with the inshore sand assemblage group B4 (=**SSa.IMuSa.FfabMag** biotope). Comparing the species lists, the two BIOMÔR stations appeared closer to OBC subgroup IId than to OBC 135.

The Biotopes

A biotope map of the Outer Bristol Channel (Figure 6.20) was produced using the OBCMHS grab data supplemented by information (Figure 6.18) from Environmental Resources Management (2002). Biotope 'boundaries' were adjusted in several areas (relative to the faunal assemblage map; Figure 6.10) with reference to the sea bed character and bedform map (Figure 4.1).

The biotope map is necessarily general in nature, but some additional observations can be made. The sand waves shown in the SOBel Sands (Figure 4.1, 4.20, 5.1 & 6.32) are likely to host the **HeloMsim** biotope in its various manifestations (assemblage subgroups IIIa-c). Mixed gravelly sediment areas between these sand waves will predominantly support **MedLumVen** though those with increased surface sand will be intermediate between this and **HeloMsim**, varying according to the amount of sand present. As demonstrated at OBC 78 on Corridor 9, the small sand waves (<10 m) in the western NOBel Sands probably also have the **HeloMsim** biotope. The areas between these sand waves support a fauna having affinities with **AalbNuc** and **OfusAfil**. The epifaunal biotope overlays will vary according to the availability of suitable attachment surfaces (e.g., gravel, cobbles, rock) and the mobility of any surface sand.

Biotope Code	Description
Infauna	
SS.SSa.IFiSa.IMoSa	Infralittoral mobile clean sand with sparse fauna
SS.SSa.IFiSa.NcirBat	*Nephtys cirrosa* and *Bathyporeia* spp. in infralittoral sand
SS.SSa.IMuSa.FfabMag	*Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in infralittoral compacted fine muddy sand
SS.SSa.CMuSa.AalbNuc	*Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment
SS.SSa.OSa.OfusAfil	*Owenia fusiformis* and *Amphiura filiformis* in offshore circalittoral sand or muddy sand
SS.SCS.ICS.HeloMsim	*Hesionura elongata* and *Microphthalmus similis* with other interstitial polychaetes in infralittoral mobile coarse sand
SS.SCS.CCS.MedLumVen	*Mediomastus fragilis*, *Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel
SS.SMx.OMx.PoVen	Polychaete-rich deep *Venus* community in offshore mixed sediment
Epifauna	
SS.SBR.PoR.SspiMx	*Sabellaria spinulosa* on stable circalittoral mixed sediment
SS.SMx.CMx.FluHyd	*Flustra foliacea* and *Hydrallmania falcata* on tide-swept circalittoral mixed sediment
SS.SSa.IfiSa.ScupHyd	*Sertularia cupressina* and *Hydrallmania falcata* on tide-swept sublittoral sand with cobbles or pebbles

Table 6.28: Guide to benthic biotopes present in the Outer Bristol Channel (following definitions in Connor et al. *2004)*

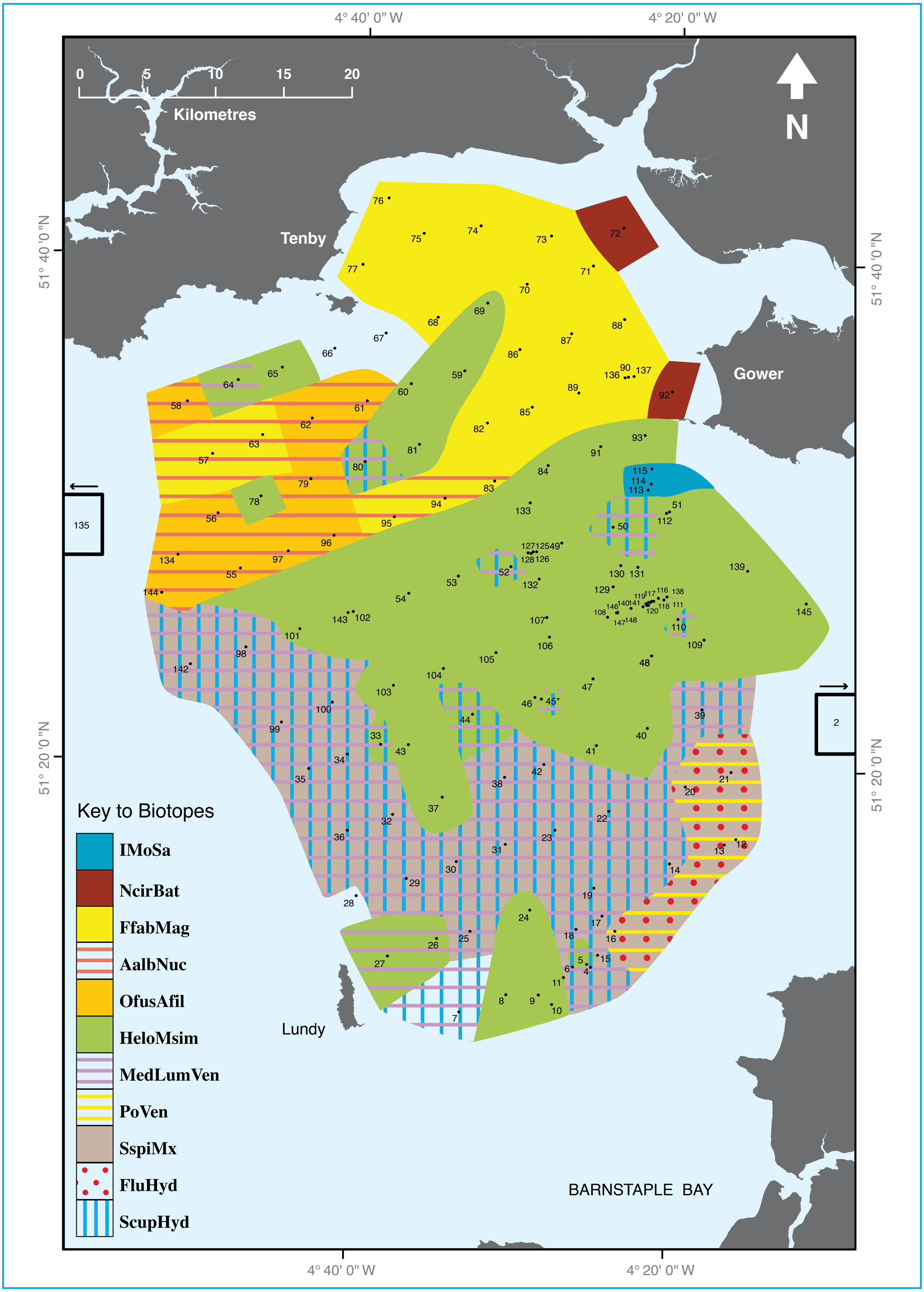


Fig. 6.20: Distribution of benthic biotopes (and combinations thereof) in the OBCMHS area (see Table 6.28 for biotope definitions)

6.3 Species Diversity

Biological diversity or biodiversity, essentially the variety of life in all its manifestations (Gaston & Spicer 1998), and its conservation and sustainable use is central to the Convention on Biological Diversity (www.biodiv.org). Biodiversity can be considered at many levels from genetics to organisms, populations to ecosystems (Harper & Hawksworth 1994; May 1994; Hambler & Speight 1995) and therefore encompasses everything from DNA to the planet Earth itself. In promoting an Ecosystem Approach to the use and management of natural resources, the Convention recognises man's place in achieving sustainable development and conservation of biodiversity. Consequently, biodiversity can be considered from scientific, ecological, economic, nutritional, medical, aesthetic, ethical and political viewpoints (World Conservation Monitoring Centre 1992).

One major concern is that biodiversity loss could adversely affect ecosystem functioning (Naeem *et al.* 1994). A number of models and methods for describing the relationships between species diversity, functional diversity and ecosystem function have been proposed (Peterson *et al.* 1998; Hooper *et al.* 2002; Petchey & Gaston 2002), but relatively few studies on the true nature of these links exist (Schwartz *et al.* 2000; Duffy 2002; Naeem & Wright 2003). The last decade has seen an increase in investigations involving marine benthic biodiversity and ecosystem functioning (Duarte 2000; Worm *et al.* 2002; Covich *et al.* 2004; Micheli & Halpern 2005; Bremner *et al.* 2006).

Consequently, for decision-making processes, it is vital that we evaluate and understand biodiversity patterns (e.g., see UK Biodiversity Action Plan: www.ukbap.org.uk). In the marine environment there has been much debate both about how many species are present and where the greatest diversities are to be found (e.g., Briggs 1994). However, our knowledge of these is incomplete and patchy. We know more about the sea bed life (benthos) of shallow water areas than the deep sea, and more about temperate seas than tropical areas (e.g., see Sanders 1968; Grassle & Maciolek 1992; Mackie *et al.* 1997, 2005). Nevertheless, even in UK waters, species new to science are still being discovered from benthic habitats (Mackie 1991; Woodham & Chambers 1994; Fiege *et al.* 2000). Further, the distributions and ecology of most benthic species are poorly known.

Mapping benthic habitats, species assemblages, biotopes and biodiversity is important for managing, using and conserving natural resources in the marine environment. The *Outer Bristol Channel Marine Habitat Study* (OBCMHS) directly contributes to this at a regional level. In addition, the scientific findings of the study will directly feed into other larger projects involving sea bed mapping and predictive modelling. Two such projects are currently underway associated with EU INTERREG III programmes; the Wales-Ireland HabMap study in the southern Irish Sea area (www.habmap.org), and the multinational NW Europe MESH project (www.searchmesh.net).

In the OBCMHS, biodiversity was examined at the species and assemblage/habitat levels. For many people, biodiversity simply relates to the number of species (i.e., species richness) in an area, but the relative abundances of the different species are also important. An area in which the species are equally abundant (maximum evenness) should be regarded as more diverse than one where the same number of species are of disparate abundance. Hence diversity measures often incorporate both species richness and evenness (or dominance) in their calculation. Diversity indices reduce the numerical complexity of a species grouping to a single number that can then be used in comparative studies. They have been widely employed in assessments of the richness or 'health' of benthic macrofaunal assemblages, particularly in relation to environmental monitoring programmes. Note, however, that for conservation and management purposes the identities of particular species may be more important than simple abundance, richness or diversity measurements.

There are many different diversity indices. To facilitate comparison with other studies, a variety of diversity and evenness measures were calculated (see section 3.4). These included the diversity measures of Fisher (α), Margalef (d), Simpson (D) and Shannon-Wiener

(H′), and the evenness measures of Pielou (J′) and Heip (E or N10′). Diversity was additionally assessed using rarefaction methodology (Hurlbert 1971) for a variety of interpolated abundance values.

Species Richness

The dataset used in the quantitative multivariate analyses (Figures 6.7 & 6.8) comprised 811 taxa, while the qualitative and semi-quantitative analyses (Figures 6.9, 6.10, A8.3-A8.5) included 948 taxa, over 830 of which were named species (Appendix 6). The Annelida was the dominant faunal component (Tables 6.1, 6.29 & 6.30).

The proportional representation of each faunal component varied at each station (Table A11.1 & A11.2) and in each assemblage group (Table 6.30), though annelid taxa predominated throughout. The order of species representation was generally Annelida>Arthropoda>Mollusca>other phyla. Inclusion of colonial taxa such as hydroids and bryozoans increased the species richness of the sample stations (Table A11.3), and the assemblages and subgroups to which they belonged. Comparison between the quantitative and semi-quantitative (or qualitative) species richness patterns (Figures A12.1 & 6.21) showed that the largest enhancements occurred in assemblage IV.

Taxon	Quantitative data		Semi-quantitative data	
	No. of Taxa	Contribution	No. of Taxa	Contribution
Annelida	356	43.90%	356	37.55%
Mollusca	130	16.03%	130	13.71%
Arthropoda	247	30.46%	247	26.05%
Other Phyla	78	9.62%	81	8.54%
Colonial taxa*	—	—	134	14.14%
Total	**811**		**948**	

*Table 6.29: Main faunal components of the Outer Bristol Channel grab and dredge samples (*hydroids, bryozoans & entoprocts)*

Group	Annelida	Mollusca	Arthropoda	Others	Total
I	13	3	4	<1	**21**
IIa	17	11	18	3	**47**
IIb	33	17	20	9	**79**
IIc	27	9	12	5	**53**
IId	49	13	19	10	**91**
II other (OBC1)	43	19	23	15	**100**
IIIa	36	9	10	5	**60**
IIIb	37	10	17	6	**71**
IIIc	20	3	9	3	**34**
IIId	46	17	15	8	**86**
OBC 135	26	8	7	6	**47**
IVa	89	27	33	14	**162**
IVb	77	20	27	15	**140**
IVc	113	38	46	14	**211**
IVd	65	14	21	9	**109**
IVe	106	29	42	19	**195**
IVf	50	12	23	13	**98**
Other (OBC2)	16	6	8	3	**33**

Table 6.30: Average number of taxa (per 0.2 m^2 quantitative station) within each Outer Bristol Channel assemblage group (adjusted to whole animal values; totals may differ slightly from the sum of the faunal components)

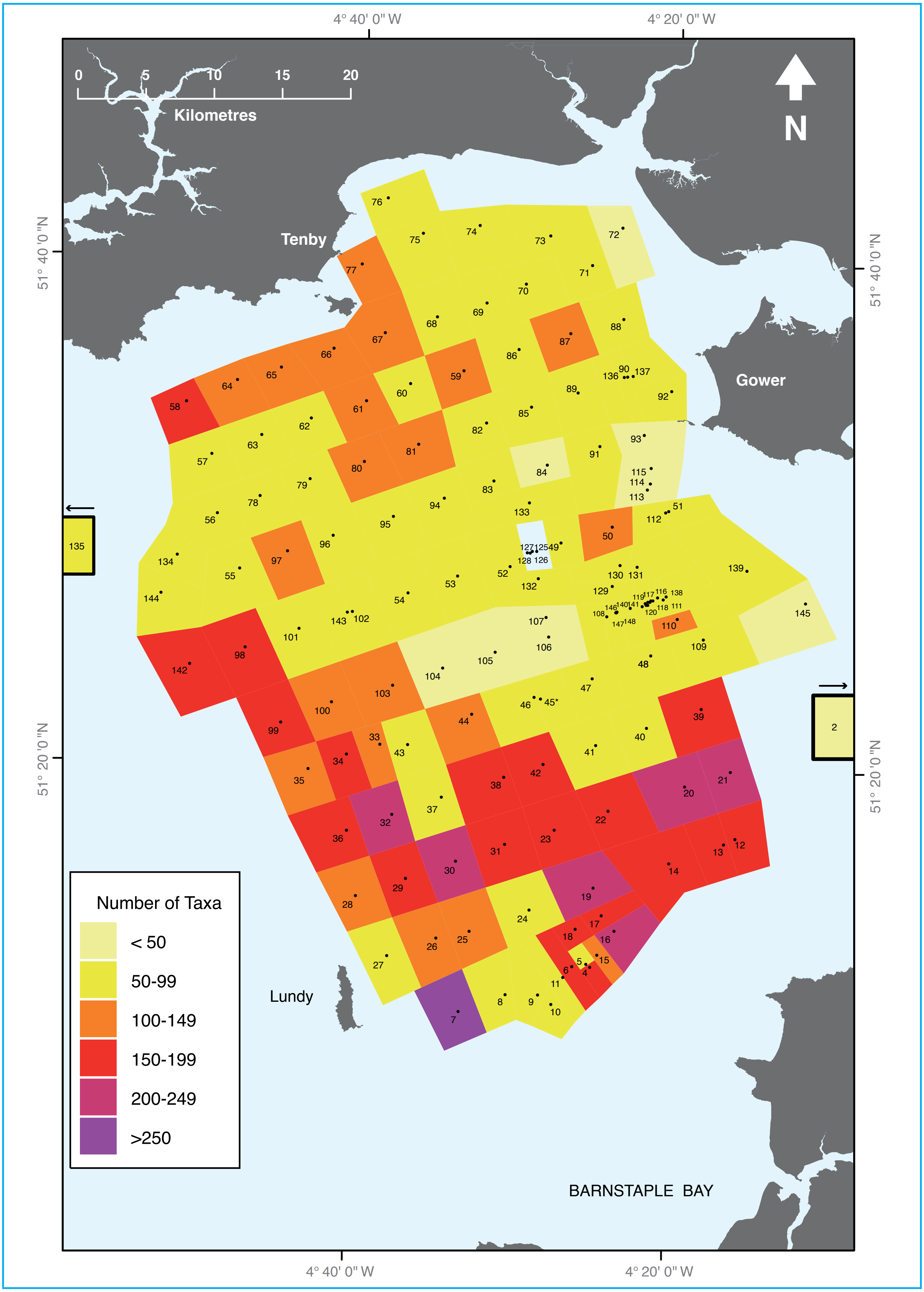


Fig. 6.21: Generalised distribution of qualitatively assessed taxa at each station in the Outer Bristol Channel

There were clear differences between the number of taxa in the assemblage groups (ANOVA: F=49.89; d.f.=16; p<0.0001). Species richness was noticeably higher in the assemblage IV subgroups in the SOBel Sands (IVa & b), Lundy Platform (IVc) and Morte Platform (IVe). This was not surprising since the mixed sands and gravels, plus increased colonial epifauna, of these areas offered many more micro-habitats for other animals compared to the sandier sediments of the other assemblages. Previous work in the southern Irish Sea (Mackie *et al.* 1995) also showed that the highest species richness values coincided with the gravelly offshore sediments. In the OBCMHS, the highest values were found in subgroups IVc (OBC 7) and IVe, and at three stations in subgroup IVa (OBC 19, 30 & 32). However, the assemblage IV subgroups most associated with sand wave areas (IVd & IVf) had more moderate species richness values (Figure 6.22), approaching those of assemblage III. A Fisher's Protected Least Significant Difference (PLSD) *post hoc* test showed the differences between these two subgroups and the sand wave subgroups (IIIa & IIIb) were significant (P<0.01), though these must be viewed with caution due to the low number of stations in the two assemblage IV subgroups. The differences were not significant (p≥0.56) using the more conservative Scheffe's test. Assemblage I at the Helwick Bank, subgroup IIIc in the NOBel Sands and the out-of-area OBC 2 had the lowest number of species.

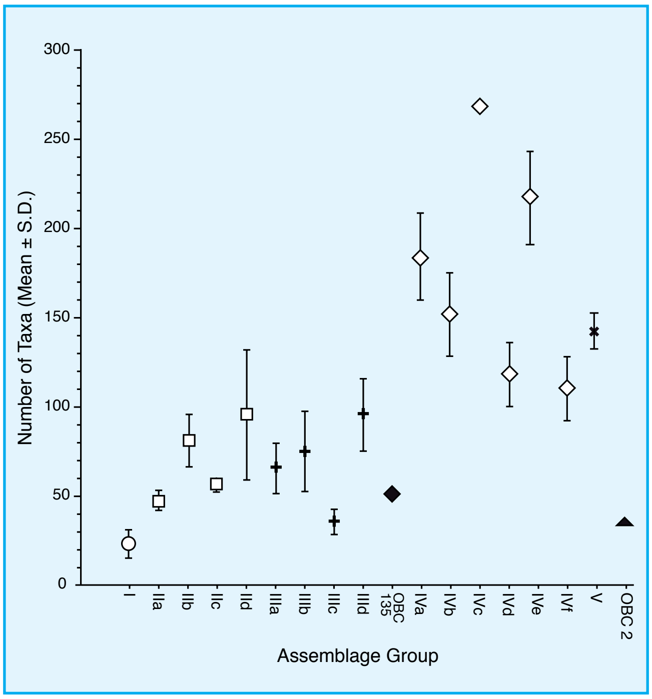


Fig. 6.22: Number of taxa (including colonial species) within each Outer Bristol Channel assemblage group

Abundance

A total of 214,795 individuals were enumerated from the 129 quantitative grab stations (Table A11.2); averaging 1665 per station. The annelids dominated with 131,756 individuals (61.34%), followed by molluscs (22.03%), arthropods (12.41%) and other phyla (4.22%). The highest station abundance (12,953 individuals/0.2 m^2) was recorded at the out-of-area reference station OBC 1 in Red Wharf Bay, northeast Anglesey. The foregoing percentage contributions were little changed by excluding OBC 1.

The proportional representation of each faunal component varied in each assemblage group, though annelids predominated in most (Table 6.31). Molluscs were, on average, more prevalent in subgroup IIId. The order of numerical representation was generally Annelida>Mollusca>Arthropoda>other phyla. Overall, the station abundances were highly variable (Figure 6.23). Low numbers of animals were common in assemblage I, and the NOBel Sands subgroups IIIa and IIIc. Conversely, high abundances were consistently found throughout assemblage IV and in most of assemblage II.

Diversity

The diversity indices used have different underlying principles, with each index having its own strengths and weaknesses (see Magurran 2004). The simplest here is the species-abundance ratio of Margalef's index. Most of the others are derived from theoretical species abundance models (Fisher's log series α) or based on the proportional abundances of the species (Shannon-Wiener & Simpson indices). The Hurlbert Rarefaction methodology differs by interpolating the estimated number of species for any number of individuals (less than a sample total) and this can aid cross-comparison between studies using different sample sizes. Ideally the full rarefaction curves should be used for comparison, though this is difficult when many stations are involved (see Mackie *et al.* 1995). In practice, the estimated number of species (ES) present

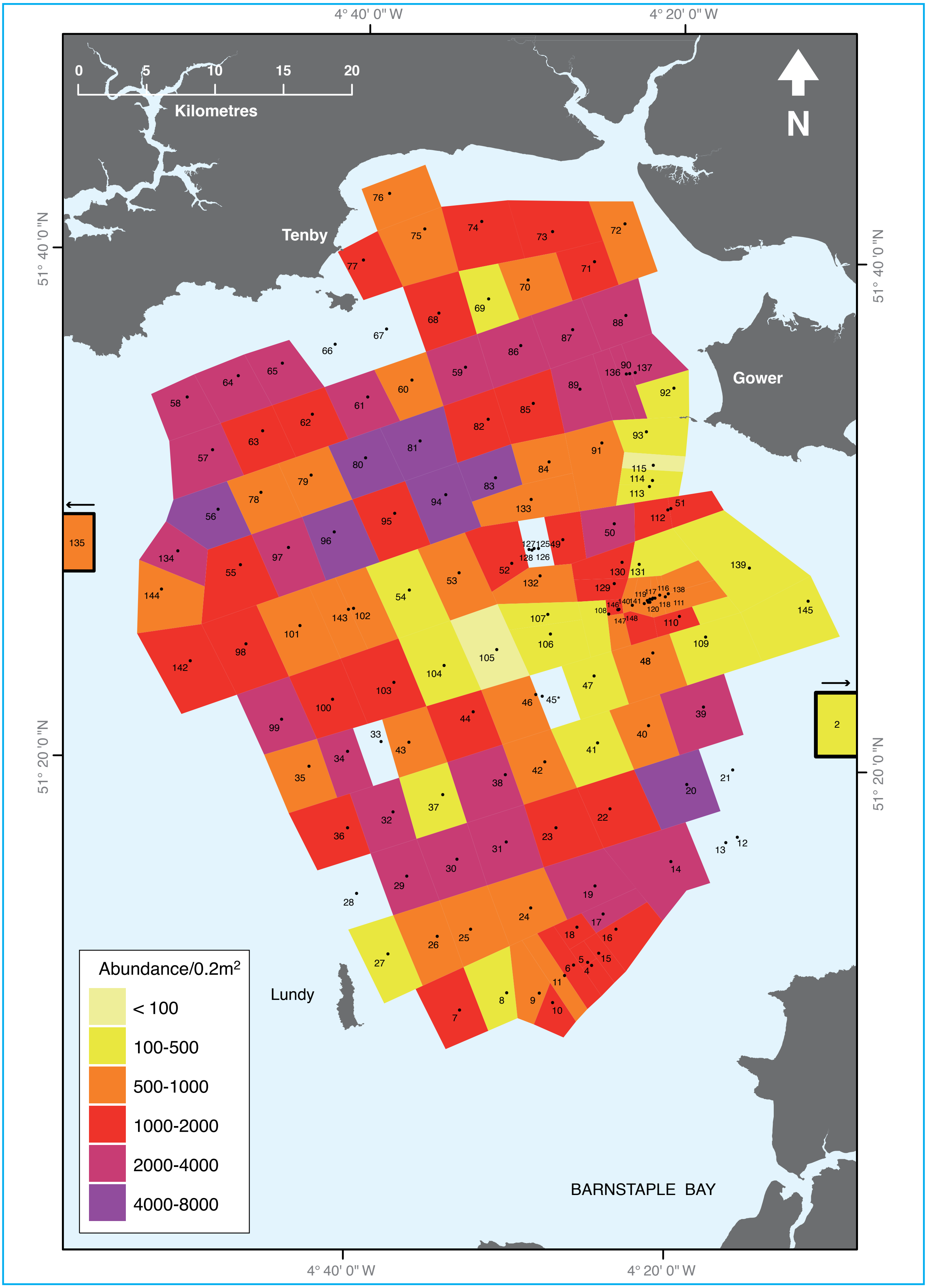


Fig. 6.23: Generalised distribution of macrofaunal abundance at each quantitatively assessed station in the Outer Bristol Channel

Group	Annelida	Mollusca	Arthropoda	Others	Total
I	110	43	22	1	**176**
IIa	227	131	155	11	**523**
IIb	1114	466	240	112	**1932**
IIc	2907	359	195	19	**3480**
IId	1884	559	203	122	**2768**
II other (OBC1)	8144	2674	1866	269	**12953**
IIIa	469	196	33	33	**730**
IIIb	834	208	165	26	**1233**
IIIc	79	14	24	6	**121**
IIId	577	751	69	52	**1449**
OBC 135	486	26	32	17	**561**
IVa	1034	521	438	113	**2106**
IVb	867	237	221	155	**1479**
IVc	725	365	519	119	**1728**
IVd	2141	566	333	77	**3116**
IVe	1400	831	662	187	**3078**
IVf	409	523	258	50	**1240**
Other (OBC2)	60	20	26	7	**113**

Table 6.31: Average abundance (per 0.2 m^2 quantitative station) within each Outer Bristol Channel assemblage group (adjusted to whole animal values; totals may differ slightly from the sum of the faunal components)

for a given number of individuals (e.g., 100) is often used; ES100.

The diversity values for the different indices and the ES values for several different abundance levels are presented relative to station and assemblage group in Table A11.3 and A11.4. For reference, the diversity values for each of the major macrofaunal components (Annelida, Mollusca, Arthropoda, other phyla) are given in Tables A11.5-A11.8, but are not discussed further in this publication.

Each of the indices showed differences between the different assemblage groups (Table 6.32), though the extent and pattern of these varied according to the properties of each index. The results for the Fisher and Margalef indices (Figures 6.24, 6.25 & A12.2), both heavily influenced by the number of taxa present, were very similar to those for species richness. Diversity was generally low over most of the OBC area, except for assemblage IV in the SOBel Sands, and on the Lundy and Morte Platforms.

The remaining three indices, all influenced to various degrees by the relative abundances of the species, showed more variation. The patterns for the Shannon-Weiner index (Figure 6.26) and rarefaction ES100 (not shown) were similar, and exhibited less discrimination at the higher ends of their respective scales compared to the ‘species richness’ indices. On the generalised diversity map (Figure 6.27), moderate diversities (H’: 3.5-4.5) predominated, with higher diversities (H’: 4.5-5.5) evident in Carmarthen Bay and some parts of the NOBel Sands. However, the highest values were again in the SOBel Sands assemblage IV. Simpson’s Index, often referred to as a dominance index because of its bias toward the most abundant species, had the least discriminatory ability with most of the values concentrated toward the high end of the scale. This was exemplified in the generalised diversity map (Figure A12.3).

There were clear differences in diversity between the assemblage groups ($p<0.0001$) for all the diversity indices. Assemblage I and subgroup IIc generally had

Group	Margalef	Fisher	Hurlbert	Simpson	Shannon
I	3.94	6.72	19.95*	0.88	3.45
IIa	7.40	12.79	27.79	0.92	4.31
IIb	10.39	17.07	27.69	0.88	4.24
IIc	6.62	9.55	14.52	0.62	2.49
IId	11.54	19.11	24.78	0.86	3.97
II other (OBC1)	10.46	14.75	15.62	0.72	2.88
IIIa	9.09	16.39	27.02	0.86	4.05
IIIb	10.16	18.06	27.33	0.85	4.03
IIIc	6.81	15.63	30.96**	0.95	4.44
IIId	12.10	22.44	29.49	0.89	4.32
OBC 135	7.27	12.21	19.64	0.77	3.07
IVa	21.16	41.66	45.70	0.96	5.74
IVb	19.34	40.32	44.21	0.93	5.46
IVc	28.17	63.05	54.57	0.98	6.39
IVd	13.72	23.17	29.17	0.89	4.32
IVe	24.27	47.25	49.86	0.98	6.12
IVf	13.62	24.97	31.57	0.88	4.46
Other (OBC2)	6.77	15.68	31.09	0.94	4.39

Table 6.32: Average diversity values (per 0.2 m^2 quantitative station) within each Outer Bristol Channel assemblage group (average two of three stations, ** one of two stations)*

the lowest diversity values, and the assemblage IV subgroups in the SOBel sands the highest. The mean diversities for the assemblage IV subgroups most

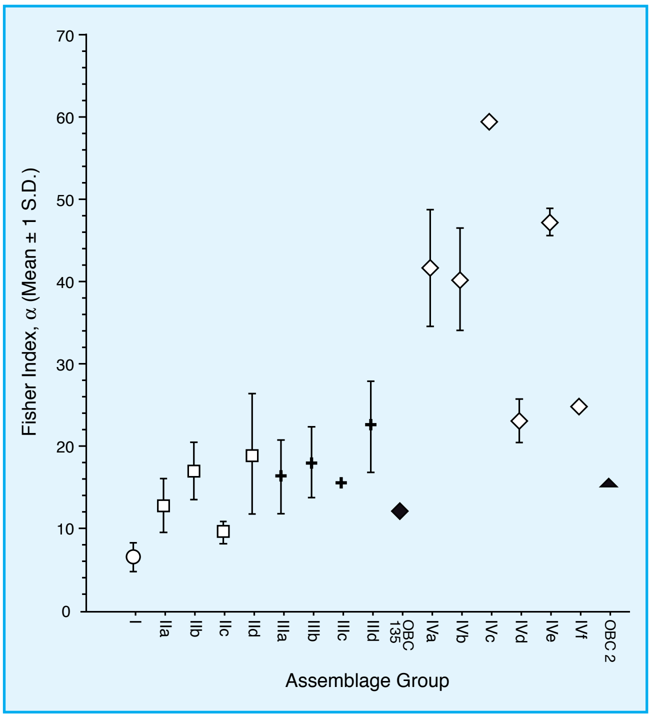


Figure 6.24: Fisher's α Index values within each Outer Bristol Channel assemblage group

associated with sand wave areas (IVd & IVe) were not significantly different (Scheffe: $p \geq 0.60$) from those of the NOBel Sands subgroups IIIa and IIIb. Using the more liberal Fisher's PLSD test, the only significant differences, in this comparison, were between subgroups IIIa and IVd ($p<0.05$, Fisher's α; $p<0.001$, Margalef d), and IIIb and IVd ($p<0.01$, Margalef d).

Evenness

Many evenness indices have been described, but none are perfect (Routledge 1983; Smith & Wilson 1996). The two measures employed here, the Pielou's J' and Heip's E or N10' (Heip 1974; Heip & Engels 1974) show different relationships with diversity. Evenness J' varies linearly with diversity (H'), whereas N10' has a concave curvilinear relationship. The latter arguably better represents natural assemblages where species abundances are disparate and maximum evenness is rare. The evenness values for the different indices are presented for each station in Table A11.3. For reference, the evenness values for each of the major macrofaunal components are given in Tables A11.5-A11.8.

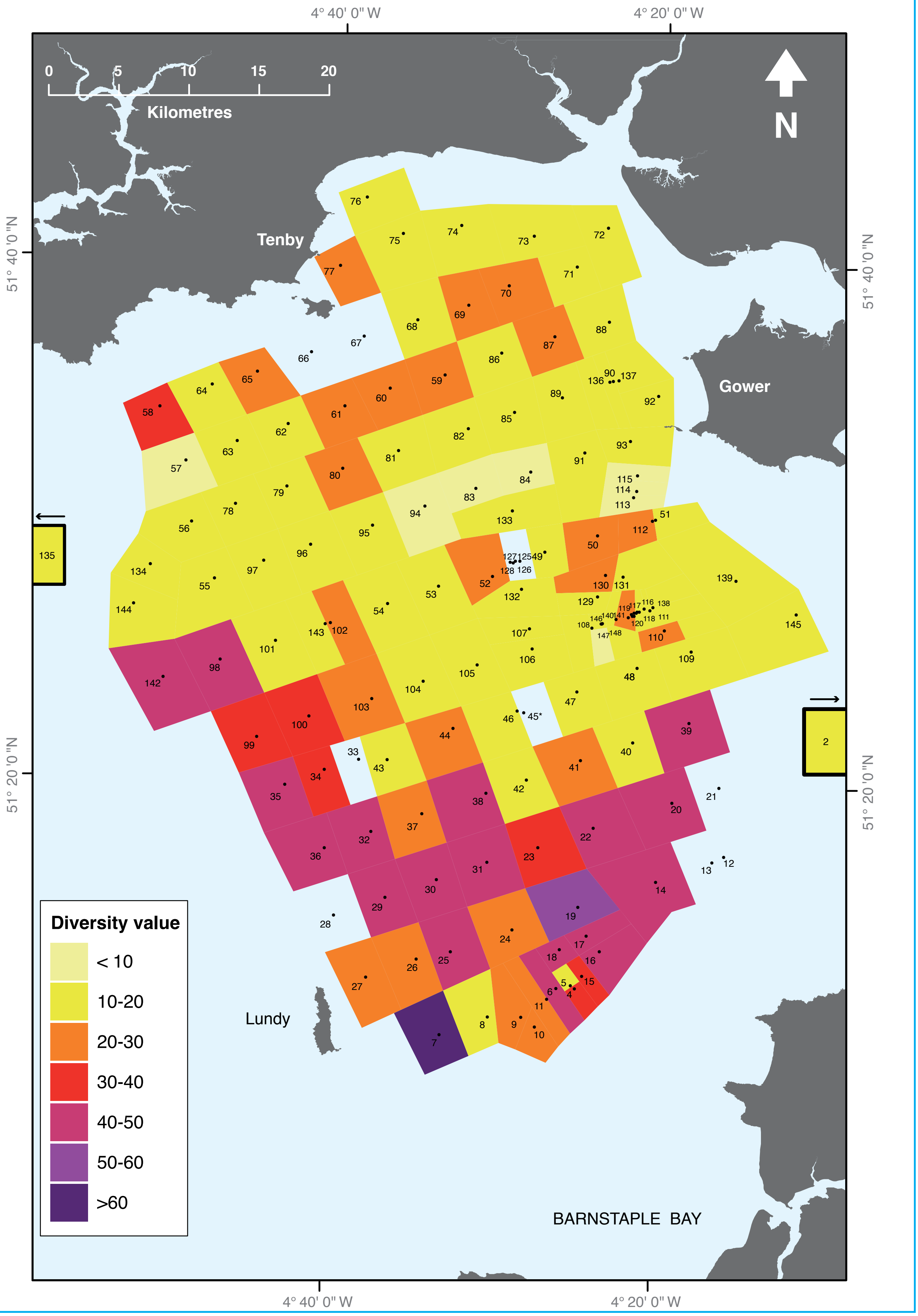


Fig. 6.25: Generalised distribution of Fisher's Index (α) at each quantitatively assessed station in the Outer Bristol Channel

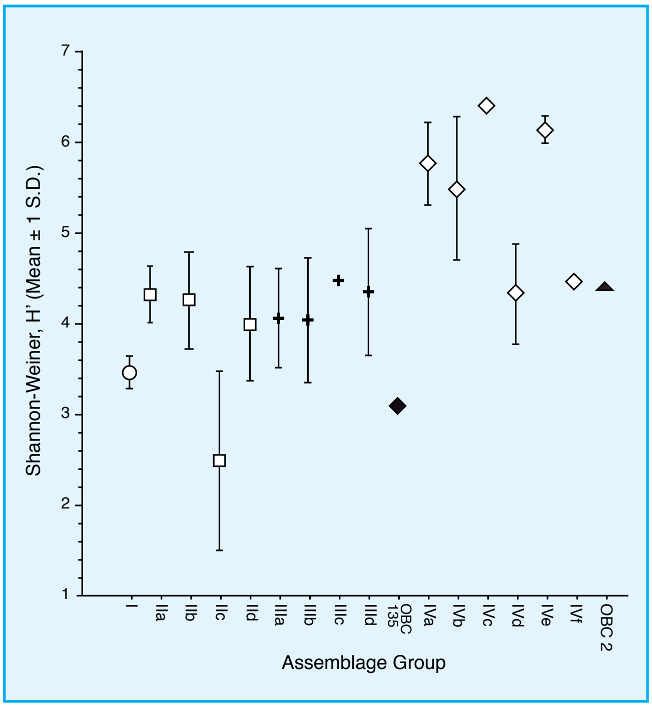


Fig. 6.26: Shannon-Wiener Index values within each Outer Bristol Channel assemblage group

The average assemblage group evenness values demonstrated the different approaches of the two indices (Table 6.33). Pielou's index produced high values with less discrimination toward the maximum, whereas Heip's index produced lower values and accentuated the differences relative to the higher evenness values (see also Figure 6.28).

In the OBCMHS area, the highest evenness values (0.72 & 0.73) for Heip's index were found at two stations with low species richness (14 & 30 taxa) and the lowest abundance levels (70 & 91 individuals). Both stations, OBC 115 at the Helwick Bank (assemblage I) and OBC 105 in the 'central' NOBel Sands (IIIc), appeared to be part of larger high evenness areas (Figure 6.29). Other high evenness locations, OBC 75 and OBC 142, had moderate and high species richness respectively. Evenness was lowest in the western NOBel Sands and Carmarthen Bay Approaches, particularly in subgroups IIc and IId; mostly stations with moderate species richness and high abundances. The generalised distribution of Pielou's evenness values highlighted most of the high evenness areas mentioned above, but fewer of the low evenness stations (Figure A12.4).

Group	Pielou J'	Heip N10'
I	0.81	0.54
IIa	0.78	0.41
IIb	0.68	0.26
IIc	0.44	0.11
IId	0.62	0.18
II other (OBC1)	0.43	0.06
IIIa	0.69	0.28
IIIb	0.67	0.27
IIIc	0.88	0.65
IIId	0.68	0.25
OBC 135	0.55	0.16
IVa	0.78	0.34
IVb	0.77	0.35
IVc (OBC 7)	0.83	0.40
IVd	0.64	0.19
IVe (OBC 16 & 20)	0.81	0.36
IVf (OBC 44)	0.67	0.22
Other (OBC2)	0.87	0.62

Table 6.33: Average evenness values (per 0.2 m^2 quantitative station) within each Outer Bristol Channel assemblage group

Discussion

For the OBCMHS area, all the diversity indices used recognised the SOBel Sands as supporting the highest biodiversity. However, the patterns for the other areas were less consistent due to the differing emphases of each index. The Shannon-Wiener index has been criticised for being unduly influenced by the abundance of the dominant species (e.g., Kempton & Taylor 1976; Pearson & Rosenberg 1978; Statzner 1981) and only having a moderate discriminatory ability. Jost (2006) recently re-examined the conflicting behaviour of a number of related diversity indices, including the ubiquitous Shannon-Wiener and various variants of the Simpson index. It was concluded that neither were true diversity indices in their currently used forms and converting these to "effective number of species" was the key to interpreting diversity and to comparing different indices. Conversion of the Shannon-Wiener and Simpson indices produced $e^{H'}$ (or $2^{H'}$ when $\log_2$ values were used) and $1/\lambda$ respectively, equivalent to the 'Hill numbers' N1 and N2 (Hill 1973). Applying these formulae to the OBCMHS data produced diver-

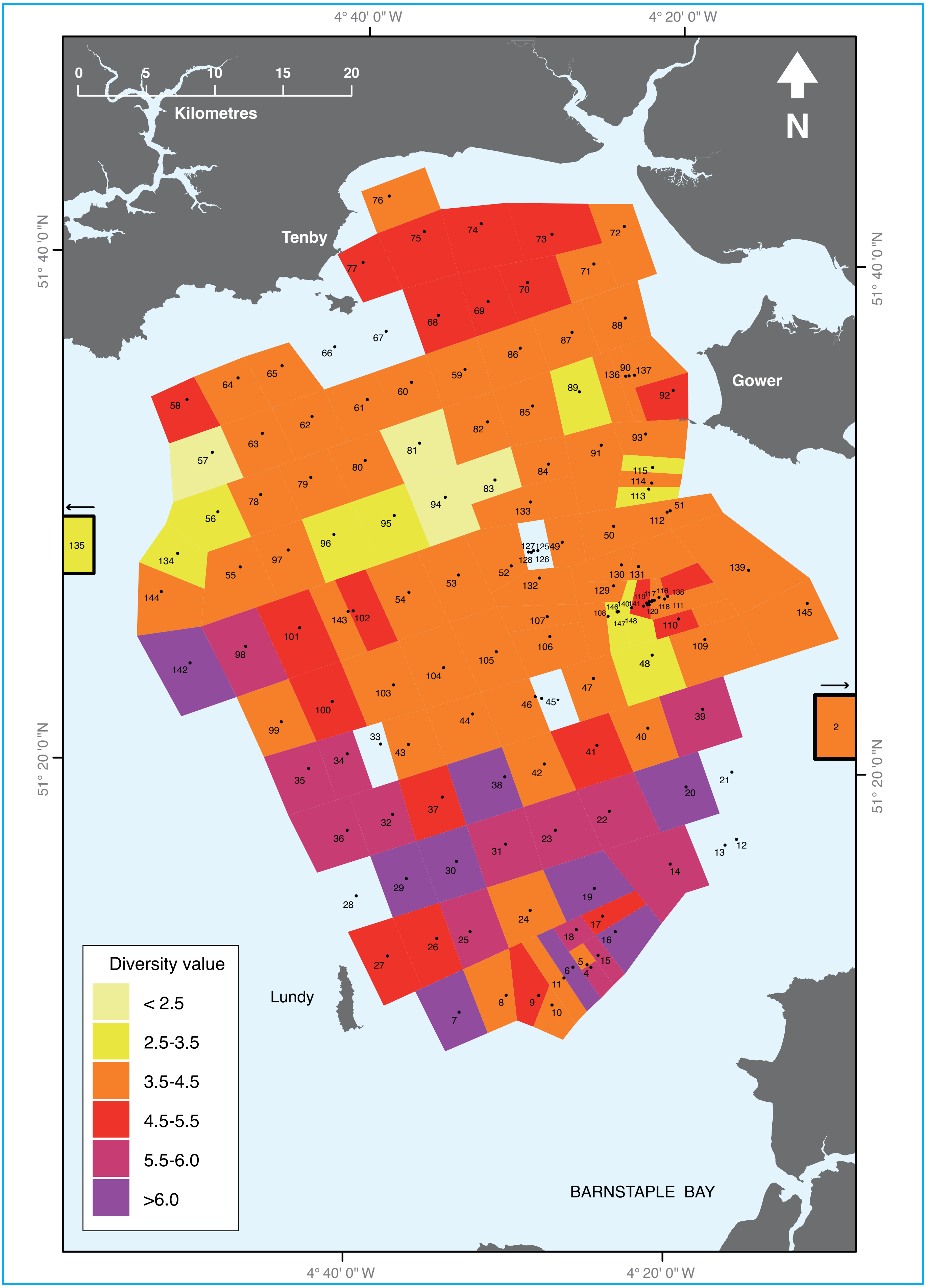


Fig. 6.27: Generalised distribution of Shannon-Wiener (H′) at each quantitatively assessed station in the Outer Bristol Channel

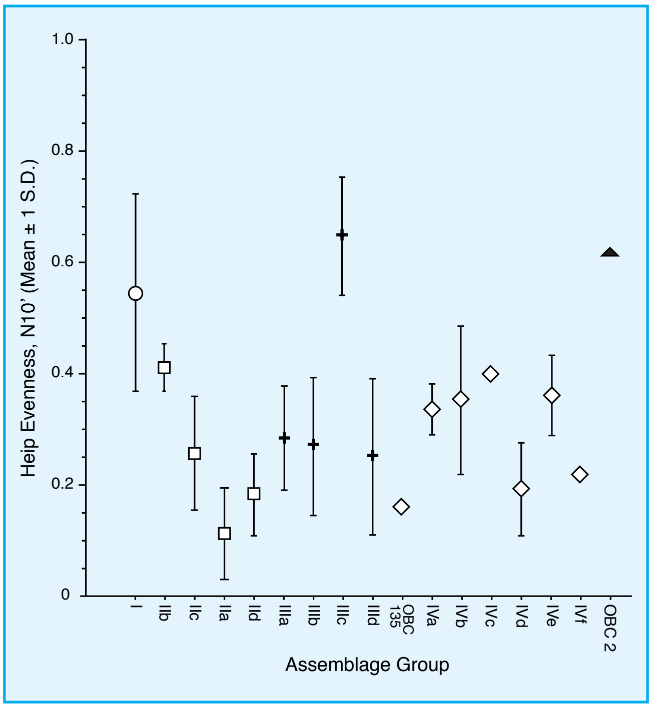


Figure 6.28: Heip Evenness values within each Outer Bristol Channel assemblage group

sity patterns (not shown) more similar to those for Fisher's index (Figure 6.24) and increased the discrimination of the richer assemblage IV subgroups. Accordingly, Fisher's index was used in subsequent diversity examinations.

There was good correspondence with earlier benthic studies that used the same sampling methodology. The high α values of the SOBel Sands assemblage IV subgroups (18.8-52.7; mean 41.3) were very similar to those from other gravelly sediments (35.3-57.8; 45.3) in the southern Irish Sea (Mackie *et al.* 1995). The lower values (5.3-8.7; 6.7) from assemblage I on Helwick Bank agreed well with those (5.08-11.69; 8.02) from a larger 2001 survey (Darbyshire *et al.* 2002) of the same bank. A 1998 survey of Carmarthen Bay (Woolmer 2003) revealed Fisher's α values for subgroup IIa (as B2) of 6.3–7.6 (mean 6.9) and subgroup IIb (as B1) of 7.5–11.2 (9.0). In this case, the OBCMHS values were higher at 10.5–15.0 (12.8) and 12.0–27.1 (17.1) respectively. This increased diversity could reflect temporal changes in the fauna (see section 6.2), but additional sampling would be required to investigate this further. No comparable diversity data were available for assemblage III, primarily located in the NOBel Sands and parts of the SOBel Sands.

Mixed gravelly sediments have been shown to exhibit high biodiversity (e.g., see Mackie *et al.* 1995). They offer more microhabitats for the infauna and the surfaces of gravel and stones can be colonised by attached and encrusting epifauna. Such epifaunal species provide additional heterogeneity to the habitat as a whole and diversity can be further enhanced (Bradshaw *et al.* 2003; Cocito 2004).

In the multivariate analyses of the Outer Bristol Channel benthic fauna it was noted that subgroup IVd only clustered within assemblage IV when the colonial epifaunal taxa were included (see Table 6.2). In the quantitative analysis, these stations formed part of subgroup IIIb. This was interesting in relation to the roles of both gravel and colonial epifauna in enhancing diversity. There were indications that an increased gravel content increased diversity in assemblage II, but not in assemblage III or IV (Figures 6.30 & 6.31). The only significant correlation between gravel and Fisher's α was for assemblage II ($r=0.749$; $p<0.0001$; $n=34$). The diversity of subgroups IVd and IVe was atypical of assemblage IV and more comparable (see lower values in Figure 6.31) to those of the sand wave subgroups IIa and IIIb, with which they co-occurred.

Therefore the influence of gravel on the fauna differed according to location. This may reflect the position of the gravel within the sediment and the stability of the surface layer. The generally fine to medium sands of Carmarthen Bay and its Approaches, hosting assemblage II, are likely to be more stable than the large sand waves of the NOBel Sands. Hence, the addition of some gravel could help produce local enhancements of biodiversity within. Conversely, in areas having an assemblage III fauna, the gravel may be mixed with the sediment, only intermittently exposed or subject to frequent scouring by mobilisation of the surface sand layer. These would limit any faunal increases associated with the presence of colonial epifauna and explain why subgroup IVd had diversity values similar to subgroups IIIa and IIIc. The faunal distributions relative to the sand waves are discussed further in Section 6.5.

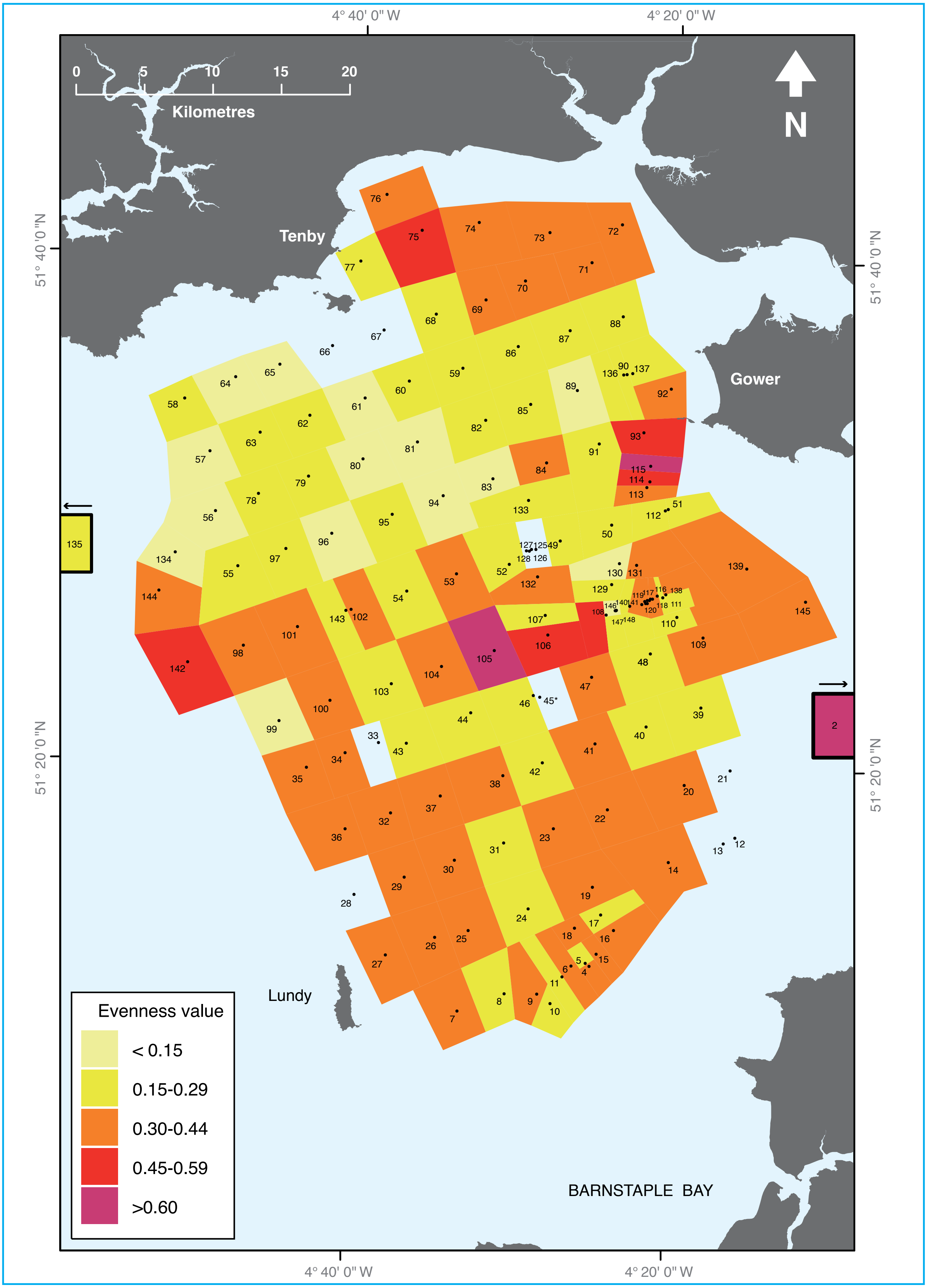


Fig. 6.29: Generalised distribution of Heip Evenness (N10') at each quantitatively assessed station in the Outer Bristol Channel

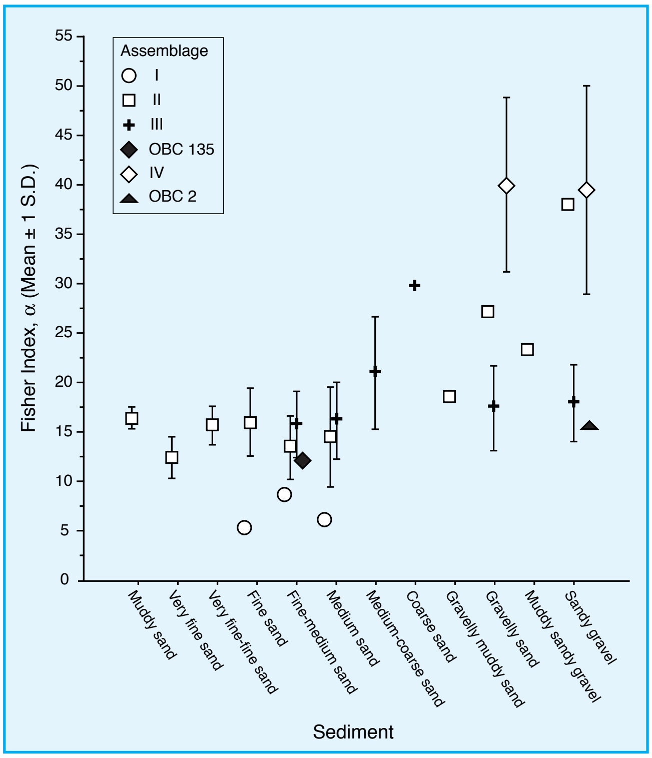


Fig. 6.30: Relationship between sediment type and Fisher's α in the Outer Bristol Channel

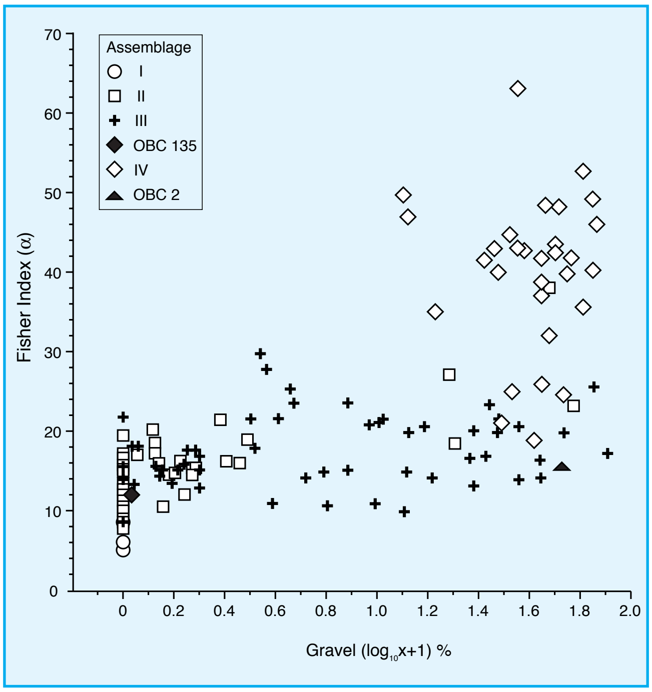


Fig. 6.31: Relationship between sediment gravel content and Fisher's α in the Outer Bristol Channel

The dominant role of sand in the NOBel Sands was demonstrated in the photographs from Video tows V7 on Corridor 6 (in vicinity of OBC 118-124) and V8 on Corridor 7 (near OBC 125). The patchy exposure of the more gravelly sediments was visible on the sidescan images also (Figures 5.8B & 5.9B). The reverse situation predominated in the SOBel Sands; i.e., the bulk of the sand was largely restricted to isolated sand waves separated by large gravelly plains (Figure 4.1). This was shown well on images (Chapter 5) from Video tows V1 on Corridor 1 (near OBC 4) and V19 on Corridor 2 (between OBC 14 & 19). Where the grabs landed on the plains (e.g., at OBC 4) very diverse faunas belonging to assemblage subgroup IVa were collected. However, where sandier sediments on or close to sand waves were encountered (e.g., OBC 5), less diverse assemblage III faunas were found. This pattern of high diversity between less rich sand waves was reminiscent of the situation in parts of the Southern North Sea (Mackie, pers. obs.; Van Dalfsen, pers. comm).

6.4 Benthic Epifauna and Demersal Fish: samples from small-mesh beam trawls

Introduction

To obtain a more complete view of the range of the benthic fauna in the offshore Outer Bristol Channel area, a limited amount of small-mesh beam trawl sampling was added to the project in May 2005. This aspect is to be seen as supplementary to the grab based benthos sampling.

As with all sampling methods, the sub-sets of species recorded by trawls will inevitably be selective. Trawls sample from the bed surface and can only be semi-quantitative, even if the distances the gear is towed are well controlled. However, an advantage of using small mesh trawls is that they sample spatial areas that are several orders of magnitude greater than possible even with multiple replicate grabs. As a result, small trawls are particularly suitable for gaining additional information on the larger superficial components of the benthic fauna and some of the smaller demersal fish. When trawls cut into ripples they will also pick up individuals of some of the same infaunal species taken in the grabs, but most of the larger superficial fauna species are too widely dispersed for adequate sampling by grabs. Knowledge of the presence of the megafauna can be important as some may influence the functioning of the whole ecosystem through their roles as predators, as agents of physical disturbance or stabilisation. Being patchy, they can create small scale heterogeneity in the biotopes. Colonial species, such as the hydroids visible on some of the sea bed photos in this study, have an influence on current shear profiles near the sea bed, with local consequences for sediment deposition.

Trawl sample data sets can provide broad indications of the habitats and biotopes, whether to be viewed alongside more detailed biological information from grabs or in isolation. Epifaunal data has previously been used to allocate wider areas of the sea bed around the British Isles to broad categories (Rees *et al.* 1999; Ellis *et al.* 2000). As the gear used in the *Outer Bristol Channel Marine Habitat Study* (OBCMHS) conformed to a standard pattern of beam width, mesh sizes and tickler chains, the data obtained may be compared with that from other areas around Britain.

Results

During 15th to 18th May 2005 a series of 5 minute tows with 2 m small-mesh beam trawls was carried out. The tows were grouped within 13 box shaped areas so as to cover a range of habitat types and features along several of the multibeam corridors previously surveyed by the British Geological Survey (Figure 6.32). In each box four replicate tows were successfully undertaken, except at one where there were only three tows. Comparable data was thus obtained from a total of 51 samples across the area as a whole. Table 6.34 shows the numbers of taxa and individuals identified per tow series and how a single species dominated the catch in certain areas. Metadata for each of the tows is given in Appendix 4.

Fauna Occurrence and Abundance

Across the 51 samples, 130 separate taxa were noted, the readily recognised egg masses of a few species such as whelks being recorded separately. For the taxon categories, counts were made of numbers of individuals in each tow together with the bulk wet weights in each taxon. When looking at the species lists it is important to note that for logistical reasons the identities were all based on recognition at sea. So, for example, not all the small encrusting fauna on stones and shells, which would have needed microscopy or recourse to specialist keys for taxonomic identification, were recorded. In the circumstances, separation of some of the small fish and crabs to species was also not practicable. At the time in early May 2005, there were large numbers of very small 0-group gadoid fish in some samples. Most of these were probably Whiting *Merlangius merlangus*, though it was impossible to check the identity of every one.

Beam Trawl box	Taxa (Total)	Taxa (enumerated)	Number of individuals/ trawl box	Number of *Ophiura* spp./trawl box	Number of *Psammechinus miliaris*/trawl box	Mean weight (kg)/ standardised 250 m tow*
1	34	32	10314	9664	0	10.014
2	38	36	594	0	11	1.805
3	26	24	259	0	1	1.002
4	20	19	306	0	0	0.850
5	24	22	310	18	2	0.827
6	36	35	1033	177	0	2.842
7	37	36	4217	2848	0	3.152
8	36	35	357	57	0	1.228
9	40	38	9569	7698	1	6.435
10	54	51	1866	108	416	2.408
11	44	36	588	136	4	0.678
12	49	43	4076	2643	81	1.966
13	33	31	2746	8	1723	3.745

*Table 6.34: Summary of Beam Trawl catches from the Outer Bristol Channel (each trawl box 4 x 5 minute 2 m trawls, except BT 1 with 3 trawls; *see text p.198)*

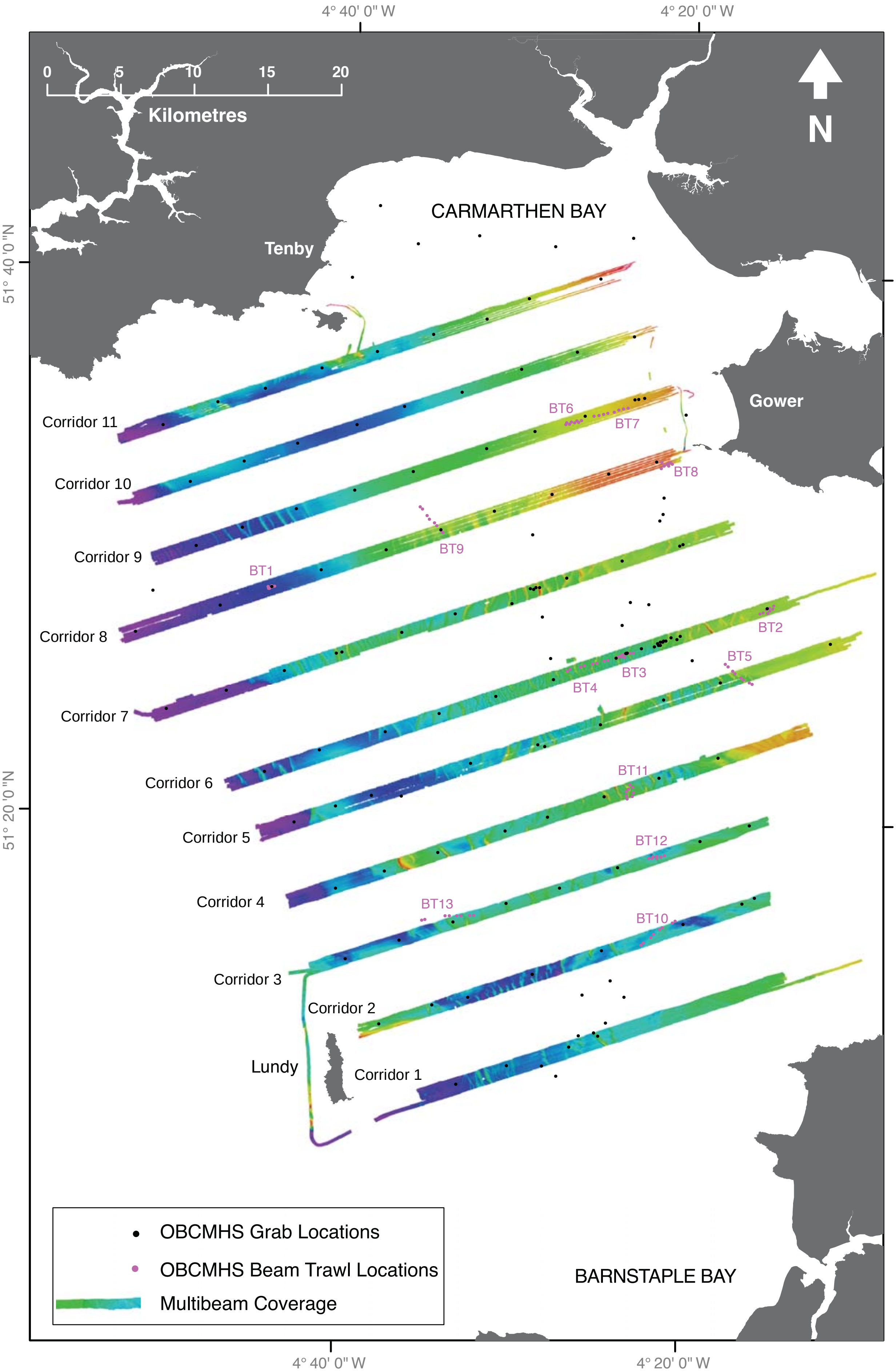


Fig. 6.32: Map showing the start and finish locations of the 2005 beam trawl tows overlaid on the multibeam corridors

Species	A	B
Asterias rubens	51	31
Pagurus bernhardus	50	33
Hydrozoa indet.	40	+
Crangon allmanni	38	16
Gadidae (0-group agg.)	32	26
Buccinum undatum	27	10
Ophiura ophiura	27	626
Macropodia agg.	24	14
Polinices catena	24	2
Ophiura albida	24	586
Polinices eggs	22	+
Eutrigla gurnardus	22	4
Pagurus prideaux	21	10
Callionymus agg.	21	5
Pomatoschistus minutus	21	12
Psammechinus miliaris	20	112
Solea solea	19	2
Aphrodita aculeata	18	5
Inachus agg,	16	32
Crangon trispinosus	15	8
Maja squinado	15	1
Aequipecten opercularis	15	28
Buglossidium luteum	15	43
Hyas coarctatus	14	7
Spisula solida	14	6
Sepiola atlantica	14	1
Merlangius merlangus	14	3
Agonus cataphractus	14	4
Limanda limanda	14	14
Corystes cassivelaunus	13	46
Liocarcinus holsatus	13	3
Astropecten irregularis	12	6
Pandalus montagui	11	4
Polinices pulchellus	11	26
Crangon crangon	10	4
Ebalia tuberosa	10	15
Echiichthys vipera	10	4
Idotea linearis	9	4
Atelecyclus rotundatus	9	7
Calliostoma zizyphinum	9	4
Trisopterus minutus	9	3
Pleuronectes platessa	9	2
Liocarcinus depurator	8	4
Liocarcinus mamoreus	8	4
Colus gracilis	8	1
Spisula elliptica	8	11
Xanthidae indet.	7	1
Philine aperta	7	37
Alcyonidium diaphanum	7	1
Ammodytes tobianus	7	3
Arnoglossus laterna	7	1
Pandalina brevirostris	6	5
Eurynome aspera	6	6
Hyperoplus lanceolatus	6	1
Sabellaria spinulosa (tubes)	5	+
Buccinum undatum eggs	5	6
Dendronotus agg.	5	4
Flustra foliacea	5	+
Scyliorhinus canicula	5	1
Raja microocellata	5	1
Microchirus variegatus	5	2
Ebalia cranchii	4	2
Nemertesia antennina	3	+
Galathea agg.	3	1
Liocarcinus pusillus	3	18
Leptochiton asellus	3	7
Palliolum tigerinum	3	2
Tapes rhomboides	3	1
Alloteuthis subulata	3	1
nodular bryozoan	3	+
Spatangus purpureus	3	1
Echinocardium cordatum	3	2
Entelurus aequoreus	3	2
Tubularia indivisa	2	+
Urticina agg.	2	1
Nephtys agg.	2	1
Pagurus pubescens	2	2
Pilumnus hirtellus	2	3
Aporrhais pespelecani	2	3
Nudibranchia indet.	2	1
Aeolidia papillosa	2	1
Mactra stultorum	2	2
Ensis siliqua	2	1
Pharus legumen	2	18
Circomphalus casina	2	4
Chamelea gallina	2	2
Clausinella fasciata	2	1
Alloteuthis eggs	2	+
Luidia ciliaris	2	1
Ophiothrix fragilis	2	4
Raja clavata	2	1
Syngnathus rostellatus	2	2
Aphia minuta	2	1
Raspailia ramosa	1	+
Porifera indet.	1	+
Nemertesia ramosa	1	+
Nemertean indet	1	1
Phascolion strombus	1	4
Owenia fusiformis	1	1
Amphictene auricoma	1	1
Sabella pavonina	1	1
Thalassema thalassemum	1	1
Pycnogonida indet.	1	1
Processa agg.	1	2
Pagurus cuanensis	1	1
Munida rugosa	1	1
Pisidia longicornis	1	3
Ebalia tumefacta	1	2
Cancer pagurus	1	1
Necora puber	1	1
Goneplax rhomboides	1	1
Pinnotheres pisum	1	1
Crepidula fornicata	1	2
Ocenebra erinacea	1	1
Comarmondia gracilis	1	1
Acteon tornatalis	1	1
Mytilus edulis	1	6
Laevicardium crassum	1	5
Abra alba	1	1
Dosinia agg.	1	4
Luidia sarsi	1	1
Crossaster papposus	1	2
Holothurian indet.	1	1
Raja montagui	1	1
Sprattus sprattus	1	1
Diplecogaster bimaculata	1	1
Lophius piscatorius	1	1
Gadus morhua	1	1
Gaidropsarus vulgaris	1	1
Trisopterus luscus	1	6
Zeus faber	1	1
Trigla lucerna	1	1
Microstomus kitt	1	1

Table 6.35: Numbers of 2m Beam Trawl tows (A), in rank order, in which each taxon occurred with the average abundance in which they were recorded (B). Colonial taxa marked '+'

The same applied to the dragonets (*Callionymus* spp.) where the small individuals of three similar species are not easy to separate under rapid sorting conditions at sea. Numbers of individuals of each taxon in each sample are set out in Appendix 5. The '+' sign is given for occurrences of the colonial species. Weights, in grams, are also set out in Appendix 5. The number of occurrences and the average numbers of individuals of each taxon, recorded in just those tows where that category was found, are set out in Table 6.35.

Of the species recorded, two occurred in virtually every tow, including the tows from the sand waves with naturally sparse epifauna. These two were the Common Starfish *Asterias rubens* (in 51 tows) and the hermit crab *Pagurus bernhardus* (in 50 tows). By contrast, others such as the Circular Crab *Atelecyclus rotundatus* and the stone crabs *Ebalia* spp. were restricted to the deeper locations with gravel or muddy gravel sediment, while Solenettes *Buglossidium luteum* and Masked Crabs *Corystes cas-*

STATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13
Number of Tows	3	4	4	4	4	4	4	4	4	4	4	4	4
PORIFERA													
Raspailia ramosa											+		
Porifera indet.											+		
CNIDARIA													
Hydrozoa indet.	+	+	+	+	+	+	+	+	+	+	+	+	+
Nemertesia antennina			+		+								
Nemertesia ramosa											+		
Tubularia indivisa												+	
Urticina agg.										<1		<1	
MINOR PHYLA													
Nemertean indet												<1	
Phascolion strombus												<1	
Thalassema thalassemum											<1		
POLYCHAETA													
Owenia fusiformis		<1											
Amphictene auricoma	1												
Aphrodita aculeata	12	<1				2	1		2	2		1	
Nephtys agg.			<1		<1								
Sabella pavonina		<1											
Sabellaria spinulosa (tubes)	+	+										+	
CHELICERATA													
Pycnogonida indet.		<1											
CRUSTACEA													
Idotea linearis						1		1	7	<1	<1		
Processa agg.									<1				
Pandalina brevirostris		<1			<1			<1	<1	<1	<1		
Pandalus montagui		4	<1		1		<1			2			
Crangon allmanni	9	15	4	2	16	1		6	3	18	22	23	
Crangon crangon						<1	<1	7	1				
Crangon trispinosus			1	5	1	<1		5	3	<1			
Pagurus bernhardus	7	12	26	44	20	25	16	16	46	27	19	40	30
Pagurus cuanensis										<1			
Pagurus prideaux	7	<1	2	<1	<1					3	<1	8	38
Pagurus pubescens										1			
Galathea agg.										<1	<1	<1	
Munida rugosa												<1	
Pisidia longicornis		<1											
Ebalia cranchii	<1	<1										<1	<1
Ebalia tuberosa		<1								18	<1	14	<1
Ebalia tumefacta										<1			
Maja squinado	1	<1	<1	<1	1			1	<1	1		<1	1
Hyas coarctatus		<1	<1						<1	9	<1	13	
Inachus agg,	8		<1							90	<1	12	10
Macropodia agg.	19	13	1		3		<1	<1	<1		2	24	1
Eurynome aspera										5		2	
Corystes cassivelaunus						24	87		29				
Atelecyclus rotundatus	12									3		<1	<1
Cancer pagurus		<1											
Liocarcinus depurator	<1	2	<1			<1						<1	<1
Liocarcinus holsatus	<1	1	<1		<1	<1	1		2		<1		<1
Liocarcinus marmoreus							<1	2	2			<1	<1
Liocarcinus pusillus										14			
Necora puber									<1				
Goneplax rhomboides	<1												
Xanthidae indet.		<1		1				<1	1			<1	
Pilumnus hirtellus											<1	<1	
Pinnotheres pisum				<1									
MOLLUSCA													
Leptochiton asellus										6			
Calliostoma zizyphinum										2	<1	5	2
Aporrhais pespelecani										<1			<1
Crepidula fornicata		<1											
Polinices pulchellus						15	16	<1	1	<1	<1		
Polinices catena			2	3	4	1	<1	1	2		1		
Polinices eggs			+	+	+	+	+		+		+		+
Ocenebra erinacea										<1			
Buccinum undatum	14	1		<1	1	1	<1		5	17		27	16
Buccinum undatum eggs							+		+				
Colus gracilis		1		<1								1	1
Comarmondia gracilis										<1			
Acteon tornatalis	<1												
Philine aperta	3					2	1		<1				

STATIONS	1	2	3	4	5	6	7	8	9	10	11	12	13
Nudibranchia indet.			<1		<1								
Dendronotus agg.										2	<1	2	
Aeolidia papillosa		<1								<1			
Mytilus edulis			<1										
Aequipecten opercularis		<1			1					36	1	72	1
Palliolum tigerinum										2			
Laevicardium crassum												<1	
Mactra stultorum						<1	1						
Spisula elliptica			<1	11				1		<1	<1		
Spisula solida			4		4			<1	<1		<1	7	
Ensis siliqua			<1		<1								
Pharus legumen							5						
Abra alba			<1										
Circomphalus casina													2
Chamelea gallina							1						
Clausinella fasciata										<1			<1
Tapes rhomboides										1		<1	
Dosinia agg.												<1	
Sepiola atlantica				<1		2	1	1	1		<1		
Alloteuthis subulata						1	<1						
Alloteuthis eggs						+							
BRYOZOA													
Flustra foliacea										+	+	+	+
nodular bryozoan											+	+	
Alcyonidium diaphanum			+						+	+		+	
ECHINODERMATA													
Luidia ciliaris										<1		<1	
Luidia sarsi	<1												
Astropecten irregularis						5	3		4				
Crossaster papposus										<1			
Asterias rubens	21	36	9	3	13	13	8	4	29	37	22	64	59
Ophiothrix fragilis										1			
Ophiura albida	2542				6		<1	2		13	34	533	<1
Ophiura ophiura	3522					39	5	2	814	4	4	4	
Psammechinus miliaris		1	<1		1				<1	96	1	20	432
Spatangus purpureus											1		<1
Echinocardium cordatum						<1	1						
Holothurian indet.								<1					
PISCES													
Scyliorhinus canicula		<1				1				<1	<1		
Raja clavata	<1					<1							
Raja microocellata				<1			<1	1	<1				
Raja montagui								<1					
Sprattus sprattus							<1						
Diplecogaster bimaculata										<2			
Lophius piscatorius												<1	
Gadidae (0-group agg.)	4	1	<1	1	3	1	<1	3	113	6	27	10	<1
Gadus morhua						<1							
Gaidropsarus vulgaris		<1											
Merlangius merlangus	1	<1	1			1	5	<1	<1				
Trisopterus luscus										<1			
Trisopterus minutus		<1	1					<1		<1	1	1	
Zeus faber		<1											
Entelurus aequoreus		<1			<1			<1					
Syngnathus rostellatus							<1		<1				
Eutrigla gurnardus		1		<1		8	4	1	2		<1	<1	2
Trigla lucerna						<1		<1					
Agonus cataphractus	1					3	<1	4	4				
Echiichthys vipera				2			<1	5			1		<1
Ammodytes tobianus	1							1			<1	<1	<1
Hyperoplus lanceolatus				1				1					<1
Aphia minuta			<1								<1		
Callionymus agg.	3	<1	<1			<1	2		<1	1	1	1	16
Pomatoschistus minutus	1			<1	1	9	19	<1	18	<1	<1		<1
Arnoglossus laterna						1	<1		1				
Limanda limanda	2					4	29	1	1				
Microstomus kitt													<1
Pleuronectes platessa						2	3		1				
Buglossidium luteum						49	32	1	22	<1			
Microchirus variegatus	1									<1		<1	<1
Solea solea	<1		1	1	1	1		3	1		1	<1	

Table 6.36: Median numbers of taxa caught in 2 m beam trawls of 5 minute duration in each of the station boxes sampled in May 2005

sivelaunus occurred almost exclusively on the finer shallow sands off Carmarthen Bay.

In general the quasi-replicate tows in the boxes tended to pick up sufficiently similar suites of species for such pooling to be valid, this being supported, with few exceptions, by the clustering of the samples when multi-variate statistical methods were applied. Median numbers across quasi-replicate tows at each station, grouped by major taxa, are given in Table 6.36.

Community Discrimination

Multivariate statistical methods using PRIMER were applied separately to the count and weight data sets to create Bray-Curtis dendrograms and MDS plots indicating the clustering of the beam trawl tows. Figures 6.33a and 6.33b show plots derived from the numerical data. The colonial taxa and sparsely occurring species found only once or with total numbers less than 5 were deleted before running the analyses. Plots derived from the weight data, including the colonial taxa are given in Figures 6.34a and 6.34b. Taxa only occurring once or amounting to less than 5 grams across the whole data set were omitted from the analyses. Hermit crabs had been weighed in the shells they occupied. To allow for differences in the distances towed, correction factors were applied to the weight data as if a standard distance of 250 m had been covered. Square-root transformations were applied prior to multi-variate analyses of both the numerical and weight data.

The numerical and weight-based plots separated the 12 tow samples in the finer sands of Carmarthen Bay (BT6, 7 & 9) from the 12 (BT10, 12 & 13) in the more uniform gravel grounds in the south of the area. The remaining 27 tow samples were mainly from the Outer Bristol Channel sands (OBel Sands), however the affinities of those from boxes 2 and 11 were variable, some appearing more similar to the southern gravelly area. This was probably because the tows often ran over both the sand waves with the adjoining megaripples and the gravel plains between the sand waves. For example, box 2 trawls also collected *Sabellaria* (Table 6.36). This broad clustering (‘assemblage III’) included both the NOBel Sands and similar grounds

Species	Median	% of Catch	SIMPER
Ophiura ophiura	62/103	83	14/7
Buglossidium luteum	49/293	100	16/6
Pagurus bernhardus	36/130	100	10/8
Corystes cassivelaunus	29/190	100	13/10
Asterias rubens	11/359	100	9/18
Pomatoschistus minutus	11/18	100	7/3
Polinices pulchellus	10/5	75	4/1
Astropecten irregularis	4/15	100	4/4
Eutrigla gurnardus	4/16	92	4/3
Pleuronectes platessa	2/110	75	2/6

A. Inshore Sand, corridors 8&9 (12 trawls)

Species	Median	% of Catch	SIMPER
Pagurus bernhardus	21/194	96	31/32
Asterias rubens	8/129	100	19/26
Crangon allmanni	7/7	92	16/5
Gadidae (0-group)	2/1	67	5/1
Polinices catena	1/4	71	5/3
Macropodia agg.	1/<1	50	3/-
Solea solea	1/26	54	3/7

B. Sand wave ridge plus intervening plains, corridors 4, 5, 6 & 8 (24 trawls)

Species	Median	% of Catch	SIMPER
Psammechinus miliaris	76/185	100	16 / 11
Asterias rubens	56/200	100	15/13
Aequipecten opercularis	36/190	100	7/9
Pagurus bernhardus	35/367	100	12/18
Inachus agg,	16/19	92	7/4
Buccinum undatum	16/209	92	7/12
Crangon allmanni	14/13	67	4/2
Ophiura albida	13/3	75	8/8
Ebalia tuberosa	12/4	67	3/-
Hysa coarctatus	8/10	67	2/2
Pagurus prideaux	5/27	83	4/4
Calliostoma zizyphinum	3/6	67	-/-
Callionymus agg.	2/7	83	3/3

C. Gravel/cobble, corridors 2&3 (12 trawls)

Table 6.37: Most common species and those characterising the different sediment regimes from beam trawls of 5 minutes duration: median numbers/weights in grams, percent occurrence and contributions to similarity within the cluster (SIMPER analysis) from numbers/weights

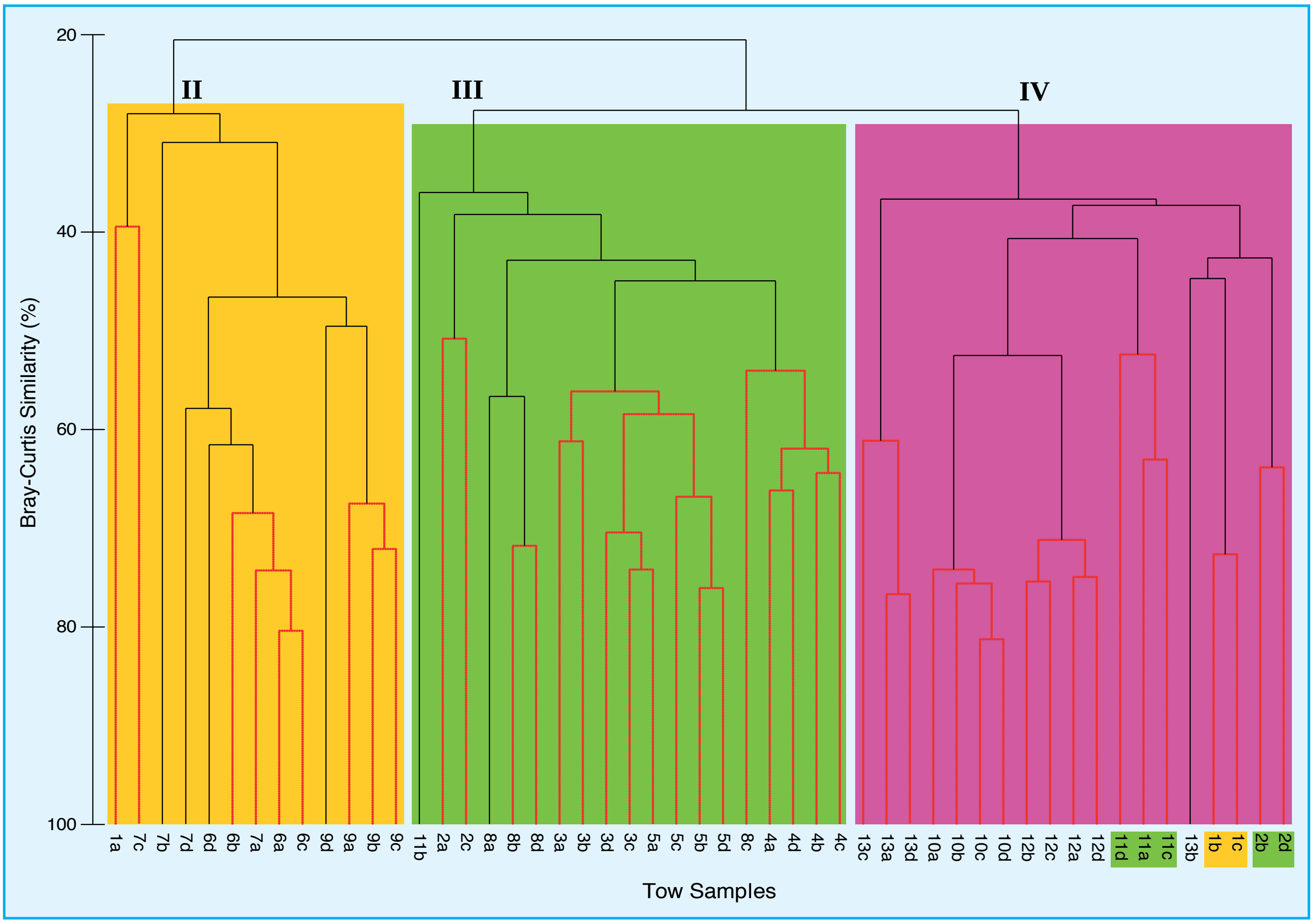
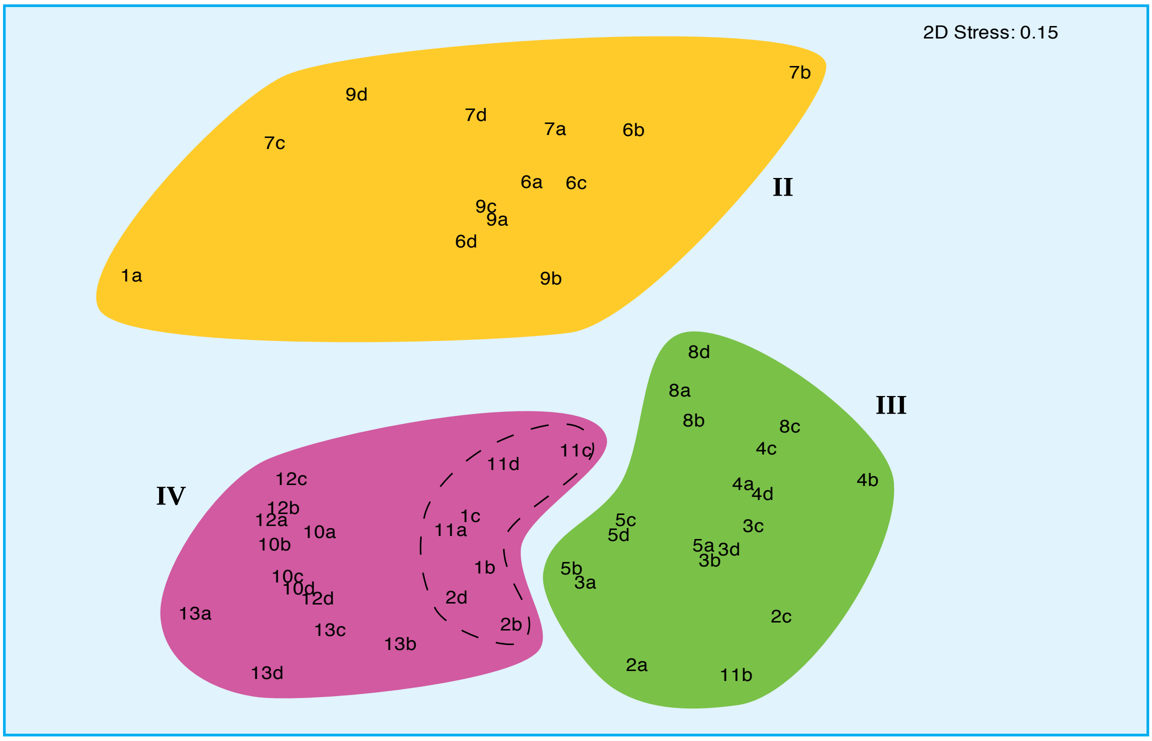


Fig. 6.33a: Bray-Curtis similarity dendrogam of numerical count data from beam trawls. The colours indicate the three broad clusters into which the 51 samples group. The tow sample numbers are coloured where the beam trawl clustering differed from the nearest adjoining grab samples. Non-significantly different samples (p<0.05) marked in red

Fig. 6.33b: MDS plot derived from beam trawl numerical count data. Groups of samples are coloured according to the three classes into which they group



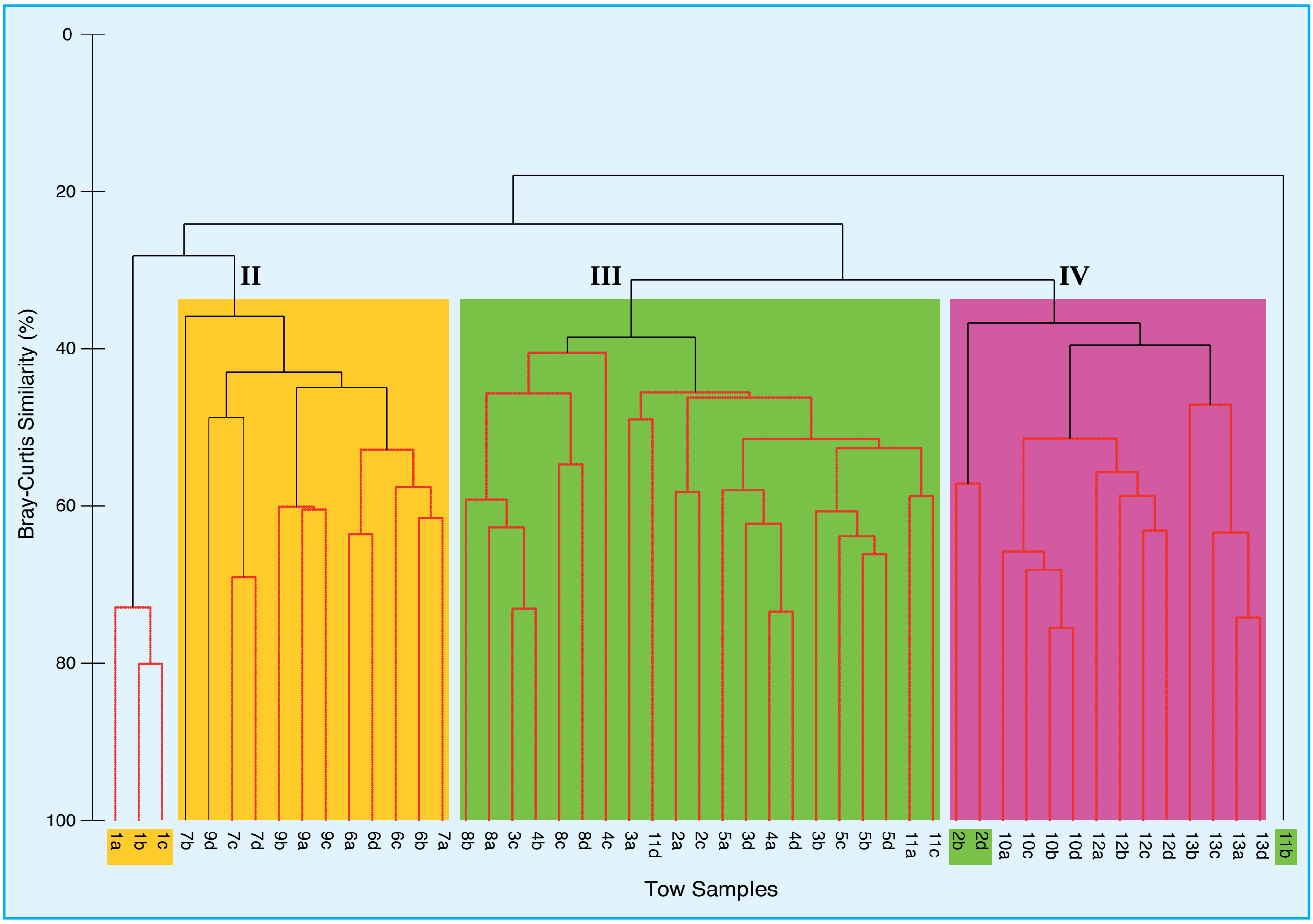
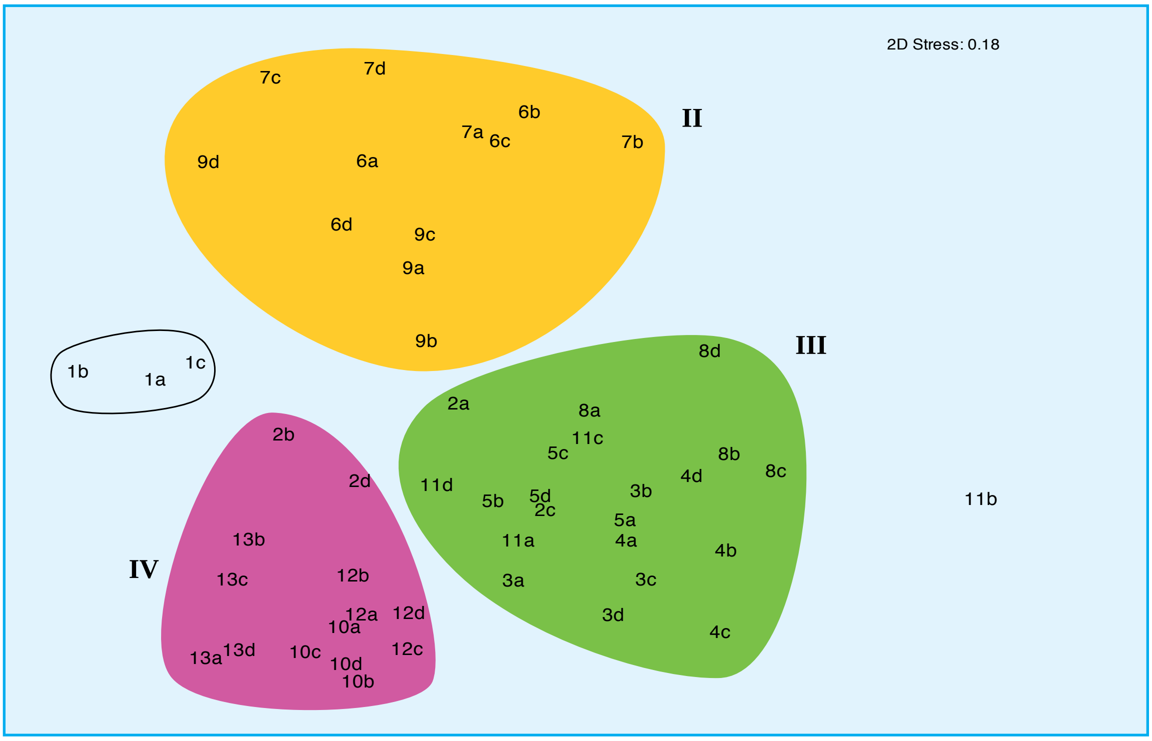


Fig. 6.34a: Bray-Curtis similarity dendrogam of weight data, adjusted for beam trawl tow distances. The colours indicate the three broad clusters into which the 51 samples group. Those from station box 1 form a fourth cluster. The tow sample numbers are coloured where the beam trawl clustering differed from the nearest adjoining grab samples. Non-significantly different samples (p<0.05) marked in red

Fig. 6.34b: MDS plot derived from weight data, adjusted for beam trawl tow distances. Groups of samples are coloured according to the three classes into which they group. Samples from one station / box form a separate cluster



where the spacing of the sand waves was wider in the Southern sector. As the catches in the sand wave areas were sparse, varying abundance of those less habitat specialised species, such as *Pagurus bernhardus* and *Asterias rubens*, had relatively more influence on the disposition of tows on the multivariate plots.

The relationships between box 1 tows and the others differed between the numerical and weight analyses (Figures 6.33 & 6.34). The sediment in this area (near grab station OBC 97) is recorded as gravelly muddy sand (gms), but the area is clearly heterogeneous since the grab fauna (e.g., see Figures 6.8 & 6.10) was closer to that of the finer sand. The trawls also collected *Sabellaria* here (Table 6.36), and the individual tows had affinities with either the finer sand fauna or the gravel faunas.

Nevertheless, apart from the faunal variability evident in sample boxes 1, 2 and 11, there was good agreement with the three main assemblages (II-IV) recognised in the grab analyses (Section 6.2).

To provide an overview of the more common elements of the epifauna and demersal fish in the above three broad sub-divisions, median numbers and weights of these taxa are given in Tables 6.37A-C. These tables also show the percentage occurrences of the taxa and, from SIMPER analyses, the percentage contribution these taxa made to the similarity within that cluster of samples.

Local Variation Within Habitat Mosaics

Within some of the survey boxes sampled in May 2005, the catches on particular Beam Trawl tows can be compared with the mosaic of sea bed features over which the trawl tracks ran. The mosaics can be inferred from the multibeam and sidescan images for the same localities. Three of the boxes had substantial sand waves with gravel or gravelly sand plains between. A fourth area, off Carmarthen Bay, showed patches with stronger acoustic backscatter within a wider area of generally flat sea bed on the sidescan images.

Figure 6.35 shows the multibeam image from the sampling box on Corridor 4, where beam trawls BT 11A

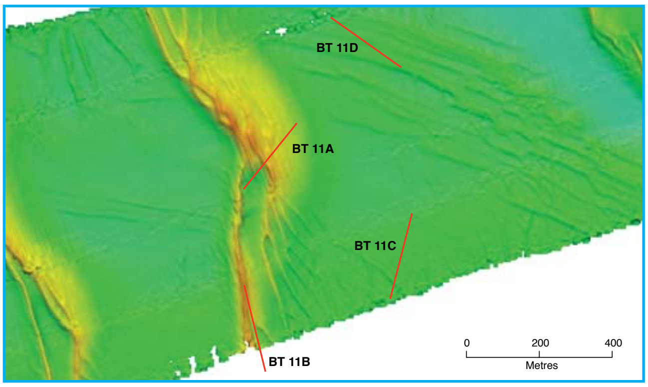


Fig. 6.35: Multibeam image from part of Corridor 4 showing where the Beam Trawl tows in the BT 11 series each ran

– 11D were taken. Of these four trawl tows, only BT 11B, was actually along the axis of a pronounced sand wave. Examination of the species lists showed that BT 11B differed from the others. In the multivariate analyses of the whole 51 samples, BT 11B also came out as discrete from any of the others. Using Bray-Curtis Similarity it was only 24% similar to the other three tows at BT 11. Most of the fauna was sparser at BT 11B than at the other three, though two fish, the Lesser Weaver *Echiichthys vipera* and Sole *Solea solea* were

Species	Mean (A,C,D)	BT 11B
Asterias rubens	207	20
Pagurus bernhardus	137	0
Solea solea	17	146
Echiichthys vipera	4	48
Hydrozoa indet.	31	5
Spatangus purpureus	29	0
Ophiura albida	25	1
Crangon allmanni	22	6
Trisopterus minutus	15	1
Gadidae (0-group)	15	0
Inachus agg.	13	0
Polinices (egg masses)	12	0
Aequipecten opercularis	12	0
Spisula solida	10	0

Table 6.38: Comparison of catches between a trawl tow along the axis of a sand wave (BT 11B) and the means of the three other tows within the same sampling box. Weights in grams after conversion to standard tow lengths of 250 metres. Only the more common taxa are shown

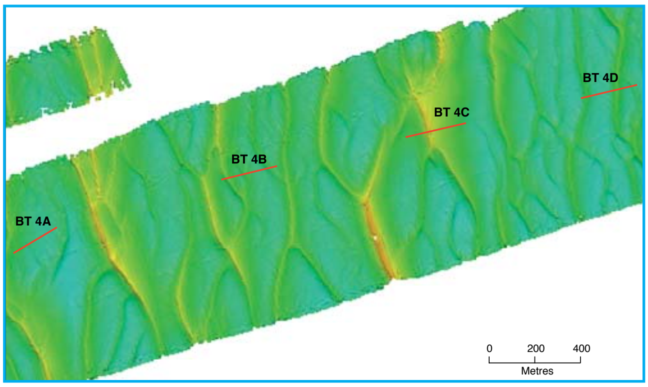


Fig. 6.36: Multibeam image showing where the beam trawl tows in the BT 4 series each ran

more abundant by weight (see Table 6.38). Soles, like dogfish, are individually relatively heavier than most of the small species caught in the 2 m beam trawl so this is probably not significant.

Differences between tows were somewhat less clear cut at the BT 4 series of tows but one of them (BT 4C) went across a larger sand wave than the others (see Figure 6.36). It will be noted that the common species were all less abundant at BT 4C than in the other three tows in the series (Table 6.39). Proportionately, the starfish *Asterias rubens* showed a greater difference between the tow crossing the large sand wave and the others than did the hermit crabs *Pagurus bernhardus*.

Species	Mean (A,B,D)	BT 4C
Pagurus bernhardus	337	251
Solea solea	102	35
Asterias rubens	86	10
Echiichthys vipera	22	0
Hyperoplus lanceolatus	21	0
Polinices (egg masses)	16	0
Hydrozoa indet.	9	4
Polinices catena	8	2
Pagurus prideaux	4	0

Table 6.39: Comparison of catches between a trawl tow across the axis of a major sand wave (BT 4C) and the means in the three other tows in this sampling box which were mainly across plains. Weights in grams after conversion to standard tow length of 250 metres. Only the more common taxa are shown

At BT 5 (Figure 6.37) none of the individual beam trawls stood out from the others. There were some differences between pairs of tows (Table 6.40) within the box which probably reflected differences in the proportions of gravel plain versus sand wave habitat in the strips of ground over which the trawl tows ran.

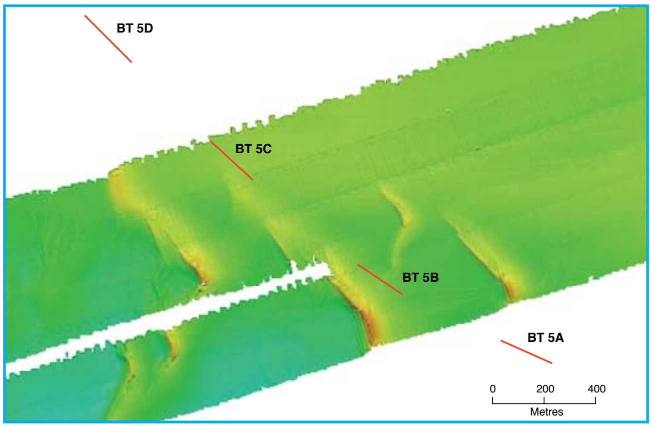


Fig. 6.37: Multibeam image showing where the beam trawl tows in the BT 5 series each ran

Species	BT 5A & D	BT 5B &C
Pagurus bernhardus	192	155
Solea solea	249	0
Asterias rubens	307	103
Buccinum undatum	80	12
Crangon allmanni	20	17
Spisula solida	26	4
Pandalus montagui	8	1
Pagurus prideaux	4	0

Table 6.40: Comparison of catches between means of two trawl tows adjacent to major sand waves (BT 5B & C) and the means of tows near this sampling box which were probably across plains (BT 5A & D). Weights in grams after conversion to standard tow length of 250 m. Only the more common taxa are shown

In the area where the BT 3 series of trawl tows were run there was a complex series of bifurcating smaller sand waves and megaripples which were relatively closely spaced (Figure 6.38). On the photographs from this general location there was enough of a sand veneer between the sand waves that little of the underlying gravel showed. As a result there was little difference between the catches in each of the trawl tows so in Table 6.41 mean weights are given from the four tows. It is noteworthy that these figures are more

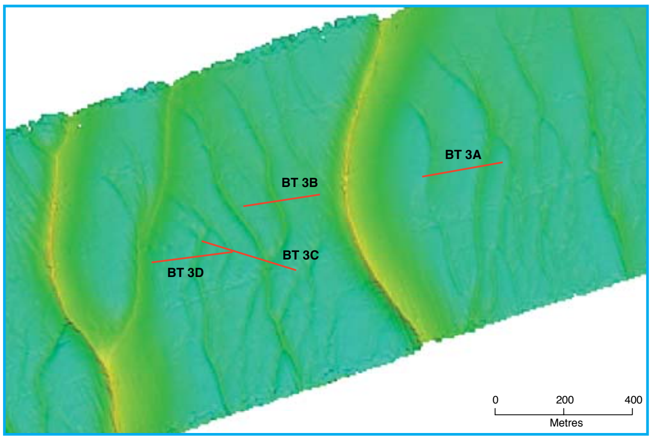


Fig. 6.38: Multibeam image showing where the beam trawl tows in the BT 3 series each ran

Species	BT 3A - 3D
Pagurus bernhardus	291
Solea solea	116
Asterias rubens	145
Spisula solida	33
Crangon allmanni	3
Polinices catena	3
Polinices (egg masses)	17
Pagurus prideaux	17
Macropodia agg.	4
Inachus agg.	4
Hyas coarctatus	4

Table 6.41: Average catches in four trawl tows on apparently similar ground (BT 3A – 3D) between major sand waves. No clear distinction was detected between the four tows. Weights in grams after conversion to standard tow length of 250 metres. Only the more common taxa are shown

similar to those from the tows at other mainly plain locations than to the tows on the larger sand waves.

Away from the more obvious mosaic patterns of habitat differences in the fields of sand waves, there were still more complex habitat mosaics at scales able to influence beam trawl catches. An example of this was seen at BT 6 off Carmarthen Bay (Figure 6.39). The area covered by this box showed discrete patches on the sidescan record with higher levels of acoustic backscatter. A video tow in the same area indicated that the patches showed up because they had numerous shells of *Ensis* spp. and *Pharus legumen* lying

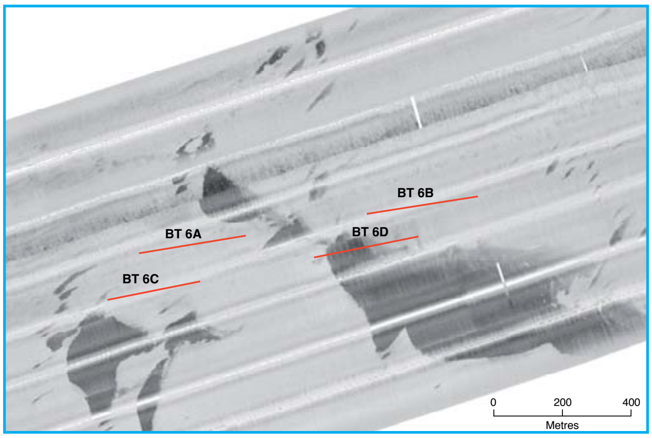


Fig. 6.39: Sidescan image showing where the beam trawl tows in the BT 6 series each ran relative to patches of ground having stronger backscatter properties

on the surface. Some of these appeared to be still articulated so that the valves were on edge and hence providing reflectors. A trawl tow across one of the backscatter patches caught substantially more of several epifaunal species (e.g., *Asterias rubens* and *Pagurus bernhardus*) than the nearby tows over apparently smooth sand (Table 6.42). Some other species typical of fine sand grounds did not however differ much or were slightly more abundant on the smoother sand (*Buglossidium luteum, Ophiura ophiura, Corystes cassivelaunus* and *Aphrodita aculeata*).

Species	Mean (A,B,C)	BT 6D
Asterias rubens	244	4423
Pagurus bernhardus	33	529
Buccinum undatum	12	214
Solea solea	4	149
Pleuronectes platessa	69	207
Polinices (egg masses)	53	110
Merlangius merlangus	19	98
Astropecten irregularis	20	140
Philine aperta	8	53
Buglossidium luteum	272	350
Ophiura ophiura	77	79
Corystes cassivelaunus	125	85
Aphrodita aculeata	44	26

Table 6.42: Comparison between mean catches in three trawl tows on apparently similar ground with uniformly low acoustic backscatter on sidescan and the single tow (BT 6D) which crossed a high backscatter patch. Weights in grams after conversion to standard tow length of 250 metres. Only the more common taxa are shown

Whelks

As whelks are the basis of a significant fishery in parts of the Outer Bristol Channel, special note was made of the catches of *Buccinum undatum* by the beam trawl. Whelks live on the surface of the sea bed and should be sampled effectively by the 2 m beam trawl. In relation to the three major zones into which the multivariate analyses divided the total fauna taken in both the beam trawls and the grabs, only small numbers of whelks were picked up in the sand wave zones (see Table 6.43). This distinction included the part of the area referred to as the NOBel Sands. Many more whelks were found on the stable gravel grounds in the SOBel Sands, with intermediate numbers in those tows made in the Approaches and west NOBel Sands, southwest of Carmarthen Bay. The muddy sand inner parts of Carmarthen Bay, where at times there has been a major whelk fishery, were not sampled during the present study.

	Sand Wave Zone	SW of Carmarthen Bay	SOBel Sands gravels
Median Number	0	2	16
Maximum	5	16	39
% Occurrence	19	64	100

Table 6.43: Relative numerical abundance and frequency of occurrence of whelks Buccinum undatum *in three generalised habitat zones in the Outer Bristol Channel from 5 minute 2 m beam trawl samples.*

A targeted investigation of whelk distribution was also undertaken in the NOBel Sands area by Henderson *et al.* (2005). They made 15 tows with 2 m beam trawls similar to those used in the present study. A pronounced difference was noted between the sand waves and the gravel ground in troughs between. Henderson *et al.* (2005) found no whelks in tows on the actual sand waves, but they were found in 70% of the trough samples. This finding and other faunal differences in that report were similar to those from the present wider OBCMHS. In view of the generally sparse fauna in the unstable habitats of the sand waves, the very low abundance actually on the sand waves was as expected. Whelks were not seen on the photographs from the sands either.

Conclusions

In the OBCMHS there was a close similarity in the broad divisions of the area by multivariate analyses of both the grab and the beam trawl data. There were enough differences in the catches of the Beam Trawls to distinguish three broad groupings indicative of different habitat types. The differences were both in the overall range of species present and in the amounts, whether expressed as numbers of individuals or as weights.

In one direction the shallower locations with finer sand, which were sampled in the north of the area, were separated by multivariate techniques from the others. These samples tended to yield more fauna than the others. Also separated fairly well were the sites to the south which had gravel or cobbles and less overlying sand. As would be expected, several species such the Green Sea Urchin *Psammechinus miliaris* and the stone crabs *Ebalia* spp., were almost exclusive to the coarser ground. There was less cohesion between samples from the middle area, including the NOBel Sands. This variability was partly because, in the limited time available, it was not possible to specifically target tows along the alignments of the sand wave crests. In most cases, the trawl tows probably went over both the sand waves with unstable conditions, and the more stable ground in the plains between. The series of 15 targeted Beam Trawl tows with similar gear by Henderson *et al.* (2005) in the NOBel Sands area did allow the expected distinctions to be made between catches made on the sand waves and on the adjoining gravel with sand veneer plains. Due to the risk to the gear, no beam trawls were run over the more obvious rock outcrops, so the spectrum of habitats and species was not fully covered.

In broad terms, the range of species collected by the beam trawl was in keeping with expectations from the same types of grounds, at these depths and in this biogeographic region. No particularly scarce species were encountered in this study, but an isolated individual of the bivalve *Callista chione* was recorded by Henderson *et al.* (2005). This is a scarce southern species for which only three live records off Wales in the last 50 years were known. This species has been considered for

Biodiversity Action Plan (BAP) listing. As no others were seen, or even any dead shells, the record can be regarded as merely of an isolated individual.

The detailed comparison made here between beam trawl tows and the subtle habitat differences showing on multibeam and sidescan images has wider implications, having seldom been looked at before. In terms of plans to map sea bed habitats at whole sea scales, the ability to detect mosaics needs careful consideration. Even if the mosaics cannot be displayed at appropriate scales for sea area maps, let alone be separated for management purposes, knowledge of their existence can still be important. The variability between quasi-replicates in small areas has particular relevance during monitoring fish and benthos. Where there are habitat mosaics which are detectable by geo-acoustic means, sampling may need to be more carefully stratified to take account of previously hidden variations in habitat types.

The close agreement between the assemblage groups recognised in both the grab and trawl analyses was confirmed by carrying out analyses of an 'epifaunal' subset of the semi-quantitative grab data (Figures 6.40-6.42). This subset included all the colonial forms (138 taxa) plus 140 other epifaunal taxa that could potentially be collected by trawl, or seen on photographs or video (in total 29% of the grab taxa). This epifaunal subset included some of the smaller species that would only be identifiable under the microscope and not detected during sorting at sea. The large number of juveniles of the 9 mytilid species were excluded – no adults being collected by either grab or trawl, and the data was subjected to a square root transformation. As a qualifier to the general agreement between grabs and trawls, it was noticeable that the subset analysis also indicated a higher degree of heterogeneity within the sand wave faunal area (assemblage III) delimited by the entire grab data (Section 6.2). Hence, the evidence of a close interaction with the assemblage IV fauna was larger (Fig. 6.40, 6.42).

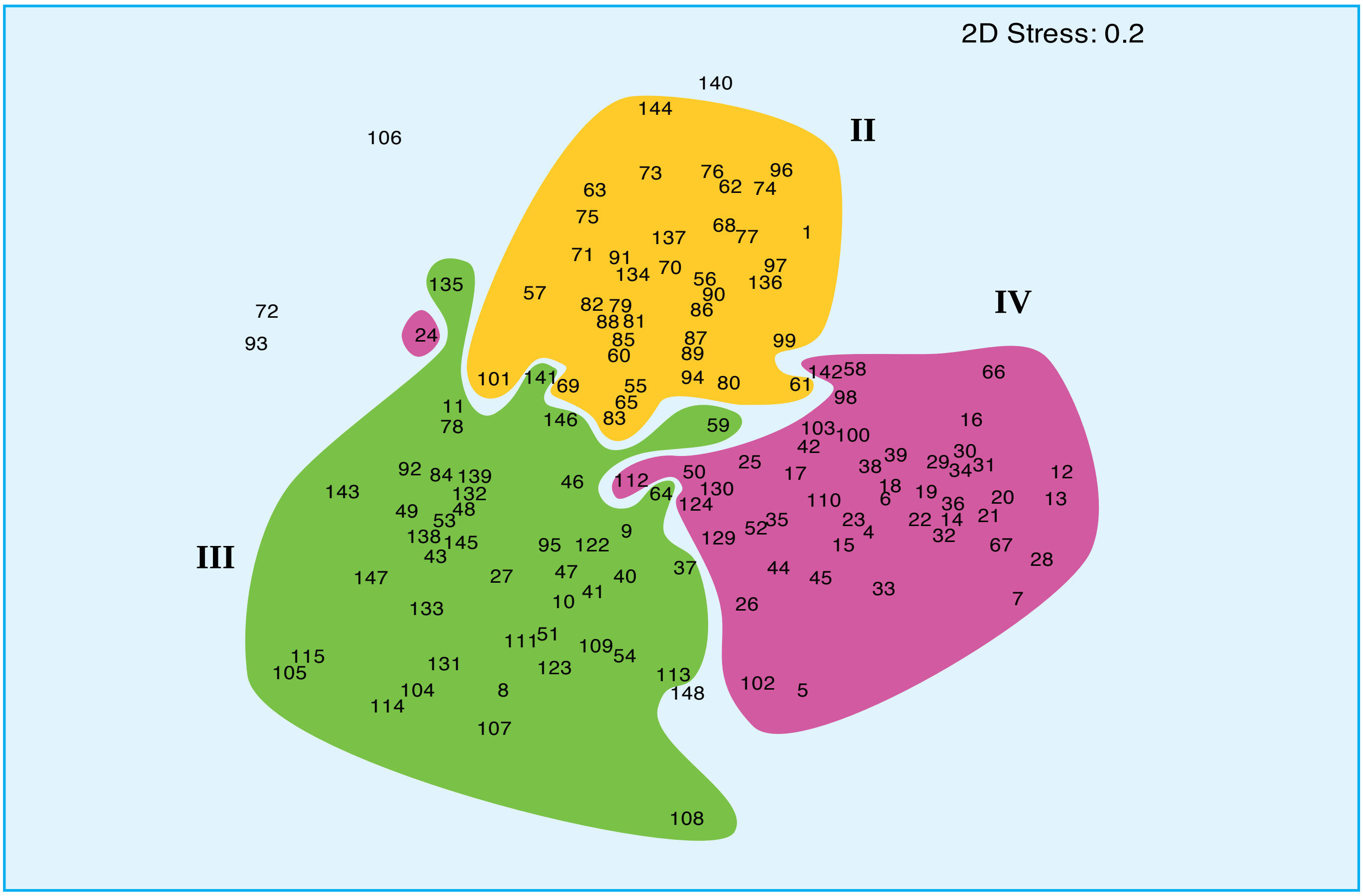


Fig. 6.40: MDS plot of an 'epifaunal' subset of the OBCMHS semi-quantitative grab data (see text of Fig. 6.41)

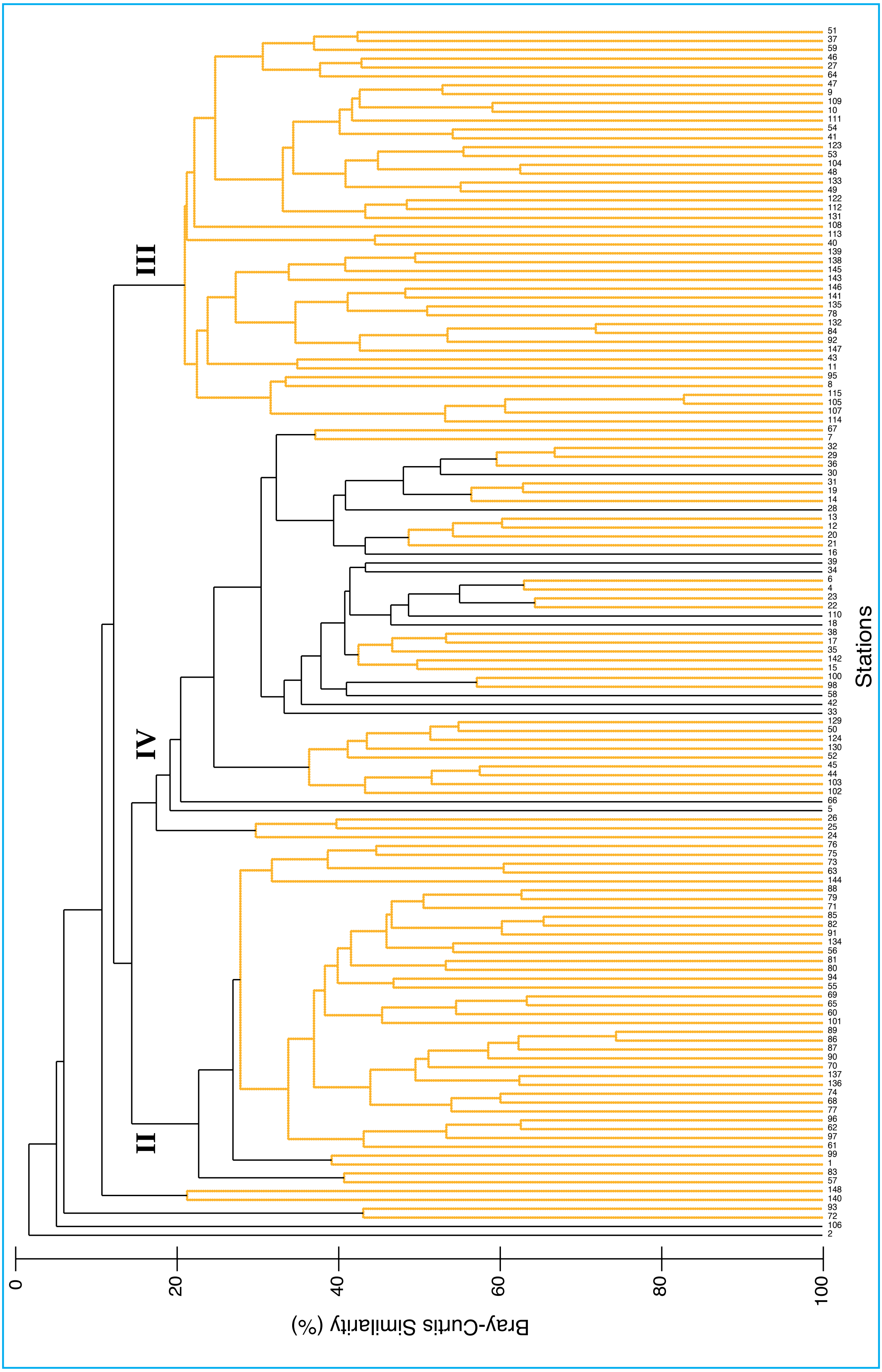


Fig. 6.41: Semi-quantitative cluster analysis of an 'epifaunal' subset of the OBCMHS grab data (square root transformed); non-significantly different stations (p<0.05) highlighted in orange

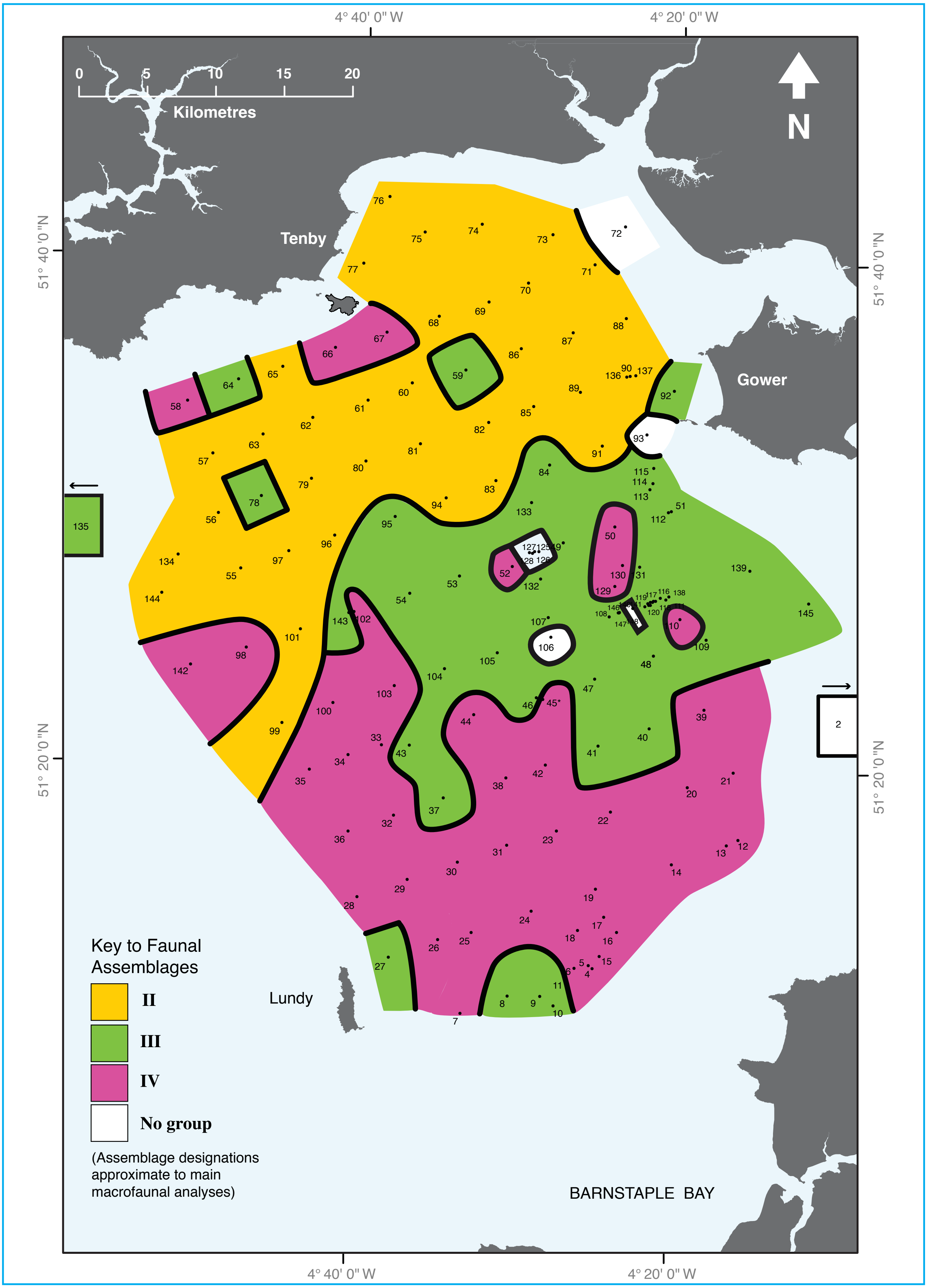


Fig. 6.42: Distribution of macrofaunal assemblages derived from an 'epifaunal' subset of the semi-quantitative grab data

6.5 Sand Wave Fauna

Sand waves were the major bedform in the Outer Bristol Channel Sands (OBel Sands), particularly in the NOBel Sands and parts of the SOBel Sands, however there were indications that the extent of their influence on the benthic macrofauna was greater in the NOBel Sands. This was attributed to the fact that the NOBel Sands were sand dominated, with a greater frequency, extent and size range of sand waves and strong currents creating a mobile sea bed surface both on the sand waves and in the intervening troughs. Surface exposure of any gravelly sediments in the troughs was patchy. Conversely, in the SOBel Sands, the sand waves were often more isolated and, lying on a gravelly pavement, separated by extensive areas of heterogeneous gravelly sediments. These gravelly sediments supported richer and more diverse macrofaunal assemblages than the sand waves, or any exposed coarser sediments in the NOBel Sands. The colonial epifauna was also better developed on the SOBel Sands mixed gravelly sediments.

The significance of sand waves in the study area, especially the large sand waves with their distinctive slope morphology and minor associated bedforms warranted further analysis with regard to sand wave faunal distributions. For example, was there any variation in fauna between steep lee slopes and shallower stoss slopes? We looked at station locations relative to the lee and stoss, and steepness of the sand wave slope. In addition, the variability between sample 'replicates' could be studied.

Station Location

The methodology of the biological sampling cruise in 2003 was designed to provide broad coverage of the Outer Bristol Channel benthic habitats. The biological cruise was originally scheduled to follow the geophysical one and the sample stations were to have been sited following initial interpretation of the geophysics. Unfortunately this was not possible, so the biological sampling took place first. Stations were sited to provide good, regularly spaced coverage along 11 planned geophysical corridors and additional station positions were selected based on prior geological or biological knowledge. Hence, to a large extent, the initial grab sampling and video imaging was carried out 'blind'. Later grab sampling (2004), and trawl and video work (2005) were targeted using the interpretation of the full geophysical and sedimentological results. A key component of the second grab survey was a transect across a large 11 m high sand wave (OBC 140, 141, 146-148) on Corridor 6 northeast of OBC 108 sampled during the first cruise.

		Sand wave Slopes	
	Flat	**Lee**	**Stoss**
II	56, 57, 58, 61, 62, 63, 68, 70, 71, 79, 82, 83, 85, 86, 87, 88, 89, 90, 94, 96, 97, 136, 137, 144	95	55
III	24, 27, **37, 40, 43**, 48, 51, 53, 54, 59, 60, 64, 65, 69, 78, 81, 84, 91, 93, **101, 102, 103**, 104, **108**, 109, 112, **124**, 138, **139, 145**	9, 26, 41, **49, 122, 140, 146**	5, 8, 11, **46**, 47, 105, **106**, 111, 123, **141, 143**, **147, 148**
IV	7, 12, 13, 14, 15, 19, 20, 21, 23, 25, 29, 30, 32, 34, 35, 36, 44, 45, **50, 52**, 80, 98, 99, 100, **142**	**39**	4, 22, 31, 33, **38, 42**

Table 6.44: Locations of OBCMHS grab stations relative to sand waves in each assemblage (II-IV). Stations in bold analysed in Figure 6.47

Analysis of species diversity in areas with at least some sand waves (Table 6.44) revealed no significant

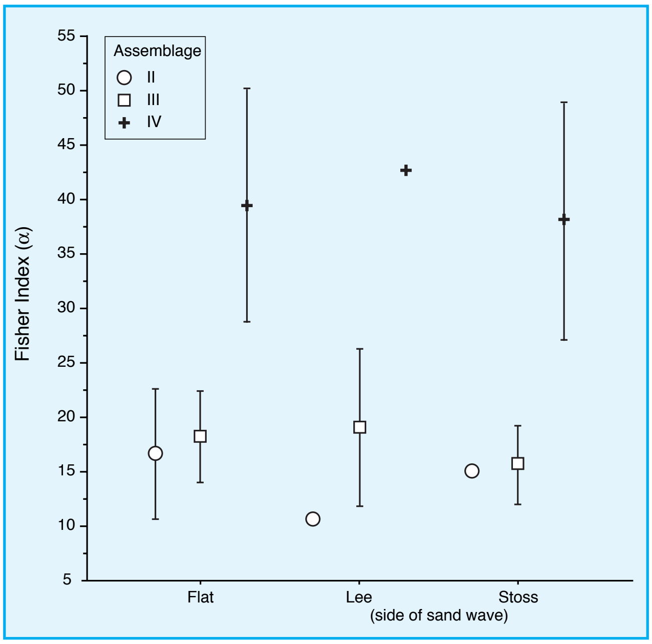


Fig. 6.43: Fisher's α diversity of each assemblage relative to sea bed position

differences with respect to station location (Figure 6.43) within each assemblage (p>0.63; III & IV). The steepest slope encountered at the grab stations was 15° at OBC 126 (Appendix 1), a sediment-only station. Stations sampled for macrofauna were either on a 'flat' sea bed or, in the NOBel Sands (III), inclined at between two and seven degrees. There was no significant difference (p>0.22) between the diversity of assemblage III stations on flat, slight (2-3°) or higher (5-7°) slopes (Figure 6.44).

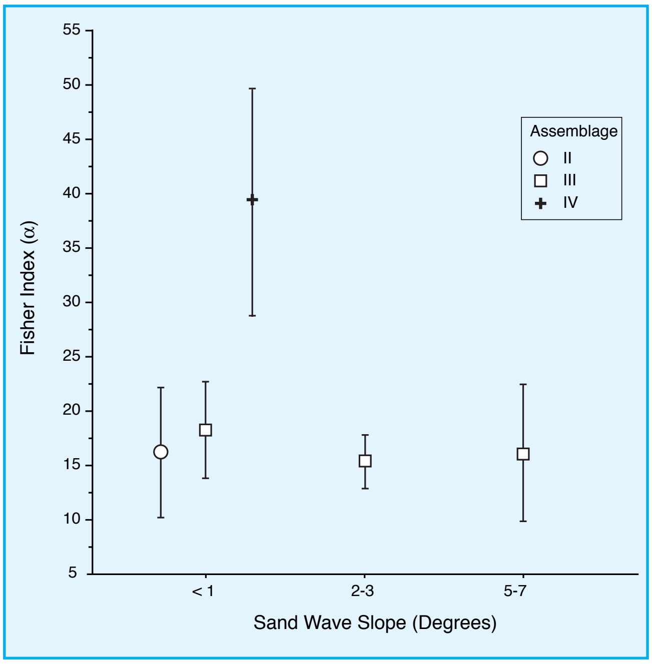


Figure 6.44: Fisher's α diversity of each assemblage relative to sea bed slope

Macrofaunal Variability

The sampling regime of taking three samples per station (two for fauna and one for sediment) has been employed in previous surveys in Welsh waters (Mackie *et al*. 1995; Darbyshire *et al*. 2002; Woolmer 2003). The rationale behind this in regional mapping studies was that two 'replicates' (when combined) help balance out anomalies due to the likely patchiness of macrofaunal species or sampling artefacts. A higher number of replicates would be required for population studies.

In these earlier surveys, and the present one, grab station positioning was carried out using the Global Positioning System (GPS) and latterly Differential GPS available on the R.V. *Prince Madog*, with the ship static holding position, though sometimes drifting in the short periods while replicate samples were taken. Examination of macrofaunal data from the 1989 and 1991 Southern Irish Sea surveys (Mackie *et al*. 1995) showed that each pair of replicates from 49 stations grouped together first in a cluster analysis; replicates from only two stations (stns 16 & 51) were separated on the dendrogram (Mackie 2004). However, in the OBCMHS, sample replicates showed less fidelity (Figure A8.19). The largest differences were evident at assemblage III and IV stations, particularly the former in the NOBel Sands (Table 6.45).

This larger degree of discrepancy between replicates was undoubtedly due to interactions between the scales of sea bed heterogeneity and replicate positioning spread. The former was clearly evident at various scales from sea bed video, photographs and sidescan images (Chapter 5 & Data DVD-ROM). Positional spread in topographically varied areas such as the sand wave fields in the NOBel Sands was exacerbated by the intense sampling schedule (Figure 3.11), sometimes in high tidal flows. For example, in a 1 knot tidal stream, when 3 samples are taken the difference in position between the first and third points where the grab would land might be 150-200 metres apart. The spread could thus have been significant in proportion to the basal width of a single sand wave and spacing of the waves. Such spreads of presumed replicates could be reduced in several ways but with added time penalties (see Boyd 2002: 40-42). Using Differential GPS (DGPS) it would be possible to repeatedly reposition the ship to sample within a few metres. It must be remembered that the deployment position on the ship may itself be 15 metres from the DGPS aerial so the ship's heading needs to be accounted for as well. In deeper water, acoustic positioning systems involving the attachment of a transponder to the grab might be justified. Ships fitted with Dynamic Positioning are capable of holding position with great accuracy. Indeed, in some situations, it may be necessary to adjust position between samples to avoid re-sampling exactly the same place (Boyd pers. comm.). All of these methods would increase the survey costs.

Visual imaging can help target sampling to particular sediment types and The Centre for Environment,

	Group together+		Same Assemblage				Different Assemblage	
			Same cluster		Different cluster			
	N	Stations	N	Stations	N	Stations	N	Stations
I	**4**	93, 113, 114, 115	–		–			
II	**28**	1, 56, 57, 58, 61, 62, 63, 68, 70, 71,72, 74, 75, 76, 77, 85, 86, 88, 90, 92, 95, 96, 97, 134, 135, 136, 137, 144	**5**	55, 73*, 82*, 89*, 94*	–			
II/III							**4**	78, 79, 83, 87
III	**25**	5, 27, 41, 43, 49, 59, 64, 69, 80, 81, 84, 91, 101, 102, 103, 106, 122, 124, 130, 133, 139, 140, 145, 147, 148	**22**	8*, 9*, 10*, 11, 24, 37, 40, 42, 46, 48, 51*, 60, 107, 108, 109, 111, 123, 131, 138, 141, 143, 146,	**9**	44, 47, 52, 53, 54, 65, 104, 129, 132		
III/IV							**8**	25, 26, 35, 36, 98, 100, 110, 112
IV	**14**	6, 14, 16, 18, 20, 23, 29, 30, 31, 32, 34, 39, 50, 142	**4**	15*, 19*, 22, 99	**4**	4, 7, 17, 38		
Other	**1**	2	–		–			
Other/III							**1**	105
Total	**72**		**31**		**13**		**13**	

*Table 6.45: Fidelity of replicates at each Outer Bristol Channel grab station (log transformed quantitative data; SIMPROF test). + replicates not significantly different (P<0.05); * replicates in close proximity on dendrogram*

Fisheries & Aquaculture (Cefas) have often deployed a Hamon grab with a video camera attached (Brown *et al.* 2001; Boyd 2002; Boyd *et al.* 2004). The sea bed can be viewed in real time prior to sampling and the grab set down on the desired substratum. Alternatively, in sand wave fields it ought to be possible to use echosounder readings to gauge when to set down the grab on a sand wave from a drifting ship as opposed to landing it in the trough part of the habitat mosaic.

Another, but more laborious, approach is to take many replicates and, by post-sampling stratification, based perhaps on visual sediment types, separate sand wave and trough deployments.

Each sample taken in the OBCMHS was assessed by examining the surface sediment immediately after collection and before emptying the grab. If the sediment type differed between samples, then further grab deployments were made to obtain additional matching samples. Experience shows, however, that visual assessments are variable, commonly overestimating the mud content of fine sediments (Figure 6.45). Gravel and shell content was also difficult to assess in the sandy sediment categories.

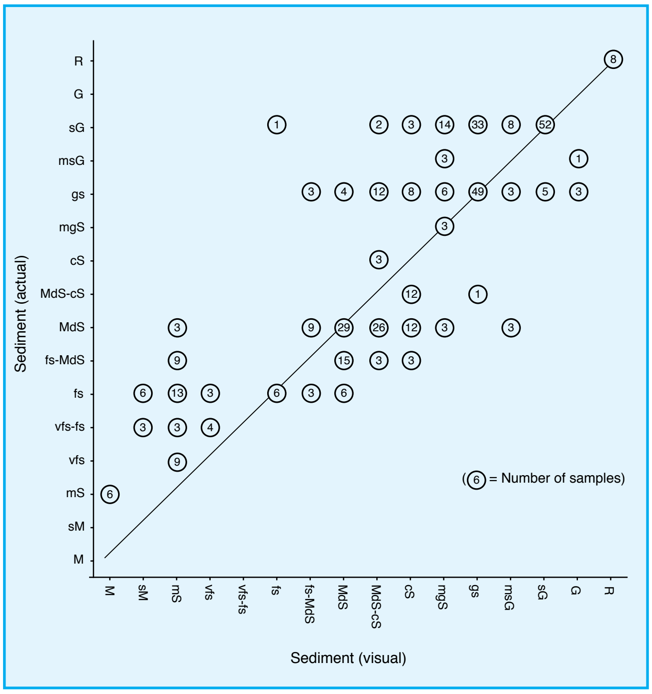


Fig. 6.45: Relationship between visual assessments of sediment categories and those derived from particle size analyses

The relationship between visual assessment and actual analysis of the sediments relies on the assumption that the latter are representative of the grab samples taken at each station. Ideally sediment samples would be taken from exactly the same places as each faunal sample. The simplest method would be to take a subsample of the surface sediment from each grab prior to processing the remaining material for macrofauna. Unfortunately most of the macrofauna inhabit the top 5 cm of sediment (Lie & Pamatmat 1965; Sanders 1960; Shirayama & Horikoshi 1982; Ferraro & Cole 2004) and, furthermore, are likely to be contagiously distributed within the sample area (e.g., Gage & Geekie 1973; Gage & Coghill 1977; Riddle 1984). Hence removal of any surface subsample will alter the species richness and relative abundances of the sampled fauna to a variable and unknown extent. Other solutions to this 'problem' involve samplers with internal partitions or dual grab arrangements (see Mackie *et al.* 2006). However, these are likely to increase the number and area of edges that the grab has to force into the sediment. This would undoubtedly lead to an increase in the failure rate of the sampler on the coarser sediments. Equally, the sediment in one grab partition or co-joined grab could differ from that in the other if small-scale sediment heterogeneity was present. Therefore all methods of obtaining 'matching' sediment and faunal samples have their pros and cons. In the present study macrofaunal sample integrity was prioritised.

Sand Wave Transect

Additional grab sampling of 13 stations was carried out over four days in the summer of 2004. The sampling vessel (R.V. *Noctiluca*) repositioned using GPS for each sample. Five of the stations (OBC 140, 141, 146-148) were selected to examine the benthos relative to position both on and between sand waves (Figure 6.46). Although earlier analyses (see above) showed no significant differences in species diversity relative to location in the sand wave zone, this did not discount the possibility that faunal composition could vary in a measurable manner.

Multivariate analyses of the station data (combined replicates) carried out in Section 6.2 (see Figures 6.7 & 6.9) revealed no distinct differences between

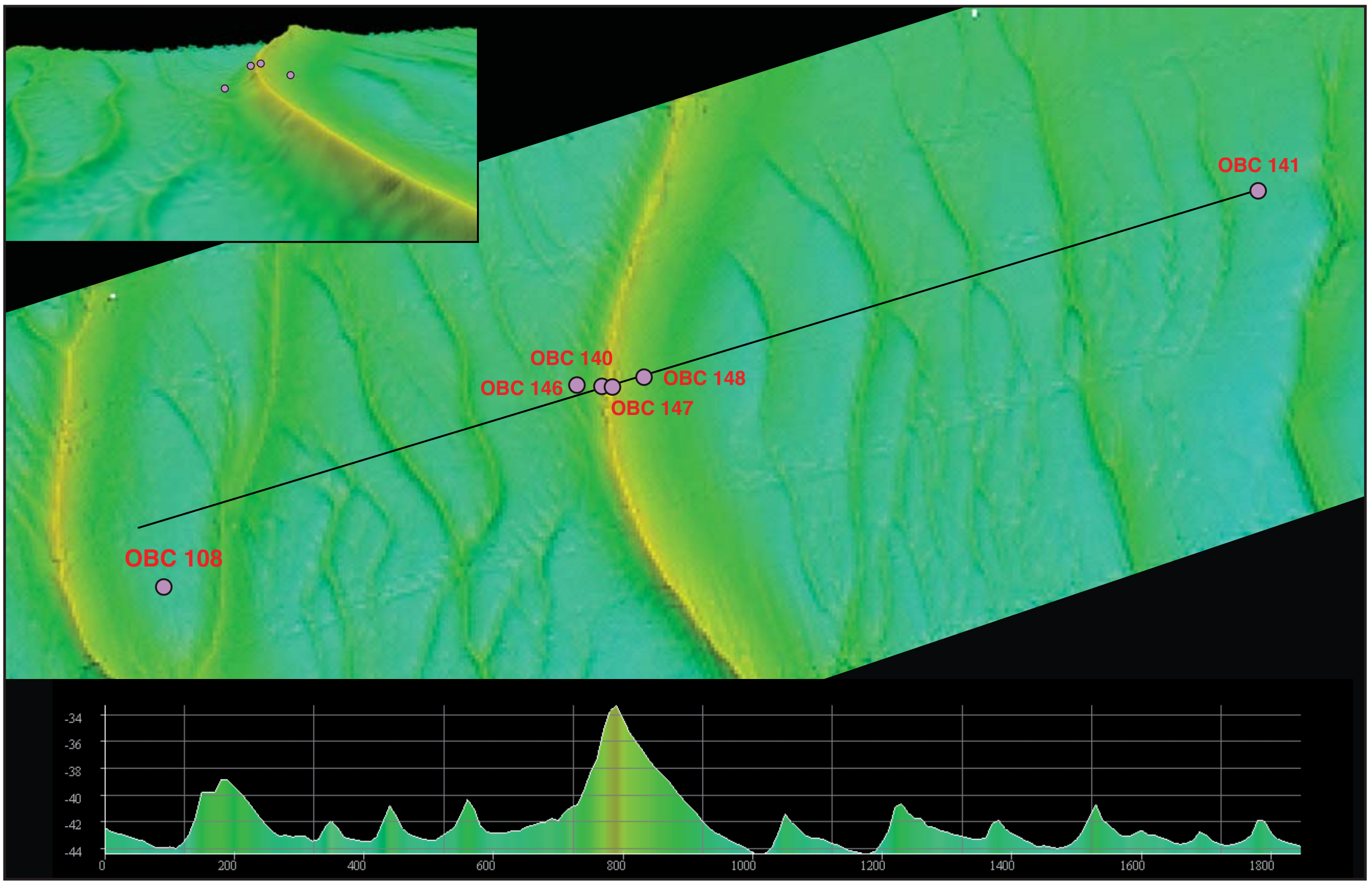


Fig. 6.46: Position of stations in transect across an 11 m high sand wave in the NOBel Sands (Corridor 6 – 51°26.2′N 4°23.5′W). Profile projected from line marked on main image

the fauna on the lee or stoss slope, or between near the crest and base, of the sand wave. Neither were there any major differences relative to more distant stations; OBC 141 on another stoss slope and OBC 108 on a flat sea bed. The combination of replicates in the station analyses could potentially produce species combinations that masked such differences. Therefore, this was investigated using the individual grab samples from the sand wave transect, plus replicates from 15 other NOBel sand wave stations assigned to assemblage III (Table 6.44). Six stations, including OBC 50 & 52 in the NOBel Sands area, from the richer assemblage IV were included for comparative purposes. Two of these (OBC 42 & 46) were of additional interest since three macrofaunal grabs had been taken at each, and the sediments of the third samples were visually assessed as differing from the two pairs (Appendix 2). These extra samples were omitted from the quantitative multivariate and univariate analyses of Sections 6.2 and 6.3, but were included in the qualitative (presence-absence) ones.

The dendrogram (Figure 6.47) revealed the two 'near-crest' stations (OBC 140 & 147) as having different, but closely related, species compositions. These two stations were only slightly different from most of the other transect samples, irrespective of location. All the sand wave transect samples were part of a larger cluster within subgroup IIIa. There was no clear evidence that location on the sand wave influenced fauna composition in any major way. It was interesting that the sand wave samples in subgroup IIIa were in two groups separate from another two groups that included samples from flat sea bed areas, but this could simply be an artefact resulting from the selection of a particular subset of stations. The pattern was less clear when additional samples were included.

As anticipated, the samples from the assemblage IV stations mostly grouped together. Both samples from OBC 50 and one from OBC 52 had a close affinity with one sample from OBC 38 in the SOBel Sands. The other OBC 52 sample had a fauna that belonged to the sand wave subgroup IIIa. Indeed one sample was

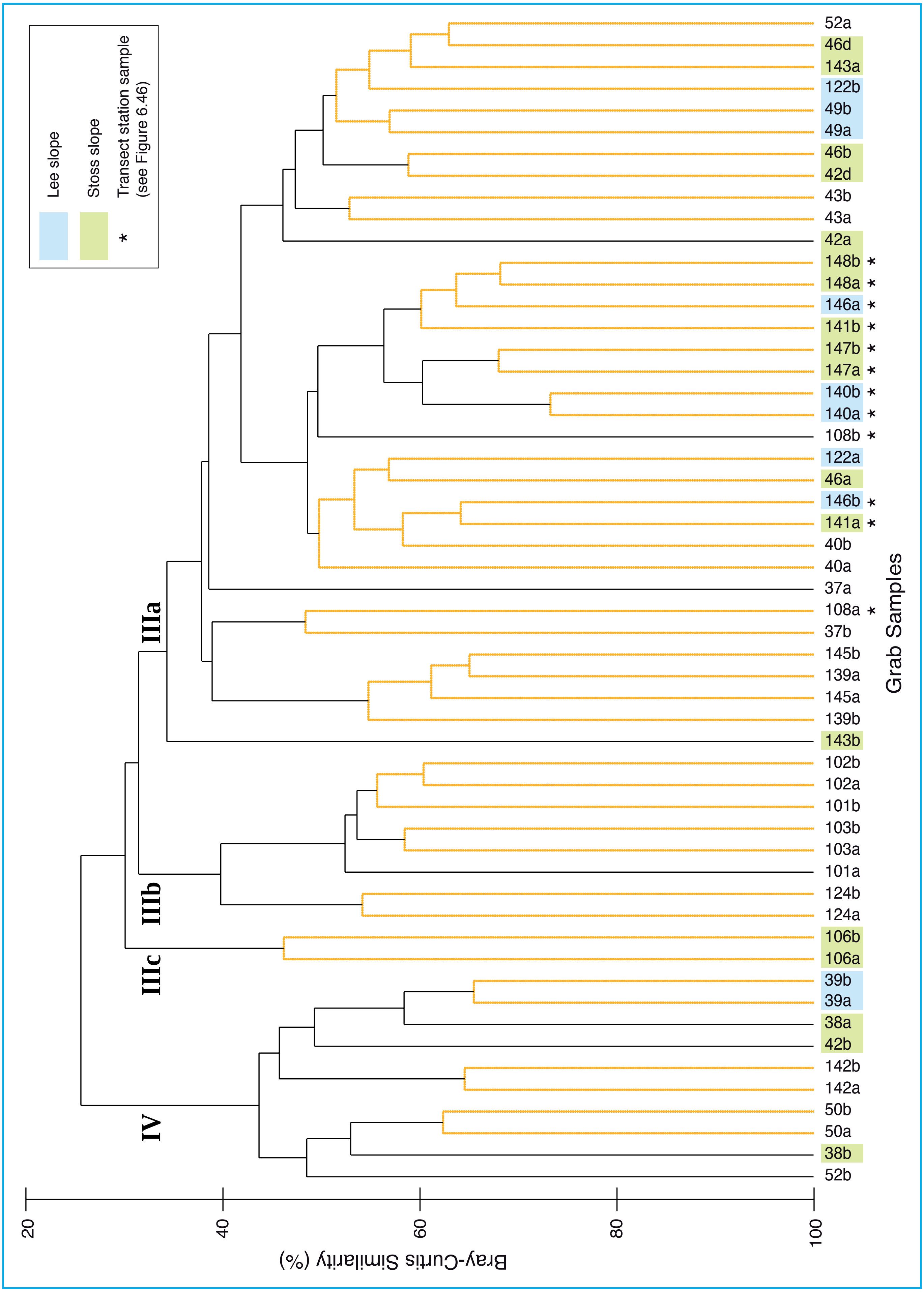


Fig. 6.47: Quantitative cluster analysis of selected OBCMHS grab samples relative to flat sea bed or slope of sand wave (lee/ stoss) in NOBel Sands. Non-significantly different samples (p<0.05) marked in orange

noted in the deck log as having more gravel than the other (Appendix 2).

The three replicates at OBC 42 and OBC 46 revealed contrasting relationships. It was noted in the log that one macrofaunal sample at OBC 42 contained more gravel than the other 'medium-coarse' sand samples and the cluster analysis confirmed that their faunal compositions correspondingly differed; OBC 42b clustering with assemblage IV samples and the others grouping with subgroup IIIa. The OBC 42b sample was very rich with 120 taxa including colonial forms compared to 37 and 51 taxa for the other samples. For the second station, OBC 46a was sandier than the gravelly sand pair, but all clustered within subgroup IIIa. The sandier sample was the richest of the three, with 62 taxa compared to 35 and 54, lending support to the earlier finding that the gravel content of the assemblage III sand waves did not enhance diversity.

In summary, there was no evidence that macrofaunal composition or species diversity differed between the lee and stoss slopes of the sand waves in the NOBel Sands. Little sampling has taken place on the sand wave crests *per se*, but the data available from grab sampling (including that by Environmental Resources Management 2002) identified no distinct crest fauna. One trawl sample (BT 11B) taken mainly along the ridge crest of a sand wave (see Section 6.4) was suggestive of a very sparse epifaunal assemblage with some large Sole (*Solea solea*) and Lesser Weaver (*Echiichthys vipera*) fish. The analysis using individual grab samples again showed that assemblage IV faunas occurred in localised areas of exposed gravel within the NOBel Sands, but there was no associated enhancement of diversity. Any increased gravel contents of sand wave field sediments had little or no effect on faunal composition or diversity. Extensive sampling (44 stations) carried out in NOBel Sands licence area 473 (Environmental Resources Management 2002) with sediment subsamples taken from the grabs revealed the same faunal patterns. In the SOBel Sands, where the waves were more widely spaced and isolated, the more extensive gravelly sediments supported higher diversity faunas than the sands. One of the factors in this is that bed load transport of sand here is less influential as a component of stress on the sea bed.

6.6 Species-Environment Relationships

The distribution of the benthic macrofaunal assemblages in the Outer Bristol Channel (Figure 6.10) showed good agreement with the distribution of the bedforms and sediments (Figures 4.1 & 4.21). The relationships between the species and environment (see Section 3.4) were examined further using the BIO-ENV and LINKTREE procedures in the PRIMERv6 program (Clarke & Gorley 2006).

The BIO-ENV procedure identified six variables as 'best explaining' the faunal distributions at 110 stations throughout the whole area (Table 6.46). Depth and three or four sediment attributes produced only slightly lower correlations. Depth plus sand and mud content were the primary variables in all cases. As sand and gravel content were strongly correlated, gravel could have replaced sand in the analysis. The maximum correlation was not improved by incorporating slope in addition to the ten variables initially included.

Warwick & Uncles (1998) showed that the macrofaunal assemblages in the Bristol Channel could be related to tidal stress, rather than sediments. Later, Woolmer (2003) included four hydrodynamic (tide and wave) variables in a BIO-ENV analysis of the benthic macrofaunal distributions in Carmarthen Bay. The hydrodynamic variables used were derived from a model produced by Posford Duvivier Environment & ABP Research (2000). The 'best match' between the fauna and environmental variables (ρ_W=0.795) was obtained with mud, median grain size (phi) and wave height. For the Outer Bristol Channel, hydrodynamic data from a current velocity model (Figure 2.8) were kindly made available by the Proudman Oceanographic Laboratory. Current velocity was incorporated into a BIO-ENV analysis, but no increased resolution of the species-environment relationship was obtained.

Number of Variables	Correlation	Variables
6	0.615*	Depth, Sand, Mud, $CaCO_3$ (gravel), Mean phi, Inman Sorting
5	0.613	Depth, Sand, Mud, $CaCO_3$ (gravel), Mean phi
	0.611	Depth, Sand, Mud, Mean phi, Inman Sorting
	0.599	Depth, Sand, Mud, $CaCO_3$ (gravel), Inman Sorting
	0.588	Depth, Mud, $CaCO_3$ (gravel), Mean phi, Inman Sorting
4	0.606	Depth, Sand, Mud, Inman Sorting
	0.602	Depth, Sand, Mud, Mean phi
3	0.587	Depth, Sand, Mud

*Table 6.46: Spearman correlations for environmental variable combinations best 'explaining' quantitative macrofaunal distributions in the Outer Bristol Channel (All variables listed log transformed, except depth and sand content, and normalised). * $p \leq 0.001$*

While BIO-ENV identified the 'best' overall multivariable correlation for the Outer Bristol Channel area, LINKTREE permitted more detailed evaluations of the species-environment relationships in smaller groups of stations. The technique successively subdivided the stations according to single environmental variables from the six identified in the BIO-ENV analysis above. The resulting linkage tree (Figure 6.48) essentially produced a dichotomous key to the fauna at each Outer Bristol Channel station. The variables involved at each nodular split are given in Table 6.47, along with the SIMPROF test (π, & significance p) and tree (ANOSIM R, & group differences B) statistics. The variable states identified for each node can be used for predictive purposes. If environmental data (for the variables in question) are available at a new station within the OBCMHS area, then the probable affinities of its fauna can be determined.

Heading Node & Station split	Variable	LHS (RHS) split	π	Sign. (p)	R	B%
A—>B, (115)	Inman Sort, Sand	>0.20 (<0.18) <100 (100)	8.16	0.1	0.82	91.2
B—>C, (114)	Sand	<100 (100)	8.03	0.1	0.56	77.3
C—>D, (72, 76)	Depth	>8.0 (<7.9)	8.01	0.1	0.52	74.3
D—>AV, E	Mean phi	>2.16 (<2.08)	7.88	0.1	0.46	64.9
AV—>AW, (58, 62, 96)	Sand, Depth	>80.7 (<72.3) <34 (>38)	7.19	0.1	0.89	38.6
AW—>57, (AX)	Mean Phi	<2.16 (>2.17)	3.66	0.1	0.73	19.7
AX—>AY, (92)	Mud, Sand	>0.29 (<0.04) <99.7 (100)	3.18	0.1	0.84	16.3
AY—>63, 82, 85, (AZ)	Depth	>28 (<25)	2.71	0.1	0.70	7.5
AZ—>BA, (68, 77, 86)	Mean phi	>2.55 (<2.48)	2.68	0.1	0.61	3.7
BA—>70, (BB)	Depth, Mean phi, Inman Sort	>16 (<11) <2.55 (>2.74) >0.57 (<0.56)	2.58	0.1	0.84	2.8
BB—>74, 75, (71, 73, 88)	Mud, Sand	>3.31 (<1.79) <96.3 (>98.2)	2.23	0.2	0.58	0.7
E—>20, (F)	Sand	<26.0 (>28.3)	7.32	0.1	0.41	64.3
F—>G, (95, 105, 113)	Inman Sort	>0.31 (<0.3)	7.19	0.1	0.41	61.1
G—>AG, H	Sand	>90.4 (<87.9)	7.09	0.1	0.39	49.6
AG—>AH, (135)	Mean phi, Depth	<1.99 (>2.08) <52.1 (>52.1)	5.30	0.1	0.41	44.5
AH—>AI, AP	Mud	<0.03 (>0.04)	5.36	0.1	0.39	39.2
AI—>AK, AJ	Mean phi	>1.11 (<1.1)	4.00	0.1	0.40	30.8
AK—>AL, (69, 91, 93)	Depth	>25 (<21)	3.66	0.1	0.48	25.9
AL—>103, (AM)	Depth, Mud	>49 (<46) 0 (>0)	3.79	0.1	0.56	28.4
AM—>AN, (112)	$CaCO_3$(g), Sand, Inman Sort	<0.33 (>1.38) >94.8 (<90.8) <0.52 (>0.57)	3.13	0.1	0.44	19.2
AN—>8, 48, 53, 84, 107, 131 (AO)	Mean phi	<1.53 (>1.54)	3.11	0.1	0.23	13.4
8, 48, 53, 84, 107, 131			1.35	6.7		
AO—>106, (54, 102, 104, 129)	Depth, Sand	<40.0 (>40.5) <100 (100)	3.38	0.3	1.00	25.9
(54, 102, 104, 129)			0.86	61.2		
AJ—>9, 49, 111, (27)	$CaCO_3$(g)	<0.54 (>2.56)	3.83	0.2	1.00	39.1
AP—>26, (AQ)	Inman Sort, Mean phi	>1.08 (<0.81) <0.83 (>1.26)	5.31	0.1	0.42	35.7
AQ—>AR, (94, 101, 108)	Inman Sort	>0.44 (<0.42)	5.51	0.1	0.38	36.2
AR—>AU, AS	Depth	>42 (<36)	4.37	0.1	0.55	25.5
AU—>78, 79, (55, 56, 134)	Depth, Mean phi	<45 (>46)				
>1.61 (<1.58)	4.40	0.1	0.67	12.6		

Table 6.47: Macrofaunal station linkage tree (LINKTREE routine) description (see Figure 6.48)

Heading Node & station split	Variable	LHS (RHS) split	π	Sign. (p)	R	B%
AS—>90, 133, (AT)	Inman Sort	<0.47 (>0.50)	4.83	0.1	0.48	21.4
AT—>83, 87, 89, (59, 60, 65, 81)	Depth, Sand	<28 (>29) >98.6 (<98.5)	3.57	0.1	0.87	12.8
(59, 60, 65, 81)			0.30	96.1		
H—>97, (I)	Mud	>16.9 (<10.6)	7.76	0.1	0.52	53.6
I—>J, (61)	Mud, Inman Sort	<2.39 (>10.60) <1.43 (>1.89)	7.68	0.1	0.43	49.8
J—>K, T	Mud	<0.21 (>0.30)	7.66	0.1	0.33	36.8
K—>L, (34)	Inman Sort	>0.35 (<0.31)	5.73	0.1	0.44	40.1
L—>22, (M)	Sand	>87.9 (<87.4)	5.06	0.1	0.50	36.2
M—>99, (N)	Depth	<55 (>55)	4.46	0.1	0.44	30.3
N—>P, O	Sand	>57.4 (<56.1)	3.99	0.1	0.46	22.9
P—>Q, (35)	Mean phi, Depth	<1.76 (>1.90) <52 (>55)	3.38	0.1	0.62	22.4
Q—>R, S	Depth	<40 (>41)	2.76	0.1	0.40	15.5
R—>47, 109, 123, (124)	Mean phi	<1.46 (>1.51)	3.96	0.1	1.00	24.3
S—>11, 24, 41, 43, 46, (10, 40, 52)	Mud	0 (>0.07)	1.05	3.7	0.68	8.5
11, 24, 41, 43, 46,			0.90	33.2		
O—>37, (50, 100, 110)	Sand, $CaCO_3$(g)	<28.3 (>46.9) <0.717 (>3.07)	6.29	0.1	1.00	36.8
T—>42, 51, (U)	Inman Sort	<0.46 (>0.47)	8.35	0.1	0.76	50.6
U—>5, 64, 80, (V)	Depth	<39.0 (>40.7)	7.23	0.1	0.85	41.6
V—>W, (44)	$CaCO_3$(g)	>1.03 (0)	4.97	0.1	0.89	33.4
W—>X, (98)	$CaCO_3$(g), Depth	<6.8 (>14.8) <49 (>56)	4.08	0.1	0.60	16.7
X—>36, (Y)	Depth	<49 (>49)	3.91	0.1	0.26	9.0
Y—>Z, AB	Mean phi	<1.27 (>1.31)	4.08	0.1	0.33	10.4
Z—>AA, (17)	Depth, Sand, $CaCO_3$(g)	>44 (<40.8) <62.9 (>64.3) >1.10 (<1.05)	3.14	0.1	0.83	4.7
AA—>14, (29, 30, 32)	Inman Sort, Sand	>1.39 (<1.19) <29.8 (>29.8)	2.92	0.1	1.00	2.4
AB—>7, (AC)	Depth	>48 (<45)	3.60	0.1	0.50	9.5
AC—>AD, (25, 39)	Inman Sort	<1.11 (>1.33)	3.73	0.1	0.48	10.7
AD—>16, (AE)	$CaCO_3$(g)	>6.80 (<4.98)	2.24	0.1	0.73	5.8
AE—>AF, (31, 38)	Sand	<67.2 (>72.8)	1.74	0.1	0.56	3.5
AF—>19, (6, 15, 18, 23)	Sand, Inman Sort, Mean phi	<35.1 (>48.8) >1.11 (<1.09) <1.38 (>1.39)	1.27	0.6	0.67	2.8
(6, 15, 18, 23)			0.50	51.9		

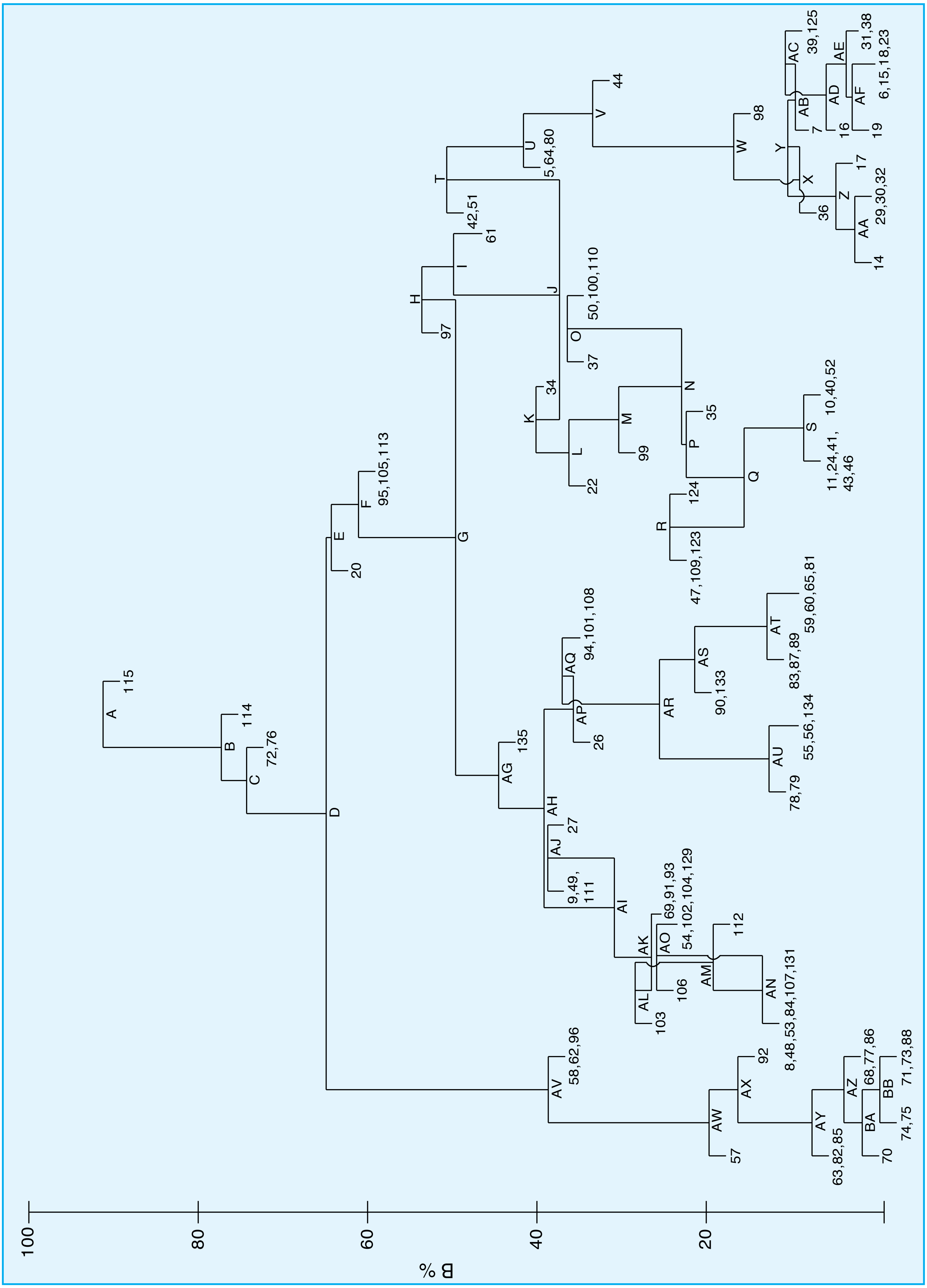


Fig. 6.48: Station linkage tree (LINKTREE routine) using the 6 environmental variables identified by BIO-ENV procedure as 'best' describing overall macrofaunal distribution in Outer Bristol Channel area

7. Integrated Assessment of Habitats and Biotopes

The area of the Outer Bristol Channel covered by the study is around 2400 km^2. The scale at which an integrated assessment can be produced has to take into account the density and coverage of the geological and biological data collected by the study, which form the primary source for the interpretation, plus other published and unpublished data. The multibeam corridors, which are the largest geological data set, cover about 15% of the study area sea bed (Figure 5.1). The principal biological dataset comprises 137 grab stations, the majority of which are sited at about 5 km spacing along the multibeam corridors (Figure 3.10). Although we have produced a great deal of detailed data, for example, in terms of sea bed morphology and bedforms along each corridor, and species assemblages at each sample station, the interpolation of these to produce an integrated assessment across the Outer Bristol Channel has to be at a coarser regional scale.

What also has to be borne in mind is the variability of the marine environment on a temporal scale and its impact on sea bed habitat. These can be on a daily basis with flood and ebb tides or night and day (e.g., sand eel activity), longer lunar cycles of neap and spring tides, and seasonal variations such as sea temperature, salinity and biological productivity. Therefore, each survey provides a snapshot of the situation at the time of survey. Further surveys over time and different seasons can build up a picture of those features which are stable and those that are more ephemeral or seasonal.

We have been able to compare some of our data with previous surveys and these have enabled us to assess variability and change over time and provide confidence in our interpretations. For example, comparison of sand waves on multibeam data collected by this study in 2003 with bathymetric data surveyed in 1977 shows remarkable uniformity in the sea bed indicating long term stability of large sand waves in the NOBel and SOBel Sands. The only large-area benthic survey available for comparison is that of Warwick & Davies (1977) with 42 stations in the OBCMHS area. However, there is broad agreement between the composition and distribution of the major benthic macrofaunal assemblages found in each study. It is not possible to discern definite temporal differences between the two benthic surveys though there are indications, when considered alongside recent studies (Woolmer 2003), of some changes in the benthos of Carmarthen Bay at the time of the 2003 OBCMHS survey. More time-series data would be required to determine whether this was a transient situation or part of a longer-term change.

The OBCMHS geological interpretation divided the Outer Bristol Channel into four physical regions (Figures 4.1, 7.1 & 7.2; Map 1).

The OBCMHS biological interpretations indicate three major faunal assemblages within the study area (Figure 6.8 & 6.10). They have been designated II, III and IV. In addition, two more localised assemblages have also been defined. Assemblage I is confined to

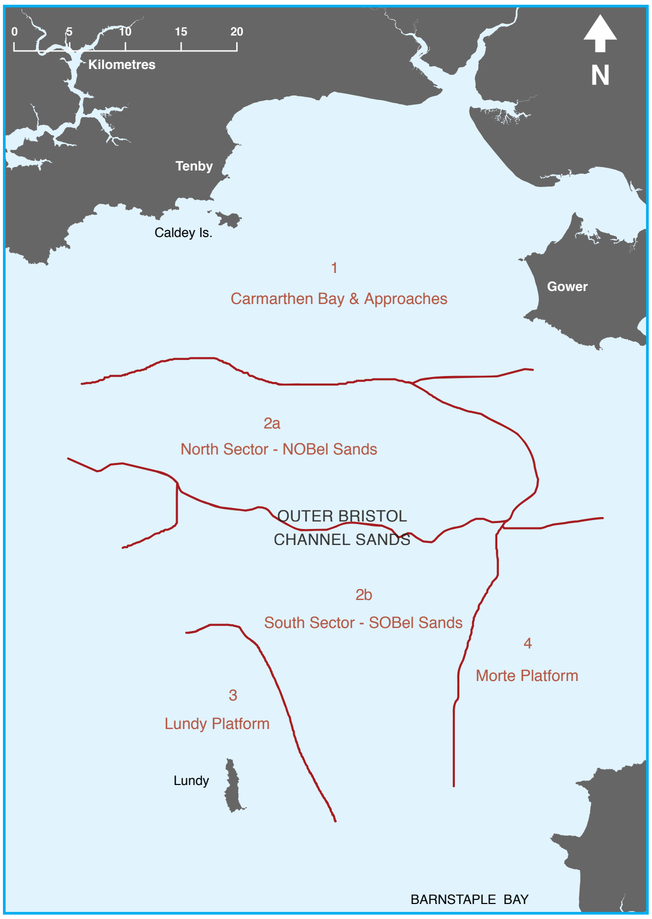


Fig. 7.1: Physical regions in the Outer Bristol Channel

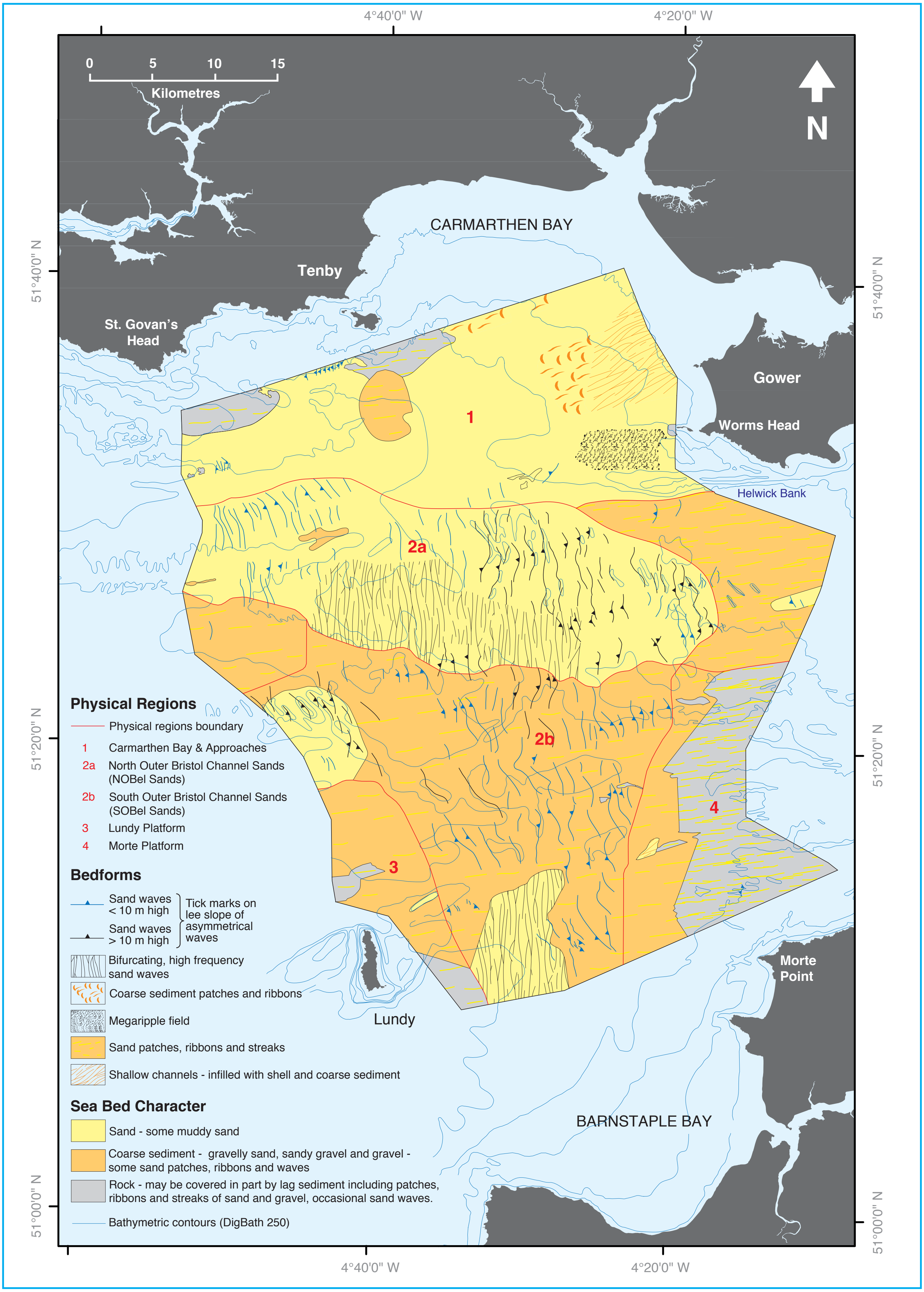


Fig. 7.2: Sea bed character and bedforms (also reproduced at a larger scale in Map 1)

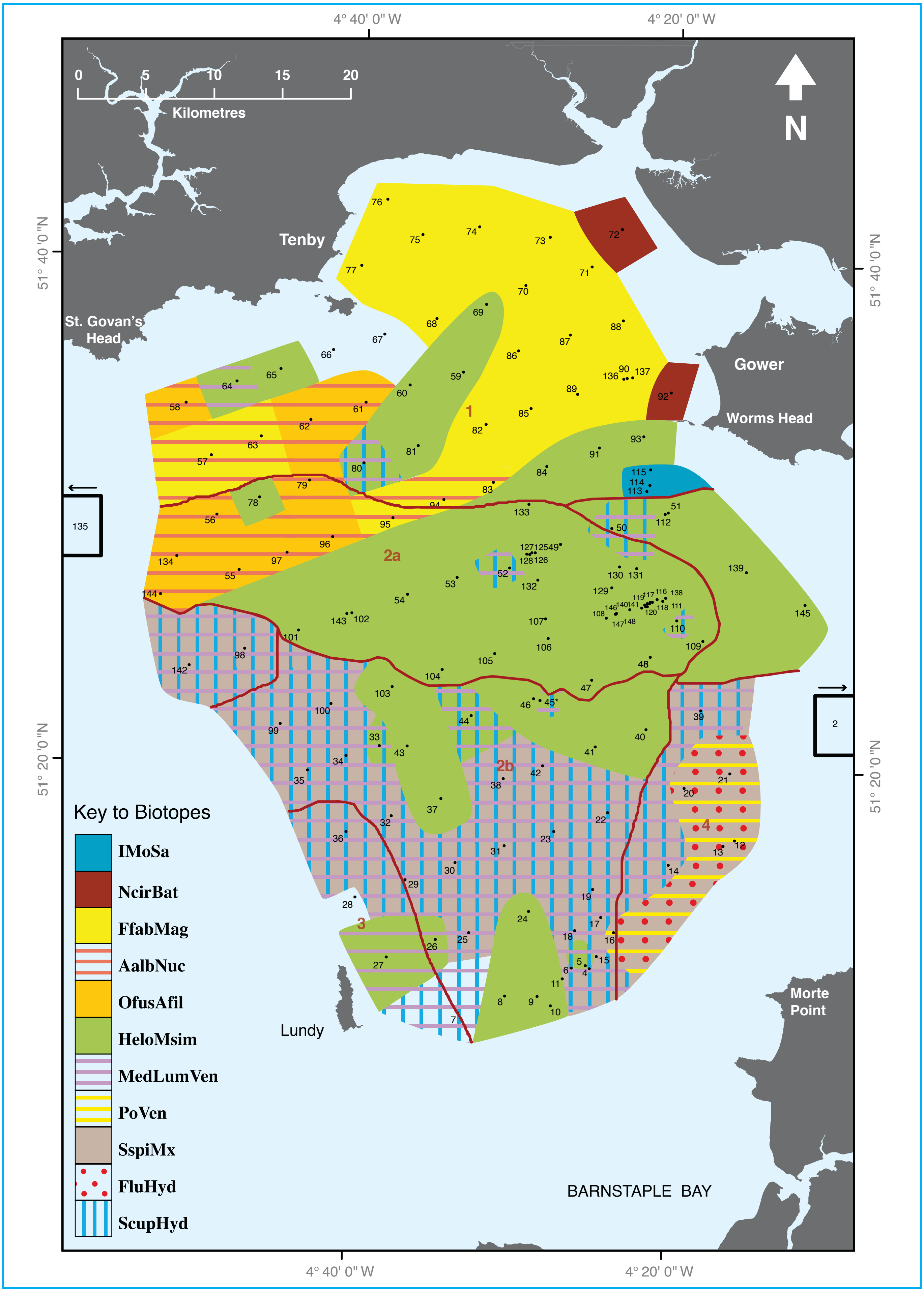


Fig. 7.3: Distribution of benthic biotopes (and combinations thereof) in the OBCMHS area with regions overlaid (see Table 6.28 for biotope definitions & Fig. 7.2 for physical regions)

Helwick Bank and assemblage V includes small rock outcrops. None of the assemblages are unique within UK waters. The species compositions of each assemblage are examined in relation to biotope descriptions in *The Marine Habitat Classification for Britain and Ireland* (Connor *et al.* 2004) and a biotope map produced (Figure 7.3).

A comparison of the sea bed character (Figure 7.2) and benthic macrofaunal maps (Figures 6.8, 6.10 & 7.3) shows broad agreement between the assemblages/ biotopes and the sea bed types associated with particular physical regions. For example, in Region 1, the large expanses of fine and medium sand that dominate Carmarthen Bay are populated by assemblage II faunas, particularly those belonging to the **FfabMag** biotope (Tables 7.2 & 7.7). In Region 2a – NOBel Sands – the sand wave areas are predominantly characterised by assemblage III faunas each representing variations of the **HeloMsim** biotope (Tables 7.3 & 7.8) that is typically found in mobile medium sands. By contrast, Region 2b – SOBel Sands – has extensive pavements of gravelly sediments overlain with a number of generally isolated sand waves. While the sand waves again host the **HeloMsim** biotope, the plains have assemblage IV faunas attributable to the rich **MedLumVen** biotope variously overlain by some epifaunal biotopes (Tables 7.4 & 7.9).

Other parameters such as species diversity, richness and abundance can also be included in these general relationships. Species diversity was generally low in the sandy northern regions and higher in the coarse sediments of the SOBel Sands, and on the stony Lundy and Morte Platforms. Coarse mixed sediments offer more microhabitats for the fauna than sandy ones, and biodiversity is further enhanced when stones and rock outcrops provide suitable surfaces for epifaunal species. Furthermore, the sand wave areas have small and large-scale bedforms with mobile sea bed surfaces that limit the fauna to species tolerant of such stressful, current dominated, environments. In these areas, the surface exposure of gravel is sporadic and this restricts the development of colonial epifaunal biotopes.

An analysis of the relationship between the species and a suite of measured environmental variables (BIO-ENV procedure) shows the fauna to be ‘best’ correlated (ρ_S=0.615) with water depth and several sediment attributes (sand, mud, carbonate, mean phi & sorting). The study has developed a tool (LINKTREE procedure) capable of predicting faunal characteristics relative to these six environmental variables. This predictive tool could be utilised in future habitat research in the Outer Bristol Channel.

We have produced a number of tables to provide an integrated summary of the physical and biological characteristics of the study area.

The tables comprise two series:

• The first series, based on physical region (Tables 7.1-7.5), summarises sampling data, physical and geological attributes, macrofaunal assemblages and biotopes, epifauna, species richness and abundance.

• The second series, based on macrofaunal assemblages (Tables 7.6-7.9), summarises macrofaunal assemblage (and subgroup) occurrence by region, depth, sediment, biotopes, dominant species, characterising species, colonial taxa, total taxa, species richness and other indices.

Region 1 — Carmarthen Bay & Approaches Integrated Summary

Water Depth (m)	Area (km^2)	Grab stations	Trawl boxes	Video locations	Multibeam Corridor (km)	Sidescan Corridor (km)	Boomer Line (km)
<10 - 48	~700	40	4	4	124	124	47

Bedforms (Fig. 4.1, 4.20, 4.52, & Map 1)	• Dominantly smooth sea bed with some small ripples • Occasional coarse shelly patches and ribbons aligned SW-NE in east of Bay • Very shallow sinuous, shell surfaced, SW-NE aligned channels in east off Loughor Estuary • Few west facing ebb dominant sand waves (2 – 7 m high) to west of Caldey Island • Small megaripple field in southeast off Worms Head • Helwick Bank, large sand bank on southeast boundary of region
Sea bed sediment (Fig. 4.21)	• Fine to medium sand. Becomes finer as water depth shallows into Bay • Few relatively small areas of gravel and mud
Rock Outcrops (Fig. 4.1, 4.21 & Map 1)	• Confined to Devonian and Carboniferous limestone and sandstone outcrops • South of Caldey Island and off St Govan's Head with relief of <2 – 5 m • Small crop of Carboniferous Limestone in scour west of Worms Head
Hydrodynamics (Fig. 2.8 & 4.27)	• Depth averaged mean spring tidal currents 1.1 - < 0.4 ms^{-1} - decrease into Bay. • Bay appears to be long term sink for fine sediment • Wave processes influential in shallow <20 m water depth. Bay faces prevailing SW waves and swell
Quaternary Sediments (Fig. 4.9, 4.10 & 4.16)	• Within and on margin of ice limit of Last Glaciation • Underlain by Late Pleistocene Sediments (sand, gravel, clay and till) & Basal Sand & Gravel (sand & gravel) • Includes glacial, pro-glacial, fluvial and marine sediments • Max thickness >16 m. Concentrated in Carmarthen Bay. Thins at western boundary of region

Macrofaunal Assemblage (Fig. 6.10)	**Biotope assignations** (Figs 6.28 & 7.2; Tables 7.6-7.10)
• Dominated by assemblage II with four subgroups • Carmarthen Bay characterised by IIb, with IIa in the eastern shallows • Deeper water to southwest with extensive occurrence of IIc and IId • Several localised occurrences of IIIb along the outer margin of the bay, some associated with coarser sediments • Loosely defined assemblage V on rocky outcrops around Caldey Island. • Assemblage I confined to Helwick Bank	**I - SS.SSa.IFiSa.ImoSa** **IIa - SS.SSa.IFiSa.NcirBat** **IIb - SS.SSa.IMuSa.FfabMag** **IIc -** Intermediate **SS.SSa.IMuSa.FfabMag/SSa.CMuSa.AalbNuc** **IId -** Intermediate **SS.SSa.CMuSa.AalbNuc/SSa.Osa.OfusAfil** **IIIb -** Modified **SS.SCS.ICS.HeloMsim** **IIId -** Intermediate **SS.SCS.ICS.HeloMsim/SCS.CCS.MedLumVen** **IVd – SS.SCS.CCS.MedLumVen/SCS.ICS.HeloMsim,** with partial **SS.SSa.IfiSa.ScupHyd** **V -** Stony ground (no biotope determined)

Visible Fauna (epifauna)	• Generally low numbers of colonial taxa (<5); a little higher (5-10) in IId, IIId and IVd; maximum of 18 at OBC 58 • Rocky assemblage V with 18-25 colonial taxa • Trawl tows generally collected about 20-30 taxa (including several colonial forms)
Species Richness (Fig. 6.21)	• Assemblage II characterised by low to moderate numbers of species (generally 50-99; maximum 184 in IId) • Very low species numbers (<50) in southeast, around Helwick Bank and Worms Head • Higher richness (100-149) associated with rock and some coarser sediments around Caldey Island
Macrofaunal Abundance (individuals/0.2 m^2 ; Fig. 6.23)	• Approaches with generally high densities (>2000); highest (4000-8000) between OBC 80 and OBC 83 in south • Northern half of Carmarthen Bay with lower numbers (500-2000) • Lowest abundances (<500) in southeast in Helwick Bank - Worms Head area • Trawls from near OBC 94 (BT9) in south and east of OBC 89 (BT7) in southeast Carmarthen Bay respectively collected thousands of *Ophiura ophiura* and *Ophiura albida* brittle stars

Table 7.1: Summary of biological and geophysical data from Region 1 - Carmarthen Bay & Approaches

Region 2a — NOBel Sands Integrated Summary							
Water Depth (m)	**Area (km^2)**	**Grab stations**	**Trawl boxes**	**Video locations**	**Multibeam Corridor (km)**	**Sidescan Corridor (km)**	**Boomer Line (km)**
26-60	~440	51	4	4	97	97	95

Bedforms (Fig. 4.1, 4.20, 4.52 & Map 1)	• Sand wave field with two distinctive sand wave areas comprising: - **1**. Large sand waves, generally 12 – 14 m high in east. Max height 19 m. <10 m high in west. • Crest lengths <1 km to 7 km • Strongly asymmetrical, west facing lee slopes. Commonly well developed megaripples and ripples on slopes • Wave separation 0.6 - 3 km with generally flat rippled sea bed between sand waves with coarse gravelly patches **2**. Bifurcating high frequency sand waves. Primary waves generally 4 – 10 m high and wavelengths 0.1 – 0.5 km, asymmetrical west facing and symmetrical. Secondary waves 1 – 4 m high, mostly symmetrical. Commonly well developed megaripples and ripples on slopes • Surface of large sand waves are covered by mobile sediment but position and form has remained essentially static in recent times • Appear to be in state of *in situ* equilibrium
Sea bed sediment (Fig. 4.21)	• High frequency sand waves area predominantly well sorted, symmetrical medium sand • Elsewhere dominantly medium sand but some fine & coarse. Well to poorly sorted • Gravelly sand and sandy gravel associated with some large sand wave troughs
Rock Outcrops (Fig. 4.1, 4.21 & Map 1)	• No rock outcrops identified at sea bed • Unlikely to appear at sea bed because of relatively thick Quaternary sediment cover
Hydrodynamics (Fig. 2.8 & 4.27)	• Depth averaged mean spring tidal currents 1.1 – 1.3 ms^{-1}, velocity decreases to the west • Dominantly rectilinear currents. Ebb tidal residual to the west • Flood currents appear significant in maintaining form and position of large sand waves
Quaternary Sediments (Fig. 4.9, 4.10 & 4.16)	• Late Pleistocene Sediments just extend into area in north and east. Their limit possibly associated with ice limit of Last Glaciation • Late Pleistocene Sediments include sand, gravel, clay and till • Basal Sand & Gravel thicker, >10 m, within NE-SW axis across region. Thins to < 3m to east and west. Dominantly sand & gravel • Basal Sand & Gravel includes significant marine deposits in upper part. Pro-glacial and glaciofluvial sediments likely at depth

Macrofaunal Assemblage (Fig. 6.10)	**Biotope assignations** (Figs 6.28 & 7.2; Tables 7.6-7.10)
• Dominated by IIIa and IIIb • Large sand wave area to the east predominately IIIa, with some IIIb; patches of IVd between waves where some gravel exposed • High-frequency sand wave area predominantly IIIb; some IIIc (OBC 105 & 106) • Northwest part of NOBel Sands mainly IId, with IIIb on smaller sand waves (OBC 78); some IIc (OBC 95)	**IIc** - Intermediate **SS.SSa.IMuSa.FfabMag/SSa.CMuSa.AalbNuc** **IId** - Intermediate **SS.SSa.CMuSa.AalbNuc/SSa.OSa.OfusAfil** **IIIa - SS.SCS.ICS.HeloMsim** **IIIb** - Modified **SS.SCS.ICS.HeloMsim** **IIIc** - Impoverished **SS.SCS.ICS.HeloMsim** **IVd - SS.SCS.CCS.MedLumVen/SCS.ICS.HeloMsim,** with partial **SS.SSa.IfiSa.ScupHyd** overlay

Visible Fauna (epifauna)	• Generally low numbers of colonial taxa (<5), but up to 13 in IIIa and IIIb; 8-14 in IVd • Most trawl tows generally collected 9-17 taxa (including several colonial forms) • Trawls from box BT1 (near OBC 97) in west sampled faunas from assemblage II and IV and caught more taxa (23 or 24)
Species Richness (Fig. 6.21)	• Low to moderate numbers of species (generally 50-99; maximum 125 in IVd) • Very low species numbers (<50) in south at OBC104-107
Macrofaunal Abundance (individuals/0.2 m^2; Fig. 6.23)	• Generally higher densities (2000-8000) in northwest; moderately high (1000+) in northeast • Lowest abundances (<500) in south; lowest (<100) at OBC 105 • One trawl at BT1 collected thousands of both *Ophiura albida* and *Ophiura ophiura* brittle stars

Table 7.2: Summary of biological and geophysical data from Region 2a - NOBel Sands

Region 2b — SOBel Sands Integrated Summary							
Water Depth (m)	**Area (km^2)**	**Grab stations**	**Trawl boxes**	**Video locations**	**Multibeam Corridor (km)**	**Sidescan Corridor (km)**	**Boomer Line (km)**
25-55	~480	36	2	6	104	88	103

Bedforms (Fig. 4.1, 4.20, 4.52, & Map 1)	• Field of isolated sand waves on relatively flat sea bed • Generally < 10 m high. Few > 10 m. Wavelengths 150 m – 1.8 km. Crest lengths <1 – 5 km • Generally asymmetrical, west facing lee slopes. Commonly well developed megaripples and ripples on slopes • Surface of large sand waves are covered by mobile sediment but position and form has remained essentially static in recent times. Appear to be in state of *in situ* equilibrium • Double crested sand waves relatively frequent, especially in south of region. Form series of elliptical ovoids along sand wave crest • Coarse sediment pavement between sand waves with isolated sand patches, ribbons and streaks – some rippled surfaces • Small patch of high frequency sand waves at southwest margin of region
Sea bed sediment (Fig. 4.21)	• Gravelly sand and sandy gravel predominant on pavement • Dominantly medium sand on sand waves. Some coarse sand and fine gravel associated with pavement sand rippled surfaces
Rock Outcrops (Fig. 4.1, 4.21 & Map 1)	• Rock outcrops confined to small very low relief (<2 m) areas between isolated sand waves in east of region • Dominantly rocks of Tertiary age
Hydrodynamics (Fig. 2.8 & 4.27)	• Depth averaged mean spring tidal currents 1.0 – 1.3 ms^{-1}, velocity decreases to the west • Dominantly rectilinear currents. Ebb tidal residual to the west • Flood currents appear significant in maintaining form and position of large sand waves and also in form of elliptical double crests
Quaternary Sediments (Fig. 4.9, 4.10 & 4.16)	• Basal Sand & Gravel within N-S axis across region. Generally 3 – 6 m thick. Small axial area up to 8 m thick. Thins to < 1m to east and west against rock. Dominantly sand & gravel • Includes significant marine deposits in upper part and where relatively thin • Pro-glacial and glaciofluvial sediments likely at depth in thicker deposits

Macrofaunal Assemblage (Fig. 6.10)	**Biotope assignations** (Figs 6.28 & 7.2; Tables 7.6-7.10)
• Dominated by IVa, with IVb in northwest and at OBC 25 in south • Sand waves in north, and southern high-frequency sand wave zone, with IIIa; areas of IVf between northern sand waves • Some IIId near sand waves in south (OBC 5 & 26) • Rich IVc at 'interface' with Lundy Platform (OBC 7) • Rich IVe near 'interface' with Morte Platform (OBC 16)	**IIIa - SS.SCS.ICS.HeloMsim** **IIId** - Intermediate **SS.SCS.ICS.HeloMsim/SCS.CCS.MedLumVen** **IVa - SS.SCS.CCS.MedLumVen** with **SSa.IfiSa.ScupHyd** overlay & some **SS.SBR.PoR.SspiMx** **IVb** - modified **SS.SCS.CCS.MedLumVen** with **SS.SSa.IfiSa.ScupHyd** overlay & some **SS.SBR.PoR.SspiMx** **IVc - SS.SCS.CCS.MedLumVen** with well-developed **SS.SSa.IfiSa.ScupHyd** overlay **IVe - SS.SMX.Cmx.FluHyd** (rock) & **SS.SMX.Omx.PoVen/SS.SBR.PoR.SspiMx** (sediment) **IVf - SS.SCS.CCS.MedLumVen/SCS.ICS.HeloMsim,** with **SS.SSa.IfiSa.ScupHyd** overlay

Visible Fauna (epifauna)	• Lowest numbers of colonial taxa (<14) generally in IIIa, IIIb, IIId, IVb and IVf • Higher numbers (10-30) in IVa; highest (53-56) at OBC 7 and OBC 16 • Trawl tows collected 8-27 taxa, generally 16-22 (including several colonial forms)
Species Richness (Fig. 6.21)	• High numbers of species (>150) over most of area; highest (264) at OBC 7 in southwest • Lowest species numbers (50-99) associated with sand wave areas in north and south
Macrofaunal Abundance (individuals/0.2 m^2; Fig. 6.23)	• Mostly moderate to high abundances (1000-3500) • Lower numbers (<1000) associated with sand wave areas in north and south • Most trawls from box BT 13 (near OBC 30) collected hundreds of *Psammechinus miliaris* urchins

Table 7.3: Summary of biological and geophysical data from Region 2b - SOBel Sands

Region 3 — Lundy Platform Integrated Summary

Water Depth (m)	Area (km^2)	Grab stations	Trawl boxes	Video locations	Multibeam Corridor (km)	Sidescan Corridor (km)	Boomer Line (km)
<20 - 55	>120	4	0	2	19	15	27

Bedforms (Fig. 4.1, 4.20, 4.52, & Map 1)	• Stanley Bank: SW-NE trending banner bank 2 km to east of northern tip of Lundy. Bank is ~5 km long, ~1 km wide, max height ~28 m. Likely to be covered by small sand waves and megaripples along its flanks and crest • Coarse sediment pavement with rock outcrops • Some sand patches and streaks. Sand ribbons and rare sand wave likely
Sea bed sediment (Fig. 4.21)	• Gravelly sand, sandy gravel and gravel on pavement • Stanley Bank likely to be dominantly medium sand
Rock Outcrops (Fig. 4.1, 4.21 & Map 1)	• Some Devonian outcrops with relief of <2 – 5 m • Granite and few igneous dolerite dykes likely around Lundy
Hydrodynamics (Fig. 2.8 & 4.27)	• Depth averaged mean spring tidal currents 0.5 – 1.4 ms^{-1} • Velocity decreases in lee of Lundy Island & increases off northern and southern tip of Lundy • Dominantly rectilinear currents
Quaternary Sediments (Fig. 4.9, 4.10 & 4.16)	• Basal Sand & Gravel up to 10 m thick to NE of Lundy Island around Stanley Bank • Thins to < 1m to south and west against rock. Dominantly sand & gravel • Includes significant marine deposits in upper part and where relatively thin • Pro-glacial and glaciofluvial sediments likely at depth in thicker deposits

Macrofaunal Assemblage (Fig. 6.10)	**Biotope assignations** (Figs 6.28 & 7.2; Tables 7.6-7.10)
• No single dominant biotope • Part of IVa and stony V to north of Lundy • Part of IIId and IVc (OBC 7) to east of Lundy	**IIId -** Intermediate **SS.SCS.ICS.HeloMsim/SCS.CCS.Med-LumVen** **IVa - SS.SCS.CCS.MedLumVen** with **SS.SSa.IfiSa.ScupHyd** overlay & some **SBR.PoR.SspiMx** **IVc - SS.SCS.CCS.MedLumVen** with well-developed **SS.SSa.IfiSa.ScupHyd** overlay **V -** Stony ground (no biotope determined)

Visible Fauna (epifauna)	• Variable number of colonial taxa; low (6 & 18) in IIId and IVa • High colonial taxa (32 & 53) at stony OBC 28 and at OBC 7 in south at ‘interface’ with SOBel Sands
Species Richness (Fig. 6.21)	• Moderate to high species richness (ca. 70-160) • Highest species number (264) at OBC 7
Macrofaunal Abundance (individuals/0.2 m^2; Fig. 6.23)	• Range of abundances (ca. 300-1200) • Highest abundance (1728) at OBC 7

Table 7.4: Summary of biological and geophysical data from Region 3 - Lundy Platform

Region 4 — Morte Platform Integrated Summary							
Water Depth (m)	**Area (km^2)**	**Grab stations**	**Trawl boxes**	**Video locations**	**Multibeam Corridor (km)**	**Sidescan Corridor (km)**	**Boomer Line (km)**
<20 - 40	>300	11	3	4	64	60	58

Bedforms (Fig. 4.1, 4.20, 4.52, & Map 1)	• Coarse sediment pavement in west and north and extensive rock outcrops to east • Some sand patches, ribbons and streaks. Occasional isolated west facing lunate - barchanoid sand wave 2 – 8 m high • Sand streams to east of Horseshoe Rocks
Sea bed sediment (Fig. 4.21)	• Gravelly sand, sandy gravel and gravel on pavement and in lows between rock scarps • Medium sand with coarse sand and pebbles in sandy bedforms
Rock Outcrops (Fig. 4.1, 4.21 & Map 1)	• Extensive thinly bedded Devonian, Triassic and Jurassic rocks in east • Low relief < 2 m, form abundant scarp and dip features • Horseshoe Rocks – Dolerite intrusion forms significant 2 km long, 100 m wide shoal off north Devon coast
Hydrodynamics (Fig. 2.8 & 4.27)	• Depth averaged mean spring tidal currents 1.1 – >2.0 ms^{-1} • Velocity increases off north Devon coast around Horseshoe Rocks • Dominantly rectilinear currents. Ebb tidal residual to the west • Possible bedform evidence of eastward net sand transport along north Devon coast at Horseshoe Rocks
Quaternary Sediments (Fig. 4.9, 4.10 & 4.16)	• Basal Sand & Gravel generally thin < 3 m beneath coarse sediment pavement. Dominantly sand & gravel • Some Late Pleistocene Sediments up to 5 m thick to east of NOBel Sands and south of Helwick Bank • Late Pleistocene Sediments include sand, gravel, clay and till

Macrofaunal Assemblage (Fig. 6.10)	**Biotope assignations** (Figs 6.28 & 7.2; Tables 7.6-7.10)
• Predominantly IVe associated with the mainly rocky area to the east • Gravelly sediments to west with IVa	**IVa - SS.SCS.CCS.MedLumVen** with **SS.SSa.IfiSa.ScupHyd** overlay & some **SBR.PoR.SspiMx** **IVe - SS.SMX.Cmx.FluHyd** (rock) & **SS.SMX.Omx.PoVen/ SS.SBR.PoR.SspiMx** (sediment)

Visible Fauna (epifauna)	• Colonial presence variable, 12-27 taxa in IVa, 27-35 taxa in IVe • Most trawl tows in IVa collected 27-34 taxa (including several colonial forms)
Species Richness (Fig. 6.21)	• High species richness (>170) throughout, generally higher (>ca. 200) in IVe
Macrofaunal Abundance (individuals/0.2 m^2; Fig. 6.23)	• High abundance (ca. 2000-4200) throughout • Trawls from box BT10 (west of OBC 14) collected hundreds of *Psammechinus miliaris* urchins • Trawls from box BT12 (west of OBC 20) collected hundreds of *Ophiura albida* brittle stars

Table 7.5: Summary of biological and geophysical data from Region 4 - Morte Platform

Assemblage	I		Assemblage	V
Regions	1- Carmarthen Bay & Approaches		Regions	1- Carmarthen Bay & Approaches; 3- Lundy Platform
Locations	Approaches (Helwick Bank)		Locations	Approaches (south of Caldey); North of Lundy
Depth	9-29 m		Depth	29-38 m
Sediment	fine to medium sands		Sediment	stony, mixed sediments
Number of stations	3		Number of stations	3
Dominant species (numerical abundance)	*Hesionura elongata, Mytilus edulis* juvs, *Protodriloides chaetifer, Magelona* sp. juv., *Gastrosaccus spinifer, Nephtys cirrosa, Obelia dichotoma, Nephtys* sp. indet., *Cumopsis fagei, Lagis koreni* juvs, *Megaluropus agilis, Magelona mirabilis*		Dominant species (numerical abundance)	Mytilidae juvs, *Achelia echinata, Heteranomia squamula, Pomatoceros lamarckii, Pisidia longicornis, Alcyonidium parasiticum, Pomatoceros triqueter,* Harmothoinae indet., *Syllidia armata*
Characterising Species*	*Gastrosaccus spinifer, Obelia dichotoma, (Protodriloides chaetifer)*		Characterising Species*	*Achelia echinata, Pomatoceros lamarckii, Alcyonidium parasiticum*
Top-ranked colonial taxa	*Obelia dichotoma* (rank 7)		Top-ranked colonial taxa	*Alcyonidium parasiticum* (rank 6)
Biotopes (MNCR)	**SS.SSa.IFiSa.IMoSa** Infralittoral mobile clean sand with sparse fauna		Biotopes (MNCR)	Not determined May be a biotope complex
Biotopes (EUNIS)	**A5.231**		Biotopes (EUNIS)	Not determined
Taxa (Total)	45		Taxa (Total)	272
Colonial taxa (Total)	4		Colonial taxa	47
Species Richness	Low		Species Richness	High
Taxa (station)**	22 (14-29) 24		Taxa (station)**	141 (130-149) 145
Individuals (0.2 m^2)**	176 (70-344) 114		Individuals (0.2 m^2)**	No data
Fisher's Index (0.2 m^2)**	6.7 (5.3-8.7) 6.2		Fisher's Index (0.2 m^2)**	No data
Shannon-Wiener (0.2 m^2)**	3.5 (3.3-3.6) 3.4		Shannon-Wiener (0.2 m^2)**	No data
Heip Evenness (0.2 m^2)**	0.54 (0.38-0.73) 0.52		Heip Evenness (0.2 m^2)**	No data

Table 7.6: Summary of Outer Bristol Channel macrofaunal assemblages I and V [Characterising species are those exhibiting higher fidelity and/or numerical presence; ** mean (range) median)]*

Subgroup	IIa	IIb	IIc	IId
Regions	1- Carmarthen Bay & Approaches; 2a- NOBel Sands			
Locations	Carmarthen Bay (east: OBC 72 & 92)	Carmarthen Bay; Approaches (southeast)	Approaches (south: OBC 83, 94 & 95; west: OBC 57 & 63)	Approaches (west); NOBel Sands (west: <10m high sandwaves)
Depth	8-12 m	6-31 m	28-34 m	38-55 m
Sediment	very fine & fine-medium sand	predominantly fine sand (very fine sand to gravelly sand)	fine to medium sand	mostly fine to medium sands (muddy sand to sandy gravel)
Number of stations	2	17	5	10
Dominant species (numerical abundance)	*Magelona johnstoni, Pontocrates arenarius, Pseudocuma longicornis, Acteon tornatilis, Mactra stultorum, Magelona filiformis, Spio* sp. A, *Lagis koreni* juvs, *Glycera tridactyla, Spisula subtruncata* juvs	*Lagis koreni* juvs, *Spisula subtruncata* juvs, *Spiophanes bombyx, Pseudocuma longicornis, Magelona filiformis, Abra alba* juvs, *Lutraria lutraria, Phaxas pellucidus, Chaetozone setosa, Poecilochaetus serpens, Spio* sp. A, *Magelona johnstoni*	*Lagis koreni* juvs, *Abra alba* juvs, *Spiophanes bombyx, Scalibregma inflatum, Pseudocuma longicornis, Magelona filiformis, Magelona johnstoni, Argissa hamatipes, Phaxas pellucidus, Spio* sp. A, *Pariambus typicus, Hesionura elongata*	*Scalibregma inflatum, Spiophanes bombyx, Ampharete lindstroemi, Abra alba* juvs, *Lagis koreni* juvs, *Mysella bidentata, Mediomastus fragilis, Phoronis* spp., *Ampharete* sp., *Ampelisca spinipes, Hyala vitrea*
Characterising Species*	*Magelona johnstoni, Nephtys cirrosa, Acteon tornatilis, Mactra stultorum, Pontocrates arenarius, Donax vittatus, Angulus tenuis*	*Lutraria lutraria, Fabulina fabula, Philine aperta, Spio* sp. A, *Chaetozone setosa, Poecilochaetus serpens, Capitella capitata, Owenia fusiformis, Bathyporeia tenuipes, Perioculodes longimanus, Synchelidium maculatum, Chamelea gallina, Thracia phaseolina, Pharus legumen*	*Lagis koreni, Argissa hamatipes, Cumopsis fagei*	*Spiophanes bombyx, Scalibregma inflatum, Scoloplos armiger, Aricidea minuta, Goniada maculata,* tubificid oligochaetes, *Mysella bidentata. Hyala vitrea, Eudorella truncatula, 'Mysella' obliquata*
Top-ranked colonial taxa	—	*Lovenella clausa* (rank 66), *Obelia dichotoma* (85), *Obelia* spp. combined (74)	*Sertularia* spp. combined (36)	*Lovenella clausa* (80)
Biotopes (MNCR)	**SS.SSa.IFiSa.NcirBat** *Nephtys cirrosa* and *Bathyporeia* spp. in infralittoral sand	**SS.SSa.IMuSa.FfabMag** *Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in infralittoral compacted fine muddy sand	Intermediate **SS.SSa.IMuSa.FfabMag/ SS.SSa.CMuSa.AalbNuc** **FfabMag/** *Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	Intermediate **SS.SSa.CMuSa.AalbNuc/ SS.SSa.OSa.OfusAfil** **AalbNuc/** *Owenia fusiformis* and *Amphiura filiformis* in offshore circalittoral sand or muddy sand
Biotopes (EUNIS)	**A5.233**	**A5.242**	Intermediate **A5.242/A5.261**	Intermediate **A5.261/A5.272**
Taxa (Total)	70	280	121	320
Colonial taxa (Total)	None	17	12	32
Species Richness	Low	Moderate	Low	Moderate
Taxa (station)**	47 (43 & 51) 47	81 (60-118) 78	56 (52-60) 57	95 (64-184) 82
Individuals (0.2 m^2)**	523 (430 & 616) 523	1932 (677-3769) 1737	3479 (1076-7918) 2534	2767 (615-5593) 2682
Fisher's Index (0.2 m^2)**	12.8 (10.5 &15.0) 12.8	17.1 (12.0-27.1) 16.2	9.6 (8.0-11.3) 9.3	19.1 (12.1-38.0) 16.6
Shannon-Wiener (0.2 m^2)**	4.3 (4.1 & 4.5) 4.3	4.2 (2.8-4.9) 4.3	2.5 (1.3-3.7) 2.3	4.0 (3.1-5.3) 4.0
Heip Evenness (0.2 m^2)**	0.41 (0.38-0.44) 0.41	0.26 (0.07-0.46) 0.23	0.11 (0.03-0.22) 0.08	0.18 (0.10-0.31) 0.18

Table 7.7: Summary of Outer Bristol Channel macrofaunal assemblage II [Characterising species are those exhibiting higher fidelity and/or numerical presence; ** mean (range) median]*

Subgroup	IIIa	IIIb	IIIc	IIId
Regions	2a- NOBel Sands; 2b- SOBel Sands; 1- Carmarthen Bay & Approaches; 3- Lundy Platform			
Locations	NOBel Sands (mainly large sand waves; SOBel Sands (sand waves & southern high-frequency bifurcating sand wave field)	NOBel Sands (primarily high-frequency bifurcating sand wave field); Approaches (including OBC 65 & 78 in west, SW-NE strip reaching into Carmarthen Bay, south-east, megaripple field north of Helwick Bank, & south of Helwick Bank)	NOBel Sands (high-frequency bifurcating sand wave field/large sand waves: OBC 105 & 106)	Carmarthen Bay Approaches (west: OBC 64); Lundy Platform (OBC 26 & 27); SOBel Sands (south: OBC 5)
Depth	27-52 m	18-49 m	40-43 m	28-40 m
Sediment	mostly gravelly sand or sandy gravel (medium sand to sandy gravel)	mostly medium sand (fine-medium sand to sandy gravel)	medium sand	medium-coarse sand to sandy gravel
Number of stations	31	20	2	4
Dominant species (numerical abundance)	*Hesionura elongata, Spisula elliptica, Goodallia triangularis, Mytilus edulis* juvs, *Macrochaeta helgolandica, Grania* spp., *Streptosyllis bidentata*, Nemertea, Terebellidae juvs	*Lagis koreni* juvs, *Mytilus edulis* juv., *Spisula elliptica, Hesionura elongata, Spiophanes bombyx, Pseudocuma similis, Goodallia triangularis, Abra alba* juvs, *Scalibregma inflatum*, Terebellidae juvs, *Grania* spp.	*Hesionura elongata, Spisula elliptica, Protodriloides chaetifer, Glycera oxycephala*, Terebellidae juvs, *Urothoe brevicornis, Nephtys cirrosa, Streptosyllis* sp. A, *Spiophanes bombyx*, Nemertea	*Mytilus edulis* juvs, *Spisula elliptica, Pisione remota, Sphaerosyllis bulbosa, Caecum glabrum, Hesionura elongata, Goodallia triangularis, Polygordius appendiculatus, Mediomastus fragilis, Polygordius* sp., *Microphthalmus similis*
Characterising Species*	*Goodallia triangularis,(Hesionura elongata, Protodriloides chaetifer)*	*Atylus falcatus, Ophelia borealis*	*Glycera oxycephala*	*Pisione remota, Sphaerosyllis bulbosa, Caecum glabrum, Protodrilus* sp.
Top-ranked colonial taxa	*Electra pilosa* (rank 52), *Sertularia* spp. collectively (47)	*Electra pilosa* (34), *Lovenella clausa* (64), *Sertularia* spp. collectively (24)	*Lovenella clausa* (21)	*Electra pilosa* (40), *Sertularia* spp. collectively (52)
Biotopes (MNCR)	**SS.SCS.ICS.HeloMsim** *Hesionura elongata* and *Microphthalmus similis* with other interstitial polychaetes in infralittoral mobile coarse sand	Modified **SS.SCS.ICS.HeloMsim** Increased presence of species more prevalent in less mobile habitats	Impoverished **SS.SCS.ICS.HeloMsim** Sparse fauna, lacking *Microphthalmus similis*	Intermediate **SS.SCS.ICS.HeloMsim/ SS.SCS.CCS.MedLumVen** **HeloMsim/** *Mediomastus fragilis, Lumbrineris* spp. and venerid bivalves in circalittoral coarse sand or gravel
Biotopes (EUNIS)	**A5.124**	Modified **A5.124**	Impoverished **A5.124**	Intermediate **A5.124/A5.132**
Taxa (Total)	342	318	52	214
Colonial taxa (Total)	42	25	3	28
Species Richness	Moderate	Moderate	Low	Moderate
Taxa (station)**	65 (42-98) 61	75 (36-112) 74	35 (30 & 40) 35	95 (69-117) 98
Individuals (0.2 m^2)**	730 (287-1752) 683	1233 (202-7331) 711	121 (91 & 151) 121	1449 (322-2794) 1340
Fisher's Index (0.2 m^2)**	16.4 (9.8-27.7) 15.2	18.1 (8.7-25.2) 17.9	15.6 (15.6 & 15.6) 15.6	22.4 (16.9-29.7) 21.6
Shannon-Wiener (0.2 m^2)**	4.0 (3.0-5.0) 4.2	4.0 (1.6-4.9) 4.0	4.4 (4.4 & 4.5) 4.4	4.3 (3.7-5.1) 4.3
Heip Evenness (0.2 m^2)**	0.28 (0.10-0.46) 0.26	0.27 (0.02-0.52) 0.25	0.65 (0.57 & 0.72) 0.65	0.25 (0.13-0.42) 0.23

Table 7.8: Summary of Outer Bristol Channel macrofaunal assemblage III [Characterising species are those exhibiting higher fidelity and/or numerical presence; ** mean (range) median]*

Subgroup	IVa	IVb	IVc
Regions	2b- SOBel Sands; 2a- NOBel Sands; 4- Morte Platform; 3- Lundy Platform; 1- Carmarthen Bay & Approaches		
Locations	SOBel Sands; Morte Platform (west: OBC 14, 15 & 39); Lundy Platform (north of Lundy: OBC 36)	SOBel Sands (northwest) & SOBel high-frequency bifurcating sand wave field/Lundy Platform (OBC 25)	SOBel Sands high-frequency bifurcating sand wave field/ Lundy Platform (OBC 7)
Depth	40-49 m	44-57 m	48 m
Sediment	Mainly sandy gravel (OBC 22, 31 & 38 with gravelly sand)	Mainly gravelly sand (OBC 98 & 100 with sandy gravel)	Sandy gravel
Number of stations	18	6	1
Dominant species (numerical abundance)	*Mediomastus fragilis, Spisula elliptica, Mytilus edulis* juvs, *Stenothoe marina, Lagis koreni* juvs, *Aonides paucibranchiata, Spiophanes bombyx, Aora gracilis, Gibbula tumida, Abra alba, Heteranomia squamula, Timoclea ovata*	*Lagis koreni* juvs, *Pseudocuma similis, Spiophanes bombyx, Echinocyamus pusillus, Scalibregma inflatum, Spisula elliptica, Mediomastus fragilis, Ampharete lindstroemi, Aonides paucibranchiata, Mysella bidentata. Goodallia triangularis*	*Electra pilosa, Hydrallmania falcata, Timoclea ovata, Aora gracilis, Stenothoe marina, Spiophanes bombyx, Microjassa cumbrensis, Mysella bidentata, Scrupocellaria scruposa, Mediomastus fragilis, Lumbrineris gracilis, Echinocyamus pusillus*
Characterising Species*	*Aonides paucibranchiata, Gibbula tumida, Amphilochus neapolitanus, Urothoe elegans, Abludomelita obtusata, Modiolus adriaticus*	*Echinocyamus pusillus*	*Electra pilosa, Hydrallmania falcata*
Top-ranked colonial taxa	*Electra pilosa* (rank 30), *Halecium* spp. (67); *Sertularia* spp. collectively (46)	*Alcyonidium parasiticum* (36), *Sertularia argentea* (40), *Electra pilosa* (50); *Sertularia* spp. collectively (22)	*Electra pilosa* (1), *Hydrallmania falcata* (2), *Scrupocellaria scruposa* (9)
Biotopes (MNCR)	**SS.SCS.CCS.MedLumVen** with **SS.SSa.IfiSa.ScupHyd** overlay & some **SS.SBR.PoR.SspiMx** *Mediomastus fragilis, Lumbrineris* spp., and venerid bivalves in circalittoral sand or gravel, with overlay of *Sertularia cupressina* and *Hydrallmania falcata* on tide-swept sublittoral sand with cobbles or pebbles & some *Sabellaria spinulosa* on stable circalittoral mixed sediment	Modified **SS.SCS.CCS.MedLumVen** with **SS.SSa.IfiSa.ScupHyd** overlay & some **SS.SBR.PoR.SspiMx** Sandier variant of IVa	**SS.SCS.CCS.MedLumVen** with well-developed **SS.SSa.IfiSa.ScupHyd** overlay Hydroid and bryozoan epifauna common
Biotopes (EUNIS)	**A5.132** with **A5.233** & some **A5.611**	**A5.132** with **A5.233** & some **A5.611**	**A5.132** with **A5.233**
Taxa (Total)	559	350	264
Colonial taxa (Total)	66	37	54
Species Richness	High	High	Very high
Taxa (station)**	184 (149-238) 184	152 (123-186) 152	264
Individuals (0.2 m^2)**	2106 (681-3346) 2044	1479 (599-3300) 1278	1728
Fisher's Index (0.2 m^2)**	41.7 (18.8-52.7) 42.6	40.3 (32.1-49.6) 41.0	63.1
Shannon-Wiener (0.2 m^2)**	5.7 (4.3-6.3) 5.7	5.5 (4.0-6.3) 5.7	6.4
Heip Evenness (0.2 m^2)**	0.34 (0.24-0.40) 0.35	0.35 (0.10-0.46) 0.40	0.40

Table 7.9: Summary of Outer Bristol Channel macrofaunal assemblage IV [Characterising species are those exhibiting higher fidelity and/or numerical presence; ** mean (range) median]*

Subgroup	IVd	IVe	IVf
Regions	2b- SOBel Sands; 2a- NOBel Sands; 4- Morte Platform; 3- Lundy Platform; 1- Carmarthen Bay & Approaches		
Locations	NOBel Sands (large sand wave zone: OBC 50, 52 & 110); Carmarthen Bay Approaches (west: OBC 80)	Morte Platform ('east': OBC 12, 13, 16, 20 & 21)	SOBel Sands ('north': OBC 33, 44 & 45)
Depth	35-42 m	38-42 m	42-50 m
Sediment	Mainly sandy gravel (OBC 80: gravelly sand)	Rock, overlain with coarse sediments: mainly sandy gravel (OBC 13: muddy sandy gravel)	Mainly sandy gravel (OBC 45: gravelly sand)
Number of stations	4	5	3
Dominant species (numerical abundance)	*Ampharete lindstroemi*, *Lagis koreni* juvs, *Spisula elliptica*, *Hesionura elongata*, *Ampelisca spinipes*, *Abra alba*, *Mytilus edulis* juvs, Ampharetidae juvs, *Mediomastus fragilis*, *Scalibregma inflatum*, *Microphthalmus similis*, *Protodorvillea kefersteini*	*Mytilus edulis* juvs, *Sphenia binghami*, *Heteranomia squamula*, *Sabellaria spinulosa*, Harmothoinae spp., *Mediomastus fragilis*, *Lumbrineris gracilis*, *Ericthonius punctatus*, *Ampelisca spinipes*, *Abra alba*, *Aora gracilis*	Mytilidae juvs, *Stenothoe marina*, *Mytilus edulis* juvs, *Hesionura elongata*, *Aora gracilis*, *Spisula elliptica*, *Goodallia triangularis*, Terebellidae juvs, *Sertularia argentea*, *Eusyllis blomstrandi*, *Electra pilosa*
Characterising Species*	*Prododorvillea keferesteini*, *Grania* spp. (*Hesionura elongata*)	Including *Lumbrineris gracilis*, *Sabellaria spinulosa*, *Lepidonotus squamatus*, *Sphenia binghami*, *Nucula nucleus*, *Modiolus modiolus*, *Parvicardium ovale*, *Gammaropsis maculata*, *Verruca stroemi*, *Amphipholis squamata*, *Dendrodoa grossularia*, *Scrupocellaria scruposa*, *Alcyonidium mytili*, *Bicellariella ciliata*	*Stenothoe marina*
Top-ranked colonial taxa	*Electra pilosa* (rank 24), *Sertularia argentea* (27); *Sertularia* spp. combined (25)	*Electra pilosa* (23), *Hydrallmania falcata* (24), *Bicellariella ciliata* (42); *Alcyonidium mytili* (48)	*Sertularia argentea* (9), *Electra pilosa* (11), *Alcyonidium parasiticum* (16), *Diphasia rosacea* (28)
Biotopes (MNCR)	**SS.SCS.CCS.MedLumVen/ SS.SCS.ICS.HeloMsim**, with partial **SS.SSa.IfiSa.ScupHyd** overlay **HeloMsim** influence higher than IVf	**SS.SMx.CMx.FluHyd** (rock) & **SS.SMx.OMx.PoVen/ SS,SBR.PoR.SspiMx** (sediment) *Flustra foliacea* & *Hydrallmania falcata* on tide-swept circalittoral mixed sediment (rock) & Polychaete-rich deep *Venus* community in offshore mixed sediment/ *Sabellaria spinulosa* on stable circalittoral mixed sediment	**SS.SCS.CCS.MedLumVen/ SS.SCS.ICS.HeloMsim,** with **SS.SSa.IfiSa.ScupHyd** overlay **HeloMsim** influence lower than IVd; **ScupHyd** well-developed
Biotopes (EUNIS)	**A5.132/A5.124** with partial **A5.232**	**A5.444** & **A5.451/A5.611**	**A5.132/A5.124** with **A5.232**
Taxa (Total)	239	443	187
Colonial taxa (Total)	21	61	30
Species Richness	Moderate	High	Moderate
Taxa (station)**	118 (91-130) 126	216 (179-238) 230	109 (91-125) 110
Individuals (0.2 m^2)**	3116 (1068-5880) 2758	3078 (1980: OBC 16 & 4176: OBC 20) 3078	1240 (OBC 44)
Fisher's Index (0.2 m^2)**	23.2 (20.9-26.0) 22.9	47.3 (46.0: OBC 20 & 48.5: OBC 16) 47.3	25.0 (OBC 44)
Shannon-Wiener (0.2 m^2)**	4.3 (3.6-4.9) 4.4	6.1 (6.0: OBC 20 & 6.2: OBC 16) 6.1	4.5 (OBC 44)
Heip Evenness (0.2 m^2)**	0.19 (0.09-0.26) 0.21	0.36 (0.31: OBC 20 & 0.41: OBC 16) 0.36	0.22 (OBC 44)

Table 7.9 (cont.): Summary of Outer Bristol Channel macrofaunal assemblage IV [Characterising species are those exhibiting higher fidelity and/or numerical presence; ** mean (range) median]*

8. Summary and Conclusions

The study has produced an assessment of the marine habitat of the Outer Bristol Channel through an integrated interpretation of the geology and biology of the area. The interpretation is primarily based on eleven, kilometre-wide corridors of high-resolution geophysics including multibeam, sidescan and sub-bottom profiling — ground-truthed with the analysis of grab and trawl samples, and video and camera tows. The corridor approach has only provided geophysical coverage of about 15% of the area's sea bed, but has enabled the principal geological and morphological features to be delineated and assessed in terms of their biological attributes. The study's survey data and interpretation have been augmented by a number of other relevant datasets to extend the significance and value of the corridor habitat interpretation regionally across the Outer Bristol Channel.

There are a number of processes and features that control and influence marine sea bed habitats. The principals amongst these include the physical nature of the sea bed in terms of geology and sediment, and the sedimentation and hydrodynamic processes which impact the sea bed. These include not only present-day conditions in terms of water quality, salinity, tides, currents, waves, sediment mobility, grain size, bedforms and rock outcrop, but also previous environments in geological time which have left their imprint on the sea bed.

The distribution of sediments at and beneath the Outer Bristol Channel sea bed appears to be the product of sedimentation processes associated with two major geological environments. The first is glacial and glaciofluvial associated with the Quaternary Last Devensian Glaciation when an ice lobe extended south out into Carmarthen Bay and initially deposited **Late Pleistocene Sediments**, subsequently overlain by **Basal Sand and Gravel** within the Bay and out across the axial centre of the Outer Bristol Channel; these deposits appear to have remained in relatively close proximity to their original depositional source, although some reworking and transport has occurred subsequently. At the glacial maximum, around 22,000 years ago, sea level would have been at least 100 m lower than the present-day with the Outer Bristol Channel a marginal glaciated terrestrial environment. The subsequent amelioration of climate brought on the development of the second major geological environment with the gradual rise in sea level culminating in a fully marine environment by around 5000 years ago. The morphology of the Outer Bristol Channel underwent a considerable metamorphosis as sea level rose and wave and tidal currents began to fashion mobile sandy sediments into a major **Sand Waves** unit and produce one of the most significant sand wave fields on the UK continental shelf.

The modern present-day marine environment is characterised by strong tidal currents and one of the largest tidal ranges in the world with a mean spring tidal range up to 8 m. Apart from Carmarthen Bay, depth-averaged mean spring tidal currents are $>1.0\ ms^{-1}$ over the area and capable of entraining and moving sandy sediment in an environment of relatively high bed shear stress. The tidal streams are commonly rectilinear with the western ebb tidal constituent being dominant. This tidal asymmetry is also matched by the dominance of west facing asymmetry in the large sand waves of the area, indicative of net sand transport to the west.

The study area covers approximately 2400 km^2 and in simple terms the sea bed has a northern half which is dominated by sand and a southern half where gravelly sediments are common and sand, although present, is less significant. Rock is notable at the margins of the area in the northwest, southwest and southeast.

The Outer Bristol Channel has been divided into four physical regions:

Region 1 – Carmarthen Bay & Approaches
Region 2 – Outer Bristol Channel Sands (OBel Sands)
  a. North Sector (NOBel Sands)
  b. South Sector (SOBel Sands)
Region 3 – Lundy Platform
Region 4 – Morte Platform

These regions support five benthic faunal assemblages. The three major faunal assemblages, designated II, III and IV, respectively dominate regions 1, 2a and 2b. Assemblage I is confined to Helwick Bank and Assemblage V covers small rock outcrops. None of the assemblages are unique within UK waters. The assemblages and their subgroups correspond to eight infaunal and three epifaunal biotopes included in the 2004 *Marine Habitat Classification for Britain and Ireland*. The epifaunal biotopes are present as overlays on some infaunal biotopes and can occur in combination.

Region 1 - Carmarthen Bay and Approaches

- Dominantly smooth sea bed of fine to medium sand with some small ripples
- Few bedforms and some muddy, coarse and shelly patches and channels
- Waves are important as a transport mechanism in shallow water as tidal current energy decreases
- Inner Bay acts as store for sediment
- Dominated by macrofaunal Assemblage II with low to moderate numbers of species all indicative of stable sand or muddy sand habitats
- Main biotope is **FfabMag**
- Macrofaunal abundance decreases from the Approaches into the shallower waters of the Bay. Epifauna numbers also generally low
- Very low species numbers and lowest abundances occur at and around Helwick Bank and Worms Head
- Higher species richness and colonial taxa associated with rock and coarser sediment around Caldey Island.

Region 2a – NOBel Sands

- Extensive sand wave field with area of around 440 km^2
- Includes large sand waves in east 12–14 m high with maximum height of 19 m
- They are <10 m high in west
- They are strongly asymmetrical with steep west facing lee slopes
- Also includes an area of bifurcating high frequency sand waves in south of region
- These include primary waves generally 4–10 m high with west-facing asymmetrical waves and symmetrical waves, and secondary waves up to 4 m high
- Surfaces of the large sand waves covered by mobile sediment in the form of megaripples and ripples, but their position and form appears to have remained static in recent times. Hence, large sand waves may be in a state of *in situ* equilibrium
- Sea bed sediments are generally medium sand
- Gravelly sand and sandy gravel visible in some large sand wave troughs
- Large sand wave field and high frequency sand waves predominantly host macrofaunal Assemblage III
- Main biotope is **HeloMsim**
- Low to moderate numbers of species.

Region 2b – SOBel Sands

- Field of isolated sand waves on relatively flat sea bed of gravelly sand and sandy gravel covering an area of about 480 km^2
- Sand waves are generally asymmetrical and west facing, <10 m high
- Double crested waves common in south of region
- Sand waves appear to be relatively static and in state of *in situ* equilibrium
- Assemblage III fauna (**HeloMsim** biotope) associated with sand waves
- Assemblage IV on coarse sediment corresponds to **MedLumVen** biotope, often overlain with one or two epifaunal biotopes
- Richer assemblage IV subgroups at boundaries with Platforms to east and west
- Very rich fauna with many colonial epifaunal species
- Coarser sediment and stony areas more diverse than sandy areas.

Region 3 – Lundy Platform

- Apart from the Stanley Bank sand bank the area has coarse sediment pavement with rock outcrops
- No single dominant biotope
- Range of abundances, moderate to high species richness and variable number of colonial taxa.

Region 4 – Morte Platform

- Coarse sediment pavement in west and north with rock outcrops to east
- Some sand patches, ribbons and isolated sand waves
- Rich Assemblage IV subgroups associated with rocky areas and gravelly sediments

• Sediments between epifaunal dominated rock corresponds to **PoVen** biotope
• High species richness and abundance across region.

Species diversity is generally moderate to low over most of the study area except in the coarse sediments of the SOBel Sands, and on the Lundy and Morte Platforms. These coarse sediments and rock outcrops provide a habitat for a variety of colonial epifauna and exhibit high biodiversity. They offer more microhabitats for infauna, and gravel and rock surfaces can be colonised by attached and encrusting epifauna. Hence, species richness is highest where gravelly sediments and rock outcrops co-occur.

Areas of sand with mobile surface sediment and extensive large and small bedforms such as NOBel Sands support a reduced complement of infaunal species that are adaptable to stressful, current dominated conditions. Colonial epifaunal biotope overlays are less well developed, as any gravel suitable for providing surfaces for attachment could be frequently scoured or buried by mobile sand. There is no evidence that faunal composition or diversity differs in relation to location on a sand wave.

Species assemblages derived from trawls correspond well with macrofaunal assemblages II-IV identified from grab sampling. There is some evidence from the trawls and videos that some areas near the southeast margin of Carmarthen Bay possess more starfish and hermit crabs. Catches from sand wave areas are generally small. Sand Eels are relatively infrequent in grabs and sporadic in trawls taken in daytime. However, they may possibly be more abundant if sampling took place at night. Brittle stars are very abundant on some stable sediments in west NOBel Sands, and east SOBel Sands and Morte Platform areas. Whelks are infrequently found on the sand waves of the east NOBel Sands, being numerous on the sands in the Carmarthen Bay Approaches, west NOBel Sands and highest on the coarser gravelly sediments of the SOBel Sands.

The faunal distributions are correlated with depth, sand, mud, carbonate, mean phi and sorting. The study has developed a tool (LINKTREE procedure) capable of predicting faunal characteristics relative to these six environmental variables. This predictive tool could be utilised in future habitat research in the Outer Bristol Channel.

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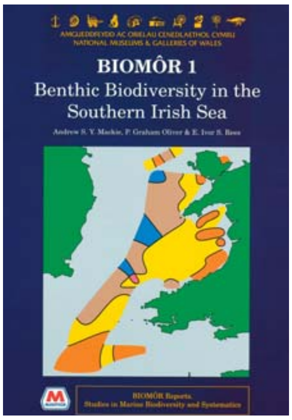

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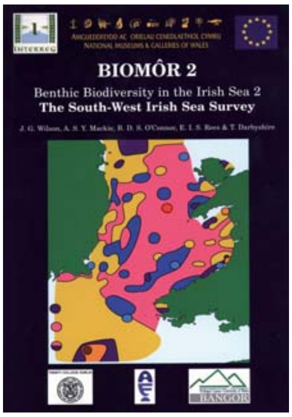

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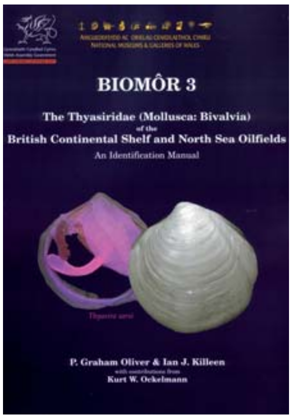

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Etymology: BIOMÔR from the welsh bioleg (biology) and môr (sea)

The Outer Bristol Channel Marine Habitat Study has been funded by the Aggregates Levy Sustainability Fund (ALSF) in Wales and England, Amgueddfa Cymru—National Museum Wales (NMW), British Geological Survey (BGS)/the Natural Environment Research Council (NERC), The Crown Estate and the British Marine Aggregate Producers Association (BMAPA).

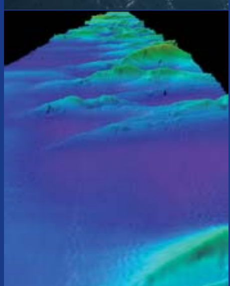
R.V. *Prince Madog*, University of Wales, Bangor
(J. Wild, NMW)

R.V. *Noctiluca*, University of Wales, Swansea
(P. Dyrynda)

Van Veen grabs were deployed to obtain samples from the sea bed for investigation of fauna and sediment type.

Visual assessment of the sea bed environment was made using a photosled towed over the sea bed taking both still photographs and video footage.

Larger fauna from the sea bed surface, generally too widely dispersed to be adequately sampled using a grab, were collected via a series of epibenthic trawl tows.



The physical nature of the sea bed was determined using a variety of geophysical methods: multibeam, sidescan & boomer. Detailed images of the sea floor, both above & sub-surface, were obtained.

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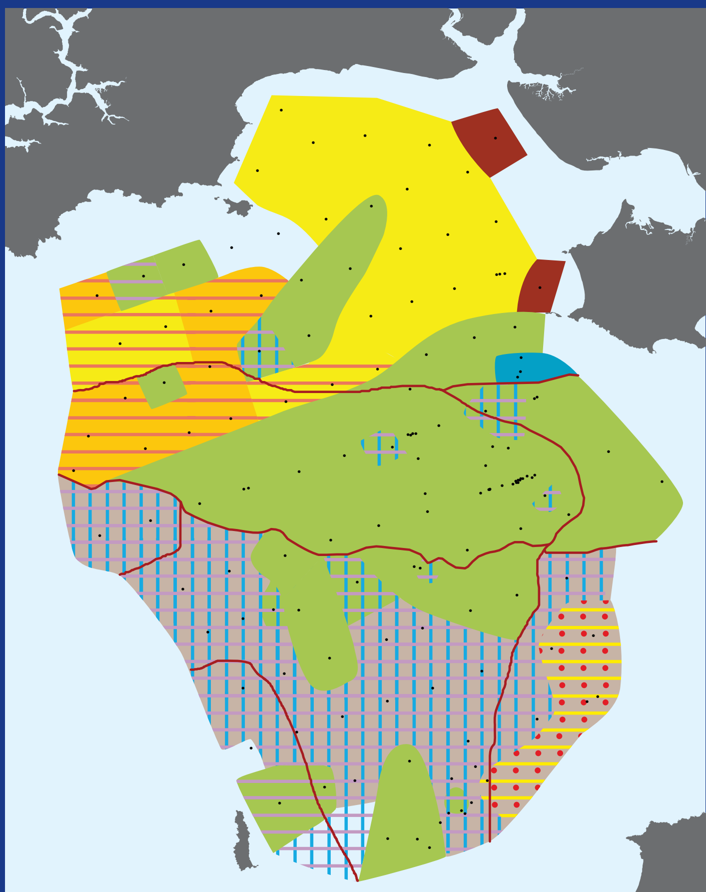

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Front Cover illustration: Biotope map for the Outer Bristol Channel (see Figure 7.3)

Back Cover photos (left to right): Dragonet *Callionymus reticulatus*, Dahlia anemone *Urticina* sp., Dog cockle *Glycymeris glycymeris*, hydroid *Nemertesia antennina* with hermit crab, Sunstar *Crossaster papposus*, Sea Mouse *Aphrodita aculeata*

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Appendices

Appendix 1

Locality and Sediment Data for all OBCMHS Stations

Definitions

Station:	OBC station number
BGS No:	Number in BGS database
Latitude/Longitude (min/sec):	Lat and long in minutes and seconds
Latitude/Longitude (decimal):	Lat and long in decimal degrees
Raw Depth (m):	Depth from cruise
Corrected Depth (m):	Depth from tidally corrected multibeam data. Depth in brackets obtained from UK Hydrographic Office Admiralty TotalTide program
Aspect:	If sample lies on a slope, which way the slope faces
Slope (degrees°):	If sample lies on a slope, the slope angle in degrees. (No data - sample outside of corridor)
Folk Classification:	Sediment size using Folk classification
Gravel (%):	Percentage of gravel in total sample
Sand (%):	Percentage of sand in total sample
Mud (%):	Percentage of mud in total sample
$CaCO_3$ (Sand):	Percentage of carbonate in sand fraction
$CaCO_3$ (Gravel):	Percentage of carbonate in gravel fraction
$CaCO_3$ (Total):	Percentage of carbonate in total sample
Wentworth Grade:	Classification of sand according to Wentworth
Mean phi:	Mean grain size in phi
Mean mm:	Mean grain size in mm
d_{50}:	The line at which 50% of the grains are coarser and 50% are finer than the median value
Folk Sort:	Spread of particles about the average (Folk formula, well-sorted sediments with a high sand content)
Inman Sort:	Spread of particles about the average (Inman formula, high mud or gravel content)
Folk Skew:	Measure of asymmetry of the sediment distribution curve (Folk formula, well-sorted sediments with a high sand content)
Inman Skew:	Measure of asymmetry of the sediment distribution curve (Inman formula, high mud or gravel content)
Folk Kurtosis:	Degree of peakedness of the sediment distribution curve (Folk formula, well-sorted sediments with a high sand content)
Inman Kurtosis:	Degree of peakedness of the sediment distribution curve (Inman formula, high mud or gravel content)
Sample Description:	Visual description of sample from onboard log
Additional Comments:	Any other comments on the sediment

Station	BGS No	Latitude (min/sec)	Longitude (min/sec)	Latitude (decimal)	Longitude (decimal)	Raw Depth (m)	Corrected Depth (m)	Aspect	Slope (degrees °)	Folk Classification	Gravel (%)	Sand (%)	Mud (%)	$CaCO_3$ (Sand)	$CaCO_3$ (Gravel)	$CaCO_3$ (Total)
OBC2	+51-04 3010	51° 21' 36.00" N	3° 10' 01.20" W	51° 21.60' N	3° 10.01' W	33.9	(25.1)	No data	No data	sG	52.73	47.17	0.1	13.00	6	9
OBC3	+51-04 3011	51° 20' 49.20" N	3° 13' 37.20" W	51° 20.80' N	3° 13.63' W	23.6	No data	No data	No data	-	-	-	-	-	-	-
OBC4	+51-05 1197	51° 12' 10.80" N	4° 24' 46.80" W	51° 12.20' N	4° 24.79' W	39.5	40	Northeast	<1	sG	55.46	44.54	0	3.00	3	3
OBC5	+51-05 1198	51° 12' 18.00" N	4° 25' 01.20" W	51° 12.28' N	4° 25.01' W	39.1	39	Northeast	<1	gS	26.14	73.48	0.38	19.00	5	15
OBC6	+51-05 1199	51° 12' 10.80" N	4° 25' 55.20" W	51° 12.19' N	4° 25.90' W	45.6	(41.0)	No data	No data	sG	49.81	48.77	1.42	18.00	10	14
OBC7	+51-05 1200	51° 10' 19.20" N	4° 33' 00.00" W	51° 10.32' N	4° 32.98' W	50.5	48	Flat	Flat	sG	35.01	64.14	0.85	19.00	12	17
OBC8	+51-05 1201	51° 11' 02.40" N	4° 30' 03.60" W	51° 11.05' N	4° 30.06' W	46.8	41	East	3	S	0.09	99.91	0	17.00	100	17
OBC9	+51-05 1202	51° 11' 02.40" N	4° 28' 01.20" W	51° 11.03' N	4° 28.02' W	46.2	45	West	<1	(g)S	2.7	97.30	0	13.00	20	13
OBC10	+51-05 1203	51° 10' 40.80" N	4° 27' 10.80" W	51° 10.70' N	4° 27.15' W	46.6	(44.1)	No data	No data	sG	35.96	64.04	0.08	19.00	17	18
OBC11	+51-05 1204	51° 11' 45.60" N	4° 26' 27.60" W	51° 11.73' N	4° 26.43' W	43.1	43	Northeast	<1	gS	29.67	73.33	0	20.00	12	18
OBC12	+51-05 1205	51° 17' 20.40" N	4° 15' 46.80" W	51° 17.34' N	4° 15.80' W	42.1	39	Flat	Flat	-	-	-	-	-	-	-
OBC13	+51-05 1206	51° 17' 06.00" N	4° 16' 30.00" W	51° 17.11' N	4° 16.52' W	41.2	38	Flat	Flat	msG	73.5	23.57	2.93	26.00	2	8
OBC14	+51-05 1207	51° 16' 19.20" N	4° 19' 55.20" W	51° 16.32' N	4° 19.91' W	43.5	44	Flat	Flat	sG	69.86	29.75	0.39	13.00	2	5
OBC15	+51-05 1208	51° 12' 39.60" N	4° 23' 02.40" W	51° 12.66' N	4° 23.01' W	46.6	42	Flat	Flat	sG	43.77	53.84	2.39	17.00	4	11
OBC16	+51-05 1209	51° 13' 37.20" N	4° 23' 16.80" W	51° 13.61' N	4° 23.29' W	47.6	(41.3)	No data	No data	sG	45.35	52.87	1.78	18.00	15	17
OBC17	+51-05 1210	51° 14' 13.20" N	4° 24' 07.20" W	51° 14.23' N	4° 24.10' W	47.3	(40.8)	No data	No data	sG	34.89	64.34	0.77	20.00	3	14
OBC18	+51-05 1211	51° 13' 40.80" N	4° 25' 44.40" W	51° 13.70' N	4° 25.73' W	47.3	(40.7)	No data	No data	sG	32.37	67.16	0.47	20.00	7	16
OBC19	+51-05 1212	51° 15' 18.00" N	4° 24' 39.60" W	51° 15.32' N	4° 24.67' W	48.7	42	Flat	Flat	sG	63.53	35.09	1.38	19.00	3	9
OBC20	+51-05 1213	51° 19' 22.80" N	4° 19' 01.20" W	51° 19.37' N	4° 19.01' W	47.1	41	Flat	Flat	sG	72.15	25.96	1.89	28.00	3	10
OBC21	+51-05 1214	51° 19' 58.80" N	4° 16' 08.40" W	51° 19.98' N	4° 16.14' W	48.7	42	Flat	Flat	sG	74.64	22.97	2.39	27.00	1	8
OBC22	+51-05 1215	51° 18' 21.60" N	4° 23' 49.20" W	51° 18.36' N	4° 23.82' W	49.8	40	Northeast	<1	gS	12.15	87.85	0	17.00	31	19
OBC23	+51-05 1216	51° 17' 34.80" N	4° 27' 10.80" W	51° 17.58' N	4° 27.17' W	49.4	44	Flat	Flat	sG	43.44	55.12	1.44	15.00	3	10
OBC24	+51-05 1217	51° 14' 24.00" N	4° 28' 40.80" W	51° 14.41' N	4° 28.70' W	46.6	45	Flat	Flat	gS	27.2	72.80	0	11.00	12	11
OBC25	+51-05 1218	51° 13' 30.00" N	4° 32' 24.00" W	51° 13.47' N	4° 32.41' W	48.1	44	Flat	Flat	gS	29.4	70.02	0.58	18.00	9	15
OBC26	+51-05 1219	51° 13' 12.00" N	4° 34' 30.00" W	51° 13.18' N	4° 34.48' W	42.3	40	Southwest	7	(g)S	2.53	97.36	0.11	21.00	42	22
OBC27	+51-05 1220	51° 12' 28.80" N	4° 37' 33.60" W	51° 12.50' N	4° 37.58' W	43.0	39	Flat		(g)S	3.76	96.24	0	21.00	68	23
OBC28	+51-05 1221	51° 14' 49.20" N	4° 39' 36.00" W	51° 14.83' N	4° 39.60' W	51.1	48	Flat	Flat	-	-	-	-	-	-	-
OBC29	+51-05 1222	51° 15' 32.40" N	4° 36' 28.80" W	51° 15.51' N	4° 36.48' W	50.9	49	Flat	Flat	sG	51.49	47.67	0.84	35.00	5	20
OBC30	+51-05 1223	51° 16' 15.60" N	4° 33' 21.60" W	51° 16.27' N	4° 33.34' W	45.5	44	Flat	Flat	sG	69.83	29.78	0.39	22.00	7	12
OBC31	+51-05 1224	51° 16' 58.80" N	4° 30' 18.00" W	51° 16.96' N	4° 30.27' W	45.6	43	Northeast	<1	gS	25.69	73.61	0.7	15.00	4	12
OBC32	+51-05 1225	51° 18' 03.60" N	4° 37' 26.40" W	51° 18.08' N	4° 37.43' W	49.1	47	Flat	Flat	sG	36.76	62.91	0.33	14.00	3	10
OBC33	+51-05 1226	51° 20' 49.20" N	4° 38' 16.80" W	51° 20.81' N	4° 38.30' W	52.6	50	East	<1	sG	59.84	40.08	0.08	10.00	4	6
OBC34	+51-05 1227	51° 20' 24.00" N	4° 40' 22.80" W	51° 20.37' N	4° 40.40' W	48.8	46	Flat	Flat	sG	64.33	35.59	0.08	11.00	3	6
OBC35	+51-05 1228	51° 19' 48.00" N	4° 42' 46.80" W	51° 19.81' N	4° 42.75' W	59.1	55	Flat	Flat	gS	27.87	72.13	0	14.00	5	11
OBC36	+51-05 1229	51° 17' 24.00" N	4° 40' 15.60" W	51° 17.42' N	4° 40.28' W	54.5	49	Flat	Flat	sG	44.06	53.91	2.03	18.00	8	14
OBC37	+51-05 1230	51° 18' 46.80" N	4° 34' 19.20" W	51° 18.77' N	4° 34.32' W	48.9	46	Flat	Flat	sG	71.72	28.26	0.02	10.00	1	4
OBC38	+51-05 1231	51° 19' 37.20" N	4° 30' 25.20" W	51° 19.61' N	4° 30.39' W	51.5	45	Southeast	<1	gS	26.89	72.81	0.3	14.00	10	13
OBC39	+51-05 1232	51° 22' 26.40" N	4° 18' 03.60" W	51° 22.44' N	4° 18.07' W	55.2	42	North	<1	sG	49.22	49.75	1.03	22.00	11	17
OBC40	+51-05 1233	51° 21' 39.60" N	4° 21' 28.80" W	51° 21.63' N	4° 21.48' W	52.8	46	Flat	Flat	gS	12.4	87.39	0.21	17.00	10	16
OBC41	+51-05 1234	51° 20' 56.40" N	4° 24' 39.60" W	51° 20.96' N	4° 24.67' W	45.8	43	Southwest	5	gS	14.66	85.34	0	12.00	4	11
OBC42	+51-05 1235	51° 20' 09.60" N	4° 27' 57.60" W	51° 20.18' N	4° 27.94' W	47.7	44	Southeast	<1	sG	40.65	58.05	1.3	13.00	3	9
OBC43	+51-05 1236	51° 20' 49.20" N	4° 36' 32.40" W	51° 20.84' N	4° 36.53' W	53.8	52	Flat	Flat	gS	23.4	76.60	0	9.00	8	9
OBC44	+51-05 1237	51° 22' 04.80" N	4° 32' 31.20" W	51° 22.05' N	4° 32.53' W	49.1	46	Flat	Flat	sG	33.19	66.39	0.42	10.00	0	7
OBC45	+51-05 1238	51° 22' 44.40" N	4° 28' 12.00" W	51° 22.73' N	4° 28.19' W	48.8	42	Flat	Flat	gS	17.05	82.81	0.14	9.00	0	7
OBC46	+51-05 1239	51° 22' 48.00" N	4° 28' 37.20" W	51° 22.80' N	4° 28.64' W	48.8	41	East	5	gS	15.82	84.18	0	10.00	1	9
OBC47	+51-05 1240	51° 23' 34.80" N	4° 24' 57.60" W	51° 23.58' N	4° 24.94' W	41.6	40	East	2	sG	42.63	57.37	0	11.00	2	7
OBC48	+51-05 1241	51° 24' 32.40" N	4° 21' 18.00" W	51° 24.51' N	4° 21.30' W	45.0	43	Flat	Flat	S	0	100.00	0	11.00	0	11
OBC49	+51-05 1242	51° 28' 55.20" N	4° 27' 07.20" W	51° 28.92' N	4° 27.13' W	40.7	35	Northwest	2	gS	6.73	93.27	0	7.00	0	7
OBC50	+51-05 1243	51° 29' 34.80" N	4° 23' 52.80" W	51° 29.60' N	4° 23.90' W	37.7	35	Flat	Flat	sG	53.08	46.90	0.02	23.00	14	18

Station	BGSNo	Latitude (min/sec)	Longitude (min/sec)	Latitude (decimal)	Longitude (decimal)	Raw Depth (m)	Corrected Depth (m)	Aspect	Slope (degrees °)	Folk Classification	Gravel (%)	Sand (%)	Mud (%)	$CaCO_3$ (Sand)	$CaCO_3$ (Gravel)	$CaCO_3$ (Total)
OBC51	+51-05 1244	51° 30' 14.40" N	4° 20' 20.40" W	51° 30.21' N	4° 20.31' W	39.7	36	Flat	Flat	sG	43.29	56.15	0.56	20.00	4	13
OBC52	+51-05 1245	51° 27' 57.60" N	4° 30' 18.00" W	51° 27.98' N	4° 30.29' W	45.1	42	Flat	Flat	sG	30.26	69.67	0.07	10.00	22	14
OBC53	+51-05 1246	51° 27' 32.40" N	4° 33' 36.00" W	51° 27.53' N	4° 33.59' W	48.2	43	Flat	Flat	gS	5.25	94.75	0	9.00	6	9
OBC54	+51-05 1247	51° 26' 49.20" N	4° 36' 43.20" W	51° 26.81' N	4° 36.74' W	42.3	42	Flat	Flat	S	0.43	99.57	0	8.00	9	8
OBC55	+51-05 1248	51° 27' 39.60" N	4° 47' 24.00" W	51° 27.67' N	4° 47.37' W	58.4	52	East	<1	S	0.59	93.62	5.79	11.00	35	11
OBC56	+51-05 1249	51° 29' 49.20" N	4° 48' 54.00" W	51° 29.82' N	4° 48.87' W	51.0	46	Flat	Flat	S	0.75	91.53	7.72	10.00	48	10
OBC57	+51-05 1250	51° 32' 09.60" N	4° 49' 19.20" W	51° 32.17' N	4° 49.31' W	39.8	34	Flat	Flat	S	0	95.75	4.25	9.00	0	9
OBC58	+51-05 1251	51° 34' 12.00" N	4° 51' 00.00" W	51° 34.19' N	4° 51.00' W	43.4	38	Flat	Flat	sG	46.85	49.33	3.82	19.00	14	17
OBC59	+51-05 1252	51° 35' 38.40" N	4° 33' 28.80" W	51° 35.63' N	4° 33.48' W	32.6	29	Flat	Flat	(g)S	2.22	97.50	0.28	21.00	66	22
OBC60	+51-05 1253	51° 35' 06.00" N	4° 36' 50.40" W	51° 35.07' N	4° 36.82' W	39.1	36	Flat	Flat	(g)S	3.59	92.51	3.9	10.00	18	10
OBC61	+51-05 1254	51° 34' 22.80" N	4° 39' 36.00" W	51° 34.36' N	4° 39.59' W	41.1	39	Flat	Flat	msG	59.02	30.40	10.58	33.00	7	18
OBC62	+51-05 1255	51° 33' 39.60" N	4° 43' 04.80" W	51° 33.65' N	4° 43.10' W	40.6	38	Flat	Flat	mS	0.13	63.49	36.38	27.00	0	27
OBC63	+51-05 1256	51° 32' 56.40" N	4° 46' 12.00" W	51° 32.94' N	4° 46.20' W	40.6	34	Flat	Flat	S	0	96.84	3.16	17.00	0	17
OBC64	+51-05 1257	51° 35' 06.00" N	4° 47' 49.20" W	51° 35.10' N	4° 47.80' W	31.7	28	Flat	Flat	sG	54.51	45.10	0.39	37.00	20	28
OBC65	+51-05 1258	51° 35' 38.40" N	4° 45' 03.60" W	51° 35.62' N	4° 45.03' W	34.0	31	Flat	Flat	(g)S	3.1	96.60	0.3	30.00	89	32
OBC66	+51-05 1259	51° 36' 25.20" N	4° 41' 45.60" W	51° 36.44' N	4° 41.78' W	33.7	31	Flat	Flat	-	-	-	-	-	-	-
OBC67	+51-05 1260	51° 37' 04.80" N	4° 38' 31.20" W	51° 37.07' N	4° 38.54' W	36.3	29	Flat	Flat	-	-	-	-	-	-	-
OBC68	+51-05 1261	51° 37' 44.40" N	4° 35' 13.20" W	51° 37.72' N	4° 35.22' W	36.3	25	Flat	Flat	S	0.34	95.26	4.4	16.00	0	16
OBC69	+51-05 1262	51° 38' 20.40" N	4° 32' 06.00" W	51° 38.35' N	4° 32.08' W	36.3	18	Flat	Flat	gS	9.58	90.39	0.03	32.00	100	39
OBC70	+51-05 1263	51° 39' 07.20" N	4° 29' 38.40" W	51° 39.10' N	4° 29.64' W	21.7	16	Flat	Flat	S	0.31	97.80	1.89	14.00	100	14
OBC71	+51-05 1264	51° 39' 54.00" N	4° 25' 26.40" W	51° 39.92' N	4° 25.44' W	15.0	8	Flat	Flat	S	0	98.21	1.79	15.00	0	15
OBC72	+51-05 1265	51° 41' 24.00" N	4° 23' 34.80" W	51° 41.38' N	4° 23.57' W	15.0	(7.9)	No data	No data	S	0.44	98.83	0.73	14.00	100	14
OBC73	+51-05 1266	51° 41' 02.40" N	4° 28' 08.40" W	51° 41.05' N	4° 28.14' W	15.0	(8.2)	No data	No data	S	0	98.36	1.64	15.00	0	15
OBC74	+51-05 1267	51° 41' 24.00" N	4° 32' 38.40" W	51° 41.39' N	4° 32.63' W	15.0	(8.8)	No data	No data	S	0.38	96.31	3.31	20.00	100	20
OBC75	+51-05 1268	51° 41' 02.40" N	4° 36' 14.40" W	51° 41.03' N	4° 36.22' W	15.0	(9.3)	No data	No data	S	0	90.39	9.61	22.00	0	22
OBC76	+51-05 1269	51° 42' 25.20" N	4° 38' 31.20" W	51° 42.43' N	4° 38.51' W	11.1	(5.9)	No data	No data	S	0	95.05	4.95	27.00	100	27
OBC77	+51-05 1270	51° 39' 46.80" N	4° 40' 04.80" W	51° 39.76' N	4° 40.08' W	13.9	(9.3)	No data	No data	gS	18.31	80.66	1.03	21.00	96	35
OBC78	+51-05 1271	51° 30' 32.40" N	4° 46' 12.00" W	51° 30.53' N	4° 46.19' W	48.0	45	Flat	Flat	(g)S	2.33	92.83	4.84	23.00	40	23
OBC79	+51-05 1272	51° 31' 15.60" N	4° 43' 04.80" W	51° 31.24' N	4° 43.10' W	43.5	42	Flat	Flat	S	0.96	98.41	0.63	11.00	83	12
OBC80	+51-05 1273	51° 31' 58.80" N	4° 39' 39.60" W	51° 31.95' N	4° 39.67' W	39.4	38	Flat	Flat	gS	29.62	68.11	2.27	15.00	15	15
OBC81	+51-05 1274	51° 32' 42.00" N	4° 36' 14.40" W	51° 32.71' N	4° 32.26' W	35.4	35	Flat	Flat	(g)S	1.03	98.52	0.45	9.00	40	9
OBC82	+51-05 1275	51° 33' 36.00" N	4° 31' 58.80" W	51° 33.57' N	4° 31.99' W	31.2	31	Flat	Flat	S	0.69	91.26	8.05	11.00	100	12
OBC83	+51-05 1276	51° 31' 19.20" N	4° 31' 26.40" W	51° 31.30' N	4° 31.45' W	28.7	28	Flat	Flat	S	0	99.50	0.5	9.00	0	9
OBC84	+51-05 1277	51° 31' 58.80" N	4° 28' 04.80" W	51° 31.98' N	4° 28.10' W	24.8	25	Flat	Flat	S	0	100.00	0	9.00	0	9
OBC85	+51-05 1278	51° 34' 15.60" N	4° 29' 09.60" W	51° 34.27' N	4° 29.13' W	29.0	28	Flat	Flat	S	0.51	98.56	0.93	12.00	100	12
OBC86	+51-05 1279	51° 36' 32.40" N	4° 30' 00.00" W	51° 36.55' N	4° 30.00' W	25.9	24	Flat	Flat	S	0.33	99.06	0.61	15.00	100	15
OBC87	+51-05 1280	51° 37' 12.00" N	4° 26' 45.60" W	51° 37.22' N	4° 26.73' W	23.0	20	Flat	Flat	(g)S	1.4	98.56	0.04	11.00	95	12
OBC88	+51-05 1281	51° 37' 48.00" N	4° 23' 24.00" W	51° 37.78' N	4° 23.41' W	15.1	11	Flat	Flat	S	0	99.71	0.29	15.00	0	15
OBC89	+51-05 1282	51° 34' 51.60" N	4° 26' 13.20" W	51° 34.83' N	4° 26.19' W	29.0	23	Flat	Flat	S	0	99.93	0.07	10.00	0	10
OBC90	+51-05 1283	51° 35' 31.20" N	4° 23' 06.00" W	51° 35.54' N	4° 23.07' W	22.9	17	Flat	Flat	(g)S	1.56	97.87	0.57	11.00	100	12
OBC91	+51-05 1284	51° 32' 45.60" N	4° 24' 46.80" W	51° 32.77' N	4° 24.77' W	28.5	21	Flat	Flat	S	0.11	99.89	0	10.00	0	10
OBC92	+51-05 1285	51° 34' 58.80" N	4° 20' 16.80" W	51° 34.95' N	4° 20.30' W	19.5	(11.7)	No data	No data	S	0	99.96	0.04	12.00	0	12
OBC93	+51-05 1286	51° 33' 14.40" N	4° 21' 57.60" W	51° 33.25' N	4° 21.95' W	26.1	19	Flat	Flat	S	0.57	99.43	0	8.00	0	8
OBC94	+51-05 1287	51° 30' 36.00" N	4° 34' 33.60" W	51° 30.59' N	4° 34.57' W	36.6	29	Flat	Flat	S	0	99.28	0.72	8.00	0	8
OBC95	+51-05 1288	51° 29' 49.20" N	4° 37' 44.40" W	51° 29.82' N	4° 37.75' W	38.5	32	West	<1	S	0	98.44	1.56	8.00	0	8
OBC96	+51-05 1289	51° 29' 02.40" N	4° 41' 31.20" W	51° 29.01' N	4° 41.49' W	52.6	46	Flat	Flat	mS	0.9	72.28	26.82	15.00	65	15
OBC97	+51-05 1290	51° 28' 22.80" N	4° 44' 24.00" W	51° 28.35' N	4° 44.37' W	55.9	50	Flat	Flat	gmS	19.36	63.75	16.89	18.00	31	21
OBC98	+51-05 1291	51° 24' 32.40" N	4° 46' 55.20" W	51° 24.52' N	4° 46.90' W	60.7	56	Flat	Flat	sG	56.96	41.90	1.14	15.00	26	21
OBC99	+51-05 1292	51° 21' 36.00" N	4° 44' 34.80" W	51° 21.61' N	4° 44.58' W	58.6	55	Flat	Flat	gS	15.87	83.98	0.15	11.00	20	12

Station	BGSNo	Latitude (min/sec)	Longitude (min/sec)	Latitude (decimal)	Longitude (decimal)	Raw Depth (m)	Corrected Depth (m)	Aspect	Slope (degrees °)	Folk Classification	Gravel (%)	Sand (%)	Mud (%)	$CaCO_3$ (Sand)	$CaCO_3$ (Gravel)	$CaCO_3$ (Total)
OBC100	+51-05 1293	51° 22' 26.40" N	4° 41' 24.00" W	51° 22.44' N	4° 41.39' W	49.8	49	Flat	Flat	sG	47.35	52.65	0	11.00	10	11
OBC101	+51-05 1294	51° 25' 19.20" N	4° 43' 33.60" W	51° 25.32' N	4° 43.56' W	48.2	49	Flat	Flat	S	0.16	99.76	0.08	10.00	0	10
OBC102	+51-05 1295	51° 26' 02.40" N	4° 40' 12.00" W	51° 36.02' N	4° 40.20' W	42.6	41	Flat	Flat	S	0	100.00	0	8.00	0	8
OBC103	+51-05 1296	51° 23' 09.60" N	4° 37' 33.60" W	51° 23.15' N	4° 37.55' W	50.1	49	Flat	Flat	gS	6.68	93.32	0	8.00	10	8
OBC104	+51-05 1297	51° 23' 52.80" N	4° 34' 26.40" W	51° 23.90' N	4° 34.46' W	46.9	46	Flat	Flat	(g)S	1.03	98.97	0	8.00	32	8
OBC105	+51-05 1298	51° 24' 32.40" N	4° 31' 08.40" W	51° 24.52' N	4° 31.11' W	45.6	43	East	2	S	0.37	99.63	0	8.00	0	8
OBC106	+51-05 1299	51° 25' 12.00" N	4° 27' 46.80" W	51° 25.22' N	4° 27.76' W	44.1	40	East	5	S	0	100.00	0	8.00	0	8
OBC107	+51-05 1300	51° 25' 58.80" N	4° 27' 57.60" W	51° 25.98' N	4° 27.96' W	42.3	(38.9)	No data	No data	S	0	100.00	0	8.00	0	8
OBC108	+51-05 1301	51° 26' 02.40" N	4° 24' 07.20" W	51° 26.06' N	4° 24.12' W	33.8	43	Flat	Flat	(g)S	4.27	94.36	1.37	10.00	32	11
OBC109	+51-05 1302	51° 25' 12.00" N	4° 18' 00.00" W	51° 25.21' N	4° 18.00' W	26.8	39	Flat	Flat	gS	22.47	77.48	0.05	16.00	4	13
OBC110	+51-05 1303	51° 25' 58.80" N	4° 19' 40.80" W	51° 25.97' N	4° 19.70' W	45.9	(39.8)	No data	No data	sG	43.87	56.13	0	13.00	7	10
OBC111	+51-05 1304	51° 26' 45.60" N	4° 20' 34.80" W	51° 26.76' N	4° 20.60' W	42.6	36	East	<1	gS	5.48	94.52	0	14.00	6	14
OBC112	+51-05 1305	51° 30' 10.80" N	4° 20' 31.20" W	51° 30.18' N	4° 20.49' W	39.1	36	Flat	Flat	gS	9.23	90.77	0	20.00	15	20
OBC113	+51-05 1306	51° 31' 04.80" N	4° 21' 43.20" W	51° 31.08' N	4° 21.73' W	38.4	(29.4)	No data	No data	S	0	99.88	0.12	10.00	0	10
OBC114	+51-05 1307	51° 31' 19.20" N	4° 21' 32.40" W	51° 31.34' N	4° 21.52' W	18.4	(9.4)	No data	No data	S	0	100.00	0	10.00	0	10
OBC115	+51-05 1308	51° 31' 55.20" N	4° 21' 28.80" W	51° 31.89' N	4° 21.45' W	18.4	(9.4)	No data	No data	S	0	100.00	0	9.00	0	9
OBC116	+51-05 1309	51° 26' 49.20" N	4° 20' 56.40" W	51° 26.80' N	4° 20.94' W	44.0	39	Flat	Flat	gS	22.95	77.05	0	14.00	39	20
OBC117	+51-05 1310	51° 26' 42.00" N	4° 21' 14.40" W	51° 26.72' N	4° 21.26' W	46.9	34	East	<1	gS	12.58	87.42	0	13.00	4	12
OBC118	+51-05 1311	51° 26' 38.40" N	4° 21' 25.20" W	51° 26.64' N	4° 21.40' W	48.4	40	Flat	Flat	gS	20.04	78.63	1.33	14.00	8	13
OBC119	+51-05 1312	51° 26' 38.40" N	4° 21' 32.40" W	51° 26.61' N	4° 21.56' W	46.9	40	Flat	Flat	sG	38.4	61.42	0.18	15.00	11	13
OBC120	+51-05 1313	51° 26' 34.80" N	4° 21' 43.20" W	51° 26.55' N	4° 21.72' W	49.3	39	Southwest	3	sG	34.58	65.24	0.18	15.00	9	13
OBC121	+51-05 1314	51° 26' 27.60" N	4° 21' 54.00" W	51° 26.47' N	4° 21.89' W	50.9	43	Southeast	<1	sG	43.04	56.54	0.42	14.00	4	10
OBC122	+51-05 1315	51° 26' 31.20" N	4° 21' 39.60" W	51° 26.53' N	4° 21.64' W	49.3	41	West	5	gS	12.34	87.66	0	14.00	8	13
OBC123	+51-05 1316	51° 26' 31.20" N	4° 21' 32.40" W	51° 26.54' N	4° 21.51' W	45.2	37	East	2	sG	35.46	64.54	0	14.00	5	11
OBC124	+51-05 1317	51° 26' 42.00" N	4° 21' 21.60" W	51° 26.69' N	4° 21.33' W	44.0	39	Flat	Flat	gS	28.98	71.02	0	14.00	3	11
OBC125	+51-05 1318	51° 28' 33.60" N	4° 28' 40.80" W	51° 28.55' N	4° 28.66' W	41.9	36	Northeast	<1	sG	37.8	62.20	0	10.00	4	8
OBC126	+51-05 1319	51° 28' 33.60" N	4° 28' 55.20" W	51° 28.53' N	4° 28.89' W	33.8	27	Northeast	15	S	0.44	99.56	0	11.00	0	11
OBC127	+51-05 1320	51° 28' 30.00" N	4° 29' 02.40" W	51° 28.52' N	4° 29.03' W	44.4	38	Flat	Flat	(g)S	1.21	98.79	0	10.00	25	10
OBC128	+51-05 1321	51° 28' 30.00" N	4° 29' 13.20" W	51° 28.52' N	4° 29.20' W	43.0	38	Flat	Flat	S	0.74	99.26	0	8.00	0	8
OBC129	+51-05 1322	51° 28' 01.20" N	4° 22' 15.60" W	51° 28.03' N	4° 22.27' W	43.8	(40.5)	No data	No data	S	0.76	99.24	0	12.00	0	12
OBC130	+51-05 1323	51° 28' 04.80" N	4° 23' 20.40" W	51° 28.07' N	4° 23.31' W	43.8	(40.8)	No data	No data	gS	23.13	76.14	0.73	14.00	3	11
OBC131	+51-05 1324	51° 27' 14.40" N	4° 23' 49.20" W	51° 27.21' N	4° 23.81' W	40.0	(37.6)	No data	No data	S	0.66	99.34	0	10.00	0	10
OBC132	+51-05 1325	51° 27' 28.80" N	4° 28' 30.00" W	51° 27.48' N	4° 28.51' W	41.9	(40.4)	No data	No data	sG	43.64	56.07	0.29	10.00	4	7
OBC133	+51-05 1326	51° 30' 28.80" N	4° 29' 09.60" W	51° 30.50' N	4° 29.16' W	28.4	(27.0)	No data	No data	(g)S	1.03	97.94	1.03	10.00	0	10
OBC134	+51-05 1327	51° 28' 08.40" N	4° 51' 21.60" W	51° 28.14' N	4° 51.33' W	53.8	(52.1)	No data	No data	(g)S	1.91	95.11	2.98	20.00	100	22
OBC135	+51-05 1328	51° 27' 10.80" N	5° 05' 02.40" W	51° 27.17' N	5° 05.05' W	54.8	(52.1)	No data	No data	S	0.08	97.05	2.87	13.00	0	13
OBC136	+51-05 1329	51° 35' 29.70" N	4° 23' 19.08" W	51° 35.52' N	4° 23.34' W	21.6	17	Flat	Flat	S	0.88	95.80	3.32	-	-	-
OBC137	+51-05 1330	51° 35' 33.60" N	4° 22' 43.86" W	51° 35.58' N	4° 22.74' W	22.7	16	Flat	Flat	S	2.11	96.13	1.76	-	-	-
OBC138	+51-05 1331	51° 26' 52.32" N	4° 20' 23.82" W	51° 26.88' N	4° 20.40' W	41.8	37	Flat	Flat	S	0.83	99.17	0.00	-	-	-
OBC139	+51-05 1332	51° 27' 56.34" N	4° 15' 18.48" W	51° 27.96' N	4° 15.30' W	38.1	36	Flat	Flat	sG	80.52	19.43	0.05	-	-	-
OBC140	+51-05 1333	51° 26' 12.96" N	4° 23' 32.04" W	51° 26.22' N	4° 23.52' W	41	34	West	7	S	2.89	97.11	0.00	-	-	-
OBC141	+51-05 1334	51° 26' 23.46" N	4° 22' 39.48" W	51° 26.40' N	4° 22.68' W	48	43	Southeast	<1	gS	8.36	91.41	0.22	-	-	-
OBC142	+51-05 1335	51° 23' 49.68" N	4° 50' 24.54" W	51° 23.82' N	4° 50.40' W	62.4	57	Flat	Flat	gS	11.80	86.47	1.73	-	-	-
OBC143	+51-05 1336	51° 26' 00.42" N	4° 40' 31.32" W	51° 25.98' N	4° 40.50' W	40	35	Northeast	3	S	0.96	99.04	0.00	-	-	-
OBC144	+51-05 1337	51° 26' 37.68" N	4° 52' 19.14" W	51° 26.64' N	4° 52.32' W	59	55	Flat	Flat	S	0.00	96.03	3.97	-	-	-
OBC145	+51-05 1338	51° 26' 41.40" N	4° 11' 35.40" W	51° 26.70' N	4° 11.58' W	36.4	35	Flat	Flat	-	-	-	-	-	-	-
OBC146	+51-05 1339	51° 26' 13.02" N	4° 23' 34.14" W	51° 26.22' N	4° 23.58' W	46.6	40	West	7	S	0.41	99.59	0.00	-	-	-
OBC147	+51-05 1340	51° 26' 12.96" N	4° 23' 31.26" W	51° 26.22' N	4° 23.52' W	37.6	33	East	6	gS	12.00	88.00	0.00	-	-	-
OBC148	+51-05 1341	51° 26' 13.50" N	4° 23' 28.74" W	51° 26.22' N	4° 23.46' W	43.6	37	East	3	gS	8.98	91.02	0.00	-	-	-

Station	Wentworth Grade	mean phi	mean mm	d_{50}	Folk Sort	Inman Sort	Folk Skew	Inman Skew	Folk Kurtosis	Inman Kurtosis	Sample Description	Additional Comments
OBC2	-	-	-	-	-	-	-	-	-	-	Coarse sandy shelly gravel	
OBC3	-	-	-	-	-	-	-	-	-	-	No sample	No sample due to cobbles catching in jaws of grab
OBC4	-	-	-	-0.39	-	-	-	-	-	-	Coarse sandy gravel. Some shell and shell fragments	
OBC5	-	1.64	0.322	1.92	-	0.96	-	-0.45	-	-	Coarse sandy gravel (granules). Some sand	
OBC6	-	1.39	0.382	1.44	-	1.09	-	-0.07	-	-	Gravelly sand. Some mud/silt	
OBC7	-	1.80	0.287	1.83	0.80	0.69	-0.21	-0.06	1.70	1.16	Medium to coarse gravelly sand. Some shells/fragments	
OBC8	medium sand	1.50	0.353	1.54	0.35	0.34	-0.21	-0.16	1.11	0.82	Medium sand. Shelly	
OBC9	medium-coarse sand	1.10	0.467	1.13	0.89	0.88	-0.06	-0.05	1.01	0.70	Coarse sand	
OBC10	-	1.76	0.296	1.78	0.50	0.44	-0.16	-0.08	1.53	1.15	Coarse shelly sand	Pebbles caught in jaws of grab
OBC11	-	1.09	0.469	1.38	-	0.96	-	-0.45	-	-	Medium to coarse shelly sand.	
OBC12	-	-	-	-	-	-	-	-	-	-	Till with thin gravel veneer	Poor recovery due to cobbly nature of till
OBC13	-	1.29	0.410	1.19	1.05	1.12	0.07	0.13	0.85	0.45	Till with thin gravel veneer. Some shells	Poor recovery due to cobbly nature of till
OBC14	-	0.91	0.531	0.70	-	1.39	-	0.23	-	-	Sandy gravel	
OBC15	-	2.08	0.237	2.16	0.73	0.55	-0.40	-0.23	1.71	1.75	Medium to coarse sand. Shells and shell fragments	
OBC16	-	1.84	0.279	2.15	-	0.93	-	-0.49	-	-	Sandy gravel	
OBC17	-	0.94	0.521	0.90	-	1.37	-	0.04	-	-	Sandy gravel	
OBC18	-	1.51	0.350	1.60	-	1.02	-	-0.13	-	-	Gravelly sand	
OBC19	-	1.38	0.383	1.26	1.03	1.11	0.09	0.17	0.84	0.43	Muddy gravelly sand	
OBC20	-	1.30	0.405	1.46	-	1.42	-	-0.17	-	-	Muddy gravelly sand	
OBC21	-	1.05	0.482	1.04	-	1.45	-	0.01	-	-	Muddy sandy gravel	Poor recovery due to armoured sea bed (seen in video)
OBC22	-	1.06	0.481	1.11	0.44	0.37	-0.29	-0.22	1.53	1.27	Muddy sandy gravel. Shells and fragments	
OBC23	-	1.67	0.314	1.67	0.55	0.47	-0.04	0.01	1.58	1.28	Muddy sandy gravel. Shelly	
OBC24	-	0.60	0.660	0.39	-	1.02	-	0.31	-	-	Muddy sandy gravel. Shells and fragments	
OBC25	-	1.50	0.354	1.98	-	1.33	-	-0.54	-	-	Muddy sandy gravel. Shells and shell fragments	
OBC26	coarse sand	0.83	0.563	0.75	-	1.08	-	0.11	-	-	Muddy sandy gravel	
OBC27	medium-coarse sand	1.03	0.489	1.23	-	0.84	-	-0.35	-	-	Very coarse shelly sand	
OBC28	-	-	-	-	-	-	-	-	-	-	No sediment recovered	
OBC29	-	1.10	0.465	1.10	-	1.19	-	0.00	-	-	Muddy sandy gravel. Some shells	
OBC30	-	1.27	0.414	1.31	-	0.85	-	-0.07	-	-	Coarse sandy gravel	
OBC31	-	1.65	0.318	1.65	0.62	0.57	-0.03	0.01	1.32	0.99	Coarse gravelly sand	
OBC32	-	0.82	0.565	0.97	-	1.04	-	-0.21	-	-	Coarse sandy gravel	
OBC33	-	1.62	0.325	1.67	0.43	0.41	-0.19	-0.17	1.10	0.80	Muddy sandy gravel. Shells common	Cobbles frequently caught in jaws of grab - recovery difficult
OBC34	-	1.81	0.285	1.80	0.54	0.31	-0.25	0.05	2.69	3.20	Sandy gravel	
OBC35	-	1.90	0.269	1.98	-	0.44	-	-0.29	-	-	Gravelly sand	
OBC36	-	1.61	0.328	1.80	-	0.85	-	-0.34	-	-	Muddy sandy gravel. Shells common	
OBC37	-	1.32	0.401	1.53	-	0.80	-	-0.40	-	-	Sandy gravel	
OBC38	-	1.50	0.354	1.80	-	0.88	-	-0.52	-	-	Gravelly sand	
OBC39	-	1.31	0.402	1.59	-	1.35	-	-0.31	-	-	Gravelly sand	Several attempts to recover material - cobbly ground
OBC40	-	1.11	0.462	1.13	0.55	0.51	-0.07	-0.05	1.27	0.97	Muddy (black anoxic) gravelly sand - possible coarse sediment veneer	
OBC41	-	0.97	0.512	1.26	-	0.91	-	-0.48	-	-	Gravelly sand. Clasts well rounded	
OBC42	-	1.66	0.317	1.64	0.48	0.45	0.03	0.06	1.24	0.93	Muddy gravelly sand	
OBC43	-	1.28	0.413	1.27	0.39	0.35	0.02	0.03	1.29	1.03	Well sorted medium Quartz sand, moderate pebbles up to 70 mm. Shells	
OBC44	-	1.50	0.353	1.49	0.49	0.50	-0.02	0.04	0.97	0.61	Well sorted medium-coarse sand underlain by pebbly gravel (70 mm)	
OBC45	-	1.31	0.404	1.31	0.44	0.43	-0.03	-0.01	1.09	0.78	Well sorted medium sand overlaying hydroid-bound pebbles (50 mm)	
OBC46	-	0.81	0.572	1.12	-	0.86	-	-0.55	-	-	Moderately sorted gravelly sand	
OBC47	-	1.46	0.364	1.51	0.46	0.40	-0.26	-0.20	1.30	1.14	Moderately sorted coarse gravelly sand (50 mm)	
OBC48	medium sand	1.22	0.428	1.22	0.40	0.40	0.03	0.01	1.06	0.71	Well sorted medium to coarse sand. Rare shells. Some black anoxic mud	
OBC49	-	1.05	0.482	1.08	0.41	0.35	-0.19	-0.11	1.34	1.20	Moderately well sorted coarse sand and granules	
OBC50	-	0.85	0.555	0.89	-	1.13	-	-0.05	-	-	Poorly sorted coarse sandy gravel. Subangular clasts	

Station	Wentworth Grade	mean phi	mean mm	d_{50}	Folk Sort	Inman Sort	Folk Skew	Inman Skew	Folk Kurtosis	Inman Kurtosis	Sample Description	Additional Comments
OBC51	-	1.50	0.353	1.56	0.50	0.46	-0.24	-0.19	1.16	0.97	Coarse sand underlain by pebbles (50mm), sub-rounded. Common shells	
OBC52	-	1.46	0.364	1.43	0.45	0.39	0.02	0.10	1.30	1.19	Coarse sandy gravel. Common shells	
OBC53	-	1.39	0.381	1.42	0.52	0.44	-0.20	-0.09	1.36	1.26	Well sorted coarse shelly sand	
OBC54	medium sand	1.67	0.314	1.69	0.34	0.32	-0.08	-0.09	1.15	0.84	Well sorted medium to coarse sand. Rare shells. Some black anoxic mud	
OBC55	medium sand	1.55	0.342	1.60	0.64	0.66	-0.13	-0.12	0.86	0.56	Fine to medium, well sorted sand underlain by smelly black anoxic clay	
OBC56	medium sand	1.50	0.354	1.49	0.52	0.44	0.02	0.02	1.33	1.22	Well sorted fine to medium sand underlain by black anoxic clay	
OBC57	medium sand	2.16	0.223	2.18	0.30	0.28	-0.07	-0.09	1.25	0.89	Well sorted fine to medium sand underlain by black anoxic clay	
OBC58	-	2.27	0.208	2.29	0.77	0.55	-0.26	-0.06	2.19	2.04	Shelly gravelly muddy sand	
OBC59	medium sand	1.30	0.407	1.29	0.57	0.53	-0.01	0.02	1.21	0.87	Moderately sorted medium sand. Moderate shell content	
OBC60	medium sand	1.72	0.304	1.75	0.55	0.52	-0.12	-0.09	1.22	0.87	Moderately sorted medium sand. Moderate shell content	
OBC61	-	1.82	0.284	2.64	-	1.89	-	-0.66	-	-	Muddy sandy gravel (sub-angular to sub-rounded clasts). Shells	
OBC62	-	2.89	0.135	2.91	-	0.43	-	-0.06	-	-	Dark brown cohesive mud	Dredge spoil?
OBC63	fine sand	2.70	0.154	2.71	0.30	0.28	-0.08	-0.05	1.22	0.95	Dark brown muddy sand	
OBC64	-	1.51	0.351	2.01	-	1.43	-	-0.52	-	-	Coarse sandy gravel (sub-angular to sub-rounded). Moderate shells	
OBC65	medium sand	1.43	0.371	1.56	0.75	0.69	-0.27	-0.28	1.26	0.96	Moderately sorted very coarse sand. Moderate shell content	
OBC66	-	-	-	-	-	-	-	-	-	-	Rock platform	No sediment recovered
OBC67	-	-	-	-	-	-	-	-	-	-	Rock platform overlain by thin gravelly shelly mud	No sediment recovered
OBC68	fine sand	2.47	0.180	2.52	0.52	0.44	-0.27	-0.17	1.39	1.30	Dark greyish very fine muddy sand	
OBC69	-	1.14	0.454	1.28	-	0.84	-	-0.25	-	-	Very coarse shelly sand	
OBC70	fine sand	2.55	0.171	2.61	-	0.57	-	-0.17	-	-	Dark brown sandy mud. Quartz rich	
OBC71	very fine sand	3.17	0.111	3.18	0.22	0.20	-0.16	-0.10	1.21	1.00	Brown, quartz rich muddy sand	
OBC72	very fine sand	3.11	0.116	3.12	0.22	0.22	-0.11	-0.07	1.09	0.79	Brown, quartz rich muddy sand	Carmarthen Bay sample
OBC73	very fine sand	3.05	0.121	3.10	0.32	0.29	-0.33	-0.26	1.43	1.02	Brown, quartz rich muddy sand	Carmarthen Bay sample
OBC74	very fine-fine sand	2.89	0.135	2.91	0.55	0.35	-0.35	-0.10	2.07	2.59	Brown muddy sand	Carmarthen Bay sample
OBC75	fine sand	2.80	0.144	2.81	0.36	0.34	-0.08	-0.04	1.20	0.93	Brown muddy sand	Carmarthen Bay sample
OBC76	very fine-fine sand	3.01	0.124	3.03	-	0.32	-	-0.11	-	-	Grey-brown sandy mud	Carmarthen Bay sample
OBC77	-	2.48	0.179	2.52	0.67	0.37	-0.41	-0.16	2.60	3.36	Dark grey-brown muddy shelly sand	Carmarthen Bay sample
OBC78	medium sand	1.61	0.327	1.65	0.54	0.47	-0.11	-0.12	1.41	1.18	Coarse shelly sand and soft grey mud beneath (two units)	
OBC79	fine-medium sand	1.77	0.294	1.81	0.58	0.55	-0.15	-0.12	1.16	0.84	Slightly muddy coarse Quartz sand	
OBC80	-	0.76	0.592	0.84	-	0.99	-	-0.13	-	-	Slightly muddy very coarse gravelly sand	
OBC81	medium sand	1.57	0.337	1.62	0.58	0.54	-0.19	-0.14	1.18	0.91	Well sorted medium to coarse Quartz sand	
OBC82	fine sand	2.27	0.207	2.27	0.35	0.34	0.02	0.00	1.10	0.78	Fine sandy mud underlain by soft grey clay	
OBC83	medium sand	1.50	0.354	1.51	0.49	0.52	-0.03	-0.03	0.85	0.49	Well sorted Quartz sand underlain by soft grey clay	
OBC84	medium sand	1.51	0.350	1.43	0.47	0.47	0.25	0.27	1.02	0.69	Well sorted medium sand	
OBC85	fine sand	2.17	0.222	2.20	0.36	0.33	-0.14	-0.12	1.33	0.92	Slightly muddy dark brown well sorted fine sand	
OBC86	-	2.41	0.188	2.43	0.37	0.31	-0.22	-0.10	1.34	1.27	Dark brown slightly muddy fine to coarse sand	
OBC87	medium sand	1.26	0.419	1.20	0.56	0.51	0.23	0.17	1.44	1.02	Shelly coarse sand with rare mud clasts	
OBC88	very fine-fine sand	2.74	0.150	2.89	0.59	0.56	-0.45	-0.41	1.29	0.80	Dark brown very fine well sorted muddy sand	
OBC89	fine-medium sand	1.79	0.289	1.81	0.52	0.50	-0.09	-0.05	1.14	0.83	Medium to coarse slightly muddy sand	
OBC90	fine-medium sand	1.99	0.252	1.95	0.47	0.46	0.10	0.12	1.08	0.77	Slightly muddy medium sand	
OBC91	fine-medium sand	1.97	0.256	2.03	0.45	0.46	-0.21	-0.21	1.00	0.62	Well sorted medium sand	
OBC92	fine-medium sand	2.26	0.208	2.19	0.52	0.53	0.20	0.21	1.13	0.58	Well sorted medium Quartz sand	Carmarthen Bay sample
OBC93	medium sand	1.60	0.330	1.64	0.40	0.38	-0.17	-0.16	1.16	0.86	Well sorted medium Quartz sand with rare mud clasts and granules	
OBC94	fine-medium sand	1.90	0.268	1.93	0.35	0.34	-0.18	-0.13	1.12	0.79	Muddy fine to coarse sand	
OBC95	fine-medium sand	1.95	0.259	1.94	0.24	0.24	0.05	0.04	1.04	0.65	Muddy medium Quartz sand (well sorted)	
OBC96	-	2.24	0.211	2.30	0.66	0.50	-0.27	-0.17	2.20	1.72	Very dark grey slightly sandy organic mud	
OBC97	-	1.49	0.356	1.86	-	1.29	-	-0.43	-	-	Poorly sorted dark grey gravelly sandy mud	
OBC98	-	1.70	0.308	2.06	-	0.93	-	-0.58	-	-	Very poorly sorted shelly gravelly sandy mud	
OBC99	-	1.75	0.297	1.80	0.50	0.43	-0.27	-0.16	1.39	1.16	Coarse to very coarse shelly sand	

Station	Wentworth Grade	mean phi	mean mm	d_{50}	Folk Sort	Inman Sort	Folk Skew	Inman Skew	Folk Kurtosis	Inman Kurtosis	Sample Description	Additional Comments
OBC100	-	1.70	0.307	1.80	0.67	0.51	-0.42	-0.29	2.29	1.71	Coarse shelly pebbly sand	
OBC101	fine-medium sand	1.88	0.272	1.88	0.34	0.33	-0.07	-0.02	1.12	0.82	Well sorted medium sand	
OBC102	medium sand	1.54	0.344	1.54	0.35	0.34	-0.03	0.00	1.03	0.71	Very well sorted-medium sand	
OBC103	-	1.66	0.316	1.71	0.41	0.33	-0.35	-0.23	1.96	1.51	Very well sorted medium to coarse Quartz sand. Rare granules	
OBC104	medium sand	1.63	0.324	1.69	0.42	0.37	-0.35	-0.26	1.64	1.19	Very well sorted medium to coarse Quartz sand	
OBC105	medium sand	1.69	0.311	1.70	0.25	0.22	-0.12	-0.09	1.35	1.09	Very well sorted medium Quartz sand	
OBC106	medium sand	1.56	0.340	1.58	0.37	0.36	-0.11	-0.10	1.07	0.76	Very well sorted medium to coarse Quartz sand	
OBC107	medium sand	1.53	0.345	1.55	0.31	0.31	-0.09	-0.08	1.00	0.67	Very well sorted medium to coarse Quartz sand	
OBC108	medium sand	1.47	0.361	1.48	0.43	0.42	-0.05	-0.04	1.08	0.75	Moderately sorted medium to coarse Quartz sand. Rare mud clasts	
OBC109	-	0.77	0.588	0.89	0.62	0.62	-0.32	-0.30	0.87	0.67	Very coarse, poorly sorted shelly pebble sand	
OBC110	-	1.28	0.413	1.39	0.73	0.68	-0.33	-0.25	1.24	0.89	Very coarse shelly gravelly sand	
OBC111	-	0.99	0.505	1.29	-	0.94	-	-0.49	-	-	Moderately sorted coarse shelly gravel	
OBC112	-	1.36	0.389	1.42	0.59	0.57	-0.18	-0.15	1.06	0.79	Moderately sorted very coarse shelly gravel	Helwick Bank sample
OBC113	medium sand	1.62	0.326	1.62	0.30	0.30	0.01	-0.02	1.03	0.71	Well sorted very coarse shelly sand	Helwick Bank sample
OBC114	fine-medium sand	1.95	0.258	1.98	0.26	0.26	-0.15	-0.15	1.04	0.71	Well sorted medium sand	Helwick Bank sample
OBC115	fine sand	2.15	0.225	2.16	0.20	0.18	-0.13	-0.06	1.20	1.03	Well sorted medium Quartz sand	Helwick Bank sample
OBC116	-	1.61	0.328	1.64	0.42	0.40	-0.11	-0.11	1.10	0.87	Moderately sorted very shelly coarse sand	Sand wave transect #1
OBC117	-	1.01	0.497	1.12	-	0.75	-	-0.22	-	-	Well sorted shelly very coarse sand. Moderate pebbles (30 mm)	Sand wave transect #2
OBC118	-	1.64	0.320	1.69	0.41	0.37	-0.23	-0.19	1.39	1.01	Moderately sorted pebbly (10 mm) very coarse sand.	Sand wave transect #3
OBC119	-	1.51	0.352	1.62	0.69	0.64	-0.34	-0.27	1.27	0.91	Moderately sorted very coarse pebbly (20 mm) shelly sand	Sand wave transect #4
OBC120	-	1.74	0.300	1.77	0.44	0.38	-0.20	-0.13	1.61	1.17	Well sorted medium to coarse shelly Quartz sand	Sand wave transect #5
OBC121	-	1.90	0.269	1.91	0.44	0.40	-0.15	-0.05	1.20	1.01	Slightly muddy coarse to very coarse shelly Quartz sand	Sand wave transect #6
OBC122	-	-	-	0.01	-	-	-	-	-	-	Well sorted very coarse sandy gravel	Additional station at OBC120
OBC123	-	0.77	0.586	0.97	-	1.06	-	-0.28	-	-	Very coarse pebbly gravelly sand	Crest of sand wave
OBC124	-	1.51	0.351	1.61	0.59	0.47	-0.40	-0.32	1.55	1.46	Very coarse pebbly gravelly sand	
OBC125	-	1.15	0.452	1.21	-	0.50	-	-0.19	-	-	Moderately sorted pebbly very coarse sand	Sand wave transect (2) #1
OBC126	medium-coarse sand	0.86	0.551	0.89	0.60	0.63	-0.11	-0.07	0.91	0.52	Poorly sorted medium to very coarse shelly Quartz sand	Sand wave transect (2) #2
OBC127	medium sand	1.36	0.390	1.36	0.43	0.41	-0.05	0.00	1.17	0.82	Well sorted medium to coarse Quartz sand	Sand wave transect (2) #3
OBC128	medium sand	1.44	0.368	1.49	0.46	0.43	-0.13	-0.16	1.06	0.86	Well sorted medium to coarse Quartz sand	Sand wave transect (2) #4
OBC129	medium sand	1.56	0.340	1.52	0.51	0.51	0.06	0.11	0.98	0.66	Medium to very coarse sand. Some pebbles	
OBC130	-	2.11	0.232	2.11	-	-	-	-	-	-	Slightly muddy fine to medium sand	
OBC131	medium-coarse sand	1.11	0.463	1.11	0.57	0.52	-0.04	0.00	1.21	0.99	Moderately sorted coarse to very coarse sand	
OBC132	-	1.34	0.395	1.34	-	-	-	-	-	-	Moderately sorted coarse sandy gravel	
OBC133	medium sand	1.68	0.312	1.71	0.47	0.47	-0.10	-0.10	1.01	0.67	Poorly sorted muddy fine to medium sand	
OBC134	-	1.58	0.335	1.70	0.80	0.81	-0.23	-0.23	0.87	0.64	Poorly sorted sandy gravelly mud	
OBC135	fine-medium sand	2.08	0.237	2.03	0.44	0.41	0.20	0.19	1.11	0.91	Dark greyish brown muddy sand	
OBC136	fine sand	2.46	0.182	2.51	0.47	0.44	-0.23	-0.18	1.11	0.84	Muddy sand & shell	
OBC137	fine sand	2.45	0.183	2.49	0.43	0.41	-0.17	-0.16	1.08	0.83	Fine sand & shell; razor shells	
OBC138	medium sand	1.47	0.361	1.45	0.41	0.41	0.03	0.09	1.04	0.72	Medium-coarse sand	
OBC139	-	1.59	0.332	1.65	0.51	0.35	-0.37	-0.25	2.14	2.26	Stones, gravel, medium sand	
OBC140	medium sand	1.47	0.361	1.49	0.43	0.44	-0.10	-0.08	0.97	0.63	Medium shelly sand, some coal particles	
OBC141	gravelly sand	1.28	0.412	1.39	0.72	0.70	-0.29	-0.24	1.01	0.76	Medium-coarse sand (clay lumps in A)	
OBC142	-	1.74	0.299	1.90	0.71	0.68	-0.39	-0.35	1.18	0.84	Medium shelly sand	
OBC143	medium-coarse sand	0.99	0.503	1.02	0.50	0.45	-0.18	-0.10	1.21	1.02	Clean coarse sand	
OBC144	fine sand	2.15	0.225	2.18	0.32	0.29	-0.14	-0.16	1.42	1.07	Muddy sand	
OBC145	-	-	-	-	-	-	-	-	-	-	Fine-medium sand & stones	No sediment recovered
OBC146	medium sand	1.43	0.371	1.43	0.44	0.45	0.00	0.00	0.96	0.61	Medium sand, little shell, coal particles	
OBC147	-	1.57	0.337	1.58	0.58	0.45	-0.20	-0.02	1.54	1.59	Medium shelly sand	
OBC148	gravelly sand	1.21	0.432	1.21	0.42	0.41	0.01	0.00	1.02	0.70	Medium sand, coal particles, shell	

Appendix 2

Log Data from the 2003 - 2005 OBCMHS Biological Survey Cruises

A2.1: Log of the 2003 Prince Madog *cruise*

Ship: R.V. *Prince Madog* (University of Wales, Bangor)

Personnel aboard ship: *NMW*: T. Darbyshire, K. Mortimer, A. S. Y. Mackie, E. I. S. Rees, H. Wood, J. Turner, M. Lambert, B. Rowson, R. Bowen, D. Cowell, K. Vint, H. Kerbey; *BGS*: G. O. Jenkins; *UCG*: B. Barrett

Samples sorted by: A. Critchlow, R. Bowen, C. Angele, S. Noorbhai; **Supervisor:** D. Powell

Specimens identified by: T. Darbyshire, P. R. Garwood & A. S. Y. Mackie (Annelida); I. J. Killeen, H. Wood & J. Gallichan (Mollusca); D. Powell, D. Rostron & S. Whyte (Arthropoda, Echinodermata, 'Other' Phyla)

Sediment analysed by: John Malcolm, Sediment Analysis Services

Repeat Stations

During the survey, some stations coincided with previous survey station locations, some repeat stations were added to allow greater comparison to earlier surveys from the area and a few new stations were sampled to fill in gaps in area coverage. Previous surveys alluded to are:

Warwick & Davies (1977)
BIOMÔR 1 (1989, 1991)
Welsh Sandbanks Survey 2001
See end for survey references.

South West Wales (1998, unpublished)
- includes Carmarthen Bay (Woolmer 2003)

Station numbers

Original station numbers (*OBC*) from the planning stage are also included with each station

	6/07/2003
Stn. 001:	Red Wharf Bay, Anglesey (53° 19.476' N, 4° 08.996' W), 10.6 m, muddy sand & dead *Abra* shell, Ophiuroids, *Abra, Nucula, Lagis* (1 only), Solenette, *Peachia*
1250-1250	Very Good (A - 14 litres)
1252-1252	Very Good (B - 14 litres)
1254-1254	Very Good (C - sediment sample) *Pholoe; Malmgrenia; Phyllodoce mucosa, P. groenlandica; Melinna; Nephtys; Scalibregma*; Capitellidae; *Owenia*; *Galathowenia*; Terebellidae; *Nucula; Abra; Cultellus*; Spiny cockle; *Echinocardium cordatum* **Note:** Notable lack of *Lagis koreni*. *Repeat of BIOMÔR Stn 34*
	8/07/2003
Stn. 002:	One Fathom Bank, dredging area south of Cardiff (51° 21.599' N, 03° 10.014' W), 33.9 m coarse sandy shelly gravel
1505-1507	Stone in jaws
1508-1509	Slight gap in jaws (A - 13 litres)
1511-1513	Slight leak (C - sediment sample)
1517-1518	Stone in jaws
1519-1520	Scraping only
1522-1523	Scraping only
1525-1526	Scraping only
1535-1537	Scraping only
1538-1539	Poor
1541-1542	Poor
1543-1544	Good (B - 11 litres) **Note:** Problem due to constant stones & pebbles in jaws. Sample B had some leakage but was retained due to size & no. of grabs. Ship repositioned between grabs 7 & 8.
Stn. 003:	One Fathom Bank, (dredging area south of Cardiff (51° 20.803' N, 03° 13.628' W) 23.6 m, coarse sand gravel pebbles & *Sabellaria* reef *Sabellaria*
1559-1601	Stone in jaws
1602-1603	Stone in jaws *Sabellaria; Eulalia tripunctata; Eupolymnia (nesidensis?)* **Note:** Station abandoned due to time constraints for reaching next station. Reef chunk retained and analysed for fauna. NO SEDIMENT SAMPLE
Stn. 004:	*OBC* 115 (51° 12.158' N, 04° 24.787' W) 39.7 m, coarse sandy gravel
2021-2023	Good (A - 10 litres)
2027-2029	Good (B - 9.5 litres)
2030-2032	Good (C - sediment sample)
Stn. 005:	*OBC* 114 (51° 12.260' N, 04° 25.004' W) 39.8 m, coarse 'sandy' gravel (less sand than stn 4)

2037-2039	Very Good (A - 12.5 litres)
2040-2042	Very Good (B - 13 litres)
2101-2103	Very Good (C - sediment sample)
	Note: Sample C accidentally missed. Returned to it after stn 6, but sediment sample will be much sandier than the previous samples.
Video 1:	E of Lundy (OBC Video 1) 39.5 m
1937	Camera sled in (51° 16.555' N, 04° 18.734' W)
2004	Camera sled out (51° 16.899' N, 04° 17.630' W)
Stn. 006:	*OBC* 113 (51° 12.166' N, 04° 25.111' W) 45.6 m, silty gravelly sand
2048-2050	Fair (A - 6.5 litres)
2052-2054	Fair (B - 6.5 litres)
2056-2058	Fair (C - sediment sample)
	9/07/2003
Stn. 007:	*OBC* 86 (51° 10.329' N, 04° 32.902' W) 50.5 m, coarse - medium gravelly sand & hydroid; some shells / fragments, *Hydrallmania; Nephtys; Macropodia*
0700-0702	Good (A - 6.5 litres)
0704-0706	Fair (B - 4.5 litres), *Macropodia*
0708-0710	Good (C - sediment sample)
Stn. 008:	*OBC* 87 (51° 11.019' N, 04° 30.097' W) 47.3 m, medium sand (finer than stn 7, no hydroid)
0726-0728	Good (A - 8 litres)
0729-0731	Poor (C - sediment sample)
0733-0736	Scraping only
0737-0739	Scraping only
0744-0746	Very Good (B - 12 litres)
	Note: *Velella velella* sighted
Stn. 009:	*OBC* 109 (51° 11.014' N, 04° 27.990' W) 46.2 m, coarse sand
0758-0801	Good (A - 8 litres)
0802-0804	Good (B - 8 litres)
0805-0808	Good (C - sediment sample)
	Note: Leatherback turtle sighted *Repeat of Warwick & Davies Stn 132*
Stn. 010:	*OBC* 108 (51° 10.717' N, 04° 27.082' W) 46.6 m coarse sand, *Thia scutellata, Spatangus, Montacuta*
0815-0817	Very Good (A - 10 litres), *Spatangus* + commensal bivalve *Montacuta substriata*
0820-0821	Good (B - 9 litres)
0823-0825	Stone in jaws
0826-0828	Good (C - sediment sample)
	Note: Some of sample B spilt during processing

Stn. 011:	*OBC* 88 (51° 11.752' N, 04° 26.388' W) 43.1 m medium - coarse sand
0839-0841	Very Good (A - 13 litres)
0842-0844	Good (B - 9 litres)
0845-0847	Good (C - sediment sample)
Video 1b:	NW of Horseshoe Rocks (OBC Video 10) 42.9 m
0920	Camera sled in (51° 16.555' N, 04° 18.734' W)
0953	Camera sled out (51° 16.899' N, 04° 17.630' W)
Stn. 012:	*OBC* 107 51° 17.300' N, 04° 15.832' W) 42.0 m till with thin gravel veneer
1012-1014	Stone in jaws
1015-1017	Stone in jaws
1018-1020	Stone in jaws
	Note: No quantitative sample obtained so samples pooled as one qualitative sample. NO SEDIMENT SAMPLE
Stn. 013:	*OBC* 79 (51° 17.064' N, 04° 16.582' W) 41.5 m till - gravel, stones, *Sabellaria* reef
1028-1030	Gap in jaws (sediment sample)
1032-1033	Poor (A - 3.5 litres)
1035-1036	Stone in jaws
1037-1039	Stone in jaws
1039-1041	Stone in jaws
1042-1044	Empty
1044-1045	Stones
	Note: Qualitative station, only 1 small sample
Stn. 014:	*OBC* 80 (51° 16.179' N, 04° 20.096' W) 43.5 m sandy gravel
1108-1110	Empty
1110-1112	Stone
1112-1114	Good (A - 6 litres)
1114-1115	Good (B - 8 litres)
1116-1117	Good (C - sediment sample)
	Note: *Repeat of Warwick & Davies Stn 114*
Stn. 015:	*OBC* 89 (51° 12.584' N, 04° 23.066' W) 46.6 m, fine sand shell hydroid
1154-1156	Scraping only
1157-1158	Poor (A - 5 litres)
1201-1202	Scraping only
1203-1204	Stones
1205-1207	Fair (B - 6 litres)
1208-1209	Fair (C - sediment sample)
Stn. 016:	*OBC* 112 (51° 13.585' N, 04° 23.322' W) 47.6 m *Sabellaria* reef, sandy gravel
1220-1222	Fair (A - 5 litres)
1224-1225	Stones
1227-1228	Poor (C - sediment sample)
1232-1234	Fair (B - 4.5 litres); Pectinariid; decapod

Stn. 017: *OBC* 111 (51° 14.196’ N, 04° 24.182’ W) 47.3 m sandy gravel

1245-1247 Good (A - 6 litres)
1248-1250 Very Good (B - 9 litres)
1252-1254 Good (C - sediment sample)

Stn. 018: *OBC* 110 (51° 13.682’ N, 04° 25.811’ W) 47.3 m gravelly sand, *Buccinum*

1308-1310 Good (A - 5.5 litres)
1312-1314 Good (B - 6.5 litres)
1315-1316 Good (C - sediment sample)

Stn. 019: *OBC* 81 (51° 15.318’ N, 04° 24.668’ W) 48.6 m muddy gravelly sand, *Buccinum*, *Psammechinus*

1333-1335 Shell in jaws (B - 4 litres)
1337-1339 Stones
1340-1342 Fair (A - 7 litres)
1343-1345 Stones
1346-1347 Poor (C - sediment sample)
1348-1350 Stones
Note: Slight leakage from 1st grab but accepted as sample due to quality of later samples

Video 2: NW of Horseshoe Rocks (OBC Video 8) 49.2 m

1434 Camera sled in (51° 19.332’ N, 04° 19.515’ W)
1455 Camera sled out (51° 19.146’ N, 04° 19.911’ W)

Stn. 020: *OBC* 77 (51° 19.366’ N, 04° 19.014’ W) 47.1 m muddy gravelly sand & rocks, *Macropodia Xantho, Pisidia*

1521-1523 Trigger failed
1523-1525 Scraping only
1526-1528 Fair (A - 6.5 litres)
1529-1531 Gap in jaws (C - sediment sample)
1535-1537 Fair (B - 6.5 litres)
Xantho pilipes, Pisidia longicornis; Echinoid

Stn. 021: *OBC* 78 (51° 19.990’ N, 04° 16.243’ W) 48.2 m muddy sandy gravel, Terebellidae, Sipuncula, *Inachus, Macropodia, Liocarcinus*

1553-1555 Scraping only
1556-1558 Stones
1558-1600 Stones (sediment sample), Terebellidae
1614 Tjärnö dredge deployed (51° 20.040’ N, 04° 16.318’ W)
1620 Tjärnö dredge retrieved (51° 19.939’ N, 04° 16.168’ W)
Note: Qualitative only

Stn. 022: *OBC* 76 (51° 18.370’ N, 04° 23.728’ W) 49.8 m gravelly mud

1653-1655 Good (A - 7 litres)
1657-1659 Good (B - 9 litres)
1700-1702 Good (C - sediment sample)
Note: Sediment sample sandier than quantitative samples

Stn. 023: *OBC* 75 (51° 17.585’ N, 04° 27.164’ W) 49.4 m medium sand shell gravel, some mud

1716-1717 Good (A - 6.5 litres)
1719-1721 Gap in jaws
1722-1724 Slight gap in jaws (C - sediment sample)
1725-1726 Good (B - 7 litres)

Stn. 024: *OBC* 82 (51° 14.439’ N, 04° 28.566’ W) 46.6 m medium-coarse sand

1748-1750 Very Good (A - 11 litres)
1751-1753 Very Good (B - 10 litres)
1754-1756 Very Good (C - sediment sample)

Stn. 025: *OBC* 83 (51° 13.472’ N, 04° 32.270’ W) 48.1 m gravelly sand (medium-coarse), some mud

1805-1806 Good (A - 7 litres)
1810-1811 Good (B - 8 litres)
1813-1814 Stone
1816-1817 Good (C - sediment sample)
Note: *Repeat of Warwick & Davies Stn 139*

Stn. 026: *OBC* 84 (51° 13.191’ N, 04° 34.370’ W) 42.3 m medium-coarse sand

1829-1832 Very Good (A - 10 litres)
1833-1835 Very Good (B - 12.5 litres)
1836-1837 Very Good (C - sediment sample)

Video 3: E of Lundy (OBC Video 11) 47.5 m

2110 Camera sled in (51° 12.293’ N, 04° 28.516’ W)
2137 Camera sled out (51° 12.441’ N, 04° 28.810’ W)

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Stn. 027: *OBC* 85 (51° 12.487’ N, 04° 37.499’ W) 43.0 m very coarse sand

0659-0701 Very Good (A - 14 litres)
0703-0705 Very Good (B - 13.5 litres)
0705-0706 Very Good (C - sediment sample)

Stn. 028: *OBC* 71 (51° 14.838’ N, 04° 39.651’ W) 51.1 m muddy sandy gravel, *Pisidia, Porcellana, Sabellaria*, Serpulidae, whelks, bivalve

0724-0726 Stone in jaws
0726-0728 Stone
0729-0730 Stone
0736 Tjärnö dredge deployed (51° 14.852’ N, 04° 39.781’ W)
0745 Tjärnö dredge retrieved
Note: Scrapings from grab samples pooled. NO SEDIMENT SAMPLE

Stn. 029: *OBC* 72 (51° 15.498' N, 04° 36.407' W) 50.9 m
muddy sandy gravel

0805-0807 Good (A - 8 litres)
0808-0811 Stone in jaws
0812-0814 Good (B - 8 litres)
0815-0817 Good (C - sediment sample)

Stn. 030: *OBC* 73 (51° 16.260' N, 04° 33.298' W) 45.5 m
coarse sandy gravel

0835-0837 Very Good (A - 10 litres)
0838-0839 Very Good (B - 10.5 litres)
0840-0841 Very Good (C - sediment sample)

Stn. 031: *OBC* 74 (51° 16.951' N, 04° 30.223' W) 45.6 m
coarse gravelly sand

0859-0901 Good (A - 7 litres)
0902-0903 Good (B - 7 litres)
0904-0905 Good (C - sediment sample), *Malmgrenia*

Stn. 032: *OBC* 69 (51° 18.065' N, 04° 37.467' W) 49.1 m
coarse sandy gravel

0938-0940 Very Good (A - 12.5 litres)
0941-0943 Very Good (B - 11 litres)
0944-0946 Very Good (C - sediment sample)

Video 4: NW of Lundy (OBC Video 5) 46.5 m

0956 Camera sled in (51° 18.691' N, 04° 34.852' W)
1023 Camera sled out (51° 18.982' N, 04° 33.770' W)

Video 5: N of Lundy (OBC Video 4) 52.8 m

1058 Camera sled in (51° 20.725' N, 04° 38.407' W)
1121 Camera sled out (51° 20.821' N, 04° 38.947' W)

Stn. 033: *OBC* 56 (51° 20.803' N, 04° 38.328' W) 52.6 m
muddy sandy gravel & shell

1137-1139 Stones & leakage (C - sediment sample)
1142-1144 Stone in jaws
1145-1146 Stone in jaws
1147-1149 Scraping only
1150-1152 Stones
Note: Qualitative, all samples pooled.

Stn. 034: *OBC* 55 (51° 20.367' N, 04° 40.385' W) 48.8 m
sandy gravel

1209-1210 Fair (A - 4.5 litres)
1212-1213 Fair (C - sediment sample)
1215-1216 Fair (B - 4.5 litres)

Stn. 035: *OBC* 54 (51° 19.761' N, 04° 42.899' W) 59.1 m
gravelly sand

1240-1243 Stone in jaws
1244-1247 Fair (A - 6.5 litres)
1248-1251 Fair (B - 5.5 litres)
1252-1255 Fair (C - sediment sample)

Stn. 036: *OBC* 70 (51° 17.387' N, 04° 40.482' W) 54.5 m
muddy sandy gravel

1314-1317 Scraping only
1318-1320 Fair (A - 6.5 litres)
1322-1324 Fair (B - 5.5 litres)
1325-1327 Fair (C - sediment sample)
Sabellid (*Jasmineira/Chone*?)

Stn. 037: *OBC* 68 (51° 18.739' N, 04° 34.761' W) 48.9 m
sandy gravel (A & C), gravelly sand / sand (B)

1349-1351 Good (A - 7 litres)
1352-1354 Stone in jaws (C - sediment sample)
1355-1357 Stones
1358-1400 Stones
1402-1404 Trigger failed
1404-1406 Trigger failed
1407-1409 Trigger failed
1410-1412 Good (B - 6.5 litres)

Stn. 038: *OBC* 67 (51° 19.567' N, 04° 30.841' W) 51.5 m
gravelly sand

1424-1426 Good (A - 8 litres)
1427-1428 Sediment leaking
1430-1432 Good (B - 8 litres)
1433-1435 Good (C - sediment sample)
Laonice?, *Phyllodoce longipes*

Video 6: NW of Ilfracombe (OBC Video 3) 50.0 m

1526 Camera sled in (51° 22.298' N, 04° 18.866' W)
1551 Camera sled out (51° 22.170' N, 04° 19.243' W)

Stn. 039: *OBC* 63 (51° 22.398' N, 04° 18.121' W) 47.3 m
gravelly sand

1613-1615 Stone in jaws
1616-1618 Fair (A - 5 litres)
1619-1621 Scraping only
1622-1624 Stones
1624-1626 Empty
1627-1629 Good (B - 8 litres)
1630-1632 Sediment leaking
1632-1633 Sediment leaking (C - sediment sample)
Eurynome

Stn. 040: *OBC* 64 (51° 21.637' N, 04° 21.511' W) 52.8 m
gravelly muddy sand (black anoxic mud)

1650-1652 Shell in jaws
1653-1655 Scraping only
1656-1658 Poor (C - sediment sample)
1703-1705 Fair (A - 6.5 litres)
1706-1708 Fair (B - 6 litres)

Appendix 2

Stn. 041: *OBC* 65 (51° 20.958' N, 04° 24.599' W) 45.8 m gravelly sand (granules well rounded)

1723-1725 Very Good (A - 12.5 litres)
1726-1728 Very Good (B - 12 litres)
1728-1731 Very Good (C - sediment sample)

Stn. 042: *OBC* 66 (51° 20.196' N, 04° 27.867' W) 47.7 m gravelly muddy sand (B&C), medium-coarse sand (A&D)

1744-1746 Very Good (A - 12 litres)
1748-1750 Stone in jaws
1751-1753 Stone
1757-1759 Scraping only
1759-1801 Fair (B - 6 litres, qualitative)
Hesionidae; *Magelona alleni*; Terebellidae
1803-1805 Fair (C - sediment sample)
1810-1812 Good (D - 9 litres)
Note: Sediment type changed following sample A. Ship repositioned after grab 3 to try to relocate but sediment type remained different. Sediment sample was taken from the 2nd sediment type as sample B. Sample D is a comparable sediment type to sample A.

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Stn. 043: *OBC* 57 (51° 20.933' N, 04° 36.309' W) 53.8 m medium well sorted quartz sand, some pebbles, rare shells

0752-0755 Stone in jaws
0755-0758 Very Good (A - 13 litres)
0759-0801 Stone
0801-0803 Very Good (B - 11 litres)
0804-0806 Stone
0807-0809 Very Good (C - sediment sample)
Note: *Repeat of Warwick & Davies Stn 146*

Stn. 044: *OBC* 58 (51° 22.096' N, 04° 32.419' W) 49.1 m well sorted medium-coarse sand underlain by pebbly gravel, low shell content, hydroid clumps

0833-0835 Good (A - 6 litres)
0836-0838 Good (B - 5.5. litres); Pycnogonid
0839-0841 Good (C - sediment sample)

Stn. 045: near *OBC* 59 (51° 22.734' N, 04° 28.192' W) 40.8 m, well sorted medium sand overlying hydroid-bound pebbles, low shells

0901-0903 Qualitative, sediment sample taken
Note: Ship not on station so moved on. Sediment sample taken, therefore rest sieved as qualitative.

Stn. 046: *OBC* 59 (51° 22.855' N, 04° 28.515' W) 48.8 m moderate sorted gravelly sand (B&D); A - sandier

0911-0913 Very Good (A - 10.5 litres; qualitative)
0914-0916 Stone
0917-0919 Very Good (B - 10 litres)
0920-0922 Very Good (D - 10 litres)
0923-0925 Very Good (C - sediment sample)
Note: Sediment type changed after sample A, so sampling continued until 2 samples the same had been obtained.

Stn. 047: *OBC* 60 (51° 23.611' N, 04° 24.893' W) 41.6 m moderate sorted coarse gravelly sand

0944-0946 Very Good (A - 9.5 litres)
0947-0949 Very Good (B - 13 litres)
0950-0952 Very Good (C - sediment sample)

Stn. 048: *OBC* 61 (51° 24.457' N, 04° 21.310' W) 45.0 m well sorted medium-coarse sand, low shell content black anoxic mud in sample B

1009-1011 Very Good (C - sediment sample)
1013-1015 Very Good (A - 13.5 litres)
1016-1018 Very Good (B - 10 litres)

Video 7: S of Helwick Bank (OBC Video 2) 45.5 m

1034 Camera sled in (51° 26.383' N, 04° 22.304' W)
1059 Camera sled out (51° 26.660' N, 04° 21.464' W)

Video 8: SW of Helwick Bank (OBC Video 9) 39.9 m

1140 Camera sled in (51° 28.633' N, 04° 27.967' W)
1205 Camera sled out (51° 28.583' N, 04° 28.555' W)

Stn. 049: *OBC* 43 (51° 28.910' N, 04° 27.266' W) 40.7 m moderately well sorted coarse sand, low shell content

1240-1242 Very Good (A - 11 litres)
1243-1245 Very Good (B - 8 litres)
1246-1248 Very Good (C - sediment sample)

Stn. 050: *OBC* 44 (51° 29.593' N, 04° 24.105' W) 37.7 m poorly sorted coarse sandy gravel, high shell content

1306-1307 Good (A - 8.5 litres)
1308-1310 Good (B - 8 litres)
1312-1313 Trigger failed
1313-1315 Good (C - sediment sample)

Stn. 051: *OBC* 45 (51° 30.207' N, 04° 20.524' W) 39.7 m coarse sand underlain by pebbles; moderate shell content; balls of very dark grey mud

1327-1328 Stone in jaws
1329-1331 Very Good (A - 11 litres)
1332-1334 Stones
1335-1336 Very Good (B - 11 litres)
1337-1338 Very Good (C - sediment sample)

Stn. 052:	*OBC* 42 (51° 27.985' N, 04° 30.472' W) 45.1 m sediment as 51 (sandy gravel?); B more gravelly than A
1433-1435	Very Good (A - 10.5 litres)
1436-1438	Very Good (B - 8 litres); *Pandalus*?
1440-1442	Very Good (C - sediment sample)
Stn. 053:	*OBC* 41 (51° 27.017' N, 04° 33.780' W) 48.2 m coarse well sorted shelly sand
1501-1503	Good (A - 7 litres)
1504-1506	Good (B - 9 litres)
1507-1509	Good (C - sediment sample); *Echinocardium* (not *cordatum*), *Spisula solida*
Stn. 054:	*OBC* 40 (51° 26.801' N, 04° 36.871' W) 42.3 m well sorted medium - coarse sand, low shell content
1529-1531	Very Good (A - 13 litres)
1532-1534	Very Good (B - 10 litres)
1535-1537	Very Good (C - sediment sample)
Video 9:	S of Manorbier (OBC Video 12) 63.4 m
1632	Camera sled in (51° 24.354' N, 04° 47.920' W)
1655	Camera sled out (51° 24.251' N, 04° 48.383' W)
Stn. 055:	*OBC* 36 (51° 27.667' N, 04° 47.380' W) 58.4 m fine-medium well sorted sand, no shells, underlain by black organic clay
1734-1736	Very Good (A - 9.5 litres); Ophiuroid
1738-1740	Very Good (B - 11 litres)
1741-1743	Very Good (C - sediment sample)
Stn. 056:	*OBC* 19 (51° 29.866' N, 04° 48.837' W) 51.0 m sediment as 55, *Abra*
1801-1803	Very Good (A - 10.5 litres)
1805-1807	Very Good (B - 10.5 litres)
1808-1809	Very Good (C - sediment sample)
Stn. 057:	*OBC* 18 (51° 32.212' N, 04° 49.224' W) 39.8 m as 55 but slightly finer
1830-1832	Good (C - sediment sample)
1834-1835	Good (A - 10 litres)
1836-1838	Good (B - 9.5 litres)
Stn. 058:	*OBC* 1 (51° 34.233' N, 04° 51.198' W) 43.4 m, shelly gravelly muddy sand
1855-1857	Good (A - 7 litres)
1858-1859	Scraping only
1900-1902	Good (B - 6 litres); scaleworm
1903-1904	Good (C - sediment sample)

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Video 10:	S of Manorbier (OBC Video 6) 38.4 m
0611	Camera sled in (51° 35.214' N, 04° 47.183' W)
0620	Camera sled out (51° 35.061' N, 04° 47.536' W) **Note:** Camera tow aborted due to lack of visibility
Video 11:	SE of Caldey Island (OBC Video 7) 37.3 m
(not recorded)	Camera sled in (51° 35.245' N, 04° 35.725' W)
0751	Camera sled out (51° 35.164' N, 04° 35.451' W)
Stn. 059:	*OBC* 13 (51° 35.722' N, 04° 33.365' W) 32.6 m fine-medium sand, moderately sorted, moderate shell content
0816-0818	Good (A - 9 litres)
0819-0821	Good (B - 8.5 litres)
0822-0824	Good (C - sediment sample)
Stn. 060:	*OBC* 14 (51° 35.075' N, 04° 36.707' W) 39.1 m moderately sorted medium sand, moderate shell content
0836-0838	Good (A - 8 litres)
0839-0840	Good (B - 9 litres)
0841-0842	Good (C - sediment sample)
Stn. 061:	*OBC* 15 (51° 34.352' N, 04° 39.661' W) 41.1 m muddy sandy gravel, moderate shells, organic content
0857-0859	Sediment leaking (C - sediment sample)
0900-0902	Stone in jaws
0903-0904	Good (A - 7 litres)
0905-0906	Stone in jaws
0907-0908	Very Good (B - 10 litres)
Stn. 062:	*OBC* 16 (51° 33.666' N, 04° 42.969' W) 40.6 m mud
0924-0925	Very Good (A - 14 litres)
0927-0929	Very Good (B - 11 litres)
0932-0933	Very Good (C - sediment sample)
Stn. 063:	*OBC* 17 (51° 32.960' N, 04° 46.131' W) 40.6 m muddy sand
0947-0949	Very Good (A - 11 litres)
0950-0951	Good (B - 7 litres)
0952-0953	Good (C - sediment sample)
Stn. 064:	*OBC* 2 (51° 35.084' N, 04° 47.731' W) 36.2 m, coarse sandy gravel (A, D & C); muddy gravel (B)
1013-1015	Very Good (A - 12.5 litres)
1016-1018	Scraping only
1018-1020	Stone in jaws
1021-1024	Fair (B - 5 litres)
1025-1026	Scraping only

1026-1027 Very Good (D - 11.5 litres)
1028-1029 Stones
1030-1031 Stones
1031-1032 Good (C - sediment sample)
Note: Sediment changed after A sample then reverted back after 5th grab. Samples A & D were the same sediment type as was the sediment sample from sample C. Sample B was discarded.

Stn. 065: *OBC* 3 (51° 35.620' N, 04° 44.957' W) 34.0 m, moderately sorted very coarse sand (B-D)

1048-1051 Very Good (A - 9 litres)
1052-1053 Very Good (B - 10 litres)
1054-1055 Very Good (D - 10 litres)
1056-1057 Very Good (C - sediment sample)
Note: Sediment changed after A sample. The following samples B-D were all the same sediment type, so sample A was discarded.

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Stn. 066: *OBC* 4 (51° 36.431' N, 04° 41.452' W) 33.7 m, rock platform (A: muddy shelly sand)

1841-1842 Empty
1843-1844 Stone
1845-1846 Stone in jaws
1847-1848 Very Good (A - 10 litres)
1850-1851 Stones
1852-1853 Empty
1859 Tjärnö dredge deployed
1904 Tjärnö dredge retrieved: empty (!)
Note: Rock platform with occasional pockets of sand leading to one grab of sand and an empty dredge! Stones retained & pooled into 1 sample. Station is qualitative.
NO SEDIMENT SAMPLE.

Stn. 067: *OBC* 5 (51° 37.070' N, 04° 38.516' W) 36.3 m, rock platform overlain by thin gravelly shelly sandy mud

1920-1921 Stone in jaws (3 litres)
1922-1923 Stone
1924-1925 Stone
Note: Qualitative station, samples pooled. Large rock in last grab of old red sandstone.
NO SEDIMENT SAMPLE.

Stn. 068: *OBC* 6 (51° 37.723' N, 04° 35.178' W) 36.3 m, very fine muddy sand

1943-1945 Good (A - 7 litres)
1946-1948 Good (B - 7 litres)
1949-1950 Good (C - sediment sample); Spiny cockle

Stn. 069: *OBC* 7 (51° 38.362' N, 04° 31.998' W) 36.3 m, very coarse shelly sand

2005-2006 Very Good (A - 10 litres)
2007-2008 Very Good (B - 9 litres)
2009-2010 Very Good (C - sediment sample)
Note: *Repeat of Warwick & Davies Stn 134*

Stn. 070: *OBC* 8 (51° 39.115' N, 04° 29.583' W) 21.7 m, sandy mud, quartz rich

2024-2025 Good (A - 8 litres); *Corystes*
2026-2027 Good (B - 8 litres)
2028-2029 Good (C - sediment sample)

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Stn. 071: *OBC* 9 (51° 39.903' N, 04° 25.418' W) 15.0 m, quartz rich muddy sand

0719-0720 Good (A - 6 litres)
0721-0722 Good (B - 7 litres)
0723-0724 Good (C - sediment sample); *Venus*?

Stn. 072: Carmarthen Bay (51° 41.373' N, 04° 23.543' W) 15.0 m, quartz rich muddy sand

0736-0737 Fair (A - 5.5 litres)
0738-0739 Fair (B - 5 litres)
0740-0741 Fair (C - sediment sample)
Note: *Repeat of South West Wales Stn 27*

Stn. 073: Carmarthen Bay (51° 41.029' N, 04° 28.095' W) 15.0 m, quartz rich muddy sand

0752-0753 Fair (A - 5 litres)
0755-0756 Fair (B - litres)
0759-0800 Fair (C - sediment sample); *Venus*?
Note: *Repeat of Warwick & Davies Stn 126*

Stn. 074: Carmarthen Bay (51° 41.385' N, 04° 32.593' W) 15.0 m, muddy sand (not quartz rich)

0819-0820 Fair (A - 5 litres)
0821-0822 Fair (B - 5 litres)
0823-0824 Fair (C - sediment sample); *Venus*?
Note: *Repeat of South West Wales Stn 55*

Stn. 075: Carmarthen Bay (51° 40.016' N, 04° 36.167' W) 15.0 m, muddy sand (not quartz rich)

0838-0839 Good (A - 6 litres)
0840-0841 Good (B - 5 litres)
0842-0843 Good (C - sediment sample)
Note: *Repeat of Warwick & Davies Stn 142*

Stn. 076: Carmarthen Bay (51° 42.429' N, 04° 38.490' W) 11.1 m, sandy mud

0857-0858 Good (A - 6 litres)
0859-0859 Good (B - 5 litres)
0900-0900 Good (C - sediment sample)
Note: *Repeat of South West Wales Stn 49*

Stn. 077: Carmarthen Bay (51° 39.799' N, 04° 40.040' W) 13.9 m, muddy shelly sand

0921-0922	Scraping only (C - sediment sample)
0923-0924	Poor (A - 4.5 litres)
0924-0925	Poor (B - 4.5 litres)
	Note: *Repeat of South West Wales Stn 44*
Stn. 078:	*OBC* 20 (51° 30.549' N, 04° 45.759' W) 48.0 m coarse shelly sand & soft grey mud (finer A-C)
1036-1038	Good (A - 8 litres)
1039-1041	Good (B - 8.5 litres)
1042-1044	Good (C - sediment sample)
Stn. 079:	*OBC* 21 (51° 31.232' N, 04° 42.821' W) 43.5 m slightly muddy moderately sorted coarse quartz sand
1112-1114	Good (A - 8 litres)
1115-1117	Very Good (B - 12 litres)
1118-1120	Good (C - sediment sample)
Stn. 080:	*OBC* 22 (51° 31.959' N, 04° 39.489' W) 39.4 m slightly muddy very coarse gravelly sand
1149-1151	Very Good (A - 10.5 litres)
1151-1153	Good (B - 8 litres)
1154-1156	Good (C - sediment sample)
Stn. 081:	*OBC* 23 (51° 32.696' N, 04° 36.154' W) 35.4 m well sorted medium-coarse sand & quartz sand
1220-1221	Very Good (A - 10.5 litres)
1222-1224	Very Good (B - 10.5 litres)
1225-1226	Very Good (C - sediment sample)
Stn. 082:	*OBC* 24 (51° 33.539' N, 04° 31.590' W) 31.2 m fine moderately sorted sandy mud underlain by soft grey clay
1311-1312	Good (A - 8 litres)
1313-1315	Very Good (B - 12 litres)
1316-1317	Very Good (C - sediment sample)
Stn. 083:	*OBC* 31 (51° 31.277' N, 04° 31.386' W) 28.7 m well sorted quartz sand underlain by grey clay, many juvenile Pectinariidae
1334-1336	Very Good (A - 12.5 litres)
1337-1339	Very Good (B - 11 litres)
1339-1341	Very Good (C - sediment sample)
Stn. 084:	*OBC* 30 (51° 31.965' N, 04° 28.091' W) 24.8 m well sorted medium sand
1358-1359	Very Good (A - 10 litres)
1400-1401	Very Good (B - 10 litres)
1402-1403	Very Good (C - sediment sample)
Stn. 085:	*OBC* 25 (51° 34.227' N, 04° 29.143' W) 29.0 m slightly muddy well sorted fine sand
1419-1421	Good (A - 8 litres)

1422-1424	Very Good (B - 11 litres)
1424-1426	Very Good (C - sediment sample)
Stn. 086:	*OBC* 12 (51° 36.523' N, 04° 30.016' W) 25.9 m slightly muddy fine-coarse sand, moderately sorted
1500-1501	Good (A - 8 litres)
1502-1503	Good (B - 8 litres)
1505-1506	Good (C - sediment sample)
Stn. 087:	*OBC* 11 (51° 37.188' N, 04° 26.761' W) 23.0 m moderately sorted shelly coarse sand
1538-1539	Fair (A - 5 litres)
1540-1541	Good (B - 7.5 litres)
1541-1542	Good (C - sediment sample)
Stn. 088:	*OBC* 10 (51° 37.856' N, 04° 23.436' W) 15.1 m very fine muddy sand, well sorted
1620-1621	Fair
1623-1624	Fair (A - 5 litres)
1625-1626	Fair (B - 5 litres)
1627-1628	Fair (C - sediment sample)
	Note: 1 grab door found to be unlatched when 1st grab retrieved so sample discarded.
Stn. 089:	*OBC* 26 (51° 34.829' N, 04° 26.244' W) 29.0 m medium-coarse slightly muddy sand
1704-1705	Very Good (A - 11 litres)
1706-1707	Very Good (B - 9.5 litres)
1708-1709	Good (C - sediment sample)
Stn. 090:	*OBC* 27 (51° 35.520' N, 04° 23.111' W) 22.9 m slightly muddy medium sand
1733-1734	Good (A - 6 litres)
1735-1736	Good (B - 6 litres)
1736-1737	Good (C - sediment sample)
Stn. 091:	*OBC* 29 (51° 32.759' N, 04° 24.819' W) 28.5 m well sorted medium sand
1817-1818	Good (A - 8 litres)
1820-1821	Very Good (B - 10 litres)
1823-1824	Good (C - sediment sample)
	15/07/2003
Stn. 092:	Carmarthen Bay (51° 34.968' N, 04° 20.338' W) 19.5 m, well sorted medium quartz sand
0650-0651	Good (A - 8 litres)
0652-0653	Good (B - 7.5 litres)
0654-0655	Good (C - sediment sample); *Mactra corallina*?
	Note: *Repeat of South West Wales Stn 23*
Stn. 093:	*OBC* 28 (51° 33.268' N, 04° 21.975' W) 26.1 m well sorted medium quartz sand, some mud

0713-0714	Very Good (A - 10.5 litres)
0715-0716	Very Good (B - 10 litres)
0717-0718	Very Good (C - sediment sample)
	Note: *Repeat of South West Wales Stn 21*
Stn. 094:	*OBC* 32 (51° 30.585' N, 04° 34.552' W) 36.6 m muddy fine-coarse sand
0810-0811	Good (A - 6 litres)
0813-0814	Very Good (B - 10 litres)
0816-0817	Very Good (C - sediment sample)
Stn. 095:	*OBC* 33 (51° 29.826' N, 04° 37.723' W) 38.5 m muddy medium quartz sand, well sorted
0835-0837	Very Good (A - 11 litres)
0837-0839	Very Good (B - 12 litres)
0840-0842	Very Good (C - sediment sample)
Stn. 096:	*OBC* 34 (51° 29.049' N, 04° 41.384' W) 52.6 m slightly sandy organic mud
0901-0903	Very Good (A - 14 litres)
0905-0907	Very Good (B - 14 litres)
0909-0911	Very Good (C - sediment sample)
Stn. 097:	*OBC* 35 (51° 28.386' N, 04° 44.214' W) 55.9 m poorly sorted gravelly sandy mud
0926-0928	Very Good (A - 12 litres)
0929-0931	Very Good (B - 11 litres)
0932-0934	Very Good (C - sediment sample)
Stn. 098:	*OBC* 37 (51° 24.552' N, 04° 46.828' W) 60.7 m very poorly sorted shelly gravelly medium coarse sand
1008-1011	Poor
1012-1014	Good (A - 6 litres)
1015-1017	Poor (B - 4.5 litres)
1019-1021	Poor (C - sediment sample)
Stn. 099:	*OBC* 53 (51° 21.606' N, 04° 44.377' W) 58.6 m coarse-very coarse shelly sand
1056-1058	Fair (A - 5 litres)
1100-1102	Good (B - 8 litres)
1103-1105	C, sediment sample
Stn. 100:	*OBC* 52 (51° 22.432' N, 04° 41.006' W) 49.8 m coarse shelly pebbly sand
1144-1145	Poor (C - sediment sample)
1146-1148	Fair (A - 5.5 litres)
1150-1152	Scraping only
1152-1154	Stone in jaws
1155-1157	Poor (B - 4 litres)
Stn. 101:	*OBC* 38 (51° 25.325' N, 04° 43.417' W) 48.2 m well sorted medium sand

1218-1220	Good (A - 7 litres)
1221-1223	Good (B - 7.5 litres)
1224-1226	Good (C - sediment sample)
Stn. 102:	*OBC* 39 (51° 26.044' N, 04° 40.143' W) 42.6 m very well sorted medium sand
1247-1249	Good (A - 9 litres)
1250-1252	Good (B - 8 litres)
1252-1254	Good (C - sediment sample)
Stn. 103:	*OBC* 51 (51° 23.167' N, 04° 37.488' W) 50.1 m very well sorted medium-coarse quartz sand
1318-1320	Very Good (A - 10 litres)
1321-1323	Very Good (B - 10.5 litres)
1324-1326	Very Good (C - sediment sample)
Stn. 104:	*OBC* 50 (51° 23.885' N, 04° 34.331' W) 46.9 m very well sorted medium-coarse quartz sand (slightly coarser than 103)
1347-1349	Good (A - 9.5 litres)
1350-1352	Good (B - 9 litres)
1354-1356	Stone in jaws
1356-1358	Good (C - sediment sample)
Stn. 105:	*OBC* 49 (51° 24.505' N, 04° 31.069' W) 45.6 m very well sorted medium quartz sand
1420-1421	Very Good (A - 10.5 litres)
1422-1424	Very Good (B - 12.5 litres)
1425-1427	Very Good (C - sediment sample)
Stn. 106:	*OBC* 48 (51° 25.199' N, 04° 27.735' W) 44.1 m very well sorted medium-coarse quartz sand
1452-1454	Very Good (A - 9 litres)
1455-1457	Very Good (B - 11 litres)
1457-1459	Very Good (C - sediment sample)
Stn. 107:	*OBC* 105 (51° 25.957' N, 04° 27.983' W) 42.3 m very well sorted medium-coarse quartz sand
1534-1536	Very Good (A - 10.5 litres)
1537-1538	Very Good (B - 10.5 litres)
1539-1541	Very Good (C - sediment sample)
	Note: *Repeat of Warwick & Davies Stn 129*
Stn. 108:	*OBC* 47 (51° 26.044' N, 04° 24.178' W) 33.8 m moderately sorted medium-coarse quartz sand
1605-1607	Very Good (A - 11 litres)
1607-1609	Very Good (B - 11 litres)
1610-1612	Very Good (C - sediment sample)
Stn. 109:	*OBC* 62 (51° 25.174' N, 04° 18.073' W) 36.8 m very coarse shelly pebbly sand, poorly sorted
1642-1644	Good (A - 8 litres)
1645-1647	Very Good (B - 10 litres)
1648-1650	Very Good (C - sediment sample)

Stn. 110:	*OBC* 106 (51° 25.960' N, 04° 19.797' W) 45.9 m very coarse shelly gravelly sand
1715-1717	Fair (A - 5.5 litres)
1718-1720	Very Good (B - 11.5 litres)
1720-1722	Very Good (C - sediment sample)
	Note: *Repeat of Warwick & Davies Stn 112*
Stn. 111:	*OBC* 46 (51° 26.741' N, 04° 20.745' W) 43.7 m moderately sorted very coarse shelly gravel
1805-1807	Good (A - 8 litres)
1808-1810	Very Good (B - 10 litres)
1811-1813	Very Good (C - sediment sample)
	16/07/2003
Stn. 112:	Helwick Bank (51° 30.190' N, 04° 20.595' W) 39.1 m, well sorted very coarse shelly sand
0715-0717	Good (A - 8.5 litres)
0718-0719	Very Good (B - 10 litres)
0720-0721	Very Good (C - sediment sample)
	Note: *Repeat of Sandbanks Stn 37*
Stn. 113:	Helwick Bank (51° 31.085' N, 04° 21.760' W) 38.4 m, moderately sorted coarse-very coarse moderately shelly sand, occasional mud
0733-0735	Very Good (A - 9.5 litres)
0736-0738	Very Good (B - 10 litres)
0739-0741	Very Good (C - sediment sample)
	Note: *Repeat of Sandbanks Stn 31*
Stn. 114:	Helwick Bank (51° 31.360' N, 04° 21.589' W) 18.4 m, well sorted medium sand
0747-0748	Very Good (A - 12.5 litres)
0749-0750	Very Good (B - 13 litres)
0752-0753	Very Good (C - sediment sample)
	Note: *Repeat of Sandbanks Stn 37*
Stn. 115:	Helwick Bank (51° 31.893' N, 04° 21.473' W) 18.4 m, well sorted medium quartz sand
0802-0804	Very Good (A - 11 litres)
0805-0806	Good (B - 7 litres)
0807-0808	Very Good (C - sediment sample)
	Note: *Repeat of Sandbanks Stn 27*
Stn. 116:	*OBC* 100 (51° 26.803' N, 04° 20.943' W) 44.0 m very shelly coarse sand, rare pebbles
0845-0847	Very Good
	Note: OBC Eastern Transect - Sediment only
Stn. 117:	*OBC* 101 (51° 26.720' N, 04° 21.264' W) 46.9 m well sorted shelly very coarse sand with medium pebbles
0855-0857	Very Good
	Note: OBC Eastern Transect - Sediment only

Stn. 118:	*OBC* 102 (51° 26.642' N, 04° 21.403' W) 48.4 m moderately sorted pebbly very coarse sand
0858-0900	Very Good
	Note: OBC Eastern Transect - Sediment only
Stn. 119:	*OBC* 103 (51° 26.607' N, 04° 21.556' W) 46.9 m very coarse pebbly shelly sand
0904-0906	Very Good
	Note: OBC Eastern Transect - Sediment only
Stn. 120:	*OBC* 104 (51° 26.553' N, 04° 21.724' W) 49.3 m medium-coarse shelly quartz sand, well sorted
0909-0911	Very Good
	Note: OBC Eastern Transect - Sediment only
Stn. 121:	*OBC* 105 (51° 26.472' N, 04° 21.893' W) 50.9 m slightly muddy coarse-very coarse shelly quartz sand
0913-0915	Very Good
	Note: OBC Eastern Transect - Sediment only
Stn. 122:	*OBC* 104 (51° 26.558' N, 04° 21.603' W) 45.5 m well sorted very coarse sandy gravel
0925-0926	Good (A - 9 litres)
0927-0929	Very Good (B - 11 litres)
0930-0931	Good (C - sediment sample)
	Note: OBC Eastern Transect - repeat of stn 120 for fauna
Stn. 123:	*OBC* 103 (51° 26.564' N, 04° 21.486' W) 45.2 m very coarse pebbly gravelly sand
0939-0941	Very Good (A - 10 litres)
0942-0943	Very Good (B - 11.5 litres)
0944-0945	Very Good (C - sediment sample)
	Note: OBC Eastern Transect: repeat of stn 119 for fauna
Stn. 124:	*OBC* 102 (51° 26.710' N, 04° 21.298' W) 44.0 m very coarse pebbly gravelly sand
0953-0955	Good (A - 9.5 litres)
0956-0958	Good (B - 10 litres)
0959-1001	Very Good (C - sediment sample)
	Note: OBC Eastern Transect: repeat of stn 118 for fauna
Stn. 125:	*OBC* 96 (51° 28.546' N, 04° 28.662' W) 41.9 m moderately sorted pebbly very coarse sand
1024-1026	Very Good
	Note: OBC Western Transect - sediment only
Stn. 126:	*OBC* 95 (51° 28.533' N, 04° 28.892' W) 33.8 m poorly sorted medium-very coarse shelly quartz sand

1028-1030	Very Good
	Note: OBC Western Transect - sediment only
Stn. 127:	*OBC* 93 (51° 28.520' N, 04° 29.033' W) 44.4 m well sorted medium-coarse quartz sand
1030-1032	Very Good
	Note: OBC Western Transect - sediment only
Stn. 128:	*OBC* 92 (51° 28.517' N, 04° 29.198' W) 43.0 m well sorted medium-coarse quartz sand
1034-1036	Very Good
	Note: OBC Western Transect - sediment only
Stn. 129:	*OBC* 97 (51° 28.046' N, 04° 22.059' W) 43.8 m medium-very coarse sand, some pebbles
1114-1116	Very Good (A - 10 litres)
1117-1119	Good (B - 6 litres)
1119-1121	Good (C - sediment sample)
Stn. 130:	*OBC* 98 (51° 28.033' N, 04° 23.028' W) 43.8 m slightly muddy fine-medium sand
1126-1128	Good (A - 8 litres)
1129-1131	Good (B - 6 litres)
1132-1134	Good (C - sediment sample)
Stn. 131:	*OBC* 99 (51° 27.266' N, 04° 23.356' W) 40.0 m coarse-very coarse moderately sorted sand
1142-1144	Good (A - 9 litres)
1145-1146	Trigger failed
1146-1148	Trigger failed
1150-1152	Trigger failed
1152-1154	Trigger failed
1154-1156	Good (B - 6 litres)
1157-1159	Good (C - sediment sample)
Stn. 132:	Nobel Banks (New 5) (51° 27.482' N, 04° 28.367' W) 41.9 m, coarse sandy gravel, moderately sorted
1302-1302	Very Good (A - 10 litres)
1305-1307	Very Good (B - 10 litres)
1307-1308	Very Good (C - sediment sample)
Stn. 133:	Nobel Banks (New 4) (51° 30.500' N, 04° 29.088' W) 28.4 m, muddy fine-medium sand (mud overlaying sand?)
1329-1330	Very Good (A - 10.5 litres)
1331-1332	Very Good (B - 12 litres)
1333-1334	Very Good (C - sediment sample)
Stn. 134:	S of Stackpole Head (New 2) (51° 28.153' N, 04° 51.501' W) 53.8 m, sandy gravelly mud
1448-1450	Very Good (A - 12 litres)
1451-1453	Very Good (B - 10 litres)
1455-1457	Very Good (C - sediment sample)
Stn. 135:	SW of St. Govan's Head (New 3) (51° 27.165' N, 05° 05.090' W) 54.8 m, muddy sand
1546-1548	Good (A - 7.5 litres)
1548-1550	Good (B - 8 litres)
1552-1554	Good (C - sediment sample)

A2.2: Log of the 2004 Noctiluca *cruise*

Ship: R.V. *Noctiluca* (University of Wales, Swansea)

Personnel aboard ship: T. Darbyshire, D. Powell, B. Evans, A. Critchlow, R. Bowen, C. Angele, S. Noorbhai, H. Wood, J. Turner, A. S. Y. Mackie

Samples sorted by: A. Critchlow, R. Bowen, C. Angele, S. Noorbhai; **Supervisor:** D. Powell

Specimens identified by: T. Darbyshire, P. R. Garwood & A. S. Y. Mackie (Annelida); I. J. Killeen, H. Wood & J. Gallichan (Mollusca); D. Powell, D. Rostron & S. Whyte (Arthropoda, Echinodermata, 'Other' Phyla)

Sediment analysed by: John Malcolm, Sediment Analysis Services

Station Locations: Siting of the new stations was determined by BGS in order to fill in 'gaps' in the previous transects and also to sample areas that the previous survey had highlighted as of being of certain interest. Station sampling order was then determined by weather and logistical ease, not by number

Repeat Stations: There were no repeat stations undertaken on this cruise

26/07/2004

Stn. 140:	NOBel Sands (51° 26.216' N, 04° 23.534' W) 41.0 m, medium shelly sand, some coal particles, Nephtyidae
1223-1229	Very Good (A - 12 litres)
1236-1240	Very Good (B - 11.5 litres)
1247-1250	Very Good (C - sediment sample) **Note:** Part of sand ridge transect
Stn. 148:	NOBel Sands (51° 26.225' N, 04° 23.479' W) 43.6 m medium sand, coal particles, shell Nephtyidae, Spionidae (*Scolelepis*?)
1314-1317	Very Good (A - 11 litres)
1325-1328	Very Good (B - 13 litres)
1335-1339	Very Good (C - sediment sample) **Note:** Part of sand ridge transect
Stn. 146:	NOBel Sands (51° 26.217' N, 04° 23.569' W) 46.6 m medium sand, little shell, coal particles, Nephtyidae
1358-1402	Very Good (A - 12 litres)
1408-1411	Very Good (B - 10 litres)
1419-1422	Very Good (C - sediment sample) **Note:** Part of sand ridge transect

27/07/2004

Stn. 138:	NOBel Sands (51° 26.872' N, 04° 20.397' W) 41.8 m, medium-coarse sand, Nephtyidae
1114-1118	Very Good (A - 9.5 litres)
1122-1124	Very Good (B - 12.5 litres)
1128-1131	Very Good (C - sediment sample)
Stn. 141:	NOBel Sands (51° 26.391' N, 04° 22.658' W) 48.0 m medium-coarse sand (clay lumps in A)
1149-1152	Very Good (A - 11 litres)
1157-1200	Very Good (B - 12 litres)
1205-1208	Very Good (C - sediment sample)
Stn. 147:	NOBel Sands (51° 26.216' N, 04° 23.521' W) 37.6 m medium shelly sand
1225-1229	Very Good (A - 12 litres)
1234-1237	Very Good (B - 14 litres)
1246-1248	Very Good (C - sediment sample) **Note:** Part of sand ridge transect. Fishing boat anchored over station site. Station relocated further along ridge but still on crest.
Stn. 137:	Carmarthen Bay (51° 35.560' N, 04° 22.731' W) 22.7 m fine sand & shell, razor shells, Glyceridae
1555-1557	Good (A - 7 litres)
1559-1601	Good (B - 8 litres)
1603-1605	Good (C - sediment sample)

28/07/2004

Stn. 144:	West NOBel Sands (51° 26.628' N, 04° 52.319' W) 59.0 m muddy sand, *Abra*, *Scalibregma*
1251-1255	Good (A - 7 litres)
1259-1302	Very Good (B - 13 litres)
1306-1311	Very Good (C - sediment sample) **Note:** Just within Castlemartin firing range
Stn. 142:	West end of Corridor 7 (51° 23.828' N, 04° 50.409' W) 62.4 m medium shelly sand, *Corystes*, hydroid
1330-1335	Poor (4 litres)
1343-1347	Good (A - 8 litres)
1352-1356	Good (B - 7 litres)
1401-1405	Good (C - sediment sample)

	Note: First sample very poor and different sediment (fine sand with pebbles & shell) so following samples: discarded
Stn. 143:	Mid-west NOBel Sands (51° 26.007' N, 04° 40.522' W) 40.0 m clean coarse sand
1439-1442	Very Good (A - 13.5 litres)
1441-1452	Very Good (B - 12 litres)
1457-1500	Very Good (C - sediment sample)
	29/07/2004
Stn. 145:	East end of Corridor 5 (51° 26.690' N, 04° 11.590' W) 36.4 m fine-medium sand & stones
1022-1024	Fair (A - 6 litres)
1034-1036	Good (B - 9.5 litres)
1042-1045	Stone in jaws
1048-1051	Stones
1055-1058	Stones
1100-1103	Stones
	Note: No sediment sample
Stn. 139:	East end of Corridor 6 (51° 27.939' N, 04° 15.308' W) 38.1 m, stones, gravel, medium sand
1118-1121	Stones
1123-1126	Trigger failed
1130-1132	Scraping only (C - 4.5 litres, sediment sample)
1142-1145	Poor (B - 4.5 litres)
1149-1152	Fair (A - 6 litres)
	Note: Sample B was very small but jaws were shut and there had been no leakage. Due to difficulty in getting samples this was accepted despite small size.
Stn. 136:	Carmarthen Bay (51° 35.495' N, 04° 23.318' W) 21.6 m, muddy sand & shell
1325-1326	Good (A - 8.5 litres)
1330-1331	Fair (B - 6 litres)
1336-1338	Fair (C - 6.5 litres)
1344-1345	Fair (D - sediment sample)
	Note: Grab A was fine sand & shell fragments no mud - different to the following 3 grabs. The latter 3 were all comparable sediment and so were kept for the station, A was discarded.

A2.3: Log of the 2005 Prince Madog cruise

Ship: R.V. *Prince Madog* (University of Wales, Bangor)

Personnel aboard ship: E. I. S.Rees, J. Hiddink, R. Wilton (School of Ocean Sciences); M. Lambert (National Museum Wales); C. Lindenbaum (Countryside Council for Wales); A. Woolmer (South Wales Sea Fisheries Committee); D. Smith, D. McInroy, G. O. Jenkins (British Geological Survey)

Specimens sorting & recognition at sea: E. I. S. Rees, J. Hiddink, C. Lindenbaum & A. Woolmer

	15/05/2005
2009 – 2128	BT1, Corridor 8 4 x 2m Beam Trawls (Codes BT1a – 1d)
2215	Boomer deployed for calibration
2300	Boomer deployed at SW end of Corridor 6
	16/05/2005
0612	Boomer recovered at NE end of Corridor 6
0653-0714	V13, Corridor 6 Camera sledge tow
0815-0912	BT2, Corridor 6 4 x 2m Beam Trawls (Codes BT2a – 2d)
0953-1040	BT3, Corridor 6 4 x 2m Beam Trawls (Codes BT3a – 3d)
1106-1131	V14, Corridor 6 Camera sledge tow
1300-1310	V15a, camera sledge tow (aborted)
1335-1355	V15b, Corridor 6 Camera sledge tow
1418-1520	BT4, Corridor 6 4 x 2m Beam Trawls (Codes BT4a – 4d)
1608-1710	BT5, Corridor 5 4 x 2m Beam Trawls (Codes BT5a – 5d)
1826-1851	V16, Corridor 5 Camera sledge tow
2001	Boomer line commenced at NE end Corridor 5
	17/05/2005
0201	Boomer tow on Corridor 5 stopped due to weather
0715-0738	V17, Corridor 9 Camera sledge tow
0819-0901	BT6, Corridor 9 4 x 2m Beam Trawls (Codes BT 6a – 6d)
0925-1005	BT7, Corridor 9 4 x 2m Beam Trawls (Codes BT 7a – 7d)
1112-1159	BT8, Corridor 8 4 x 2m Beam Trawls (Codes BT 8a – 8d)
1300-1415	BT9, Corridor 8 5 x 2m Beam Trawls (Codes BT 9a – 9e)
1440- 1451	V18, Corridor 8 Camera sledge tow: too turbid
1700-1800	BT10, Corridor 2 4 x 2m Beam Trawls (Codes BT 10a – 10d)
1856-1920	V19, Corridor 2 Camera sledge tow (Code V19)
2045	Boomer line commenced at SW end of Corridor 4
	18/05/2005
0216	Boomer line 4 completed
0256	Boomer line commenced at NE end of Corridor 3
0808	Boomer line 3 completed
0855-0923	V20, Corridor 4 Camera sledge tow
0944-1033	BT11, Corridor 4 4 x 2m Beam Trawls (Codes BT11a – 11d)
1105-1154	BT12, Corridor 3 4 x 2m Beam Trawls (Codes BT12a – 12d)
1246-1315	V21, Corridor 3 Camera sledge tow
1421-1537	BT13, Corridor 3 4 x 2m Beam Trawls (Codes BT13a – 13d)
1611-1642	V22, Corridor 3 Camera sledge tow
1716-1742	V23, Corridor 2 Camera sledge tow
1838	Boomer line commenced at SW end of Corridor 2
2250	Boomer line 2 completed (Weather prevented further lines)

A2.4: *Example of a hand-written log sheet from the 2003 OBCMHS* Prince Madog *cruise*

National Museum of Wales **BRISTOL CHANNEL CRUISE LOG - 2003**

CHIEF SCIENTIST A.S.Y. MACKIE VESSEL PRINCE MADOG STATION 10

ENTERED BY T. DARBYSHIRE LOCATION OBC 10B

SAMPLING TEAM ASYM KM TD ML HW JT GJ EISR MK BB

SURVEY OBC

DATE 9/7/03

TIME

LAT.

LONG.

WEATHER
Light Airs
Calm sea, low swell

SIEVE 0.5/1/2

Sample	GEAR	Sample LAT.	Sample LONG.	DEPTH
A	VVI	51° 10.739' N	04° 27.010' W	46.5
B	VVI	51° 10.715' N	04° 27.085' W	46.6
—	VVI	51° 10.701' N	04° 27.129' W	46.6
C	VVI	51° 10.697' N	04° 27.152' W	46.6

SAMPLING METHOD (Gear) VV

Sample	GEAR used	TIME IN	TIME OUT	SAMPLE STATUS (observation)	(form)	VOL.	No. of POTS	SEPARATED SPECIMENS/ SAMPLES, Treatment etc.
A	VVI	0815	0817	very good	QN	10	6	
B	VVI	0820	0821	good	QN	9	4	
—	VVI	0823	0825	STONE IN JAWS	—			
C	VVI	0826	0828	good	sed.			3x sediment sample

SEDIMENT coarse sand

FAUNA Thia
Spatangus + Montacuta

COLOUR

SMELL

PHOTOGRAPHY STILL VIDEO

OBSERVATIONS 10A : Spatangus + commensal bivalve (Montacuta substriata)

A2.5: Individual grab sample positions

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
1	53° 19’ 28.56” N	4° 08’ 59.76” W	ABC	53° 19.476’ N	4° 08.996’ W	53° 19’ 28.56” N	4° 08’ 59.76” W	10.6 m
2	51° 21’ 36.00” N	3° 10’ 01.20” W	ACB	51° 21.599’ N	3° 10.014’ W	51° 21’ 35.94” N	3° 10’ 00.84” W	33.9 m
3	51° 20’ 49.20” N	3° 13’ 37.20” W	qual	51° 20.803’ N	3° 13.628’ W	51° 20’ 48.18” N	3° 13’ 37.68” W	23.6 m
4	51° 12’ 10.80” N	4° 24’ 46.80” W	A	51° 12.103’ N	4° 24.788’ W	51° 12’ 06.18” N	4° 24’ 47.28” W	40.1 m
			B	51° 12.171’ N	4° 24.782’ W	51° 12’ 10.26” N	4° 24’ 46.92” W	39.5 m
			C	51° 12.200’ N	4° 24.791’ W	51° 12’ 12.00” N	4° 24’ 47.46” W	39.5 m
5	51° 12’ 18.00” N	4° 25’ 01.20” W	A	51° 12.240’ N	4° 25.000’ W	51° 12’ 14.40” N	4° 25’ 00.00” W	40.2 m
			B	51° 12.270’ N	4° 25.001’ W	51° 12’ 16.20” N	4° 25’ 00.06” W	40.2 m
			C	51° 12.280’ N	4° 25.011’ W	51° 12’ 16.80” N	4° 25’ 00.66” W	39.1 m
6	51° 12’ 10.80” N	4° 25’ 55.20” W	A	51° 12.151’ N	4° 25.128’ W	51° 12’ 09.06” N	4° 25’ 07.68” W	45.6 m
			B	51° 12.161’ N	4° 25.115’ W	51° 12’ 09.66” N	4° 25’ 06.90” W	45.6 m
			C	51° 12.187’ N	4° 25.089’ W	51° 12’ 11.22” N	4° 25’ 05.34” W	
7	51° 10’ 19.20” N	4° 33’ 00.00” W	A	51° 10.338’ N	4° 32.830’ W	51° 10’ 20.28” N	4° 32’ 49.80” W	50.5 m
			B	51° 10.330’ N	4° 32.898’ W	51° 10’ 19.80” N	4° 32’ 53.88” W	50.5 m
			C	51° 10.320’ N	4° 32.979’ W	51° 10’ 19.20” N	4° 32’ 58.74” W	50.5 m
8	51° 11’ 02.40” N	4° 30’ 03.60” W	A	51° 11.006’ N	4° 30.109’ W	51° 11’ 00.36” N	4° 30’ 06.54” W	47.3 m
			C	51° 11.002’ N	4° 30.126’ W	51° 11’ 00.12” N	4° 30’ 07.56” W	47.6 m
			B	51° 11.050’ N	4° 30.055’ W	51° 11’ 03.00” N	4° 30’ 03.30” W	46.8 m
9	51° 11’ 02.40” N	4° 28’ 01.20” W	A	51° 10.997’ N	4° 27.966’ W	51° 10’ 59.82” N	4° 27’ 57.96” W	46.2 m
			B	51° 11.019’ N	4° 27.980’ W	51° 11’ 01.14” N	4° 27’ 58.80” W	46.2 m
			C	51° 11.027’ N	4° 28.019’ W	51° 11’ 01.62” N	4° 28’ 01.14” W	46.2 m
10	51° 10’ 40.80” N	4° 27’ 10.80” W	A	51° 10.739’ N	4° 27.010’ W	51° 10’ 44.34” N	4° 27’ 00.60” W	46.5 m
			B	51° 10.715’ N	4° 27.085’ W	51° 10’ 42.90” N	4° 27’ 05.10” W	46.6 m
			C	51° 10.697’ N	4° 27.152’ W	51° 10’ 41.82” N	4° 27’ 09.12” W	46.6 m
11	51° 11’ 45.60” N	4° 26’ 27.60” W	A	51° 11.789’ N	4° 26.355’ W	51° 11’ 47.34” N	4° 26’ 21.30” W	43.1 m
			B	51° 11.735’ N	4° 26.385’ W	51° 11’ 44.10” N	4° 26’ 23.10” W	
			C	51° 11.731’ N	4° 26.425’ W	51° 11’ 43.86” N	4° 26’ 25.50” W	
12	51° 17’ 20.40” N	4° 15’ 46.80” W	qual	51° 17.263’ N	4° 15.869’ W	51° 17’ 15.78” N	4° 15’ 52.14” W	42.0 m
			qual	51° 17.301’ N	4° 15.828’ W	51° 17’ 18.06” N	4° 15’ 49.68” W	42.0 m
			qual	51° 17.335’ N	4° 15.798’ W	51° 17’ 20.10” N	4° 15’ 47.88” W	
13	51° 17’ 06.00” N	4° 16’ 30.00” W	C	51° 16.982’ N	4° 16.673’ W	51° 16’ 58.92” N	4° 16’ 40.38” W	42.1 m
			A	—	—	—	—	
			qual	51° 17.064’ N	4° 16.582’ W	51° 17’ 03.84” N	4° 16’ 34.92” W	41.2 m
			qual	51° 17.109’ N	4° 16.518’ W	51° 17’ 06.54” N	4° 16’ 31.08” W	
			qual	51° 17.141’ N	4° 16.472’ W	51° 17’ 08.46” N	4° 16’ 28.32” W	41.2 m
			qual	—	—	—	—	
14	51° 16’ 19.20” N	4° 19’ 55.20” W	A	51° 16.321’ N	4° 19.910’ W	51° 16’ 19.26” N	4° 19’ 54.60” W	43.5 m
			BC	—	—	—	—	
15	51° 12’ 39.60” N	4° 23’ 02.40” W	A	51° 12.562’ N	4° 23.097’ W	51° 12’ 33.72” N	4° 23’ 05.82” W	46.6 m
			BC	—	—	—	—	
16	51° 13’ 37.20” N	4° 23’ 16.80” W	A	51° 13.489’ N	4° 23.452’ W	51° 13’ 29.34” N	4° 23’ 27.12” W	47.6 m
			C	51° 13.608’ N	4° 23.293’ W	51° 13’ 36.48” N	4° 23’ 17.58” W	
			B	51° 13.657’ N	4° 23.221’ W	51° 13’ 39.42” N	4° 23’ 13.26” W	
17	51° 14’ 13.20” N	4° 24’ 07.20” W	A	51° 14.166’ N	4° 24.264’ W	51° 14’ 09.96” N	4° 24’ 15.84” W	47.3 m
			B	51° 14.191’ N	4° 24.184’ W	51° 14’ 11.46” N	4° 24’ 11.04” W	
			C	51° 14.230’ N	4° 24.099’ W	51° 14’ 13.80” N	4° 24’ 05.94” W	
18	51° 13’ 40.80” N	4° 25’ 44.40” W	A	51° 13.662’ N	4° 25.900’ W	51° 13’ 39.72” N	4° 25’ 54.00” W	47.3 m
			B	51° 13.681’ N	4° 25.807’ W	51° 13’ 40.86” N	4° 25’ 48.42” W	
			C	51° 13.702’ N	4° 25.727’ W	51° 13’ 42.12” N	4° 25’ 43.62” W	
19	51° 15’ 18.00” N	4° 24’ 39.60” W	B	51° 15.248’ N	4° 24.753’ W	51° 15’ 14.88” N	4° 24’ 45.18” W	48.7 m
			A	51° 15.324’ N	4° 24.674’ W	51° 15’ 19.44” N	4° 24’ 40.44” W	
			C	51° 15.383’ N	4° 24.577’ W	51° 15’ 22.98” N	4° 24’ 34.62” W	48.5 m
20	51° 19’ 22.80” N	4° 19’ 01.20” W	A	51° 19.357’ N	4° 19.000’ W	51° 19’ 21.42” N	4° 19’ 00.00” W	47.1 m
			C	51° 19.367’ N	4° 19.013’ W	51° 19’ 22.02” N	4° 19’ 00.78” W	
			B	51° 19.373’ N	4° 19.030’ W	51° 19’ 22.38” N	4° 19’ 01.80” W	
21	51° 19’ 58.80” N	4° 16’ 08.40” W	TD in	51° 20.040’ N	4° 16.318’ W	51° 20’ 02.40” N	4° 16’ 19.08” W	47.6 m
			TD out	51° 19.939’ N	4° 16.168’ W	51° 19’ 56.34” N	4° 16’ 10.08” W	
22	51° 18’ 21.60” N	4° 23’ 49.20” W	A	51° 18.377’ N	4° 23.633’ W	51° 18’ 22.62” N	4° 23’ 37.98” W	49.8 m
			B	51° 18.372’ N	4° 23.731’ W	51° 18’ 22.32” N	4° 23’ 43.86” W	
			C	51° 18.360’ N	4° 23.820’ W	51° 18’ 21.60” N	4° 23’ 49.20” W	
23	51° 17’ 34.80” N	4° 27’ 10.80” W	A	51° 17.613’ N	4° 26.918’ W	51° 17’ 36.78” N	4° 26’ 55.08” W	49.4 m
			C	51° 17.579’ N	4° 27.165’ W	51° 17’ 34.74” N	4° 27’ 09.90” W	
			B	51° 17.562’ N	4° 27.300’ N	51° 17’ 33.72” N	4° 27’ 18.00” W	
24	51° 14’ 24.00” N	4° 28’ 40.80” W	A	51° 14.472’ N	4° 28.440’ W	51° 14’ 28.32” N	4° 28’ 26.40” W	46.6 m
			B	51° 14.436’ N	4° 28.560’ W	51° 14’ 26.16” N	4° 28’ 33.60” W	
			C	51° 14.409’ N	4° 28.699’ W	51° 14’ 24.54” N	4° 28’ 41.94” W	
25	51° 13’ 30.00” N	4° 32’ 24.00” W	A	51° 13.468’ N	4° 32.119’ W	51° 13’ 28.08” N	4° 32’ 07.14” W	48.1 m
			B	51° 13.476’ N	4° 32.286’ W	51° 13’ 28.56” N	4° 32’ 17.16” W	
			C	51° 13.473’ N	4° 32.406’ W	51° 13’ 28.38” N	4° 32’ 24.36” W	

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
26	51° 13' 12.00" N	4° 34' 30.00" W	A	51° 13.198' N	4° 34.275' W	51° 13' 11.88" N	4° 34' 16.50" W	42.3 m
			B	51° 13.199' N	4° 34.352' W	51° 13' 11.94" N	4° 34' 21.12" W	
			C	51° 13.176' N	4° 34.482' W	51° 13' 10.56" N	4° 34' 28.92" W	
27	51° 12' 28.80" N	4° 37' 33.60" W	A	51° 12.480' N	4° 37.411' W	51° 12' 28.80" N	4° 37' 24.66" W	42.9 m
			B	51° 12.479' N	4° 37.510' W	51° 12' 28.74" N	4° 37' 30.60" W	43.0 m
			C	51° 12.501' N	4° 37.576' W	51° 12' 30.06" N	4° 37' 34.56" W	
28	51° 14' 49.20" N	4° 39' 36.00" W	qual	51° 14.829' N	4° 39.574' W	51° 14' 49.74" N	4° 39' 34.44" W	51.1 m
			qual	51° 14.832' N	4° 39.598' W	51° 14' 49.92" N	4° 39' 35.88" W	
			TD1	51° 14.852' N	4° 39.781' W	51° 14' 51.12" N	4° 39' 46.86" W	51.0 m
29	51° 15' 32.40" N	4° 36' 28.80" W	A	51° 15.490' N	4° 36.337' W	51° 15' 29.40" N	4° 36' 20.22" W	50.9 m
			B	–	–	–	–	
			C	51° 15.506' N	4° 36.477' W	51° 15' 30.36" N	4° 36' 28.62" W	
30	51° 16' 15.60" N	4° 33' 21.60" W	A	51° 16.261' N	4° 33.261' W	51° 16' 15.66" N	4° 33' 15.66" W	45.5 m
			B	51° 16.249' N	4° 33.294' W	51° 16' 14.94" N	4° 33' 17.64" W	
			C	51° 16.269' N	4° 33.339' W	51° 16' 16.14" N	4° 33' 20.34" W	
31	51° 16' 58.80" N	4° 30' 18.00" W	A	51° 16.931' N	4° 30.136' W	51° 16' 55.86" N	4° 30' 08.16" W	45.6 m
			C	51° 16.961' N	4° 30.232' W	51° 16' 57.66" N	4° 30' 13.92" W	
			B	51° 16.962' N	4° 30.300' W	51° 16' 57.72" N	4° 30' 18.00" W	
32	51° 18' 03.60" N	4° 37' 26.40" W	A	51° 18.050' N	4° 37.501' W	51° 18' 03.00" N	4° 37' 30.06" W	49.1 m
			B	51° 18.070' N	4° 37.467' W	51° 18' 04.20" N	4° 37' 28.02" W	
			C	51° 18.076' N	4° 37.432' W	51° 18' 04.56" N	4° 37' 25.92" W	
33	51° 20' 49.20" N	4° 38' 16.80" W	C	51° 20.736' N	4° 38.540' W	51° 20' 44.16" N	4° 38' 32.40" W	52.6 m
			qual	51° 20.806' N	4° 38.299' W	51° 20' 48.36" N	4° 38' 17.94" W	
			qual	51° 20.868' N	4° 38.144' W	51° 20' 52.08" N	4° 38' 08.64" W	
34	51° 20' 24.00" N	4° 40' 22.80" W	A	51° 20.331' N	4° 40.508' W	51° 20' 19.86" N	4° 40' 30.48" W	48.8 m
			C	51° 20.365' N	4° 40.404' W	51° 20' 21.90" N	4° 40' 24.24" W	
			B	51° 20.406' N	4° 40.243' W	51° 20' 24.36" N	4° 40' 14.58" W	
35	51° 19' 48.00" N	4° 42' 46.80" W	A	51° 19.717' N	4° 43.136' W	51° 19' 43.02" N	4° 43' 08.16" W	(59.1 m)
			B	51° 19.756' N	4° 42.944' W	51° 19' 45.36" N	4° 42' 56.64" W	
			C	51° 19.809' N	4° 42.753' W	51° 19' 48.54" N	4° 42' 45.18" W	
36	51° 17' 24.00" N	4° 40' 15.60" W	A	51° 17.349' N	4° 40.706' W	51° 17' 20.94" N	4° 40' 42.36" W	54.5 m
			B	51° 17.391' N	4° 40.459' W	51° 17' 23.46" N	4° 40' 27.54" W	
			C	51° 17.421' N	4° 40.281' W	51° 17' 25.26" N	4° 40' 16.86" W	
37	51° 18' 46.80" N	4° 34' 19.20" W	A	51° 18.632' N	4° 34.876' W	51° 18' 37.92" N	4° 34' 52.56" W	48.9 m
			C	51° 18.691' N	4° 34.674' W	51° 18' 41.46" N	4° 34' 40.44" W	
			B	51° 18.893' N	4° 33.734' W	51° 18' 53.58" N	4° 33' 44.04" W	
38	51° 19' 37.20" N	4° 30' 25.20" W	A	51° 19.513' N	4° 31.087' W	51° 19' 30.78" N	4° 31' 05.22" W	51.5 m
			B	51° 19.575' N	4° 30.742' W	51° 19' 34.50" N	4° 30' 44.52" W	
			C	51° 19.614' N	4° 30.589' W	51° 19' 36.84" N	4° 30' 35.34" W	
39	51° 22' 26.40" N	4° 18' 03.60" W	A	51° 22.348' N	4° 18.191' W	51° 22' 20.88" N	4° 18' 11.46" W	47.3 m
			B	51° 22.411' N	4° 18.105' W	51° 22' 24.66" N	4° 18' 06.30" W	
			C	51° 22.436' N	4° 18.066' W	51° 22' 26.16" N	4° 18' 03.96" W	
40	51° 21' 39.60" N	4° 21' 28.80" W	A	51° 21.629' N	4° 21.480' W	51° 21' 37.74" N	4° 21' 28.80" W	52.8 m
			B	51° 21.637' N	4° 21.517' W	51° 21' 38.22" N	4° 21' 31.02" W	
			C	51° 21.646' N	4° 21.536' W	51° 21' 38.76" N	4° 21' 32.16" W	
41	51° 20' 56.40" N	4° 24' 39.60" W	A	51° 20.955' N	4° 24.527' W	51° 20' 57.30" N	4° 24' 31.62" W	45.8 m
			B	51° 20.959' N	4° 24.598' W	51° 20' 57.54" N	4° 24' 35.88" W	
			C	51° 20.959' N	4° 24.672' W	51° 20' 57.54" N	4° 24' 40.32" W	
42	51° 20' 09.60" N	4° 27' 57.60" W	A	51° 20.250' N	4° 27.717' W	51° 20' 15.00" N	4° 27' 43.02" W	47.7 m
			B	51° 20.192' N	4° 27.841' W	51° 20' 11.52" N	4° 27' 50.46" W	
			C	51° 20.175' N	4° 27.941' W	51° 20' 10.50" N	4° 27' 56.46" W	
			D	51° 20.165' N	4° 28.092' W	51° 20' 09.90" N	4° 28' 05.52" W	
43	51° 20' 49.20" N	4° 36' 32.40" W	A	51° 21.023' N	4° 36.088' W	51° 21' 01.38" N	4° 36' 05.28" W	53.8 m
			B	–	–	–	–	
			C	51° 20.843' N	4° 36.529' W	51° 20' 50.58" N	4° 36' 31.74" W	
44	51° 22' 04.80" N	4° 32' 31.20" W	A	51° 22.158' N	4° 32.273' W	51° 22' 09.48" N	4° 32' 16.38" W	49.1 m
			B	51° 22.082' N	4° 32.451' W	51° 22' 04.92" N	4° 32' 27.06" W	
			C	51° 22.047' N	4° 32.533' W	51° 22' 02.82" N	4° 32' 31.98" W	
45	51° 22' 44.40" N	4° 28' 12.00" W	C/qual	51° 22.734' N	4° 28.192' W	51° 22' 44.04" N	4° 28' 11.52" W	40.8 m
46	51° 22' 48.00" N	4° 28' 37.20" W	A	51° 22.922' N	4° 28.375' W	51° 22' 55.32" N	4° 28' 22.50" W	48.8 m
			B	51° 22.839' N	4° 28.526' W	51° 22' 50.34" N	4° 28' 31.56" W	
			D	–	–	–	–	
			C	51° 22.803' N	4° 28.644' W	51° 22' 48.18" N	4° 28' 38.64" W	
47	51° 23' 34.80" N	4° 24' 57.60" W	A	51° 23.647' N	4° 24.852' W	51° 23' 38.82" N	4° 24' 51.12" W	41.6 m
			B	51° 23.606' N	4° 24.890' W	51° 23' 36.36" N	4° 24' 53.40" W	
			C	51° 23.580' N	4° 24.936' W	51° 23' 34.80" N	4° 24' 56.16" W	
48	51° 24' 32.40" N	4° 21' 18.00" W	C	51° 24.507' N	4° 21.304' W	51° 24' 30.42" N	4° 21' 18.24" W	45.0 m
			A	51° 24.443' N	4° 21.319' W	51° 24' 26.58" N	4° 21' 19.14" W	
			B	51° 24.420' N	4° 21.308' W	51° 24' 25.20" N	4° 21' 18.48" W	
49	51° 28' 55.20" N	4° 27' 07.20" W	A	51° 28.893' N	4° 27.414' W	51° 28' 53.58" N	4° 27' 24.84" W	40.7 m
			B	51° 28.915' N	4° 27.251' W	51° 28' 54.90" N	4° 27' 15.06" W	
			C	51° 28.923' N	4° 27.132' W	51° 28' 55.38" N	4° 27' 07.92" W	

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
50	51° 29' 34.80" N	4° 23' 52.80" W	A	51° 29.590' N	4° 24.172' W	51° 29' 35.40" N	4° 24' 10.32" W	37.7 m
			B	51° 29.596' N	4° 24.037' W	51° 29' 35.76" N	4° 24' 02.22" W	
			C	—	—	—	—	
51	51° 30' 14.40" N	4° 20' 20.40" W	A	51° 30.207' N	4° 20.783' W	51° 30' 12.42" N	4° 20' 46.98" W	39.7 m
			B	51° 30.209' N	4° 20.484' W	51° 30' 12.54" N	4° 20' 29.04" W	
			C	51° 30.205' N	4° 20.306' W	51° 30' 12.30" N	4° 20' 18.36" W	
52	51° 27' 57.60" N	4° 30' 18.00" W	A	51° 27.999' N	4° 30.652' W	51° 27' 59.94" N	4° 30' 39.12" W	45.1 m
			B	51° 27.982' N	4° 30.472' W	51° 27' 58.92" N	4° 30' 28.32" W	
			C	51° 27.975' N	4° 30.291' W	51° 27' 58.50" N	4° 30' 17.46" W	
53	51° 27' 32.40" N	4° 33' 36.00" W	A	51° 27.500' N	4° 33.963' W	51° 27' 30.00" N	4° 33' 57.78" W	48.2 m
			B	51° 27.526' N	4° 33.789' W	51° 27' 31.56" N	4° 33' 47.34" W	
			C	51° 27.526' N	4° 33.588' W	51° 27' 31.56" N	4° 33' 35.28" W	
54	51° 26' 49.20" N	4° 36' 43.20" W	A	51° 26.787' N	4° 37.004' W	51° 26' 47.22" N	4° 37' 00.24" W	42.3 m
			B	51° 26.803' N	4° 36.866' W	51° 26' 48.18" N	4° 36' 51.96" W	
			C	51° 26.814' N	4° 36.737' W	51° 26' 48.84" N	4° 36' 44.22" W	
55	51° 27' 39.60" N	4° 47' 24.00" W	A	51° 27.662' N	4° 47.392' W	51° 27' 39.72" N	4° 47' 23.52" W	58.4 m
			B	51° 27.674' N	4° 47.382' W	51° 27' 40.44" N	4° 47' 22.92" W	
			C	51° 27.665' N	4° 47.366' W	51° 27' 39.90" N	4° 47' 21.96" W	
56	51° 29' 49.20" N	4° 48' 54.00" W	A	51° 29.924' N	4° 48.816' W	51° 29' 55.44" N	4° 48' 48.96" W	51.0 m
			B	51° 29.856' N	4° 48.824' W	51° 29' 51.36" N	4° 48' 49.44" W	
			C	51° 29.819' N	4° 48.870' W	51° 29' 49.14" N	4° 48' 52.20" W	
57	51° 32' 09.60" N	4° 49' 19.20" W	C	51° 32.264' N	4° 49.140' W	51° 32' 15.84" N	4° 49' 08.40" W	39.8 m
			A	51° 32.198' N	4° 49.226' W	51° 32' 11.88" N	4° 49' 13.56" W	
			B	51° 32.174' N	4° 49.306' W	51° 32' 10.44" N	4° 49' 18.36" W	
58	51° 34' 12.00" N	4° 51' 00.00" W	A	51° 34.233' N	4° 51.198' W	51° 34' 13.98" N	4° 51' 11.88" W	43.4 m
			BC	—	—	—	—	
59	51° 35' 38.40" N	4° 33' 28.80" W	A	51° 35.775' N	4° 33.245' W	51° 35' 46.50" N	4° 33' 14.70" W	32.6 m
			B	51° 35.706' N	4° 33.371' W	51° 35' 42.36" N	4° 33' 22.26" W	
			C	51° 35.684' N	4° 33.478' W	51° 35' 41.04" N	4° 33' 28.68" W	
60	51° 35' 06.00" N	4° 36' 50.40" W	A	51° 35.065' N	4° 36.587' W	51° 35' 03.90" N	4° 36' 35.22" W	39.1 m
			B	51° 35.092' N	4° 36.713' W	51° 35' 05.52" N	4° 36' 42.78" W	
			C	51° 35.067' N	4° 36.820' W	51° 35' 04.02" N	4° 36' 49.20" W	
61	51° 34' 22.80" N	4° 39' 36.00" W	C	51° 34.363' N	4° 39.591' W	51° 34' 21.78" N	4° 39' 35.46" W	41.1 m
			A	51° 34.341' N	4° 39.730' W	51° 34' 20.46" N	4° 39' 43.80" W	
			B	—	—	—	—	
62	51° 33' 39.60" N	4° 43' 04.80" W	A	51° 33.677' N	4° 42.903' W	51° 33' 40.62" N	4° 42' 54.18" W	40.6 m
			B	51° 33.672' N	4° 42.997' W	51° 33' 40.32" N	4° 42' 59.82" W	
			C	51° 33.650' N	4° 43.099' W	51° 33' 39.00" N	4° 43' 05.94" W	
63	51° 32' 56.40" N	4° 46' 12.00" W	A	51° 32.974' N	4° 46.042' W	51° 32' 58.44" N	4° 46' 02.52" W	40.6 m
			B	51° 32.964' N	4° 46.147' W	51° 32' 57.84" N	4° 46' 08.82" W	
			C	51° 32.943' N	4° 46.203' W	51° 32' 56.58" N	4° 46' 12.18" W	
64	51° 35' 06.00" N	4° 47' 49.20" W	A	51° 35.055' N	4° 47.650' W	51° 35' 03.30" N	4° 47' 39.00" W	40.6 m
			B	51° 35.104' N	4° 47.806' W	51° 35' 06.24" N	4° 47' 48.36" W	
			DC	—	—	—	—	
65	51° 35' 38.40" N	4° 45' 03.60" W	A	51° 35.629' N	4° 44.896' W	51° 35' 37.74" N	4° 44' 53.76" W	34.0 m
			B	51° 35.610' N	4° 44.956' W	51° 35' 36.60" N	4° 44' 57.36" W	
			D	51° 35.620' N	4° 45.034' W	51° 35' 37.20" N	4° 45' 02.04" W	
			C	—	—	—	—	
66	51° 36' 25.20" N	4° 41' 45.60" W	qual	51° 36.419' N	4° 41.488' W	51° 36' 25.14" N	4° 41' 29.28" W	33.7 m
67	51° 37' 04.80" N	4° 38' 31.20" W	qual	51° 37.074' N	4° 38.496' W	51° 37' 04.44" N	4° 38' 29.76" W	36.3 m
			qual	51° 37.066' N	4° 38.516' W	51° 37' 03.96" N	4° 38' 30.96" W	
			qual	51° 37.070' N	4° 38.535' W	51° 37' 04.20" N	4° 38' 32.10" W	
68	51° 37' 44.40" N	4° 35' 13.20" W	A	51° 37.734' N	4° 35.141' W	51° 37' 44.04" N	4° 35' 08.46" W	36.3 m
			B	51° 37.720' N	4° 35.177' W	51° 37' 43.20" N	4° 35' 10.62" W	
			C	51° 37.716' N	4° 35.215' W	51° 37' 42.96" N	4° 35' 12.90" W	
69	51° 38' 20.40" N	4° 32' 06.00" W	A	51° 38.386' N	4° 31.945' W	51° 38' 23.16" N	4° 31' 56.70" W	36.3 m
			B	51° 38.355' N	4° 32.020' W	51° 38' 21.30" N	4° 32' 01.20" W	
			C	51° 38.346' N	4° 32.083' W	51° 38' 20.76" N	4° 32' 04.98" W	
70	51° 39' 07.20" N	4° 29' 38.40" W	A	51° 39.132' N	4° 29.527' W	51° 39' 07.92" N	4° 29' 31.62" W	21.7 m
			B	51° 39.110' N	4° 29.585' W	51° 39' 06.60" N	4° 29' 35.10" W	
			C	51° 39.102' N	4° 29.638' W	51° 39' 06.12" N	4° 29' 38.28" W	
71	51° 39' 54.00" N	4° 25' 26.40" W	A	51° 39.883' N	4° 25.388' W	51° 39' 52.98" N	4° 25' 23.28" W	15.0 m
			B	51° 39.910' N	4° 25.422' W	51° 39' 54.60" N	4° 25' 25.32" W	
			C	51° 39.916' N	4° 25.444' W	51° 39' 54.96" N	4° 25' 26.64" W	
72	51° 41' 24.00" N	4° 23' 34.80" W	A	51° 41.373' N	4° 23.528' W	51° 41' 22.38" N	4° 23' 31.68" W	15.0 m
			B	51° 41.370' N	4° 23.536' W	51° 41' 22.20" N	4° 23' 32.16" W	
			C	51° 41.377' N	4° 23.566' W	51° 41' 22.62" N	4° 23' 33.96" W	
73	51° 41' 02.40" N	4° 28' 08.40" W	A	51° 41.002' N	4° 28.050' W	51° 41' 00.12" N	4° 28' 03.00" W	15.0 m
			B	51° 41.036' N	4° 28.093' W	51° 41' 02.16" N	4° 28' 05.58" W	
			C	51° 41.049' N	4° 28.141' W	51° 41' 02.94" N	4° 28' 08.46" W	
74	51° 41' 24.00" N	4° 32' 38.40" W	A	51° 41.380' N	4° 32.553' W	51° 41' 22.80" N	4° 32' 33.18" W	15.0 m
			B	51° 41.386' N	4° 32.599' W	51° 41' 23.16" N	4° 32' 35.94" W	

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
74			C	51° 41.388’ N	4° 32.628’ W	51° 41’ 23.28” N	4° 32’ 37.68” W	
75	51° 41’ 02.40” N	4° 36’ 14.40” W	A	51° 40.998’ N	4° 36.096’ W	51° 40’ 59.88” N	4° 36’ 05.76” W	15.0 m
			B	51° 41.026’ N	4° 36.187’ W	51° 41’ 01.56” N	4° 36’ 11.22” W	
			C	51° 41.027’ N	4° 36.218’ W	51° 41’ 01.62” N	4° 36’ 13.08” W	
76	51° 42’ 25.20” N	4° 38’ 31.20” W	A	51° 42.428’ N	4° 38.470’ W	51° 42’ 25.68” N	4° 38’ 28.20” W	11.1 m
			B	51° 42.430’ N	4° 38.490’ W	51° 42’ 25.80” N	4° 38’ 29.40” W	
			C	51° 42.428’ N	4° 38.510’ W	51° 42’ 25.68” N	4° 38’ 30.60” W	
77	51° 39’ 46.80” N	4° 40’ 04.80” W	C	51° 39.851’ N	4° 39.994’ W	51° 39’ 51.06” N	4° 39’ 59.64” W	13.9 m
			A	51° 39.783’ N	4° 40.052’ W	51° 39’ 46.98” N	4° 40’ 03.12” W	
			B	51° 39.762’ N	4° 40.081’ W	51° 39’ 45.60” N	4° 40’ 04.86” W	
78	51° 30’ 32.40” N	4° 46’ 12.00” W	A	51° 30.580’ N	4° 45.546’ W	51° 30’ 34.80” N	4° 45’ 32.76” W	48.0 m
			B	51° 30.540’ N	4° 46.000’ W	51° 30’ 32.40” N	4° 46’ 00.00” W	
			C	51° 30.527’ N	4° 46.185’ W	51° 30’ 31.62” N	4° 46’ 11.10” W	
79	51° 31’ 15.60” N	4° 43’ 04.80” W	A	51° 31.227’ N	4° 42.702’ W	51° 31’ 13.62” N	4° 42’ 42.12” W	43.5 m
			B	51° 31.232’ N	4° 42.941’ W	51° 31’ 13.92” N	4° 42’ 56.46” W	
			C	51° 31.236’ N	4° 43.101’ W	51° 31’ 14.16” N	4° 43’ 06.06” W	
80	51° 31’ 58.80” N	4° 39’ 39.60” W	A	51° 31.967’ N	4° 39.323’ W	51° 31’ 58.02” N	4° 39’ 19.38” W	39.4 m
			B	51° 31.956’ N	4° 39.473’ W	51° 31’ 57.36” N	4° 39’ 28.38” W	
			C	51° 31.954’ N	4° 39.670’ W	51° 31’ 57.24” N	4° 39’ 40.20” W	
81	51° 32’ 42.00” N	4° 36’ 14.40” W	A	51° 32.683’ N	4° 36.070’ W	51° 32’ 40.98” N	4° 36’ 04.20” W	35.4 m
			B	51° 32.698’ N	4° 36.134’ W	51° 32’ 41.88” N	4° 36’ 08.04” W	
			C	51° 32.707’ N	4° 36.258’ W	51° 32’ 42.42” N	4° 36’ 15.48” W	
82	51° 33’ 36.00” N	4° 31’ 58.80” W	A	51° 33.510’ N	4° 31.923’ W	51° 33’ 30.60” N	4° 31’ 55.38” W	31.2 m
			B	51° 33.541’ N	4° 31.939’ W	51° 33’ 32.46” N	4° 31’ 56.34” W	
			C	51° 33.566’ N	4° 31.987’ W	51° 33’ 33.96” N	4° 31’ 59.22” W	
83	51° 31’ 19.20” N	4° 31’ 26.40” W	A	51° 31.256’ N	4° 31.328’ W	51° 31’ 15.36” N	4° 31’ 19.68” W	28.7 m
			B	51° 31.271’ N	4° 31.383’ W	51° 31’ 16.26” N	4° 31’ 22.98” W	
			C	51° 31.303’ N	4° 31.448’ W	51° 31’ 18.18” N	4° 31’ 26.88” W	
84	51° 31’ 58.80” N	4° 28’ 04.80” W	A	51° 31.943’ N	4° 28.087’ W	51° 31’ 56.58” N	4° 28’ 05.22” W	24.8 m
			B	51° 31.969’ N	4° 28.088’ W	51° 31’ 58.14” N	4° 28’ 05.28” W	
			C	51° 31.984’ N	4° 28.097’ W	51° 31’ 59.04” N	4° 28’ 05.82” W	
85	51° 34’ 15.60” N	4° 29’ 09.60” W	A	51° 34.186’ N	4° 29.156’ W	51° 34’ 11.16” N	4° 29’ 09.36” W	29.0 m
			B	51° 34.227’ N	4° 29.142’ W	51° 34’ 13.62” N	4° 29’ 08.52” W	
			C	51° 34.269’ N	4° 29.131’ W	51° 34’ 16.14” N	4° 29’ 07.86” W	
86	51° 36’ 32.40” N	4° 30’ 00.00” W	A	51° 36.490’ N	4° 30.041’ W	51° 36’ 29.40” N	4° 30’ 02.46” W	25.9 m
			B	51° 36.531’ N	4° 30.006’ W	51° 36’ 31.86” N	4° 30’ 00.36” W	
			C	51° 36.547’ N	4° 30.001’ W	51° 36’ 32.82” N	4° 30’ 00.06” W	
87	51° 37’ 12.00” N	4° 26’ 45.60” W	A	51° 37.162’ N	4° 26.794’ W	51° 37’ 09.72” N	4° 26’ 47.64” W	23.0 m
			B	51° 37.187’ N	4° 26.760’ W	51° 37’ 11.22” N	4° 26’ 45.60” W	
			C	51° 37.216’ N	4° 26.730’ W	51° 37’ 12.96” N	4° 26’ 43.80” W	
88	51° 37’ 48.00” N	4° 23’ 24.00” W	A	51° 37.837’ N	4° 23.466’ W	51° 37’ 50.22” N	4° 23’ 27.96” W	15.1 m
			B	51° 37.856’ N	4° 23.435’ W	51° 37’ 51.36” N	4° 23’ 26.10” W	
			C	51° 37.874’ N	4° 23.406’ W	51° 37’ 52.44” N	4° 23’ 24.36” W	
89	51° 34’ 51.60” N	4° 26’ 13.20” W	A	51° 34.833’ N	4° 26.302’ W	51° 34’ 49.98” N	4° 26’ 18.12” W	29.0 m
			B	51° 34.825’ N	4° 26.242’ W	51° 34’ 49.50” N	4° 26’ 14.52” W	
			C	51° 34.828’ N	4° 26.188’ W	51° 34’ 49.68” N	4° 26’ 11.28” W	
90	51° 35’ 31.20” N	4° 23’ 6.00” W	A	51° 35.505’ N	4° 23.152’ W	51° 35’ 30.30” N	4° 23’ 09.12” W	22.9 m
			B	51° 35.521’ N	4° 23.111’ W	51° 35’ 31.26” N	4° 23’ 06.66” W	
			C	51° 35.535’ N	4° 23.069’ W	51° 35’ 32.10” N	4° 23’ 04.14” W	
91	51° 32’ 45.60” N	4° 24’ 46.80” W	A	51° 32.745’ N	4° 24.859’ W	51° 32’ 44.70” N	4° 24’ 51.54” W	28.5 m
			B	51° 32.759’ N	4° 24.826’ W	51° 32’ 45.54” N	4° 24’ 49.56” W	
			C	51° 32.773’ N	4° 24.772’ W	51° 32’ 46.38” N	4° 24’ 46.32” W	
92	51° 34’ 58.80” N	4° 20’ 16.80” W	A	51° 34.981’ N	4° 20.337’ W	51° 34’ 58.86” N	4° 20’ 20.22” W	19.5 m
			B	51° 34.969’ N	4° 20.372’ W	51° 34’ 58.14” N	4° 20’ 22.32” W	
			C	51° 34.954’ N	4° 20.304’ W	51° 34’ 57.24” N	4° 20’ 18.24” W	
93	51° 33’ 14.40” N	4° 21’ 57.60” W	A	51° 33.295’ N	4° 21.995’ W	51° 33’ 17.70” N	4° 21’ 59.70” W	26.1 m
			B	51° 33.261’ N	4° 21.978’ W	51° 33’ 15.66” N	4° 21’ 58.68” W	
			C	51° 33.249’ N	4° 21.952’ W	51° 33’ 14.94” N	4° 21’ 57.12” W	
94	51° 30’ 36.00” N	4° 34’ 33.60” W	A	51° 30.574’ N	4° 34.533’ W	51° 30’ 34.44” N	4° 34’ 31.98” W	36.6 m
			B	51° 30.594’ N	4° 34.552’ W	51° 30’ 35.64” N	4° 34’ 33.12” W	
			C	51° 30.586’ N	4° 34.572’ W	51° 30’ 35.16” N	4° 34’ 34.32” W	
95	51° 29’ 49.20” N	4° 37’ 44.40” W	A	51° 29.835’ N	4° 37.699’ W	51° 29’ 50.10” N	4° 37’ 41.94” W	38.5 m
			B	51° 29.826’ N	4° 37.724’ W	51° 29’ 49.56” N	4° 37’ 43.44” W	
			C	51° 29.816’ N	4° 37.746’ W	51° 29’ 48.96” N	4° 37’ 44.76” W	
96	51° 29’ 02.40” N	4° 41’ 31.20” W	A	51° 29.070’ N	4° 41.291’ W	51° 29’ 04.20” N	4° 41’ 17.46” W	52.6 m
			B	51° 29.064’ N	4° 41.371’ W	51° 29’ 03.84” N	4° 41’ 22.26” W	
			C	51° 29.013’ N	4° 41.490’ W	51° 29’ 00.78” N	4° 41’ 29.40” W	
97	51° 28’ 22.80” N	4° 44’ 24.00” W	A	51° 28.436’ N	4° 44.024’ W	51° 28’ 26.16” N	4° 44’ 01.44” W	55.9 m
			B	51° 28.371’ N	4° 44.252’ W	51° 28’ 22.26” N	4° 44’ 15.12” W	
			C	51° 28.350’ N	4° 44.366’ W	51° 28’ 21.00” N	4° 44’ 21.96” W	
98	51° 24’ 32.40” N	4° 46’ 55.20” W	A					60.7 m
			B	51° 24.581’ N	4° 46.757’ W	51° 24’ 34.86” N	4° 46’ 45.42” W	

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
98			C	51° 24.523' N	4° 46.898' W	51° 24' 31.38" N	4° 46' 53.88" W	
99	51° 21' 36.00" N	4° 44' 34.80" W	A	51° 21.575' N	4° 44.135' W	51° 21' 34.50" N	4° 44' 08.10" W	58.6 m
			B	51° 21.633' N	4° 44.419' W	51° 21' 37.98" N	4° 44' 25.14" W	
			C	51° 21.610' N	4° 44.576' W	51° 21' 36.60" N	4° 44' 34.56" W	
100	51° 22' 26.40" N	4° 41' 24.00" W	C	51° 22.420' N	4° 40.864' W	51° 22' 25.20" N	4° 40' 51.84" W	49.8 m
			A	51° 22.443' N	4° 41.148' W	51° 22' 26.58" N	4° 41' 08.88" W	
			B	—	—	—	—	
101	51° 25' 19.20" N	4° 43' 33.60" W	A	51° 25.333' N	4° 43.247' W	51° 25' 19.98" N	4° 43' 14.82" W	48.2 m
			B	51° 25.322' N	4° 43.441' W	51° 25' 19.32" N	4° 43' 26.46" W	
			C	51° 25.319' N	4° 43.562' W	51° 25' 19.14" N	4° 43' 33.72" W	
102	51° 26' 02.40" N	4° 40' 12.00" W	A	51° 26.066' N	4° 40.111' W	51° 26' 03.96" N	4° 40' 06.66" W	42.6 m
			B	51° 26.050' N	4° 40.120' W	51° 26' 03.00" N	4° 40' 07.20" W	
			C	51° 26.016' N	4° 40.199' W	51° 26' 00.96" N	4° 40' 11.94" W	
103	51° 23' 09.60" N	4° 37' 33.60" W	A	51° 23.185' N	4° 37.430' W	51° 23' 11.10" N	4° 37' 25.80" W	50.1 m
			B	51° 23.166' N	4° 37.486' W	51° 23' 09.96" N	4° 37' 29.16" W	
			C	51° 23.151' N	4° 37.549' W	51° 23' 09.06" N	4° 37' 32.94" W	
104	51° 23' 52.80" N	4° 34' 26.40" W	A	51° 23.866' N	4° 34.245' W	51° 23' 51.96" N	4° 34' 14.70" W	46.9 m
			B	51° 23.885' N	4° 34.290' W	51° 23' 53.10" N	4° 34' 17.40" W	
			C	51° 23.904' N	4° 34.457' W	51° 23' 54.24" N	4° 34' 27.42" W	
105	51° 24' 32.40" N	4° 31' 08.40" W	A	51° 24.488' N	4° 31.029' W	51° 24' 29.28" N	4° 31' 01.74" W	45.6 m
			B	51° 24.511' N	4° 31.063' W	51° 24' 30.66" N	4° 31' 03.78" W	
			C	51° 24.517' N	4° 31.114' W	51° 24' 31.02" N	4° 31' 06.84" W	
106	51° 25' 12.00" N	4° 27' 46.80" W	A	51° 25.181' N	4° 27.717' W	51° 25' 10.86" N	4° 27' 43.02" W	44.1 m
			B	51° 25.202' N	4° 27.729' W	51° 25' 12.12" N	4° 27' 43.74" W	
			C	51° 25.215' N	4° 27.759' W	51° 25' 12.90" N	4° 27' 45.54" W	
107	51° 25' 58.80" N	4° 27' 57.60" W	A	51° 25.933' N	4° 28.017' W	51° 25' 55.98" N	4° 28' 01.02" W	42.3 m
			B	51° 25.958' N	4° 27.999' W	51° 25' 57.48" N	4° 27' 59.94" W	
			C	51° 25.980' N	4° 27.960' W	51° 25' 58.80" N	4° 27' 57.60" W	
108	51° 26' 02.40" N	4° 24' 07.20" W	A	51° 26.026' N	4° 24.231' W	51° 26' 01.56" N	4° 24' 13.86" W	33.8 m
			B	51° 26.043' N	4° 24.181' W	51° 26' 02.58" N	4° 24' 10.86" W	
			C	51° 26.064' N	4° 24.122' W	51° 26' 03.84" N	4° 24' 07.32" W	
109	51° 25' 12.00" N	4° 18' 00.00" W	A	51° 25.142' N	4° 18.172' W	51° 25' 08.52" N	4° 18' 10.32" W	36.8 m
			B	51° 25.172' N	4° 18.045' W	51° 25' 10.32" N	4° 18' 02.70" W	
			C	51° 25.207' N	4° 18.001' W	51° 25' 12.42" N	4° 18' 00.06" W	
110	51° 25' 58.80" N	4° 19' 40.80" W	A	51° 25.946' N	4° 19.905' W	51° 25' 56.76" N	4° 19' 54.30" W	45.9 m
			B	51° 25.962' N	4° 19.787' W	51° 25' 57.72" N	4° 19' 47.22" W	
			C	51° 25.973' N	4° 19.700' W	51° 25' 58.38" N	4° 19' 42.00" W	
111	51° 26' 45.60" N	4° 20' 34.80" W	A	51° 26.719' N	4° 20.887' W	51° 26' 43.14" N	4° 20' 53.22" W	44.8 m
			B	51° 26.741' N	4° 20.752' W	51° 26' 44.46" N	4° 20' 45.12" W	42.6 m
			C	51° 26.763' N	4° 20.596' W	51° 26' 45.78" N	4° 20' 35.76" W	
112	51° 30' 10.80" N	4° 20' 31.20" W	A	51° 30.210' N	4° 20.722' W	51° 30' 12.60" N	4° 20' 43.32" W	39.1 m
			B	51° 30.185' N	4° 20.568' W	51° 30' 11.10" N	4° 20' 34.08" W	
			C	51° 30.175' N	4° 20.494' W	51° 30' 10.50" N	4° 20' 29.64" W	
113	51° 31' 04.80" N	4° 21' 43.20" W	A	51° 31.079' N	4° 21.779' W	51° 31' 04.74" N	4° 21' 46.74" W	38.4 m
			B	51° 31.093' N	4° 21.771' W	51° 31' 05.58" N	4° 21' 46.26" W	
			C	51° 31.083' N	4° 21.731' W	51° 31' 04.98" N	4° 21' 43.86" W	
114	51° 31' 19.20" N	4° 21' 32.40" W	A	51° 31.380' N	4° 21.664' W	51° 31' 22.80" N	4° 21' 39.84" W	18.4 m
			B	51° 31.360' N	4° 21.582' W	51° 31' 21.60" N	4° 21' 34.92" W	
			C	51° 31.341' N	4° 21.522' W	51° 31' 20.46" N	4° 21' 31.32" W	
115	51° 31' 55.20" N	4° 21' 28.80" W	A	51° 31.893' N	4° 21.496' W	51° 31' 53.58" N	4° 21' 29.76" W	18.4 m
			B	51° 31.898' N	4° 21.474' W	51° 31' 53.88" N	4° 21' 28.44" W	
			C	51° 31.889' N	4° 21.448' W	51° 31' 53.34" N	4° 21' 26.88" W	
116	51° 26' 49.20" N	4° 20' 56.40" W	C	51° 26.803' N	4° 20.943' W	51° 26' 48.18" N	4° 20' 56.58" W	44.0 m
117	51° 26' 42.00" N	4° 21' 14.40" W	C	51° 26.720' N	4° 21.264' W	51° 26' 43.20" N	4° 21' 15.84" W	46.9 m
118	51° 26' 38.40" N	4° 21' 25.20" W	C	51° 26.642' N	4° 21.403' W	51° 26' 38.52" N	4° 21' 24.18" W	48.4 m
119	51° 26' 38.40" N	4° 21' 32.40" W	C	51° 26.607' N	4° 21.556' W	51° 26' 36.42" N	4° 21' 33.36" W	46.9 m
120	51° 26' 34.80" N	4° 21' 43.20" W	C	51° 26.553' N	4° 21.724' W	51° 26' 33.18" N	4° 21' 43.44" W	49.3 m
121	51° 26' 27.60" N	4° 21' 54.00" W	C	51° 26.472' N	4° 21.893' W	51° 26' 28.32" N	4° 21' 53.58" W	50.9 m
122	51° 26' 31.20" N	4° 21' 39.60" W	A	51° 26.588' N	4° 21.572' W	51° 26' 35.28" N	4° 21' 34.32" W	45.5 m
			B	51° 26.553' N	4° 21.593' W	51° 26' 33.18" N	4° 21' 35.58" W	
			C	51° 26.534' N	4° 21.643' W	51° 26' 32.04" N	4° 21' 38.58" W	
123	51° 26' 31.20" N	4° 21' 32.40" W	A	51° 26.592' N	4° 21.485' W	51° 26' 35.52" N	4° 21' 29.10" W	45.2 m
			B	51° 26.563' N	4° 21.463' W	51° 26' 33.78" N	4° 21' 27.78" W	
			C	51° 26.538' N	4° 21.511' W	51° 26' 32.28" N	4° 21' 30.66" W	
124	51° 26' 42.00" N	4° 21' 21.60" W	A	51° 26.730' N	4° 21.276' W	51° 26' 43.80" N	4° 21' 16.56" W	44.0 m
			B	51° 26.706' N	4° 21.289' W	51° 26' 42.36" N	4° 21' 17.34" W	
			C	51° 26.694' N	4° 21.328' W	51° 26' 41.64" N	4° 21' 19.68" W	
125	51° 28' 33.60" N	4° 28' 40.80" W	C	51° 28.546' N	4° 28.662' W	51° 28' 32.76" N	4° 28' 39.72" W	41.9 m
126	51° 28' 33.60" N	4° 28' 55.20" W	C	51° 28.533' N	4° 28.892' W	51° 28' 31.98" N	4° 28' 53.52" W	33.8 m
127	51° 28' 30.00" N	4° 29' 02.40" W	C	51° 28.520' N	4° 29.033' W	51° 28' 31.20" N	4° 29' 01.98" W	44.4 m
128	51° 28' 30.00" N	4° 29' 13.20" W	C	51° 28.517' N	4° 29.198' W	51° 28' 31.02" N	4° 29' 11.88" W	43.0 m
129	51° 28' 01.20" N	4° 22' 15.60" W	A	51° 28.081' N	4° 21.901' W	51° 28' 04.86" N	4° 21' 54.06" W	43.8 m

Station	(General) Station Latitude	(General) Station Longitude	Sample	Latitude (Decimal)	Longitude (Decimal)	Latitude (Deg/Sec)	Longitude (Deg/Sec)	Depth (Recorded)
129			B	51° 28.032’ N	4° 22.110’ W	51° 28’ 01.92” N	4° 22’ 06.60” W	
			C	51° 28.025’ N	4° 22.265’ W	51° 28’ 01.50” N	4° 22’ 15.90” W	
130	51° 28’ 04.80” N	4° 23’ 20.40” W	A	51° 28.003’ N	4° 22.875’ W	51° 28’ 00.18” N	4° 22’ 52.50” W	43.8 m
			B	51° 28.031’ N	4° 23.027’ W	51° 28’ 01.86” N	4° 23’ 01.62” W	
			C	51° 28.065’ N	4° 23.307’ W	51° 28’ 03.90” N	4° 23’ 18.42” W	
131	51° 27’ 14.40” N	4° 23’ 49.20” W	A	51° 27.314’ N	4° 23.039’ W	51° 27’ 18.84” N	4° 23’ 02.34” W	40.0 m
			BC	—	—	—	—	
132	51° 27’ 28.80” N	4° 28’ 30.00” W	A	51° 27.479’ N	4° 28.143’ W	51° 27’ 28.74” N	4° 28’ 08.58” W	41.9 m
			B	51° 27.484’ N	4° 28.450’ W	51° 27’ 29.04” N	4° 28’ 27.00” W	
			C	51° 27.484’ N	4° 28.509’ W	51° 27’ 29.04” N	4° 28’ 30.54” W	
133	51° 30’ 28.80” N	4° 29’ 09.60” W	A	51° 30.502’ N	4° 29.017’ W	51° 30’ 30.12” N	4° 29’ 01.02” W	28.4 m
			B	51° 30.498’ N	4° 29.090’ W	51° 30’ 29.88” N	4° 29’ 05.40” W	
			C	51° 30.501’ N	4° 29.158’ W	51° 30’ 30.06” N	4° 29’ 09.48” W	
134	51° 28’ 08.40” N	4° 51’ 21.60” W	A	51° 28.161’ N	4° 51.471’ W	51° 28’ 09.66” N	4° 51’ 28.26” W	53.8 m
			B	51° 28.154’ N	4° 51.505’ W	51° 28’ 09.24” N	4° 51’ 30.30” W	
			C	51° 28.143’ N	4° 51.528’ W	51° 28’ 08.58” N	4° 51’ 31.68” W	
135	51° 27’ 10.80” N	05° 05’ 02.40” W	A	51° 27.143’ N	05° 05.133’ W	51° 27’ 08.58” N	05° 05’ 07.98” W	54.8 m
			B	51° 27.182’ N	05° 05.088’ W	51° 27’ 10.92” N	05° 05’ 05.28” W	
			C	51° 27.170’ N	05° 05.049’ W	51° 27’ 10.20” N	05° 05’ 02.94” W	
136	51° 35’ 29.70” N	4° 23’ 19.08” W	ABC	51° 35.495’ N	4° 23.318’ W	51° 35’ 29.70” N	4° 23’ 19.08” W	21.4 m
137	51° 35’ 33.60” N	4° 22’ 43.86” W	ABC	51° 35.560’ N	4° 22.731’ W	51° 35’ 33.60” N	4° 22’ 43.86” W	22.7 m
138	51° 26’ 52.32” N	4° 20’ 23.82” W	ABC	51° 26.872’ N	4° 20.397’ W	51° 26’ 52.32” N	4° 20’ 23.82” W	41.8 m
139	51° 27’ 56.34” N	4° 15’ 18.48” W	CBA	51° 27.939’ N	4° 15.308’ W	51° 27’ 56.34” N	4° 15’ 18.48” W	38.0 m
140	51° 26’ 12.96” N	4° 23’ 32.04” W	ABC	51° 26.216’ N	4° 23.534’ W	51° 26’ 12.96” N	4° 23’ 32.04” W	41.0 m
141	51° 26’ 23.46” N	4° 22’ 39.48” W	ABC	51° 26.391’ N	4° 22.658’ W	51° 26’ 23.46” N	4° 22’ 39.48” W	47.9 m
142	51° 23’ 49.68” N	4° 50’ 24.54” W	ABC	51° 23.828’ N	4° 50.409’ W	51° 23’ 49.68” N	4° 50’ 24.54” W	62.0 m
143	51° 26’ 00.42” N	4° 40’ 31.32” W	ABC	51° 26.007’ N	4° 40.522’ W	51° 26’ 00.42” N	4° 40’ 31.32” W	39.7 m
144	51° 26’ 37.68” N	4° 52’ 19.14” W	ABC	51° 26.628’ N	4° 52.319’ W	51° 26’ 37.68” N	4° 52’ 19.14” W	59.0 m
145	51° 26’ 41.40” N	4° 11’ 35.40” W	AB	51° 26.690’ N	4° 11.590’ W	51° 26’ 41.40” N	4° 11’ 35.40” W	36.4 m
146	51° 26’ 13.02” N	4° 23’ 34.14” W	ABC	51° 26.217’ N	4° 23.569’ W	51° 26’ 13.02” N	4° 23’ 34.14” W	46.5 m
147	51° 26’ 12.96” N	4° 23’ 31.26” W	ABC	51° 26.216’ N	4° 23.521’ W	51° 26’ 12.96” N	4° 23’ 31.26” W	37.7 m
148	51° 26’ 13.50” N	4° 23’ 28.74” W	ABC	51° 26.225’ N	4° 23.479’ W	51° 26’ 13.50” N	4° 23’ 28.74” W	43.6 m

Appendix 3

Metadata for the 2003 & 2005 Sea Bed Imaging Surveys

Station Code	OBC V1	OBC V1b	OBC V2	OBC V3	OBC V4	OBC V5	OBC V6	OBC V7
Date	08.07.2003	08.07.2003	09.07.2003	09.07.2003	10.07.2003	10.07.2003	10.07.2003	11.07.2003
Time Deployed	19 37 BST	21 10 BST	09 20 BST	14 29 BST	9 56 BST	10 55 BST	15 21 BST	10 34 BST
Latitude Deployed	51° 12.128’ N	51° 12.293’ N	51° 16.555’ N	51° 19.387’ N	51° 18.691’ N	51° 20.725’ N	51° 22.328’ N	51° 26.383’ N
Longitude Deployed	004° 24.829’ W	004° 28.516’ W	004° 18.734’ W	004° 19.396’ W	004° 34.852’ W	004° 38.407’ W	004° 18.754’ W	004° 22.304’ W
Depths (m)	38.9 - 40.0	47.6 - 47.3	42.9	49.0 - 49.4	42.9 - 50.1	47.6 - 47.3	50	45.5
Time Recovered	20 04 BST	21 37 BST	09 53 BST	14 55 BST	10 23 BST	11 21 BST	15 51 BST	10 59 BST
Latitude Recovered	51° 12.226’ N	51° 12.441’ N	51° 16.899’ N	51° 19.146’ N	51° 18.982’ N	51° 20.821’ N	51° 22.170’ N	51° 26.660’ N
Longitude Recovered	004° 24.255’ W	004° 28.810’ W	004° 17.630’ W	004° 19.911’ W	004° 33.770’ W	004° 38.947’ W	004° 19.293’ W	004° 21.464’ W
Weather / Sea	W 2/3	Light airs	SW 2	E 3	W 3	W 3	SW 2	NW 4
Quality Video	Good - water clear	Good - water clear	Rather turbid large flocs		Good - water clear	Good - water clear	Slightly turbid	
Quality Stills & Number	Failed - Motor wind problem	Good - 24 images	Failed	Good - 26 images	Good - 27 images	Only 1 bottom image, motor wind problem	Good - 27 images	Good - 27 images
Bottom Type	Cobbles & Gravel with intermittent sand veneer	Sand megaripples with marine snow lying in the ripples. Sand thinly over gravel	Rocks and bedrock with lot of silt coating matt	Rounded cobbles with patchy sand veneer over gravel	Sand veneer ripples over gravel with floc behind ripples	Sand veneer and megaripples over gravel and shell hash	Gravel with much coarse floc. Silt covered bedrock emerging	Gravel and shell hash with sand ripple veneer and intermittent sand megaripples much floc amongst ripples
Fauna Visible	Lots of Hydroid colonies sometimes trapping sand	Sparse	*Alcyonium, Urticina, Hydralmania, Flustra* clumps	Many hydroids emerging from sand possible small *Sabellaria* reefs	Hydroid colonies sometimes trapping sand	Few hydroids	Short hydroids on gravel. Clumps of *Nemertesia* on the rocks. *Asterias, Pagurus, Munida*	Sparse
Notes	Sledge landed on bottom just after sand wave ridge passed on echo-sounder		Turbid clouds of floc stirred up by sledge		Daylight at bottom allowed distant views of ripples when sledge front lifted			

Station Code	OBC V8	OBC V9	OBC V10	OBC V11	OBC V13	OBC V14	OBC V15a	OBC V15b
Date	11.07.2003	11.07.2003	12.07.2003	12.07.2003	16.05.2005	16.05.2005	16.05.2005	16.05.2005
Time Deployed	11 40 BST	16 27 BST	06 11 BST	07 28 BST	06 53 BST	11 06 BST	13 00 BST	13 35 BST
Latitude Deployed	51° 28.633' N	51° 24.373' N	51° 35.214' N	51° 35.245' N	51° 27.993' N	51° 26.221' N	51° 25.465' N	51° 25.627' N
Longitude Deployed	004° 27.967' W	004° 47.790' W	004° 47.183' W	004° 35.725' W	004° 15.039' W	004° 23.104' W	004° 26.836' W	004° 26.570' W
Depths (m)	39.9 - 36.9	63.4	38.4	37.3	40	49	49.4	44.8
Time Recovered	12 05 BST	16 55 BST	06 20 BST	07 51 BST	07 14 BST	11 31 BST	13.10 BST	13 55 BST
Latitude Recovered	51° 28.583' N	51° 24.251' N	51° 35.061' N	51° 35.164' N	51° 27.936' N	51° 26.027' N	51° 25.512' N	51° 25.772' N
Longitude Recovered	004° 28.555' W	004° 48.383' W	004° 47.536' W	004° 35.451' W	004° 15.315' W	004° 23.385' W	004° 26.751' W	004° 26.454' W
Weather / Sea	NW 4	WNW 4	Calm	Calm	Light airs	var 1	var 1	var 1
Quality Video			Extremely turbid	Slightly turbid				
Quality Stills & Number	Good - 29 images	Good - 28 images	No useable images	Moderate - 30 images	31 OK	nil	nil	24
Bottom Type	Series of asymetrical sand megaripples with minor ripples. Gravel and shell hash showing on flats	Gravel with a coating of silt/floc a few boulders standing proud mainly in later part of tow	Too turbid to determine bottom type	Rippled sand / muddy sand. Ripples in several directions. Much floc. More cohesive under?	Gravel and cobbles with patchy sand veneer			Rippled sand veneer over gravel
Fauna Visible	Sparse	Silt coated hydroid turf, several *Atelecyclus, Nemertesia* clumps	Too turbid	Few *Asterias*, possible *Lagis* tube ends. Sand Sole, squid egg mass	Many trailing hydroids			
Notes			Owing to turbidity TV could not focus. Tried towing in both ways to tide. Clear at surface			No still photos as TV umbilical slipped and dislodged plug from timer	Failed tow due to umblical tangled in sledge. Recovered after <10 min on bottom	Repeat of V15

Appendix 3

Station Code	OBC V16	OBC V17	OBC V18	OBC V19	OBC V20	OBC V21	OBC V22	OBC V23
Date	16.05.2005	17.05.2005	17.05.2005	17.05.2005	18.05.2005	18.05.2005	18.05.2005	18.05.2005
Time Deployed	18 26 BST	07 15 BST	14 40 BST	18 56 BST	08 55 BST	12 46 BST	16 11 BST	17 16 BST
Latitude Deployed	51° 25.286' N	51° 34.505' N	51° 30.584' N	51° 15.824' N	51° 20.993' N	51° 19.318' N	51° 16.701' N	51° 12.903' N
Longitude Deployed	004° 16.606' W	004° 27.437' W	004° 36.101' W	004° 21.823' W	004° 23.440' W	004° 20.036' W	004° 33.069' W	004° 35.538' W
Depths (m)	38	29.8 - 28.5	35.1 - 36.2	44.9 - 43.2	48 - 40.1 - 47	49.7 - 50.4	53.7 - 51.3	45.4 - 42.2
Time Recovered	18 51 BST	07 38 BST	14 51 BST	19 20 BST	09 23 BST	13 15 BST	16 42 BST	17 42 BST
Latitude Recovered	51° 25.418' N	51° 34.479' N	51° 30.639' N	51° 15.812' N	51° 21.332' N	51° 19.246' N	51° 16.418' N	51° 13.289' N
Longitude Recovered	004° 16.960' W	004° 26.885' W	004° 36.221' W	004° 21.490' W	004° 23.304' W	004° 20.134' W	004° 33.446' W	004° 35.331' W
Weather / Sea	NW 2	NE 2	SW 2	W 2	SW 2-3	SW 3	SSW 5	SSW 5
Quality Video		Turbid due to plankton bloom	Very turbid					
Quality Stills & Number	29	29		24	30	Good - 30 images	31	Good - 29 images
Bottom Type	Sand veneer over gravel	Patches of shells in later part of tow		Stony gravel with sand veneers	Sand ripples with gravel and stones in troughs. Note depth fluctuation over sand wave	Gravel with muddy sand veneer and patches of loose sand	Gravel & Shell	Gravel & stones with patchy sand veneer
Fauna Visible	Many hydroids	Many *Asterias*				*Flustra* on boulders showing through sand		Many trailing hy-droids
Notes			Not interpretable due to turbidity					

Appendix 4

Metadata for the 2005 Beam Trawl Survey

Station Code	Date		Time (BST)	LATITUDE	LONGITUDE	Tow Depth (m)	Tow Length (m)
SITE 1-8-4 (near grab stn 97)							
BT 1A	15.05.2005	Tow Start	20:13	51° 28.410’ N	4° 44.407’ W	53.6	
		Haul	20:18	51° 28.377’ N	4° 44.613’ W	53.9	246
BT 1B	15.05.2005	Tow Start	20:33	51° 28.377’ N	4° 44.358’ W	54.6	
		Haul	20:38	51° 28.318’ N	4° 44.526’ W	54.9	149
BT 1C	15.05.2005	Tow Start	20:52	51° 28.402’ N	4° 44.223’ W	54.6	
		Haul	20:57	51° 28.370’ N	4° 44.407’ W	55.2	213
BT 1D	15.05.2005	Tow Start	21:22	51° 28.372’ N	4° 44.399’ W	55.3	
		Haul	21:27	51° 28.316’ N	4° 44.595’ W	55.7	250
SITE 1-6-2							
BT 2A	16.05.2005	Tow Start	08:14	51° 27.904’ N	4° 15.176’ W	40.1	
		Haul	08:19	51° 27.854’ N	4° 15.368’ W	40.3	241
BT 2B	16.05.2005	Tow Start	08:38	51° 28.000’ N	4° 14.939’ W	40.2	
		Haul	08:43	51° 27.882’ N	4° 14.991’ W	40.7	227
BT 2C	16.05.2005	Tow Start	08:36	51° 27.811’ N	4° 15.144’ W	40.4	
		Haul	08:59	51° 27.780’ N	4° 15.287’ W	40.9	175
BT 2D	16.05.2005	Tow Start	09:07	51° 27.736’ N	4° 15.550’ W	41.0	
		Haul	09:12	51° 27.702’ N	4° 15.754’ W	40.5	236
SITE 1-6-1							
BT 3A	16.05.2005	Tow Start	09:52	51° 26.241’ N	4° 23.132’ W	48.7	
		Haul	09:57	51° 26.216’ N	4° 23.334’ W	49.4	238
BT 3B	16.05.2005	Tow Start	10:06	51° 26.185’ N	4° 23.590’ W	47.3	
		Haul	10:11	51° 26.164’ N	4° 23.782’ W	45.9	225
BT 3C	16.05.2005	Tow Start	10:18	51° 26.108’ N	4° 23.885’ W	48.4	
		Haul	10:23	51° 26.065’ N	4° 23.646’ W	46.1	288
BT 3D	16.05.2005	Tow Start	10:35:00	51° 26.092’ N	4° 23.807’ W	46.2	
		Haul	10:40:00	51° 26.073’ N	4° 24.010’ W	45.3	237
SITE 1-6-3							
BT 4A	16.05.2005	Tow Start	14:21	51° 25.514’ N	4° 26.970’ W	47.0	
		Haul	14:26	51° 25.577’ N	4° 26.807’ W	47.5	222
BT 4B	16.05.2005	Tow Start	14:41	51° 25.697’ N	4° 26.190’ W	41.6	
		Haul	14:46	51° 25.732’ N	4° 25.980’ W	44.3	251
BT 4C	16.05.2005	Tow Start	14:58	51° 25.806’ N	4° 25.496’ W	45.1	
		Haul	15:03	51° 25.842’ N	4° 25.269’ W	47.3	271
BT 4D	16.05.2005	Tow Start	15:13	51° 25.906’ N	4° 24.836’ W	44.1	
		Haul	15:18	51° 25.940’ N	4° 24.624’ W	48.5	253

Station Code	Date		Time (BST)	LATITUDE	LONGITUDE	Tow Depth (m)	Tow Length (m)
SITE 1-5-3							
BT 5A	16.05.2005	Tow Start	16:13	51° 25.169' N	4° 16.134' W	43.1	
		Haul	16:18	51° 25.215' N	4° 16.308' W	42.1	219
BT 5B	16.05.2005	Tow Start	16:29	51° 25.308' N	4° 16.640' W	41.0	
		Haul	16:34	51° 25.369' N	4° 16.792' W	41.4	209
BT 5C	16.05.2005	Tow Start	16:45	51° 25.542' N	4° 17.147' W	39.6	
		Haul	16:50	51° 25.623' N	4° 17.294' W	39.7	227
BT 5D	16.05.2005	Tow Start	17:01	51° 25.784' N	4° 17.561' W	40.2	
		Haul	17:06	51° 25.881' N	4° 17.721' W	40.6	258
SITE 1-9-2							
BT 6A	17.05.2005	Tow Start	08:18	51° 34.607' N	4° 27.278' W	29.2	
		Haul	08:23	51° 34.638' N	4° 27.009' W	29.4	316
BT 6B	17.05.2005	Tow Start	08:32	51° 34.676' N	4° 26.705' W	28.6	
		Haul	08:37	51° 34.707' N	4° 26.426' W	28.1	328
BT 6C	17.05.2005	Tow Start	08:49	51° 34.533' N	4° 27.355' W	29.5	
		Haul	08:54	51° 34.565' N	4° 27.122' W	29.6	276
BT 6D	17.05.2005	Tow Start	09:01	51° 34.606' N	4° 26.836' W	30.2	
		Haul	09:06	51° 34.642' N	4° 26.574' W	28.4	310
SITE 1-9-1							
BT 7A	17.05.2005	Tow Start	09:25	51° 34.859' N	4° 25.699' W	23.6	
		Haul	09:30	51° 34.902' N	4° 25.415' W	23.1	338
BT 7B	17.05.2005	Tow Start	09:36	51° 34.944' N	4° 25.139' W	25.7	
		Haul	09:41	51° 34.985' N	4° 24.895' W	24.7	292
BT 7C	17.05.2005	Tow Start	09:47	51° 35.039' N	4° 24.520' W	23.0	
		Haul	09:52	51° 35.111' N	4° 24.247' W	22.7	343
BT 7D	17.05.2005	Tow Start	09:58	51° 35.159' N	4° 23.982' W	22.1	
		Haul	10:03	51° 35.197' N	4° 23.700' W	21.5	334
SITE 1-8-1							
BT 8A	17.05.2005	Tow Start	11:12	51° 33.211' N	4° 21.177' W	29.5	
		Haul	11:17	51° 33.160' N	4° 21.334' W	26.2	205
BT 8B	17.05.2005	Tow Start	11:24	51° 33.108' N	4° 21.518' W	25.2	
		Haul	11:29	51° 33.001' N	4° 21.698' W	24.6	287
BT 8C	17.05.2005	Tow Start	11:41	51° 33.168' N	4° 21.043' W	29.4	
		Haul	11:46	51° 33.098' N	4° 21.254' W	27.4	276
BT 8D	17.05.2005	Tow Start	11:53	51° 33.088' N	4° 21.531' W	25.9	
		Haul	11:58	51° 33.219' N	4° 21.661' W	25.2	285

Appendix 4

Station Code	Date		Time (BST)	LATITUDE	LONGITUDE	Tow Depth (m)	Tow Length (m)
SITE 1-8-2							
BT 9A	17.05.2005	Tow Start	13:06	51° 30.502' N	4° 34.434' W	35.9	
		Haul	13:09	51° 30.584' N	4° 34.549' W	35.1	202
BT 9B	17.05.2005	Tow Start	13:18	51° 30.749' N	4° 34.790' W	34.8	
		Haul	13:23	51° 30.848' N	4° 34.928' W	34.2	243
BT 9C	17.05.2005	Tow Start	13:36	51° 30.976' N	4° 35.247' W	33.5	
		Haul	13:41	51° 31.109' N	4° 35.392' W	33.2	268
BT 9D	17.05.2005	Tow Start	13:51	51° 31.343' N	4° 35.668' W	35.3	
		Haul	13:56	51° 31.423' N	4° 35.804' W	36.4	216
SITE 1-2-1							
BT 10A	17.05.2005	Tow Start	17:01	51° 15.530' N	4° 22.350' W	46.1	
		Haul	17:06	51° 15.616' N	4° 22.217' W	45.8	221
BT 10B	17.05.2005	Tow Start	17:17	51° 15.828' N	4° 21.809' W	45.3	
		Haul	17:22	51° 15.948' N	4° 21.647' W	46.1	291
BT 10C	17.05.2005	Tow Start	17:34	51° 16.119' N	4° 21.298' W	45.1	
		Haul	17:39	51° 16.186' N	4° 21.127' W	44.0	233
BT 10D	17.05.2005	Tow Start	17:53	51° 16.371' N	4° 20.553' W	47.2	
		Haul	17:58	51° 16.438' N	4° 20.382' W	45.6	233
SITE 2-4-1							
BT 11A	18.05.2005	Tow Start	09:45	51° 21.244' N	4° 23.260' W	44.2	
		Haul	09:50	51° 21.145' N	4° 23.383' W	41.8	232
BT 11B	18.05.2005	Tow Start	09:58	51° 21.003' N	4° 23.377' W	40.6	
		Haul	10:03	51° 20.876' N	4° 23.323' W	45.8	243
BT 11C	18.05.2005	Tow Start	10:14	51° 20.987' N	4° 23.032' W	45.9	
		Haul	10:19	51° 21.114' N	4° 22.984' W	47.8	238
BT 11D	18.05.2005	Tow Start	10:27	51° 21.329' N	4° 23.016' W	47.5	
		Haul	10:32	51° 21.401' N	4° 23.185' W	48.2	237
SITE 3-3-1							
BT 12A	18.05.2005	Tow Start	11:05	51° 18.781' N	4° 21.306' W	49.9	
		Haul	11:10	51° 18.735' N	4° 21.529' W	48.7	272
BT 12B	18.05.2005	Tow Start	11:19	51° 18.741' N	4° 21.798' W	48.9	
		Haul	11:24	51° 18.725' N	4° 21.982' W	51.4	215
BT 12C	18.05.2005	Tow Start	11:35	51° 18.823' N	4° 21.070' W	50.9	
		Haul	11:40	51° 18.795' N	4° 21.297' W	50.6	268
BT 12D	18.05.2005	Tow Start	11:48	51° 18.806' N	4° 21.543' W	51.6	
		Haul	11:53	51° 18.782' N	4° 21.757' W	52.4	251

Station Code	Date		Time (BST)	LATITUDE	LONGITUDE	Tow Depth (m)	Tow Length (m)
SITE 3-3-2							
BT 13A	18.05.2005	Tow Start	13:26	51° 16.507’ N	4° 32.153’ W	52.2	
		Haul	13:31	51° 16.503’ N	4° 32.390’ W	51.5	274
BT 13B	18.05.2005	Tow Start	13:44	51° 16.494’ N	4° 32.912’ W	52.1	
		Haul	13:49	51° 16.489’ N	4° 33.146’ W	53.2	271
BT 13C	18.05.2005	Tow Start	13:58	51° 16.483’ N	4° 33.578’ W	52.5	
		Haul	14:03	51° 16.479’ N	4° 33.820’ W	51.8	280
BT 13D	18.05.2005	Tow Start	14:30	51° 16.331’ N	4° 34.992’ W	56.9	
		Haul	14:35	51° 16.307’ N	4° 35.186’ W	53.0	229

Notes:

- Five minute tows counted from time of end of paying out warp to start of haul
- It is expected that:
    1. the net will be near static as warp is paid out
    2. on start of hauling the net will come off bottom
- Positions based on ship position at end of warp pay-out and start of haul
- Actual sample positions will be approximately 15 m plus 2.5x water depth behind the DGPS

- Length of tow from which area sampled adjustments made based on change of ship position
- Conversion of Longitude used was 0.62455
- Conversion of minute Latitude 1852 m

- BT 1C: net had retained much sand, sub-sampling needed for small organisms
- BT 1D: no sample as cod end became undone
- BT 12 & 13: all samples retained over 5 buckets of small stones & gravel needing sub-sampling

Appendix 5

Abundance & Catch Weight Data for all 2005 Beam Trawl Tows

TOWS	BT1A	BT1B	BT1C	BT2A	BT2B	BT2C	BT2D	BT3A	BT3B	BT3C	BT3D	BT4A	BT4B	BT4C	BT4D	BT5A	BT5B	BT5C	BT5D	BT6A	BT6B	BT6C	BT6D
TAXA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raspailia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porifera indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNIDARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa indet.	+	+	+	+	+	+	+	+	+	+	-	+	-	+	-	+	+	+	+	+	+	-	+
Nemertesia antennina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Nemertesia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia indivisa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urticina agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MINOR PHYLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertea indet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phascolion strombus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thalassema thalassemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLYCHAETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphictene auricoma	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphrodita aculeata	30	7	12	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	3
Nephtys agg.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	-	-
Sabella pavonina	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa (tubes)	+	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CHELICERATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonida indet.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea linearis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Processa agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Pandalus montagui	-	-	-	1	21	-	6	1	-	-	-	-	-	-	-	-	8	-	2	-	-	-	-
Crangon allmanni	41	9	8	13	17	7	128	6	1	2	6	5	-	3	1	12	19	12	22	-	1	-	2
Crangon crangon	-	-	-	2	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Crangon trispinosus	-	-	-	-	-	-	-	-	3	2	-	-	8	5	5	-	-	1	3	-	-	-	1
Pagurus bernhardus	7	5	34	6	14	10	33	35	19	18	32	45	36	42	58	18	22	15	29	34	4	15	68
Pagurus cuanensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus prideaux	5	7	9	-	-	-	1	6	2	1	1	2	-	-	-	-	1	-	-	-	-	-	-
Pagurus pubescens	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munida rugosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pisidia longicornis	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia cranchii	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tuberosa	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tumefacta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	1	2	1	-	-	-	1	-	-	1	-	-	1	-	-	1	-	1	-	-	-	-	-
Hyas coarctatus	-	-	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus agg,	15	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia agg.	52	7	19	5	20	-	78	20	2	-	-	-	-	-	-	-	6	2	3	-	-	-	-
Eurynome aspera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corystes cassivelaunus	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	5	48	21
Atelecyclus rotundatus	18	8	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cancer pagurus	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus depurator	16	-	-	1	3	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Liocarcinus holsatus	-	1	-	-	2	-	3	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Liocarcinus marmoreus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus pusillus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Necora puber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goneplax rhomboides	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthidae indet.	-	-	-	-	2	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-
Pilumnus hirtellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinnotheres pisum	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
MOLLUSCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aporrhais pespelecani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crepidula fornicata	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	6	19	69
Polinices catena	-	-	-	-	-	-	-	2	-	2	1	3	1	2	6	4	3	3	4	-	-	3	2
Polinices eggs	-	-	-	-	-	-	-	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+
Ocenebra erinacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	16	8	14	1	1	-	1	-	-	-	-	-	-	1	-	-	5	-	1	1	-	-	8
Buccinum undatum eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colus gracilis	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Comarmondia gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatalis	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	144	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	10
Nudibranchia indet.	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Dendronotus agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aeolidia papillosa	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mytilus edulis	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Palliolum tigerinum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laevicardium crassum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A5.1: Abundance data from Beam Trawls

TOWS	BT7A	BT7B	BT7C	BT7D	BT8A	BT8B	BT8C	BT8D	BT9A	BT9B	BT9C	BT9D	BT10A	BT10B	BT10C	BT10D	BT11A	BT11B	BT11C	BT11D	BT12A	BT12B	BT12C	BT12D	BT13A	BT13B	BT13C	BT13D
TAXA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raspailia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
Porifera indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
CNIDARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa indet.	+	-	-	-	+	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	I+	+
Nemertesia antennina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
Nemertesia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
Tubularia indivisa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
Urticina agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-
MINOR PHYLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertea indet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Phascolion strombus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-
Thalassema thalassemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
POLYCHAETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphictene auricoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphrodita aculeata	-	-	1	2	-	-	-	-	2	-	2	4	1	-	2	3	-	-	-	-	-	7	1	-	-	-	-	-
Nephtys agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabella pavonina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa (tubes)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
CHELICERATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonida indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea linearis	-	-	-	-	-	-	3	2	8	7	6	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Processa agg.	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	-	-	-	-	-	-	1	-	-	1	-	-	-	-	7	-	-	-	-	1	-	-	-	-	-	-	-	-
Pandalus montagui	1	-	-	-	-	-	-	-	-	-	-	-	2	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-
Crangon allmanni	-	-	-	-	7	5	8	2	10	2	3	-	10	32	18	18	36	8	36	-	29	16	12	31	-	-	-	-
Crangon crangon	-	-	-	1	12	6	-	7	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon trispinosus	-	-	-	-	12	6	4	-	-	3	2	64	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus bernhardus	7	1	65	42	25	15	15	17	35	38	54	82	29	54	19	24	10	-	27	34	53	37	33	42	199	10	24	36
Pagurus cuanensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus prideaux	-	-	-	-	-	-	-	-	-	-	-	-	3	1	3	2	3	-	-	-	9	7	-	17	51	-	25	59
Pagurus pubescens	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	-	-	-
Munida rugosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Pisidia longicornis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia cranchii	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	1	-	-
Ebalia tuberosa	-	-	-	-	-	-	-	-	-	-	-	-	18	17	26	11	1	-	-	-	16	12	42	-	-	-	8	-
Ebalia tumefacta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	-	-	-	-	1	1	-	-	-	1	-	-	1	2	1	1	-	-	-	-	1	-	-	-	2	-	1	1
Hyas coarctatus	-	-	-	-	-	-	-	-	-	1	-	-	12	8	8	10	1	-	-	-	13	12	32	1	-	-	-	-
Inachus agg,	-	-	-	-	-	-	-	-	-	-	-	-	64	80	155	100	11	-	-	-	15	15	9	1	21	3	16	-
Macropodia agg.	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	3	-	1	18	27	36	5	22	1	1	12	-
Eurynome aspera	-	-	-	-	-	-	-	-	-	-	-	-	14	2	7	2	-	-	-	-	-	8	4	-	-	-	-	-
Corystes cassivelaunus	69	9	202	105	-	-	-	-	26	15	31	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atelecyclus rotundatus	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	5	-	-	-	-	8	-	-	-	-	1	-	-
Cancer pagurus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus depurator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	4	-
Liocarcinus holsatus	-	-	1	4	-	-	-	-	1	-	3	13	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Liocarcinus marmoreus	-	-	-	7	5	3	-	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4	-
Liocarcinus pusillus	-	-	-	-	-	-	-	-	-	-	-	-	16	17	9	11	-	-	-	-	-	-	-	-	-	-	-	-
Necora puber	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goneplax rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthidae indet.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Pilumnus hirtellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	4	-	-	-	-	-
Pinnotheres pisum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOLLUSCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	-	-	-	-	-	-	-	-	-	-	-	-	6	10	-	6	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	-	-	-	-	-	-	-	-	-	-	-	-	3	2	1	-	-	-	-	2	5	4	8	-	4	-	4	-
Aporrhais pespelecani	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-
Crepidula fornicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	8	-	111	24	-	-	1	-	1	-	-	32	-	1	-	-	-	-	7	-	-	-	-	-	-	-	-	-
Polinices catena	-	-	-	4	1	1	1	1	3	1	1	3	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
Polinices eggs	-	+	+	+	-	-	-	-	+	-	-	+	-	-	-	-	+	-	+	+	-	-	-	-	-	+	-	-
Ocenebra erinacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	2	-	-	-	-	-	-	-	6	3	-	7	9	22	11	22	-	-	-	-	29	39	11	24	20	9	12	25
Buccinum undatum eggs	-	-	+	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colus gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	4
Comarmondia gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatalis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	-	-	3	2	-	-	-	-	-	-	-	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nudibranchia indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dendronotus agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	3	1	-	-	-	4	-	-	4	-	-	-	-
Aeolidia papillosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mytilus edulis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	-	-	-	-	-	-	-	-	-	-	-	-	14	49	26	46	1	-	-	2	87	48	60	83	4	2	-	-
Palliolum tigerinum	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-
Laevicardium crassum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-

Appendix 5

TOWS	BT1A	BT1B	BT1C	BT2A	BT2B	BT2C	BT2D	BT3A	BT3B	BT3C	BT3D	BT4A	BT4B	BT4C	BT4D	BT5A	BT5B	BT5C	BT5D	BT6A	BT6B	BT6C	BT6D
Mactra stultorum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Spisula elliptica	-	-	-	-	-	-	-	-	1	-	-	17	6	15	-	-	-	-	-	-	-	-	-
Spisula solida	-	-	-	-	-	-	-	4	3	14	4	-	-	-	-	8	1	4	4	-	-	-	-
Ensis siliqua	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Pharus legumen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Circomphalus casina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamelea gallina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clausinella fasciata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tapes rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dosinia agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sepiola atlantica	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	3	2	1	2
Alloteuthis subulata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1
Alloteuthis eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-
BRYOZOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
nodular bryozoan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium diaphanum	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
ECHINODERMATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia ciliaris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia sarsi	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	4	25
Crossaster papposus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	10	21	27	12	59	5	66	19	11	5	6	3	1	2	9	7	18	18	4	13	5	13	83
Ophiothrix fragilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura albida	7952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	6	-	-	-	-
Ophiura ophiura	1712	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	16	41	37
Psammechinus miliaris	-	-	-	-	2	-	9	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Spatangus purpureus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium cordatum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Holothurian indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PISCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scyliorhinus canicula	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Raja clavata	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Raja microocellata	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Raja montagui	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sprattus sprattus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplecogaster bimaculata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lophius piscatorius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadidae (0-group agg.)	24	4	2	-	3	-	2	-	-	5	-	2	-	1	1	3	-	8	2	1	-	2	-
Gadus morhua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Gaidropsarus vulgaris	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merlangius merlangus	1	-	1	3	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	1	1	3
Trisopterus luscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus minutus	-	-	-	8	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zeus faber	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entelurus aequoreus	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Syngnathus rostellatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eutrigla gurnardus	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	-	-	-	-	8	9	8	4
Trigla lucerna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Agonus cataphractus	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	4
Echiichthys vipera	-	-	-	-	-	-	-	-	-	-	-	3	4	-	1	-	-	-	-	-	-	-	-
Ammodytes tobianus	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus lanceolatus	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-	-	-
Aphia minuta	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callionymus agg.	3	1	2	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Pomatoschistus minutus	1	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	1	10	7	12	5
Arnoglossus laterna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1
Limanda limanda	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	15	4
Microstomus kitt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleuronectes platessa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	2
Buglossidium luteum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	45	49	52
Microchirus variegatus	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solea solea	-	-	1	-	-	-	-	-	3	1	1	-	2	1	-	-	1	1	-	-	-	1	2

Table A5.1: Abundance data from Beam Trawls (cont.)

TOWS	BT7A	BT7B	BT7C	BT7D	BT8A	BT8B	BT8C	BT8D	BT9A	BT9B	BT9C	BT9D	BT10A	BT10B	BT10C	BT10D	BT11A	BT11B	BT11C	BT11D	BT12A	BT12B	BT12C	BT12D	BT13A	BT13B	BT13C	BT13D
Mactra stultorum	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula elliptica	-	-	-	-	1	-	21	-	-	-	-	-	-	-	-	1	-	-	26	-	-	-	-	-	-	-	-	-
Spisula solida	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	12	8	19	-	5	-	-	-	-
Ensis siliqua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pharus legumen	-	-	10	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Circomphalus casina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4
Chamelea gallina	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clausinella fasciata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-
Tapes rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-
Dosinia agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-
Sepiola atlantica	-	1	2	-	-	1	1	1	-	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Alloteuthis subulata	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alloteuthis eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRYOZOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	+	-	+	-	+	-	-	-
nodular bryozoan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	+	-	-	-	-
Alcyonidium diaphanum	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-	-	-	-	+	+	+	-	-	-	-
ECHINODERMATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia ciliaris	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Luidia sarsi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	4	1	1	4	-	-	-	-	1	4	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crossaster papposus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	8	4	32	7	5	4	2	3	6	8	50	216	78	51	18	23	15	23	21	23	84	66	45	61	188	48	16	69
Ophiothrix fragilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura albida	-	-	2670	-	5	2	4	2	-	-	-	-	9	51	11	15	44	4	23	47	509	984	581	556	-	-	-	8
Ophiura ophiura	9	-	-	169	40	2	-	2	1270	270	357	5800	7	13	1	1	5	1	3	9	6	2	5	-	-	-	-	-
Psammechinus miliaris	-	-	-	-	-	-	-	-	-	1	-	-	159	65	87	105	3	-	-	1	24	16	2	39	625	35	239	824
Spatangus purpureus	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	1	-	-
Echinocardium cordatum	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holothurian indet.	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PISCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scyliorhinus canicula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-
Raja clavata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raja microocellata	-	-	-	1	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raja montagui	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sprattus sprattus	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplecogaster bimaculata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lophius piscatorius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Gadidae (0-group agg.)	1	-	-	-	-	4	2	8	66	66	311	160	15	-	12	-	45	1	43	11	13	8	12	-	-	-	8	-
Gadus morhua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaidropsarus vulgaris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merlangius merlangus	3	-	9	7	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus luscus	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus minutus	-	-	-	-	1	-	-	-	-	-	-	-	12	-	-	-	-	-	2	1	-	3	-	1	-	-	-	-
Zeus faber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entelurus aequoreus	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syngnathus rostellatus	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eutrigla gurnardus	6	-	31	2	-	1	-	2	1	2	3	1	-	-	-	-	-	-	-	1	-	-	1	-	5	2	2	2
Trigla lucerna	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agonus cataphractus	-	-	1	-	3	5	1	6	12	3	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echiichthys vipera	1	-	-	-	-	7	2	7	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	7	-	-
Ammodytes tobianus	-	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	7	-	-
Hyperoplus lanceolatus	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Aphia minuta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Callionymus agg.	-	-	3	4	-	-	-	-	-	-	-	8	2	1	1	1	1	-	1	-	1	-	-	5	16	8	15	32
Pomatoschistus minutus	14	1	70	24	-	-	-	11	2	2	41	34	-	-	-	1	-	-	-	1	-	-	-	-	-	3	-	-
Arnoglossus laterna	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limanda limanda	3	-	54	65	-	-	1	1	-	1	1	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microstomus kitt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Pleuronectes platessa	3	1	2	3	-	-	-	-	1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buglossidium luteum	75	10	86	102	1	1	-	-	12	11	32	122	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microchirus variegatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	5	-
Solea solea	-	-	-	-	3	1	3	5	1	3	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-

Appendix 5

TOWS	BT1A	BT1B	BT1C	BT2A	BT2B	BT2C	BT2D	BT3A	BT3B	BT3C	BT3D	BT4A	BT4B	BT4C	BT4D	BT5A	BT5B	BT5C	BT5D	BT6A	BT6B	BT6C	BT6D
TAXA																							
PORIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raspailia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Porifera indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNIDARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa indet.	183	35	127	66	74	30	200	15	12	27	14	23	-	5	-	8	70	165	89	86	70	39	8
Nemertesia antennina	-	-	-	-	-	-	-	533	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-
Nemertesia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia indivisa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urticina agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MINOR PHYLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertea indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phascolion strombus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thalassema thalassemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
POLYCHAETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphictene auricoma	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphrodita aculeata	28	17	83	1	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	8	-	140	32
Nephtys agg.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-
Sabella pavonina	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa (tubes)	1081	932	1136	-	917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CHELICERATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonida indet.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea linearis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Processa agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
Pandalus montagui	-	-	-	1	28	-	27	2	-	-	-	-	-	-	-	-	14	-	3	-	-	-	-
Crangon allmanni	24	9	7	12	15	7	84	6	1	1	5	4	-	4	1	12	23	12	20	-	1	-	2
Crangon crangon	-	-	-	5	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Crangon trispinosus	-	-	-	-	-	-	-	-	1	0	-	-	1	2	1	-	-	1	1	-	-	-	1
Pagurus bernhardus	68	17	128	43	176	146	415	385	171	230	350	423	290	272	248	117	221	108	181	54	4	57	656
Pagurus cuanensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus prideaux	17	10	14	-	-	-	5	34	22	3	3	11	-	-	-	-	6	-	-	-	-	-	-
Pagurus pubescens	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munida rugosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pisidia longicornis	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia cranchii	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tuberosa	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tumefacta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	136	361	64	-	-	-	157	-	-	907	-	-	534	-	-	218	-	49	-	-	-	-	-
Hyas coarctatus	-	-	2	-	1	-	2	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus agg.	30	4	12	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia agg.	51	5	21	4	17	-	7	15	1	-	-	-	-	-	-	-	6	1	2	-	-	-	-
Eurynome aspera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corystes cassivelaunus	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149	17	269	106
Atelecyclus rotundatus	43	78	105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cancer pagurus	-	-	-	-	143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus depurator	16	-	-	1	13	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Liocarcinus holsatus	-	1	-	-	8	-	9	-	4	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Liocarcinus marmoreus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus pusillus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Necora puber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goneplax rhomboides	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthidae indet.	-	-	-	-	1	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-
Pilumnus hirtellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinnotheres pisum	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
MOLLUSCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aporrhais pespelecani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crepidula fornicata	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	5	14	66
Polinices catena	-	-	-	-	-	-	-	5	-	5	2	13	3	2	6	16	14	15	26	-	-	16	10
Polinices eggs	-	-	-	-	-	-	-	8	22	-	32	9	11	-	27	28	21	22	19	134	38	26	136
Ocenebra erinacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	316	355	186	42	61	-	3	-	-	-	-	-	-	103	-	-	133	-	25	46	-	-	265
Buccinum undatum egg mass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colus gracilis	-	-	-	-	-	14	5	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Comarmondia gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatalis	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	16	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	48
Nudibranchia indet.	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Dendronotus agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aeolidia papillosa	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mytilus edulis	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	5	-	1	-	-	-	-
Palliolum tigerinum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laevicardium crassum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A5.2: Catch weights from Beam Trawls

TOWS	BT7A	BT7B	BT7C	BT7D	BT8A	BT8B	BT8C	BT8D	BT9A	BT9B	BT9C	BT9D	BT10A	BT10B	BT10C	BT10D	BT11A	BT11B	BT11C	BT11D	BT12A	BT12B	BT12C	BT12D	BT13A	BT13B	BT13C	BT13D
TAXA																												
PORIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raspailia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	-	-	-	-	-	-	-	-
Porifera indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-
CNIDARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa indet.	2	-	-	-	10	-	9	-	239	169	492	1170	15	71	36	38	16	5	25	48	41	240	40	40	4	-	48	16
Nemertesia antennina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-
Nemertesia ramosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Tubularia indivisa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-
Urticina agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	26	-	-	-	-	-
MINOR PHYLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertea indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Phascolion strombus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Thalassema thalassemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
POLYCHAETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphictene auricoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphrodita aculeata	-	-	39	125	-	-	-	-	42	-	18	174	6	-	33	25	-	-	-	-	-	118	15	-	-	-	-	-
Nephtys agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabella pavonina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa (tubes)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	183	-	-	-	-	-	-	-
CHELICERATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonida indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea linearis	-	-	-	-	-	-	2	2	4	3	5	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Processa agg.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-
Pandalus montagui	1	-	-	-	-	-	-	-	-	-	-	-	2	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-
Crangon allmanni	-	-	-	-	7	4	10	2	10	1	3	-	9	23	24	18	36	6	27	-	24	12	12	31	-	-	-	-
Crangon crangon	-	-	-	2	21	9	-	18	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon trispinosus	-	-	-	-	10	1	1	-	-	1	1	32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus bernhardus	32	25	196	172	178	139	215	145	106	336	222	252	391	501	289	264	122	-	107	158	604	457	300	215	1786	135	94	389
Pagurus cuanensis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus prideaux	-	-	-	-	-	-	-	-	-	-	-	-	37	5	10	3	8	-	-	-	57	11	-	76	759	-	156	537
Pagurus pubescens	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	-	-	-
Munida rugosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Pisidia longicornis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia cranchii	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	1	-	-
Ebalia tuberosa	-	-	-	-	-	-	-	-	-	-	-	-	11	14	17	7	0	-	-	-	4	4	46	-	-	-	4	-
Ebalia tumefacta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	-	-	-	-	434	736	-	-	-	560	-	-	59	1316	47	150	-	-	-	-	53	-	-	-	674	-	39	375
Hyas coarctatus	-	-	-	-	-	-	-	-	-	1	-	-	20	12	9	11	3	-	-	-	18	20	52	1	-	-	-	-
Inachus agg.	-	-	-	-	-	-	-	-	-	-	-	-	222	260	577	359	37	-	-	-	24	13	16	1	39	3	16	-
Macropodia agg.	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	2	-	1	16	9	24	6	22	1	1	4	-
Eurynome aspera	-	-	-	-	-	-	-	-	-	-	-	-	14	1	8	2	-	-	-	-	-	4	2	-	-	-	-	-
Corystes cassivelaunus	32	37	1034	628	-	-	-	-	200	132	268	327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atelecyclus rotundatus	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	12	-	-	-	-	16	-	-	-	-	6	-	-
Cancer pagurus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus depurator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	16	-
Liocarcinus holsatus	-	-	6	21	-	-	-	-	1	-	9	31	-	-	-	-	-	-	-	3	-	-	-	-	-	4	-	-
Liocarcinus marmoreus	-	-	-	17	17	3	-	1	6	40	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	4	-
Liocarcinus pusillus	-	-	-	-	-	-	-	-	-	-	-	-	19	11	6	9	-	-	-	-	-	-	-	-	-	-	-	-
Necora puber	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goneplax rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthidae indet.	-	-	-	-	-	-	4	-	16	52	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Pilumnus hirtellus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-	-	-
Pinnotheres pisum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MOLLUSCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	-	-	-	-	-	-	-	-	-	-	-	-	10	12	1	-	-	-	-	10	8	4	28	-	28	-	12	-
Aporrhais pespelecani	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	312	-	-	-
Crepidula fornicata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	5	-	110	25	-	-	1	-	1	-	-	10	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Polinices catena	-	-	-	25	9	6	4	3	6	5	7	15	-	-	-	-	-	-	14	1	-	-	-	-	-	-	-	-
Polinices eggs	-	4	601	158	-	-	-	-	16	-	-	10	-	-	-	-	14	-	11	10	-	-	-	-	-	14	-	-
Ocenebra erinacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	24	-	-	-	-	-	-	-	147	63	-	414	68	299	145	431	-	-	-	-	-	541	93	130	262	313	200	278
Buccinum undatum egg mass	-	-	924	385	-	-	-	-	-	94	-	135	-	-	-	-	-	-	-	-	388	-	-	-	-	-	-	-
Colus gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	16	13	17	-	-	20
Comarmondia gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatalis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	-	-	9	6	-	-	-	-	-	-	-	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nudibranchia indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dendronotus agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	1	-	-	-	4	-	-	2	-	-	-	-
Aeolidia papillosa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mytilus edulis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	-	-	-	-	-	-	-	-	-	-	-	-	73	286	125	290	7	-	-	27	411	216	288	574	56	15	-	-
Palliolum tigerinum	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-
Laevicardium crassum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-

Appendix 5

TOWS	BT1A	BT1B	BT1C	BT2A	BT2B	BT2C	BT2D	BT3A	BT3B	BT3C	BT3D	BT4A	BT4B	BT4C	BT4D	BT5A	BT5B	BT5C	BT5D	BT6A	BT6B	BT6C	BT6D
Mactra stultorum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Spisula elliptica	-	-	-	-	-	-	-	-	1	-	-	19	2	15	-	-	-	-	-	-	-	-	-
Spisula solida	-	-	-	-	-	-	-	63	25	18	20	-	-	-	-	4	11	36	4	-	-	-	-
Ensis siliqua	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	35	-	-	-	-	-	-
Pharus legumen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-
Circomphalus casina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamelea gallina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clausinella fasciata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tapes rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dosinia agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sepiola atlantica	-	-	-	-	-	-	-	-	-	-	-	-	-	352	-	-	-	-	-	8	6	2	6
Alloteuthis subulata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	7	6
Alloteuthis eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	45	-	-
BRYOZOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
nodular bryozoan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium diaphanum	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-
ECHINODERMATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia ciliaris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia sarsi	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	6	33	173
Crossaster papposus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	199	265	364	411	1263	198	1385	329	118	74	37	71	50	18	129	81	272	263	118	688	195	44	5484
Ophiothrix fragilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura albida	960	2542	2156	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-
Ophiura ophiura	1568	4153	3522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	34	86	98
Psammechinus miliaris	-	-	-	-	7	-	26	3	-	-	-	-	-	-	-	-	4	-	4	-	-	-	-
Spatangus purpureus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium cordatum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Holothurian indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PISCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scyliorhinus canicula	-	-	-	-	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	577	-	-	494
Raja clavata	178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95	-	-
Raja microocellata	-	-	-	-	-	-	-	-	-	-	-	-	-	253	-	-	-	-	-	-	-	-	-
Raja montagui	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sprattus sprattus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplecogaster bimaculata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lophius piscatorius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gadidae (0-group agg.)	16	3	1	-	4	-	1	-	-	0	-	4	-	3	1	1	-	5	1	2	-	1	-
Gadus morhua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Gaidropsarus vulgaris	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merlangius merlangus	27	-	22	40	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	25	18	27	121
Trisopterus luscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus minutus	-	-	-	74	-	-	-	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zeus faber	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entelurus aequoreus	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Syngnathus rostellatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eutrigla gurnardus	-	-	-	-	4	-	157	-	-	-	-	-	-	1	-	-	-	-	-	53	53	26	20
Trigla lucerna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	-	-	-
Agonus cataphractus	45	16	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	6	13
Echiichthys vipera	-	-	-	-	-	-	-	-	-	-	-	15	33	-	17	-	-	-	-	-	-	-	-
Ammodytes tobianus	-	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus lanceolatus	-	-	-	-	-	-	-	-	-	-	-	24	12	-	27	-	-	-	-	-	-	-	-
Aphia minuta	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callionymus agg.	40	10	26	-	-	19	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	169
Pomatoschistus minutus	1	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	15	27	25	7
Arnoglossus laterna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	21	5	7
Limanda limanda	301	51	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	-	104	65
Microstomus kitt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleuronectes platessa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	205	59	-	257
Buglossidium luteum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	299	298	389	434
Microchirus variegatus	34	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solea solea	-	-	130	-	-	-	-	-	273	183	-	-	308	60	-	-	270	158	-	-	-	14	185

Table A5.2: Catch weights from Beam Trawls (cont.)

TOWS	BT7A	BT7B	BT7C	BT7D	BT8A	BT8B	BT8C	BT8D	BT9A	BT9B	BT9C	BT9D	BT10A	BT10B	BT10C	BT10D	BT11A	BT11B	BT11C	BT11D	BT12A	BT12B	BT12C	BT12D	BT13A	BT13B	BT13C	BT13D
Mactra stultorum	-	-	12	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula elliptica	-	-	-	-	2	-	12	-	-	-	-	-	-	-	-	8	-	-	17	-	-	-	-	-	-	-	-	-
Spisula solida	-	-	-	-	31	-	-	-	-	-	-	5	-	-	-	-	-	-	-	28	20	92	-	28	-	-	-	-
Ensis siliqua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pharus legumen	-	-	77	253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Circomphalus casina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	225
Chamelea gallina	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clausinella fasciata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-
Tapes rhomboides	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	26	-	-	-	-	-	-	-
Dosinia agg.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-
Sepiola atlantica	-	4	6	-	-	2	1	5	-	1	3	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Alloteuthis subulata	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alloteuthis eggs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRYOZOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	4	44	-	4	-	4	-	-	-
nodular bryozoan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5	8	-	-	-	-
Alcyonidium diaphanum	-	-	-	-	-	-	-	-	-	4	-	-	-	2	-	1	-	-	-	-	-	3	15	4	-	-	-	-
ECHINODERMATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luidia ciliaris	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-	116	-	-	-	-	-	-
Luidia sarsi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	18	6	5	16	-	-	-	-	4	23	17	126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crossaster papposus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	146	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	382	241	979	205	238	92	12	71	119	424	1376	5780	200	79	78	56	130	19	200	256	287	145	89	192	660	288	352	191
Ophiothrix fragilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura albida	-	-	4080	-	1	1	1	1	-	-	-	-	1	13	2	2	29	1	7	33	81	152	85	84	-	-	-	4
Ophiura ophiura	18	-	-	244	53	1	-	1	1110	301	318	4064	4	12	1	1	12	1	8	9	12	6	6	-	-	-	-	-
Psammechinus miliaris	-	-	-	-	-	-	-	-	-	3	-	-	509	196	187	293	9	-	-	1	29	20	3	32	1871	137	1266	1732
Spatangus purpureus	-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	52	-	-	29	-	-	-	-	-	31	-	-
Echinocardium cordatum	-	-	16	97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holothurian indet.	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PISCES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scyliorhinus canicula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	730	-	-	-	-	642	-	-	-	-	-	-	-	-
Raja clavata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raja microocellata	-	-	-	18	-	342	17	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raja montagui	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sprattus sprattus	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplecogaster bimaculata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Lophius piscatorius	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	413	-	-	-	-	-
Gadidae (0-group agg.)	1	-	-	-	-	15	2	15	62	73	293	128	8	-	9	-	21	0	17	3	9	4	6	-	-	-	4	-
Gadus morhua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gaidropsarus vulgaris	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merlangius merlangus	47	-	137	112	33	-	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus luscus	-	-	-	-	-	-	-	-	-	-	-	-	-	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trisopterus minutus	-	-	-	-	13	-	-	-	-	-	-	-	172	-	-	-	-	-	28	14	-	34	-	11	-	-	-	-
Zeus faber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entelurus aequoreus	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syngnathus rostellatus	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eutrigla gurnardus	34	-	40	1	-	1	-	10	9	1	1	14	-	-	-	-	-	-	-	1	-	-	1	-	81	17	23	15
Trigla lucerna	-	-	-	-	-	-	-	167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agonus cataphractus	-	-	5	-	1	2	1	1	2	4	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echiichthys vipera	29	-	-	-	-	19	9	28	-	-	-	-	-	-	-	-	-	47	12	-	-	-	-	-	-	230	-	-
Ammodytes tobianus	-	-	-	-	-	9	9	-	-	-	-	-	-	-	-	-	3	-	-	-	-	4	-	-	-	68	-	-
Hyperoplus lanceolatus	-	-	-	-	28	-	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	-
Aphia minuta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-
Callionymus agg.	-	-	15	37	-	-	-	-	-	-	-	28	4	10	19	1	3	-	1	-	1	-	-	5	90	456	539	462
Pomatoschistus minutus	22	4	44	43	-	-	-	4	2	1	50	34	-	-	-	1	-	-	-	1	-	-	-	-	-	2	-	-
Arnoglossus laterna	5	-	-	-	-	-	-	-	-	20	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limanda limanda	29	-	1023	1225	-	-	85	168	-	1	5	405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microstomus kitt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	-	-	-
Pleuronectes platessa	196	68	127	169	-	-	-	-	116	-	-	504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buglossidium luteum	644	71	775	816	5	5	-	-	84	87	253	819	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microchirus variegatus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	16	-	-	-	119	-
Solea solea	-	-	-	-	540	62	164	248	57	292	-	-	-	-	-	-	48	142	-	-	-	415	-	-	-	-	-	-

Appendix 6

Systematic List of Taxa Recorded from all OBCMHS Surveys

(* indicates species found only in the 2005 Beam Trawl survey
‡ indicates species identified from video or photographs only)

PROTOZOA
Foraminiferida
Astrorhiza sp.
Planorbulina sp.

PORIFERA
Porifera indet.
CALCAREA
Leucosoleniidae
Leucoselenia spp. indet.
DEMOSPONGIAE
Hadromerida indet.
Clionidae
Cliona celata (Grant, 1826)
Raspailiidae
**Raspailia ramosa* (Montagu, 1818)

CNIDARIA
Atractylis arenosa
HYDROZOA
*Hydrozoa indet.
Corymorphidae
Corymorpha sp.
Tubulariidae
Tubularia sp.
Tubularia indivisa Linnaeus, 1858
Eudendriidae
Eudendrium spp. indet.
Eudendrium rameum (Pallas, 1766)
Pandeiidae
Leuckartiara octona (Flemming, 1823)
Bougainvilliidae
Bougainvillia ramosa (van Beneden, 1844)
Hydractiniidae
‡*Hydractinia echinata* (Fleming, 1828)
Mitrocomidae
Mitrocomella sp?
Lovenellidae
Lovenella clausa (Lovén, 1836)
Phialellidae
Phialella quadrata (Forbes, 1848)
Campanulinidae
Calycella syringa (Linnaeus, 1767)
Lafoeidae
Lafoea dumosa (Flemming, 1828)
Haleciidae
Halecium spp. indet.
Halecium beanii (Johnston, 1838)
Halecium halecinum (Linnaeus, 1758)
Halecium lankesteri (Bourne, 1890)
Sertulariidae
Abietinaria abietina (Linnaeus, 1758)
Diphasia spp. indet.
Diphasia attenuata (Hincks, 1866)
Diphasia rosacea (Linnaeus, 1758)
Hydrallmania falcata (Linnaeus, 1758)
Sertularella spp. indet.
Sertularella polyzonias (Linnaeus, 1758)
Sertularella rugosa (Linnaeus, 1758)
Sertularella tenella (Alder, 1856)
Sertularia spp. indet.
Sertularia argentea Linnaeus, 1758
Sertularia cupressina Linnaeus, 1758
Plumulariidae
Kirchenpaueria pinnata (Linnaeus, 1758)
Nemertesia antennina (Linnaeus, 1758)
Nemertesia ramosa Lamouroux, 1816
Plumularia setacea (Linnaeus, 1758)
Campanulariidae
Campanularia hincksii Alder, 1856
Clytia sp.
Clytia gracilis (M Sars, 1850)
Clytia hemisphaerica (Linnaeus, 1767)
Clytia paulensis (Vanhöffen, 1910)
Obeliinae indet.
Laomedea spp. indet.
Laomedea calceolifera (Hincks, 1871)
Laomedea neglecta Alder, 1856
Gonothyraea loveni (Allman, 1859)
Obelia spp. indet.
Obelia dichotoma (Linnaeus, 1758)

ANTHOZOA
Anthozoa indet.
Alcyoniidae
Alcyonium digitatum Linnaeus, 1758
Zoantharia indet.
Epizoanthidae
Epizoanthus couchii (Johnston in Couch, 1844)
Incertae sedis
?*Zoanthus alderi* Gosse, 1859

ACTINIARIA
Actiniidae
‡*Metridium senile* (Linnaeus, 1761)
‡*Urticina* sp.
Sagartiidae
Sagartia sp. indet?
Edwardsiidae
Edwardsia claparedii (Panceri, 1869)
Caryophylliidae
Sphenotrochus andrewianus Milne-Edwards & Haime, 1848

PLATYHELMINTHES
TURBELLARIA
Turbellaria indet.

NEMERTEA
Nemertea indet.
Cerebratulidae
Cerebratulus sp. indet.

ENTOPROCTA
Entoprocta indet.
Loxosomatidae
Loxosomatidae indet.
Loxosomella phascolosomata (Vogt, 1876)
Pedicellinidae
Pedicellina spp. indet.
Pedicellina cernua (Pallas, 1774)
Pedicellina hispida Ryland, 1965
Barentsiidae
Barentsia ?gracilis (M Sars, 1835)
Barentsia ?matshushimana Toriumi, 1951

SIPUNCULA
Sipuncula juv.
Golfingiidae
Golfingiidae indet. juv.

Golfingia vulgaris vulgaris (de Blainville, 1827)
Thysanocardia procera (Möbius, 1875)
Phascolionidae
Phascolion strombus strombus (Montagu, 1804)

ECHIURA
Echiuridae
Thalassema thalassemum (Pallas, 1776)

ANNELIDA
POLYCHAETA
Pisionidae
Pisione remota (Southern, 1914)
Aphroditidae
Aphrodita aculeata Linnaeus, 1758
Hermonia hystrix (Savigny in Lamarck, 1818)
Polynoidae
Acholoe squamosa (Chiaje, 1827)
Lepidonotus squamatus (Linnaeus, 1758)
Harmothoinae juv
Harmothoinae indet.
Adyte assimilis (McIntosh, 1874)
Adyte pellucida (Ehlers, 1864)
Gattyana cirrosa (Pallas, 1766)
Harmothoe sp.
Harmothoe andreapolis (McIntosh, 1874)
Harmothoe extenuata (Grube, 1840)
Harmothoe fraserthomsoni McIntosh, 1897
Harmothoe glabra (Malmgren, 1865)
Harmothoe imbricata? (Linnaeus, 1767)
Harmothoe impar? (Johnston, 1839)
Harmothoe pagenstecheri Michaelsen, 1896
Malmgrenia sp.
Malmgrenia arenicolae (Saint-Joseph, 1888)
Malmgrenia marphysae (McIntosh, 1876)
Malmgrenia castanea? McIntosh, 1876
Polynoe scolopendrina Savigny, 1822
Pholoidae
Pholoe sp. juv.
Pholoe tuberculata Southern, 1914
Pholoe sp. B
Sigalionidae
Sigalionidae juv.
Sigalion mathildae Audouin & Milne-Edwards in Cuvier, 1830
Sthenelais sp. indet.
Sthenelais boa (Johnston, 1833)
Sthenelais limicola (Ehlers, 1864)
Phyllodocidae
Phyllodocidae indet.
Paranaitis kosteriensis (Malmgren, 1867)
Paranaitis wahlbergi? (Malmgren, 1865)
Anaitides groenlandica (Oersted, 1842)
Anaitides cf. *longipes* (Kinberg, 1866)
Anaitides mucosa (Oersted, 1843)
Anaitides rosea (McIntosh, 1877)
Phyllodoce sp.
Eumida sp. juv.
Eumida bahusiensis Bergstrom, 1914
Eumida ockelmanni Eibye-Jacobsen, 1987
Eumida sanguinea (Oersted, 1843)
Eulalia sp.
Eulalia bilineata (Johnston, 1839)
Eulalia microoculata Pleijel, 1987
Eulalia mustela Pleijel, 1987
Eulalia ornata Saint-Joseph, 1888
Eulalia tripunctata McIntosh, 1874
Eulalia viridis (Linnaeus, 1767)
Pterocirrus macroceros (Grube, 1860)
Pseudomystides sp.
Pseudomystides limbata (Saint-Joseph, 1888)
Hesionura elongata (Southern, 1914)
Eteone foliosa Quatrefages, 1866
Eteone cf. *longa* (Fabricius, 1780)
Mysta picta (Quatrefages, 1866)
Mystides caeca Langerhans, 1880
?*Mystides* sp.
Glyceridae
Glycera sp. juv.
Glycera sp. indet.
Glycera alba (O F Müller, 1776)
Glycera capitata (Oersted, 1842)
Glycera celtica O'Connor, 1987
Glycera gigantea Quatrefages, 1866
Glycera tridactyla Schmarda, 1861
Glycera lapidum Quatrefages, 1866
Glycera oxycephala Ehlers, 1887
Glycera tesselata? Grube, 1863
Goniadidae
Goniadidae juv.
Glycinde nordmanni (Malmgren, 1866)
Goniada sp. juv.
Goniada emerita Audouin & Milne-Edwards, 1834
Goniada maculata Oersted, 1843
Goniadella gracilis (Verrill, 1873)
Sphaerodoridae
Commensodorum commensalis (Lützen, 1961)
Sphaerodorum gracilis (Rathke, 1843)
Sphaerodoropsis sp.
Hesionidae
Hesionidae juv.
Podarkeopsis capensis (Day, 1963)
Gyptis sp. juv.
Gyptis rosea (Malm, 1874)
Psamathe fusca Johnston, 1836
Podarke pallida (Claparède, 1864)
Nereimyra punctata (O F Müller, 1788)
Syllidia armata Quatrefages, 1866
Hesionides maxima Westheide, 1967
Microphthalmus sp.
Microphthalmus fragilis
Microphthalmus listensis Westheide, 1967
Microphthalmus similis Bobretzky, 1870
Syllidae
Syllidae sp. juv.
Eusyllinae sp. juv.
Ehlersia sp. A
Syllis cornuta Rathke, 1843
Ehlersia ferrugina Langerhans, 1881
Syllis sp. juv.
Syllis sp. B
Syllis sp. E
Syllis sp. H
Syllis sp. L
Syllis variegata (Grube, 1860)
Amblyosyllis madeirensis? Langerhans, 1879
Eusyllis blomstrandi Malmgren, 1867
Eusyllis lamelligera Marion & Bobretzky, 1875
Odontosyllis fulgurans (Audouin & Milne-Edwards, 1833)
Odontosyllis gibba Claparède, 1863
Opisthodonta pterochaeta Southern, 1914
Palposyllis prosostoma Hartmann-Schröder, 1977
Pionosyllis lamelligera Saint-Joseph, 1886
Streptosyllis sp. A
Streptosyllis bidentata Southern, 1914

Streptosyllis websteri Southern, 1914
Syllides indet.
Syllides sp. A
Syllides sp. X
Syllides sp. Y
Syllides benedicti Banse, 1971
Brania swedmarki Gidholm, 1962
Exogone hebes (Webster & Benedict, 1884)
Exogone naidina Oersted, 1845
Exogone verugera (Claparède, 1868)
Sphaerosyllis sp. A
Sphaerosyllis sp. X
Sphaerosyllis sp. Y
Sphaerosyllis bulbosa Southern, 1914
Sphaerosyllis erinaceus Claparède, 1863
Sphaerosyllis hystrix Claparède, 1863
Sphaerosyllis taylori Perkins, 1980
Sphaerosyllis tetralix Eliason, 1920
Autolytus sp.
Autolytus alexandri Malmgren, 1867
Autolytus brachycephalus (Marenzeller, 1874)
Autolytus inermis Saint-Joseph, 1886
Autolytus langerhansi Gidholm, 1967
Autolytus prolifera (O F Müller, 1788)
Proceraea cornuta (Agassiz, 1862)
Procerastea halleziana Malaquin, 1893

Nereididae
Nereididae sp. juv.
‡*Neanthes fucata* (Savigny, 1820)
Nereis longissima Johnston, 1840
Nereis zonata Malmgren, 1867
Websterinereis glauca (Claparède, 1870)

Nephtyidae
Aglaophamus rubella (Michaelsen, 1897)
Nephtys sp. juv.
Nephtys caeca (Fabricius, 1780)
Nephtys cirrosa Ehlers, 1868
Nephtys assimilis Oersted, 1843
Nephtys hombergii Savigny, 1818
Nephtys kersivalensis McIntosh, 1908
Nephtys longosetosa Oersted, 1843
Nephtys pulchra? juv.

Onuphidae
Onuphidae sp. juv.
Aponuphis bilineata (Baird, 1870)
Nothria conchylega (G O Sars, 1835)

Eunicidae
Eunicidae juv.
Marphysa bellii (Audouin & Milne-Edwards, 1833)
Marphysa sanguinea (Montagu, 1813)
Nematonereis unicornis (Grube, 1840)

Lumbrineridae
Lumbrineridae sp. juv.
Lumbrineris sp. juv.
Lumbrineris agastos Fauchald, 1974
Lumbrineris fragilis (O F Müller, 1776)
Lumbrineris funchalensis? (Kinberg, 1865)
Lumbrineris gracilis (Ehlers, 1868)
Lumbrineris latreilli? Audouin & Milne-Edwards, 1833

Oenonidae
Oenone iricolor (Montagu, 1804)
Drilonereis filum (Claparède, 1868)
Notocirrus scoticus McIntosh, 1869

Dorvilleidae
Dorvilleidae sp. indet.
?*Ophryotrocha* sp.
?*Ougia* spp.
Parougia spp.
Protodorvillea kefersteini (McIntosh, 1869)
Schistomeringos neglecta (Fauvel, 1923)
Schistomeringos rudolphi (Chiaje, 1828)

Orbiniidae
Orbinia sp. juv.
Orbinia armandi (McIntosh, 1910)
Orbinia latreilli (Audouin & Milne-Edwards, 1833)
Orbinia sertulata (Savigny, 1820)
Scoloplos armiger (O F Müller, 1776)

Paraonidae
Paraonidae sp.
Aricidea sp.
Aricidea catherinae Laubier, 1967
Aricidea cerrutii Laubier, 1966
Aricidea laubieri Hartley, 1981
Aricidea minuta Southward, 1956
Paradoneis sp.
Paradoneis cf. *ilvana* Castelli, 1985
Paradoneis lyra (Southern, 1914)
Paraonis fulgens (Levinsen, 1884)

Questidae
Questidae sp.

Poecilochaetidae
Poecilochaetus serpens Allen, 1904

Spionidae
Spionidae juv.
Aonides sp. juv.
Aonides oxycephala (M Sars, 1862)
Aonides paucibranchiata Southern, 1914
Aurospio banyulensis (Laubier, 1966)
Laonice bahusiensis Soderstrom, 1920
Malacoceros sp.
Malacoceros tetracerus (Schmarda, 1861)
Minuspio cirrifera (Wiren, 1883)
Polydora sp.
Polydora caeca? (Oersted, 1843)
Polydora caulleryi Mesnil ,1897
Polydora ciliata? (Johnston, 1838)
Polydora cornuta Bosc, 1802
Polydora flava Claparède, 1870
Polydora hermaphroditica Hannerz, 1956
Polydora sanctijosephi? Eliason, 1920
Polydora socialis? (Schmarda, 1861)
Prionospio sp. juv.
Pseudopolydora sp. juv.
Pseudopolydora cf. *paucibranchiata* (Okuda, 1937)
Pseudopolydora pulchra (Carazzi, 1895)
Pygospio elegans Claparède, 1863
Scolelepis sp. juv.
Scolelepis bonnieri (Mesnil, 1896)
Scolelepis foliosa (Audouin & Milne-Edwards, 1833)
Scolelepis mesnili (Bellan & Lagardere, 1971)
Parascolelepis cf. *gilchristi* (Day, 1961)
Spio sp.
Spio armata Thulin, 1957
Spio filicornis (O F Müller, 1776)
Spio goniocephala Thulin, 1957
Spio sp. A
Spiophanes bombyx (Claparède, 1870)
Spiophanes kroyeri Grube, 1860

Magelonidae
Magelona sp. juv.
Magelona alleni Wilson, 1958
Magelona filiformis Wilson, 1959
Magelona johnstoni Fiege, Licher & Mackie, 2000
Magelona mirabilis (Johnston, 1865)

Chaetopteridae
Chaetopteridae indet.

Phyllochaetopterus sp. indet.
Cirratulidae
Cirratulidae juv.
Cirratulidae indet.
Aphelochaeta sp.
Aphelochaeta marioni (Saint-Joseph, 1894)
?*Aphelochaeta vivipara* (Christie, 1984)
Caulleriella sp. juv.
Caulleriella alata (Southern, 1914)
Caulleriella bioculata (Keferstein, 1862)
Caulleriella zetlandica (McIntosh, 1911)
Chaetozone sp.
Chaetozone gibber Woodham & Chambers, 1994
Chaetozone setosa Malmgren, 1867
Cirratulus filiformis Keferstein, 1862
Tharyx killariensis (Southern, 1914)
Psammodrilidae
Psammodrilus sp. juv.
Psammodrilus balanoglossoides Swedmark, 1953
Flabelligeridae
Diplocirrus glaucus (Malmgren, 1867)
Flabelligera affinis M Sars, 1829
Pherusa flabellata (M Sars, 1872)
Acrocirridae
Macrochaeta helgolandica Friedrich, 1937
Capitellidae
Capitellidae indet. juv.
Capitella capitata (Fabricius, 1780)
Mediomastus fragilis Rasmussen, 1973
Notomastus sp. juv.
Notomastus sp. B
Notomastus sp. C
Notomastus sp. D
Notomastus sp. E
Arenicolidae
Arenicola sp. juv.
Maldanidae
Maldanidae juv.
Praxillura longissima Arwidsson, 1906
Euclymeninae spp.
Clymenura sp.
Clymenura johnstoni (McIntosh, 1915)
Euclymene sp.
Euclymene lumbricoides (Quatrefages, 1866)
Euclymene oerstedii (Claparède, 1863)
Praxillella sp.
Praxillella affinis (M Sars, 1872)
Praxillella praetermissa (Malmgren, 1865)
Nicomachinae sp. indet.
Petaloproctus terricola Quatrefages, 1866
Petaloproctus tenuis borealis Arwidsson, 1906
Opheliidae
Opheliidae juv.
Euzonus flabelligerus (Ziegelmeier, 1955)
Ophelia sp. juv.
Ophelia borealis Quatrefages, 1866
Ophelia celtica Amoureux & Dauvin, 1981
Travisia forbesii Johnston, 1840
Armandia sp. juv.
Armandia polyophthalma Kukenthal, 1887
Ophelina sp. juv.
Ophelina acuminata Oersted, 1843
Scalibregmatidae
Scalibregmatidae indet.
Asclerocheilus sp.
Asclerocheilus intermedius (Saint-Joseph, 1894)
Scalibregma sp.
Scalibregma celticum Mackie, 1991
Scalibregma inflatum Rathke, 1843
Polygordiidae
Polygordius sp.
Polygordius appendiculatus Fraipont, 1887
Protodrilidae
Protodrilus? sp.
Protodriloididae
Protodriloides chaetifer (Remane, 1926)
Oweniidae
Galathowenia sp.
Myriochele sp.?
Owenia fusiformis Chiaje, 1842
Pectinariidae
**Amphictene auricoma* (O F Müller, 1776)
Lagis koreni Malmgren, 1866
Sabellariidae
Sabellaria sp. juv.
Sabellaria spinulosa Leuckart, 1849
Ampharetidae
Ampharetidae sp. juv.
Melinna sp. juv.
Melinna elisabethae McIntosh, 1885
Melinna palmata Grube, 1869
Ampharete sp.
Ampharete lindstroemi Hessle, 1917
Amphicteis midas (Gosse, 1855)
Anobothrus gracilis (Malmgren, 1866)
Trichobranchidae
Terebellides stroemi M Sars, 1835
Trichobranchus glacialis Malmgren, 1866
Terebellidae
Terebellidae indet.
Terebellidae juv.
Amphitritides gracilis (Grube, 1860)
Axionice maculata (Dalyell, 1853)
Eupolymnia sp. indet.
Eupolymnia nesidensis (Chiaje, 1828)
Lanice conchilega (Pallas, 1766)
Loimia sp.
Nicolea sp. juv.
Nicolea venustula (Montagu, 1819)
Nicolea zostericola (Oersted, 1844)
Phisidia aurea Southward, 1956
Pista cristata (O F Müller, 1776)
Polycirrinae indet.
Amaena trilobata (M Sars, 1863)
Lysilla loveni Malmgren, 1866
Polycirrus spp.
Polycirrus aurantiacus Grube, 1860
Polycirrus haematodes (Claparède, 1864)
Polycirrus medusa? Grube, 1850
Polycirrus norvegicus Wollebaek, 1912
?*Streblosoma* spp.
Thelepus sp. juv.
Thelepus cincinnatus (Fabricius, 1780)
Thelepus setosus (Quatrefages, 1866)
Sabellidae
Sabellidae indet. juv.
Fabriciinae juv.
Branchiomma bombyx (Dalyell, 1853)
Chone sp. juv.
Chone filicaudata Southern, 1914
Demonax torulis Knight-Jones & Walker, 1985
Sabellinae juv.
Jasmineira caudata Langerhans, 1880
Jasmineira elegans Saint-Joseph, 1894
Sabella sp.
Sabella discifera Grube, 1874

**Sabella pavonina* Savigny, 1820
Serpulidae
Serpulidae juv.
Serpulidae indet.
Hydroides sp.
Pomatoceros sp. juv.
Pomatoceros lamarckii (Quatrefages, 1866)
Pomatoceros triqueter (Linnaeus, 1758)
Serpula vermicularis Linnaeus, 1767
Filograna implexa Berkeley, 1827 in Sars, 1851

OLIGOCHAETA
Tubificidae
Tubificidae spp.
Tubificoides benedii? (Udekem, 1855)
Tubificoides pseudogaster? (Dahl, 1960)
Enchytraeidae
Enchytraeidae spp.
Grania sp.

CHELICERATA
PYCNOGONIDA
Nymphonidae
Nymphon brevirostre Hodge, 1863
Ammotheidae
Achelia sp. juv.
Achelia echinata Hodge, 1864
Achelia laevis Hodge, 1864
Endeidae
Endeis spinosa (Montagu, 1808)
Callipallenidae
Callipallene spp. indet.
Callipallene brevirostris (Johnston, 1837)
Callipallene emaciata (Dohrn, 1881)
Phoxichilidiidae
Anoplodactylus petiolatus (Kröyer, 1884)
Anoplodactylus pygmaeus (Hodge, 1864)
Pycnogonidae
Pycnogonum littorale (Ström, 1762)

ARACHNIDA
Acari indet.

CRUSTACEA
Crustacea indet.
CIRRIPEDIA
Verrucidae
Verruca stroemi (O. F. Müller, 1776)
Balanidae
Balanus spp. indet.
Balanus crenatus Brugière, 1789
Balanus ?eburneus Gould, 1841
Balanus ?improvisus Darwin, 1854

LEPTOSTRACA
Nebaliidae
Nebalia bipes (O Fabricius, 1780)

MYSIDACEA
Mysidacea indet. [larvae]
Mysidae
Gastrosaccus indet. juv.
Gastrosaccus spinifer (Goes, 1864)
Mysidopsis gibbosa G O Sars, 1864
Mesopodopsis slabberi (P J van Beneden, 1861)
Paramysis nouveli Labat, 1953
Schistomysis ornata (G. O. Sars, 1864)

AMPHIPODA
Amphipoda indet.
Eusiridae
Apherusa bispinosa (Bate, 1856)
Oedicerotidae
Perioculodes longimanus (Bate & Westwood, 1868)
Pontocrates altamarinus (Bate & Westwood, 1862)
Pontocrates arenarius (Bate, 1858)
Synchelidium maculatum Stebbing, 1906
Pleustidae
Pleustidae indet.
Parapleustes assimilis (G. O. Sars, 1882)
Stenopleustes nodifera (G. O. Sars, 1882)
Amphilochidae
Amphilochus manudens Bate, 1862
Amphilochus neapolitanus Della Valle, 1893
Gitana sarsi Boeck, 1871
Cressidae
Cressa dubia (Bate, 1857)
Stenothoidae
Stenothoe indet. juv.
Stenothoe marina (Bate, 1856)
Stenothoe cf. *monoculoides* (Montagu, 1815)
Urothoidae
Urothoe sp. juv.
Urothoe brevicornis Bate, 1862
Urothoe elegans (Bate, 1856)
Urothoe marina (Bate, 1857)
Urothoe poseidonis Reibisch, 1905
Phoxocephalidae
Harpinia crenulata (Boeck, 1871)
Harpinia pectinata G. O. Sars, 1891
Parametaphoxus fultoni (T Scott, 1890)
Lysianassidae
Lysianassidae indet.
Acidostoma obesum (Bate & Westwood, 1861)
Hippomedon denticulatus (Bate, 1857)
Lepidepecreum longicorne (Bate & Westwood, 1861)
Lysianassa ceratina (Walker, 1889)
Orchomene nanus (Kröyer 1846)
Socarnes erythrophthalmus Robertson, 1892
Tmetonyx similis (G. O. Sars, 1891)
Argissidae
Argissa hamatipes (Norman, 1869)
Iphimediidae
Iphimedia eblanae Bate, 1857
Iphimedia minuta (G. O. Sars, 1882)
Liljeborgiidae
Listriella mollis Myers & McGrath, 1983
Dexaminidae
Atylus sp. juv.
Atylus falcatus Metzger, 1871
Atylus swammerdamei (H. Milne-Edwards, 1830)
Atylus vedlomensis (Bate & Westwood, 1862)
Guernea coalita (Norman, 1868)
Tritaea gibbosa (Bate, 1862)
Ampeliscidae
Ampelisca sp. juv.
Ampelisca brevicornis (Costa, 1853)
Ampelisca diadema (A. Costa, 1853)
Ampelisca spinipes Boeck, 1861
Ampelisca tenuicornis Liljeborg, 1855
Ampelisca typica (Bate, 1856)
Pontoporeiidae
Bathyporeia spp. indet.
Bathyporeia elegans Watkin, 1938

Bathyporeia guilliamsoniana (Bate, 1856)
Bathyporeia nana Toulmond, 1966
Bathyporeia pelagica (Bate, 1856)
Bathyporeia pilosa Lindström, 1855
Bathyporeia tenuipes Meinert, 1877
Haustoriidae
Haustorius arenarius (Slabber, 1769)
Gammaridae
Gammarus salinus Spooner, 1947
Melphidippidae
Megaluropus agilis Hoek, 1889
Melphidippa goesi Stebbing, 1899
Melphidippella macra (Norman, 1869)
Melitidae
Melitidae sp. indet
Abludomelita obtusata (Montagu, 1813)
Ceradocus semiserratus (Bate, 1862)
Cheirocratus spp. [females]
Cheirocratus assimilis (Liljeborg, 1852)
Cheirocratus sundevallii (Rathke, 1843)
Elasmopus rapax Costa, 1853
Eriopisa elongata (Bruzelius, 1859)
Maera sp. juv.
Maera othonis (H. Milne Edwards, 1830)
Maerella tenuimana (Bate, 1862)
Melita spp. indet.
Melita dentata (Kröyer, 1842)
Melita hergensis Reid, 1939
Melita palmata (Montagu, 1804)
Ampithoidae
Ampithoe spp. indet.
Ampithoe rubricata (Montagu, 1808)
Isaeidae
Gammaropsis spp. indet.
Gammaropsis cornuta (Norman, 1869)
Gammaropsis maculata (Johnston, 1828)
Gammaropsis nitida (Stimpson, 1853)
Gammaropsis palmata (Stebbing & Robertson, 1891)
Microprotopus maculatus Norman, 1867
Photis juv. indet.
Photis longicaudata (Bate & Westwood, 1862)
Photis reinhardi Kröyer, 1842
Ischyroceridae
Ischyroceridae indet.
Ericthonius brasiliensis (Dana, 1852)
Ericthonius punctatus (Bate, 1857)
Ischyrocerus anguipes Kröyer, 1838
Jassa spp. indet.
Jassa falcata (Montagu, 1808)
Microjassa cumbrensis (Stebbing & Robertson, 1891)
Parajassa pelagica (Leach, 1814)
Aoridae
Aoridae indet.
Aora sp.
Aora gracilis (Bate, 1857)
Autonoe longipes (Liljeborg, 1852)
Leptocheirus sp. juv.
Leptocheirus hirsutimanus (Bate, 1862)
Leptocheirus pectinatus (Norman, 1869)
Corophiidae
Corophium indet. juv.
Corophium crassicorne Bruzelius, 1859
Corophium insidiosum Crawford, 1937
Corophium sextonae Crawford, 1937
Siphonoecetes kroyeranus Bate, 1856
Siphonoecetes striatus Myers & McGrath, 1979
Unciola crenatipalma (Bate, 1862)
Unciola planipes Norman, 1867

Podoceridae
Podoceridae indet.
Dyopedos monacanthus (Metzger, 1875)
Caprellidae
Caprellidae juv.
Caprella erethizon Mayer, 1901
Pariambus typicus (Kröyer, 1845)
Phtiscidae
Phtisica marina Slabber, 1769
Pseudoprotella phasma (Montagu, 1804)
Hyperiidae
Hyperiidae indet.
Hyperia galba (Montagu, 1813)

ISOPODA
Gnathiidae
Gnathia spp. indet.
Gnathia dentata G. O. Sars, 1871
Gnathia oxyuraea (Liljeborg)
Anthuridae
Anthura gracilis (Montagu, 1808)
Cirolanidae
Cirolana sp. indet.
Cirolana borealis Liljeborg, 1851
Cirolana cranchii Leach, 1818
Eurydice pulchra Leach, 1815
Eurydice spinigera Hansen, 1890
Janiridae
Janira maculosa Leach, 1813
Munnidae
Munna sp.
Munna minuta Hansen, 1916
Idoteidae
**Idotea linearis* (Pennant, 1777)
Idotea neglecta G O Sars, 1897
Arcturidae
Arcturella dilatata (G O Sars, 1882)

TANAIDACEA
Paratanaidae
Leptochelia dubia (Kröyer, 1842)
Anarthruridae
Pseudoparatanais batei (G O Sars, 1882)
Tanaopsis graciloides (Liljeborg, 1864)
Nototanaidae
Tanaissus lilljeborgi Stebbing, 1891

CUMACEA
Bodotriidae
Cumopsis fagei Bacescu, 1958
Cumopsis goodsiri (van Beneden, 1861)
Vauntompsonia cristata Bate, 1858
Bodotria sp. juv.
Bodotria arenosa (Goodsir, 1842)
Bodotria pulchella (G. O. Sars, 1879)
Bodotria scorpioides (Montagu, 1804)
Iphinoe trispinosa (Goodsir, 1843)
Leuconiidae
Eudorella truncatula (Bate, 1856)
Nannastacidae
Campylaspis ?glabra G. O. Sars, 1879
Cumella pygmaea G. O. Sars, 1865
Nannastacus unguiculatus (Bate, 1859)
Pseudocumatidae
Pseudocumatidae sp. juv.
Pseudocuma gilsoni Bacescu, 1950
Pseudocuma longicornis (Bate, 1858)
Pseudocuma similis G. O. Sars, 1900

Diastylidae
Diastylis spp. indet.
Diastylis bradyi Norman, 1879
Diastylis rathkei (Kröyer, 1841)
DECAPODA
Caridea indet. juv.
Palaemonidae
Palaemonidae juv.
Hippolytidae
Hippolytidae juv.
Eualus gaimardii (H Milne-Edwards, 1837)
Eualus ?pusiolus (Kröyer, 1841)
Hippolyte varians Leach, 1814
Thoralus cranchii (Leach, 1817)
Processidae
Processidae indet. juv.
Processa canaliculata Leach, 1815
Processa nouveli holthuisi Al-Adhub & Williamson, 1975
Pandalidae
Pandalidae juv.
Pandalina brevirostris (Rathke, 1837)
Pandalus montagui Leach, 1814
Crangonidae
Crangonidae juv.
**Crangon allmanni* Kinahan, 1857
Crangon crangon (Linnaeus, 1758)
Crangon bispinosus neglecta (Hailstone, 1835)
Crangon ?fasciatus (Risso, 1816)
Crangon trispinosus (Hailstone, 1835)
Pontophilus sp.
Callianassidae
Callianassidae juv.
Callianassa subterranea (Montagu, 1808)
Upogebiidae
Upogebia sp. indet. juv.
Upogebia deltaura (Leach, 1815)
Anomura juv.
Diogenidae
Diogenes pugilator (Roux, 1829)
Paguridae
Paguridae indet. juv.
Anapagurus hyndmanni (Bell, 1845)
Pagurus bernhardus (Linnaeus, 1758)
**Pagurus cuanensis* Bell, 1845
**Pagurus prideaux* Leach, 1815
Pagurus pubescens Kröyer, 1838
Galatheidae
Galatheidae indet. juv.
Galathea dispersa Bate, 1859
Galathea intermedia Liljeborg, 1851
Munida rugosa (Fabricius, 1775)
Porcellanidae
Pisidia longicornis (Linnaeus, 1767)
Leucosiidae
Ebalia spp. indet.
**Ebalia cranchii* Leach, 1817
Ebalia granulosa H Milne-Edwards, 1837
Ebalia tuberosa (Pennant, 1777)
Ebalia tumefacta (Montagu, 1808)
Oxyrhyncha indet.
Majidae
Maja squinado (Herbst, 1788)
Hyas sp. juv.
Hyas araneus (Linnaeus, 1758)
**Hyas coarctatus* Leach, 1815
Inachus dorsettensis (Pennant, 1777)
Inachus leptochirus Leach, 1817
Inachus phalangium (Fabricius, 1775)
Macropodia spp. juv.
Macropodia deflexa Forest, 1978
Macropodia linaresi Forest & Z. Alvarez, 1964
Macropodia rostrata (Linnaeus, 1761)
Eurynome aspera (Pennant, 1777)
Eurynome spinosa Hailstone, 1835
Corystidae
Corystes cassivelaunus (Pennant, 1777)
Atelecyclidae
Atelecyclus rotundatus (Olivi, 1792)
Thiidae
Thia scutellata (Fabricius, 1793)
Pirimelidae
Pirimela denticulata (Montagu, 1808)
Cancridae
**Cancer pagurus* Linnaeus, 1758
Portunidae
Liocarcinus indet. juv.
Liocarcinus depurator (Linnaeus, 1758)
Liocarcinus holsatus (Fabricius, 1798)
Liocarcinus marmoreus (Leach, 1814)
Liocarcinus pusillus (Leach, 1815)
**Necora puber* (Linnaeus, 1767)
Carcinus maenas juv. (Linnaeus, 1758)
Portumnus latipes (Pennant, 1777)
Goneplacidae
**Goneplax rhomboides* (Linnaeus,1758)
Xanthidae
*Xanthidae indet.
Monodaeus couchi (Couch, 1851)
Pilumnus hirtellus (Linnaeus, 1761)
Xantho pilipes A Milne-Edwards, 1867
Grapsidae
Brachynotus sexdentatus (Risso, 1826)
Pinnotheridae
Pinnotheres pisum (Linnaeus, 1767)

MOLLUSCA
POLYPLACOPHORA
Chiton juv.
Leptochiton asellus (Gmelin, 1791)

GASTROPODA
Gastropoda indet.
Fissurellacea
Emarginula fissura (Linnaeus, 1758)
Diodora graeca (Linnaeus, 1758)
Trochacea
Tricolia pullus (Linnaeus, 1758)
Trochidae indet.
Gibbula tumida (Montagu, 1803)
Jujubinus montagui (W. Wood, 1828)
Calliostoma zizyphinum (Linnaeus, 1758)
Dikoleps nitens (Philippi, 1844)
Cerithiacea
Cerithiopsis tubercularis (Montagu, 1803)
Rissoacea
Rissoidae indet.
Rissoa parva (da Costa, 1778)
Alvania punctura (Montagu, 1803)
Obtusella alderi (Jeffreys, 1858)
Onoba semicostata (Montagu, 1803)
Pusillina inconspicua (Alder, 1844)
Hyala vitrea (Montagu, 1803)
Caecum glabrum (Montagu, 1803)
Tornus subcarinatus (Montagu, 1803)
Strombacea

**Aporrhais pespelecani* (Linnaeus, 1758)
Calyptraeacea
**Crepidula fornicata* (Linnaeus, 1758)
Naticacea
Naticidae juv.
Polinices pulchellus (Risso, 1826)
Polinices catena (da Costa, 1778)
Epitoniacea
Aclis minor (Brown, 1827)
Graphis albida (Kanmacher in G Adams, 1798)
Eulimacea
Eulimidae indet.
Eulima bilineata Alder, 1848
Melanella alba (da Costa, 1778)
Vitreolina philippi (Rayneval & Ponzi, 1854)
Muricacea
Ocenebra erinacea (Linnaeus, 1758)
Buccinum undatum Linnaeus, 1758
**Colus gracilis* (da Costa, 1778)
Colus jeffreysianus (Fischer, 1868)
Hinia juv.
Hinia incrassata (Ström, 1768)
Conacea
Mangelia nebula (Montagu, 1803)
**Comarmondia gracilis* (Montagu, 1803)
Raphitoma linearis (Montagu, 1803)
Pyramidellacea
Odostomia plicata (Montagu, 1803)
Odostomia turrita Hanley, 1844
Odostomia unidentata (Montagu, 1803)
Brachystomia eulimoides (Hanley, 1844)
Chrysallida obtusa (Brown, 1827)
Noemiamea dolioliformis (Jeffreys, 1848)
Ondina diaphana (Jeffreys, 1848)
Partulida spiralis (Montagu, 1803)
Turbonilla acuta (Donovan, 1804)
Opisthobranchia juv.
Acteonacea
Acteon tornatilis (Linnaeus, 1758)
Philinacea
Cylichna cylindracea (Pennant, 1777)
Philine indet.
Philine aperta (Linnaeus, 1767)
Diaphanacea
Diaphana minuta Brown, 1827
Retusacea
Retusa juv.
Retusa truncatula (Bruguière, 1792)
Nudibranchia
Nudibranchia indet.
Doto indet.
Okenia sp.
Dorididae indet.
**Aeolidia papillosa* (Linnaeus, 1761)

SCAPHOPODA
Antalis juv.

PELECYPODA
Bivalve indet.
Nuculacea
Nuculacea juv.
Nucula nitidosa Winckworth, 1930
Nucula nucleus (Linnaeus, 1758)
Limopsacea
Glycymeris glycymeris (Linnaeus, 1758)
Mytilacea
Mytilidae juv.
Mytilus edulis Linnaeus, 1758
Modiolus adriaticus (Lamarck, 1819)
Modiolus modiolus (Linnaeus, 1758)
Modiolula phaseolina (Philippi, 1844)
Modiolarca tumida (Hanley, 1843)
Musculus discors (Linnaeus, 1767)
Rhomboidella prideauxi (Leach, 1815)
Limacea
Limatula subauriculata (Montagu, 1808)
Pectinacea
Pectinidae juv.
Pecten maximus (Linnaeus, 1758)
Aequipecten opercularis (Linnaeus, 1758)
Palliolum tigerinum (O F Müller, 1776)
Anomiacea
Anomiidae indet.
Heteranomia squamula (Linnaeus, 1758)
Lucinacea
Thyasira flexuosa (Montagu, 1803)
Diplodonta rotundata (Montagu, 1803)
Galeommatacea
Semierycina nitida (Turton, 1822)
Montacutidae indet.
Montacuta substriata (Montagu, 1808)
Tellimya ferruginosa (Montagu, 1808)
Mysella bidentata (Montagu, 1803)
Cyamiacea
'Mysella' obliquata (Chaster, 1897)
Astartacea
Goodallia triangularis (Montagu, 1803)
Cardiacea
Acanthocardia echinata (Linnaeus, 1758)
Parvicardium juv.
Parvicardium ovale (G B Sowerby II, 1840)
Parvicardium scabrum (Philippi, 1844)
**Laevicardium crassum* (Gmelin, 1791)
Mactracea
Mactra stultorum (Linnaeus, 1758)
Spisula indet.
Spisula juv.
Spisula elliptica (Brown, 1827)
Spisula solida (Linnaeus, 1758)
Spisula subtruncata (da Costa, 1778)
Lutraria lutraria (Linnaeus, 1758)
Solenacea
Ensis spp.
Ensis arcuatus (Jeffreys, 1865)
Ensis ensis (Linnaeus, 1758)
**Ensis siliqua* (Linnaeus, 1758)
Pharus legumen (Linnaeus, 1758)
Phaxas pellucidus (Pennant, 1777)
Tellinacea
Tellinidae indet.
Angulus tenuis (da Costa, 1778)
Arcopagia crassa (Pennant, 1777)
Fabulina fabula (Gmelin, 1791)
Moerella donacina (Linnaeus, 1758)
Moerella pygmaea (Lovén, 1846)
Donax vittatus (da Costa, 1778)
Gari tellinella (Lamarck, 1818)
Gari fervensis (Gmelin, 1791)
Abra sp. juv.
Abra alba (W Wood, 1802)
Abra prismatica (Montagu, 1808)
Veneracea
Veneracea juv.
**Circomphalus casina* (Linnaeus, 1758)
Gouldia minima (Montagu, 1803)

Chamelea gallina (Linnaeus, 1758)
Clausinella fasciata (da Costa, 1778)
Timoclea ovata (Pennant, 1777)
Tapes rhomboides (Pennant, 1777)
Dosinia exoleta (Linnaeus, 1758)

Myacea
Mya truncata Linnaeus, 1758
Sphenia binghami Turton, 1822
Corbula gibba (Olivi, 1792)

Hiatellacea
Hiatella arctica (Linnaeus, 1767)

Thraciacea
Thracia phaseolina (Lamarck, 1818)
Thracia villosiuscula (Macgillivray, 1827)
Cochlodesma praetenue (Pulteney, 1799)

CEPHALOPODA

Sepioidea
Sepiola atlantica Orbigny in Férussac & Orbigny, 1840

Teuthoidea
******Alloteuthis subulata* (Lamarck, 1798)

BRACHIOPODA
Gwynia capsula (Jeffreys, 1859)

BRYOZOA

CYCLOSTOMATIDA

Crisiidae
Crisia spp. indet.
Crisia aculeata Hassall, 1841
Crisia denticulata (Lamarck, 1816)
Crisia eburnea (Linnaeus, 1758)

Tubuliporidae
Tubulipora sp. indet.
Tubulipora liliacea (Pallas, 1766)

Diastoporidae
Plagioecia patina (Lamarck, 1816)
Plagioecia sarniensis (Norman, 1864)

Annectocymidae
Entalophoroecia deflexa (Couch, 1842)

Lichenoporidae
Disporella hispida (Fleming, 1828)

CTENOSTOMATIDA

Alcyonidiidae
Alcyonidium sp. indet.
Alcyonidium diaphanum (Hudson, 1762)
Alcyonidium gelatinosum (Linnaeus, 1761)
Alcyonidium mamillatum Alder, 1857
Alcyonidium mytili Dalyell, 1848
Alcyonidium parasiticum (Fleming, 1828)

Arachnidiidae
?*Arachnidium fibrosum* Hincks, 1880
Arachnidium hippothooides Hincks, 1859

Nolellidae
Nolella dilatata (Hincks, 1860)
Anguinella palmata van Beneden, 1845

Triticellidae
Farrella repens (Farre, 1837)

Hypophorellidae
?*Hypophorella expansa* Ehlers, 1876

Penetrantiidae
?*Penetrantia concharum* Silén, 1946

Vesiculariidae
Vesicularia spinosa (Linnaeus, 1767)
Amathia lendigera (Linnaeus, 1758)
Bowerbankia spp. indet.
Bowerbankia citrina (Hincks, 1877)
Bowerbankia gracilis Leidy, 1855
Bowerbankia imbricata (Adams, 1798)
Bowerbankia pustulosa (Ellis & Solander, 1786)

CHEILOSTOMATIDA

Aeteidae
Aetea anguina (Linnaeus, 1758)
Aetea sica (Couch, 1844)

Scrupariidae
Scruparia ambigua (d'Orbigny, 1841)
Scruparia chelata (Linnaeus, 1758)

Eucrateidae
Eucratea loricata (Linnaeus, 1758)

Membraniporidae
Conopeum reticulum (Linnaeus, 1767)

Electridae
Electra pilosa (Linnaeus, 1767)
Pyripora catenularia (Fleming, 1828)

Flustridae
Flustra foliacea (Linnaeus, 1758)

Calloporidae
Callopora discreta (Hincks, 1862)
Callopora dumerelli (Audouin, 1826)
Amphiblestrum auritum (Hincks, 1877)
Membraniporella nitida (Johnston, 1838)

Bugulidae
Bugula avicularia (Linnaeus, 1758)
Bugula flabellata (Thompson in Gray, 1848)
Bugula plumosa (Pallas, 1766)
Bugula turbinata Alder, 1857
Bicellariella ciliata (Linnaeus, 1758)

Candidae
Scrupocellaria scrupea Busk, 1852
Scrupocellaria scruposa (Linnaeus, 1758)

Setosellidae
Setosella vulnerata (Busk, 1860)

Cellariidae
Cellaria fistulosa (Linnaeus, 1758)

Cribrilinidae
Cribrilina annulata (Fabricius, 1780)
Cribrilina punctata (Hassall, 1841)
Puellina spp. indet.
Puellina innominata (Couch, 1844)
Puellina praecox? Bishop & Househam, 1987
Puellina setosa (Waters, 1899)

Chorizoporidae
Chorizopora brongniartii (Audouin, 1826)

Escharellidae
Escharella immersa (Fleming, 1828)
Escharella variolosa (Johnston, 1838)
Escharella ventricosa (Hassall, 1842)

Adeonidae
Reptadeonella violacea (Johnston, 1847)

Teuchoporidae
Phylactella labrosa (Busk, 1854)

Schizoporellidae
Schizoporella hesperia Hayward & Ryland, 1995
Escharina johnstoni (Quelch, 1884)

Smittinidae
Schizomavella sp.
Schizomavella auriculata (Hassall, 1842)
Schizomavella linearis (Hassall, 1841)

Microporellidae
Microporella ciliata (Pallas, 1766)
Fenestrulina malusii (Audouin, 1826)

Celleporidae

Cellepora pumicosa (Pallas, 1766)
Celleporina hassallii (Johnston, 1847)
Turbicellepora sp.
Turbicellepora avicularis (Hincks, 1860)

PHORONIDA
Phoronidae
Phoronis spp. indet.
Phoronis ?hippocrepia Wright, 1856
Phoronis muelleri Selys-Longchamps, 1903

ECHINODERMATA
CRINOIDEA
Crinoidea spp.

ASTEROIDEA
Asteroidea indet. juv.
Luidiidae
Luidia ciliaris (Philippi, 1837)
Luidia sarsi Duben & Koren, 1846
Astropectinidae
Astropecten irregularis (Pennant, 1777)
Solasteridae
Solasteridae spp.
**Crossaster papposus* (Linnaeus, 1767)
Asteriidae
Asterias rubens Linnaeus, 1758
Marthasterias glacialis (Linnaeus, 1758)

OPHIUROIDEA
Ophiuroidea indet. juv.
Ophiotrichidae
Ophiothrix fragilis (Abildgaard, 1789)
Ophiactidae
Ophiactis balli (Thompson, 1840)
Amphiuridae
Amphiuridae indet. juv.
Amphiura brachiata (Montagu, 1804)
Amphiura chiajei Forbes, 1843
Amphiura filiformis (O. F. Muller, 1776)
Amphipholis squamata (Chiaje, 1829)
Ophiuridae
Ophiura indet. juv.
Ophiura affinis Lutken, 1858
Ophiura albida Forbes, 1839
Ophiura ophiura (Linnaeus, 1758)

ECHINOIDA
Echinoida juv.
Parechinidae
Psammechinus miliaris (Gmelin, 1778)
Echinidae
Echinus elegans Duben & Koren, 1844
Echinus esculentus Linnaeus, 1758
Fibulariidae
Echinocyamus pusillus (O. F. Muller, 1776)
Spatangoida indet. juv.
Spatangidae
Spantagus purpureus O F Müller, 1776
Loveniidae
Echinocardium cordatum (Pennant, 1777)
Echinocardium flavescens (O F Müller, 1776)

HOLOTHURIOIDEA
Holothurioidea indet.
Phyllophoridae
Neopentadactyla mixta (Ostergren, 1898)
Thyone fusus (O. F. Muller, 1776)
Synaptidae
Leptosynapta sp. juv.
Leptosynapta inhaerens (O. F. Muller, 1776)
Labidoplax buskii (MacIntosh, 1866)

HEMICHORDATA
ENTEROPNEUSTA
Enteropneusta spp.

CEPHALOCHORDATA
Branchiostoma lanceolatum (Pallas, 1774)

TUNICATA
ENTEROGONA
Polyclinidae
Aplidium glabrum (Verrill, 1871)
Didemnidae
Didemnidae indet.
Ascidiidae
Ascidiidae indet.
Ascidiella aspersa (O.F. Müller, 1776)
Ascidiella scabra (O.F. Müller, 1776)

PLEUROGONA
Styelidae
Styela coriacea (Alder & Hancock, 1848)
Polycarpa fibrosa? (Stimpson, 1852)
Polycarpa pomaria (Savigny, 1816)
Dendrodoa grossularia (van Beneden, 1846)
Botrylloides leachi (Savigny, 1816)
Pyuridae
Pyura tessellata (Forbes, 1848)
Molgulidae
Molgula spp. indet.?
Molgula citrina Alder & Hancock, 1848
Molgula complanata Alder & Hancock, 1870
Molgula manhattensis (de Kay, 1843)
Molgula occulta Kupffer, 1875
Eugyra arenosa (Alder & Hancock, 1848)

PISCES
CHONDRICHTHYES
Scyliorhinidae
**Scyliorhinus canicula* (Linnaeus, 1758)
Rajidae
**Raja clavata* Linnaeus, 1758
**Raja microocellata* Montagu, 1818
**Raja montagui* Fowler, 1910

OSTEICHTHYES
Clupeidae
**Sprattus sprattus* (Linnaeus, 1758)
Gobiesocidae
**Diplecogaster bimaculata* (Bonaterre, 1788)
Lophiidae
**Lophius piscatorius* Linnaeus, 1758
Gadidae
**Gadus morhua* Linnaeus, 1758
**Gaidropsarus vulgaris* (Cloquet, 1824)
**Merlangius merlangus* (Linnaeus, 1758)

Trisopterus luscus (Linnaeus, 1758)
Trisopterus minutus (Linnaeus, 1758)
Zeidae
Zeus faber Linnaeus, 1758
Syngnathidae
Entelurus aequoreus (Linnaeus, 1758)
Syngnathus rostellatus Nilsson, 1855
Triglidae
Eutrigla gurnardus (Linnaeus, 1758)
Trigla lucerna Linnaeus, 1758
Agonidae
Agonus cataphractus (Linnaeus, 1758)
Trachinidae
Echiichthys vipera Cuvier, 1829
Ammodytidae
Ammodytes tobianus Linnaeus, 1758
Hyperoplus immaculatus (Corbin, 1950)
Hyperoplus lanceolatus (Le Sauvage, 1824)
Callionymidae
Callionymus lyra Linnaeus, 1758
Callionymus reticulatus Valenciennes, 1837
Gobiidae
Aphia minuta (Risso, 1810)
Pomatoschistus minutus (Pallas, 1770)
Pleuronectiformes juv.
Bothidae
Arnoglossus laterna (Walbaum, 1792)
Pleuronectidae
Limanda limanda (Linnaeus, 1758)
Microstomus kitt (Walbaum, 1792)
Pleuronectes platessa Linnaeus, 1758
Soleidae
Buglossidium luteum (Risso, 1810)
Microchirus variegatus (Donovan, 1808)
Solea solea (Linnaeus, 1758)

Appendix 7

Abundance Data for all Biological Sample Stations

**Stations in italics are qualitative*

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
POLYCHAETA																																			
Pisionidae																																			
Pisione remota	P0015	-	-	7	105	2	-	9	33	29	56	-	-	-	-	-	12	-	1	-	-	1	-	79	-	127	7	-	-	6	-	23	1	2	1
Aphroditidae																																			
Aphrodita aculeata	P0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hermonia hystrix	P0021	5	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	2	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Polynoidae																																			
Acholoe squamosa	P0029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte assimilis	P0031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte pellucida	P0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gattyana cirrosa	P0049	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	3	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-
Harmothoinae sp. juv		4	-	8	24	19	11	-	3	4	-	94	46	26	2	42	5	7	33	150	334	11	-	-	5	-	-	73	25	45	94	73	32	50	1
Harmothoinae sp. indet.		-	-	-	-	-	7	-	-	-	4	-	12	5	-	7	9	3	6	4	-	11	4	-	-	-	-	20	8	41	7	9	-	-	-
Malmgrenia sp.		-	-	-	1	4	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-
Malmgrenia arenicolae		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-
Harmothoe sp.	P0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe andreapolis	P0051	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	1	1	-	-	-	1	1	-	1	1	2	-	-	-	-
Malmgrenia castanea?	P0055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe extenuata	P0058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe fraserthomsoni	P0060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Harmothoe glabra	P0062	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe imbricata ?	P0064	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Harmothoe impar ?	P0065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Harmothoe pagenstecheri		-	-	-	-	-	1	-	-	-	-	2	1	1	-	1	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	1	-	1	-
Malmgrenia marphysae	P0068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	10	-	4	-	-	-	-	-	-	-	-	3	1	-	-	-
Lepidonotus squamatus	P0082	-	-	-	-	1	4	-	-	-	-	36	16	2	-	10	-	1	1	53	39	2	-	-	-	-	-	4	-	3	7	9	22	5	-
Polynoe scolopendrina	P0084	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pholoidae																																			
Pholoe sp. juv.	P0091	656	-	1	-	8	7	-	-	-	-	-	-	-	1	25	-	-	-	-	-	-	-	-	-	-	-	-	5	10	7	26	5	75	1
Pholoe sp. B	P0091	-	-	-	-	5	13	-	1	-	-	122	59	21	1	90	6	9	41	165	72	7	10	-	2	-	-	61	2	6	15	1	-	-	-
Pholoe tuberculata	P0095	273	-	1	-	-	2	-	-	-	-	9	5	-	-	8	-	-	2	5	8	1	-	-	-	-	-	-	2	-	-	-	-	-	-
Sigalionidae																																			
Sigalionidae juv.	P0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sigalion mathildae	P0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sthenelais sp. indet.	P0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sthenelais boa	P0107	1	-	-	-	2	-	-	-	-	-	-	3	-	-	1	-	-	21	29	10	-	-	-	-	-	-	1	-	-	9	-	-	19	-
Sthenelais limicola	P0109	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phyllodocidae																																			
Phyllodocidae sp. indet.	P0114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
Eteone sp. indet.	P0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eteone cf. longa	P0118	37	-	1	-	-	-	-	-	-	-	2	-	-	-	1	-	-	6	2	4	2	-	-	-	2	-	-	3	2	3	9	-	4	5
Hesionura elongata	P0122	-	1	10	6	-	-	78	177	263	116	5	-	-	8	-	24	-	28	-	-	57	15	155	3	117	41	-	3	16	7	74	10	59	12
Eteone foliosa	P0124	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysta picta	P0127	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Mystides caeca	P0130	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	2	-	-	-	-	-
Pseudomystides sp.	P0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Pseudomystides limbata	P0136	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-
Anaitides groenlandica	P0141	67	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides cf. longipes	P0143	-	-	1	-	1	1	-	-	-	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides mucosa	P0145	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides rosea	P0146	3	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2
Eulalia sp. A	P0150	-	-	-	-	-	1	-	1	-	-	-	-	3	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	-	-	2	-	-	-
Eulalia bilineata	P0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Eulalia expusilla	P0153	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia mustela	P0155	-	-	12	1	1	13	-	10	1	3	-	-	5	4	3	10	1	1	-	2	12	1	5	-	1	-	-	9	17	5	9	-	-	-
Eulalia ornata	P0156	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia tripunctata	P0159	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eumida sp. juv.	P0163	1	-	7	-	25	4	-	1	-	-	-	-	2	3	6	3	27	13	9	1	4	19	-	52	1	-	10	2	10	6	7	1	12	1
Eumida bahusiensis	P0164	33	-	-	-	36	4	-	-	-	-	-	-	-	5	8	4	48	4	7	2	1	38	1	7	1	-	16	-	-	8	1	-	3	-
Eumida ockelmanni	P0165	-	-	-	-	-	-	-	-	-	-	17	8	-	1	35	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	2	-	-
Eumida sanguinea	P0167	-	-	-	1	-	3	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	4	2	11	-	2	-	-	-
Paranaitis kosteriensis	P0176	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Phyllodoce sp.	P0178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pterocirrus macroceros	P0188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Glyceridae																																			
Glycera sp. juv.	P0255	-	-	8	5	14	3	-	2	6	11	*1*	-	7	3	3	9	-	1	5	-	-	1	11	2	1	1	-	1	24	-	19	*3*	16	2
Glycera sp. indet.	P0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycera alba	P0256	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	1	-	3	*17*	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Glycera celtica	P0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Glycera gigantea	P0259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-
Glycera lapidum	P0260	-	-	5	22	7	16	2	14	4	5	*10*	-	26	2	11	35	12	8	7	*6*	11	10	1	-	13	1	*1*	13	29	14	35	-	11	3
Glycera oxycephala	P0262	-	6	1	-	2	2	6	2	8	7	*1*	-	-	3	-	3	1	1	-	-	-	-	3	1	7	6	-	-	3	-	7	*1*	5	3
Glycera tridactyla	P0265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniadidae																																			
Goniadidae juv.	P0266	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Glycinde nordmanni	P0268	-	-	-	-	1	1	-	-	-	-	*1*	-	2	-	-	1	1	-	-	*3*	-	1	-	-	-	-	-	3	-	2	1	-	-	-
Goniada sp. juv.	P0269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniada emerita	P0270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-
Goniada maculata	P0271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniadella sp. juv.	P0274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Goniadella gracilis	P0276	-	-	2	5	-	-	-	-	1	5	-	-	1	-	-	-	-	1	-	-	2	-	3	-	-	-	-	11	20	-	8	-	1	-
Sphaerodoridae																																			
Commensodorum commensalis	P0280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerodoropsis sp.	P0285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerodorum gracilis	P0291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hesionidae																																			
Hesionidae juv.	P0293	-	-	1	-	-	-	-	-	-	-	-	*5*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-
Gyptis sp. juv.	P0297	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	1	-	-	-	-	-	-	-	-	5	10	2	-	-	-	-
Gyptis rosea	P0301	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
Psamathe fusca	P0305	-	-	-	2	-	-	-	-	-	-	*5*	-	-	-	-	1	-	-	2	*1*	-	-	-	-	-	-	*2*	2	6	-	11	-	-	-
Nereimyra punctata	P0311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Podarke pallida	P0317	-	-	-	3	-	-	-	-	-	1	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	4	14	-	8	-	-	-
Podarkeopsis capensis	P0319	21	-	-	-	4	-	-	-	-	-	-	-	3	-	1	2	1	1	4	-	2	3	-	1	-	-	-	-	-	2	-	-	-	1
Syllidia armata	P0321	-	-	-	-	-	3	-	-	-	-	*10*	-	-	-	6	-	2	-	19	*4*	-	-	-	-	-	-	*2*	-	1	-	-	-	-	-
Hesionides maxima	P0325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus sp.	P0326	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus fragilis	P0330	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-
Microphthalmus listensis	P0331	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Microphthalmus similis	P0333	-	-	2	8	1	1	1	6	2	5	-	-	-	-	-	27	-	-	-	-	4	-	70	1	11	58	-	-	1	-	-	-	-	5
Syllidae																																			
Ehlersia sp. A	P0348	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis cornuta	P0349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ehlersia ferrugina	P0350	-	-	-	-	-	-	-	-	-	-	*2*	*8*	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. B	P0359	-	-	-	1	-	2	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	*2*	-	-	-	-	-	-	-
Syllis sp. E	P0359	-	-	1	2	1	42	1	5	1	-	-	-	1	-	-	-	-	2	-	-	-	-	-	1	3	-	-	19	123	3	45	*1*	-	2
Syllis sp. H	P0359	-	-	1	4	-	2	2	9	4	1	-	-	1	1	-	-	-	6	-	-	1	-	1	-	8	-	-	3	19	1	23	*2*	1	2
Syllis sp. L	P0359	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Syllis sp. juv.	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Syllis variegata	P0371	-	-	-	-	-	-	-	-	-	-	*2*	*4*	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amblyosyllis madierensis?	P0375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eusyllis blomstrandi	P0380	-	-	6	-	6	41	-	-	-	33	*5*	*1*	7	3	5	5	27	15	9	*133*	6	14	-	-	-	-	*18*	10	73	39	19	*59*	30	20
Eusyllis lamelligera	P0382	-	-	-	-	-	2	-	-	-	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odontosyllis fulgurans	P0387	-	-	2	-	10	3	-	-	-	1	-	-	-	1	-	1	5	6	-	*1*	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Odontosyllis gibba	P0388	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Opisthodonta pterochaeta	P0391	-	-	-	1	-	-	2	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	1	*3*	2	-
Palposyllis prosostoma	P0394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	3	-	-	-
Pionosyllis lamelligera	P0398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-
Streptosyllis sp. A	P0402	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	1	-	-	-	-	-	-	-	-	-
Streptosyllis bidentata	P0403	-	1	15	-	-	3	29	52	55	17	-	-	18	8	1	41	10	22	1	-	28	6	38	8	15	2	-	5	29	7	14	*4*	10	8
Streptosyllis websteri	P0405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Syllides sp. X	P0406	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides sp. Y	P0406	-	-	-	-	3	1	-	2	-	-	*3*	-	1	1	6	3	8	1	5	-	-	3	1	-	-	-	-	3	-	2	-	-	-	1
Syllides indet.	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides benedicti	P0407	-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	1	1	-	-	-	-	-	2	-	-	-	-	1	-	-	3	-	-	-
Brania swedmarki	P0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exogone hebes	P0421	-	-	1	-	22	8	-	18	3	1	*2*	*2*	-	8	17	20	22	10	8	*10*	8	23	2	7	1	1	-	5	1	46	1	*1*	18	3
Exogone naidina	P0422	-	-	2	-	3	4	-	-	-	1	*2*	*2*	1	5	4	4	5	7	2	*3*	1	6	2	-	-	-	-	-	1	4	1	*5*	1	2
Exogone verugera	P0423	-	-	4	1	7	4	-	9	3	-	*12*	*2*	36	74	70	63	49	57	10	*18*	28	29	-	1	1	-	-	3	1	4	3	*1*	38	6
Sphaerosyllis sp. X	P0424	-	-	3	1	-	-	-	-	-	-	*3*	*1*	31	1	4	14	1	4	7	*7*	3	2	1	-	2	-	-	-	5	1	6	-	-	-
Sphaerosyllis sp. Y	P0424	-	-	6	1	-	13	-	-	-	-	*24*	*4*	91	4	12	19	1	-	10	*5*	1	-	1	-	1	-	-	-	8	1	1	*1*	-	-

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Sphaerosyllis bulbosa	P0425	-	-	19	34	1	1	-	-	-	-	2	-	154	-	1	28	-	-	-	-	-	-	6	-	10	-	-	4	17	-	14	-	-	-
Sphaerosyllis erinaceus	P0426	-	-	-	-	-	-	-	-	-	-	1	2	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis hystrix	P0427	-	-	-	1	-	-	-	-	-	-	-	-	39	-	-	3	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis taylori	P0430	-	2	3	2	7	4	1	2	2	1	-	-	12	12	4	13	8	8	9	1	17	14	1	1	1	1	1	2	12	2	7	8	4	6
Sphaerosyllis tetralix	P0431	2	-	-	-	1	1	-	-	-	-	1	1	8	-	7	1	1	1	4	6	1	-	-	-	-	-	-	5	4	2	-	-	-	-
Autolytus juv.	P0434	-	-	-	-	-	-	-	-	-	-	3	1	1	-	4	-	1	2	4	22	1	1	-	-	-	-	-	-	-	3	1	13	2	8
Autolytus indet.	P0434	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	3	-	1	-	2	-
Autolytus indet. stolons	P0434	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1	4	2	1	-	-	-	-	-	-	-	-	-	-	1	1	-
Autolytus alexandri	P0435	-	-	2	-	1	1	-	-	-	-	-	5	-	1	1	-	1	2	2	20	-	4	-	1	-	-	-	-	1	-	-	14	27	-
Autolytus brachycephalus	P0437	-	-	2	-	4	-	-	-	-	-	-	1	-	-	-	-	2	2	2	3	-	2	-	-	-	-	1	1	2	5	-	1	1	1
Autolytus inermis	P0439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
Autolytus langerhansi	P0440	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Autolytus prolifera	P0444	-	-	-	-	5	1	-	-	-	-	3	4	-	-	5	3	1	7	6	31	6	6	-	-	-	-	3	2	1	15	7	28	11	6
Proceraea cornuta	P0452	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	6	-	3	-	-	-	-	1	-	1	-	-	14	-	1
Procerastea halleziana	P0456	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	5	4	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Nereididae																																			
Nereididae sp.	P0458	3	-	1	-	-	1	-	-	-	-	-	-	-	-	3	1	1	1	1	-	-	1	-	-	-	-	-	1	2	2	5	1	2	-
Nereis elitoralis	P0474	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1	1	-	1	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-
Nereis longissima	P0475	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Nereis zonata	P0478	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	2	-	2	-	-	-
Websterinereis glauca	P0487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtyidae																																			
Aglaophamus rubella	P0493	-	-	1	-	1	6	1	1	1	-	-	-	-	2	-	1	1	2	-	-	-	4	1	1	-	1	-	1	-	-	1	2	-	-
Nephtys sp. juv.	P0494	1	-	1	-	-	4	11	-	3	-	-	1	-	3	4	-	3	1	-	-	1	8	-	14	3	2	-	-	-	-	-	1	1	2
Nephtys sp. indet.	P0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys assimilis	P0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys caeca	P0496	-	-	-	-	1	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys cirrosa	P0498	-	-	-	-	10	1	5	5	6	2	-	-	-	4	-	2	1	-	-	-	-	3	3	5	13	4	-	2	-	1	-	5	8	9
Nephtys hombergii	P0499	84	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys hombergii? juv.	P0499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-
Nephtys kersivalensis	P0502	-	-	-	-	-	-	-	-	-	-	44	4	2	-	-	-	-	-	31	66	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Nephtys longosetosa	P0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nephtys pulchra juv.?	P0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicida juv.	P0536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	2	-
Onuphidae																																			
Onuphidae sp. juv.	P0537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Aponuphis bilineata	P0539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-	-	-
Nothria conchylega	P0545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicidae																																			
Eunicidae juv.	P0553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa sp. indet.	P0563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa bellii	P0564	-	-	3	1	7	1	-	-	-	-	1	-	4	7	4	2	8	4	5	2	4	2	-	1	-	-	-	9	10	10	7	-	1	-
Marphysa sanguinea	P0566	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nematonereis unicornis	P0568	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	1	2	-	-	1	-	1	-	-	-	2	-	-	-	-	-	-
Lumbrineridae																																			
Lumbrineridae indet.	P0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineriopsis sp.	P0570	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineris sp. juv.	P0572	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-
Lumbrineris sp. indet.	P0572	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Lumbrineris agastos	P0573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-	-	1
Lumbrineris fragilis	P0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineris gracilis	P0579	-	-	2	1	82	48	-	5	5	1	226	43	19	28	82	26	52	31	124	166	33	34	-	14	6	2	5	52	15	81	5	-	2	-
Lumbrineris latreilli?	P0582	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oenonidae																																			
Oenone iricolor	P0588	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drilonereis filum	P0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Notocirrus scoticus	P0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorvilleidae																																			
?Ophryotrocha sp.	P0613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Ougia spp.	P0625	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Parougia spp.	P0632	-	-	1	-	2	-	-	1	1	-	-	-	1	3	1	2	1	3	-	-	2	5	-	-	-	-	-	6	8	-	-	-	1	1
Protodorvillea kefersteini	P0638	-	-	9	10	6	12	-	1	-	1	9	3	15	-	3	27	6	16	16	6	10	5	19	8	48	2	1	19	19	50	36	-	-	2
Schistomeringos neglecta	P0642	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	2	-	2	-	-	1
Schistomeringos rudolphi	P0643	-	-	-	-	1	5	-	-	-	-	3	-	-	-	1	3	-	2	3	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Orbiniidae																																			
Orbiniidae indet.	P0655	5	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia sp. juv.	P0662	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	1

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Orbinia armandi	P0663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia latreilli?	P0664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia sertulata	P0665	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scoloplos armiger	P0672	2	-	1	-	4	-	-	-	-	-	1	-	1	1	12	-	3	4	5	3	1	2	-	-	2	-	-	-	-	-	-	-	3	-
Paraonidae																																			
Paraonidae sp.	P0674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea sp.	P0675	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
Aricidea minuta	P0677	-	-	-	-	13	2	-	-	-	-	-	-	-	1	10	6	8	3	4	8	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Aricidea catherinae	P0684	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-
Aricidea cerrutii	P0685	-	-	1	-	1	-	2	8	2	-	-	-	-	1	-	-	2	-	-	-	-	3	2	2	3	-	-	1	1	-	2	1	4	3
Aricidea laubieri	P0686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Paradoneis sp.	P0695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paradoneis cf. ilvana	P0698	-	-	-	-	-	1	3	-	-	-	-	-	1	-	-	2	-	-	1	-	-	-	-	-	-	4	-	2	-	1	-	-	-	-
Paradoneis lyra	P0699	-	-	-	-	6	17	-	-	-	-	11	3	-	6	1	1	3	18	13	11	4	18	-	1	-	-	-	6	1	4	-	-	-	-
Paraonis fulgens	P0704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Questidae																																			
Questidae sp.	P0706	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Poecilochaetidae																																			
Poecilochaetus sp. juv.?	P0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poecilochaetus serpens	P0718	-	-	3	-	13	10	-	-	-	-	-	-	1	2	3	7	10	12	-	2	4	31	-	1	3	-	-	3	-	8	1	-	4	1
Spionidae																																			
Spionidae juv.	P0720	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aonides sp.	P0721	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aonides oxycephala	P0722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	4	-	5	-	-	-	-	-	-	-	2	-	-	-	-
Aonides paucibranchiata	P0723	-	-	54	14	42	7	-	9	-	20	3	1	168	9	8	41	31	42	10	7	40	5	11	14	31	-	-	104	177	16	180	7	9	18
Laonice sp.	P0731	-	-	-	-	9	1	-	-	-	1	15	9	172	4	16	4	-	22	28	34	6	2	-	-	1	-	-	19	52	11	165	-	-	1
Laonice bahusiensis	P0733	-	-	16	-	1	1	-	-	-	-	2	-	45	6	-	21	4	10	1	2	9	-	1	3	2	-	-	21	46	4	11	-	15	1
Malacoceros sp.	P0736	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malacoceros tetracerus	P0738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prionospio cirrifera	P0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora sp.	P0748	-	-	-	-	-	-	-	-	-	-	18	1	4	-	1	1	2	-	-	2	-	-	-	-	-	-	6	-	-	-	-	-	-	-
Polydora caeca ?	P0750	-	-	10	-	-	-	-	-	-	-	-	-	-	1	5	-	-	1	3	-	-	2	2	-	-	-	-	-	1	-	3	-	-	-
Polydora caulleryi	P0751	-	-	2	1	3	3	-	-	-	-	2	-	2	-	3	4	-	-	6	-	-	-	-	1	1	-	-	4	4	4	3	-	1	1
Polydora ciliata ?	P0752	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora cornuta	P0753	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora flava	P0754	-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Polydora hermaphroditica	P0756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora sanctijosephi?	P0761	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora socialis?	P0762	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	4	7	-	1	-	-	-
Prionospio sp. juv.	P0763	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Aurospio banyulensis	P0766	-	-	-	-	3	29	-	-	-	2	17	1	24	5	26	17	8	18	36	21	8	3	-	1	3	2	-	13	7	7	8	-	8	2
Pseudopolydora sp. juv.	P0771	3	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	-
Pseudopolydora cf. paucibranchiata	P0773	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Pseudopolydora pulchra	P0774	5	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	1	5	5	3	1	-	-	-	-	-	-	1	-	-	-	-	3	-
Pygospio elegans	P0776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis sp.	P0777	-	-	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis sp. juv.	P0777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	-	1	2	-	-	1	-	1	2	-	-	-
Scolelepis bonnieri	P0779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis foliosa	P0781	-	-	-	-	2	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	2	-	-	-	-
Scolelepis mesnili	P0782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parascolelepis cf. gilchristi		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio sp. A	P0787	1	-	-	-	13	2	-	4	4	5	-	-	-	7	2	8	8	2	1	2	2	6	4	4	16	1	-	-	-	3	5	-	4	10
Spio sp.	P0787	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-
Spio armata	P0788	-	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	1	3	-	1	1	-	-	1	-	-	-	-	-	4	1	-	4	-
Spio filicornis	P0790	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-
Spio goniocephala		-	1	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Spiophanes bombyx	P0794	235	-	28	-	91	59	9	16	1	4	-	-	-	123	27	37	97	42	4	12	27	138	7	80	29	1	-	11	4	43	2	19	116	24
Spiophanes kroyeri	P0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	1	2	3	5	-	1	-	-	-	-	-	3	-	-	1	-	9	-
Magelonidae																																			
Magelona sp. juv.	P0803	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magelona alleni	P0804	-	-	-	-	5	1	-	-	-	-	-	-	-	1	3	-	-	1	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-
Magelona filiformis	P0805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magelona johnstoni		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
Magelona mirabilis	P0807	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Chaetopteridae																																			
Chaetopteridae indet.	P0810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phyllochaetopterus sp. indet.	P0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirratulidae																																			
Cirratulidae juv.	P0822	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-
Cirratulidae sp. indet.	P0822	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphelochaeta sp.	P0823	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Aphelochaeta marioni	P0824	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-
?Aphelochaeta vivipara	P0827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Caulleriella sp. juv.	P0828	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella alata	P0829	-	-	4	-	7	4	-	-	-	1	23	10	10	7	8	7	6	14	25	26	9	2	1	-	8	4	-	8	8	18	4	1	8	4
Caulleriella bioculata	P0830	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Caulleriella zetlandica	P0831	8	-	8	-	68	3	-	1	-	1	7	-	7	52	59	29	33	65	47	100	13	26	5	5	1	2	-	30	-	49	3	-	9	-
Chaetozone sp.	P0832	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone gibber	P0833	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone setosa	P0834	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirratulus filiformis	P0837	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tharyx killariensis	P0846	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tharyx killariensis? juv.	P0846	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psammodrilidae																																			
Psammodrilus balanoglossoides	P0864	-	-	-	-	-	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	1
Flabelligeridae																																			
Diplocirrus glaucus	P0878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flabelligera affinis	P0881	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pherusa flabellata	P0884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrocirridae																																			
Macrochaeta helgolandica	P0892	-	10	-	2	-	-	6	14	89	16	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	1
Capitellidae																																			
Capitellidae indet. juv.	P0903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Capitella capitata	P0907	-	-	2	-	-	1	-	-	-	-	-	-	-	2	1	-	3	5	-	6	1	28	-	-	7	-	-	-	-	2	-	-	3	-
Mediomastus fragilis	P0919	6355	17	78	59	57	50	1	23	2	2	174	24	136	28	77	69	74	92	231	164	132	48	9	6	36	3	-	146	221	241	296	5	33	56
Notomastus sp. B	P0920	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	1	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-
Notomastus sp. C	P0920	-	-	7	1	1	5	-	1	2	1	1	-	5	-	1	1	1	3	1	-	3	3	1	1	2	-	-	21	7	6	-	-	-	-
Notomastus sp. C? juv.	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notomastus sp. D	P0920	3	-	1	-	-	24	2	-	-	1	12	2	13	10	14	2	1	7	4	7	2	2	1	1	-	-	-	10	48	4	9	-	-	1
Notomastus sp. E juv.	P0920	-	-	9	2	5	-	-	1	1	1	-	-	-	-	-	2	3	-	-	-	2	1	-	3	-	1	-	4	20	3	3	-	-	5
Notomastus sp. juv.	P0920	-	-	-	4	3	16	1	7	3	6	8	-	6	2	6	6	9	4	8	2	1	-	1	2	-	-	1	7	14	7	8	2	5	1
Arenicolidae																																			
Arenicola sp. juv.	P0929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maldanidae																																			
Maldanidae sp. juv.	P0938	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	10	1	-	-	-	-	-	-	-	-	-	-	-
Maldanidae sp. indet.	P0938	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Praxillura longissima	P0944	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euclymeninae spp.	P0951	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clymenura sp.	P0955	-	-	9	-	-	1	-	1	1	-	-	-	-	11	3	-	-	-	-	-	2	17	-	2	1	-	-	-	2	3	-	-	-	2
Clymenura johnstoni	P0958	-	-	7	1	37	36	-	-	-	-	-	-	24	17	15	22	28	52	2	65	17	19	4	11	-	-	-	34	40	6	4	8	28	6
Euclymene sp.	P0960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euclymene lumbricoides	P0963	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Euclymene oerstedii	P0964	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella sp.	P0970	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	10	19	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-
Praxillella affinis	P0971	-	-	1	-	3	-	-	-	-	-	38	3	2	-	6	8	3	-	13	33	-	7	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella praetermissa?	P0973	-	-	-	-	-	-	1	-	-	-	-	-	-	-	13	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomachinae sp. indet.	P0976	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomache sp. indet.	P0979	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petaloproctus tenuis borealis	P0986	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petaloproctus terricola	P0987	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opheliidae																																			
Opheliidae sp. juv.	P0993	-	-	3	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	2
Euzonus flabelligerus	P0996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelia sp. juv.	P0997	-	-	7	2	2	-	-	1	-	-	-	-	1	5	-	-	-	2	-	-	-	-	-	6	-	-	-	-	1	-	1	1	3	4
Ophelia borealis	P0999	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	5	-	-	-	-	-	-	-	-	-	-
Ophelia celtica	P1000	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Travisia forbesii	P1007	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Armandia sp. juv.	P1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armandia polyophthalma	P1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
Ophelina sp. juv.	P1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelina acuminata	P1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Scalibregmatidae																																			
Asclerocheilus sp.	P1021	-	-	-	-	-	6	-	1	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus sp. A	P1021	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus intermedius	P1022	-	-	-	-	-	-	-	-	-	-	2	-	4	-	6	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma sp.	P1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma celticum	P1026	-	-	4	-	3	3	-	-	-	-	10	2	26	2	27	5	4	8	11	8	3	1	-	-	-	-	-	6	19	2	8	-	-	-
Scalibregma inflatum	P1027	43	-	1	-	28	-	1	3	-	-	8	1	6	3	11	5	19	20	24	40	29	9	1	4	12	-	2	5	3	68	4	-	30	4
Polygordiidae																																			
Polygordius sp.	P1062	-	-	-	78	2	-	4	16	6	18	-	-	-	-	-	3	-	-	-	-	-	-	9	-	6	-	-	-	5	-	22	2	-	-
Polygordius appendiculatus	P1063	-	-	-	119	-	-	-	9	6	12	-	-	-	-	-	2	-	-	-	-	-	-	7	-	12	-	-	-	-	-	8	-	-	-
Protodrilidae																																			
Protodrilus? sp.	P1069	-	2	-	32	-	-	5	-	1	-	-	-	-	-	-	3	-	-	-	-	-	-	25	-	18	6	-	-	1	-	-	-	-	-
Protodriloididae																																			
Protodriloides chaetifer	P1083	-	7	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	5	-	-	-	-	-	-	-	-
Oweniidae																																			
Galathowenia sp.	P1091	41	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Myriochele sp.?	P1094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	P1098	37	-	4	-	2	-	-	-	-	1	-	-	2	1	3	6	4	3	4	3	4	1	-	2	1	-	-	2	4	2	1	3	7	2
Pectinariidae																																			
Lagis koreni	P1107	1	1	6	-	82	1	-	-	-	1	-	-	5	44	10	8	34	58	57	51	33	51	-	35	54	1	-	3	-	24	51	11	417	91
Sabellariidae																																			
Sabellaria sp. juv.	P1115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa	P1117	-	-	-	-	-	6	-	-	-	-	231	171	9	-	176	-	1	10	147	20	13	3	-	1	-	-	38	-	-	-	-	2	-	3
Sabellaria spinulosa juv.	P1117	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	137	-
Ampharetidae																																			
Ampharetidae juv.	P1118	-	-	-	-	-	1	-	-	-	-	-	3	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-
Melinna elisabethae	P1122	2	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melinna palmata	P1124	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampharete sp.	P1133	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	10	-
Ampharete lindstroemi	P1139	19	-	-	-	3	-	-	-	-	-	28	2	27	-	5	2	-	32	83	143	3	-	-	-	-	-	1	38	88	22	17	-	111	-
Amphicteis midas	P1143	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anobothrus gracilis	P1147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichobranchidae																																			
Terebellides stroemi	P1175	-	-	-	-	6	1	-	-	-	-	48	23	43	3	17	1	1	26	116	56	6	6	-	-	2	-	-	32	69	19	47	1	53	-
Trichobranchus glacialis	P1177	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terebellidae																																			
Terebellidae indet.	P1179	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Terebellidae juv.	P1179	-	2	-	-	-	-	-	9	6	5	1	1	4	1	-	-	-	-	3	10	2	1	-	5	-	-	-	-	4	-	9	30	11	18
Amphitritides gracilis	P1185	-	-	-	-	-	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Axionice maculata	P1187	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Eupolymnia sp. indet.	P1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eupolymnia nesidensis	P1190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Lanice conchilega	P1195	10	-	13	-	32	2	-	6	1	-	2	1	-	5	4	7	6	6	5	6	3	6	-	7	-	-	-	5	2	-	1	2	6	1
Loimia sp.	P1200	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Nicolea juv. indet.	P1209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Nicolea venustula	P1210	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	1	-	-	-
Nicolea zostericola	P1211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phisidia aurea	P1215	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-
Pista cristata	P1217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	6	10	-	12	-	-	-
Polycirrinae indet.	P1227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Amaena trilobata	P1229	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Lysilla loveni	P1233	-	-	-	-	-	5	-	6	4	-	-	-	-	2	1	-	1	1	-	-	-	-	-	3	-	-	-	10	1	5	-	-	-	-
Polycirrus spp.	P1235	1	-	10	3	15	17	1	23	6	16	3	5	31	6	8	13	7	11	12	9	31	4	5	4	-	1	3	7	42	10	13	4	2	14
Polycirrus aurantiacus	P1237	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus haematodes	P1240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Polycirrus medusa	P1242	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	3	-	1	1	-	-	-	4	4	-	4	-	-	-
Polycirrus norvegicus	P1243	-	-	-	-	3	1	-	2	1	-	3	-	1	2	4	-	9	14	20	20	23	4	-	4	-	-	2	14	18	29	2	-	-	-
Polycirrus sp. juv. (norvegicus?)	P1243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-
?Streblosoma spp.	P1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Thelepus sp. juv.	P1253	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus cincinnatus	P1254	-	-	-	-	-	4	-	-	-	-	1	-	-	-	1	-	1	1	2	-	-	1	-	-	-	-	3	1	1	1	-	-	-	-
Thelepus setosus	P1255	-	-	-	-	-	2	-	-	-	-	2	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellidae																																			
Sabellidae juv.	P1257	-	-	-	-	-	2	-	-	-	-	3	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	2	-	-	3	3	-	5	-
Fabriciinae sp. juv.		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Sabellinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Branchiomma bombyx	P1263	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Chone sp. juv.	P1264	-	-	-	-	5	-	-	-	-	-	46	-	9	-	36	-	-	13	17	-	1	-	-	-	-	-	-	12	44	8	8	-	-	-
Chone filicaudata	P1269	-	-	5	-	4	3	-	-	-	-	7	1	23	3	17	10	4	5	7	11	2	-	-	-	-	-	-	55	114	10	12	-	-	-
Demonax torulis	P1276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Jasmineira caudata	P1289	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jasmineira elegans	P1290	-	-	-	-	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabella sp.	P1317	-	-	-	-	3	13	-	1	-	-	-	1	-	-	-	-	1	22	2	10	1	6	-	2	-	-	-	3	-	17	2	20	9	1
Sabella discifera	P1318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Serpulidae																																			
Serpulidae sp. juv.	P1324	-	-	1	-	-	-	-	-	-	-	-	1	3	-	-	-	2	7	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	2
Serpulidae sp. indet.	P1324	-	-	1	-	-	7	-	-	-	-	-	1	-	1	2	-	-	-	-	6	1	1	-	-	-	-	12	-	31	-	18	1	18	-
Chitinopoma serrula	P1327	-	-	-	22	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroides sp.	P1330	-	-	-	-	-	3	-	-	-	-	2	1	2	13	1	1	-	-	5	-	-	1	-	1	1	-	6	5	17	3	8	1	8	2
Pomatoceros sp. indet.	P1339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	8	2	-	31	-	-	1
Pomatoceros lamarckii	P1340	-	-	-	-	-	-	-	-	-	-	86	26	14	1	8	-	1	4	5	22	3	-	-	-	-	-	78	33	35	20	29	-	1	1
Pomatoceros triqueter	P1341	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	1	1	2	-	-	-	-	-	-	151	11	14	1	1	-	3	2
Serpula vermicularis	P1343	-	-	2	-	2	3	-	-	-	-	-	-	-	2	-	1	1	5	2	2	1	4	-	-	1	1	-	-	10	4	5	3	16	3
Filograna implexa	P1350	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spirorbidae																																			
Spirorbidae sp.	P1362	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLIGOCHAETA																																			
Tubificidae																																			
Tubificidae spp.	P1425	33	2	-	1	-	1	-	-	1	1	8	2	1	2	30	17	1	12	6	7	-	17	1	-	-	-	-	-	-	1	-	-	3	-
Tubificoides sp. (benedii?)	P1490	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubificoides sp. (pseudogaster?)	P1498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enchytraeidae																																			
Enchytraeidae spp.	P1501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grania spp.	P1524	-	6	4	-	-	5	2	22	32	15	2	-	6	-	-	15	10	12	-	-	6	35	26	1	8	1	-	7	6	6	31	-	6	13
TOTAL		**8144**	**63**	**468**	**592**	**906**	**725**	**208**	**556**	**587**	**406**	**1521**	**632**	**1406**	**612**	**1240**	**851**	**802**	**1144**	**1795**	**2004**	**760**	**820**	**553**	**363**	**670**	**167**	**543**	**998**	**1925**	**1199**	**1653**	**380**	**1568**	**431**

Table A7.1A: Abundance data for stations 1-35: Annelida

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	*66*	*67*	68	69	70
POLYCHAETA																																				
Pisionidae																																				
Pisione remota	P0015	32	10	2	-	5	15	61	51	1	2	49	3	3	10	22	7	6	-	1	-	-	-	-	4	1	-	-	-	154	4	-	-	-	-	-
Aphroditidae																																				
Aphrodita aculeata	P0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Hermonia hystrix	P0021	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	10	-	1	3	7	-	-	1	-	-	-	-	-
Polynoidae																																				
Acholoe squamosa	P0029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte assimilis	P0031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte pellucida	P0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gattyana cirrosa	P0049	2	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	*2*	-	-	-	-
Harmothoinae sp. juv		12	-	25	21	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	1	7	-	17	2	-	21	-	-	-	-	*13*	*40*	5	1	1
Harmothoinae sp. indet.		-	-	10	-	-	-	-	-	-	-	-	-	-	-	19	-	2	-	-	-	-	-	5	-	-	-	-	-	-	-	*6*	-	-	-	-
Malmgrenia sp.		3	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malmgrenia arenicolae		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe sp.	P0050	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	*3*	-	-	-
Harmothoe andreapolis	P0051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	2	-	-
Malmgrenia castanea?	P0055	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe extenuata	P0058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Harmothoe fraserthomsoni	P0060	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe glabra	P0062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe imbricata ?	P0064	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe impar ?	P0065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe pagenstecheri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malmgrenia marphysae	P0068	-	-	4	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	1	-	-
Lepidonotus squamatus	P0082	-	-	3	2	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	*18*	*9*	-	-	-
Polynoe scolopendrina	P0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pholoidae																																				
Pholoe sp. juv.	P0091	-	-	24	22	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	4	6	-	-	-	-	6	6	-	-	1	*6*	-	-	-	-
Pholoe sp. B	P0091	-	-	1	27	-	-	3	-	-	-	-	-	-	-	5	-	-	-	-	-	4	-	64	1	-	20	-	-	-	-	*43*	*10*	-	-	-
Pholoe tuberculata	P0095	1	-	-	2	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	29	-	-	13	14	-	-	-	*1*	-	-	-	-
Sigalionidae																																				
Sigalionidae juv.	P0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	1
Sigalion mathildae	P0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Sthenelais sp. indet.	P0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sthenelais boa	P0107	-	-	11	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	2	-	-	7	-	-	-	-	*6*	*3*	-	-	-
Sthenelais limicola	P0109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	2	-	3	1	-	-	-	-	-	-	1
Phyllodocidae																																				
Phyllodocidae sp. indet.	P0114	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eteone sp. indet.	P0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Eteone cf. longa	P0118	1	-	8	4	1	-	2	-	1	-	-	-	-	1	9	1	9	-	1	4	39	2	1	3	1	8	1	19	3	1	-	*2*	2	-	1
Hesionura elongata	P0122	34	9	29	3	201	72	64	305	67	217	119	141	358	176	230	308	249	52	26	-	1	-	-	242	17	-	-	-	66	113	*4*	*15*	-	27	1
Eteone foliosa	P0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysta picta	P0127	-	-	-	-	-	-	-	1	-	-	4	1	-	2	1	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-
Mystides caeca	P0130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudomystides sp.	P0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudomystides limbata	P0136	-	1	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Anaitides groenlandica	P0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides cf. longipes	P0143	-	-	2	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	2	-	-	-	-	1
Anaitides mucosa	P0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides rosea	P0146	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	1	4	-	2	-	2	-	3	2	-	2	*1*	-	2	1	2
Eulalia sp. A	P0150	-	1	-	1	-	-	4	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia bilineata	P0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia expusilla	P0153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia mustela	P0155	8	6	2	4	2	2	-	-	-	1	3	-	-	3	5	1	1	-	-	-	-	-	-	-	-	-	-	-	2	-	*1*	-	-	-	-
Eulalia ornata	P0156	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia tripunctata	P0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eumida sp. juv.	P0163	2	-	8	11	2	-	38	-	2	2	1	-	-	-	4	-	7	-	-	-	1	-	10	1	-	19	-	-	-	1	-	-	-	-	3
Eumida bahusiensis	P0164	-	-	6	3	-	-	16	-	1	1	-	-	-	-	-	-	10	-	-	1	228	3	17	-	-	2	1	-	-	-	-	-	4	-	2
Eumida ockelmanni	P0165	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-	-
Eumida sanguinea	P0167	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-	-
Paranaitis kosteriensis	P0176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Phyllodoce sp.	P0178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pterocirrus macroceros	P0188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Glyceridae																																				
Glycera sp. juv.	P0255	6	-	5	10	-	1	2	8	8	1	19	5	1	4	2	7	9	4	4	-	-	-	1	1	-	1	7	-	-	-	*1*	-	-	4	-
Glycera sp. indet.	P0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-
Glycera alba	P0256	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	3	12	-	5	-	-	8	1	-	-	1	-	-	-	-	-
Glycera celtica	P0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycera gigantea	P0259	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Glycera lapidum	P0260	5	4	17	11	3	7	8	-	-	-	8	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-
Glycera oxycephala	P0262	-	2	3	1	3	1	6	2	5	1	12	11	7	3	3	3	-	4	4	-	-	-	2	3	4	-	-	-	7	2	-	-	-	4	-
Glycera tridactyla	P0265	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	13	-	-	-	-	16	-	3
Goniadidae																																				
Goniadidae juv.	P0266	-	-	-	-	-	1	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycinde nordmanni	P0268	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Goniada sp. juv.	P0269	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniada emerita	P0270	-	-	1	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniada maculata	P0271	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	11	3	5	-	-	14	15	4	-	-	-	-	-	-	-
Goniadella sp. juv.	P0274	-	2	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniadella gracilis	P0276	5	1	2	3	-	3	4	1	-	-	4	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerodoridae																																				
Commensodorum commensalis	P0280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerodoropsis sp.	P0285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-
Sphaerodorum gracilis	P0291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	*2*	-	-	1
Hesionidae																																				
Hesionidae juv.	P0293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gyptis sp. juv.	P0297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gyptis rosea	P0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psamathe fusca	P0305	3	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Nereimyra punctata	P0311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Podarke pallida	P0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Podarkeopsis capensis	P0319	-	-	-	3	1	-	7	-	-	-	-	-	-	-	1	-	-	-	-	10	2	-	-	-	-	16	11	-	-	-	*1*	-	4	-	-
Syllidia armata	P0321	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	*102*	*47*	-	-	-
Hesionides maxima	P0325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus sp.	P0326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus fragilis	P0330	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus listensis	P0331	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	4	*1*	-	-	-	-
Microphthalmus similis	P0333	-	-	9	2	9	6	-	-	-	38	1	-	-	-	58	1	17	-	1	-	-	-	-	4	-	-	-	-	6	58	*137*	*8*	-	2	-
Syllidae																																				
Ehlersia sp. A	P0348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis cornuta	P0349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ehlersia ferrugina	P0350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. B	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. E	P0359	27	3	3	3	-	4	6	-	-	1	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Syllis sp. H	P0359	18	4	9	-	-	4	56	2	-	1	4	-	-	3	6	25	1	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	-
Syllis sp. L	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. juv.	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis variegata	P0371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amblyosyllis madierensis?	P0375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-	-
Eusyllis blomstrandi	P0380	6	-	7	4	1	-	2	-	32	16	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*15*	*21*	-	-	-
Eusyllis lamelligera	P0382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odontosyllis fulgurans	P0387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Odontosyllis gibba	P0388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opisthodonta pterochaeta	P0391	5	4	1	-	-	2	1	9	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palposyllis prosostoma	P0394	5	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pionosyllis lamelligera	P0398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Streptosyllis sp. A	P0402	-	-	-	-	-	12	-	3	-	-	1	3	5	-	-	3	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Streptosyllis bidentata	P0403	16	-	26	37	31	12	3	14	17	19	12	49	39	4	26	22	31	10	6	-	-	-	-	70	1	-	-	-	5	9	-	*2*	-	-	-
Streptosyllis websteri	P0405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Syllides sp. X	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides sp. Y	P0406	-	-	-	7	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Syllides indet.	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides benedicti	P0407	-	-	1	-	-	2	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brania swedmarki	P0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-
Exogone hebes	P0421	9	8	11	8	4	-	12	-	20	4	-	-	1	-	-	3	2	-	-	-	-	-	21	13	14	-	-	-	1	-	*1*	-	6	-	-
Exogone naidina	P0422	-	1	1	3	5	3	3	-	2	3	1	5	1	-	1	-	-	-	-	-	-	-	1	11	9	1	-	-	-	4	-	-	-	2	-
Exogone verugera	P0423	-	4	6	14	4	1	8	-	2	-	1	1	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	*1*	-	-	-
Sphaerosyllis sp. X	P0424	-	-	-	8	2	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis sp. Y	P0424	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Sphaerosyllis bulbosa	P0425	1	-	-	-	-	-	-	-	-	-	-	-	-	1	7	4	-	-	-	-	-	-	-	-	-	-	-	-	332	3	-	-	-	-	-
Sphaerosyllis erinaceus	P0426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Sphaerosyllis hystrix	P0427	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Sphaerosyllis taylori	P0430	4	4	14	17	12	-	2	-	5	3	1	-	2	2	33	10	2	-	-	-	-	-	1	8	1	-	-	-	4	5	*2*	*1*	-	-	-
Sphaerosyllis tetralix	P0431	1	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus juv.	P0434	1	-	-	-	-	-	-	-	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*7*	*9*	-	-	-
Autolytus indet.	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	*4*	-	-	-
Autolytus indet. stolons	P0434	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus alexandri	P0435	3	-	1	-	-	-	-	-	1	1	-	-	-	-	4	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	*3*	*26*	-	-	-
Autolytus brachycephalus	P0437	-	-	1	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	*8*	-	-	-
Autolytus inermis	P0439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus langerhansi	P0440	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	*1*	-	-	-
Autolytus prolifera	P0444	1	-	5	6	-	-	1	-	8	5	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	*13*	*20*	-	-	-
Proceraea cornuta	P0452	-	-	-	-	-	-	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*8*	*14*	-	1	-
Procerastea halleziana	P0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nereididae																																				
Nereididae sp.	P0458	1	-	3	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	1	-	-	8	2	-	-	-	-	*1*	-	-	1
Nereis elitoralis	P0474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nereis longissima	P0475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Nereis zonata	P0478	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Websterinereis glauca	P0487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Nephtyidae																																				
Aglaophamus rubella	P0493	4	3	1	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-	-	-	-
Nephtys sp. juv.	P0494	1	6	-	-	2	-	1	1	11	1	-	6	6	-	-	1	5	9	-	2	4	9	2	3	10	2	6	20	-	1	-	-	2	18	18
Nephtys sp. indet.	P0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys assimilis	P0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	5	-	1
Nephtys caeca	P0496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys cirrosa	P0498	-	1	2	-	9	2	2	5	7	2	8	4	12	8	1	14	9	7	17	2	1	5	-	10	7	-	-	4	1	8	*2*	-	-	13	21
Nephtys hombergii	P0499	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	24	-	-	-	-	-	-	-	-
Nephtys hombergii? juv.	P0499	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
Nephtys kersivalensis	P0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	5	-	-	-	-	*1*	-	-	-	-
Nephtys longosetosa	P0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Nephtys pulchra juv.?	P0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicida juv.	P0536	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Onuphidae																																				
Onuphidae sp. juv.	P0537	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aponuphis bilineata	P0539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nothria conchylega	P0545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicidae																																				
Eunicidae juv.	P0553	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa sp. indet.	P0563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa bellii	P0564	2	-	2	11	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	-	2	-	1	2	1	-	1	1	-	-	1	-	-
Marphysa sanguinea	P0566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nematonereis unicornis	P0568	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineridae indet.	P0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Lumbrineriopsis sp.	P0570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineris sp. juv.	P0572	1	-	-	11	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-
Lumbrineris sp. indet.	P0572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Lumbrineris agastos	P0573	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	1	-
Lumbrineris fragilis	P0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Lumbrineris gracilis	P0579	4	-	3	73	7	1	19	-	-	-	-	-	1	-	1	-	-	-	1	7	5	-	25	2	4	109	3	-	-	15	*2*	-	10	-	4
Lumbrineris latreilli?	P0582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oenonidae																																				
Oenone iricolor	P0588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drilonereis filum	P0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notocirrus scoticus	P0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorvilleidae																																				
?Ophryotrocha sp.	P0613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
?Ougia spp.	P0625	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parougia spp.	P0632	1	-	11	2	-	-	-	-	3	1	-	-	2	-	3	-	-	-	1	-	-	-	1	-	-	11	-	-	-	-	-	-	-	2	-
Protodorvillea kefersteini	P0638	8	-	24	10	-	2	16	-	-	-	11	-	-	3	65	3	10	-	-	-	-	-	6	-	-	5	-	-	4	1	*2*	*9*	-	1	-
Schistomeringos neglecta	P0642	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	6	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Schistomeringos rudolphi	P0643	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Orbiniidae																																				
Orbiniidae indet.	P0655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Orbinia sp. juv.	P0662	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Orbinia armandi	P0663	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia latreilli?	P0664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia sertulata	P0665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Scoloplos armiger	P0672	-	-	3	3	-	-	3	-	-	-	-	-	1	-	-	-	-	1	-	61	5	9	-	1	-	-	1	4	-	-	1	-	1	2	-
Paraonidae																																				
Paraonidae sp.	P0674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Aricidea sp.	P0675	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea minuta	P0677	-	-	-	3	13	-	7	-	-	-	-	-	2	-	-	-	-	-	-	30	8	-	3	-	2	-	1	-	-	26	2	-	5	-	-
Aricidea catherinae	P0684	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea cerrutii	P0685	3	3	2	-	1	-	-	1	2	2	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea laubieri	P0686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paradoneis sp.	P0695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paradoneis cf. ilvana	P0698	-	-	-	-	-	-	-	-	3	1	-	6	-	-	-	-	1	-	3	1	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-
Paradoneis lyra	P0699	2	-	-	5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	8	-	1	9	-	-	-	-	-	2	-	-	-
Paraonis fulgens	P0704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Questidae																																				
Questidae sp.	P0706	-	-	-	-	1	-	-	-	-	36	-	-	23	-	-	-	2	4	1	-	-	-	-	7	1	-	-	-	-	-	-	-	-	1	-
Poecilochaetidae																																				
Poecilochaetus sp. juv.?	P0717	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poecilochaetus serpens	P0718	1	-	3	7	-	-	21	-	2	-	-	-	2	-	3	-	-	-	-	-	1	-	18	4	8	2	1	6	1	8	1	1	259	-	9
Spionidae																																				
Spionidae juv.	P0720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aonides sp.	P0721	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aonides oxycephala	P0722	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	17	-	-	-	-	-	-	-	-	-
Aonides paucibranchiata	P0723	17	5	110	34	4	5	5	21	12	6	30	-	1	79	113	2	22	2	2	1	-	-	-	21	1	-	-	-	27	3	-	4	-	1	-
Laonice sp.	P0731	4	-	9	37	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-
Laonice bahusiensis	P0733	5	1	4	10	-	-	1	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	2	-	-	2	-	-	1	-	-	-	-	-	-
Malacoceros sp.	P0736	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malacoceros tetracerus	P0738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prionospio cirrifera	P0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora sp.	P0748	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	3	2	-	-	-
Polydora caeca ?	P0750	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-
Polydora caulleryi	P0751	2	-	7	4	-	-	4	-	-	-	-	-	-	-	12	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	1	-	-	-	-
Polydora ciliata ?	P0752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora cornuta	P0753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora flava	P0754	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora hermaphroditica	P0756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora sanctijosephi?	P0761	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora socialis?	P0762	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prionospio sp. juv.	P0763	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aurospio banyulensis	P0766	12	-	4	4	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	1	2	-	-	-	-	-
Pseudopolydora sp. juv.	P0771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-
Pseudopolydora cf. paucibranchiata	P0773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudopolydora pulchra	P0774	-	-	2	4	-	-	1	-	-	-	-	-	-	1	4	-	1	-	-	-	-	-	20	1	-	2	-	-	-	-	-	-	-	-	-
Pygospio elegans	P0776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
Scolelepis sp.	P0777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis sp. juv.	P0777	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Scolelepis bonnieri	P0779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis foliosa	P0781	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Scolelepis mesnili	P0782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parascolelepis cf. gilchristi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio sp. A	P0787	16	1	6	9	2	12	97	7	7	-	13	1	-	56	2	9	4	1	3	6	14	15	54	9	4	15	34	28	52	22	3	-	42	18	78
Spio sp.	P0787	-	-	-	-	-	-	-	-	1	-	-	-	-	3	1	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Spio armata	P0788	-	-	1	1	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio filicornis	P0790	-	-	-	-	-	-	-	1	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio goniocephala		-	2	-	1	-	2	-	1	-	-	-	6	1	-	-	3	1	5	2	-	-	-	-	1	2	1	-	-	-	4	-	-	-	1	-
Spiophanes bombyx	P0794	17	9	54	63	7	6	86	3	17	2	7	11	14	1	19	3	17	44	43	124	463	31	161	22	23	23	478	237	17	40	1	-	84	22	71
Spiophanes kroyeri	P0796	1	-	2	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	6	1	-	-	-	-	-	-	-	-
Magelonidae																																				
Magelona sp. juv.	P0803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-	10	-	-	1	-	-	25	-	-	-	-	33	5	24
Magelona alleni	P0804	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	8	-	-	7	1	-	-	-	-	-	1	-	-
Magelona filiformis	P0805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	-	-	-	-	30	369	7	-	-	-	83	-	40
Magelona johnstoni		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	159	-	-	-	-	101	-	6
Magelona mirabilis	P0807	-	-	-	-	-	-	-	-	3	-	-	-	1	-	-	-	-	1	-	-	-	8	-	1	1	-	-	5	-	-	-	-	-	8	13

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Chaetopteridae																																				
Chaetopteridae indet.	P0810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phyllochaetopterus sp. indet.	P0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirratulidae																																				
Cirratulidae juv.	P0822	-	-	2	5	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Cirratulidae sp. indet.	P0822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphelochaeta sp.	P0823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	2	-	-	2	-	-
Aphelochaeta marioni	P0824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Aphelochaeta vivipara	P0827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella sp. juv.	P0828	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella alata	P0829	4	-	9	6	1	-	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	13	-	1	4	-	-	1	2	3	3	6	-	-
Caulleriella bioculata	P0830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella zetlandica	P0831	1	-	8	36	1	-	10	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	32	-	-	12	-	-	1	-	-	1	4	-	-
Chaetozone sp.	P0832	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone gibber	P0833	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone setosa	P0834	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	17	-	-	-	-	34	-	8
Cirratulus filiformis	P0837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tharyx killariensis	P0846	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	1	-	-	-	-	-	-	-	-
Tharyx killariensis? juv.	P0846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psammodrilidae																																				
Psammodrilus balanoglossoides	P0864	-	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	1	-	4	1	-	-	-	-	-	-	-	15	-	1
Flabelligeridae																																				
Diplocirrus glaucus	P0878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	5	1	-	-	-	-	-	-	-	-
Flabelligera affinis	P0881	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pherusa flabellata	P0884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrocirridae																																				
Macrochaeta helgolandica	P0892	-	-	-	-	111	1	1	-	3	14	3	2	23	-	1	55	1	2	1	-	-	-	-	63	2	-	-	-	41	4	4	7	-	1	-
Capitellidae																																				
Capitellidae indet. juv.	P0903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Capitella capitata	P0907	-	-	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	1	-	-	-	-	1	-	2
Mediomastus fragilis	P0919	29	6	167	167	17	12	110	1	9	4	27	3	2	16	50	13	24	1	1	16	10	-	41	2	3	396	8	-	11	6	10	12	-	4	-
Notomastus sp. B	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notomastus sp. C	P0920	-	-	3	2	-	1	2	-	1	1	8	-	-	2	-	1	-	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	-
Notomastus sp. C? juv.	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notomastus sp. D	P0920	2	-	3	13	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3	-	-	3	1	-	-	-	-	1	-	-	-
Notomastus sp. E juv.	P0920	2	1	1	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notomastus sp. juv.	P0920	4	-	9	7	5	3	7	15	7	1	5	2	2	12	5	9	3	1	1	-	8	-	5	1	-	1	-	-	1	1	-	-	-	-	-
Arenicolidae																																				
Arenicola sp. juv.	P0929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Maldanidae																																				
Maldanidae sp. juv.	P0938	-	2	-	-	1	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Maldanidae sp. indet.	P0938	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-
Praxillura longissima	P0944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euclymeninae spp.	P0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-
Clymenura sp.	P0955	-	-	-	4	9	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clymenura johnstoni	P0958	4	-	15	-	-	-	1	-	8	1	-	-	-	-	4	-	-	-	-	-	-	-	141	-	-	-	-	-	6	-	-	2	-	-	-
Euclymene sp.	P0960	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euclymene lumbricoides	P0963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	1	-	-	-	-	-	-	-	-	-	-	-
Euclymene oerstedii	P0964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	4	-	-	-	-	-	-	-	-
Praxillella sp.	P0970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella affinis	P0971	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-	-	2	-	-	-
Praxillella praetermissa?	P0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomachinae sp. indet.	P0976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomache sp. indet.	P0979	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petaloproctus tenuis borealis	P0986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petaloproctus terricola	P0987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opheliidae																																				
Opheliidae sp. juv.	P0993	1	-	-	1	1	-	-	-	1	-	-	-	2	1	3	-	-	-	-	-	-	-	-	2	2	-	-	-	-	2	1	2	-	-	-
Euzonus flabelligerus	P0996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelia sp. juv.	P0997	1	1	2	4	-	-	-	-	8	-	-	-	3	-	9	-	-	1	-	3	-	-	-	-	3	-	-	-	1	2	-	-	-	-	-
Ophelia borealis	P0999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	1	-	-	-	-	17	-	-	-	1	-
Ophelia celtica	P1000	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Travisia forbesii	P1007	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	2	-
Armandia sp. juv.	P1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armandia polyophthalma	P1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	1	-	-	-	4	-	-	-	-	-
Ophelina sp. juv.	P1012	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelina acuminata	P1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Scalibregmatidae																																				
Asclerocheilus sp.	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus sp. A	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus intermedius	P1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma sp.	P1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma celticum	P1026	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma inflatum	P1027	3	-	14	24	1	-	64	-	1	1	1	-	2	1	16	4	13	5	3	319	1411	151	42	11	20	307	302	71	1	68	*1*	*6*	24	-	-
Polygordiidae																																				
Polygordius sp.	P1062	-	2	3	1	5	10	-	8	-	-	17	2	9	1	6	-	6	-	2	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Polygordius appendiculatus	P1063	5	1	-	-	-	11	5	10	-	-	57	-	5	7	11	3	3	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Protodrilidae																																				
Protodrilus? sp.	P1069	-	-	1	-	3	1	2	-	-	1	2	11	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-
Protodriloididae																																				
Protodriloides chaetifer	P1083	-	-	-	-	7	1	-	15	4	13	1	10	10	4	-	17	9	7	8	-	-	-	-	15	-	-	-	-	-	6	-	-	-	3	-
Oweniidae																																				
Galathowenia sp.	P1091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	3	2	-	-	-	-	*1*	-	-	-
Myriochele sp.?	P1094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	P1098	-	2	8	1	1	-	2	-	-	-	-	-	-	-	-	-	1	-	-	3	4	1	7	2	1	3	1	-	-	1	-	*1*	11	4	19
Pectinariidae																																				
Lagis koreni	P1107	2	1	93	329	31	7	59	-	2	9	17	13	8	9	335	9	94	51	146	334	1020	1436	524	833	279	108	84	113	21	979	*5*	*13*	220	47	107
Sabellariidae																																				
Sabellaria sp. juv.	P1115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa	P1117	-	-	16	114	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	2	-	-	-	-	*1*	*6*	-	-	-
Sabellaria spinulosa juv.	P1117	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampharetidae																																				
Ampharetidae juv.	P1118	-	-	-	2	-	-	-	-	4	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melinna elisabethae	P1122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melinna palmata	P1124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampharete sp.	P1133	7	-	11	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	19	-	8	203	-	-	-	3	*4*	-	-	-	-
Ampharete lindstroemi	P1139	-	-	64	140	-	-	1	-	-	-	-	-	-	-	107	-	-	-	-	-	49	-	76	3	-	1241	47	-	-	2	-	*2*	4	-	1
Amphicteis midas	P1143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anobothrus gracilis	P1147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Trichobranchidae																																				
Terebellides stroemi	P1175	4	-	39	34	2	-	3	-	2	-	1	3	2	-	-	-	-	-	-	-	-	-	3	2	1	4	-	-	-	-	-	-	-	-	-
Trichobranchus glacialis	P1177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terebellidae																																				
Terebellidae indet.	P1179	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-
Terebellidae juv.	P1179	-	2	1	-	32	7	-	28	73	7	1	10	15	-	-	-	-	3	-	-	-	-	-	55	65	-	-	-	-	-	-	-	-	15	-
Amphitritides gracilis	P1185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Axionice maculata	P1187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eupolymnia sp. indet.	P1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eupolymnia nesidensis	P1190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lanice conchilega	P1195	1	2	9	9	1	1	5	-	1	4	-	1	-	-	8	-	13	-	1	3	8	1	20	-	-	9	2	7	2	2	-	-	3	-	2
Loimia sp.	P1200	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea juv. indet.	P1209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea venustula	P1210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea zostericola	P1211	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phisidia aurea	P1215	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pista cristata	P1217	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrinae indet.	P1227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaena trilobata	P1229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysilla loveni	P1233	4	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus spp.	P1235	33	7	15	11	7	7	4	-	1	2	12	1	-	-	46	24	17	2	1	-	-	-	4	-	-	-	-	-	2	2	-	*2*	2	-	-
Polycirrus aurantiacus	P1237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus haematodes	P1240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus medusa	P1242	-	-	2	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	18	-	-	-	-	-
Polycirrus norvegicus	P1243	1	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	*1*	*1*	-	-	-
Polycirrus sp. juv. (norvegicus?)	P1243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Streblosoma spp.	P1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus sp. juv.	P1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus cincinnatus	P1254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus setosus	P1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellidae																																				
Sabellidae juv.	P1257	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Fabriciinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellinae sp. juv.		-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Branchiomma bombyx	P1263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	*2*	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Chone sp. juv.	P1264	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Chone filicaudata	P1269	7	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	1	-	-
Demonax torulis	P1276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jasmineira caudata	P1289	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jasmineira elegans	P1290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabella sp.	P1317	-	-	7	-	3	-	5	-	3	10	-	-	-	-	5	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-
Sabella discifera	P1318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Serpulidae																																				
Serpulidae sp. juv.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Serpulidae sp. indet.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chitinopoma serrula	P1327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Hydroides sp.	P1330	7	-	8	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pomatoceros sp. indet.	P1339	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	-	-
Pomatoceros lamarckii	P1340	11	-	4	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	4	-	-	2	-	22	123	-	-	-
Pomatoceros triqueter	P1341	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Serpula vermicularis	P1343	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Filograna implexa	P1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spirorbidae																																				
Spirorbidae sp.	P1362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
OLIGOCHAETA																																				
Tubificidae																																				
Tubificidae spp.	P1425	-	-	-	-	1	-	45	4	4	-	13	-	-	1	-	1	-	-	-	25	19	-	6	-	4	-	26	1	-	2	-	-	26	-	-
Tubificoides sp. (benedii?)	P1490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubificoides sp. (pseudogaster?)	P1498	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enchytraeidae																																				
Enchytraeidae spp.	P1501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Grania spp.	P1524	4	1	23	2	44	2	2	3	24	15	31	11	72	35	34	8	14	24	10	9	1	-	-	8	7	-	-	-	-	25	1	1	-	31	-
TOTAL		**462**	**128**	**1088**	**1557**	**623**	**245**	**1006**	**525**	**409**	**475**	**517**	**331**	**646**	**458**	**1389**	**590**	**642**	**259**	**292**	**990**	**3372**	**1704**	**1791**	**1464**	**525**	**2696**	**1141**	**1109**	**877**	**1519**	***488***	***511***	**1029**	**246**	**445**

Table A7.1B: Abundance data for stations 36-70: Annelida

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
POLYCHAETA																																				
Pisionidae																																				
Pisione remota	P0015	-	-	-	-	-	-	-	-	-	20	5	-	-	-	1	-	38	-	1	-	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-
Aphroditidae																																				
Aphrodita aculeata	P0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hermonia hystrix	P0021	-	-	-	-	-	-	-	-	-	9	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	10	-	2	-	-	-	-	-
Polynoidae																																				
Acholoe squamosa	P0029	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte assimilis	P0031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adyte pellucida	P0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gattyana cirrosa	P0049	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Harmothoinae sp. juv		1	-	-	-	-	-	-	-	1	8	-	1	-	-	11	-	1	-	3	11	-	-	-	4	5	10	1	9	-	-	-	-	1	-	-
Harmothoinae sp. indet.		2	-	-	-	-	-	-	-	-	27	-	-	4	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	9	5	-	-	-	-	-
Malmgrenia sp.		1	-	1	-	-	2	5	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Malmgrenia arenicolae		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe sp.	P0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe andreapolis	P0051	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malmgrenia castanea?	P0055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe extenuata	P0058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe fraserthomsoni	P0060	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
Harmothoe glabra	P0062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe imbricata ?	P0064	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe impar ?	P0065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harmothoe pagenstecheri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malmgrenia marphysae	P0068	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lepidonotus squamatus	P0082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	3	-	-
Polynoe scolopendrina	P0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pholoidae																																				
Pholoe sp. juv.	P0091	-	-	-	-	-	-	-	-	1	41	7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	59	42	9	-	-	-	1	1	-	-
Pholoe sp. B	P0091	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	14	2	-	-	-	-	-
Pholoe tuberculata	P0095	-	-	-	-	-	-	-	-	11	-	-	-	1	-	-	-	-	-	-	-	-	-	-	6	-	11	24	4	-	-	-	-	-	-	-
Sigalionidae																																				
Sigalionidae juv.	P0096	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sigalion mathildae	P0104	2	3	3	2	-	22	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sthenelais sp. indet.	P0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sthenelais boa	P0107	-	-	-	-	-	-	5	-	-	2	1	-	1	-	-	-	-	-	-	3	-	-	-	5	-	1	-	7	1	-	-	-	-	-	-
Sthenelais limicola	P0109	-	-	-	2	-	1	-	2	-	-	-	1	-	-	3	3	2	1	-	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
Phyllodocidae																																				
Phyllodocidae sp. indet.	P0114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-
Eteone sp. indet.	P0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Eteone cf. longa	P0118	11	2	8	9	5	3	27	2	-	69	5	5	1	-	20	6	8	2	-	2	-	-	-	6	2	6	1	-	13	-	-	-	-	-	-
Hesionura elongata	P0122	-	-	-	-	-	-	-	15	13	68	65	-	83	164	-	-	33	-	21	25	22	-	33	1	4	-	-	8	21	24	20	17	19	3	7
Eteone foliosa	P0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysta picta	P0127	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Mystides caeca	P0130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudomystides sp.	P0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Pseudomystides limbata	P0136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides groenlandica	P0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides cf. longipes	P0143	-	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Anaitides mucosa	P0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anaitides rosea	P0146	-	-	-	3	-	-	4	1	-	-	3	3	-	-	2	12	-	1	1	4	-	-	-	-	2	8	7	2	1	-	-	1	-	-	-
Eulalia sp. A	P0150	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia bilineata	P0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia expusilla	P0153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia mustela	P0155	-	-	-	-	-	-	-	-	-	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-	-	-	-	-
Eulalia ornata	P0156	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulalia tripunctata	P0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eumida sp. juv.	P0163	-	-	-	1	-	-	-	-	-	38	-	-	-	-	-	-	-	1	1	-	1	-	-	-	-	2	4	7	6	6	-	2	2	-	-
Eumida bahusiensis	P0164	1	-	-	1	-	-	10	1	3	28	1	1	3	-	1	5	-	-	3	3	-	-	-	3	-	18	3	6	1	2	-	-	-	-	-
Eumida ockelmanni	P0165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Eumida sanguinea	P0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paranaitis kosteriensis	P0176	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phyllodoce sp.	P0178	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Pterocirrus macroceros	P0188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Glyceridae																																				
Glycera sp. juv.	P0255	-	-	-	-	-	-	-	-	-	2	3	-	-	2	-	-	2	-	-	-	-	-	1	1	-	2	1	7	20	3	4	5	-	1	-
Glycera sp. indet.	P0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Glycera alba	P0256	-	-	-	-	-	-	-	1	5	-	-	2	4	-	-	-	-	-	-	-	-	-	-	2	-	1	7	3	1	-	-	-	-	-	-
Glycera celtica	P0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycera gigantea	P0259	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Glycera lapidum	P0260	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	8	5	-	-	4	-	1
Glycera oxycephala	P0262	-	-	-	-	-	-	-	3	-	-	7	1	-	1	-	-	5	-	1	-	-	-	-	-	-	-	1	3	8	2	5	6	7	3	2
Glycera tridactyla	P0265	25	35	41	43	23	21	17	-	-	-	-	2	-	-	3	6	9	3	1	3	-	3	-	7	11	3	-	-	-	-	-	-	-	-	-
Goniadidae																																				
Goniadidae juv.	P0266	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Glycinde nordmanni	P0268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	1	-
Goniada sp. juv.	P0269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Goniada emerita	P0270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Goniada maculata	P0271	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	8	6	1	-	-	-	-	1	-	-
Goniadella sp. juv.	P0274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goniadella gracilis	P0276	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Sphaerodoridae																																				
Commensodorum commensalis	P0280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerodoropsis sp.	P0285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Sphaerodorum gracilis	P0291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	-	-	-	-	-	-	-
Hesionidae																																				
Hesionidae juv.	P0293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Gyptis sp. juv.	P0297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gyptis rosea	P0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psamathe fusca	P0305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Nereimyra punctata	P0311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Podarke pallida	P0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Podarkeopsis capensis	P0319	1	-	1	-	1	1	3	-	6	-	1	2	-	-	1	7	1	-	-	-	-	-	-	-	-	13	21	3	1	-	-	-	1	-	-
Syllidia armata	P0321	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hesionides maxima	P0325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus sp.	P0326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus fragilis	P0330	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microphthalmus listensis	P0331	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Microphthalmus similis	P0333	-	-	-	-	-	-	-	1	-	25	25	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Syllidae																																				
Ehlersia sp. A	P0348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis cornuta	P0349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ehlersia ferrugina	P0350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. B	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. E	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Syllis sp. H	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Syllis sp. L	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis sp. juv.	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllis variegata	P0371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amblyosyllis madierensis?	P0375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eusyllis blomstrandi	P0380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	2	1	-	-
Eusyllis lamelligera	P0382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odontosyllis fulgurans	P0387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odontosyllis gibba	P0388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opisthodonta pterochaeta	P0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
Palposyllis prosostoma	P0394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pionosyllis lamelligera	P0398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Streptosyllis sp. A	P0402	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	3	-	-	1	5
Streptosyllis bidentata	P0403	-	-	-	-	-	-	-	3	1	9	26	-	-	17	-	-	7	-	-	-	-	-	-	-	-	-	-	2	11	2	4	5	2	2	1
Streptosyllis websteri	P0405	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Syllides sp. X	P0406	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides sp. Y	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Syllides indet.	P0406	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syllides benedicti	P0407	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Brania swedmarki	P0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Exogone hebes	P0421	-	-	-	1	-	-	18	-	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	7	26	8	5	2	6	-	-
Exogone naidina	P0422	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	4	1	4	30	14	13	3	2
Exogone verugera	P0423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	7	3	4	-	-	-	-
Sphaerosyllis sp. X	P0424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis sp. Y	P0424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Sphaerosyllis bulbosa	P0425	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis erinaceus	P0426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis hystrix	P0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphaerosyllis taylori	P0430	-	-	-	-	-	-	-	1	-	3	3	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	7	4	-	13	1	3	-	-
Sphaerosyllis tetralix	P0431	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus juv.	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-
Autolytus indet.	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Autolytus indet. stolons	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus alexandri	P0435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	-	7	-	2	-	-	-
Autolytus brachycephalus	P0437	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	-	-
Autolytus inermis	P0439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus langerhansi	P0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Autolytus prolifera	P0444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	4	-	1	1	-	-
Proceraea cornuta	P0452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Procerastea halleziana	P0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nereididae																																				
Nereididae sp.	P0458	-	-	1	-	1	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	1	3	-	-	-	-	-	-	-
Nereis elitoralis	P0474	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nereis longissima	P0475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Nereis zonata	P0478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Websterinereis glauca	P0487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtyidae																																				
Aglaophamus rubella	P0493	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-
Nephtys sp. juv.	P0494	3	10	1	-	-	2	3	1	4	-	5	1	9	17	-	11	-	4	5	13	24	4	4	15	3	8	5	-	2	2	9	5	5	5	2
Nephtys sp. indet.	P0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-
Nephtys assimilis	P0495	6	5	4	16	-	10	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	-	-	1	-	-	-	-	-	-
Nephtys caeca	P0496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Nephtys cirrosa	P0498	1	2	-	-	-	-	-	6	1	1	8	14	13	12	10	13	9	6	27	17	22	26	11	2	6	-	-	3	-	6	4	6	15	10	5
Nephtys hombergii	P0499	-	-	10	-	9	1	2	-	2	-	-	2	1	-	3	-	-	3	-	-	-	-	-	1	2	5	2	-	-	-	-	-	-	-	-
Nephtys hombergii? juv.	P0499	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys kersivalensis	P0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys longosetosa	P0503	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nephtys pulchra juv.?	P0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicida juv.	P0536	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Onuphidae																																				
Onuphidae sp. juv.	P0537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aponuphis bilineata	P0539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-
Nothria conchylega	P0545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eunicidae																																				
Eunicidae juv.	P0553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa sp. indet.	P0563	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marphysa bellii	P0564	-	-	-	-	-	-	-	-	-	8	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	6	2	2	-	-	-	-	-	-
Marphysa sanguinea	P0566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nematonereis unicornis	P0568	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineridae																																				
Lumbrineridae indet.	P0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineriopsis sp.	P0570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineris sp. juv.	P0572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	1	-	-	-	-	-	-
Lumbrineris sp. indet.	P0572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Lumbrineris agastos	P0573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-
Lumbrineris fragilis	P0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lumbrineris gracilis	P0579	-	-	-	5	-	-	13	-	9	3	-	6	-	-	4	29	8	6	1	1	-	-	-	1	1	24	44	15	1	9	-	1	-	-	-
Lumbrineris latreilli?	P0582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oenonidae																																				
Oenone iricolor	P0588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drilonereis filum	P0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notocirrus scoticus	P0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorvilleidae																																				
?Ophryotrocha sp.	P0613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Ougia spp.	P0625	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parougia spp.	P0632	-	-	-	-	-	-	2	-	-	2	3	-	-	2	-	-	-	-	-	-	1	-	-	-	-	6	-	-	-	1	-	-	-	-	-
Protodorvillea kefersteini	P0638	-	-	-	-	-	-	-	-	-	120	6	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-	-	-
Schistomeringos neglecta	P0642	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Schistomeringos rudolphi	P0643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-	-	-
Orbiniidae																																				
Orbiniidae indet.	P0655	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia sp. juv.	P0662	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Orbinia armandi	P0663	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia latreilli?	P0664	3	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orbinia sertulata	P0665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scoloplos armiger	P0672	-	-	-	1	-	-	1	12	2	4	1	2	1	-	-	-	1	-	-	-	3	-	-	1	2	3	5	10	4	-	4	2	1	-	-
Paraonidae																																				
Paraonidae sp.	P0674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea sp.	P0675	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aricidea minuta	P0677	-	-	-	-	-	-	1	12	-	-	1	10	9	-	18	18	-	-	18	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-
Aricidea catherinae	P0684	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Aricidea cerrutii	P0685	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	5	-	-	-	-	-
Aricidea laubieri	P0686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paradoneis sp.	P0695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paradoneis cf. ilvana	P0698	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	22	6	2	-
Paradoneis lyra	P0699	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Paraonis fulgens	P0704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Questidae																																				
Questidae sp.	P0706	-	-	-	-	-	-	-	-	-	-	1	-	-	3	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	12	1	2	-	-
Poecilochaetidae																																				
Poecilochaetus sp. juv.?	P0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poecilochaetus serpens	P0718	2	-	1	31	1	2	65	-	1	2	19	44	19	1	159	33	112	77	33	23	3	1	1	7	1	1	2	4	4	5	-	-	-	-	-
Spionidae																																				
Spionidae juv.	P0720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Aonides sp.	P0721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-
Aonides oxycephala	P0722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-	-	-
Aonides paucibranchiata	P0723	-	-	-	-	-	-	-	1	2	28	27	1	-	-	-	-	20	-	-	1	-	-	-	-	-	-	-	3	109	3	-	2	2	1	-
Laonice sp.	P0731	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
Laonice bahusiensis	P0733	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Malacoceros sp.	P0736	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Malacoceros tetracerus	P0738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prionospio cirrifera	P0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Polydora sp.	P0748	-	-	-	-	-	4	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Polydora caeca ?	P0750	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-
Polydora caulleryi	P0751	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-
Polydora ciliata ?	P0752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora cornuta	P0753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora flava	P0754	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora hermaphroditica	P0756	-	-	-	-	-	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora sanctijosephi?	P0761	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polydora socialis?	P0762	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prionospio sp. juv.	P0763	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aurospio banyulensis	P0766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	19	6	2	3	-	-	-	-
Pseudopolydora sp. juv.	P0771	-	-	1	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudopolydora cf. paucibranchiata	P0773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudopolydora pulchra	P0774	-	-	-	8	1	5	15	-	4	3	8	1	-	-	4	4	1	-	4	5	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-
Pygospio elegans	P0776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis sp.	P0777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Scolelepis sp. juv.	P0777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Scolelepis bonnieri	P0779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scolelepis foliosa	P0781	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-
Scolelepis mesnili	P0782	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parascolelepis cf. gilchristi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio sp. A	P0787	77	27	42	96	51	72	232	1	7	11	6	2	18	-	12	22	29	27	11	19	9	18	2	20	12	85	26	3	9	11	2	4	8	2	-
Spio sp.	P0787	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio armata	P0788	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio filicornis	P0790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spio goniocephala		-	-	-	-	-	-	-	1	1	-	1	-	-	3	-	-	-	-	-	-	3	-	1	-	-	-	-	-	-	6	7	8	2	4	2
Spiophanes bombyx	P0794	99	19	80	113	14	45	64	115	117	77	91	133	136	27	153	275	184	108	167	282	58	10	5	208	275	1528	457	51	56	86	77	54	181	41	9
Spiophanes kroyeri	P0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	10	-	1	-	-	-	-	-
Magelonidae																																				
Magelona sp. juv.	P0803	57	10	15	68	4	9	10	-	-	-	2	1	20	18	-	25	7	14	3	13	12	4	1	7	14	-	1	-	-	-	-	-	1	-	-
Magelona alleni	P0804	-	-	-	3	-	1	3	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3	1	7	1	-	-	-	-	-	-
Magelona filiformis	P0805	341	38	138	263	28	71	39	-	-	-	-	23	7	-	44	53	60	105	-	-	-	7	-	4	5	-	-	-	-	-	-	-	-	-	-
Magelona johnstoni		47	151	84	105	29	58	13	-	-	-	-	2	20	-	10	8	183	24	3	-	-	9	-	74	36	-	-	-	-	-	-	-	-	-	-
Magelona mirabilis	P0807	1	5	2	4	1	2	2	-	-	-	-	1	-	2	-	2	2	3	4	2	9	-	6	2	4	1	-	-	-	-	4	-	2	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Chaetopteridae																																				
Chaetopteridae indet.	P0810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Phyllochaetopterus sp. indet.	P0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirratulidae																																				
Cirratulidae juv.	P0822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirratulidae sp. indet.	P0822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphelochaeta sp.	P0823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aphelochaeta marioni	P0824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Aphelochaeta vivipara	P0827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella sp. juv.	P0828	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella alata	P0829	-	-	-	1	-	-	2	1	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	3	3	-	1	-	-	1	-	-
Caulleriella bioculata	P0830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caulleriella zetlandica	P0831	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	12	4	5	5	-	-	-	-	-
Chaetozone sp.	P0832	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone gibber	P0833	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetozone setosa	P0834	53	2	53	151	103	217	89	-	-	-	-	2	-	-	2	3	34	60	-	2	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-
Cirratulus filiformis	P0837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tharyx killariensis	P0846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Tharyx killariensis? juv.	P0846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psammodrilidae																																				
Psammodrilus balanoglossoides	P0864	1	-	-	-	2	4	19	-	-	-	2	-	-	-	-	2	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	1
Flabelligeridae																																				
Diplocirrus glaucus	P0878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flabelligera affinis	P0881	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pherusa flabellata	P0884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acrocirridae																																				
Macrochaeta helgolandica	P0892	-	-	-	-	-	-	-	9	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
Capitellidae																																				
Capitellidae indet. juv.	P0903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capitella capitata	P0907	52	7	124	67	16	51	7	-	-	-	-	-	25	-	-	1	1	4	-	1	5	3	-	7	2	-	-	-	-	-	-	-	-	-	-
Mediomastus fragilis	P0919	-	-	-	1	-	-	60	-	26	243	21	-	1	1	-	-	20	-	-	-	-	-	-	-	-	27	78	25	99	30	3	1	3	1	-
Notomastus sp. B	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-
Notomastus sp. C	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	3	-	-	-	-	1	1
Notomastus sp. C? juv.	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notomastus sp. D	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	6	-	-	-	-	-	-
Notomastus sp. E juv.	P0920	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	4	1	-	-	-	-
Notomastus sp. juv.	P0920	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	7	1	3	-	1	4	1	1	1
Arenicolidae																																				
Arenicola sp. juv.	P0929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-
Maldanidae																																				
Maldanidae sp. juv.	P0938	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maldanidae sp. indet.	P0938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Praxillura longissima	P0944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euclymeninae spp.	P0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clymenura sp.	P0955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	9	2	-	1	-	-
Clymenura johnstoni	P0958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	10	-	-	-	-	-	-
Euclymene sp.	P0960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-
Euclymene lumbricoides	P0963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Euclymene oerstedii	P0964	-	-	-	2	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella sp.	P0970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella affinis	P0971	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Praxillella praetermissa?	P0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomachinae sp. indet.	P0976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicomache sp. indet.	P0979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Petaloproctus tenuis borealis	P0986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petaloproctus terricola	P0987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Opheliidae																																				
Opheliidae sp. juv.	P0993	-	-	-	-	-	-	-	1	1	5	5	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	-	-	1	-	-
Euzonus flabelligerus	P0996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelia sp. juv.	P0997	-	-	-	-	-	-	-	2	-	2	3	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	16	18	5	6	-	3	-	-
Ophelia borealis	P0999	-	-	-	-	-	-	-	6	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	2	-	2	1	-	-	-	-
Ophelia celtica	P1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Travisia forbesii	P1007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Armandia sp. juv.	P1009	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armandia polyophthalma	P1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-
Ophelina sp. juv.	P1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophelina acuminata	P1014	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Scalibregmatidae																																				
Asclerocheilus sp.	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus sp. A	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asclerocheilus intermedius	P1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma sp.	P1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma celticum	P1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scalibregma inflatum	P1027	-	-	1	2	3	-	4	27	168	271	120	68	45	7	242	24	2	-	13	1	-	-	2	190	284	709	705	82	67	15	7	16	85	1	-
Polygordiidae																																				
Polygordius sp.	P1062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polygordius appendiculatus	P1063	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Protodrilidae																																				
Protodrilus? sp.	P1069	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Protodriloididae																																				
Protodriloides chaetifer	P1083	-	-	-	-	-	-	-	-	3	-	1	-	-	14	-	-	3	-	-	1	7	-	1	-	-	-	-	-	-	-	4	-	-	-	9
Oweniidae																																				
Galathowenia sp.	P1091	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Myriochele sp.?	P1094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Owenia fusiformis	P1098	-	-	-	4	1	2	1	-	1	10	3	1	2	-	6	14	19	-	20	35	6	-	-	7	1	2	4	13	13	9	1	-	4	-	-
Pectinariidae																																				
Lagis koreni	P1107	178	7	76	4	10	4	309	230	12	1374	5977	330	6527	19	519	1014	934	755	1910	1110	249	34	1	3266	175	20	63	142	1560	216	66	73	625	8	2
Sabellariidae																																				
Sabellaria sp. juv.	P1115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellaria spinulosa	P1117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
Sabellaria spinulosa juv.	P1117	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	45	-	-	-	-	-
Ampharetidae																																				
Ampharetidae juv.	P1118	-	-	-	-	-	-	-	-	-	365	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Melinna elisabethae	P1122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melinna palmata	P1124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampharete sp.	P1133	-	-	-	-	-	-	2	-	-	161	7	-	-	-	-	1	-	-	-	-	-	-	-	-	-	214	147	12	-	-	-	-	-	-	-
Ampharete lindstroemi	P1139	-	-	-	11	-	15	-	1	15	2080	18	1	13	-	-	5	13	2	2	1	-	-	-	7	1	907	618	76	77	-	-	-	-	-	-
Amphicteis midas	P1143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anobothrus gracilis	P1147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichobranchidae																																				
Terebellides stroemi	P1175	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	6	1	-	-	-	-	-
Trichobranchus glacialis	P1177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terebellidae																																				
Terebellidae indet.	P1179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Terebellidae juv.	P1179	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	10	22	6	6	6	7	7
Amphitritides gracilis	P1185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Axionice maculata	P1187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eupolymnia sp. indet.	P1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Eupolymnia nesidensis	P1190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lanice conchilega	P1195	1	-	4	-	-	1	4	2	6	7	3	12	8	3	8	21	5	7	18	59	9	1	-	4	3	7	2	6	10	5	1	-	4	-	-
Loimia sp.	P1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea juv. indet.	P1209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea venustula	P1210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nicolea zostericola	P1211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phisidia aurea	P1215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pista cristata	P1217	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrinae indet.	P1227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaena trilobata	P1229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysilla loveni	P1233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Polycirrus spp.	P1235	-	-	-	-	-	-	-	-	-	37	12	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	13	8	-	-	1	1	-
Polycirrus aurantiacus	P1237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus haematodes	P1240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus medusa	P1242	-	-	-	-	-	-	-	1	-	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	1	-	-
Polycirrus norvegicus	P1243	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycirrus sp. juv. (norvegicus?)	P1243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Streblosoma spp.	P1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus sp. juv.	P1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus cincinnatus	P1254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thelepus setosus	P1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabellidae																																				
Sabellidae juv.	P1257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fabriciinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Sabellinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Branchiomma bombyx	P1263	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Chone sp. juv.	P1264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chone filicaudata	P1269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Demonax torulis	P1276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Jasmineira caudata	P1289	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jasmineira elegans	P1290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sabella sp.	P1317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	5	-	5	5	-	-
Sabella discifera	P1318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
Serpulidae																																				
Serpulidae sp. juv.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Serpulidae sp. indet.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Chitinopoma serrula	P1327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydroides sp.	P1330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
Pomatoceros sp. indet.	P1339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pomatoceros lamarckii	P1340	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Pomatoceros triqueter	P1341	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Serpula vermicularis	P1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Filograna implexa	P1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spirorbidae																																				
Spirorbidae sp.	P1362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OLIGOCHAETA																																				
Tubificidae																																				
Tubificidae spp.	P1425	-	-	1	48	9	4	26	-	7	1	3	-	-	-	6	-	1	-	-	4	-	-	-	-	-	35	48	4	-	-	-	-	-	-	-
Tubificoides sp. (benedii?)	P1490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubificoides sp. (pseudogaster?)	P1498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Enchytraeidae																																				
Enchytraeidae spp.	P1501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grania spp.	P1524	-	-	-	-	-	-	-	4	3	34	26	-	3	87	1	-	-	-	38	-	12	-	8	-	-	-	2	9	4	2	12	6	6	-	-
TOTAL		**967**	**330**	**695**	**1075**	**313**	**638**	**1113**	**466**	**446**	**5286**	**6567**	**682**	**6991**	**405**	**1248**	**1628**	**1802**	**1215**	**2323**	**1650**	**463**	**123**	**93**	**3865**	**864**	**3763**	**2399**	**735**	**2328**	**642**	**329**	**288**	**1050**	**101**	**58**

Table A7.1C: Abundance data for stations 71-105: Annelida

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
POLYCHAETA																																			
Pisionidae																																			
Pisione remota	P0015	-	1	2	6	5	-	6	-	-	-	17	3	-	2	2	15	1	-	3	-	-	-	8	-	2	1	8	25	-	-	-	5	4	**1128**
Aphroditidae																																			
Aphrodita aculeata	P0019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Hermonia hystrix	P0021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-	-	-	-	9	-	-	-	-	-	-	**86**
Polynoidae																																			
Acholoe squamosa	P0029	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Adyte assimilis	P0031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Adyte pellucida	P0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Gattyana cirrosa	P0049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**28**
Harmothoinae sp. juv		-	-	-	-	16	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	5	1	-	-	-	-	11	-	-	-	-	-	-	**1497**
Harmothoinae sp. indet.		-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**258**
Malmgrenia sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**31**
Malmgrenia arenicolae		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Harmothoe sp.	P0050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
Harmothoe andreapolis	P0051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**74**
Malmgrenia castanea?	P0055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Harmothoe extenuata	P0058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Harmothoe fraserthomsoni	P0060	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Harmothoe glabra	P0062	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Harmothoe imbricata ?	P0064	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**5**
Harmothoe impar ?	P0065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**7**
Harmothoe pagenstecheri		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
Malmgrenia marphysae	P0068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**35**
Lepidonotus squamatus	P0082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**257**
Polynoe scolopendrina	P0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Pholoidae																																			
Pholoe sp. juv.	P0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	3	2	-	-	-	-	1	-	-	-	-	-	-	**1078**
Pholoe sp. B	P0091	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**912**
Pholoe tuberculata	P0095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	3	-	11	-	-	-	-	**466**
Sigalionidae																																			
Sigalionidae juv.	P0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Sigalion mathildae	P0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	-	-	-	-	-	-	-	-	-	-	-	**44**
Sthenelais sp. indet.	P0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Sthenelais boa	P0107	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**177**
Sthenelais limicola	P0109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	**47**
Phyllodocidae																																			
Phyllodocidae sp. indet.	P0114	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**10**
Eteone sp. indet.	P0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Eteone cf. longa	P0118	-	-	-	-	6	-	-	-	-	-	2	1	10	1	1	-	-	-	8	-	4	5	-	-	-	-	6	-	-	-	2	-	-	**467**
Hesionura elongata	P0122	21	172	62	49	202	92	82	104	20	-	92	119	9	116	34	70	21	125	6	5	-	1	89	13	447	206	22	229	1	39	960	328	633	**9466**
Eteone foliosa	P0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**6**
Mysta picta	P0127	-	-	-	1	2	-	-	-	-	-	4	-	1	-	-	1	1	-	-	-	1	3	-	-	-	1	-	2	-	-	-	-	-	**36**
Mystides caeca	P0130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Pseudomystides sp.	P0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Pseudomystides limbata	P0136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	**16**
Anaitides groenlandica	P0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**70**
Anaitides cf. longipes	P0143	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	4	-	-	-	-	-	-	**33**
Anaitides mucosa	P0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**12**
Anaitides rosea	P0146	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	2	-	2	-	-	-	-	1	-	-	-	-	-	-	-	**97**
Eulalia sp. A	P0150	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**29**
Eulalia bilineata	P0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eulalia expusilla	P0153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eulalia mustela	P0155	-	-	-	3	1	-	4	-	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	**200**
Eulalia ornata	P0156	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Eulalia tripunctata	P0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eumida sp. juv.	P0163	-	-	-	-	16	-	1	-	-	-	2	-	2	3	3	-	-	-	3	-	-	2	-	-	-	-	3	-	-	1	3	-	-	**449**
Eumida bahusiensis	P0164	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	3	2	-	-	-	-	2	-	-	-	1	-	-	**630**
Eumida ockelmanni	P0165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	**77**
Eumida sanguinea	P0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**28**
Paranaitis kosteriensis	P0176	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Phyllodoce sp.	P0178	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Pterocirrus macroceros	P0188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Glyceridae																																			
Glycera sp. juv.	P0255	-	6	1	1	9	2	4	-	-	-	3	6	1	7	1	-	2	3	-	-	-	-	-	-	6	2	6	-	-	-	1	-	-	**385**
Glycera sp. indet.	P0255	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**5**
Glycera alba	P0256	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	1	-	-	-	-	-	-	-	-	5	-	-	-	-	**100**
Glycera celtica	P0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Glycera gigantea	P0259	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**
Glycera lapidum	P0260	-	-	3	2	2	-	-	-	-	-	1	1	-	-	-	-	-	-	1	-	-	-	1	-	-	-	22	8	-	-	-	2	-	**477**
Glycera oxycephala	P0262	17	4	1	2	2	3	4	-	-	-	2	3	-	1	2	4	5	3	-	1	-	-	8	5	7	9	3	7	-	3	5	7	6	**341**
Glycera tridactyla	P0265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	16	-	-	-	-	-	-	-	-	1	-	-	**344**
Goniadidae																																			
Goniadidae juv.	P0266	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**15**
Glycinde nordmanni	P0268	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	**32**
Goniada sp. juv.	P0269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	**7**
Goniada emerita	P0270	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**10**
Goniada maculata	P0271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	2	-	8	-	-	-	-	**102**
Goniadella sp. juv.	P0274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**7**
Goniadella gracilis	P0276	-	-	-	1	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	**98**
Sphaerodoridae																																			
Commensodorum commensalis	P0280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Sphaerodoropsis sp.	P0285	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Sphaerodorum gracilis	P0291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
Hesionidae																																			
Hesionidae juv.	P0293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Gyptis sp. juv.	P0297	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**
Gyptis rosea	P0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Psamathe fusca	P0305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	**43**
Nereimyra punctata	P0311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Podarke pallida	P0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**
Podarkeopsis capensis	P0319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	4	7	-	-	-	1	2	-	1	-	-	-	-	**187**
Syllidia armata	P0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**204**
Hesionides maxima	P0325	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Microphthalmus sp.	P0326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Microphthalmus fragilis	P0330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Microphthalmus listensis	P0331	-	-	-	-	1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	5	**50**
Microphthalmus similis	P0333	-	1	7	2	184	-	9	1	-	-	3	4	8	-	-	1	-	-	3	-	-	1	-	-	17	3	-	1	-	-	4	42	107	**1032**
Syllidae																																			
Ehlersia sp. A	P0348	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Syllis cornuta	P0349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Ehlersia ferrugina	P0350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
Syllis sp. B	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Syllis sp. E	P0359	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**314**
Syllis sp. H	P0359	-	-	-	1	3	1	5	-	-	-	1	-	-	-	-	2	-	1	-	-	-	-	-	1	4	-	10	5	-	-	-	-	2	**294**
Syllis sp. L	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Syllis sp. juv.	P0359	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Syllis variegata	P0371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Amblyosyllis madierensis?	P0375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Eusyllis blomstrandi	P0380	-	-	-	-	10	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	**715**
Eusyllis lamelligera	P0382	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Odontosyllis fulgurans	P0387	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**
Odontosyllis gibba	P0388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Opisthodonta pterochaeta	P0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	**43**
Palposyllis prosostoma	P0394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Pionosyllis lamelligera	P0398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Streptosyllis sp. A	P0402	7	5	9	1	4	-	4	-	-	-	3	-	-	-	1	4	-	29	-	-	-	-	7	-	6	8	-	3	-	-	35	6	25	**230**
Streptosyllis bidentata	P0403	2	14	10	3	34	2	9	-	-	-	13	29	2	21	36	28	1	13	-	-	-	-	12	2	23	27	25	4	-	8	57	7	71	**1453**
Streptosyllis websteri	P0405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	**9**
?Syllides sp. X	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Syllides sp. Y	P0406	-	-	-	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**66**
Syllides indet.	P0406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Syllides benedicti	P0407	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**
Brania swedmarki	P0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Exogone hebes	P0421	-	-	-	-	4	1	2	-	-	-	-	5	8	4	4	-	1	-	2	-	-	-	1	3	-	3	2	-	-	-	1	-	2	**526**
Exogone naidina	P0422	4	-	2	-	-	33	-	-	-	-	-	6	3	2	1	1	1	-	1	-	-	-	19	1	1	2	2	-	1	1	6	-	3	**291**
Exogone verugera	P0423	-	-	-	-	2	-	-	-	-	-	-	1	2	2	-	-	-	-	-	1	-	-	-	2	-	1	23	-	-	-	-	-	1	**654**
Sphaerosyllis sp. X	P0424	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**116**
Sphaerosyllis sp. Y	P0424	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**212**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Sphaerosyllis bulbosa	P0425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**648**
Sphaerosyllis erinaceus	P0426	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Sphaerosyllis hystrix	P0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**48**
Sphaerosyllis taylori	P0430	1	1	1	-	-	3	10	-	-	-	-	1	1	5	2	-	1	2	-	-	-	-	-	1	-	2	9	-	-	-	2	-	1	**381**
Sphaerosyllis tetralix	P0431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**52**
Autolytus juv.	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**109**
Autolytus indet.	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Autolytus indet. stolons	P0434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**18**
Autolytus alexandri	P0435	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**145**
Autolytus brachycephalus	P0437	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**55**
Autolytus inermis	P0439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Autolytus langerhansi	P0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Autolytus prolifera	P0444	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	**244**
Proceraea cornuta	P0452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**
Procerastea halleziana	P0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**15**
Nereididae																																			
Nereididae sp.	P0458	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	5	-	-	-	-	-	-	**74**
Nereis elitoralis	P0474	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**14**
Nereis longissima	P0475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Nereis zonata	P0478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Websterinereis glauca	P0487	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Nephtyidae																																			
Aglaophamus rubella	P0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**51**
Nephtys sp. juv.	P0494	2	2	-	1	-	-	12	11	3	6	-	-	-	13	-	-	24	-	3	5	4	8	1	-	1	2	-	-	3	9	3	1	3	**510**
Nephtys sp. indet.	P0494	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Nephtys assimilis	P0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**66**
Nephtys caeca	P0496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Nephtys cirrosa	P0498	7	9	6	-	6	9	4	11	6	13	7	9	22	16	21	10	6	22	-	3	2	14	7	7	4	11	3	4	3	4	14	5	6	**800**
Nephtys hombergii	P0499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	1	-	-	-	-	**168**
Nephtys hombergii? juv.	P0499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Nephtys kersivalensis	P0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**165**
Nephtys longosetosa	P0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Nephtys pulchra juv.?	P0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eunicida juv.	P0536	-	-	-	-	-	6	2	-	-	-	1	-	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**
Onuphidae																																			
Onuphidae sp. juv.	P0537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Aponuphis bilineata	P0539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Nothria conchylega	P0545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Eunicidae																																			
Eunicidae juv.	P0553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Marphysa sp. indet.	P0563	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**2**
Marphysa bellii	P0564	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	**149**
Marphysa sanguinea	P0566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Nematonereis unicornis	P0568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**17**
Lumbrineridae																																			
Lumbrineridae indet.	P0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Lumbrineriopsis sp.	P0570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Lumbrineris sp. juv.	P0572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**65**
Lumbrineris sp. indet.	P0572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**8**
Lumbrineris agastos	P0573	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Lumbrineris fragilis	P0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Lumbrineris gracilis	P0579	-	-	-	-	6	-	-	-	-	-	-	-	1	-	-	-	-	-	3	-	1	1	-	-	-	-	4	-	1	-	-	-	-	**1684**
Lumbrineris latreilli?	P0582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Oenonidae																																			
Oenone iricolor	P0588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Drilonereis filum	P0591	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Notocirrus scoticus	P0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**2**
Dorvilleidae																																			
?Ophryotrocha sp.	P0613	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
?Ougia spp.	P0625	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Parougia spp.	P0632	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	1	**100**
Protodorvillea kefersteini	P0638	-	-	-	6	3	-	-	-	-	-	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	**701**
Schistomeringos neglecta	P0642	-	-	-	-	-	-	5	-	-	-	-	4	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**44**
Schistomeringos rudolphi	P0643	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**29**
Orbiniidae																																			
Orbiniidae indet.	P0655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Orbinia sp. juv.	P0662	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Orbinia armandi	P0663	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	1	3	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	**16**
Orbinia latreilli?	P0664	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Orbinia sertulata	P0665	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Scoloplos armiger	P0672	-	-	-	-	3	1	-	-	-	-	-	-	3	1	2	-	-	-	105	215	-	-	-	-	-	-	4	-	17	-	-	-	-	**552**
Paraonidae																																			
Paraonidae sp.	P0674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**5**
Aricidea sp.	P0675	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Aricidea minuta	P0677	-	-	-	-	5	-	-	-	-	-	-	1	6	1	2	-	-	-	57	14	-	-	-	-	-	9	-	-	16	-	-	-	-	**361**
Aricidea catherinae	P0684	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Aricidea cerrutii	P0685	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	1	-	-	**75**
Aricidea laubieri	P0686	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Paradoneis sp.	P0695	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Paradoneis cf. ilvana	P0698	1	2	1	-	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	4	**82**
Paradoneis lyra	P0699	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**155**
Paraonis fulgens	P0704	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Questidae																																			
Questidae sp.	P0706	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	42	1	-	**166**
Poecilochaetidae																																			
Poecilochaetus sp. juv.?	P0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Poecilochaetus serpens	P0718	1	1	-	1	31	-	2	-	-	-	1	1	14	3	9	2	3	-	-	-	19	13	-	-	1	-	7	-	3	-	1	-	-	**1244**
Spionidae																																			
Spionidae juv.	P0720	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	6	7	-	1	-	1	-	1	-	**23**
Aonides sp.	P0721	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Aonides oxycephala	P0722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Aonides paucibranchiata	P0723	1	4	2	12	14	3	7	-	-	-	30	1	5	2	3	4	4	3	4	2	-	-	11	2	24	18	41	16	1	-	14	7	6	**2047**
Laonice sp.	P0731	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**635**
Laonice bahusiensis	P0733	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**255**
Malacoceros sp.	P0736	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Malacoceros tetracerus	P0738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Prionospio cirrifera	P0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**3**
Polydora sp.	P0748	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**59**
Polydora caeca ?	P0750	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**41**
Polydora caulleryi	P0751	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**100**
Polydora ciliata ?	P0752	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Polydora cornuta	P0753	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Polydora flava	P0754	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Polydora hermaphroditica	P0756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Polydora sanctijosephi?	P0761	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Polydora socialis?	P0762	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Prionospio sp. juv.	P0763	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	**2**
Aurospio banyulensis	P0766	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	1	-	-	-	-	-	**361**
Pseudopolydora sp. juv.	P0771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**
Pseudopolydora cf. paucibranchiata	P0773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Pseudopolydora pulchra	P0774	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	**141**
Pygospio elegans	P0776	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Scolelepis sp.	P0777	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Scolelepis sp. juv.	P0777	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**23**
Scolelepis bonnieri	P0779	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Scolelepis foliosa	P0781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**
Scolelepis mesnili	P0782	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Parascolelepis cf. gilchristi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Spio sp. A	P0787	1	-	-	2	17	-	-	3	1	-	67	3	19	-	2	46	1	11	16	-	24	36	10	1	-	2	4	1	7	1	3	-	-	**2005**
Spio sp.	P0787	-	1	2	-	-	2	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**29**
Spio armata	P0788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**41**
Spio filicornis	P0790	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Spio goniocephala		-	3	-	-	-	1	2	-	-	-	-	3	-	6	-	2	4	-	-	-	-	-	-	7	-	1	-	-	-	7	1	1	2	**118**
Spiophanes bombyx	P0794	2	8	6	3	25	10	26	1	1	1	10	9	46	40	38	7	33	2	175	66	310	181	10	6	4	21	14	1	35	4	39	1	3	**10039**
Spiophanes kroyeri	P0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**63**
Magelonidae																																			
Magelona sp. juv.	P0803	-	-	-	-	-	-	-	8	14	12	-	-	-	3	5	1	-	5	-	-	-	12	1	-	-	-	-	-	-	-	-	-	-	**482**
Magelona alleni	P0804	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	**70**
Magelona filiformis	P0805	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	70	21	1	-	-	-	-	-	-	-	-	-	-	**1855**
Magelona johnstoni		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	12	-	-	-	-	-	-	-	-	-	-	-	**1178**
Magelona mirabilis	P0807	-	-	1	-	-	-	-	-	3	8	2	-	1	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	2	1	-	1	**124**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Chaetopteridae																																			
Chaetopteridae indet.	P0810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Phyllochaetopterus sp. indet.	P0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Cirratulidae																																			
Cirratulidae juv.	P0822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Cirratulidae sp. indet.	P0822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Aphelochaeta sp.	P0823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Aphelochaeta marioni	P0824	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
?Aphelochaeta vivipara	P0827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Caulleriella sp. juv.	P0828	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Caulleriella alata	P0829	-	-	-	-	10	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	**314**
Caulleriella bioculata	P0830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Caulleriella zetlandica	P0831	-	-	-	-	12	-	2	-	-	-	-	-	3	1	-	-	-	-	1	-	-	-	-	-	-	-	5	-	-	-	-	-	-	**795**
Chaetozone sp.	P0832	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Chaetozone gibber	P0833	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**
Chaetozone setosa	P0834	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	136	19	-	-	-	-	-	-	-	-	-	-	-	**991**
Cirratulus filiformis	P0837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Tharyx killariensis	P0846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**25**
Tharyx killariensis? juv.	P0846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**2**
Psammodrilidae																																			
Psammodrilus balanoglossoides	P0864	-	1	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	**77**
Flabelligeridae																																			
Diplocirrus glaucus	P0878	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Flabelligera affinis	P0881	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Pherusa flabellata	P0884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Acrocirridae																																			
Macrochaeta helgolandica	P0892	2	1	4	-	10	89	10	1	-	-	-	31	-	33	1	12	-	12	-	-	-	-	2	12	3	46	-	-	-	15	16	-	235	**1032**
Capitellidae																																			
Capitellidae indet. juv.	P0903	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Capitella capitata	P0907	-	1	-	-	31	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	26	13	-	-	-	-	-	-	-	-	-	-	-	**521**
Mediomastus fragilis	P0919	-	1	-	1	11	1	8	-	-	-	19	9	21	-	14	2	2	18	31	1	6	1	2	-	4	4	25	-	-	-	6	1	5	**10956**
Notomastus sp. B	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Notomastus sp. C	P0920	-	1	-	7	-	1	2	-	-	-	5	-	1	-	-	1	1	2	-	-	-	-	-	-	9	-	1	6	-	-	-	-	-	**147**
Notomastus sp. C? juv.	P0920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**2**
Notomastus sp. D	P0920	-	5	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	1	-	-	-	-	**232**
Notomastus sp. E juv.	P0920	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	5	-	-	-	-	-	-	**101**
Notomastus sp. juv.	P0920	1	4	2	3	-	1	-	-	-	-	-	2	2	1	-	3	1	6	1	-	-	-	5	2	3	3	9	3	-	2	1	-	-	**341**
Arenicolidae																																			
Arenicola sp. juv.	P0929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Maldanidae																																			
Maldanidae sp. juv.	P0938	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**29**
Maldanidae sp. indet.	P0938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Praxillura longissima	P0944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Euclymeninae spp.	P0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Clymenura sp.	P0955	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1	-	1	-	**101**
Clymenura johnstoni	P0958	-	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	3	-	-	-	1	-	-	**695**
Euclymene sp.	P0960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Euclymene lumbricoides	P0963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	5	-	-	-	-	-	-	**24**
Euclymene oerstedii	P0964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**88**
Praxillella sp.	P0970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**37**
Praxillella affinis	P0971	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**195**
Praxillella praetermissa?	P0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**
Nicomachinae sp. indet.	P0976	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Nicomache sp. indet.	P0979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Petaloproctus tenuis borealis	P0986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Petaloproctus terricola	P0987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Opheliidae																																			
Opheliidae sp. juv.	P0993	-	-	-	-	5	-	3	-	1	-	-	-	3	3	1	-	-	-	11	2	-	1	-	-	-	-	3	-	-	-	2	1	2	**87**
Euzonus flabelligerus	P0996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Ophelia sp. juv.	P0997	-	1	-	-	-	1	-	-	-	-	-	-	1	-	2	-	2	-	-	7	-	-	-	-	-	8	18	-	1	-	2	-	-	**175**
Ophelia borealis	P0999	-	-	-	-	-	-	-	-	-	-	-	-	1	2	5	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	**55**
Ophelia celtica	P1000	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Travisia forbesii	P1007	1	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	-	-	3	-	-	-	**21**
Armandia sp. juv.	P1009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Armandia polyophthalma	P1011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Ophelina sp. juv.	P1012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Ophelina acuminata	P1014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	**11**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Scalibregmatidae																																			
Asclerocheilus sp.	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Asclerocheilus sp. A	P1021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Asclerocheilus intermedius	P1022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**
Scalibregma sp.	P1025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Scalibregma celticum	P1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**178**
Scalibregma inflatum	P1027	-	4	4	2	18	1	5	-	-	-	-	1	30	1	-	-	4	1	1184	145	-	-	-	-	-	1	82	-	136	-	3	-	-	**8054**
Polygordiidae																																			
Polygordius sp.	P1062	-	-	2	11	4	7	3	-	-	-	24	4	-	1	-	3	-	3	1	-	-	1	3	-	6	3	2	14	-	-	5	17	7	**365**
Polygordius appendiculatus	P1063	-	1	8	4	5	9	-	-	-	-	12	2	-	1	-	6	-	4	-	-	-	-	2	-	2	5	1	3	-	-	1	6	1	**374**
Protodrilidae																																			
Protodrilus? sp.	P1069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	9	2	10	20	1	5	-	3	33	15	61	**303**
Protodriloididae																																			
Protodriloides chaetifer	P1083	12	12	22	1	13	9	1	32	7	-	-	9	-	6	1	7	6	12	1	-	-	-	12	-	2	14	-	-	-	1	128	21	106	**631**
Oweniidae																																			
Galathowenia sp.	P1091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**78**
Myriochele sp.?	P1094	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Owenia fusiformis	P1098	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	108	51	-	-	-	1	8	-	1	-	-	-	1	**525**
Pectinariidae																																			
Lagis koreni	P1107	1	20	6	39	358	49	153	13	-	-	11	20	277	33	532	13	143	197	115	3	313	331	8	-	2	26	17	-	11	-	2	4	-	**38964**
Sabellariidae																																			
Sabellaria sp. juv.	P1115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Sabellaria spinulosa	P1117	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**994**
Sabellaria spinulosa juv.	P1117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**194**
Ampharetidae																																			
Ampharetidae juv.	P1118	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**441**
Melinna elisabethae	P1122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Melinna palmata	P1124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**43**
Ampharete sp.	P1133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	7	-	-	-	-	-	-	**881**
Ampharete lindstroemi	P1139	1	-	-	-	9	-	5	-	-	-	-	-	-	-	-	-	-	-	90	-	161	51	1	-	-	-	80	-	-	-	-	-	-	**6622**
Amphicteis midas	P1143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Anobothrus gracilis	P1147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Trichobranchidae																																			
Terebellides stroemi	P1175	-	-	1	-	-	-	1	-	-	-	-	-	5	-	-	-	2	-	-	-	-	-	1	-	2	-	7	-	-	-	-	-	-	**710**
Trichobranchus glacialis	P1177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Terebellidae																																			
Terebellidae indet.	P1179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**27**
Terebellidae juv.	P1179	9	12	16	3	-	142	11	-	1	-	10	33	6	153	8	31	8	5	-	-	-	-	32	2	22	19	2	-	-	4	18	2	34	**1086**
Amphitritides gracilis	P1185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Axionice maculata	P1187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Eupolymnia sp. indet.	P1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eupolymnia nesidensis	P1190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Lanice conchilega	P1195	-	-	-	2	14	-	7	-	-	-	3	-	4	7	2	-	2	-	4	2	4	3	-	-	-	4	8	-	-	-	3	1	-	**545**
Loimia sp.	P1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**8**
Nicolea juv. indet.	P1209	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Nicolea venustula	P1210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Nicolea zostericola	P1211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Phisidia aurea	P1215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Pista cristata	P1217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**35**
Polycirrinae indet.	P1227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Amaena trilobata	P1229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Lysilla loveni	P1233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**48**
Polycirrus spp.	P1235	-	1	-	3	3	-	-	-	-	-	1	22	2	1	3	1	-	1	-	-	-	-	-	1	5	1	13	3	-	-	1	-	2	**678**
Polycirrus aurantiacus	P1237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Polycirrus haematodes	P1240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Polycirrus medusa	P1242	-	-	1	-	2	1	-	-	-	-	1	1	-	-	-	-	-	-	-	1	-	-	-	2	-	-	2	-	-	2	-	-	1	**75**
Polycirrus norvegicus	P1243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	**192**
Polycirrus sp. juv. (norvegicus?)	P1243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**
?Streblosoma spp.	P1250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Thelepus sp. juv.	P1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Thelepus cincinnatus	P1254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Thelepus setosus	P1255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Sabellidae																																			
Sabellidae juv.	P1257	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	**42**
Fabriciinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Sabellinae sp. juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Branchiomma bombyx	P1263	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Chone sp. juv.	P1264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**207**
Chone filicaudata	P1269	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**309**
Demonax torulis	P1276	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Jasmineira caudata	P1289	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Jasmineira elegans	P1290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**37**
Sabella sp.	P1317	-	-	-	-	6	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**187**
Sabella discifera	P1318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Serpulidae																																			
Serpulidae sp. juv.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**28**
Serpulidae sp. indet.	P1324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**102**
Chitinopoma serrula	P1327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Hydroides sp.	P1330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	8	-	-	-	-	-	-	**111**
Pomatoceros sp. indet.	P1339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**95**
Pomatoceros lamarckii	P1340	-	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**545**
Pomatoceros triqueter	P1341	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**200**
Serpula vermicularis	P1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	**83**
Filograna implexa	P1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Spirorbidae																																			
Spirorbidae sp.	P1362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
OLIGOCHAETA																																			
Tubificidae																																			
Tubificidae spp.	P1425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	7	-	-	-	-	-	2	8	1	-	-	-	-	**582**
Tubificoides sp. (benedii?)	P1490	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Tubificoides sp. (pseudogaster?)	P1498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Enchytraeidae																																			
Enchytraeidae spp.	P1501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Grania spp.	P1524	3	17	17	2	36	22	6	8	-	-	21	24	8	23	23	16	15	4	33	4	-	-	26	9	19	43	5	11	-	4	107	6	78	**1566**
TOTAL		**99**	**318**	**210**	**183**	**1245**	**509**	**442**	**217**	**67**	**46**	**386**	**372**	**543**	**534**	**789**	**294**	**300**	**491**	**1965**	**486**	**1301**	**821**	**293**	**85**	**644**	**562**	**700**	**371**	**275**	**115**	**1537**	**493**	**1433**	**139308**

Table A7.1D: Abundance data for stations 106-148: Annelida

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
POLYPLACOPHORA																																			
CHITON juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	W0053	-	-	-	-	3	2	-	-	-	-	16	8	6	-	-	2	2	15	14	83	3	5	-	-	-	-	6	-	6	8	1	-	-	-
GASTROPODA																																			
GASTROPODA indet.		-	3	-	-	7	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	7	-	-	-	2	-	-	1	16	43	55	-	-	1
Emarginula fissura	W0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Diodora graeca	W0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-
Tricolia pullus	W0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trochidae indet.	W0140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Gibbula tumida	W0161	-	-	3	-	16	-	-	-	-	-	13	9	83	2	13	3	5	14	29	58	11	-	-	-	1	-	8	135	159	95	195	-	15	-
Jujubinus montagui	W0174	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Calliostoma zizyphinum	W0182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Dikoleps nitens	W0204	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cerithiopsis tubercularis	W0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Rissoidae indet.	W0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rissoa parva	W0334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Alvania punctura	W0344	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtusella alderi	W0365	-	-	2	1	5	2	-	-	-	-	-	-	13	7	3	5	2	2	-	-	6	6	3	1	7	2	-	46	39	7	28	1	18	2
Onoba semicostata	W0371	-	-	-	-	-	-	-	-	-	-	36	13	-	-	6	1	-	-	8	6	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Pusillina inconspicua	W0376	-	-	4	-	2	13	-	-	-	-	-	3	-	2	6	-	2	28	15	75	1	5	-	-	-	-	-	5	-	60	1	8	3	-
Hyala vitrea	W0410	-	-	-	-	-	-	-	-	-	-	4	2	-	-	6	1	-	1	36	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caecum glabrum	W0418	-	-	142	121	-	-	-	1	1	2	1	1	58	1	-	7	-	5	-	-	1	-	1	-	6	35	-	14	117	1	98	-	-	1
Tornus subcarinatus	W0421	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naticidae juv.	W0482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	W0491	2	-	1	3	2	-	1	1	1	3	-	-	-	3	-	5	2	2	-	-	-	1	1	1	4	2	-	3	1	-	2	-	-	3
Polinices catena	W0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aclis minor	W0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Graphis albida	W0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulimidae indet.	W0599	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulima bilineata	W0603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melanella alba	W0634	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitreolina philippi	W0669	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-
Ocenebra erinacea	W0685	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Buccinum undatum	W0708	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Colus jeffreysianus	W0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinia juv.	W0743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinia incrassata	W0747	-	-	-	-	1	-	-	-	-	-	2	-	1	-	4	-	-	-	6	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-
Mangelia nebula	W0801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raphitoma linearis	W0861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Odostomia plicata	W0913	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia turrita	W0915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Odostomia unidentata	W0916	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brachystomia eulimoides	W0922	-	-	3	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-
Chrysallida obtusa	W0937	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Noemiamea dolioliformis	W0956	-	-	-	-	-	-	-	-	-	-	4	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ondina diaphana	W0959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Partulida spiralis	W0965	-	-	-	-	-	-	-	-	-	-	8	7	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbonilla acuta	W0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OPISTHOBRANCHIA juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatilis	W1006	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cylichna cylindracea	W1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine indet.	W1036	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	W1038	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diaphana minuta	W1059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retusa juv.	W1074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retusa truncatula	W1080	-	-	-	-	-	-	-	-	-	-	1	3	-	-	1	-	-	-	2	1	-	-	-	-	-	-	1	1	2	-	-	-	-	-
NUDIBRANCHIA indet.		-	1	6	11	6	7	-	-	-	2	4	18	3	1	11	11	14	10	13	13	9	7	1	3	-	-	16	16	15	16	28	74	25	6
Doto indet.	W1270	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Okenia sp.	W1307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorididae indet.	W1370	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	2	-	-	-	-	-	-	6	1	3	-	2	-	20	-
SCAPHOPODA																																			
Antalis juv.	W1516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
PELECYPODA																																			
BIVALVE indet.		1	-	-	-	2	-	-	2	11	-	20	-	-	-	-	-	-	-	-	-	2	1	3	1	1	-	-	-	7	4	-	-	4	2
Nuculacea juv.	W1562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nucula nitidosa	W1569	700	6	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nucula nucleus	W1570	-	-	-	-	-	-	-	-	-	-	23	6	2	-	-	-	-	-	53	12	-	-	-	-	-	-	8	-	-	-	-	-	-	-
Glycymeris glycymeris	W1688	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	-	-	-	-
Mytilidae juv.	W1691	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	603	-	-
Mytilus edulis	W1695	19	8	141	187	37	32	-	14	5	21	79	70	44	69	20	57	53	118	407	925	91	154	22	15	4	5	-	2	6	163	55	-	203	47
Modiolus adriaticus	W1700	-	-	7	-	53	7	-	-	-	-	-	1	6	6	20	56	8	3	3	-	4	-	-	-	-	-	4	44	99	5	6	-	-	1
Modiolus modiolus	W1702	-	-	1	-	4	19	-	1	1	1	-	67	4	-	24	-	3	8	28	16	-	-	-	9	2	2	2	-	6	2	3	5	8	-
Modiolula phaseolina	W1708	-	-	-	-	-	11	-	-	-	-	42	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Modiolarca tumida	W1718	-	-	-	-	-	3	-	-	-	-	-	1	-	-	3	-	-	-	6	17	-	1	-	-	-	-	1	1	1	-	-	-	-	-
Musculus discors	W1721	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-
Rhomboidella prideauxi	W1724	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limatula subauriculata	W1746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Pectinidae juv.	W1768	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pecten maximus	W1771	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	W1773	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	1	-	-	2	-	-	4	1
Palliolum tigerinum	W1786	-	-	-	-	-	2	-	-	-	-	1	-	2	-	-	-	-	3	-	2	-	-	-	-	1	-	-	2	4	-	2	-	-	-
Anomiidae indet.	W1805	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heteranomia squamula	W1809	-	-	6	2	7	13	-	1	-	-	462	72	38	8	52	7	3	35	72	221	14	17	-	-	-	-	344	145	45	76	110	4	5	5
Thyasira flexuosa	W1837	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplodonta rotundata	W1864	-	-	2	-	1	3	-	-	-	-	-	1	4	2	-	1	1	1	1	-	2	2	-	8	-	1	-	-	-	1	2	-	2	5
Semierycina nitida	W1882	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacutidae indet.	W1888	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacuta substriata	W1892	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Tellimya ferruginosa	W1902	11	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	3	-	-	-
Mysella bidentata	W1906	496	1	-	1	37	55	-	6	10	1	9	1	2	3	8	50	14	72	10	18	27	14	-	25	4	-	1	5	5	53	4	-	3	-
'Mysella' obliquata	W1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goodallia triangularis	W1929	-	-	4	91	2	-	14	29	181	28	-	1	-	4	2	5	-	1	-	-	7	-	14	1	24	4	-	6	8	1	4	36	10	39
Acanthocardia echinata	W1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium juv.	W1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium ovale	W1951	-	-	-	-	-	-	-	-	-	-	28	40	-	-	-	-	-	-	187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium scabrum	W1952	-	-	-	-	6	5	-	-	-	-	69	40	14	-	14	4	-	16	-	37	2	1	-	-	-	-	-	57	63	22	66	-	1	-
Mactra stultorum	W1972	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula indet.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula juv.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula elliptica	W1975	-	1	60	612	60	8	95	80	146	229	2	-	34	104	18	619	38	89	7	5	59	37	206	21	118	12	-	12	46	27	115	42	9	47
Spisula solida	W1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula subtruncata	W1978	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lutraria lutraria	W1984	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	-	-	-	-	2	-
Ensis spp.	W1996	-	-	5	-	-	2	-	-	-	-	-	-	-	-	1	-	8	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-
Ensis arcuatus	W1998	-	-	11	-	28	2	-	2	1	6	-	-	-	-	-	8	-	-	-	-	5	14	1	2	-	-	-	-	3	9	-	-	1	3
Ensis ensis	W1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-
Pharus legumen	W2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phaxas pellucidus	W2006	4	-	-	-	3	3	-	2	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3	-	-	-	1	-	-	-	-	-
Tellinidae indet.	W2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Angulus tenuis	W2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arcopagia crassa	W2015	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Fabulina fabula	W2019	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moerella donacina	W2021	-	-	-	-	1	2	-	-	-	-	-	-	4	-	-	1	6	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Moerella pygmaea	W2023	-	-	5	-	-	3	14	20	14	29	-	-	3	-	4	3	-	-	-	-	3	-	14	1	20	9	-	3	10	2	6	9	-	16
Donax vittatus	W2041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gari tellinella	W2049	-	-	5	-	-	1	-	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	1	-	-	-	-	6	7	1	13	-	-	-
Gari fervensis	W2051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra juv.	W2058	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	W2059	1269	-	8	2	5	2	-	-	-	-	39	11	85	3	20	1	4	36	144	315	11	2	-	-	1	2	2	11	26	32	160	-	210	2
Abra prismatica	W2062	-	-	-	-	-	5	1	3	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	7	3	2
Veneracea juv.	W2085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gouldia minima	W2095	-	-	-	-	-	11	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	1	12	-	-	-	-	-
Chamelea gallina	W2098	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Clausinella fasciata	W2100	-	-	-	3	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	3	60	-	6	-	-	2
Timoclea ovata	W2104	-	-	11	-	41	112	-	-	2	-	11	-	24	39	84	54	47	41	36	19	13	14	-	10	22	-	2	42	133	31	57	2	19	12
Tapes rhomboides	W2113	-	-	-	-	4	3	-	-	-	-	12	5	8	1	7	-	7	7	13	11	11	9	-	-	-	-	-	10	28	28	19	-	19	-
Dosinia exoleta	W2130	-	-	-	-	1	-	-	-	1	-	-	-	12	1	2	6	-	-	1	-	2	-	-	-	7	-	7	5	23	-	12	-	1	3
Mya truncata	W2147	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Sphenia binghami	W2152	-	-	-	-	2	2	-	-	-	-	467	148	9	-	150	-	3	16	196	31	1	-	-	-	-	-	28	1	1	2	1	-	-	-
Corbula gibba	W2157	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Hiatella arctica	W2166	-	-	-	-	-	2	-	-	-	-	-	3	-	3	17	1	-	-	3	-	3	1	-	-	-	-	12	1	2	1	-	1	6	-
Thracia phaseolina	W2231	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thracia villosiuscula	W2233	-	-	14	3	1	4	-	7	3	14	2	1	9	7	2	8	-	6	1	-	6	-	10	4	9	1	-	16	43	3	33	2	1	32
Cochlodesma praetenue	W2239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CEPHALOPODA																																			
Sepiola atlantica	W2329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL		**2674**	**20**	**442**	**1043**	**341**	**365**	**125**	**170**	**378**	**339**	**1365**	**557**	**473**	**275**	**514**	**925**	**232**	**541**	**1308**	**1886**	**305**	**295**	**278**	**117**	**241**	**76**	**468**	**608**	**1015**	**698**	**1095**	**794**	**594**	**232**

Table A7.2A: Abundance data for stations 1-35: Mollusca

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
POLYPLACOPHORA																																				
CHITON juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-
Leptochiton asellus	W0053	-	-	-	6	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
GASTROPODA																																				
GASTROPODA indet.		-	-	-	11	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	4	-	3	-
Emarginula fissura	W0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diodora graeca	W0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tricolia pullus	W0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
Trochidae indet.	W0140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gibbula tumida	W0161	22	-	58	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jujubinus montagui	W0174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	W0182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dikoleps nitens	W0204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cerithiopsis tubercularis	W0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rissoidea indet.	W0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Rissoa parva	W0334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alvania punctura	W0344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtusella alderi	W0365	-	-	15	1	-	-	-	1	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	3	6	-	-	-	12	13	1	-	-	-	-
Onoba semicostata	W0371	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	-
Pusillina inconspicua	W0376	2	-	3	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Hyala vitrea	W0410	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	127	10	-	5	-	-	13	8	-	-	-	-	-	5	-	-
Caecum glabrum	W0418	1	-	4	2	1	1	1	-	-	-	-	-	-	-	19	2	-	-	-	-	-	-	1	-	-	-	-	-	200	-	1	-	-	-	-
Tornus subcarinatus	W0421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naticidae indet.	W0482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polinices pulchellus	W0491	-	-	2	-	-	-	1	1	1	1	2	1	1	2	1	-	-	1	-	3	1	-	1	-	-	-	-	-	3	3	-	-	-	3	-
Polinices catena	W0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aclis minor	W0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Graphis albida	W0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulimidae indet.	W0599	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Eulima bilineata	W0603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melanella alba	W0634	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Vitreolina philippi	W0669	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ocenebra erinacea	W0685	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	W0708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colus jeffreysianus	W0717	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinia juv.	W0743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Hinia incrassata	W0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Mangelia nebula	W0801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raphitoma linearis	W0861	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia plicata	W0913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
Odostomia turrita	W0915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia unidentata	W0916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	2	-
Brachystomia eulimoides	W0922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysallida obtusa	W0937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-
Noemiamea dolioliformis	W0956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ondina diaphana	W0959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Partulida spiralis	W0965	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbonilla acuta	W0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
OPISTHOBRANCHIA juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acteon tornatilis	W1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	7	-	5
Cylichna cylindracea	W1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Philine indet.	W1036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	W1038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	2	-	2	3	-	-	1	-	10	2	17
Diaphana minuta	W1059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retusa juv.	W1074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retusa truncatula	W1080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-
NUDIBRANCHIA indet.		3	-	11	1	-	-	8	-	-	8	1	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	1	-	2	6	-	-	-
Doto indet.	W1270	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Okenia sp.	W1307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorididae indet.	W1370	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCAPHOPODA																																				
Antalis juv.	W1516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
PELECYPODA																																				
BIVALVE indet.		3	-	1	5	-	-	-	-	-	-	-	2	-	-	5	-	-	-	-	22	-	-	4	-	-	-	6	-	-	-	1	-	-	-	-
Nuculacea juv.	W1562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nucula nitidosa	W1569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	10	1	-	-	-	-	-	-	-
Nucula nucleus	W1570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-
Glycymeris glycymeris	W1688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Mytilidae juv.	W1691	-	-	-	-	-	-	-	-	-	1775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	14060	6974	-	-	-
Mytilus edulis	W1695	21	35	140	72	38	28	131	38	371	-	154	8	-	183	129	61	156	8	12	2	12	6	262	31	66	84	10	-	1004	513	1	-	65	47	17
Modiolus adriaticus	W1700	-	-	15	4	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Modiolus modiolus	W1702	1	-	-	4	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	1	2	1	-	-	-
Modiolula phaseolina	W1708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Modiolarca tumida	W1718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	6	-	-	-	-
Musculus discors	W1721	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Rhomboidella prideauxi	W1724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limatula subauriculata	W1746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pectinidae juv.	W1768	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pecten maximus	W1771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	W1773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palliolum tigerinum	W1786	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anomiidae indet.	W1805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heteranomia squamula	W1809	144	1	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thyasira flexuosa	W1837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diplodonta rotundata	W1864	6	-	1	-	-	1	-	1	3	-	-	2	-	1	2	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-
Semierycina nitida	W1882	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacutidae indet.	W1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacuta substriata	W1892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tellimya ferruginosa	W1902	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Mysella bidentata	W1906	29	-	-	5	3	-	75	-	2	3	-	-	-	-	-	-	-	-	-	153	397	1	198	-	-	9	190	6	-	2	3	1	35	-	-
'Mysella' obliquata	W1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Goodallia triangularis	W1929	18	48	23	1	126	46	5	41	53	25	31	5	3	161	53	167	34	73	21	-	-	-	-	8	3	-	-	-	79	12	7	2	-	1	-
Acanthocardia echinata	W1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Parvicardium juv.	W1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium ovale	W1951	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Parvicardium scabrum	W1952	11	-	7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mactra stultorum	W1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula indet.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149	-	-
Spisula juv.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula elliptica	W1975	134	68	104	27	74	31	169	67	71	31	312	11	9	72	894	226	102	80	57	27	10	-	22	47	21	-	28	1	308	53	1	7	-	48	-
Spisula solida	W1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula subtruncata	W1978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	18	2	1	-	-	-	-	-	-	57
Lutraria lutraria	W1984	-	-	-	1	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	2	2	3	1	-	1	1	3	1	6	-	-	18	2	22
Ensis spp.	W1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	-
Ensis arcuatus	W1998	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	7	-	2	-	-	-
Ensis ensis	W1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Pharus legumen	W2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Phaxas pellucidus	W2006	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	2	2	19	2	-	1	-	16	20	-	-	-	-	14	-	9
Tellinidae indet.	W2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Angulus tenuis	W2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arcopagia crassa	W2015	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fabulina fabula	W2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	19	-	-	-	-	54	-	-
Moerella donacina	W2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moerella pygmaea	W2023	23	6	2	-	3	5	6	9	10	4	32	-	1	12	9	6	9	-	-	-	-	-	-	13	2	-	-	-	16	3	-	-	-	3	-
Donax vittatus	W2041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gari tellinella	W2049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gari fervensis	W2051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Abra juv.	W2058	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	W2059	6	-	34	148	3	-	33	1	-	-	1	1	-	-	213	-	-	-	-	172	1482	399	93	78	58	204	190	21	2	49	6	1	6	-	5
Abra prismatica	W2062	1	-	-	-	4	-	-	-	-	-	-	-	1	-	1	1	3	11	9	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
Veneracea juv.	W2085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gouldia minima	W2095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamelea gallina	W2098	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	2	-	3

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	*66*	*67*	68	69	70
Clausinella fasciata	W2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Timoclea ovata	W2104	22	2	11	14	-	2	4	1	-	-	-	-	-	-	11	-	-	-	-	2	-	-	35	1	-	5	1	-	4	10	*1*	-	-	-	-
Tapes rhomboides	W2113	7	-	2	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Dosinia exoleta	W2130	6	1	33	4	-	-	-	-	-	2	-	-	-	-	5	-	1	-	-	-	-	-	-	2	-	-	-	-	4	-	-	*2*	-	-	-
Mya truncata	W2147	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphenia binghami	W2152	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*9*	*3*	-	-	-
Corbula gibba	W2157	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	-	-	-	-	-	-	-	-	-
Hiatella arctica	W2166	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Thracia phaseolina	W2231	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-
Thracia villosiuscula	W2233	20	7	32	3	-	14	10	-	-	-	11	1	-	9	51	7	6	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-
Cochlodesma praetenue	W2239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CEPHALOPODA																																				
Sepiola atlantica	W2329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL		**486**	**169**	**514**	**341**	**254**	**130**	**453**	**169**	**523**	**1851**	**546**	**32**	**15**	**441**	**1421**	**472**	**311**	**174**	**104**	**519**	**1920**	**434**	**651**	**193**	**167**	**339**	**465**	**76**	**1645**	**923**	***14115***	***7019***	**373**	**123**	**139**

Table A7.2B: Abundance data for stations 36-70: Mollusca

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
POLYPLACOPHORA																																				
CHITON juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochiton asellus	W0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GASTROPODA																																				
GASTROPODA indet.		-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	2	4	-	-	-	-	4	1	-	-	-	-	1	1	-	-	-	-	-	-
Emarginula fissura	W0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diodora graeca	W0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tricolia pullus	W0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trochidae indet.	W0140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Gibbula tumida	W0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jujubinus montagui	W0174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calliostoma zizyphinum	W0182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dikoleps nitens	W0204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cerithiopsis tubercularis	W0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rissoidae indet.	W0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rissoa parva	W0334	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alvania punctura	W0344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtusella alderi	W0365	-	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	3	-	-	-	-
Onoba semicostata	W0371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pusillina inconspicua	W0376	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Hyala vitrea	W0410	-	-	-	-	-	-	-	-	52	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	42	139	-	-	-	-	-	-	-	-
Caecum glabrum	W0418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-
Tornus subcarinatus	W0421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naticidae juv.	W0482	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	-	-	-	-	-	-	-	-	2	-	-	1	-
Polinices pulchellus	W0491	3	3	-	-	2	-	-	6	-	3	2	7	-	3	8	-	4	21	2	40	-	2	2	-	-	-	-	1	1	2	-	-	-	-	-
Polinices catena	W0493	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aclis minor	W0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Graphis albida	W0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulimidae indet.	W0599	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eulima bilineata	W0603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Melanella alba	W0634	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitreolina philippi	W0669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ocenebra erinacea	W0685	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Buccinum undatum	W0708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colus jeffreysianus	W0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinia juv.	W0743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinia incrassata	W0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mangelia nebula	W0801	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raphitoma linearis	W0861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia plicata	W0913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia turrita	W0915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odostomia unidentata	W0916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brachystomia eulimoides	W0922	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysallida obtusa	W0937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	3	1	-	-	-	-	-	-	-	-	-	-	-
Noemiamea dolioliformis	W0956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ondina diaphana	W0959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Partulida spiralis	W0965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbonilla acuta	W0973	3	-	1	1	1	5	1	-	-	-	-	-	-	-	-	-	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OPISTHOBRANCHIA juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Acteon tornatilis	W1006	11	73	13	6	3	8	6	-	-	-	2	-	-	-	2	5	3	18	2	25	-	8	-	-	-	-	-	-	1	-	-	-	-	-	-
Cylichna cylindracea	W1028	2	-	1	-	1	2	2	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Philine indet.	W1036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philine aperta	W1038	4	-	2	10	1	-	8	-	1	-	2	-	-	-	6	34	2	15	52	15	-	-	-	-	-	1	2	-	-	1	-	-	-	-	-
Diaphana minuta	W1059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Retusa juv.	W1074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retusa truncatula	W1080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NUDIBRANCHIA indet.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dotoindet.	W1270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	2	5	-	-
Okenia sp.	W1307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dorididae indet.	W1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCAPHOPODA																																				
Antalis juv.	W1516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
PELECYPODA																																				
BIVALVE indet.		-	-	-	-	-	1	1	-	1	1	-	9	18	-	18	-	8	-	-	-	-	-	6	2	-	-	-	-	3	-	-	2	-	-	-
Nuculacea juv.	W1562	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nucula nitidosa	W1569	-	-	-	3	4	-	3	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-
Nucula nucleus	W1570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycymeris glycymeris	W1688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mytilidae juv.	W1691	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	-	-	-	-	-
Mytilus edulis	W1695	4	1	23	11	46	12	156	10	2	18	-	1	10	15	14	8	8	13	21	71	15	18	14	6	8	1	5	16	9	45	2	106	71	6	2
Modiolus adriaticus	W1700	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Modiolus modiolus	W1702	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	3	-	-
Modiolula phaseolina	W1708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Modiolarca tumida	W1718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musculus discors	W1721	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rhomboidella prideauxi	W1724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limatula subauriculata	W1746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pectinidae juv.	W1768	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pecten maximus	W1771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aequipecten opercularis	W1773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palliolum tigerinum	W1786	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anomiidae indet.	W1805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heteranomia squamula	W1809	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thyasira flexuosa	W1837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-
Diplodonta rotundata	W1864	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Semierycina nitida	W1882	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacutidae indet.	W1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Montacuta substriata	W1892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tellimya ferruginosa	W1902	4	8	-	-	-	36	1	-	-	-	-	-	-	-	-	-	5	6	3	-	-	1	-	-	-	-	1	1	2	-	-	-	-	1	-
Mysella bidentata	W1906	-	-	2	5	6	1	39	-	47	9	-	-	-	-	26	1	1	-	-	1	-	-	-	2	-	88	476	80	30	2	-	-	3	-	-
'Mysella' obliquata	W1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	39	33	-	-	-	-	-	-	-
Goodallia triangularis	W1929	-	-	-	-	-	-	-	1	18	2	10	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	35	51	15	20	22	12	2
Acanthocardia echinata	W1943	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium juv.	W1947	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Parvicardium ovale	W1951	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parvicardium scabrum	W1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mactra stultorum	W1972	36	21	35	6	-	-	2	-	-	-	1	-	1	-	6	3	8	-	-	-	-	29	-	-	-	1	-	-	-	-	-	-	-	-	-
Spisula indet.	W1973	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spisula juv.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Spisula elliptica	W1975	-	-	-	-	-	-	-	34	15	65	191	-	6	10	-	3	20	-	3	-	30	-	12	-	11	-	4	19	93	43	55	69	48	48	10
Spisula solida	W1977	-	-	-	-	-	1	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Spisula subtruncata	W1978	20	-	30	13	26	5	41	-	-	-	8	17	2	-	63	214	35	223	60	95	1	34	-	7	-	-	-	-	-	-	-	-	-	-	-
Lutraria lutraria	W1984	39	-	22	13	7	5	22	-	-	1	14	23	16	-	33	90	37	57	83	119	2	2	-	2	-	2	2	-	-	-	1	-	-	-	-
Ensis spp.	W1996	-	-	1	1	1	-	-	-	-	-	-	-	-	-	2	-	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Ensis arcuatus	W1998	-	-	-	-	-	-	9	-	-	4	5	-	-	-	-	4	-	-	1	1	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-
Ensis ensis	W1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pharus legumen	W2004	2	-	1	-	18	2	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phaxas pellucidus	W2006	71	-	109	63	36	18	19	1	1	1	3	16	24	-	52	14	22	73	78	79	-	3	2	28	6	1	3	5	3	1	-	-	-	-	-
Tellinidae indet.	W2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Angulus tenuis	W2012	-	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arcopagia crassa	W2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fabulina fabula	W2019	9	-	15	37	28	8	6	-	-	-	1	1	-	-	8	8	42	27	-	-	-	4	-	1	13	-	-	-	-	-	-	-	-	-	-
Moerella donacina	W2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moerella pygmaea	W2023	-	-	-	-	-	-	-	1	3	2	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1	2	-
Donax vittatus	W2041	-	12	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Gari tellinella	W2049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Gari fervensis	W2051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra juv.	W2058	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abra alba	W2059	3	-	16	42	26	18	62	22	130	156	216	129	625	3	145	106	33	6	127	13	4	4	-	382	103	187	61	14	2	6	9	-	15	-	-
Abra prismatica	W2062	-	-	-	-	-	-	-	13	-	-	-	6	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	1	14	1	7	4	12	5	-
Veneracea juv.	W2085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gouldia minima	W2095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-
Chamelea gallina	W2098	9	-	5	8	3	8	4	-	-	-	-	-	-	-	3	1	3	26	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Clausinella fasciata	W2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Timoclea ovata	W2104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	38	2	19	-	2	1	-	-
Tapes rhomboides	W2113	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	2	-	-	-	-	-
Dosinia exoleta	W2130	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Mya truncata	W2147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphenia binghami	W2152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corbula gibba	W2157	-	-	-	2	-	-	1	-	-	8	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
Hiatella arctica	W2166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	1	-	-	-
Thracia phaseolina	W2231	4	-	1	12	1	16	2	-	-	17	9	1	-	-	-	1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thracia villosiuscula	W2233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	1	-	-	1	-	-
Cochlodesma praetenue	W2239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CEPHALOPODA																																				
Sepiola atlantica	W2329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
TOTAL		**235**	**143**	**278**	**234**	**213**	**148**	**397**	**92**	**272**	**293**	**510**	**210**	**705**	**45**	**395**	**498**	**246**	**506**	**439**	**468**	**62**	**119**	**41**	**440**	**142**	**326**	**746**	**230**	**284**	**319**	**97**	**206**	**184**	**75**	**14**

Table A7.2C: Abundance data for stations 71-105: Mollusca

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
POLYPLACOPHORA																																			
CHITON juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**6**
Leptochiton asellus	W0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**192**
GASTROPODA																																			
GASTROPODA indet.		-	-	-	-	4	-	-	-	-	-	-	2	1	1	-	-	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	**187**
Emarginula fissura	W0106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Diodora graeca	W0116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Tricolia pullus	W0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Trochidae indet.	W0140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Gibbula tumida	W0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**950**
Jujubinus montagui	W0174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Calliostoma zizyphinum	W0182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Dikoleps nitens	W0204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Cerithiopsis tubercularis	W0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Rissoidaae indet.	W0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Rissoa parva	W0334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Alvania punctura	W0344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Obtusella alderi	W0365	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	4	-	-	1	-	-	1	**308**
Onoba semicostata	W0371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**81**
Pusillina inconspicua	W0376	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	**247**
Hyala vitrea	W0410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	4	-	-	-	-	**461**
Caecum glabrum	W0418	-	-	1	4	1	-	10	-	-	-	1	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	**898**
Tornus subcarinatus	W0421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Naticidae indet.	W0482	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Polinices pulchellus	W0491	-	-	-	-	2	1	1	-	-	-	1	-	2	2	-	1	1	1	6	3	2	3	1	1	-	4	4	-	-	1	2	-	-	**223**
Polinices catena	W0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Aclis minor	W0591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Graphis albida	W0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eulimidae indet.	W0599	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Eulima bilineata	W0603	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Melanella alba	W0634	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Vitreolina philippi	W0669	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Ocenebra erinacea	W0685	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Buccinum undatum	W0708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Colus jeffreysianus	W0717	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Hinia juv.	W0743	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Hinia incrassata	W0747	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**
Mangelia nebula	W0801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**3**
Raphitoma linearis	W0861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Odostomia plicata	W0913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Odostomia turrita	W0915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Odostomia unidentata	W0916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Brachystomia eulimoides	W0922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Chrysallida obtusa	W0937	-	-	-	-	-	-	-	-	1	8	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	**33**
Noemiamea dolioliformis	W0956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Ondina diaphana	W0959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Partulida spiralis	W0965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**29**
Turbonilla acuta	W0973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**23**
OPISTHOBRANCHIA juv.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Acteon tornatilis	W1006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**202**
Cylichna cylindracea	W1028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	**19**
Philine indet.	W1036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Philine aperta	W1038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	19	-	-	-	-	1	1	-	-	-	-	-	**248**
Diaphana minuta	W1059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Retusa juv.	W1074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**4**
Retusa truncatula	W1080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
NUDIBRANCHIA indet.		-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	17	-	-	-	-	-	-	**411**
Doto indet.	W1270	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**33**
Okenia sp.	W1307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Dorididae indet.	W1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**39**
SCAPHOPODA																																			
Antalis juv.	W1516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
PELECYPODA																																			
BIVALVE indet.		-	-	-	-	-	-	1	-	-	-	-	-	-	1	2	-	1	3	-	1	-	4	-	-	-	2	-	-	-	-	2	-	-	**197**
Nuculacea juv.	W1562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Nucula nitidosa	W1569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**744**
Nucula nucleus	W1570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**107**
Glycymeris glycymeris	W1688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Mytilidae juv.	W1691	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**23847**
Mytilus edulis	W1695	2	9	15	21	114	53	91	77	28	5	68	28	19	192	55	21	4	100	1	1	25	16	47	57	42	40	6	20	5	64	31	21	48	**8872**
Modiolus adriaticus	W1700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**361**
Modiolus modiolus	W1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**247**
Modiolula phaseolina	W1708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**55**
Modiolarca tumida	W1718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**41**
Musculus discors	W1721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Rhomboidella prideauxi	W1724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Limatula subauriculata	W1746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pectinidae juv.	W1768	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pecten maximus	W1771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Aequipecten opercularis	W1773	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Palliolum tigerinum	W1786	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Anomiidae indet.	W1805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Heteranomia squamula	W1809	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1920**
Thyasira flexuosa	W1837	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**70**
Diplodonta rotundata	W1864	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	**73**
Semierycina nitida	W1882	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Montacutidae indet.	W1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Montacuta substriata	W1892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Tellimya ferruginosa	W1902	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-	-	-	-	-	21	-	-	-	-	**121**
Mysella bidentata	W1906	-	-	-	-	1	-	-	-	-	-	-	-	-	2	1	-	-	-	156	2	9	-	-	-	2	-	38	-	56	-	-	-	-	**3133**
'Mysella' obliquata	W1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	4	-	-	-	-	**85**
Goodallia triangularis	W1929	-	3	15	5	7	260	30	-	-	-	43	109	8	247	8	15	57	116	1	-	-	-	67	57	32	42	12	38	-	85	6	38	53	**3113**
Acanthocardia echinata	W1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Parvicardium juv.	W1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Parvicardium ovale	W1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**259**
Parvicardium scabrum	W1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	8	-	-	-	-	1	-	-	-	-	-	-	**467**
Mactra stultorum	W1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	**157**
Spisula indet.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	**154**
Spisula juv.	W1973	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Spisula elliptica	W1975	11	10	25	51	27	69	157	3	1	-	89	28	5	61	65	33	53	131	8	9	9	-	65	19	37	91	19	17	1	7	91	-	27	**8078**
Spisula solida	W1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Spisula subtruncata	W1978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	858	796	4	-	-	-	-	-	-	-	-	-	-	**2647**
Lutraria lutraria	W1984	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	313	103	-	-	-	-	3	-	-	-	-	-	-	**1087**
Ensis spp.	W1996	-	-	-	2	2	2	2	-	-	-	1	-	3	-	-	-	-	-	-	-	-	2	-	-	-	-	3	-	-	-	-	-	-	**55**
Ensis arcuatus	W1998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	1	-	-	-	-	-	-	-	**144**
Ensis ensis	W1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Pharus legumen	W2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	1	-	-	-	-	-	-	-	-	-	-	-	**44**
Phaxas pellucidus	W2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	246	73	-	-	-	-	-	-	-	-	-	-	-	**1162**
Tellinidae indet.	W2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Angulus tenuis	W2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Arcopagia crassa	W2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Fabulina fabula	W2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	14	-	-	-	-	-	-	2	-	-	-	-	**355**
Moerella donacina	W2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	**21**
Moerella pygmaea	W2023	-	-	-	5	3	8	3	-	-	-	6	2	1	2	2	1	1	16	-	-	-	-	-	-	-	9	5	3	-	1	-	-	-	**446**
Donax vittatus	W2041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Gari tellinella	W2049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**40**
Gari fervensis	W2051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Abra juv.	W2058	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**
Abra alba	W2059	-	-	-	-	57	-	10	-	3	-	-	-	29	1	1	1	1	6	56	-	371	93	2	1	-	4	-	1	6	-	-	-	-	**8917**
Abra prismatica	W2062	-	-	-	-	4	-	6	-	-	-	-	1	1	-	7	-	2	1	-	8	-	1	-	-	-	-	33	-	5	-	-	-	-	**202**
Veneracea juv.	W2085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Gouldia minima	W2095	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**49**
Chamelea gallina	W2098	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-	-	-	-	**105**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Clausinella fasciata	W2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**79**
Timoclea ovata	W2104	-	-	-	-	-	1	-	-	-	-	-	-	-	1	7	-	1	1	3	1	-	-	-	-	-	-	32	-	-	-	-	-	-	**1124**
Tapes rhomboides	W2113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**241**
Dosinia exoleta	W2130	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**152**
Mya truncata	W2147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Sphenia binghami	W2152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1071**
Corbula gibba	W2157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**32**
Hiatella arctica	W2166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**63**
Thracia phaseolina	W2231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	23	-	-	-	-	-	1	-	-	-	-	-	**176**
Thracia villosiuscula	W2233	-	-	1	2	3	8	2	-	-	-	5	6	-	-	8	-	1	3	-	-	-	-	-	-	-	3	37	-	-	-	2	-	-	**532**
Cochlodesma praetenue	W2239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
CEPHALOPODA																																			
Sepiola atlantica	W2329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
TOTAL		**13**	**22**	**57**	**90**	**238**	**408**	**313**	**80**	**35**	**14**	**217**	**177**	**70**	**510**	**157**	**73**	**123**	**386**	**241**	**26**	**1965**	**1170**	**191**	**136**	**114**	**197**	**242**	**82**	**105**	**159**	**135**	**60**	**131**	**75845**

Table A7.2D: Abundance data for stations 106-148: Mollusca

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CHELICERATA																																			
Pycnogonida																																			
Nymphon brevirostre	Q0005	-	-	3	-	3	12	-	-	-	-	1	6	-	-	-	-	-	5	1	82	3	7	-	-	-	-	-	1	6	3	3	6	16	3
Achelia sp. Juv.	Q0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	10	6	-	-	-	-	-
Achelia echinata	Q0015	-	-	3	-	3	31	-	-	-	-	10	32	-	1	1	-	2	2	43	126	3	12	-	-	-	-	6	23	8	7	6	1	3	2
Achelia laevis	Q0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Endeis spinosa	Q0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene spp. Indet.	Q0032	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	1	16	-	-	-	-	-	-
Callipallene brevirostris	Q0033	-	-	2	-	1	5	-	-	-	-	2	10	-	-	2	-	-	-	-	32	-	-	-	-	-	-	-	-	-	-	-	-	3	-
Callipallene emaciata	Q0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Anoplodactylus petiolatus	Q0044	-	-	8	-	38	2	-	-	-	-	2	5	-	10	2	6	9	7	33	42	12	3	-	3	1	-	-	1	-	-	1	3	15	3
Anoplodactylus pygmaeus	Q0045	-	-	-	-	-	-	-	-	-	-	2	4	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonum littorale	Q0051	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acari																																			
Acari indet.	Q0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA																																			
Crustacea indet.	R0001	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirripedia																																			
Verruca stroemi	R0041	-	-	-	-	-	1	-	-	-	-	108	270	-	-	1	2	-	1	105	3	1	-	-	-	-	-	P	1	2	-	4	-	1	-
Balanus spp. indet.	R0075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus crenatus	R0077	-	-	34	-	33	-	-	-	-	-	1	-	-	31	13	-	180	-	8	-	-	-	-	-	-	-	3	-	-	-	-	-	219	-
Balanus ?eburneus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus ?improvisus	R0078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda																																			
Commensal copepoda	R0142	-	-	-	-	-	-	-	-	-	-	3	-	4	-	10	2	6	4	16	2	-	-	-	-	-	-	7	15	11	5	10	-	-	-
Leptostraca																																			
Nebalia bipes	S0006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysidacea																																			
Mysidacea indet. [larvae]	S0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spp. indet. juv.	S0040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spinifer	S0044	-	-	-	-	-	-	1	5	9	1	-	-	-	-	-	1	-	-	-	3	-	1	-	1	-	-	-	-	-	-	-	1	-	5
Mysidopsis gibbosa	S0067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Mesopodopsis slabberi	S0074	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paramysis nouveli	S0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schistomysis ornata	S0087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda																																			
Amphipoda indet.	S0097	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Apherusa bispinosa	S0102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Perioculodes longimanus	S0131	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Pontocrates altamarinus	S0133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pontocrates arenarius	S0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Synchelidium maculatum	S0138	-	-	2	1	-	3	-	-	-	2	-	-	-	3	-	7	4	-	-	-	2	5	-	-	4	-	-	1	-	-	-	3	-	3
Pleustidae indet.	S0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parapleustes assimilis	S0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenopleustes nodifera	S0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	-	-	-	-	-	-	-	-	-	11	-	-	-	-
Amphilochus manudens	S0158	-	-	-	-	-	11	-	-	-	-	5	7	-	-	2	-	-	-	11	17	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Amphilochus neapolitanus	S0159	-	1	30	-	57	29	-	1	-	-	1	-	10	53	2	33	63	53	4	16	44	30	1	1	-	-	-	24	32	54	15	5	23	4
Gitana sarsi	S0164	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	5	-	1	-	-	-	-	-	1	-	4	-	-	-	-	-
Cressa dubia	S0186	-	-	-	-	-	39	-	-	-	-	5	32	-	-	3	-	2	21	3	56	-	1	-	-	-	-	1	-	-	8	-	-	-	-
Stenothoe spp. Indet juv.	S0208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenothoe marina	S0213	1	-	119	-	36	82	1	1	-	-	33	11	8	14	25	15	22	159	37	137	162	217	-	7	-	-	-	17	22	403	46	441	67	15
Stenothoe cf. monoculoides	S0214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe sp. Juv.	S0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Urothoe brevicornis	S0247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe elegans	S0248	-	-	-	-	13	5	-	-	-	-	-	-	-	35	83	49	214	11	-	-	24	63	-	1	-	1	-	2	-	24	-	1	51	-
Urothoe marina	S0249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe poseidonis	S0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpinia crenulata	S0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpinia pectinata	S0257	2	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parametaphoxus fultoni	S0265	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-
Lysianassidae Indet.	S0271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acidostoma obesum	S0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippomedon denticulatus	S0296	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Lepidepecreum longicorne	S0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysianassa ceratina	S0303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchomene nanus	S0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Socarnes erythrophthalmus	S0330	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tmetonyx similis	S0337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Argissa hamatipes	S0360	9	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1
Iphimedia eblanae	S0379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Iphimedia minuta	S0380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Listriella mollis	S0399	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus sp. juv.	S0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus falcatus	S0410	-	-	-	-	-	-	2	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	1
Atylus swammerdamei	S0412	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus vedlomensis	S0413	-	-	4	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Guernea coalita	S0418	-	-	7	1	-	2	1	-	-	1	-	-	4	-	-	6	-	1	-	-	1	-	-	-	1	-	-	6	6	-	7	-	-	-
Tritaea gibbosa	S0420	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca sp. juv.	S0423	-	-	-	-	-	1	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca brevicornis	S0427	13	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca diadema	S0429	-	-	16	-	13	-	-	-	-	-	1	-	1	1	-	-	-	1	165	-	11	-	-	-	-	-	-	-	-	-	-	-	1	-
Ampelisca spinipes	S0437	1	-	25	-	52	13	-	-	1	4	236	3	35	15	23	34	23	80	29	239	10	34	2	10	13	2	1	44	13	25	24	-	10	3
Ampelisca tenuicornis	S0440	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca typica	S0442	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia spp. indet.	S0451	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Bathyporeia elegans	S0452	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	1	-	-	-	-	-	-	-	-	4
Bathyporeia guilliamsoniana	S0454	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Bathyporeia nana	S0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia pelagica	S0456	-	-	-	-	-	5	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Bathyporeia pilosa	S0457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia tenuipes	S0459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Haustorius arenarius	S0462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammarus salinus	S0481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Megaluropus agilis	S0489	-	-	-	-	-	-	1	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3
Melphidippa goesi	S0491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Melphidippella macra	S0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Melitidae sp. indet	S0495	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Abludomelita obtusata	S0498	4	-	20	-	44	2	-	-	-	-	1	-	1	41	-	29	34	-	-	9	42	19	-	2	-	6	-	-	-	2	10	11	22	3
Ceradocus semiserratus	S0502	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Cheirocratus spp. [females]	S0503	-	-	1	-	3	5	-	-	-	-	-	-	3	9	4	3	1	-	5	6	2	2	-	1	-	2	3	21	17	16	13	-	-	-
Cheirocratus assimilis	S0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheirocratus sundevallii	S0506	-	-	-	-	-	-	-	-	-	-	-	-	2	-	8	2	3	9	2	-	2	1	-	-	-	-	4	2	1	13	2	-	28	-
Elasmopus rapax	S0508	-	7	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eriopisa elongata	S0510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-
Maera sp. juv.	S0515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Maera othonis	S0519	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	17	1	-	-	-	-
Maerella tenuimana	S0521	-	1	2	-	2	-	-	-	-	-	-	-	4	-	-	-	-	3	-	-	3	-	-	1	-	2	-	-	-	-	-	-	-	-
Melita spp. Indet.	S0522	-	-	-	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Melita dentata	S0523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Melita hergensis	S0524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita palmata	S0525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe spp. indet.	S0530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe rubricata	S0534	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis spp. indet.	S0538	-	-	-	-	-	-	-	1	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	1
Gammaropsis spp. indet. juv.	S0538	-	-	7	-	15	5	-	-	-	-	-	-	13	-	2	-	-	-	-	-	17	3	-	1	1	-	-	12	-	7	-	-	-	-
Gammaropsis cornuta	S0539	-	-	10	1	42	19	-	-	-	12	71	2	12	37	23	36	35	40	25	13	31	20	1	-	-	10	-	22	6	16	102	-	7	-
Gammaropsis maculata	S0541	-	-	-	-	5	-	-	-	-	-	88	10	1	-	152	2	-	3	31	167	12	-	-	-	-	-	8	1	10	-	-	6	2	2
Gammaropsis nitida	S0542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis palmata	S0543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Microprotopus maculatus	S0550	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis juv. indet.	S0551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis longicaudata	S0552	2	-	-	-	4	-	-	-	-	-	-	-	3	1	-	-	-	3	1	2	1	3	-	-	-	-	-	1	-	-	1	-	-	-
Photis reinhardi	S0554	-	-	-	-	-	-	-	-	-	-	1	2	-	-	1	3	3	3	15	40	2	-	-	-	-	-	-	-	-	2	-	-	-	-
Ischyroceridae indet.	S0558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	1	-
Ericthonius brasiliensis		-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Ericthonius punctatus	S0561	-	1	-	-	-	3	-	-	-	-	3	-	-	-	1	-	-	2	10	596	1	-	-	-	-	-	-	-	-	-	-	-	1	-
Ischyrocerus anguipes	S0567	-	-	1	-	2	14	-	-	-	-	3	1	1	-	-	-	1	30	-	22	-	-	-	-	-	-	-	3	1	65	-	-	-	-
Jassa spp. indet.	S0568	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Jassa falcata	S0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

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Microjassa cumbrensis	S0574	-	-	11	-	9	59	1	-	-	-	-	-	1	-	11	-	5	78	1	93	8	8	-	-	-	-	-	4	5	87	2	20	30	1
Parajassa pelagica	S0576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aoridae indet.	S0577	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aora sp.	S0578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	7	-	-
Aora gracilis	S0579	-	-	20	-	43	111	-	-	-	-	18	3	-	10	20	8	14	219	15	456	33	57	-	2	-	-	1	5	3	314	7	237	60	3
Autonoe longipes	S0583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus sp. juv.	S0586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Leptocheirus hirsutimanus	S0588	-	-	1	-	2	3	-	9	-	-	-	-	-	-	-	19	2	-	-	-	19	2	-	-	11	-	-	11	11	-	3	-	-	-
Leptocheirus pectinatus	S0589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-
Corophium spp. indet. juv.	S0605	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Corophium crassicorne	S0611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium insidiosum	S0612	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium sextonae	S0615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Siphonoecetes kroyeranus	S0618	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Siphonoecetes striatus	S0619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unciola crenatipalma	S0621	-	-	-	-	-	1	-	-	-	-	18	3	2	4	59	-	1	-	-	-	-	-	-	-	1	-	10	-	-	-	-	-	-	-
Unciola planipes	S0622	-	-	-	-	2	-	3	9	4	2	-	-	-	-	-	2	3	1	-	-	4	9	1	2	3	1	-	-	-	-	2	7	1	13
Podoceridae indet.	S0623	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dyopedos monacanthus	S0628	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprellidae juv.	S0639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprella erethizon	S0644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pariambus typicus	S0651	1731	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	1	1	22	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Phtisica marina	S0657	-	-	-	-	-	12	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	4	-	-	1	-	-	1	-
Pseudoprotella phasma	S0659	-	-	-	-	-	1	-	-	-	-	2	-	-	-	4	-	-	-	28	1	1	-	-	-	-	-	-	-	4	1	1	-	-	-
Hyperiidae indet.	S0728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperia galba	S0730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2	-	-	-	-	-
Isopoda																																			
Isopoda indet.	S0790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia spp. indet. [females]	S0793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia dentata	S0794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Gnathia oxyuraea	S0796	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthura gracilis	S0803	-	-	-	-	-	-	-	-	-	-	2	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-
Cirolana sp. indet.	S0843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana borealis	S0844	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
Cirolana cranchii	S0845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurydice pulchra	S0854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurydice spinigera	S0855	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Janira maculosa	S0892	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munna sp.	S0901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munna minuta	S0907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea neglecta	S0941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Arcturella dilatata	S0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaidacea																																			
Leptochelia dubia	S1114	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudoparatanais batei	S1140	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaopsis graciloides	S1142	1	-	-	-	3	1	3	2	-	-	1	-	1	-	1	-	7	5	32	32	9	-	-	1	-	-	-	5	-	8	-	-	-	-
Tanaissus lilljeborgi	S1169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumacea																																			
Cumopsis fagei	S1187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumopsis goodsiri	S1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vauntompsonia cristata	S1191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria sp. juv.	S1193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria arenosa	S1194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-
Bodotria pulchella	S1196	2	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	8
Bodotria scorpioides	S1197	-	-	23	-	122	4	-	-	-	-	-	4	4	64	91	28	68	27	28	27	56	44	1	1	4	-	-	2	-	3	-	1	3	1
Iphinoe trispinosa	S1203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudorella truncatula	S1208	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Campylaspis ?glabra	S1217	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumella pygmaea	S1224	-	-	-	1	1	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	1	2	-	2	-	-	-
Nannastacus unguiculatus	S1228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocumatidae sp. juv.	S1231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma gilsoni	S1235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma longicornis	S1236	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Pseudocuma similis	S1237	9	-	-	-	1	2	1	2	3	-	-	-	-	1	-	1	2	-	-	-	-	1	1	1	-	-	-	-	-	-	-	6	2	20
Diastylis spp. indet.	S1247	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Diastylis bradyi	S1248	-	-	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
Diastylis rathkei	S1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decapoda																																			
Caridea indet. [zoea]	S1293	2	-	9	18	17	26	35	4	7	17	1	-	-	17	37	18	13	19	2	19	20	20	6	5	18	3	-	20	10	8	4	1	5	-
Caridea spp. Indet juv.	S1293	-	-	-	4	1	-	-	-	4	2	3	-	-	6	9	4	4	4	13	-	1	-	-	-	-	5	P	3	-	10	1	-	-	-
Palaemonidae [juv.]	S1311	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolytidae [juv.]	S1334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	1	-	-
Eualus gaimardii	S1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Eualus ?pusiolus	S1345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolyte varians	S1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	7	-	-	-	-	-	-	-	3	-	2	-	-	-	-
Thoralus cranchii	S1360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processidae indet. juv.	S1361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processa canaliculata	S1363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Processa nouveli holthuisi	S1367	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalidae juv.	S1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Pandalina brevirostris	S1374	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	1	1	-	11	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Pandalus montagui	S1377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangonidae [juv.]	S1383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Crangon crangon	S1385	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon bispinosus neglecta	S1386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon ?fasciatus	S1388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon trispinosus	S1390	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pontophilus sp.	S1391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callianassidae juv.	S1413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callianassa subterranea	S1415	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upogebia sp. indet. juv.	S1418	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upogebia deltaura	S1419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anomura juv.	S1435	-	-	6	1	8	6	-	-	-	-	-	-	6	1	-	-	-	-	-	-	8	17	1	8	1	7	-	34	17	17	28	41	38	5
Diogenes pugilator	S1444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paguridae indet. juv.	S1445	-	-	1	-	2	3	-	-	-	-	-	4	1	2	-	-	1	-	6	1	1	3	-	-	-	-	-	-	1	1	-	-	2	-
Anapagurus hyndmanni	S1448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
Pagurus bernhardus	S1457	-	-	-	-	-	-	-	1	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus pubescens	S1463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galatheidae indet. juv.	S1469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea dispersa	S1471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea intermedia	S1472	-	-	1	-	-	6	-	-	-	-	3	-	1	-	6	-	-	2	-	-	-	-	-	-	-	-	-	-	3	1	4	-	-	-
Munida rugosa	S1478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pisidia longicornis	S1482	2	-	-	-	-	1	-	1	-	-	6	1	-	-	79	2	8	12	74	129	-	-	-	-	-	-	103	3	1	17	-	-	-	-
Ebalia spp. indet.	S1504	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia granulosa	S1506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Ebalia tuberosa	S1508	-	-	-	-	3	-	-	-	-	-	-	1	2	2	1	1	-	3	3	8	4	-	-	1	-	-	1	2	7	-	1	-	4	-
Ebalia tumefacta	S1509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxyrhyncha indet.	S1510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Maja squinado	S1515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Hyas sp. juv.	S1517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyas araneus	S1518	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus dorsettensis	S1526	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus leptochirus	S1527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus phalangium	S1528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia spp. juv.	S1529	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia deflexa	S1530	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia linaresi	S1531	-	-	-	-	-	4	-	-	-	-	1	1	-	-	2	-	-	4	2	1	-	1	-	-	-	-	-	-	-	6	-	-	-	-
Macropodia rostrata	S1532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurynome aspera	S1536	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Eurynome spinosa	S1537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corystes cassivelaunus	S1552	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Atelecyclus rotundatus	S1555	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	3	3	2	-	-	-	-	-	-	-	3	-	2	-	-	-	-
Thia scutellata	S1559	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pirimela denticulata	S1562	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	11	-
Portunidae megalopa	S1569	-	-	1	-	-	26	-	-	-	-	-	-	7	-	-	-	-	-	-	-	1	1	3	-	-	2	-	-	6	1	1	3	1	-
Portunidae zoea	S1569	-	-	5	9	9	19	8	10	3	3	-	-	-	6	-	-	-	-	2	-	11	14	17	6	7	10	P	3	21	4	-	3	3	3
Liocarcinus spp. indet. juv.	S1577	-	-	-	-	1	1	-	-	-	-	-	-	2	-	-	-	-	-	3	-	2	4	-	-	-	-	-	2	6	3	3	-	5	-
Liocarcinus depurator	S1580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	*12*	*13*	14	15	16	17	18	19	20	*21*	22	23	24	25	26	27	*28*	29	30	31	32	*33*	34	35
Liocarcinus holsatus	S1581	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus marmoreus	S1582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*4*	-	-	-	-	-	-	*P*	-	-	-	-	-	-	-
Liocarcinus pusillus	S1584	1	-	2	-	-	-	-	-	-	2	*1*	-	-	2	-	-	3	2	-	*2*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcinus maenas juv.	S1594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portumnus latipes	S1596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monodaeus couchi	S1609	-	-	-	-	-	-	-	-	-	-	*7*	-	-	-	-	-	-	-	7	*10*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pilumnus hirtellus	S1615	-	-	-	-	-	-	-	-	-	-	*1*	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xantho pilipes	S1620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	*6*	-	-	-	-	-	-	-
Brachynotus sexdentatus	S1630	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinnotheres pisum	S1638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Cladocera																																			
Cladocera		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL		**1869**	**26**	**389**	**39**	**595**	**590**	**62**	**52**	**42**	**58**	***649***	***468***	**142**	**371**	**730**	**322**	**757**	**847**	**799**	***2572***	**570**	**610**	**36**	**77**	**74**	**56**	***177***	**335**	**304**	**1157**	**310**	***813***	**654**	**112**

Table A7.3A: Abundance data for stations 1-35: Arthropoda

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
CHELICERATA																																				
Pycnogonida																																				
Nymphon brevirostre	Q0005	-	-	2	1	-	-	2	-	14	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	8	-	-	-
Achelia sp. juv.	Q0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Achelia echinata	Q0015	1	-	-	1	-	-	-	-	1	2	1	-	-	-	1	-	-	-	-	-	-	-	14	-	-	4	-	-	-	-	138	300	2	2	-
Achelia laevis	Q0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endeis spinosa	Q0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene spp. indet.	Q0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene brevirostris	Q0033	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	5	-	-	-	-
Callipallene emaciata	Q0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anoplodactylus petiolatus	Q0044	-	1	-	29	-	-	5	2	3	-	-	-	-	-	2	-	2	-	-	2	15	2	29	-	-	19	1	7	-	2	27	6	1	-	-
Anoplodactylus pygmaeus	Q0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-
Pycnogonum littorale	Q0051	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Acari																																				
Acari indet.	Q0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	-
CRUSTACEEA																																				
Crustacea indet.	R0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirripedia																																				
Verruca stroemi	R0041	1	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	50	-	-	-
Balanus spp. indet.	R0075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus crenatus	R0077	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	4	-	-	-	-
Balanus ?eburneus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus ?improvisus	R0078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda																																				
Commensal copepoda	R0142	-	-	-	3	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptostraca																																				
Nebalia bipes	S0006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysidacea																																				
Mysidacea indet. [larvae]	S0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spp. indet. juv.	S0040	-	-	-	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spinifer	S0044	-	-	-	-	11	1	-	2	5	1	3	5	3	4	4	4	5	22	1	1	-	-	-	1	3	-	-	-	-	2	3	-	-	2	1
Mysidopsis gibbosa	S0067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mesopodopsis slabberi	S0074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paramysis nouveli	S0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schistomysis ornata	S0087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda																																				
Amphipoda indet.	S0097	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apherusa bispinosa	S0102	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perioculodes longimanus	S0131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-	1	-	-	-	-	3	3	15
Pontocrates altamarinus	S0133	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pontocrates arenarius	S0135	-	-	-	-	-	1	1	-	-	-	4	-	-	4	-	-	-	-	-	-	-	-	-	2	-	-	-	3	6	-	-	-	1	7	19
Synchelidium maculatum	S0138	2	2	4	-	-	-	1	-	1	-	-	-	-	-	-	-	-	3	-	4	-	-	2	7	7	-	-	2	6	5	-	-	12	5	14
Pleustidae indet.	S0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parapleustes assimilis	S0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenopleustes nodifera	S0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphilochus manudens	S0158	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Amphilochus neapolitanus	S0159	9	1	8	8	-	-	4	-	15	18	3	-	-	-	-	-	3	-	-	-	1	-	1	-	1	1	-	-	-	1	1	1	-	-	-
Gitana sarsi	S0164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-
Cressa dubia	S0186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-
Stenothoe spp. Indet. juv.	S0208	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenothoe marina	S0213	14	1	37	34	3	-	66	-	132	144	1	-	-	-	3	-	20	-	-	-	-	-	1	-	-	-	2	1	-	-	18	6	-	-	-
Stenothoe cf. monoculoides	S0214	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe sp. juv.	S0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe brevicornis	S0247	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe elegans	S0248	2	-	24	4	-	-	12	-	-	-	1	-	-	-	3	-	-	-	-	-	-	1	38	-	-	-	-	-	1	12	1	3	-	-	-
Urothoe marina	S0249	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe poseidonis	S0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpinia crenulata	S0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Harpinia pectinata	S0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Parametaphoxus fultoni	S0265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysianassidae indet.	S0271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acidostoma obesum	S0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-
Hippomedon denticulatus	S0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lepidepecreum longicorne	S0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysianassa ceratina	S0303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Orchomene nanus	S0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Socarnes erythrophthalmus	S0330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tmetonyx similis	S0337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Argissa hamatipes	S0360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	11	9	86	1	32	4	9	1	-	-	5	-	-	-	1	1
Iphimedia eblanae	S0379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iphimedia minuta	S0380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Listriella mollis	S0399	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus sp. juv.	S0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-
Atylus falcatus	S0410	-	1	-	-	4	2	-	-	-	-	-	3	1	10	-	-	1	-	-	3	-	3	-	3	-	-	-	1	-	6	-	-	-	2	-
Atylus swammerdamei	S0412	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Atylus vedlomensis	S0413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Guernea coalita	S0418	4	-	3	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Tritaea gibbosa	S0420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca sp. juv.	S0423	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-
Ampelisca brevicornis	S0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca diadema	S0429	-	-	-	2	-	-	9	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	47	-	-	5	-	-	-	-	-	-	-	-	-
Ampelisca spinipes	S0437	98	-	60	15	-	1	3	-	-	-	1	-	-	8	562	3	4	-	-	9	17	-	119	2	3	97	18	-	13	83	27	1	-	-	-
Ampelisca tenuicornis	S0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	15	-	-	-	-	-	-	-	-
Ampelisca typica	S0442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Bathyporeia spp. indet.	S0451	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Bathyporeia elegans	S0452	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	-	-	-	-
Bathyporeia guilliamsoniana	S0454	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia nana	S0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia pelagica	S0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia pilosa	S0457	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia tenuipes	S0459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	17	-	3
Haustorius arenarius	S0462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammarus salinus	S0481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Megaluropus agilis	S0489	1	1	-	-	1	-	1	1	5	1	1	2	2	48	2	3	5	15	4	12	9	4	2	34	5	3	8	5	34	12	2	3	14	15	34
Melphidippa goesi	S0491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melphidippella macra	S0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melitidae sp. indet	S0495	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Abludomelita obtusata	S0498	-	-	52	6	-	-	2	-	4	18	-	-	1	-	8	-	3	-	-	-	-	-	-	-	-	3	-	-	-	3	-	6	1	-	-
Ceradocus semiserratus	S0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheirocratus spp. [females]	S0503	4	-	16	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Cheirocratus assimilis	S0504	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheirocratus sundevallii	S0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-
Elasmopus rapax	S0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eriopisa elongata	S0510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maera sp. juv.	S0515	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maera othonis	S0519	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Maerella tenuimana	S0521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita spp. indet.	S0522	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Melita dentata	S0523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita hergensis	S0524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita palmata	S0525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe spp. indet.	S0530	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe rubricata	S0534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis spp. indet.	S0538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis spp. indet. juv.	S0538	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis cornuta	S0539	26	-	59	8	-	-	1	-	-	-	-	-	-	1	146	-	3	-	-	-	-	-	4	-	-	1	-	-	-	8	1	-	-	-	-
Gammaropsis maculata	S0541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3	-	-	1
Gammaropsis nitida	S0542	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis palmata	S0543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microprotopus maculatus	S0550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis juv. indet.	S0551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis longicaudata	S0552	-	-	14	2	-	-	2	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-
Photis reinhardi	S0554	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	28	-	-	-	-
Ischyroceridae indet.	S0558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ericthonius brasiliensis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ericthonius punctatus	S0561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	4	4	-	-	-
Ischyrocerus anguipes	S0567	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-
Jassa spp. indet.	S0568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Jassa falcata	S0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	*66*	*67*	68	69	70
Microjassa cumbrensis	S0574	4	-	2	2	1	-	11	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	*12*	-	-	1
Parajassa pelagica	S0576	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aoridae indet.	S0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aora sp.	S0578	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Aora gracilis	S0579	3	-	35	6	-	1	51	-	19	19	-	1	-	-	5	-	1	-	-	-	-	-	1	-	-	1	-	-	-	-	*14*	*26*	-	-	2
Autonoe longipes	S0583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus sp. juv.	S0586	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus hirsutimanus	S0588	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus pectinatus	S0589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium spp. indet. juv.	S0605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium crassicorne	S0611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium insidiosum	S0612	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium sextonae	S0615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*45*	*19*	-	-	-
Siphonoecetes kroyeranus	S0618	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	-	1	1
Siphonoecetes striatus	S0619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unciola crenatipalma	S0621	-	-	-	3	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unciola planipes	S0622	2	4	22	-	-	1	-	1	1	1	7	14	1	-	1	-	2	9	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Podoceridae indet.	S0623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dyopedos monacanthus	S0628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprellidae juv.	S0639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Caprella erethizon	S0644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pariambus typicus	S0651	-	-	-	-	-	-	-	-	-	-	1	-	-	1	6	-	3	1	-	-	3	-	4	10	5	57	6	1	-	11	-	*1*	14	-	1
Phtisica marina	S0657	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*4*	-	-	-	-
Pseudoprotella phasma	S0659	-	-	1	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperiidae indet.	S0728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperia galba	S0730	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Isopoda																																				
Isopoda indet.	S0790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia spp. indet. [females]	S0793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5	-	-	-	2	-	*2*	-	-	-
Gnathia dentata	S0794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia oxyuraea	S0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthura gracilis	S0803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana sp. indet.	S0843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana borealis	S0844	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana cranchii	S0845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurydice pulchra	S0854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurydice spinigera	S0855	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Janira maculosa	S0892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munna sp.	S0901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Munna minuta	S0907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	*1*	-	-	-
Idotea neglecta	S0941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arcturella dilatata	S0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Tanaidacea																																				
Leptochelia dubia	S1114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudoparatanais batei	S1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaopsis graciloides	S1142	1	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	23	-	46	-	-	2	1	-	*1*	1	-	21
Tanaissus lilljeborgi	S1169	-	-	-	-	-	-	-	8	-	-	-	5	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Cumacea																																				
Cumopsis fagei	S1187	-	-	-	-	-	-	-	-	-	-	-	-	2	14	-	3	1	3	-	2	-	8	-	4	8	-	1	11	14	14	-	-	1	4	-
Cumopsis goodsiri	S1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vauntompsonia cristata	S1191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria sp. juv.	S1193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria arenosa	S1194	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria pulchella	S1196	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	5	-	10	-	1	-	9	5	-	2	1	5	9	-	-	1	-	-
Bodotria scorpioides	S1197	-	-	1	37	-	-	9	-	-	-	-	-	-	-	22	-	-	-	-	1	5	-	46	6	4	12	-	-	15	32	*3*	*1*	2	2	1
Iphinoe trispinosa	S1203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudorella truncatula	S1208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2	1	-	2	27	-	-	-	-	-	-	-	-
Campylaspis ?glabra	S1217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumella pygmaea	S1224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nannastacus unguiculatus	S1228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocumatidae sp. juv.	S1231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma gilsoni	S1235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma longicornis	S1236	-	3	-	-	-	-	-	-	-	-	6	-	1	3	-	6	-	33	1	62	82	246	38	35	10	3	47	67	62	108	-	*1*	2	5	18
Pseudocuma similis	S1237	1	-	1	1	-	-	13	1	39	-	1	2	-	1	-	-	10	25	22	42	9	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Diastylis spp. indet.	S1247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Diastylis bradyi	S1248	-	-	-	-	-	-	-	-	2	1	1	1	4	4	2	-	5	26	9	14	8	17	1	15	9	9	13	9	3	15	-	-	-	5	1
Diastylis rathkei	S1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decapoda																																				
Caridea indet. [zoea]	S1293	1	3	7	5	11	13	10	-	11	5	2	6	2	7	7	11	2	-	1	5	8	9	6	14	17	25	9	9	15	29	5	10	38	16	17
Caridea spp. indet juv.	S1293	5	2	2	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	45	7	3	4	1	7	5	-	-	38	50	12
Palaemonidae juv.	S1311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolytidae juv.	S1334	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Eualus gaimardii	S1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eualus ?pusiolus	S1345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolyte varians	S1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thoralus cranchii	S1360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processidae indet. juv.	S1361	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processa canaliculata	S1363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processa nouveli holthuisi	S1367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalidae juv.	S1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	S1374	4	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalus montagui	S1377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangonidae juv.	S1383	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon crangon	S1385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-
Crangon bispinosus neglecta	S1386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Crangon ?fasciatus	S1388	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon trispinosus	S1390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pontophilus sp.	S1391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callianassidae juv.	S1413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
Callianassa subterranea	S1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upogebia sp. indet. juv.	S1418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upogebia deltaura	S1419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anomura juv.	S1435	5	-	16	11	1	1	23	-	2	5	1	-	-	-	-	-	1	1	-	-	-	-	1	1	1	1	1	-	1	3	-	-	1	-	1
Diogenes pugilator	S1444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paguridae indet. juv.	S1445	1	-	-	1	-	-	1	-	-	1	-	1	-	-	2	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Anapagurus hyndmanni	S1448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus bernhardus	S1457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus pubescens	S1463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galatheidae indet. juv.	S1469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea dispersa	S1471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea intermedia	S1472	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munida rugosa	S1478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pisidia longicornis	S1482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	67	-	-	-
Ebalia spp. indet.	S1504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia granulosa	S1506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tuberosa	S1508	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tumefacta	S1509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxyrhyncha Indet.	S1510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	S1515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyas sp. juv.	S1517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyas araneus	S1518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus dorsettensis	S1526	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus leptochirus	S1527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus phalangium	S1528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia spp. juv.	S1529	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia deflexa	S1530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia linaresi	S1531	-	-	-	1	-	-	2	-	-	2	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	3	-	-	-	-	1	3	-	-	-
Macropodia rostrata	S1532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurynome aspera	S1536	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurynome spinosa	S1537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corystes cassivelaunus	S1552	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	3	-	-	-	-	-	-	-	1
Atelecyclus rotundatus	S1555	-	-	6	2	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Thia scutellata	S1559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Pirimela denticulata	S1562	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portunidae megalopa	S1569	-	-	3	2	-	-	2	19	7	8	13	3	16	15	11	3	7	5	7	6	1	-	2	2	2	5	7	-	12	2	6	1	1	1	1
Portunidae zoea	S1569	1	1	1	4	6	3	17	4	6	3	3	4	7	22	35	4	19	13	9	22	11	-	4	41	10	8	5	1	26	15	11	9	164	243	76
Liocarcinus spp. indet. juv.	S1577	1	-	6	1	1	-	-	-	-	-	1	-	-	2	8	-	1	-	1	1	-	-	2	1	2	1	-	1	-	1	-	-	1	1	3
Liocarcinus depurator	S1580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	*66*	*67*	68	69	70
Liocarcinus holsatus	S1581	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus marmoreus	S1582	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus pusillus	S1584	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcinus maenas juv.	S1594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-
Portumnus latipes	S1596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monodaeus couchi	S1609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pilumnus hirtellus	S1615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xantho pilipes	S1620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brachynotus sexdentatus	S1630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinnotheres pisum	S1638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cladocera																																				
Cladocera		-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	4	-	-	34	4	-	2	-	-	3	-	-	32	168	53
TOTAL		**197**	**24**	**403**	**211**	**40**	**26**	**276**	**39**	**282**	**240**	**54**	**49**	**45**	**194**	**856**	**39**	**113**	**164**	**70**	**209**	**249**	**384**	**411**	**330**	**114**	**346**	**179**	**123**	**227**	**397**	***469***	***540***	**347**	**535**	**302**

Table A7.3B: Abundance data for stations 36-70: Arthropoda

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
CHELICERATA																																				
Pycnogonida																																				
Nymphon brevirostre	Q0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	16	-	-
Achelia sp. juv.	Q0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Achelia echinata	Q0015	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Achelia laevis	Q0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Endeis spinosa	Q0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene spp. indet.	Q0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene brevirostris	Q0033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callipallene emaciata	Q0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anoplodactylus petiolatus	Q0044	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	19	9	14	-	-	6	-	-
Anoplodactylus pygmaeus	Q0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycnogonum littorale	Q0051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acari																																				
Acari indet.	Q0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRUSTACEA																																				
Crustacea indet.	R0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirripedia																																				
Verruca stroemi	R0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus spp. indet.	R0075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus crenatus	R0077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	7	-	-	-	-	-
Balanus ?eburneus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balanus ?improvisus	R0078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copepoda																																				
Commensal copepoda	R0142	-	-	-	-	-	3	-	-	-	15	1	-	-	-	2	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-
Leptostraca																																				
Nebalia bipes	S0006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mysidacea																																				
Mysidacea indet. [larvae]	S0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spp. indet. juv.	S0040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gastrosaccus spinifer	S0044	-	-	-	-	-	-	-	3	10	-	-	-	3	16	1	-	-	2	1	1	-	3	-	-	3	-	-	6	-	1	3	2	-	3	2
Mysidopsis gibbosa	S0067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mesopodopsis slabberi	S0074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paramysis nouveli	S0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schistomysis ornata	S0087	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphipoda																																				
Amphipoda indet.	S0097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apherusa bispinosa	S0102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-
Perioculodes longimanus	S0131	9	-	21	36	18	11	2	-	-	-	1	4	-	-	3	30	20	27	2	2	1	4	-	-	1	-	-	-	-	-	-	1	2	-	-
Pontocrates altamarinus	S0133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Pontocrates arenarius	S0135	118	74	31	-	10	-	1	-	-	-	-	12	-	-	14	31	3	72	10	70	-	28	-	-	14	-	-	-	-	-	-	-	-	-	-
Synchelidium maculatum	S0138	2	-	9	5	7	1	15	9	-	2	8	7	1	-	1	14	7	16	6	12	3	7	-	-	-	2	5	1	6	2	4	5	11	2	-
Pleustidae indet.	S0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parapleustes assimilis	S0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-
Stenopleustes nodifera	S0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphilochus manudens	S0158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amphilochus neapolitanus	S0159	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	3	4	5	-	4	16	-	-
Gitana sarsi	S0164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cressa dubia	S0186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenothoe spp. indet. juv.	S0208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenothoe marina	S0213	-	-	-	-	-	-	-	1	-	3	-	1	-	-	-	1	2	-	1	1	-	-	-	2	-	1	-	3	19	17	-	5	150	-	-
Stenothoe cf. monoculoides	S0214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe sp. juv.	S0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe brevicornis	S0247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Urothoe elegans	S0248	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	1	1	-	3	-	10	2
Urothoe marina	S0249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urothoe poseidonis	S0250	-	3	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Harpinia crenulata	S0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Harpinia pectinata	S0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parametaphoxus fultoni	S0265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lysianassidae indet.	S0271	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acidostoma obesum	S0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippomedon denticulatus	S0296	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-
Lepidepecreum longicorne	S0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-
Lysianassa ceratina	S0303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Orchomene nanus	S0321	-	1	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Socarnes erythrophthalmus	S0330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tmetonyx similis	S0337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Argissa hamatipes	S0360	-	-	-	-	-	-	-	1	-	22	20	5	-	-	20	4	17	1	15	9	1	4	1	43	3	16	2	-	-	-	-	-	-	-	-
Iphimedia eblanae	S0379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iphimedia minuta	S0380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Listriella mollis	S0399	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus sp. juv.	S0409	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus falcatus	S0410	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	2	-	3	-	2	4	-	-	-	-	-	-	-	-	-	19	14	-	2	-
Atylus swammerdamei	S0412	-	-	-	-	-	-	1	-	-	-	1	1	-	-	4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Atylus vedlomensis	S0413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Guernea coalita	S0418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tritaea gibbosa	S0420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca sp. juv.	S0423	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca brevicornis	S0427	-	-	-	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca diadema	S0429	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca spinipes	S0437	-	-	-	-	-	-	-	-	5	7	2	-	-	-	-	-	-	-	-	1	1	-	-	-	-	100	89	20	41	11	-	-	1	-	-
Ampelisca tenuicornis	S0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampelisca typica	S0442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Bathyporeia spp. ndet.	S0451	-	1	-	3	-	-	4	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	2	3	11	-	-
Bathyporeia elegans	S0452	-	-	-	-	-	-	-	-	-	-	-	1	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	18	-	11	-	-
Bathyporeia guilliamsoniana	S0454	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	8	15	40	2	-
Bathyporeia nana	S0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bathyporeia pelagica	S0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Bathyporeia pilosa	S0457	-	4	-	-	-	1	-	1	1	-	-	-	-	-	-	-	15	9	-	-	-	-	-	-	-	-	-	-	-	3	-	-	9	-	-
Bathyporeia tenuipes	S0459	51	11	22	5	20	3	24	-	-	-	-	-	-	-	-	6	-	76	-	3	-	-	-	-	-	-	-	-	-	-	8	2	-	1	-
Haustorius arenarius	S0462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammarus salinus	S0481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Megaluropus agilis	S0489	4	1	5	11	12	6	12	18	-	3	18	1	10	36	2	44	7	49	22	22	45	19	6	8	7	22	6	4	2	7	7	18	11	9	3
Melphidippa goesi	S0491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melphidippella macra	S0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melitidae sp. indet	S0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abludomelita obtusata	S0498	-	-	1	1	-	-	4	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	2	2	8	-	3	12	-	-
Ceradocus semiserratus	S0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Cheirocratus spp. [females]	S0503	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-
Cheirocratus assimilis	S0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheirocratus sundevallii	S0506	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Elasmopus rapax	S0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eriopisa elongata	S0510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maera sp. juv.	S0515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maera othonis	S0519	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maerella tenuimana	S0521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita spp. indet.	S0522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita dentata	S0523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melita hergensis	S0524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Melita palmata	S0525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe spp. indet.	S0530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampithoe rubricata	S0534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis spp. indet.	S0538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis spp. indet. juv.	S0538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis cornuta	S0539	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-
Gammaropsis maculata	S0541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis nitida	S0542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gammaropsis palmata	S0543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microprotopus maculatus	S0550	-	-	1	2	-	-	2	-	-	-	-	-	-	-	-	1	3	3	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis juv. indet.	S0551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Photis longicaudata	S0552	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	-	-	-	-	-	-	-	-
Photis reinhardi	S0554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ischyroceridae indet.	S0558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ericthonius brasiliensis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Ericthonius punctatus	S0561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-
Ischyrocerus anguipes	S0567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jassa spp. indet.	S0568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jassa falcata	S0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Microjassa cumbrensis	S0574	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Parajassa pelagica	S0576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aoridae indet.	S0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Aora sp.	S0578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aora gracilis	S0579	-	-	-	-	-	-	3	1	-	4	-	-	-	-	-	1	-	-	1	-	-	-	-	1	-	-	1	6	-	13	-	16	7	-	-
Autonoe longipes	S0583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-
Leptocheirus sp. juv.	S0586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus hirsutimanus	S0588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptocheirus pectinatus	S0589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium spp. indet. juv.	S0605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium crassicorne	S0611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium insidiosum	S0612	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corophium sextonae	S0615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Siphonoecetes kroyeranus	S0618	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Siphonoecetes striatus	S0619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unciola crenatipalma	S0621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unciola planipes	S0622	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	2	2	34	19	3	1
Podoceridae indet.	S0623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dyopedos monacanthus	S0628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprellidae juv.	S0639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caprella erethizon	S0644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pariambus typicus	S0651	1	-	3	14	3	-	1	1	-	54	22	7	45	-	6	10	7	6	36	50	2	-	-	43	-	23	1	-	-	1	-	-	-	-	-
Phtisica marina	S0657	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudoprotella phasma	S0659	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Hyperiidae indet.	S0728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperia galba	S0730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopoda																																				
Isopoda indet.	S0790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia spp. indet. [females]	S0793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia dentata	S0794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gnathia oxyuraea	S0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthura gracilis	S0803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana sp. indet.	S0843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cirolana borealis	S0844	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Cirolana cranchii	S0845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurydice pulchra	S0854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2	-	-	-
Eurydice spinigera	S0855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	1	2	1
Janira maculosa	S0892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munna sp.	S0901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Munna minuta	S0907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Idotea neglecta	S0941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arcturella dilatata	S0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaidacea																																				
Leptochelia dubia	S1114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudoparatanais batei	S1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaopsis graciloides	S1142	-	-	-	3	-	-	25	-	-	-	-	-	-	-	4	4	-	3	17	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tanaissus lilljeborgi	S1169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8	-	-	-	-	-	-	-	-	2	7	1	10	3
Cumacea																																				
Cumopsis fagei	S1187	-	5	1	-	-	-	-	5	1	-	10	3	15	33	-	1	-	-	3	5	14	3	5	12	8	1	-	-	-	-	2	4	-	-	-
Cumopsis goodsiri	S1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vauntompsonia cristata	S1191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria sp. juv.	S1193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria arenosa	S1194	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bodotria pulchella	S1196	-	-	-	-	-	-	-	-	-	-	4	3	-	-	1	11	1	1	-	6	1	1	-	-	-	-	2	-	6	1	14	2	7	6	-
Bodotria scorpioides	S1197	-	-	-	1	-	-	-	4	-	5	13	1	3	1	-	4	10	-	7	53	1	2	-	-	2	10	2	1	1	-	-	-	1	-	-
Iphinoe trispinosa	S1203	8	5	9	5	3	1	1	-	-	-	-	-	-	-	-	2	1	14	-	10	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudorella truncatula	S1208	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	3	-	-	-	-	-	-	-	-
Campylaspis ?glabra	S1217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cumella pygmaea	S1224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nannastacus unguiculatus	S1228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocumatidae sp. juv.	S1231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma gilsoni	S1235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocuma longicornis	S1236	105	3	67	127	36	11	6	25	1	4	30	149	105	7	75	57	9	449	100	217	8	85	7	77	25	68	18	5	-	-	30	9	2	4	-
Pseudocuma similis	S1237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	66	200	33	189	64	220	54	2
Diastylis spp. indet.	S1247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Diastylis bradyi	S1248	-	-	-	-	-	-	-	15	-	5	30	4	14	1	1	7	1	-	1	3	1	-	1	29	-	11	10	1	14	8	10	4	20	19	1
Diastylis rathkei	S1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
Decapoda																																				
Caridea indet. [zoea]	S1293	9	29	24	7	7	3	12	11	11	15	14	5	3	2	-	12	4	5	7	7	10	7	-	2	-	6	72	-	-	1	-	1	2	4	6
Caridea spp. Indet juv.	S1293	9	-	9	11	6	-	5	2	3	-	2	4	-	-	3	2	-	4	1	4	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Palaemonidae juv.	S1311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolytidae juv.	S1334	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-
Eualus gaimardii	S1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eualus ?pusiolus	S1345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippolyte varians	S1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-
Thoralus cranchii	S1360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processidae indet. juv.	S1361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
Processa canaliculata	S1363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processa nouveli holthuisi	S1367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalidae juv.	S1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalina brevirostris	S1374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandalus montagui	S1377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangonidae juv.	S1383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-
Crangon crangon	S1385	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Crangon bispinosus neglecta	S1386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crangon ?fasciatus	S1388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Crangon trispinosus	S1390	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pontophilus sp.	S1391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callianassidae juv.	S1413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callianassa subterranea	S1415	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-
Upogebia sp. indet. juv.	S1418	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upogebia deltaura	S1419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anomura juv.	S1435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	1	1	-	2	4	-	-
Diogenes pugilator	S1444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Paguridae indet. juv.	S1445	-	17	3	-	-	1	3	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Anapagurus hyndmanni	S1448	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus bernhardus	S1457	-	2	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pagurus pubescens	S1463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galatheidae indet. [juv.]	S1469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Galathea dispersa	S1471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galathea intermedia	S1472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Munida rugosa	S1478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pisidia longicornis	S1482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia spp. indet.	S1504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Ebalia granulosa	S1506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ebalia tuberosa	S1508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Ebalia tumefacta	S1509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxyrhyncha indet.	S1510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maja squinado	S1515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyas sp. juv.	S1517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyas araneus	S1518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus dorsettensis	S1526	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus leptochirus	S1527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inachus phalangium	S1528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia spp. juv.	S1529	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia deflexa	S1530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macropodia linaresi	S1531	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	3	-	-
Macropodia rostrata	S1532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurynome aspera	S1536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eurynome spinosa	S1537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corystes cassivelaunus	S1552	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	3	-	-	-	-	-	-
Atelecyclus rotundatus	S1555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thia scutellata	S1559	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pirimela denticulata	S1562	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
Portunidae megalopa	S1569	7	10	21	8	9	5	2	11	17	8	10	8	4	5	7	7	5	1	4	-	-	4	4	-	-	2	-	-	-	1	1	8	2	1	-
Portunidae zoea	S1569	62	54	30	28	24	12	6	8	15	4	4	2	17	18	3	10	16	12	6	12	-	34	46	10	9	7	-	-	5	2	-	2	6	1	7
Liocarcinus spp. indet. juv.	S1577	-	-	1	-	1	-	5	-	1	3	2	-	7	-	4	2	-	3	4	8	3	-	-	3	-	2	-	2	6	2	-	-	1	-	-
Liocarcinus depurator	S1580	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Liocarcinus holsatus	S1581	-	-	-	-	-	-	-	-	-	5	2	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Liocarcinus marmoreus	S1582	-	-	1	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Liocarcinus pusillus	S1584	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcinus maenas juv.	S1594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Portumnus latipes	S1596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monodaeus couchi	S1609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pilumnus hirtellus	S1615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xantho pilipes	S1620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brachynotus sexdentatus	S1630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinnotheres pisum	S1638	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cladocera																																				
Cladocera		9	298	127	97	34	19	22	2	14	13	-	2	3	-	-	8	19	31	7	14	7	7	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL		**394**	**521**	**388**	**366**	**194**	**86**	**172**	**121**	**80**	**183**	**196**	**224**	**230**	**120**	**160**	**287**	**156**	**813**	**257**	**557**	**109**	**232**	**116**	**230**	**74**	**326**	**233**	**199**	**426**	**152**	**321**	**238**	**601**	**134**	**28**

Table A7.3C: Abundance data for stations 71-105: Arthropoda

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
CHELICERATA																																			
Pycnogonida																																			
Nymphon brevirostre	Q0005	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	**219**
Achelia sp. juv.	Q0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**47**
Achelia echinata	Q0015	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**796**
Achelia laevis	Q0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Endeis spinosa	Q0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Callipallene spp. indet.	Q0032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**
Callipallene brevirostris	Q0033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**67**
Callipallene emaciata	Q0034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Anoplodactylus petiolatus	Q0044	-	-	-	-	8	1	-	-	-	-	-	-	-	-	-	-	-	-	9	-	2	1	-	-	-	-	8	-	5	-	-	-	1	**463**
Anoplodactylus pygmaeus	Q0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**
Pycnogonum littorale	Q0051	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Acari																																			
Acari indet.	Q0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	2	1	**12**
CRUSTACEA																																			
Crustacea indet.	R0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Cirripedia																																			
Verruca stroemi	R0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**612**
Balanus spp. indet.	R0075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	1	**19**
Balanus crenatus	R0077	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	62	-	-	-	-	-	-	**643**
Balanus ?eburneus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Balanus ?improvisus	R0078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Copepoda																																			
Commensal copepoda	R0142	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**188**
Leptostraca																																			
Nebalia bipes	S0006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Mysidacea																																			
Mysidacea indet. [larvae]	S0025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	**3**
Gastrosaccus spp. indet. juv.	S0040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**49**
Gastrosaccus spinifer	S0044	-	3	-	5	9	7	1	25	2	4	-	7	-	33	1	-	15	6	-	-	-	-	7	7	-	4	-	2	-	56	4	1	1	**372**
Mysidopsis gibbosa	S0067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Mesopodopsis slabberi	S0074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Paramysis nouveli	S0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Schistomysis ornata	S0087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Amphipoda																																			
Amphipoda indet.	S0097	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-	-	-	-	**12**
Apherusa bispinosa	S0102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Perioculodes longimanus	S0131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	22	18	-	-	-	-	-	-	4	-	-	-	-	**270**
Pontocrates altamarinus	S0133	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	3	-	**12**
Pontocrates arenarius	S0135	2	-	-	-	2	-	1	-	-	-	-	-	3	1	1	1	-	-	-	3	5	24	1	-	-	-	-	1	4	1	-	-	-	**588**
Synchelidium maculatum	S0138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	-	6	6	-	-	-	-	4	-	4	-	-	-	-	**310**
Pleustidae indet.	S0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Parapleustes assimilis	S0145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Stenopleustes nodifera	S0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**49**
Amphilochus manudens	S0158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**58**
Amphilochus neapolitanus	S0159	-	-	-	-	18	-	-	-	-	-	-	-	1	-	2	-	-	-	1	-	-	-	-	-	-	-	20	1	-	-	-	-	-	**740**
Gitana sarsi	S0164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Cressa dubia	S0186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**176**
Stenothoe spp. indet. juv.	S0208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Stenothoe marina	S0213	-	-	-	-	94	-	-	-	-	-	-	-	12	-	36	-	-	-	1	-	-	-	-	-	-	-	7	-	1	-	3	-	-	**2942**
Stenothoe cf. monoculoides	S0214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Urothoe sp. juv.	S0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Urothoe brevicornis	S0247	16	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	**33**
Urothoe elegans	S0248	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	1	-	1	-	-	1	**740**
Urothoe marina	S0249	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Urothoe poseidonis	S0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Harpinia crenulata	S0255	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Harpinia pectinata	S0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Parametaphoxus fultoni	S0265	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Lysianassidae indet.	S0271	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Acidostoma obesum	S0275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Hippomedon denticulatus	S0296	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	-	1	-	-	1	-	-	**15**
Lepidepecreum longicorne	S0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**5**
Lysianassa ceratina	S0303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Orchomene nanus	S0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	-	-	-	-	-	-	-	-	-	-	**16**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Socarnes erythrophthalmus	S0330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Tmetonyx similis	S0337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Argissa hamatipes	S0360	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	6	6	-	-	-	-	**382**
Iphimedia eblanae	S0379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Iphimedia minuta	S0380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**2**
Listriella mollis	S0399	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Atylus sp. juv.	S0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Atylus falcatus	S0410	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	16	-	-	5	2	-	4	-	1	3	-	1	1	1	3	-	-	**140**
Atylus swammerdamei	S0412	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	1	-	-	-	3	-	-	-	-	-	**25**
Atylus vedlomensis	S0413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Guernea coalita	S0418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**56**
Tritaea gibbosa	S0420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Ampelisca sp. juv.	S0423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**46**
Ampelisca brevicornis	S0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**
Ampelisca diadema	S0429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**282**
Ampelisca spinipes	S0437	-	-	-	-	6	-	175	-	-	-	-	-	3	-	10	-	-	1	30	-	-	-	-	-	-	-	47	-	-	-	-	-	-	**2698**
Ampelisca tenuicornis	S0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**90**
Ampelisca typica	S0442	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Bathyporeia spp. indet.	S0451	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**36**
Bathyporeia elegans	S0452	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	**81**
Bathyporeia guilliamsoniana	S0454	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**87**
Bathyporeia nana	S0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Bathyporeia pelagica	S0456	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	2	-	-	4	2	1	-	-	**24**
Bathyporeia pilosa	S0457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**46**
Bathyporeia tenuipes	S0459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	18	-	1	-	-	-	-	-	-	-	-	-	**298**
Haustorius arenarius	S0462	-	3	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Gammarus salinus	S0481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
Megaluropus agilis	S0489	1	1	-	-	-	1	11	5	2	4	-	2	20	7	11	3	17	12	4	3	2	4	1	-	-	8	3	5	4	2	4	-	1	**892**
Melphidippa goesi	S0491	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Melphidippella macra	S0493	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Melitidae sp. indet	S0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Abludomelita obtusata	S0498	-	-	1	-	34	-	1	-	-	-	-	-	9	-	1	-	-	-	2	-	-	-	-	-	-	-	19	-	-	-	1	-	-	**515**
Ceradocus semiserratus	S0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Cheirocratus spp. [females]	S0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	**156**
Cheirocratus assimilis	S0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Cheirocratus sundevallii	S0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**83**
Elasmopus rapax	S0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Eriopisa elongata	S0510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Maera sp. juv.	S0515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Maera othonis	S0519	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Maerella tenuimana	S0521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Melita spp. indet.	S0522	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Melita dentata	S0523	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Melita hergensis	S0524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Melita palmata	S0525	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Ampithoe spp. indet.	S0530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Ampithoe rubricata	S0534	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Gammaropsis spp. indet.	S0538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Gammaropsis spp. indet. juv.	S0538	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**84**
Gammaropsis cornuta	S0539	-	-	-	-	1	-	27	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	1	-	-	-	-	**976**
Gammaropsis maculata	S0541	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**505**
Gammaropsis nitida	S0542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9**
Gammaropsis palmata	S0543	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Microprotopus maculatus	S0550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	**23**
Photis juv. indet.	S0551	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Photis longicaudata	S0552	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**70**
Photis reinhardi	S0554	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**114**
Ischyroceridae indet.	S0558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Ericthonius brasiliensis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Ericthonius punctatus	S0561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**634**
Ischyrocerus anguipes	S0567	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**150**
Jassa spp. indet.	S0568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**16**
Jassa falcata	S0569	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Microjassa cumbrensis	S0574	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**471**
Parajassa pelagica	S0576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Aoridae indet.	S0577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Aora sp.	S0578	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Aora gracilis	S0579	-	-	-	-	88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	14	-	-	-	-	-	-	**2002**
Autonoe longipes	S0583	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**
Leptocheirus sp. juv.	S0586	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Leptocheirus hirsutimanus	S0588	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**96**
Leptocheirus pectinatus	S0589	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**
Corophium spp. indet. juv.	S0605	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Corophium crassicorne	S0611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Corophium insidiosum	S0612	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	**1**
Corophium sextonae	S0615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**70**
Siphonoecetes kroyeranus	S0618	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	**26**
Siphonoecetes striatus	S0619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Unciola crenatipalma	S0621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**104**
Unciola planipes	S0622	4	6	26	-	-	6	-	-	-	-	-	4	1	4	2	2	3	-	-	-	-	-	12	2	-	14	19	-	-	1	6	1	6	**358**
Podoceridae indet.	S0623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Dyopedos monacanthus	S0628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Caprellidae juv.	S0639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Caprella erethizon	S0644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Pariambus typicus	S0651	-	-	-	-	3	-	4	-	-	-	-	-	-	-	-	-	-	-	1	-	90	48	-	-	-	3	1	-	-	-	-	-	-	**2370**
Phtisica marina	S0657	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**24**
Pseudoprotella phasma	S0659	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**50**
Hyperiidae indet.	S0728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	1	-	**4**
Hyperia galba	S0730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Isopoda																																			
Isopoda indet.	S0790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Gnathia spp. indet. [females]	S0793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Gnathia dentata	S0794	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Gnathia oxyuraea	S0796	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Anthura gracilis	S0803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17**
Cirolana sp. indet.	S0843	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	**3**
Cirolana borealis	S0844	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Cirolana cranchii	S0845	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Eurydice pulchra	S0854	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	1	-	-	**12**
Eurydice spinigera	S0855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**41**
Janira maculosa	S0892	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Munna sp.	S0901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Munna minuta	S0907	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Idotea neglecta	S0941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Arcturella dilatata	S0951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Tanaidacea																																			
Leptochelia dubia	S1114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Pseudoparatanais batei	S1140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Tanaopsis graciloides	S1142	2	-	1	-	-	-	2	-	-	-	-	-	-	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**335**
Tanaissus lilljeborgi	S1169	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	17	5	-	-	4	-	-	-	2	1	1	-	**92**
Cumacea																																			
Cumopsis fagei	S1187	1	-	-	-	-	-	7	13	5	-	-	2	-	8	-	2	4	18	-	-	-	-	4	5	1	3	-	2	-	4	-	-	1	**301**
Cumopsis goodsiri	S1188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Vauntompsonia cristata	S1191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Bodotria sp. juv.	S1193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Bodotria arenosa	S1194	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	**14**
Bodotria pulchella	S1196	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	14	5	-	5	4	4	-	3	1	-	34	-	-	-	-	**206**
Bodotria scorpioides	S1197	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	27	-	-	-	-	-	-	-	-	-	-	-	**959**
Iphinoe trispinosa	S1203	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	**70**
Eudorella truncatula	S1208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	3	-	-	-	-	**90**
Campylaspis ?glabra	S1217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Cumella pygmaea	S1224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Nannastacus unguiculatus	S1228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pseudocumatidae sp. juv.	S1231	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pseudocuma gilsoni	S1235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Pseudocuma longicornis	S1236	2	1	-	-	-	-	3	1	-	-	-	3	-	3	-	-	4	2	14	10	83	71	7	3	-	1	-	-	-	-	-	-	-	**2972**
Pseudocuma similis	S1237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	2	19	15	94	1	-	-	-	**1194**
Diastylis spp. indet.	S1247	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Diastylis bradyi	S1248	-	3	-	-	1	-	-	-	-	-	-	1	3	3	13	-	8	-	6	-	1	2	-	-	-	-	-	2	1	-	-	-	-	**434**
Diastylis rathkei	S1253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Decapoda																																			
Caridea indet. [zoea]	S1293	4	-	6	6	4	2	12	23	2	-	8	21	34	17	13	31	11	2	4	3	23	6	17	-	11	30	44	186	1	16	3	32	29	**1616**
Caridea spp. indet. juv.	S1293	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	3	7	4	5	6	14	-	8	-	9	3	**400**
Palaemonidae juv.	S1311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Hippolytidae juv.	S1334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Eualus gaimardii	S1343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Eualus ?pusiolus	S1345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12**
Hippolyte varians	S1350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18**
Thoralus cranchii	S1360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Processidae indet. juv.	S1361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
Processa canaliculata	S1363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Processa nouveli holthuisi	S1367	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	**4**
Pandalidae juv.	S1370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Pandalina brevirostris	S1374	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**
Pandalus montagui	S1377	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Crangonidae juv.	S1383	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Crangon crangon	S1385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**13**
Crangon bispinosus neglecta	S1386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Crangon ?fasciatus	S1388	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	**5**
Crangon trispinosus	S1390	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Pontophilus sp.	S1391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Callianassidae juv.	S1413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Callianassa subterranea	S1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	**10**
Upogebia sp. indet. juv.	S1418	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Upogebia deltaura	S1419	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	**3**
Anomura juv.	S1435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**340**
Diogenes pugilator	S1444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Paguridae indet. juv.	S1445	-	-	-	1	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**72**
Anapagurus hyndmanni	S1448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Pagurus bernhardus	S1457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Pagurus pubescens	S1463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Galatheidae indet. juv.	S1469	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Galathea dispersa	S1471	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Galathea intermedia	S1472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-	-	-	-	**35**
Munida rugosa	S1478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pisidia longicornis	S1482	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	3	2	10	2	1	9	8	2	10	2	-	2	**598**
Ebalia spp. indet.	S1504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Ebalia granulosa	S1506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Ebalia tuberosa	S1508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**50**
Ebalia tumefacta	S1509	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Oxyrhyncha indet.	S1510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Maja squinado	S1515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Hyas sp. juv.	S1517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**
Hyas araneus	S1518	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Inachus dorsettensis	S1526	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Inachus leptochirus	S1527	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Inachus phalangium	S1528	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Macropodia spp. juv.	S1529	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Macropodia deflexa	S1530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Macropodia linaresi	S1531	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**46**
Macropodia rostrata	S1532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Eurynome aspera	S1536	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Eurynome spinosa	S1537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Corystes cassivelaunus	S1552	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	**20**
Atelecyclus rotundatus	S1555	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**
Thia scutellata	S1559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**
Pirimela denticulata	S1562	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**
Portunidae megalopa	S1569	-	-	-	-	1	-	1	1	-	-	-	1	-	-	-	2	-	4	1	10	-	-	-	-	-	-	-	-	-	-	-	-	-	**416**
Portunidae zoea	S1569	4	20	37	31	19	-	38	99	18	4	52	66	85	33	38	65	21	41	37	26	-	-	-	-	-	-	-	-	-	-	-	-	-	**2190**
Liocarcinus spp. indet. juv.	S1577	-	-	-	-	10	-	-	-	2	-	-	-	3	-	3	1	2	-	3	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**156**
Liocarcinus depurator	S1580	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Liocarcinus holsatus	S1581	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**
Liocarcinus marmoreus	S1582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**
Liocarcinus pusillus	S1584	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19**
Carcinus maenas juv.	S1594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Portumnus latipes	S1596	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Monodaeus couchi	S1609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24**
Pilumnus hirtellus	S1615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Xantho pilipes	S1620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Brachynotus sexdentatus	S1630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Pinnotheres pisum	S1638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Cladocera																																			
Cladocera		-	-	6	16	36	14	2	4	11	-	11	11	22	10	5	7	2	-	-	-	4	1	4	-	11	6	-	3	-	12	-	12	2	**1249**
TOTAL		**40**	**53**	**79**	**69**	**364**	**31**	**302**	**172**	**43**	**14**	**73**	**118**	**203**	**127**	**155**	**123**	**109**	**88**	**135**	**71**	**303**	**282**	**77**	**45**	**34**	**94**	**426**	**256**	**179**	**119**	**31**	**66**	**50**	**38403**

Table A7.3D: Abundance data for stations 106-148: Arthropoda

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
PROTOZOA																																			
Foraminifera		-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astrorhiza sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Planorbulina sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORIFERA																																			
Porifera indet.	C0001	-	-	-	P1	-	P1	-	-	P1	-	-	P	-	P1	P	P	-	P	P2	-	-	-	-	-	-	-	-	-	P1	-	-	P1	-	-
Leucoselenia spp. indet.	C0053	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hadromerida indet.	C0317	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliona celata	C0480	-	-	-	P1	-	P2	-	-	-	-	p	-	P	-	P	P	P	-	P1	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNIDARIA																																			
Atractylis arenosa		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa																																			
Corymorpha sp.	D0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia sp.	D0163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia indivisa	D0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	-
Eudendrium spp. indet.	D0218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	P1	p	P1	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudendrium rameum	D0226	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leuckartiara octona	D0240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bougainvillia ramosa	D0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	P1
Mitrocomella sp?	D0322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovenella clausa	D0336	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	P1	-	-
Phialella quadrata	D0343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calycella syringa	D0348	P	-	-	-	P1	P1	-	-	-	-	p	P2	-	-	-	-	P	-	P1	p2	-	-	-	P	P	-	-	-	-	-	-	P3	-	P1
Lafoea dumosa	D0386	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1
Halecium spp. indet.	D0390	P	-	P1	-	P1	P3	-	-	-	-	-	-	P	P1	P	P2	P	-	P3	p	P2	P3	P	P	-	-	P	P2	-	-	P2	-	P4	-
Halecium beanii	D0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium halecinum	D0392	-	-	-	-	-	-	-	-	-	-	p	P2	-	-	P3	-	-	P3	-	p	-	-	-	-	-	-	-	-	P2	P3	-	P1	-	-
Halecium lankesteri	D0394	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abietinaria abietina	D0409	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia spp. indet.	D0413	-	-	-	-	-	-	-	-	-	-	-	-	P	P1	P	P	-	-	P1	-	-	-	-	-	P	-	-	-	P	-	-	-	-	-
Diphasia attenuata	D0415	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia rosacea	D0420	-	-	P1	-	P2	P3	-	-	-	-	-	-	-	-	-	-	P3	P	-	-	P1	P2	P	-	P	-	-	-	-	-	-	P3	P	P3
Hydrallmania falcata	D0424	P	-	P1	-	P1	P5	-	-	-	-	p	P2	P	P1	P	P	P	P	P3	p3	P1	P2	P	P	P	P	P	P2	P2	-	P1	P1	P1	-
Sertularella spp. indet.	D0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	P	-	p	-	-	-	-	-	-	-	-	P	-	-	-	-	-
Sertularella polyzonias	D0430	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	P1	p	-	-	-	-	-	-	P	-	-	-	-	P4	P1	-
Sertularella rugosa	D0431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella tenella	D0432	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularia spp. indet.	D0433	-	-	-	P1	-	-	-	P1	P1	-	-	-	-	P3	-	P2	P	P	P2	-	-	-	-	-	-	-	P	-	-	P	P1	p	P4	P3
Sertularia argentea	D0434	P	-	P4	-	P3	P3	-	-	-	-	p	-	P	-	P	-	-	-	-	P2	P3	P3	-	P	P	-	-	P2	P	-	-	-	-	-
Sertularia cupressina	D0435	P	-	-	-	-	-	-	-	-	-	-	P4	P	-	P	-	-	-	-	p	-	-	P	P2	P	P	-	-	P2	-	-	-	-	-
Kirchenpaueria pinnata	D0455	-	-	-	-	-	-	-	-	-	-	-	-	P	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia antennina	D0463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia ramosa	D0466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-
Plumularia setacea	D0469	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	P3	p	-	-	-	-	-	-	P	-	P1	-	-	-	-	-
Campanularia hincksii	D0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Clytia sp.	D0501	P	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia gracilis	D0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia hemisphaerica	D0503	-	-	P1	-	P3	P2	-	-	-	-	p	P3	P2	P1	P2	P	P2	P	P3	p1	P2	P1	-	P	-	-	P	-	P2	-	P1	P2	P1	-
Clytia paulensis	D0505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	p1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obeliinae indet.	D0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea spp. indet.	D0511	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-
Laomedea calceolifera	D0513	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea neglecta	D0516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonothyraea loveni	D0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obelia spp. indet.	D0517	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	P1	-	-
Obelia dichotoma	D0519	-	-	P1	-	P3	-	-	-	-	-	-	-	P	-	-	-	-	P	P2	P1	P2	P3	-	-	-	-	P	P1	P1	-	-	-	-	-
Anthozoa																																			
Anthozoa indet.	D0583	7	-	2	-	1	18	-	-	-	-	16	14	-	-	2	4	1	2	21	5	-	-	1	1	-	-	1	-	7	2	-	1	112	-
Alcyonium digitatum	D0597	-	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	P	P	-	-	-	-	P1	-
Zoantharia indet.	D0646	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Epizoanthus couchii	D0649	-	-	-	-	-	7	-	-	-	-	-	-	P	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Zoanthus alderi	D0661	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagartia sp. indet?	D0712	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Edwardsia claparedii	D0766	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Sphenotrochus andrewianus	D0785	-	-	-	3	-	-	-	-	18	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	2	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
PLATYHELMINTHES																																			
Turbellaria indet.	F0002	1	-	-	-	-	1	-	1	3	1	-	-	2	-	1	1	-	-	1	1	-	-	2	-	1	1	9	-	3	2	2	-	1	1
NEMERTEA																																			
Nemertea indet.	G0001	50	3	8	3	13	8	4	11	8	12	21	5	13	11	43	13	39	27	58	26	23	45	29	16	21	18	2	11	18	31	44	7	16	11
Cerebratulus sp. indet.	G0039	1	-	-	-	1	-	-	4	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
ENTOPROCTA																																			
Entoprocta indet.	K0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loxosomatidae indet.	K0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loxosomella phascolosomata	K0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina spp. indet.	K0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina cernua	K0046	-	-	-	-	-	-	-	-	-	-	-	P3	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-
Pedicellina hispida	K0047	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?gracilis	K0053	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?matshushimana	K0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SIPUNCULA																																			
Sipuncula indet.	N0001	2	-	-	6	-	1	-	-	-	25	7	27	3	-	3	-	-	1	3	2	6	1	-	-	-	-	1	5	5	-	11	-	1	-
Golfingiidae indet. juv.	N0011	-	-	-	-	-	-	-	-	-	-	5	-	12	-	-	3	-	14	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Golfingia vulgaris vulgaris	N0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Thysanocardia procera	N0028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phascolion strombus strombus	N0034	-	-	20	-	2	2	-	2	-	-	-	-	1	3	1	1	-	-	-	-	1	-	-	1	-	-	-	2	1	-	4	-	11	6
Thalassema thalassemum	O0009	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRACHIOPODA																																			
Gwynia capsula	X0038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-
BRYOZOA																																			
Cyclostomatida																																			
Crisia spp. indet.	Y0013	-	-	-	P1	-	P1	-	P1	P1	P1	-	-	-	-	-	-	-	-	P2	p	-	-	-	-	P	-	P	P2	-	-	-	-	-	-
Crisia aculeata	Y0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-
Crisia denticulata	Y0016	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia eburnea	Y0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-
Tubulipora sp. indet.	Y0027	-	-	-	-	-	-	-	-	-	-	p	-	P	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-
Tubulipora liliacea	Y0030	-	-	-	-	-	P3	-	-	-	-	p	P2	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	P	P1	P3	-	P3	-	-	-
Plagioecia patina	Y0041	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	p1	-	-	-	-	-	-	-	-	P1	-	-	-	-	-
Plagioecia sarniensis	Y0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Entalophoroecia deflexa	Y0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-
Disporella hispida	Y0066	-	-	P1	-	-	P2	-	-	-	-	p	P1	P	-	-	2	-	P	P1	p	-	-	-	-	-	-	P	P1	P3	P	P3	-	-	-
Ctenostomatida																																			
Alcyonidium sp. indet.	Y0073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium diaphanum	Y0076	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-
Alcyonidium gelatinosum	Y0077	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium mamillatum	Y0079	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium mytili	Y0080	-	-	P1	P1	P1	P3	-	-	-	-	p	P3	P	P1	P	P	P	P	P4	p2	P3	P2	-	-	-	-	P	P1	P	P	P1	P1	P1	P1
Alcyonidium parasiticum	Y0081	-	-	-	-	P1	P3	-	P1	-	-	-	-	P	P1	P	P	P	P	P1	p	P1	P2	-	-	-	-	P	P1	P	P	P1	P3	P2	P2
?Arachnidium fibrosum	Y0088	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arachnidium hippothooides	Y0089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nolella dilatata	Y0092	-	-	-	-	-	-	-	-	-	-	p	-	P	-	P	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anguinella palmata	Y0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Farrella repens	Y0122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Hypophorella expansa	Y0125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-
?Penetrantia concharum	Y0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vesicularia spinosa	Y0131	P	-	-	-	-	P3	-	-	-	-	p	-	-	-	P	-	-	-	-	p	-	-	-	P	-	-	-	-	-	-	-	P1	-	-
Amathia lendigera	Y0135	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-
Bowerbankia spp. indet.	Y0137	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-
Bowerbankia citrina	Y0138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia gracilis	Y0139	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	P3	-	P1	P1	-	-	-	-	-	P1	-	-	P2	-	-	-
Bowerbankia imbricata	Y0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia pustulosa	Y0142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheilostomatida																																			
Aetea anguina	Y0154	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aetea sica	Y0155	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia ambigua	Y0161	-	-	-	-	-	P3	-	-	-	-	p	-	-	-	-	-	P	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia chelata	Y0162	P	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eucratea loricata	Y0165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conopeum reticulum	Y0172	-	-	P1	P1	P1	-	-	-	-	-	p1	P1	P1	-	-	P	P	P	P3	p	P1	-	-	-	-	-	-	-	P1	-	P1	-	-	P1
Electra pilosa	Y0178	-	-	P4	P2	P3	P5	P1	P1	P1	-	p	P2	P3	P3	P	P	P3	P3	P4	p3	P3	P3	-	P	P1	P	P	P3	P4	P3	P3	P4	P3	P2
Pyripora catenularia	Y0180	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	Y0187	-	-	-	-	-	-	-	-	-	-	p	P1	P	-	P	-	-	-	P1	p	-	-	-	-	-	-	-	-	-	P	-	-	-	-
Callopora discreta	Y0203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Callopora dumerelli	Y0204	-	-	-	-	-	-	-	-	-	-	p	P2	P	-	P	-	-	-	-	p	-	-	-	-	-	-	P	-	P	-	-	-	-	-
Amphiblestrum auritum	Y0222	-	-	-	-	-	P1	-	-	-	-	-	P2	P	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-
Membraniporella nitida	Y0234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Bugula avicularia	Y0241	-	-	-	-	P1	P2	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	P1	-	-	-	-	-	-	-	-	-	P1	P1	P1
Bugula flabellata	Y0243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula plumosa	Y0246	-	-	-	-	P1	P1	-	-	-	-	p	P2	-	-	P	-	-	P	P2	p	-	-	-	-	P	-	P	-	P1	P	-	-	-	-
Bugula turbinata	Y0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicellariella ciliata	Y0256	-	P	P1	-	P1	P2	-	-	-	-	p2	P4	P	-	P2	P	P	P	P3	p1	P1	-	-	P	P	-	P	P1	P1	P	-	P1	-	-
Scrupocellaria scrupea	Y0278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrupocellaria scruposa	Y0279	-	-	-	P1	-	P4	P1	-	-	-	p	P4	P	-	-	P	P	P	P3	p	-	-	-	P	P	-	P	-	P1	-	-	-	P1	-
Setosella vulnerata	Y0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-
Cellaria fistulosa	Y0300	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	P	-	P	-	-	-	-	-
Cribrilina annulata	Y0308	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cribrilina punctata	Y0310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-
Puellina spp. indet.	Y0315	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina innominata	Y0321	-	-	-	-	-	P2	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-
Puellina praecox?	Y0323	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina setosa	Y0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-
Chorizopora brongniartii	Y0344	-	-	-	P1	-	P2	-	-	-	-	p	P1	P	-	-	P	P	P	-	-	P1	-	-	-	-	-	P	P3	P3	P	P3	-	-	P1
Escharella immersa	Y0364	-	-	-	P1	-	P1	-	-	-	-	p	P1	P	-	-	-	-	P	P2	p2	-	-	-	-	-	-	P	P3	-	P	P1	-	-	-
Escharella variolosa	Y0369	-	-	-	-	-	-	-	-	-	-	-	P3	P	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	P2	-	-	-	-	-
Escharella ventricosa	Y0370	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	P1	-	-	-
Reptadeonella violacea	Y0401	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phylactella labrosa	Y0421	-	-	-	-	-	P1	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-
Schizoporella hesperia	Y0427	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharina johnstoni	Y0440	-	-	-	P1	-	P3	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella sp.	Y0467	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella auriculata	Y0468	-	-	-	-	-	P1	-	-	-	-	p2	P2	-	-	-	-	-	P	P1	p2	-	-	-	-	-	-	P	P1	-	P	P1	-	-	-
Schizomavella linearis	Y0474	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-
Microporella ciliata	Y0480	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenestrulina malusii	Y0483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellepora pumicosa	Y0495	-	-	-	-	-	P2	-	-	-	-	-	P1	-	-	-	-	-	-	2	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Celleporina hassallii	Y0498	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbicellepora sp.	Y0503	-	-	-	-	-	P	-	-	-	-	-	-	P	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubicellepora avicularis	Y0504	-	-	-	-	-	-	-	-	-	-	p	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PHORONIDA																																			
Phoronis spp. indet.	ZA0003	-	-	-	-	-	-	-	-	-	-	7	2	3	-	6	2	4	2	14	10	2	2	-	-	-	-	-	8	14	10	5	-	-	-
Phoronis ?hippocrepia	ZA0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phoronis muelleri	ZA0005	2	-	-	-	3	3	-	-	-	-	-	12	-	-	-	2	-	-	8	-	-	-	-	-	-	-	-	3	7	-	-	-	12	3
ECHINODERMATA																																			
Crinoidea																																			
Crinoidea	ZB0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asteroidea																																			
Asteroidea juv.	ZB0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	ZB0026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solasteridae	ZB0070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	ZB0100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens juv.	ZB0100	-	-	-	-	3	-	-	1	-	-	-	-	5	1	1	1	-	2	9	6	2	6	-	-	-	-	1	3	24	11	45	12	23	1
Marthasterias glacialis	ZB0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Ophiuroidea																																			
Ophiuroidea indet. juv.	ZB0105	3	-	-	-	4	-	-	-	-	-	-	2	5	-	2	-	-	-	30	-	2	3	-	1	-	-	-	16	28	15	118	-	-	5
Ophiothrix fragilis	ZB0124	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-
Ophiactis balli	ZB0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiuridae indet. juv.	ZB0149	-	2	1	-	-	-	-	-	-	-	60	-	1	1	20	1	-	2	17	15	1	-	-	-	-	-	19	2	1	3	4	1	60	1
Amphiura brachiata	ZB0151	165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiura chiajei	ZB0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiura filiformis	ZB0154	25	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	9	-
Amphipholis squamata	ZB0161	-	-	-	-	1	13	-	-	-	-	-	10	2	-	8	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Ophiura spp. indet. juv.	ZB0166	-	-	1	-	-	-	-	-	-	-	-	-	-	2	-	1	9	4	3	-	2	1	-	1	1	-	-	3	2	1	1	-	-	-
Ophiura affinis	ZB0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
Ophiura albida	ZB0168	-	-	-	-	8	2	-	1	-	-	-	-	1	5	-	2	-	-	-	-	5	1	-	-	-	-	-	-	-	1	-	-	6	-
Ophiura ophiura	ZB0170	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	1	2	4	5	6	7	8	9	10	11	*12*	*13*	14	15	16	17	18	19	20	*21*	22	23	24	25	26	27	*28*	29	30	31	32	*33*	34	35
Echinoidea																																			
Echinoida juv.	ZB0190	-	-	-	-	1	2	-	2	1	-	-	-	1	1	1	-	-	1	2	*1*	-	-	1	-	3	-	*1*	3	6	2	-	-	1	-
Psammechinus miliaris	ZB0193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus elegans	ZB0197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus esculentus	ZB0198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocyamus pusillus	ZB0212	-	-	4	2	22	46	4	7	12	10	-	-	-	63	2	13	32	5	-	-	1	5	2	19	-	5	-	9	7	-	6	*6*	41	61
Spatangoida indet. juv.	ZB0213	-	-	-	-	-	-	2	1	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	1	9
Spantagus purpureus	ZB0219	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium sp.	ZB0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium cordatum	ZB0223	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium flavescens	ZB0224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holothurioidea																																			
Holothurioidea indet.	ZB0229	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	*1*	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Neopentadactyla mixta	ZB0260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thyone fusus	ZB0262	-	-	4	1	-	-	-	-	-	1	*2*	*2*	1	-	2	3	6	5	16	*4*	6	5	-	-	1	-	-	7	7	5	11	-	8	3
Leptosynapta sp. juv.	ZB0291	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptosynapta inhaerens	ZB0296	-	-	4	13	1	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-
Labidoplax buskii	ZB0299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HEMICHORDATA																																			
Enteropneusta spp.	ZC0012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TUNICATA																																			
Enterogona																																			
Aplidium glabrum	ZD0036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Didemnidae indet.	ZD0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascidiidae indet.	ZD0082	-	-	-	6	-	-	-	1	-	-	-	-	-	3	-	-	-	-	12	-	-	2	-	7	-	-	*P*	7	-	-	4	*2*	-	-
Ascidiella aspersa	ZD0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascidiella scabra	ZD0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Pleurogona																																			
Styela coriacea	ZD0105	-	-	-	-	-	-	-	-	-	-	*3*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycarpa fibrosa?	ZD0112	-	-	7	7	-	-	-	1	4	-	*5*	*11*	1	-	9	-	-	-	8	*5*	-	-	-	-	-	-	*1*	-	-	-	-	*4*	3	-
Polycarpa pomaria	ZD0115	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dendrodoa grossularia	ZD0120	-	-	-	-	-	13	-	-	-	-	*167*	*140*	17	-	-	3	-	44	5	*108*	4	12	-	-	-	-	*P*	-	-	5	7	-	-	-
Botrylloides leachi	ZD0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyura tessellata	ZD0141	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula spp. indet.?	ZD0146	-	-	5	-	2	-	-	-	-	-	*2*	*10*	2	-	-	13	-	3	-	-	-	-	-	4	2	2	-	5	-	-	2	-	3	8
Molgula citrina	ZD0148	-	-	-	-	-	-	-	-	-	-	*5*	-	-	-	-	-	1	-	4	-	-	2	-	-	-	-	-	-	7	-	2	-	-	-
Molgula complanata	ZD0149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula manhattensis	ZD0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula occulta	ZD0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	*3*	-	-
Eugyra arenosa	ZD0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
PISCES																																			
Pisces	ZE0001	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Osteichthyes larvae	ZG0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammodytes tobianus	ZG0444	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus immaculatus	ZG0448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus lanceolatus	ZG0449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Pleuronectiformes juv.	ZG0564	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CEPHALOCHORDATA																																			
Branchiostoma lanceolatum		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	*1*	-	-	-	1	-	-	-	-	-	-	-	-	-	-
TOTAL		**271**	**7**	**56**	**43**	**63**	**119**	**10**	**32**	**47**	**53**	***302***	***238***	**72**	**91**	**108**	**68**	**94**	**115**	**278**	***195***	**57**	**87**	**38**	**53**	**29**	**38**	***41***	**87**	**141**	**91**	**270**	***39***	**311**	**109**

Table A7.4A: Abundance data for stations 1-35: Other Phyla [P = presence only recorded]

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
PROTOZOA																																				
Foraminifera		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astrorhiza sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Planorbulina sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORIFERA																																				
Porifera indet.	C0001	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	P1	-	*p*	-	-	-	-
Leucoselenia spp. indet.	C0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Hadromerida Indet.	C0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliona celata	C0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNIDARIA																																				
Atractylis arenosa		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa																																				
Corymorpha sp.	D0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	1	1	-	-	-	1	1
Tubularia sp.	D0163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia indivisa	D0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudendrium spp. indet.	D0218	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Eudendrium rameum	D0226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leuckartiara octona	D0240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-
Bougainvillia ramosa	D0257	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitrocomella sp?	D0322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovenella clausa	D0336	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	P1	-	P2	-	-	P1	-	P1	-	-	P2	-	P1	-	-	P1	P1	P2
Phialella quadrata	D0343	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calycella syringa	D0348	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	P1	-	-	P1	-	-	-	-	-	*P4*	P1	-	P1
Lafoea dumosa	D0386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium spp. indet.	D0390	P2	-	P3	P1	-	-	P1	-	P1	-	-	P1	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	*p*	-	-	-	-
Halecium beanii	D0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium halecinum	D0392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium lankesteri	D0394	-	-	-	-	-	-	P4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P4*	-	-	-
Abietinaria abietina	D0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia spp. indet.	D0413	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	P1	-	-	-	P1	-	-	-	-	-	-	-	-	*P1*	-	-	-
Diphasia attenuata	D0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia rosacea	D0420	-	-	-	-	-	-	-	-	P2	p	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrallmania falcata	D0424	P2	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	*P2*	-	-	-
Sertularella spp. indet.	D0427	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella polyzonias	D0430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Sertularella rugosa	D0431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella tenella	D0432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularia spp. indet.	D0433	-	P1	P2	P1	-	P1	P1	-	-	-	-	P1	P1	-	P2	-	-	P1	P1	P1	-	P1	-	-	-	P1	-	-	P1	P3	-	-	-	-	-
Sertularia argentea	D0434	P2	-	-	-	-	-	-	-	P4	P4	-	-	-	-	-	-	P3	-	-	-	-	-	P2	-	-	-	-	-	-	P1	-	*P4*	-	-	-
Sertularia cupressina	D0435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Kirchenpaueria pinnata	D0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia antennina	D0463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia ramosa	D0466	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumularia setacea	D0469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Campanularia hincksii	D0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia sp.	D0501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia gracilis	D0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia hemisphaerica	D0503	P1	-	P1	P2	-	P1	P1	P1	P1	P1	-	-	-	-	-	-	P1	-	P1	-	-	-	P1	-	-	-	-	-	-	-	-	*P1*	-	-	-
Clytia paulensis	D0505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obeliinae indet.	D0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea spp. indet.	D0511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea calceolifera	D0513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea neglecta	D0516	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonothyraea loveni	D0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obelia spp. indet.	D0517	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	P1	P1	-	-	-	-	-	-	-	-	P1	P1	-	-	P1	P1	P1
Obelia dichotoma	D0519	P1	-	P1	-	P3	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	P1	P1	-	-	-	-	*p*	*P2*	-	-	-
Anthozoa																																				
Anthozoa indet.	D0583	-	-	1	3	1	1	1	-	-	12	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	*1*	*1*	1	-	-
Alcyonium digitatum	D0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-
Zoantharia Indet.	D0646	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Epizoanthus couchii	D0649	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Zoanthus alderi	D0661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagartia sp. indet?	D0712	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Edwardsia claparedii	D0766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-
Sphenotrochus andrewianus	D0785	-	1	-	-	9	-	-	-	-	-	7	-	-	8	-	2	7	1	5	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
PLATYHELMINTHES																																				
Turbellaria indet.	F0002	-	-	1	-	-	1	1	1	1	-	2	-	-	3	7	1	-	-	-	-	7	15	1	2	3	3	5	-	3	2	-	2	3	1	-
NEMERTEA																																				
Nemertea indet.	G0001	3	12	42	43	26	32	55	3	12	9	22	6	-	5	26	8	11	5	5	12	17	2	29	7	6	19	8	10	12	10	5	4	54	11	10
Cerebratulus sp. indet.	G0039	-	-	-	-	-	1	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	3	3	-	4	-	1	-	-	-	-	-	-	-
ENTOPROCTA																																				
Entoprocta indet.	K0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loxosomatidae indet.	K0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loxosomella phascolosomata	K0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina spp. indet.	K0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina cernua	K0046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	P3	-	-	-
Pedicellina hispida	K0047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?gracilis	K0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?matshushimana	K0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SIPUNCULA																																				
Sipuncula indet.	N0001	1	-	2	1	4	-	16	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1	-	1	-	-	-	-	2	-	-	-	-	-	-
Golfingiidae indet. juv.	N0011	-	-	-	-	-	-	-	-	-	-	28	-	-	9	2	2	-	-	3	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-
Golfingia vulgaris vulgaris	N0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thysanocardia procera	N0028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phascolion strombus strombus	N0034	-	-	6	3	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	4	-	-	1	-	-	3	-	-	1	-	-	-
Thalassema thalassemum	O0009	-	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRACHIOPODA																																				
Gwynia capsula	X0038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRYOZOA																																				
Cyclostomatida																																				
Crisia spp. indet.	Y0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-
Crisia aculeata	Y0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia denticulata	Y0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia eburnea	Y0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubulipora sp. indet.	Y0027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubulipora liliacea	Y0030	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-
Plagioecia patina	Y0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plagioecia sarniensis	Y0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entalophoroecia deflexa	Y0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disporella hispida	Y0066	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ctenostomatida																																				
Alcyonidium sp. indet.	Y0073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium diaphanum	Y0076	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	P4	-	-	-
Alcyonidium gelatinosum	Y0077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-
Alcyonidium mamillatum	Y0079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium mytili	Y0080	-	P1	P1	P1	-	-	P1	-	-	P1	P	-	-	-	-	P1	P1	-	-	P1	-	-	P1	P1	-	-	-	-	-	-	p	P3	-	-	-
Alcyonidium parasiticum	Y0081	P	-	P1	-	P1	-	-	-	P3	p	-	-	-	-	P1	-	P1	-	-	-	-	-	P1	-	-	P	-	-	P1	-	p3	P2	-	-	-
?Arachnidium fibrosum	Y0088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arachnidium hippothooides	Y0089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nolella dilatata	Y0092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-
Anguinella palmata	Y0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	p	-	-	-	-
Farrella repens	Y0122	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Hypophorella expansa	Y0125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Penetrantia concharum	Y0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vesicularia spinosa	Y0131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	P1	-	-	-	-	-	P1	-	-	P2	-	-	-
Amathia lendigera	Y0135	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia spp. indet.	Y0137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia citrina	Y0138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	p3	-	-	-	-
Bowerbankia gracilis	Y0139	P1	-	P1	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-
Bowerbankia imbricata	Y0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia pustulosa	Y0142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-
Cheilostomatida																																				
Aetea anguina	Y0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aetea sica	Y0155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia ambigua	Y0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia chelata	Y0162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eucratea loricata	Y0165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conopeum reticulum	Y0172	-	-	-	P2	-	-	-	-	-	P1	-	-	-	-	P1	-	P1	-	-	-	-	-	-	P1	P1	P1	-	-	-	-	p	P3	-	-	-
Electra pilosa	Y0178	P2	P1	P2	P3	-	P1	P1	-	P3	P3	-	P1	-	-	P3	P1	P2	-	P1	-	-	-	-	P1	-	P1	-	-	P1	-	-	P3	-	-	-
Pyripora catenularia	Y0180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	Y0187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callopora discreta	Y0203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Callopora dumerelli	Y0204	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiblestrum auritum	Y0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Membraniporella nitida	Y0234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula avicularia	Y0241	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula flabellata	Y0243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P1*	-	-	-
Bugula plumosa	Y0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	*p2*	*P2*	-	-	-
Bugula turbinata	Y0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicellariella ciliata	Y0256	-	-	P1	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	P1	-	-	-	-	*p*	*P2*	-	-	-
Scrupocellaria scrupea	Y0278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P1*	-	-	-	-
Scrupocellaria scruposa	Y0279	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P1*	*P1*	-	-	-
Setosella vulnerata	Y0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellaria fistulosa	Y0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P2*	-	-	-
Cribrilina annulata	Y0308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cribrilina punctata	Y0310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina spp. indet.	Y0315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina innominata	Y0321	P1	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina praecox?	Y0323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina setosa	Y0324	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chorizopora brongniartii	Y0344	P1	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P2*	-	-	-
Escharella immersa	Y0364	P1	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P3*	-	-	-
Escharella variolosa	Y0369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella ventricosa	Y0370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reptadeonella violacea	Y0401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phylactella labrosa	Y0421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizoporella hesperia	Y0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharina johnstoni	Y0440	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella sp.	Y0467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella auriculata	Y0468	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*P1*	-	-	-
Schizomavella linearis	Y0474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microporella ciliata	Y0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenestrulina malusii	Y0483	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellepora pumicosa	Y0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	*P2*	-	-	-
Celleporina hassallii	Y0498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbicellepora sp.	Y0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubicellepora avicularis	Y0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PHORONIDA																																				
Phoronis spp. indet.	ZA0003	6	-	11	7	-	-	3	-	-	-	-	-	-	-	7	-	4	-	-	2	-	-	-	-	-	-	-	-	-	-	*39*	*3*	148	-	11
Phoronis ?hippocrepia	ZA0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Phoronis muelleri	ZA0005	-	-	-	-	-	-	4	-	1	-	1	-	-	-	2	-	-	-	-	4	15	-	25	2	5	124	126	1	1	5	-	-	-	-	-
ECHINODERMATA																																				
Crinoidea																																				
Crinoidea	ZB0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-
Asteroidea																																				
Asteroidea juv.	ZB0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astropecten irregularis	ZB0026	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solasteridae	ZB0070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	ZB0100	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Asterias rubens juv.	ZB0100	3	-	12	5	-	-	2	1	2	2	-	-	-	-	10	-	6	-	-	-	-	-	1	-	-	-	-	-	-	-	*4*	*1*	-	1	-
Marthasterias glacialis	ZB0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiuroidea																																				
Ophiuroidea indet. juv.	ZB0105	6	-	54	29	-	3	1	-	1	-	-	-	-	-	2	-	-	-	1	-	21	3	-	4	3	1	-	-	-	3	-	-	2	2	9
Ophiothrix fragilis	ZB0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	*4*	-	-	-
Ophiactis balli	ZB0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiuridae indet. juv.	ZB0149	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	2	-	-	-	10	4	-	-	*13*	*13*	1	-	-
Amphiura brachiata	ZB0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	9	-	-	-	-	-	6	-	-
Amphiura chiajei	ZB0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Amphiura filiformis	ZB0154	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	1	-	-	3	1	-	-	-	-	-	-	-	-
Amphipholis squamata	ZB0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura spp. indet. juv.	ZB0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	1	-	-	1	11	-	-	1	-	-	-	-	-
Ophiura affinis	ZB0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiura albida	ZB0168	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	11	-	-	-	-	-	-	-	-	*1*	-	-	-
Ophiura ophiura	ZB0170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	2	2	-	-	-	-	-	-	-

Taxonomic List	MCS Code	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	*66*	*67*	68	69	70
Echinoidea																																				
Echinoida juv.	ZB0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	*2*	-	-	-
Psammechinus miliaris	ZB0193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus elegans	ZB0197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus esculentus	ZB0198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-
Echinocyamus pusillus	ZB0212	29	11	8	2	5	-	-	2	17	-	8	-	-	-	7	-	1	-	-	-	-	-	1	1	1	-	-	-	-	-	*2*	*1*	-	-	-
Spatangoida indet. juv.	ZB0213	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	1	5	-	2	-	-	-	-	12
Spantagus purpureus	ZB0219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium sp.	ZB0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium cordatum	ZB0223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium flavescens	ZB0224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Holothurioidea																																				
Holothurioidea indet.	ZB0229	1	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neopentadactyla mixta	ZB0260	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thyone fusus	ZB0262	1	5	9	3	1	-	10	-	1	6	2	-	-	4	7	1	-	-	3	-	-	-	2	40	1	2	-	-	22	5	*1*	*1*	-	6	-
Leptosynapta sp. juv.	ZB0291	-	-	1	-	-	-	-	-	-	-	3	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-
Leptosynapta inhaerens	ZB0296	3	-	3	-	-	-	-	-	-	-	43	-	-	-	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
Labidoplax buskii	ZB0299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
HEMICHORDATA																																				
Enteropneusta spp.	ZC0012	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-
TUNICATA																																				
Enterogona																																				
Aplidium glabrum	ZD0036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Didemnidae indet.	ZD0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Ascidiidae indet.	ZD0082	6	4	11	2	1	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	2	-	20	14	3	6	-	-	3	5	-	*12*	-	4	6
Ascidiella aspersa	ZD0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*14*	-	-	-	-
Ascidiella scabra	ZD0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleurogona																																				
Styela coriacea	ZD0105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycarpa fibrosa?	ZD0112	-	-	-	-	-	-	-	-	4	5	-	2	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Polycarpa pomaria	ZD0115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dendrodoa grossularia	ZD0120	6	-	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	*73*	-	-	-
Botrylloides leachi	ZD0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*p*	-	-	-	-
Pyura tessellata	ZD0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula spp. indet.?	ZD0146	5	4	9	2	1	-	-	-	4	2	6	2	2	-	-	2	-	-	-	-	-	-	-	7	3	6	-	-	2	5	*9*	*5*	-	3	-
Molgula citrina	ZD0148	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula complanata	ZD0149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*1*	-	-	-	-
Molgula manhattensis	ZD0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	-	-	-	-	-	*7*	-	-	-	1
Molgula occulta	ZD0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eugyra arenosa	ZD0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
PISCES																																				
Pisces	ZE0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Osteichthyes larvae	ZG0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammodytes tobianus	ZG0444	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus immaculatus	ZG0448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus lanceolatus	ZG0449	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleuronectiformes juv.	ZG0564	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CEPHALOCHORDATA																																				
Branchiostoma lanceolatum		2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL		**75**	**37**	**171**	**117**	**48**	**38**	**129**	**7**	**50**	**36**	**134**	**10**	**2**	**38**	**74**	**17**	**30**	**8**	**17**	**25**	**77**	**21**	**121**	**138**	**29**	**183**	**174**	**23**	**98**	**39**	***98***	***128***	**254**	**197**	**110**

Table A7.4B: Abundance data for stations 36-70: Other Phyla [P = presence only recorded]

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
PROTOZOA																																				
Foraminifera		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Astrorhiza sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Planorbulina sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PORIFERA																																				
Porifera indet.	C0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-
Leucoselenia spp. indet.	C0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hadromerida indet.	C0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliona celata	C0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-
CNIDARIA																																				
Atractylis arenosa		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrozoa																																				
Corymorpha sp.	D0154	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3	5	1	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia sp.	D0163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubularia indivisa	D0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudendrium spp. indet.	D0218	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-
Eudendrium rameum	D0226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leuckartiara octona	D0240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-
Bougainvillia ramosa	D0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	P1	-	P1	-	-	-
Mitrocomella sp?	D0322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovenella clausa	D0336	P1	-	-	-	-	-	P	P1	P1	P1	P1	P1	-	-	P1	P1	-	P1	P1	P	P1	-	-	-	-	-	P1	P1	-	-	P1	P1	P1	-	-
Phialella quadrata	D0343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calycella syringa	D0348	-	-	-	-	-	-	P	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lafoea dumosa	D0386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium spp. indet.	D0390	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	P1	-	-	1	-	-
Halecium beanii	D0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium halecinum	D0392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium lankesteri	D0394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abietinaria abietina	D0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia spp. indet.	D0413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	P1	-	-	-	-	-
Diphasia attenuata	D0415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-
Diphasia rosacea	D0420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	P2	-	-
Hydrallmania falcata	D0424	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-
Sertularella spp. indet.	D0427	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella polyzonias	D0430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	P1	P1	-	-
Sertularella rugosa	D0431	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella tenella	D0432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularia spp. indet.	D0433	-	-	-	-	-	-	-	-	-	P	-	-	P1	-	-	P1	P1	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	P1	P	P1	-
Sertularia argentea	D0434	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	P1	P3	P	P3	-	-	P4	-	-
Sertularia cupressina	D0435	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-
Kirchenpaueria pinnata	D0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia antennina	D0463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P3	-	-	-	-	-
Nemertesia ramosa	D0466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumularia setacea	D0469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Campanularia hincksii	D0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia sp.	D0501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia gracilis	D0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-
Clytia hemisphaerica	D0503	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	-	P1	-	P1	-	-	-
Clytia paulensis	D0505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obeliinae indet.	D0506	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea spp. indet.	D0511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea calceolifera	D0513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea neglecta	D0516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonothyraea loveni	D0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-
Obelia spp. indet.	D0517	-	-	P	P	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	P1	-	-	P1	-	-	-	-
Obelia dichotoma	D0519	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	P1	P1	P1	P1	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthozoa																																				
Anthozoa indet.	D0583	-	-	-	6	1	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	44	7	17	-	-	-	-	-
Alcyonium digitatum	D0597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zoantharia indet.	D0646	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-
Epizoanthus couchii	D0649	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Zoanthus alderi	D0661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sagartia sp. indet?	D0712	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Edwardsia claparedii	D0766	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sphenotrochus andrewianus	D0785	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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PLATYHELMINTHES																																				
Turbellaria indet.	F0002	1	-	-	1	-	-	-	-	2	14	14	3	7	-	3	8	2	1	4	1	2	-	-	11	-	1	1	-	1	1	1	-	-	-	-
NEMERTEA																																				
Nemertea indet.	G0001	37	9	18	39	9	12	37	9	9	33	32	11	2	2	19	26	26	42	9	20	7	2	1	1	3	21	20	14	26	24	11	6	6	2	3
Cerebratulus sp. indet.	G0039	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ENTOPROCTA																																				
Entoprocta indet.	K0001	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loxosomatidae indet.	K0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	-	-	-	-	-	-	-
Loxosomella phascolosomata	K0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Pedicellina spp. indet.	K0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina cernua	K0046	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedicellina hispida	K0047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?gracilis	K0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barentsia ?matshushimana	K0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SIPUNCULA																																				
Sipuncula indet.	N0001	-	-	-	-	-	-	-	1	-	55	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	5	3	1	-	-	-	-
Golfingiidae indet. juv.	N0011	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	1	5	-	-	-	-	-	-
Golfingia vulgaris vulgaris	N0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Thysanocardia procera	N0028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Phascolion strombus strombus	N0034	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	10	-	-	-	-	-	-
Thalassema thalassemum	O0009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRACHIOPODA																																				
Gwynia capsula	X0038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRYOZOA																																				
Cyclostomatida																																				
Crisia spp. indet.	Y0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia aculeata	Y0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia denticulata	Y0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crisia eburnea	Y0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubulipora sp. indet.	Y0027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubulipora liliacea	Y0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plagioecia patina	Y0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plagioecia sarniensis	Y0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entalophoroecia deflexa	Y0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disporella hispida	Y0066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ctenostomatida																																				
Alcyonidium sp. indet.	Y0073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium diaphanum	Y0076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium gelatinosum	Y0077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-
Alcyonidium mamillatum	Y0079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alcyonidium mytili	Y0080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-
Alcyonidium parasiticum	Y0081	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P3	-	P3	-	P3	P2	-	-
?Arachnidium fibrosum	Y0088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arachnidium hippothooides	Y0089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nolella dilatata	Y0092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anguinella palmata	Y0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Farrella repens	Y0122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Hypophorella expansa	Y0125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
?Penetrantia concharum	Y0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vesicularia spinosa	Y0131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	P3	-	P2	-	-	-	-	-
Amathia lendigera	Y0135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia spp. indet.	Y0137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia citrina	Y0138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia gracilis	Y0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-
Bowerbankia imbricata	Y0141	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bowerbankia pustulosa	Y0142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cheilostomatida																																				
Aetea anguina	Y0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aetea sica	Y0155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia ambigua	Y0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scruparia chelata	Y0162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eucratea loricata	Y0165	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conopeum reticulum	Y0172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	P1	-	-
Electra pilosa	Y0178	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	-	-	P3	1	P2	-	P3	P1	-	-
Pyripora catenularia	Y0180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flustra foliacea	Y0187	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Callopora discreta	Y0203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Callopora dumerelli	Y0204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiblestrum auritum	Y0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Membraniporella nitida	Y0234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula avicularia	Y0241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula flabellata	Y0243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula plumosa	Y0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula turbinata	Y0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicellariella ciliata	Y0256	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrupocellaria scrupea	Y0278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrupocellaria scruposa	Y0279	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Setosella vulnerata	Y0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellaria fistulosa	Y0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cribrilina annulata	Y0308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cribrilina punctata	Y0310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina spp. indet.	Y0315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina innominata	Y0321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina praecox?	Y0323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina setosa	Y0324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chorizopora brongniartii	Y0344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella immersa	Y0364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella variolosa	Y0369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella ventricosa	Y0370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reptadeonella violacea	Y0401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phylactella labrosa	Y0421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizoporella hesperia	Y0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharina johnstoni	Y0440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella sp.	Y0467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella auriculata	Y0468	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella linearis	Y0474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microporella ciliata	Y0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenestrulina malusii	Y0483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellepora pumicosa	Y0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Celleporina hassallii	Y0498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbicellepora sp.	Y0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubicellepora avicularis	Y0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PHORONIDA																																				
Phoronis spp. indet.	ZA0003	10	-	4	44	3	10	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phoronis ?hippocrepia	ZA0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phoronis muelleri	ZA0005	-	-	-	9	-	-	6	-	47	33	1	3	1	-	6	31	40	57	14	29	1	-	-	9	-	180	70	33	10	7	-	-	1	-	-
ECHINODERMATA																																				
Crinoidea																																				
Crinoidea	ZB0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asteroidea																																				
Asteroidea juv.	ZB0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	6	-	-	-	-	-	-	-
Astropecten irregularis	ZB0026	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solasteridae	ZB0070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens	ZB0100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asterias rubens juv.	ZB0100	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	3	6	-	-	-	-	-	-	-	-	7	9	-	-	3	-	-
Marthasterias glacialis	ZB0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiuroidea																																				
Ophiuroidea indet. juv.	ZB0105	3	-	5	13	12	3	1	5	-	8	10	-	1	-	2	21	2	12	21	55	-	5	-	-	-	20	-	10	-	3	-	-	4	-	-
Ophiothrix fragilis	ZB0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ophiactis balli	ZB0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiuridae indet. juv.	ZB0149	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	1	-	-	-	-	1
Amphiura brachiata	ZB0151	-	-	-	-	-	1	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
Amphiura chiajei	ZB0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Amphiura filiformis	ZB0154	-	-	-	-	-	-	-	-	4	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	13	32	14	23	-	-	-	-	-	-
Amphipholis squamata	ZB0161	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-
Ophiura spp. indet. juv.	ZB0166	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	13	-	-	1	1	-	-	-	-	-
Ophiura affinis	ZB0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	3	-	-	-	-	-	-
Ophiura albida	ZB0168	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	2	-	1	-	-	-
Ophiura ophiura	ZB0170	1	-	2	-	3	2	-	-	4	-	-	-	-	-	-	-	-	3	-	1	-	-	-	-	-	9	10	-	-	-	-	-	-	-	-

Taxonomic List	MCS Code	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Echinoidea																																				
Echinoida juv.	ZB0190	-	-	-	-	-	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	1	-	-	-	1	-	-
Psammechinus miliaris	ZB0193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus elegans	ZB0197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinus esculentus	ZB0198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocyamus pusillus	ZB0212	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	84	17	2	-	1	-	-
Spatangoida indet. juv.	ZB0213	41	4	11	-	-	-	4	-	-	-	7	7	-	-	16	32	-	12	13	19	6	-	-	-	-	-	-	1	11	-	-	1	-	-	-
Spantagus purpureus	ZB0219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium sp.	ZB0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Echinocardium cordatum	ZB0223	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Echinocardium flavescens	ZB0224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Holothurioidea																																				
Holothurioidea indet.	ZB0229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neopentadactyla mixta	ZB0260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thyone fusus	ZB0262	-	-	-	2	-	-	-	3	2	3	11	-	-	-	-	1	55	-	1	-	-	1	-	-	-	1	-	7	57	-	1	1	1	-	-
Leptosynapta sp. juv.	ZB0291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptosynapta inhaerens	ZB0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labidoplax buskii	ZB0299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HEMICHORDATA																																				
Enteropneusta spp.	ZC0012	-	-	-	-	2	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BRYOZOA																																				
Enterogona																																				
Aplidium glabrum	ZD0036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Didemnidae indet.	ZD0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascidiidae indet.	ZD0082	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	1	4	-	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascidiella aspersa	ZD0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascidiella scabra	ZD0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleurogona																																				
Styela coriacea	ZD0105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycarpa fibrosa?	ZD0112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polycarpa pomaria	ZD0115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dendrodoa grossularia	ZD0120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Botrylloides leachi	ZD0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyura tessellata	ZD0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula spp. indet.?	ZD0146	-	-	-	-	-	-	2	-	-	2	2	-	-	-	-	1	4	-	9	-	-	-	-	-	-	-	2	6	5	5	-	-	2	-	-
Molgula citrina	ZD0148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Molgula complanata	ZD0149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula manhattensis	ZD0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molgula occulta	ZD0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-
Eugyra arenosa	ZD0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
PISCES																																				
Pisces	ZE0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Osteichthyes larvae	ZG0001	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Ammodytes tobianus	ZG0444	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus immaculatus	ZG0448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyperoplus lanceolatus	ZG0449	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pleuronectiformes juv.	ZG0564	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CEPHALOCHORDATA																																				
Branchiostoma lanceolatum		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
TOTAL		**92**	**13**	**41**	**115**	**31**	**38**	**87**	**21**	**69**	**158**	**86**	**27**	**19**	**2**	**53**	**124**	**142**	**131**	**88**	**174**	**16**	**8**	**3**	**27**	**5**	**348**	**138**	**192**	**268**	**91**	**17**	**9**	**20**	**2**	**4**

Table A7.4C: Abundance data for stations 71-105: Other Phyla [P = presence only recorded]

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
PROTOZOA																																			
Foraminifera		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Astrorhiza sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**
Planorbulina sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
PORIFERA																																			
Porifera indet.	C0001	P	-	-	P1	-	P	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leucoselenia spp. indet.	C0053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hadromerida indet.	C0317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliona celata	C0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-
CNIDARIA																																			
Atractylis arenosa		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-
Hydrozoa																																			
Corymorpha sp.	D0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	**69**
Tubularia sp.	D0163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Tubularia indivisa	D0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eudendrium spp. indet.	D0218	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Eudendrium rameum	D0226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leuckartiara octona	D0240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P	-	-	-	-	-	P	-	P	-	-	-	-	-	-
Bougainvillia ramosa	D0257	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitrocomella sp?	D0322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lovenella clausa	D0336	P1	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	P1	P2	P2	P	-	P	-	P	P	-	P	-	P	-	-	-
Phialella quadrata	D0343	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calycella syringa	D0348	-	-	-	-	P1	-	P1	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	P	-	-	-
Lafoea dumosa	D0386	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium spp. indet.	D0390	-	-	-	-	P1	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	**1**
Halecium beanii	D0391	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium halecinum	D0392	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Halecium lankesteri	D0394	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Abietinaria abietina	D0409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia spp. indet.	D0413	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Diphasia attenuata	D0415	-	-	-	-	P2	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphasia rosacea	D0420	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrallmania falcata	D0424	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-
Sertularella spp. indet.	D0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-
Sertularella polyzonias	D0430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella rugosa	D0431	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularella tenella	D0432	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sertularia spp. indet.	D0433	-	-	P1	P1	-	P1	P1	-	-	-	P1	P1	P1	P2	P1	P1	-	P1	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Sertularia argentea	D0434	-	-	-	-	P4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	P	-	P	-	-	P	-	-	-
Sertularia cupressina	D0435	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P2	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	P	-	P	-
Kirchenpaueria pinnata	D0455	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia antennina	D0463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nemertesia ramosa	D0466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumularia setacea	D0469	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Campanularia hincksii	D0494	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia sp.	D0501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Clytia gracilis	D0502	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-
Clytia hemisphaerica	D0503	-	-	-	-	P2	-	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-
Clytia paulensis	D0505	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obeliinae indet.	D0506	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea spp. indet.	D0511	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea calceolifera	D0513	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laomedea neglecta	D0516	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gonothyraea loveni	D0508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obelia spp. indet.	D0517	-	-	-	P1	P	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	P	-	-	-	P	-	-	-
Obelia dichotoma	D0519	-	-	-	-	-	-	P1	P3	P1	-	P1	P1	P1	P1	P1	P1	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	P	-
Anthozoa																																			
Anthozoa indet.	D0583	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	**331**
Alcyonium digitatum	D0597	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zoantharia indet.	D0646	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Epizoanthus couchii	D0649	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
?Zoanthus alderi	D0661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Sagartia sp. indet?	D0712	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Edwardsia claparedii	D0766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**7**
Sphenotrochus andrewianus	D0785	-	-	-	1	-	-	5	-	-	-	-	2	-	-	-	1	1	6	-	-	-	1	1	1	-	-	-	7	-	-	-	1	-	**102**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
PLATYHELMINTHES																																			
Turbellaria indet.	F0002	-	-	-	-	-	-	2	-	-	-	1	-	-	-	2	-	1	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-	-	**188**
NEMERTEA																																			
Nemertea indet.	G0001	4	6	4	6	11	4	7	-	-	-	5	3	10	4	8	5	8	2	40	10	29	46	30	8	36	28	42	30	6	9	44	53	56	**2311**
Cerebratulus sp. indet.	G0039	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**32**
ENTOPROCTA																																			
Entoprocta indet.	K0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Loxosomatidae indet.	K0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	**77**
Loxosomella phascolosomata	K0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Pedicellina spp. indet.	K0045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Pedicellina cernua	K0046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Pedicellina hispida	K0047	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Barentsia ?gracilis	K0053	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Barentsia ?matshushimana	K0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
SIPUNCULA																																			
Sipuncula indet.	N0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	**215**
Golfingiidae indet. juv.	N0011	-	-	-	-	-	-	1	-	-	-	9	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	3	2	-	-	-	-	-	**114**
Golfingia vulgaris vulgaris	N0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8**
Thysanocardia procera	N0028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Phascolion strombus strombus	N0034	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	**98**
Thalassema thalassemum	O0009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**7**
BRACHIOPODA																																			
Gwynia capsula	X0038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6**
BRYOZOA																																			
Cyclostomatida																																			
Crisia spp. indet.	Y0013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Crisia aculeata	Y0014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Crisia denticulata	Y0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Crisia eburnea	Y0017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Tubulipora sp. indet.	Y0027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Tubulipora liliacea	Y0030	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Plagioecia patina	Y0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Plagioecia sarniensis	Y0042	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Entalophoroecia deflexa	Y0054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Disporella hispida	Y0066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Ctenostomatida																																			
Alcyonidium sp. indet.	Y0073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	**-**
Alcyonidium diaphanum	Y0076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-	**-**
Alcyonidium gelatinosum	Y0077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Alcyonidium mamillatum	Y0079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Alcyonidium mytili	Y0080	-	-	P1	-	P2	-	-	-	-	-	-	-	P1	P1	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-	-	-	P	**-**
Alcyonidium parasiticum	Y0081	-	-	-	-	P2	-	-	-	-	-	-	-	-	P3	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	**-**
?Arachnidium fibrosum	Y0088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Arachnidium hippothooides	Y0089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	**-**
Nolella dilatata	Y0092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Anguinella palmata	Y0096	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Farrella repens	Y0122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
?Hypophorella expansa	Y0125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
?Penetrantia concharum	Y0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	**-**
Vesicularia spinosa	Y0131	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	P	-	-	-	**-**
Amathia lendigera	Y0135	-	-	-	-	-	-	P1	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Bowerbankia spp. indet.	Y0137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Bowerbankia citrina	Y0138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Bowerbankia gracilis	Y0139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Bowerbankia imbricata	Y0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Bowerbankia pustulosa	Y0142	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Cheilostomatida																																			
Aetea anguina	Y0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Aetea sica	Y0155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Scruparia ambigua	Y0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	**-**
Scruparia chelata	Y0162	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Eucratea loricata	Y0165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Conopeum reticulum	Y0172	-	-	-	-	P2	-	-	-	-	-	-	-	P1	P1	P1	-	-	-	-	-	P	-	-	P2	-	-	-	-	-	P	-	-	P	**-**
Electra pilosa	Y0178	-	P1	P1	P1	P4	P1	P1	P1	-	-	P1	P1	P3	P3	P2	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	P	**1**
Pyripora catenularia	Y0180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Flustra foliacea	Y0187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Callopora discreta	Y0203	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	P	**-**

Taxonomic List	MCS Code	106	107	108	109	110	111	112	113	114	115	122	123	124	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	TOTAL
Callopora dumerelli	Y0204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amphiblestrum auritum	Y0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Membraniporella nitida	Y0234	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula avicularia	Y0241	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula flabellata	Y0243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula plumosa	Y0246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bugula turbinata	Y0250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicellariella ciliata	Y0256	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrupocellaria scrupea	Y0278	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrupocellaria scruposa	Y0279	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Setosella vulnerata	Y0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-
Cellaria fistulosa	Y0300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Cribrilina annulata	Y0308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cribrilina punctata	Y0310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-
Puellina spp. indet.	Y0315	-	-	P2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-
Puellina innominata	Y0321	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina praecox?	Y0323	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puellina setosa	Y0324	-	-	-	-	-	-	-	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	P	-	P	-
Chorizopora brongniartii	Y0344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella immersa	Y0364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella variolosa	Y0369	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharella ventricosa	Y0370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reptadeonella violacea	Y0401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phylactella labrosa	Y0421	-	-	P1	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizoporella hesperia	Y0427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Escharina johnstoni	Y0440	-	-	-	P1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella sp.	Y0467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella auriculata	Y0468	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schizomavella linearis	Y0474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Microporella ciliata	Y0480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenestrulina malusii	Y0483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cellepora pumicosa	Y0495	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Celleporina hassallii	Y0498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbicellepora sp.	Y0503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tubicellepora avicularis	Y0504	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PHORONIDA																																			
Phoronis spp. indet.	ZA0003	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	73	63	-	-	6	2	2	-	-	-	1	-	1	583
Phoronis ?hippocrepia	ZA0004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phoronis muelleri	ZA0005	-	-	-	-	11	-	-	1	-	-	-	-	1	1	12	-	-	-	7	-	11	-	-	-	-	-	-	-	3	-	-	-	-	1006
ECHINODERMATA																																			
Crinoidea																																			
Crinoidea	ZB0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Asteroidea																																			
Asteroidea juv.	ZB0018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	4	-	-	-	-	-	-	12
Astropecten irregularis	ZB0026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	3
Solasteridae	ZB0070	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Asterias rubens	ZB0100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Asterias rubens juv.	ZB0100	-	-	-	5	8	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	255
Marthasterias glacialis	ZB0104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Ophiuroidea																																			
Ophiuroidea indet. juv.	ZB0105	-	1	-	-	6	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	43	42	1	1	-	2	21	-	11	-	-	-	-	724
Ophiothrix fragilis	ZB0124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
Ophiactis balli	ZB0143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Amphiuridae indet. juv.	ZB0149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	2	14	8	-	-	-	-	-	-	-	-	-	-	-	323
Amphiura brachiata	ZB0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190
Amphiura chiajei	ZB0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	28
Amphiura filiformis	ZB0154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	23	-	-	-	-	167
Amphipholis squamata	ZB0161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
Ophiura spp. indet. juv.	ZB0166	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	2	-	-	-	-	-	-	-	-	-	-	-	-	-	97
Ophiura affinis	ZB0167	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Ophiura albida	ZB0168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	71
Ophiura ophiura	ZB0170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1	-	1	-	-	-	-	7	-	-	-	-	64

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Echinoidea																																			
Echinoida juv.	ZB0190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	3	-	-	-	-	-	-	**50**
Psammechinus miliaris	ZB0193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Echinus elegans	ZB0197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Echinus esculentus	ZB0198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Echinocyamus pusillus	ZB0212	-	-	-	-	6	1	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	2	7	1	-	74	-	-	-	1	-	-	**708**
Spatangoida indet. juv.	ZB0213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	88	2	-	-	-	5	-	4	-	-	-	-	**372**
Spantagus purpureus	ZB0219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Echinocardium sp.	ZB0222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Echinocardium cordatum	ZB0223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	**14**
Echinocardium flavescens	ZB0224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Holothurioidea																																			
Holothurioidea indet.	ZB0229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	27	-	-	-	1	-	**43**
Neopentadactyla mixta	ZB0260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	7	-	-	-	-	-	-	**16**
Thyone fusus	ZB0262	1	-	-	1	-	-	-	-	-	-	2	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	**389**
Leptosynapta sp. juv.	ZB0291	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	1	10	-	-	-	-	-	**75**
Leptosynapta inhaerens	ZB0296	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**76**
Labidoplax buskii	ZB0299	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
HEMICHORDATA																																			
Enteropneusta spp.	ZC0012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	**26**
TUNICATA																																			
Enterogona																																			
Aplidium glabrum	ZD0036	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Didemnidae indet.	ZD0041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Ascidiidae indet.	ZD0082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	3	1	-	2	3	-	-	**198**
Ascidiella aspersa	ZD0084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**
Ascidiella scabra	ZD0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Pleurogona																																			
Styela coriacea	ZD0105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**
Polycarpa fibrosa?	ZD0112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**90**
Polycarpa pomaria	ZD0115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Dendrodoa grossularia	ZD0120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**627**
Botrylloides leachi	ZD0128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Pyura tessellata	ZD0141	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**
Molgula spp. indet.?	ZD0146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	3	-	-	**189**
Molgula citrina	ZD0148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**23**
Molgula complanata	ZD0149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Molgula manhattensis	ZD0151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**60**
Molgula occulta	ZD0152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**30**
Eugyra arenosa	ZD0159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	**9**
PISCES																																			
Pisces	ZE0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Osteichthyes larvae	ZG0001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	1	-	1	-	2	-	-	-	-	-	**9**
Ammodytes tobianus	ZG0444	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4**
Hyperoplus immaculatus	ZG0448	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
Hyperoplus lanceolatus	ZG0449	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**
Pleuronectiformes juv.	ZG0564	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**
CEPHALOCHORDATA																																			
Branchiostoma lanceolatum		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	9	2	3	2	3	22	2	8	1	3	-	-	-	**64**
TOTAL		**7**	**10**	**4**	**13**	**44**	**7**	**17**	**2**	**-**	**-**	**24**	**5**	**17**	**6**	**25**	**11**	**13**	**10**	**101**	**17**	**227**	**256**	**40**	**22**	**48**	**57**	**215**	**89**	**57**	**16**	**52**	**55**	**57**	**10337**

Table A7.4D: Abundance data for stations 106-148: Other Phyla [P = presence only recorded]

Appendix 8

Distribution Maps, Dendrograms & MDS Plots from Statistical Analyses

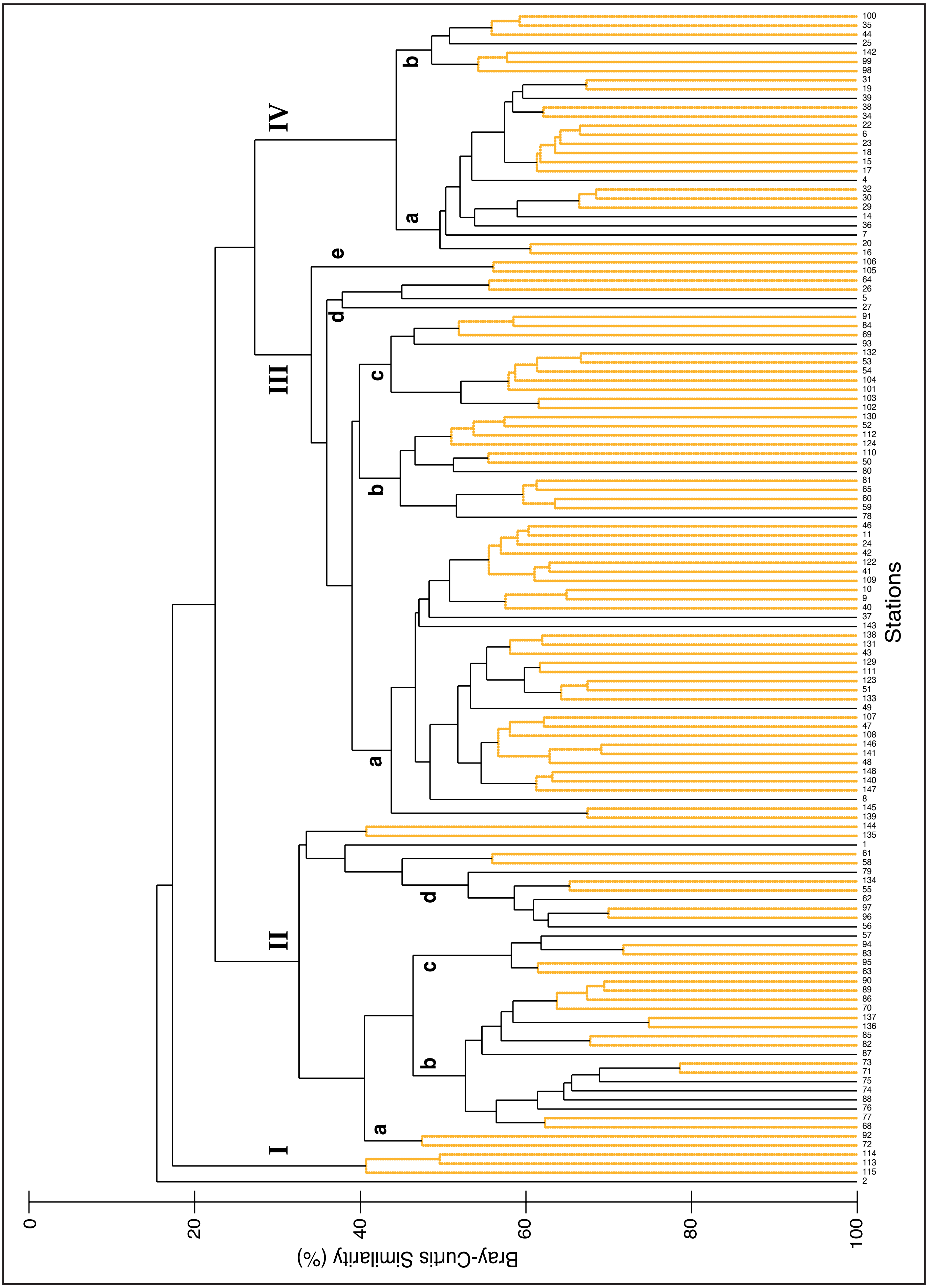


Fig. A8.1: Quantitative Bray-Curtis classification of the OBCMHS benthos (log-transformed data); non-significantly different stations (p<0.05) in red

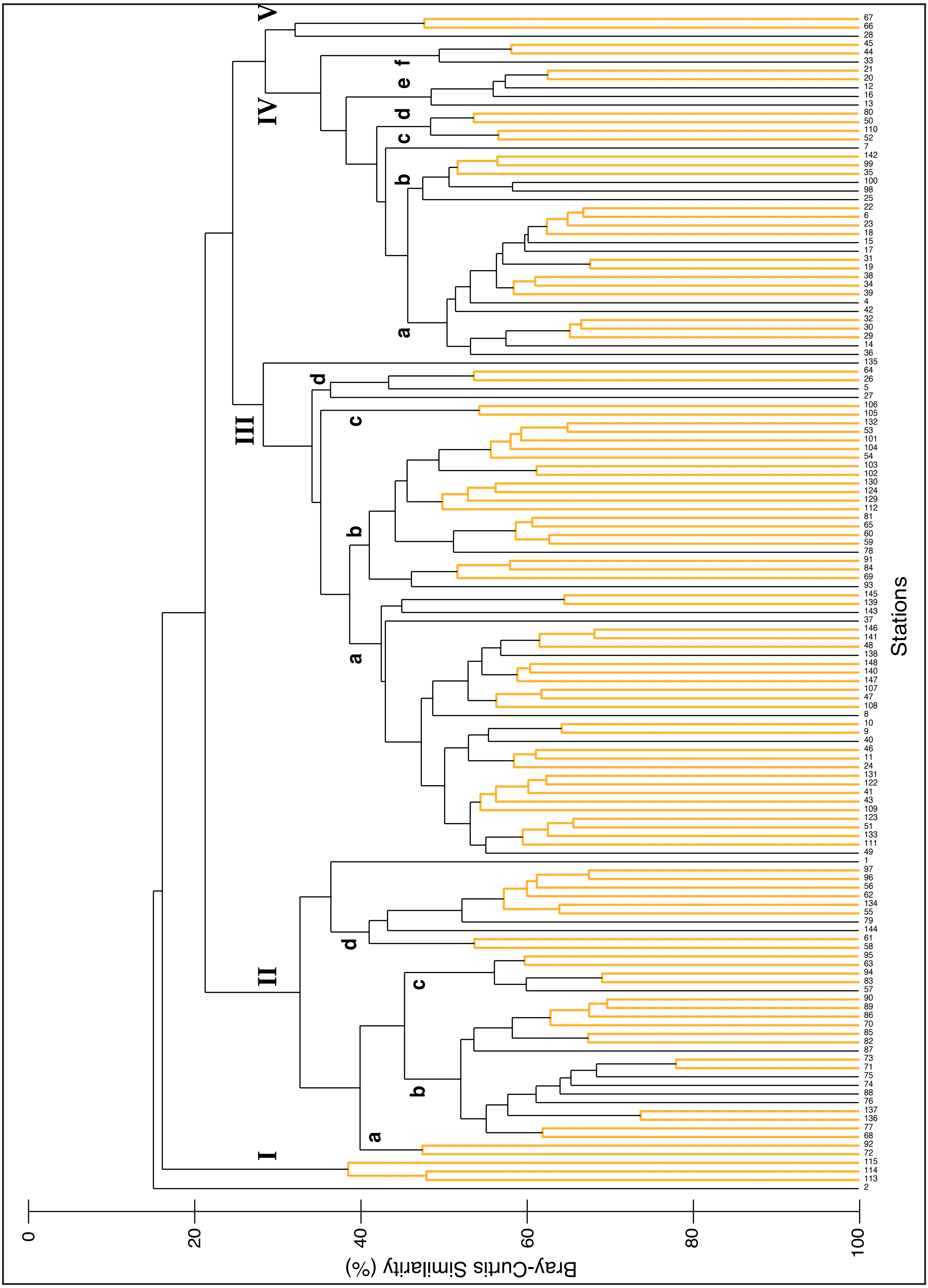


Fig. A8.2: Semi-quantitative Bray-Curtis classification of the OBCMHS benthos (log-transformed data; colonial taxa converted to numerical 'equivalents'); non-significantly different stations (p<0.05) in red

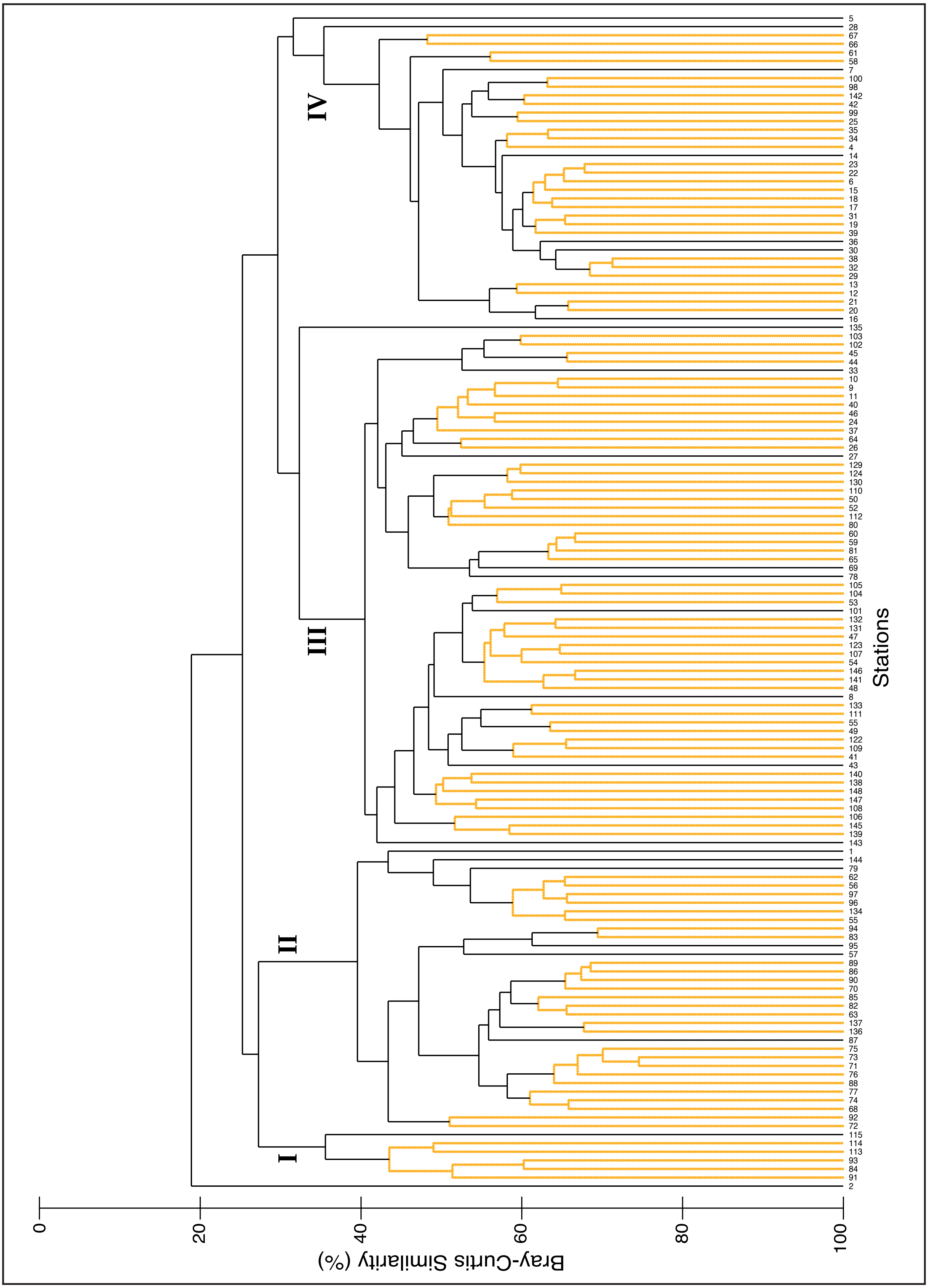


Fig. A8.3: Qualitative Czekanowski classification of the OBCMHS benthos (presence-absence data); non-significantly different stations (p<0.05) in red

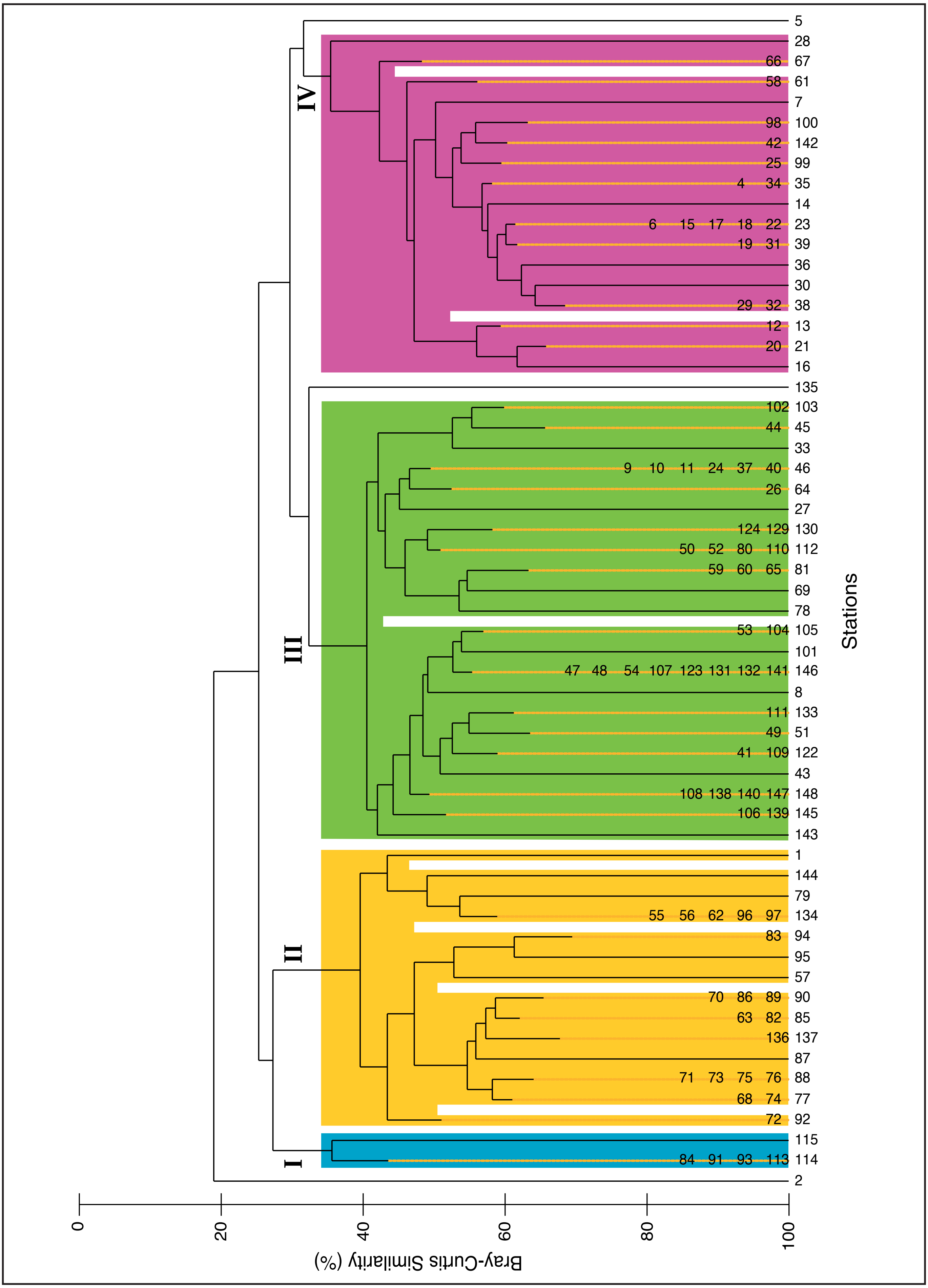


Fig. A8.4: Qualitative Czekanowski classification of the OBCMHS benthos (presence-absence data; non-significantly different groups (p <0.05) merged)

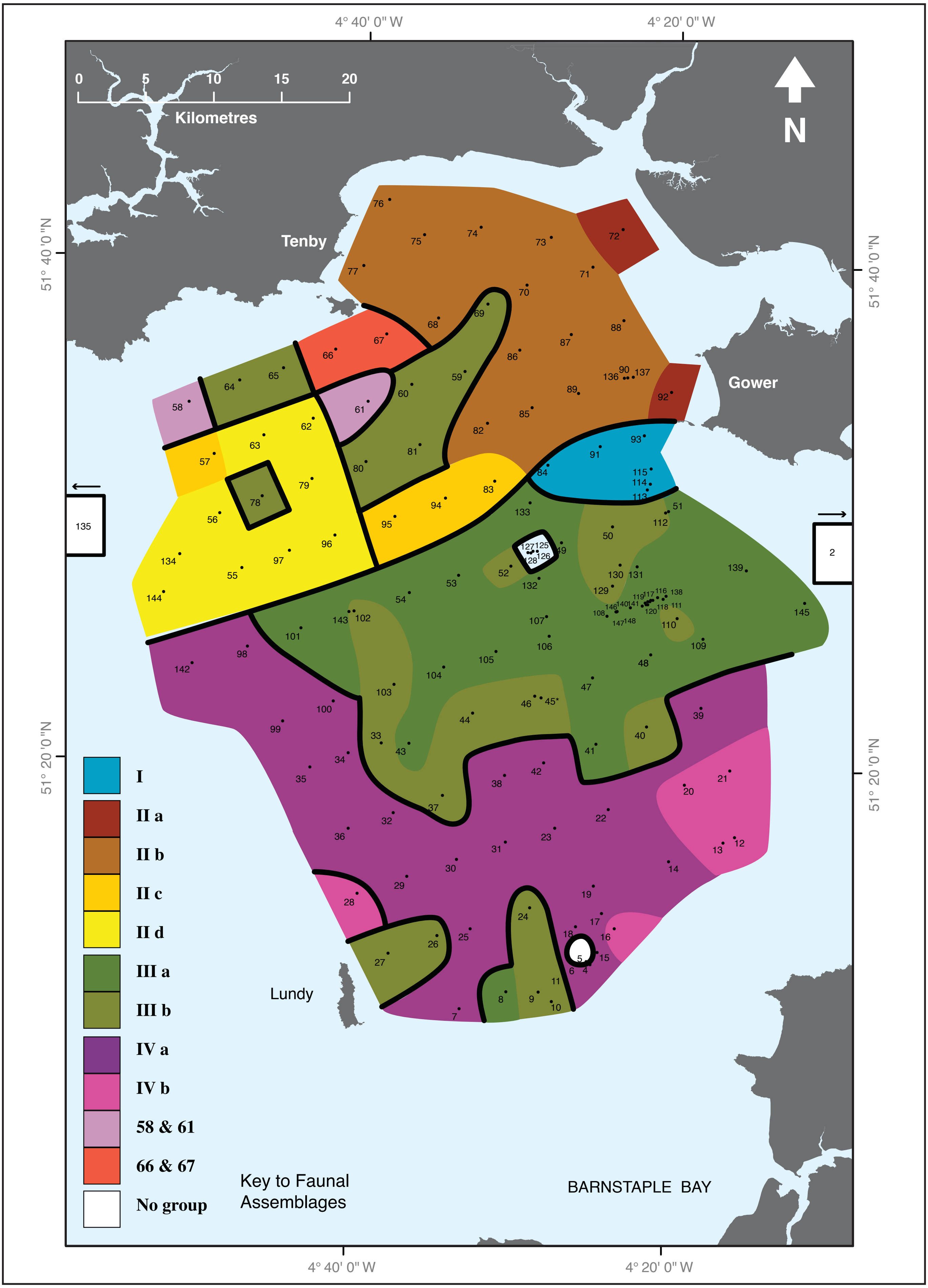


Fig. A8.5: Benthic macrofaunal assemblages in the OBCMHS area as determined by qualitative (presence-absence) data

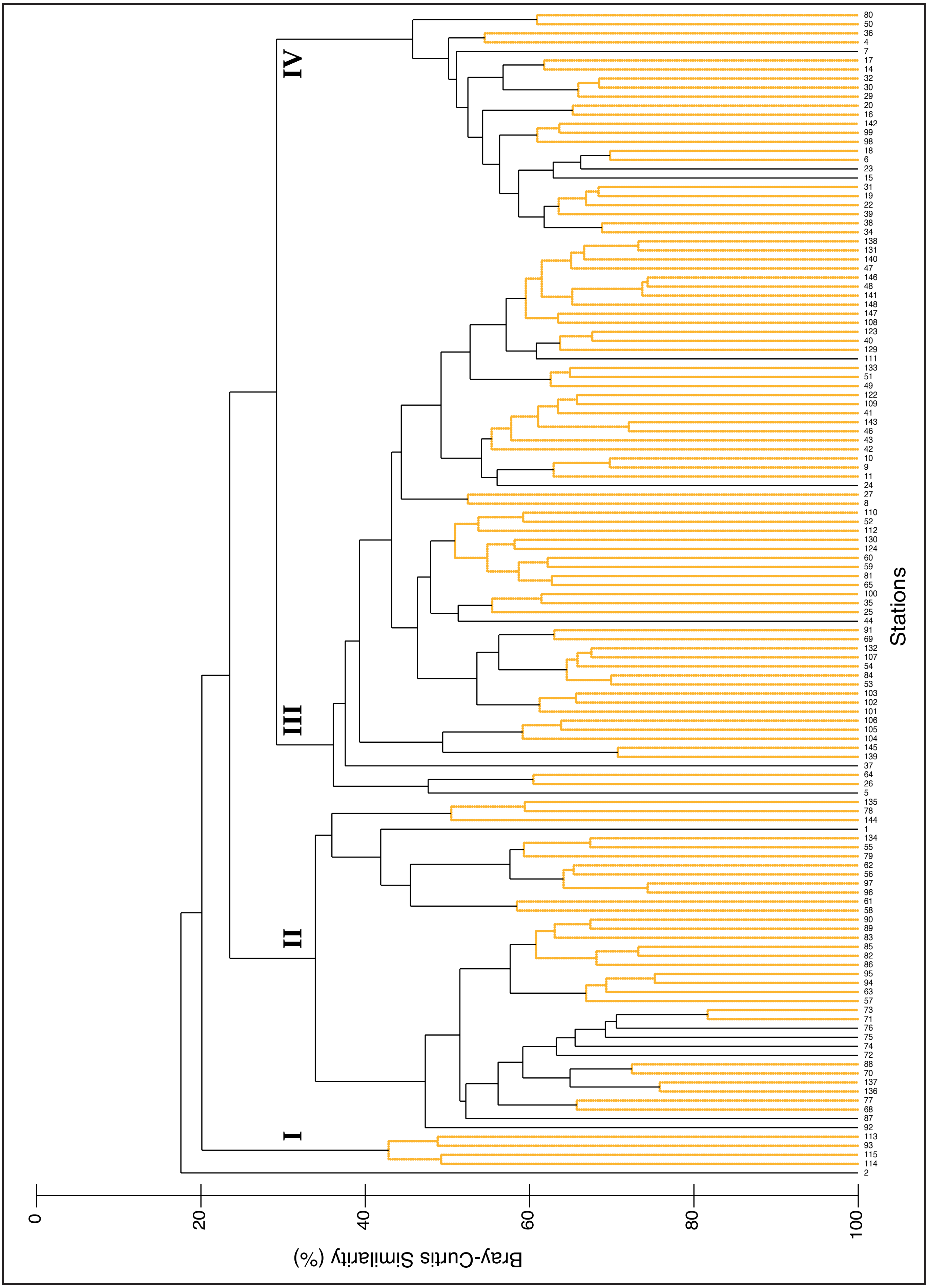


Fig. A8.6: Cluster analysis of the quantitative annelid data (log-transformed); non-significantly different stations (p<0.05) in red

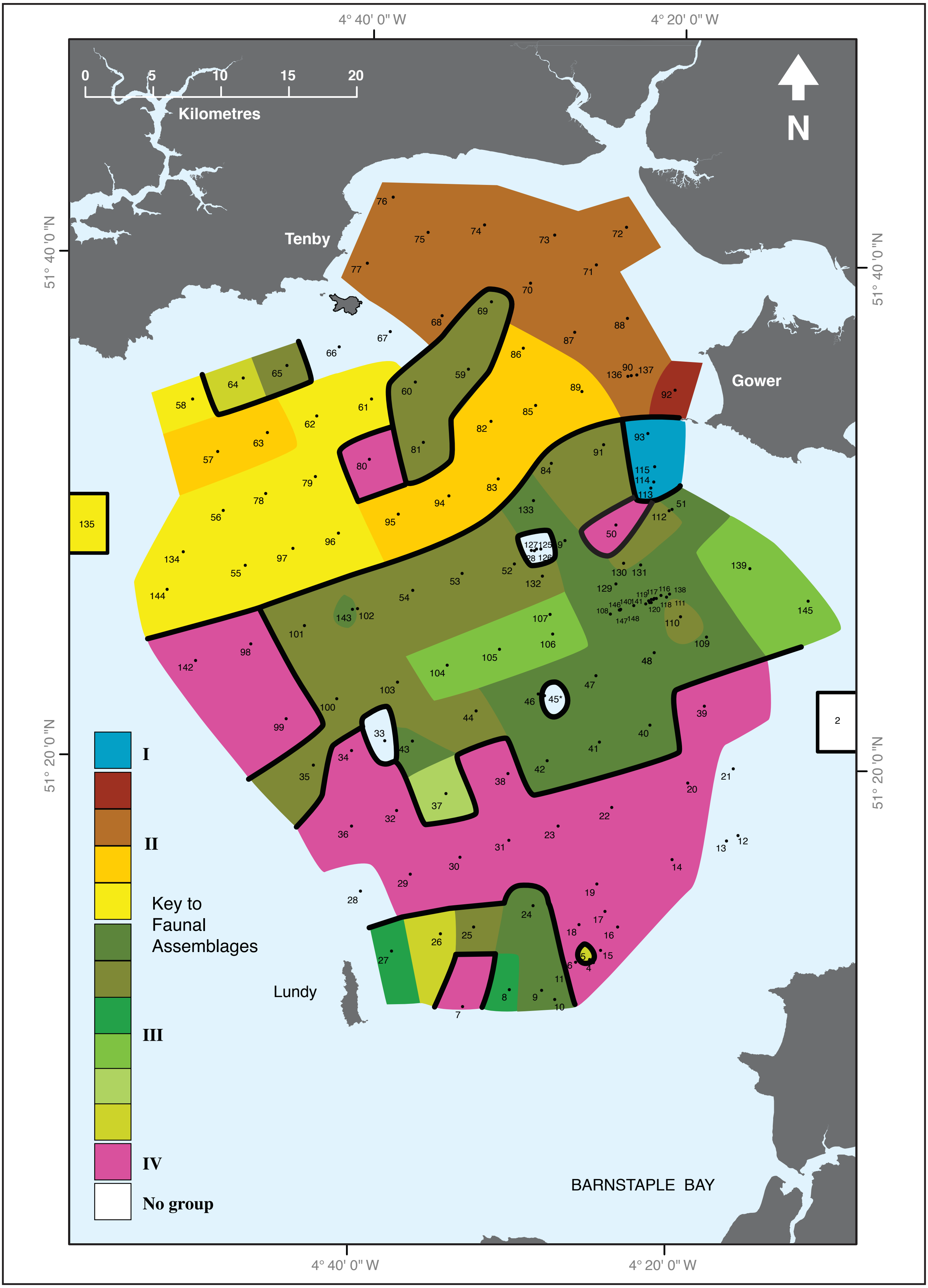


Fig. A8.7: Annelid assemblages in the OBCMHS area (quantitative data)

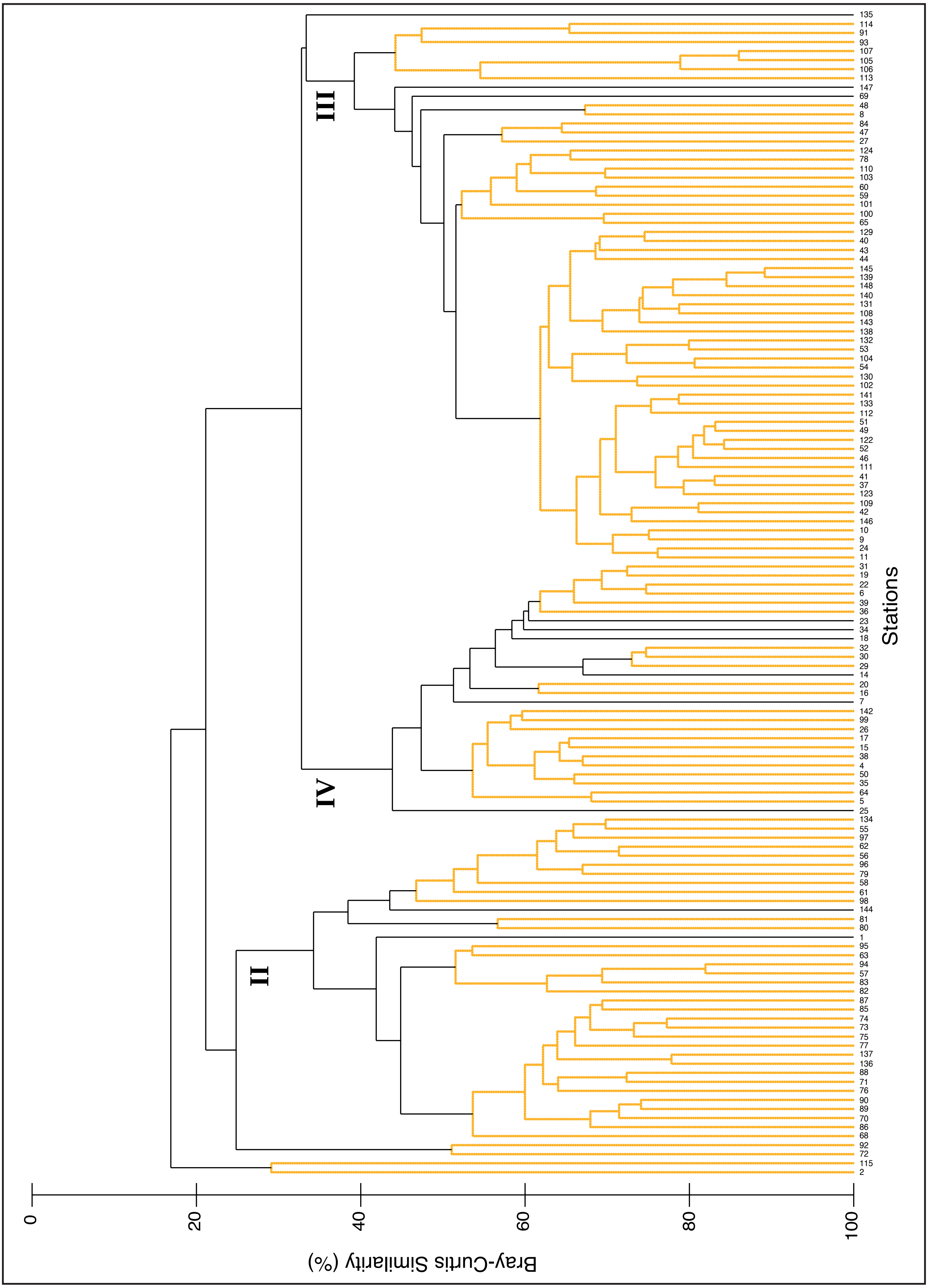


Fig. A8.8: Cluster analysis of the quantitative mollusc data (log-transformed); non-significantly different stations (p<0.05) in red

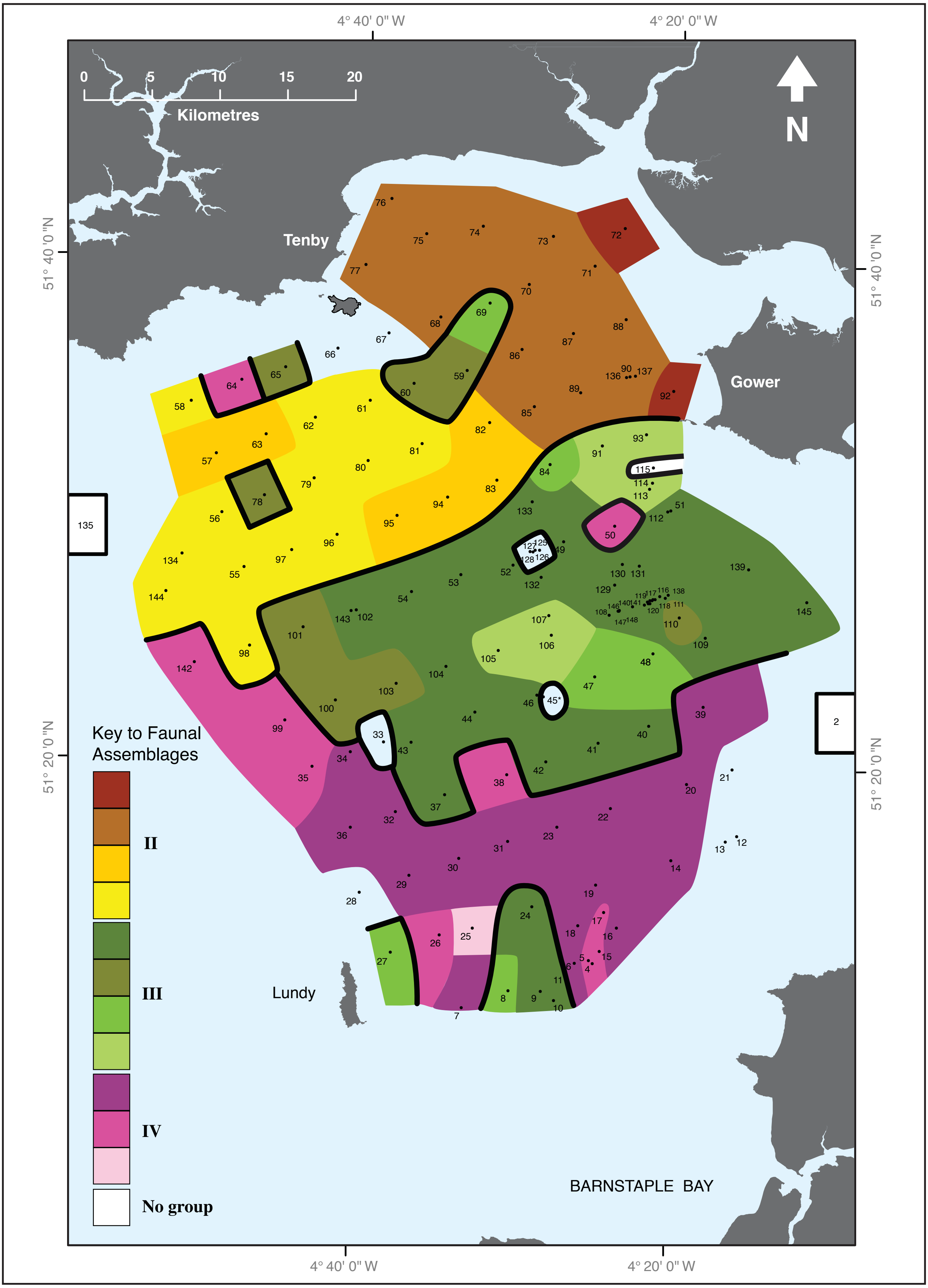


Fig. A8.9: Mollusc assemblages in the OBCMHS area (quantitative data)

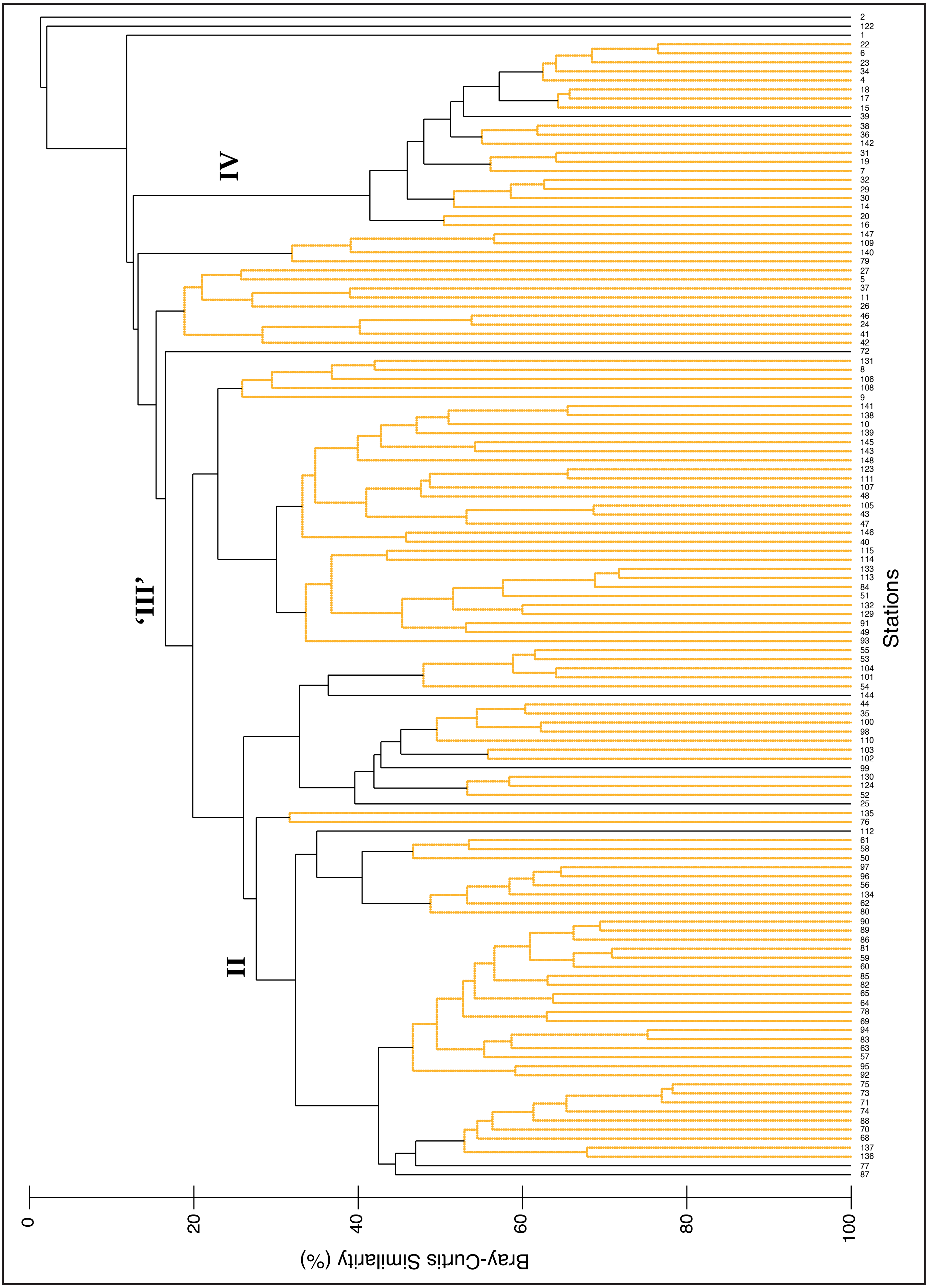


Fig. A8.10: Cluster analysis of the quantitative arthropod data (log-transformed); non-significantly different stations ($p<0.05$) in red

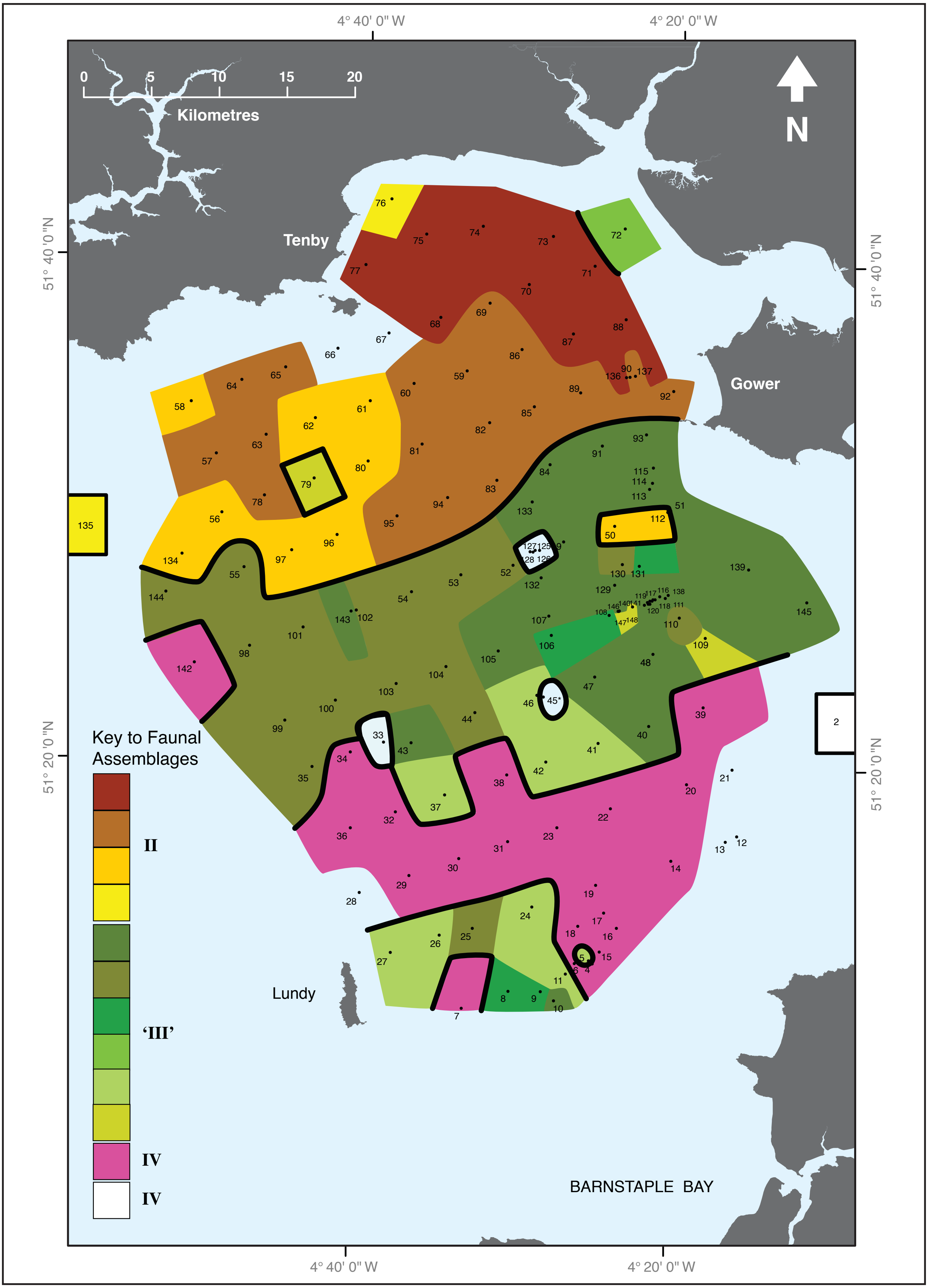


Fig. A8.11: Arthropod assemblages in the OBCMHS area (quantitative data)

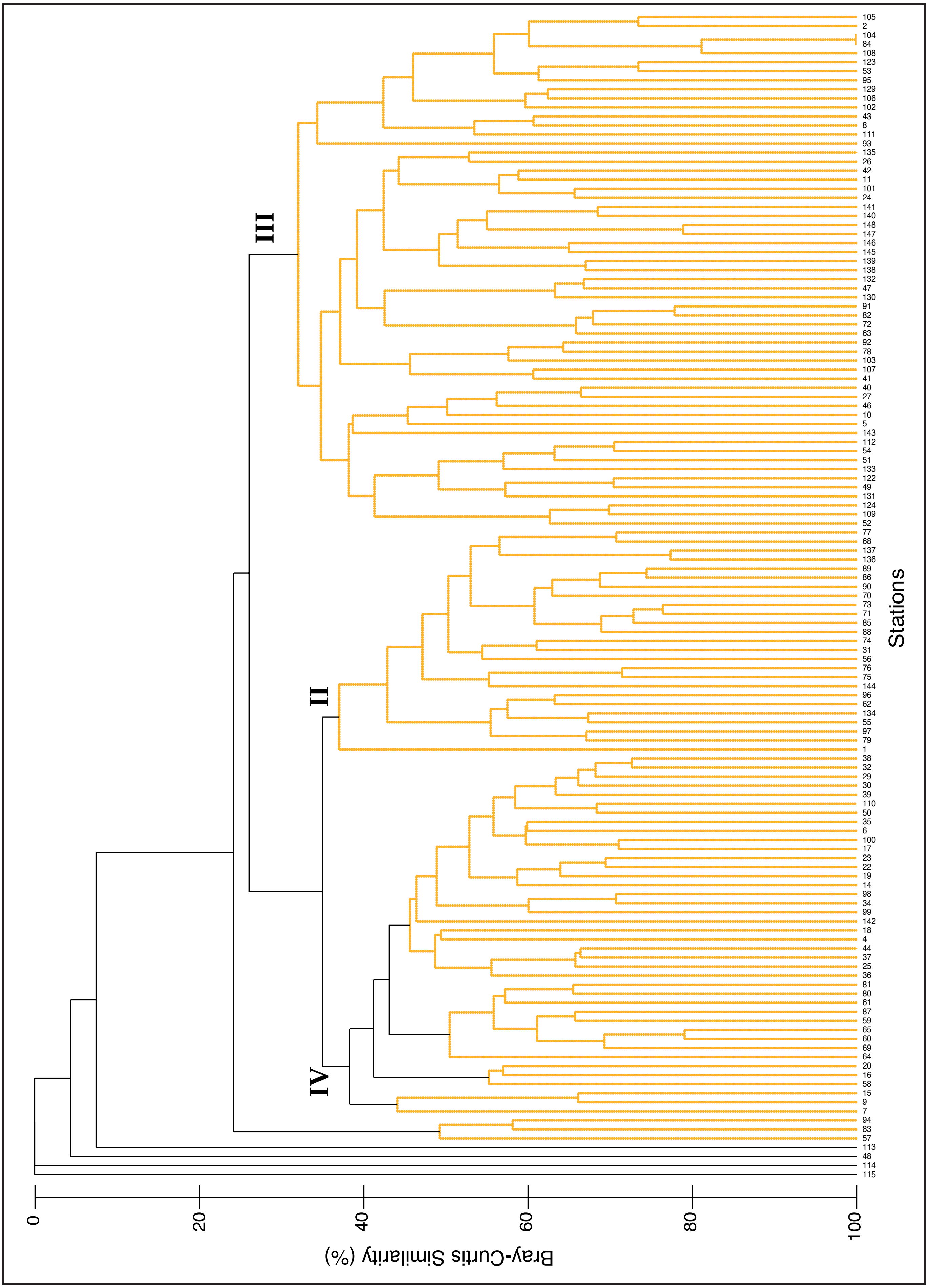


Fig. A8.12: Cluster analysis of the quantitative 'other phyla' data (log-transformed); non-significantly different stations (p<0.05) in red

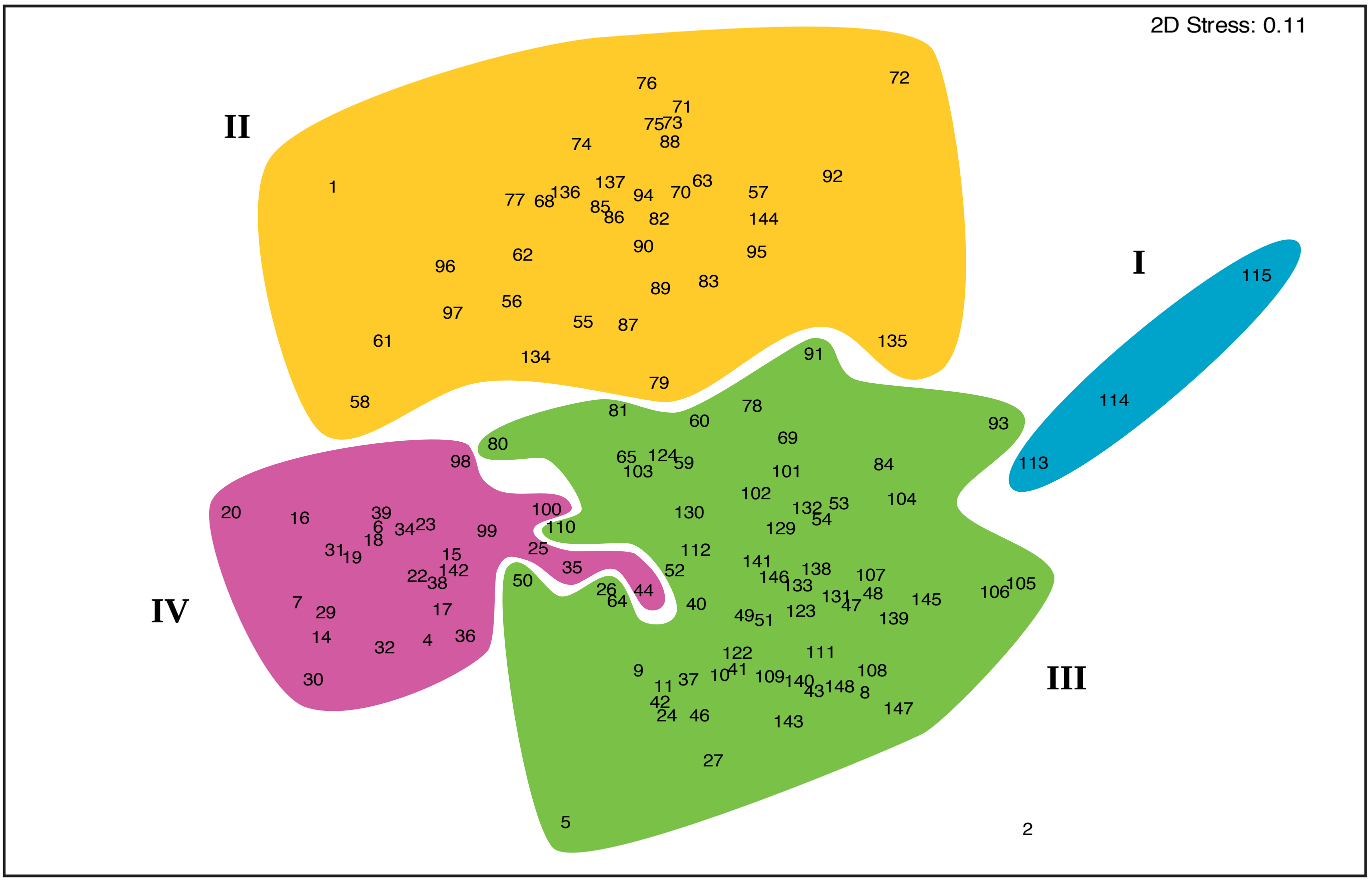


Fig. A8.13: MDS ordination of quantitative OBCMHS data showing cluster groups I-IV

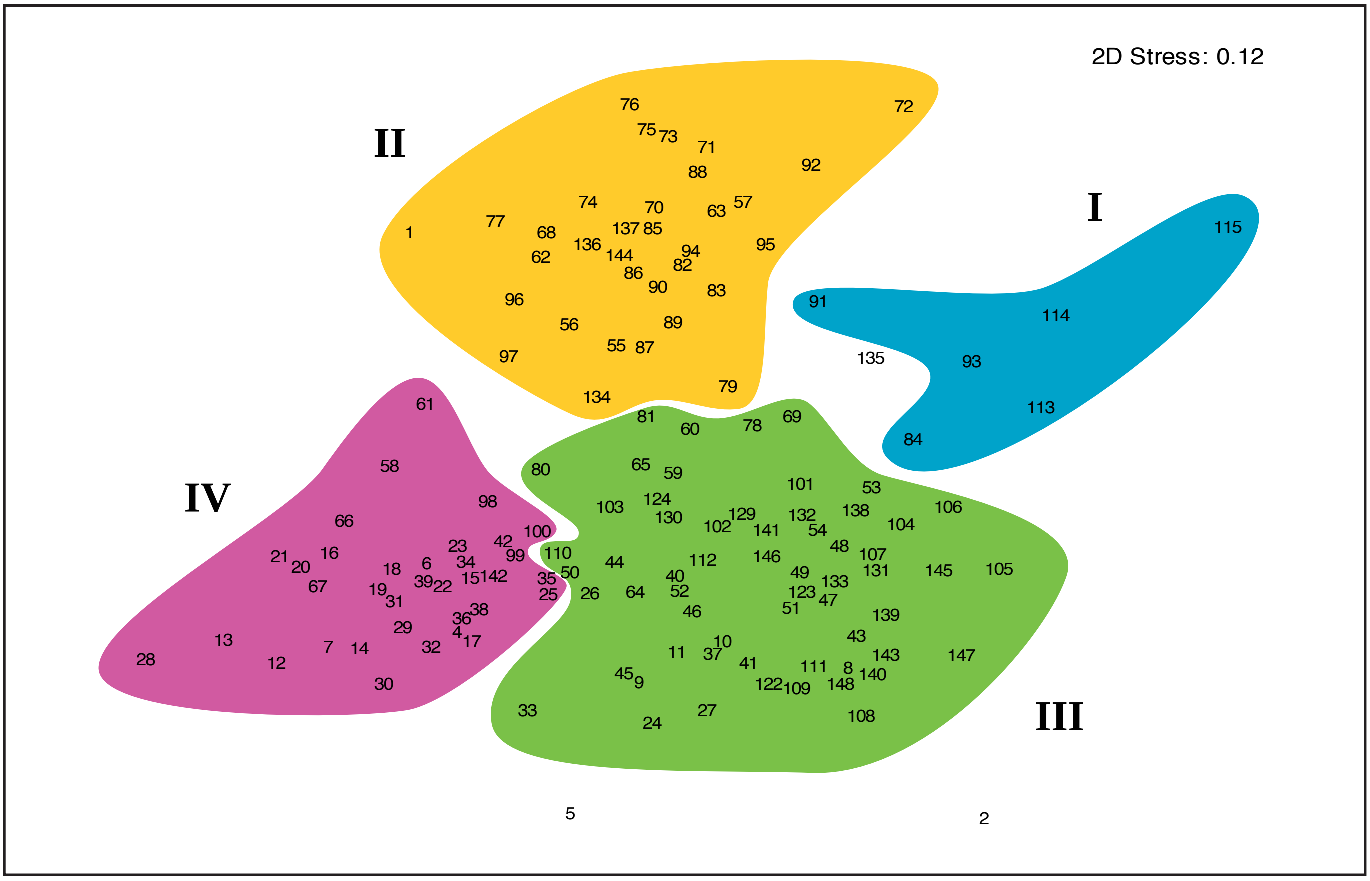


Fig. A8.14: MDS ordination of qualitative (presence-absence) OBCMHS data showing cluster groups I-IV

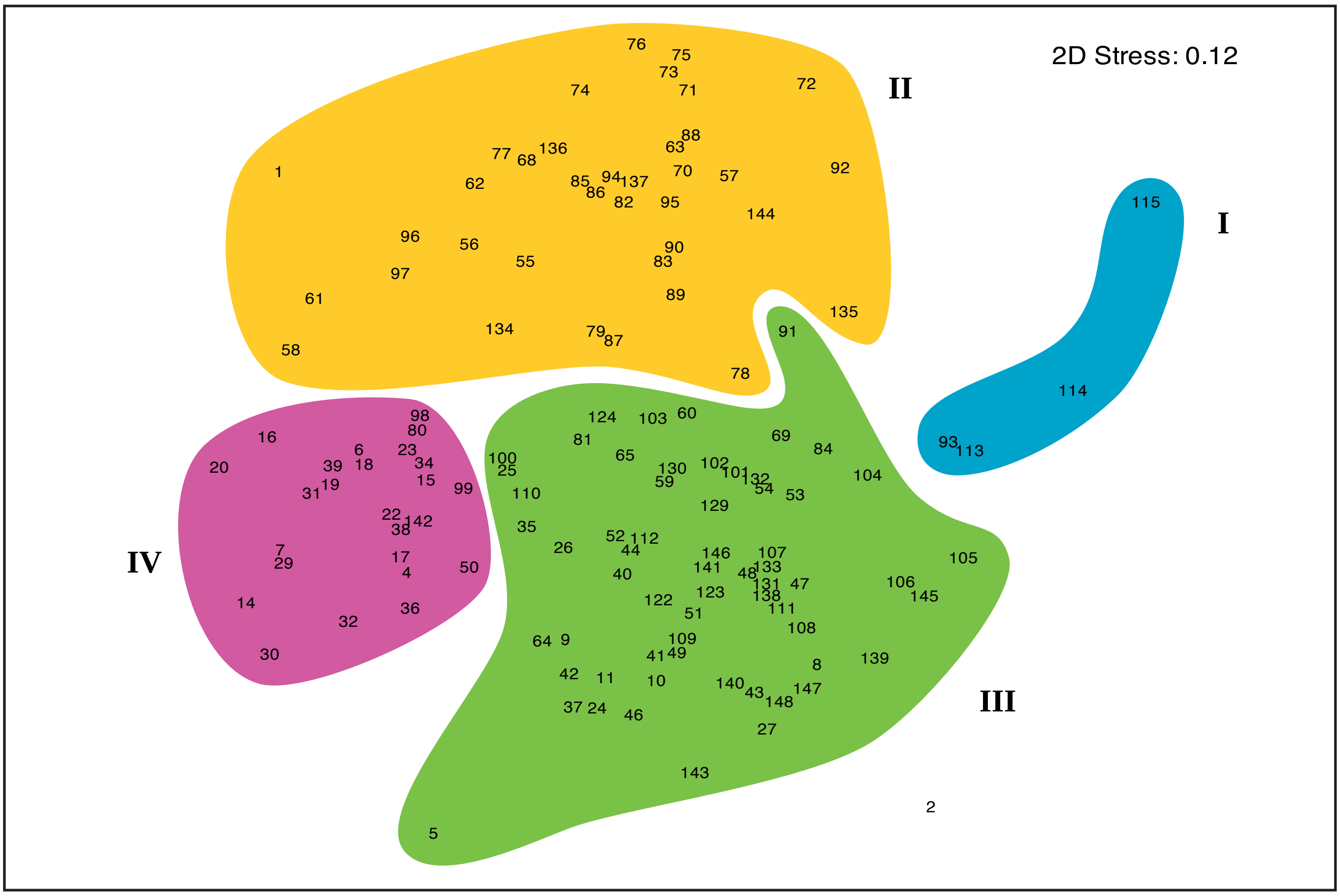


Fig. A8.15: MDS ordination of quantitative annelid OBCMHS data

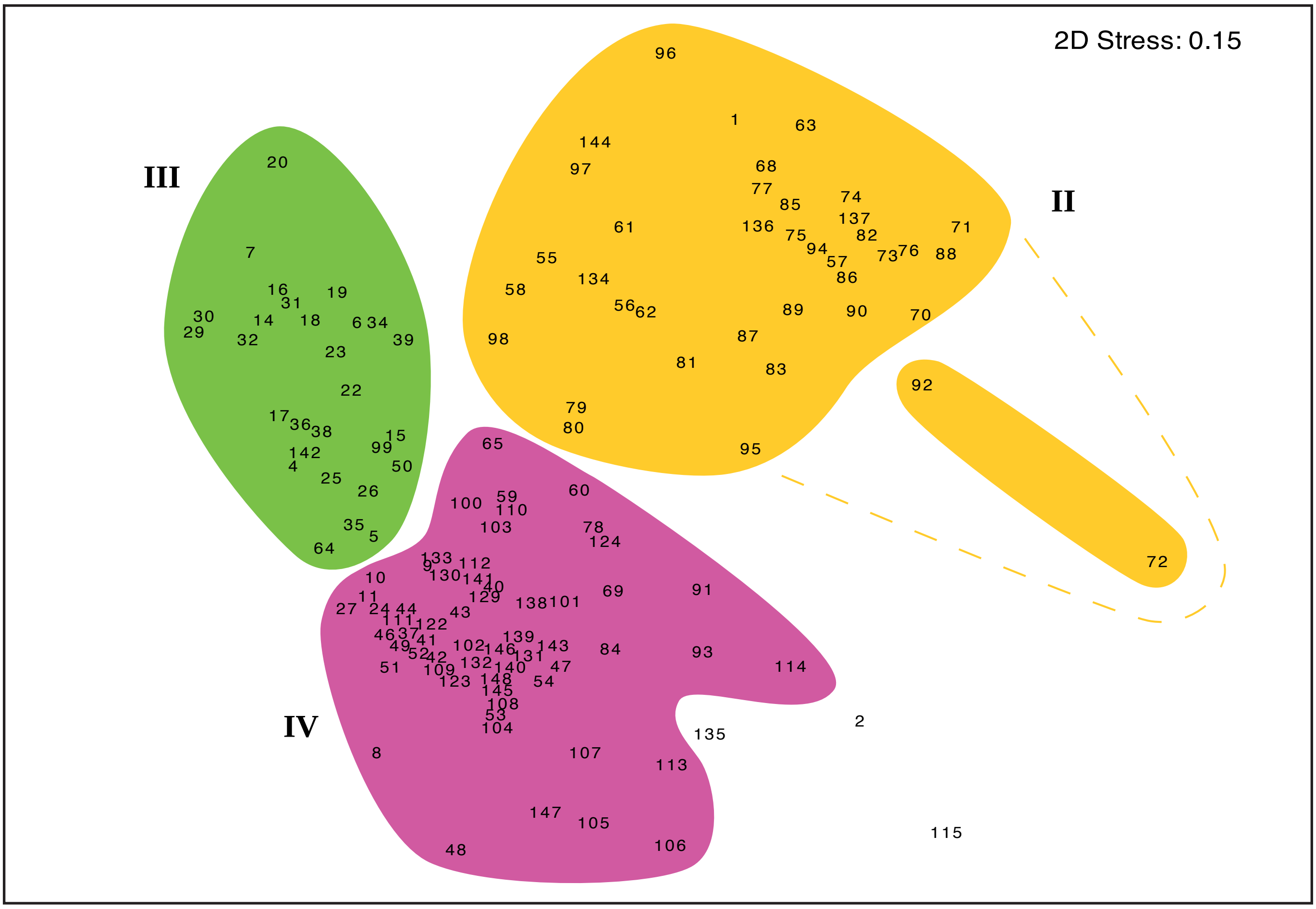


Fig. A8.16: MDS ordination of quantitative mollusc OBCMHS data

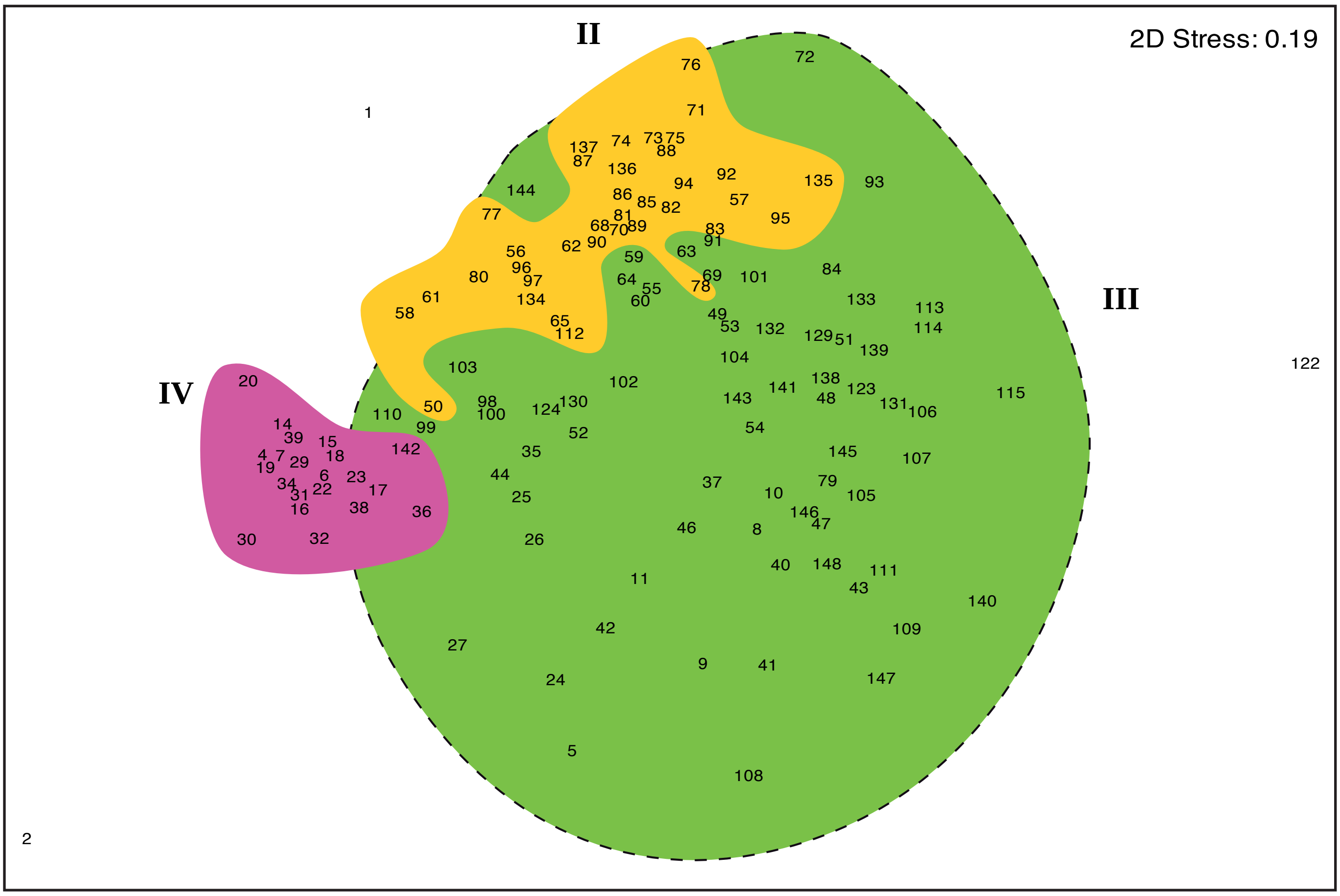


Fig. A8.17: MDS ordination of quantitative arthropod OBCMHS data

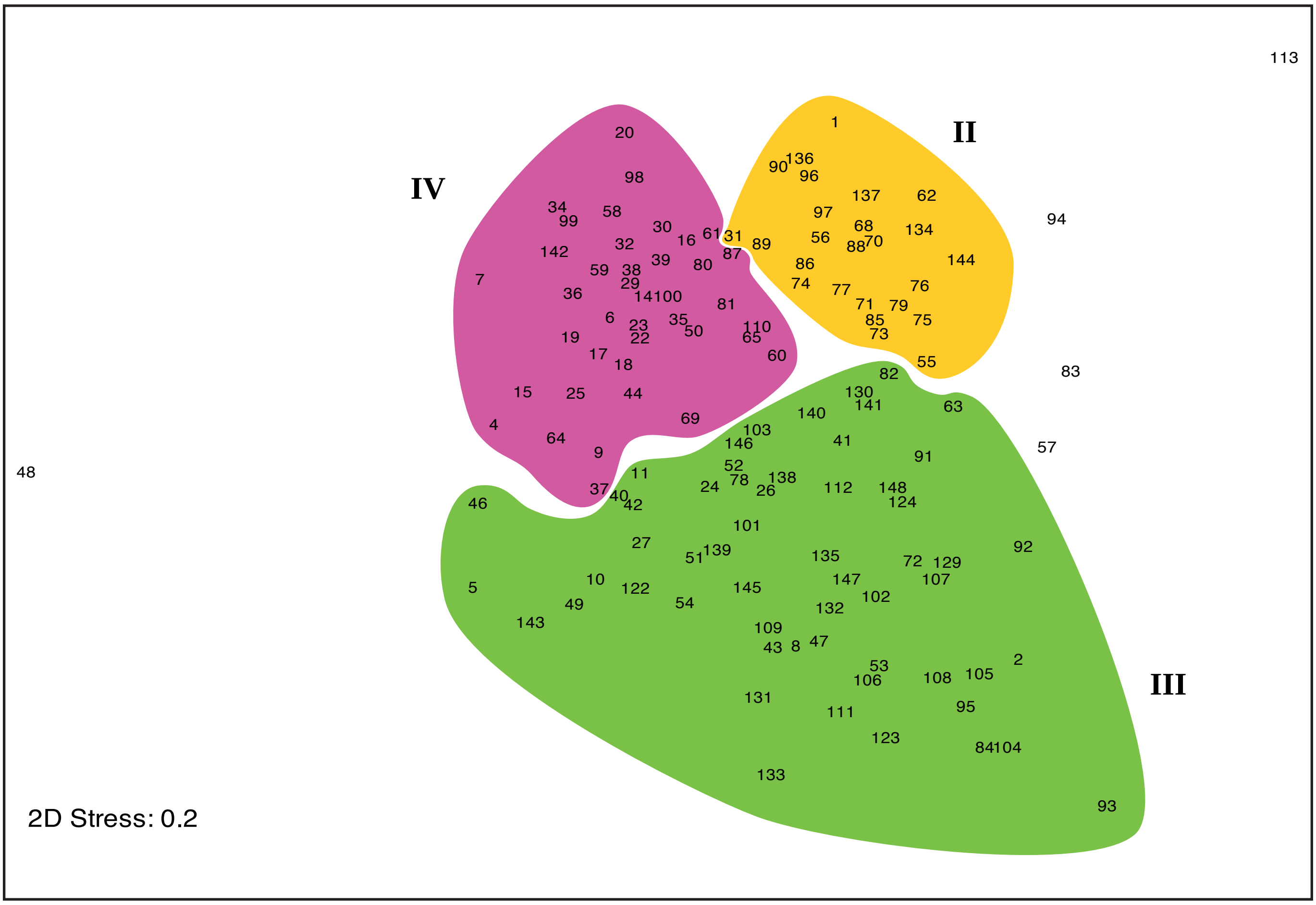


Fig. A8.18: MDS ordination of quantitative 'other phyla' OBCMHS data

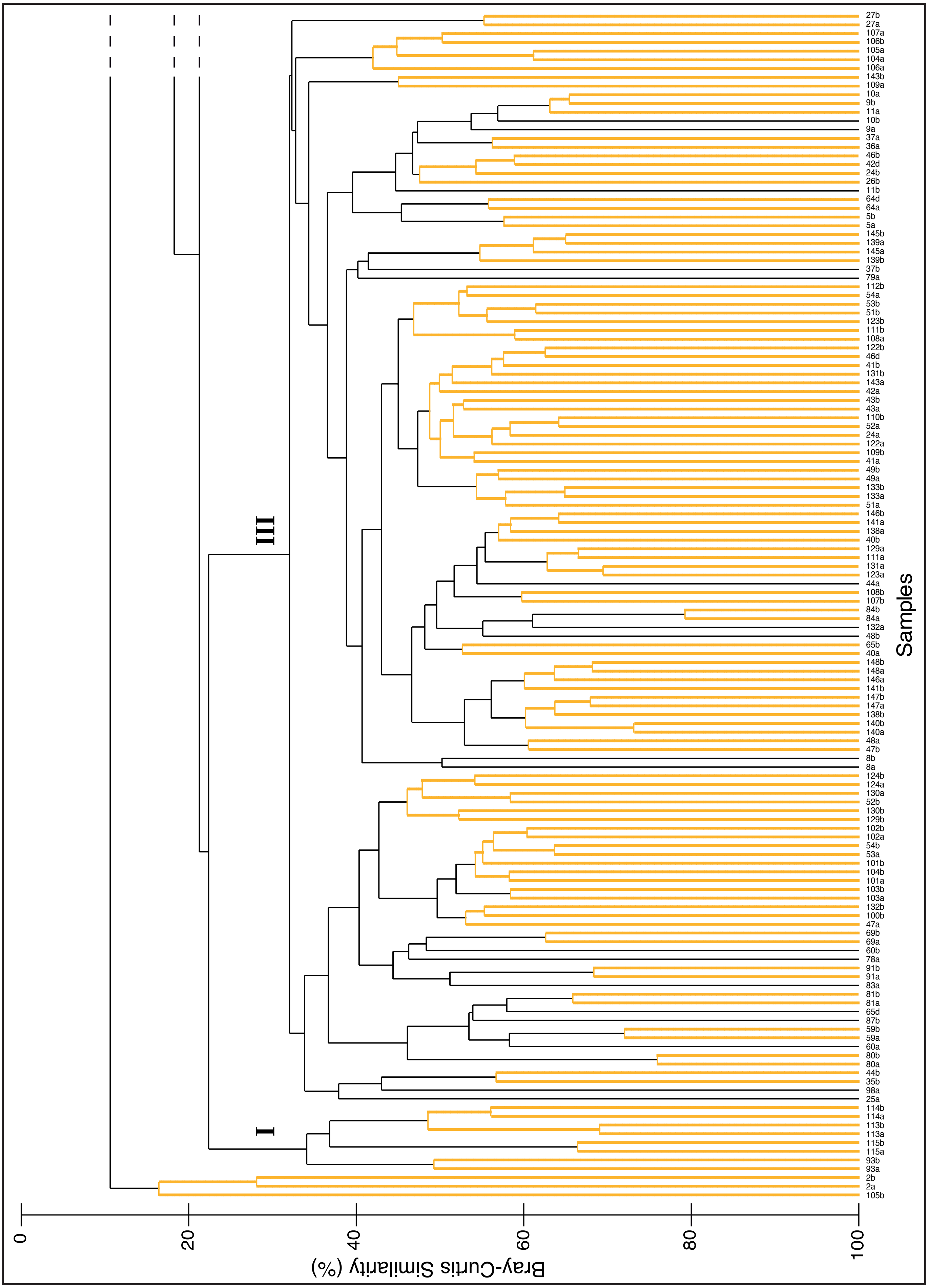
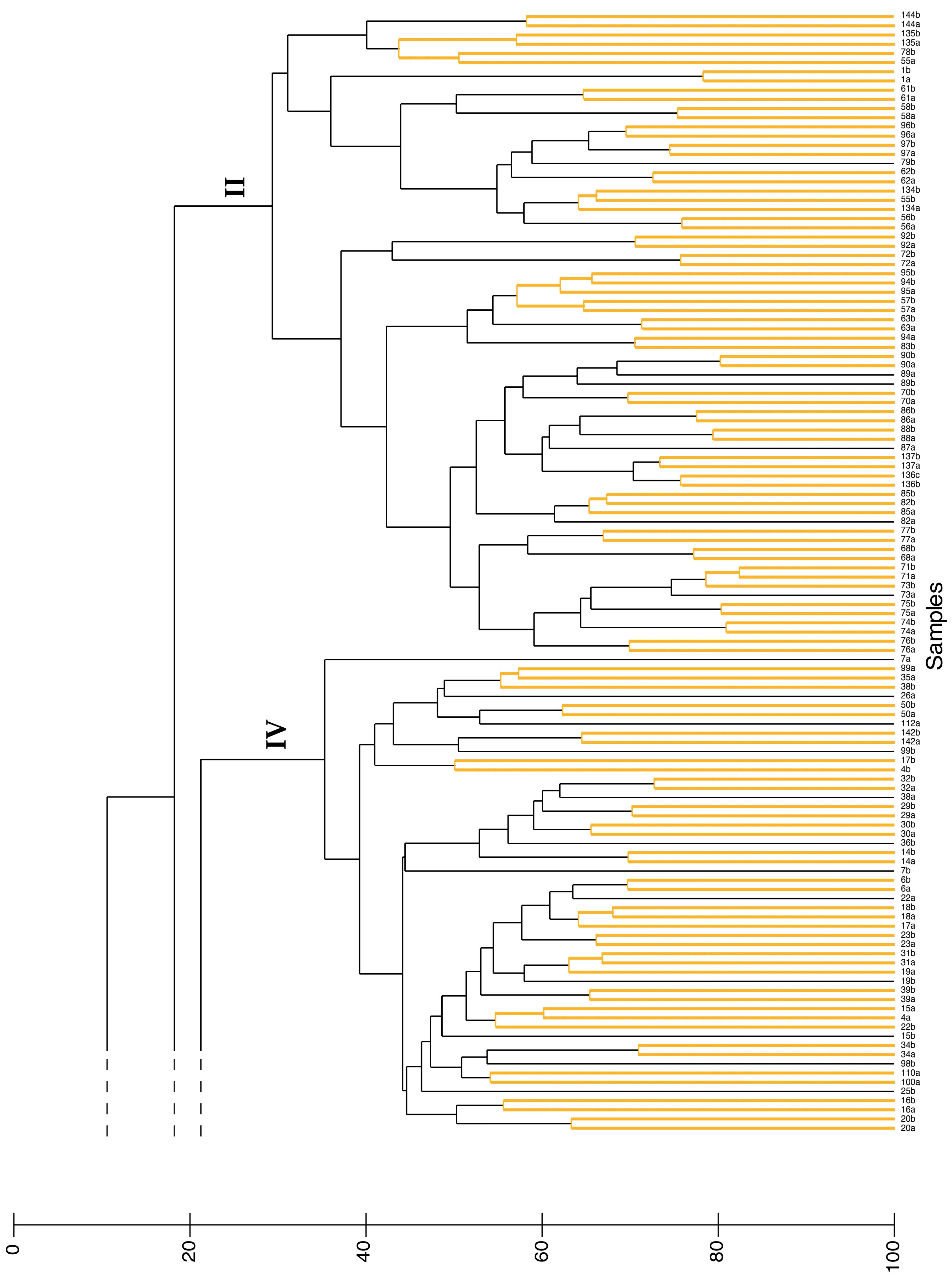


Fig. A8.19: Quantitative Bray-Curtis classification of individual grab samples from OBCMHS stations (log transformed data); non-significantly different stations (p<0.05) in red


II
IV
Samples
144b
144a
135b
135a
78b
55a
1b
1a
61b
61a
58b
58a
96b
96a
97b
97a
79b
62b
62a
134b
55b
134a
56b
56a
92b
92a
72b
72a
95b
94b
95a
57b
57a
63b
63a
94a
83b
90b
90a
89a
89b
70b
70a
86b
86a
88b
88a
87a
137b
137a
136c
136b
85b
82b
85a
82a
77b
77a
68b
68a
71b
71a
73b
73a
75b
75a
74b
74a
76b
76a
7a
99a
35a
38b
26a
50b
50a
112a
142b
142a
99b
17b
4b
32b
32a
38a
29b
29a
30b
30a
36b
14b
14a
7b
6b
6a
22a
18b
18a
17a
23b
23a
31b
31a
19a
19b
39b
39a
15a
4a
22b
15b
34b
34a
98b
110a
100a
25b
16b
16a
20b
20a
0
20
40
60
80
100

Appendix 9

Top Ranked Species for each OBCMHS Assemblage & Unassigned Station

(numerical values of species in **bold** converted from SACFOR scale - see Table 3.8)

A9.1a Assemblage I

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Hesionura elongata	2	41.3	0–104	22.14	22.14
2	Mytilus edulis juv.	3	36.7	5–77	19.64	41.79
3	Protodriloides chaetifer	2	13.0	0–32	6.96	48.75
4	Magelona juv.	3	11.3	8–14	6.07	54.82
5	Gastrosaccus spinifer	3	10.3	2–25	5.54	60.36
6	Nephtys cirrosa	3	10.0	6–13	5.36	65.71
7	**Obelia dichotoma**	**2**	**P2**	**0–P3**	**4.11**	**69.82**
8	Nephtys indet.	3	6.7	3–11	3.57	73.39
9	Cumopsis fagei	2	6.0	0–13	3.21	76.61
10	Lagis koreni	1	4.3	0–13	2.32	78.93
11	Megaluropus agilis	3	3.7	2–5	1.96	80.89
	Magelona mirabilis	2	3.7	0–8	1.96	82.86
13	Chrysallida obtusa	2	3.0	0–8	1.61	84.46
	Polydora ciliata ?	1	3.0	0–9	1.61	86.07
15	Grania spp.	1	2.7	0–8	1.43	87.50
16	Scolelepis juv.	1	2.0	0–6	1.07	88.57
17	Polydora sp.	1	1.7	0–5	0.89	89.46
18	Spisula elliptica	2	1.3	0–3	0.71	90.18
	Spio sp. A	2	1.3	0–3	0.71	90.89
	Paraonis fulgens	1	1.3	0–4	0.71	91.61

Table A9.1a: Top ranked taxa for Assemblage I (3 stations)

A9.1b Assemblage I

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Magelona juv.	2.49	6.58	2.87	15.79	15.79
2	Mytilus edulis juv.	3.17	6.18	4.20	14.83	30.63
3	Nephtys cirrosa	2.36	5.90	4.28	14.16	44.79
4	Nephtys indet.	1.94	4.36	3.99	10.45	55.24
5	Gastrosaccus spinifer	1.99	3.51	3.82	8.42	63.66
	Megaluropus agilis	1.50	3.51	3.82	8.42	72.08
7	Hesionura elongata	2.57	2.27	0.58	5.44	77.52
8	Spiophanes bombyx	0.69	1.94	3.97	4.65	82.17
9	Magelona mirabilis	1.19	1.66	0.58	3.98	86.15
10	Protodriloides chaetifer	1.86	1.55	0.58	3.71	89.86
11	Cumopsis fagei	1.48	1.33	0.58	3.20	93.0

Table A9.1b: Top ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage I (3 stations: average similarity 41.67%)

A9.2a Assemblage II

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	34	646.3	4–6527	27.69	27.69
2	Spiophanes bombyx	34	201.2	10–1528	8.62	36.31
3	Scalibregma inflatum	26	188.5	0–1411	8.08	44.39
4	Abra alba	33	156.4	0–1482	6.70	51.09
5	Ampharete lindstroemi	23	98.0	0–1241	4.20	55.28
6	Spisula subtruncata	23	77.2	0–858	3.31	58.59
7	Pseudocuma longicornis	33	74.2	0–449	3.18	61.77
8	Mysella bidentata	24	56.0	0–476	2.40	64.17
9	Magelona filiformis	24	54.3	0–369	2.33	66.50
10	Spio sp. A	34	37.5	2–232	1.61	68.10
11	Phoronis spp.	30	35.8	0–180	1.53	69.63
12	Magelona johnstoni	23	34.6	0–183	1.48	71.12
13	Phaxas pellucidus	31	33.1	0–246	1.42	72.53
14	Lutraria lutraria	28	30.7	0–313	1.31	73.85
15	Chaetozone setosa	20	29.1	0–217	1.25	75.09
16	Poecilochaetus serpens	30	27.8	0–259	1.19	76.29
	Mytilus edulis juv.	33	27.8	0–262	1.19	77.48
18	Mediomastus fragilis	15	21.2	0–396	0.91	78.39
19	NEMERTEA indet.	34	19.2	1–54	0.82	79.21
20	Ampharete sp.	8	17.5	0–214	0.75	79.96
21	Pontocrates arenarius	20	16.0	0–118	0.69	80.65
22	Ampelisca spinipes	10	14.3	0–119	0.61	81.26
23	Pariambus typicus	26	14.2	0–90	0.61	81.86
24	Capitella capitata	21	12.1	0–124	0.52	82.38
25	Hyala vitrea	13	12.0	0–139	0.52	82.90
26	Magelona sp. juv.	23	11.4	0–68	0.49	83.38
27	Megaluropus agilis	33	11.0	0–49	0.47	83.86
28	TUBIFICIDAE spp.	20	10.1	0–48	0.43	84.29
	Glycera tridactyla	25	10.1	0–43	0.43	84.72
30	Owenia fusiformis	28	9.7	0–108	0.42	85.14
	Fabulina fabula	19	9.7	0–54	0.42	85.55

Table A9.2a: Top ranked taxa for Assemblage II (34 stations)

A9.2b Assemblage II

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Spiophanes bombyx	4.79	2.84	4.14	6.62	6.62
2	Lagis koreni	5.13	2.71	2.49	6.33	12.95
3	Abra alba	3.99	2.02	1.99	4.72	17.68
4	Pseudocuma longicornis	3.60	1.91	1.78	4.45	22.12
5	Spio sp. A	3.27	1.88	3.48	4.39	26.52
6	NEMERTEA indet.	2.70	1.45	3.14	3.39	29.91
7	Phaxas pellucidus	2.64	1.22	1.37	2.84	32.75
8	Scalibregma inflatum	3.17	1.17	0.81	2.73	35.48
9	Mytilus edulis juv.	2.47	1.15	1.88	2.69	38.17
10	Megaluropus agilis	2.10	1.08	2.03	2.51	40.68
11	Phoronis spp.	2.66	1.07	1.41	2.50	43.18
12	Magelona filiformis	2.53	0.99	0.86	2.30	45.49
13	Magelona johnstoni	2.26	0.87	0.78	2.03	47.51
14	Lutraria lutraria	2.20	0.79	1.02	1.86	49.37
	Nephtys indet.	1.59	0.79	1.55	1.85	51.22
16	Spisula subtruncata	2.32	0.75	0.78	1.75	52.98
17	Poecilochaetus serpens	2.08	0.73	1.09	1.71	54.68
18	Lanice conchilega	1.60	0.68	1.45	1.59	56.28
19	Eteone cf. longa	1.54	0.66	1.33	1.55	57.82
20	Magelona juv.	1.70	0.65	0.79	1.53	59.35
21	Glycera tridactyla	1.64	0.62	0.83	1.44	60.79
22	Mysella bidentata	2.11	0.58	0.69	1.36	62.15
23	Pariambus typicus	1.72	0.54	0.87	1.26	63.41
24	Ampharete lindstroemi	2.05	0.51	0.70	1.18	64.59
	Pontocrates arenarius	1.60	0.50	0.60	1.18	65.77
	Synchelidium maculatum	1.35	0.50	0.90	1.18	66.95
27	Owenia fusiformis	1.47	0.49	1.10	1.15	68.09
28	Chaetozone setosa	1.76	0.47	0.58	1.10	69.19
29	OPHIUROIDEA juv.	1.46	0.46	0.75	1.08	70.27
30	Nephtys cirrosa	1.27	0.44	0.71	1.03	71.30
31	Perioculodes longimanus	1.36	0.43	0.71	1.01	72.31
32	Lumbrineris gracilis	1.42	0.42	0.87	0.98	73.29
33	Fabulina fabula	1.40	0.41	0.59	0.96	74.25
34	Argissa hamatipes	1.29	0.37	0.64	0.87	75.12

Table A9.2b: Top ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage II (34 stations: average similarity 42.85%)

A9.3a Assemblage III

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	47	198.1	0–5977	20.8	20.8
2	Hesionura elongata	57	132.6	3–960	13.9	34.7
3	Spisula elliptica	56	81.2	0–612	8.5	43.2
4	Mytilus edulis juv.	54	66.2	0–1004	6.9	50.1
5	Goodallia triangularis	54	46.2	0–260	4.8	55.0
6	Spiophanes bombyx	56	23.3	0–181	2.4	57.4
7	Grania spp.	53	19.0	0–107	2.0	59.4
8	Macrochaeta helgolandica	38	17.1	0–235	1.8	61.2
9	Streptosyllis bidentata	52	16.6	0–71	1.7	62.9
10	TEREBELLIDAE juv.	42	15.6	0–153	1.6	64.6
11	Pisione remota	40	15.2	0–154	1.6	66.2
12	NEMERTEA indet.	56	12.7	0–56	1.3	67.5
13	Pseudocuma similis	19	10.8	0–220	1.1	68.6
14	Protodriloides chaetifer	41	9.4	0–128	1.0	69.6
15	Abra alba	28	9.2	0–216	1.0	70.6
16	Aonides paucibranchiata	47	8.8	0–79	0.9	71.5
17	Microphthalmus similis	33	8.5	0–107	0.9	72.4
18	Nephtys cirrosa	55	8.3	0–22	0.9	73.3
19	Megaluropus agilis	46	8.1	0–48	0.8	74.1
20	Scalibregma inflatum	35	8.0	0–120	0.8	74.9
21	Spio sp. A	44	7.9	0–67	0.8	75.8
22	Pseudocuma longicornis	32	7.5	0–108	0.8	76.5
23	Mediomastus fragilis	47	7.2	0–59	0.8	77.3
24	Caecum glabrum	17	6.8	0–200	0.7	78.0
	Sphaerosyllis bulbosa	7	6.8	0–332	0.7	78.7
26	Polygordius appendiculatus	30	5.8	0–119	0.6	79.3
	Ampelisca spinipes	20	5.8	0–175	0.6	79.9
28	Polygordius sp.	32	5.4	0–78	0.6	80.5
29	Moerella pygmaea	37	5.2	0–32	0.5	81.1
30	MYTILIDAE JUV.	3	5.1	0–250	0.5	81.6
	Protodrilus? sp.	21	5.1	0–61	0.5	82.1
32	Gastrosaccus spinifer	41	4.7	0–56	0.5	82.6
33	Glycera oxycephala	53	4.4	0–17	0.5	83.1
34	Nephtys sp. indet.	38	4.2	0–24	0.4	83.5
35	Diastylis bradyi	31	4.0	0–30	0.4	83.9
	Unciola planipes	37	4.0	0–34	0.4	84.4
37	Streptosyllis sp. A	31	3.9	0–35	0.4	84.8
38	Stenothoe marina	11	3.8	0–150	0.4	85.2
39	Cumopsis fagei	30	3.5	0–33	0.4	5.5

Table A9.3a: Top ranked taxa for Assemblage III (57 stations)

A9.3b Assemblage III

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Hesionura elongata	4.26	3.36	2.91	8.08	8.08
2	Spisula elliptica	3.85	2.96	3.25	7.13	15.21
3	Mytilus edulis juv.	3.22	2.24	2.03	5.40	20.60
4	Goodallia triangularis	3.06	2.05	1.71	4.93	25.53
5	Spiophanes bombyx	2.53	1.73	2.00	4.16	29.69
6	Grania spp.	2.45	1.67	1.72	4.03	33.72
7	NEMERTEA indet.	2.26	1.64	2.66	3.95	37.68
8	Nephtys cirrosa	2.04	1.61	2.15	3.87	41.55
9	Streptosyllis bidentata	2.26	1.43	1.47	3.44	44.99
10	Lagis koreni	2.85	1.42	1.07	3.42	48.41
11	Glycera oxycephala	1.52	1.09	1.79	2.63	51.04
12	TEREBELLIDAE juv.	1.87	1.02	0.94	2.47	53.51
13	Aonides paucibranchiata	1.61	0.82	1.12	1.98	55.49
14	Protodriloides chaetifer	1.48	0.82	0.79	1.96	57.45
15	Megaluropus agilis	1.51	0.76	0.98	1.83	59.28
16	Mediomastus fragilis	1.47	0.71	1.13	1.71	60.99
17	Pisione remota	1.57	0.64	0.79	1.55	62.54
18	Spio sp. A	1.40	0.64	0.97	1.53	64.08
19	Macrochaeta helgolandica	1.56	0.60	0.69	1.46	65.53
20	Gastrosaccus spinifer	1.15	0.58	0.84	1.39	66.93
21	Nephtys indet.	1.13	0.54	0.73	1.30	68.22
22	Notomastus juv.	0.92	0.48	0.93	1.15	69.37
	Unciola planipes	1.05	0.48	0.73	1.15	70.52
24	Moerella pygmaea	1.19	0.47	0.72	1.14	71.66
25	Glycera indet.	0.98	0.46	0.81	1.10	72.76
26	Streptosyllis sp. A	0.97	0.44	0.55	1.06	73.82
27	Polygordius sp.	1.11	0.44	0.61	1.05	74.88
28	Spio goniocephala	0.80	0.39	0.73	0.94	75.82
29	Pseudocuma longicornis	1.11	0.38	0.59	0.92	76.74
30	Microphthalmus similis	1.13	0.36	0.58	0.87	77.61
31	Scalibregma inflatum	1.07	0.35	0.65	0.85	78.46
32	Polygordius appendiculatus	0.99	0.34	0.54	0.83	79.28
33	Cumopsis fagei	0.93	0.34	0.56	0.81	80.10

Table A9.3b: Top ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage III (57 stations: average similarity 41.55%)

A9.4a Assemblage IV

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	34	153.0	0–1560	6.16	6.16
2	Mytilus edulis juv.	35	108.5	0–925	4.37	10.53
3	Mediomastus fragilis	37	92.7	4–296	3.73	14.27
4	Spisula elliptica	36	88.0	0–894	3.54	17.81
5	Ampharete lindstroemi	24	87.5	0–2080	3.52	21.33
6	Stenothoe marina	37	72.6	3–441	2.93	24.26
7	MYTILIDAE juv.	4	68.2	0–1775	2.75	27.01
8	Aora gracilis	35	51.9	0–456	2.09	29.10
9	Ampelisca spinipes	34	50.1	0–562	2.02	31.11
10	Abra alba	31	48.5	0–315	1.95	33.07
11	Heteranomia squamula	26	42.5	0–462	1.71	34.78
12	Hesionura elongata	29	42.4	0–249	1.71	36.49
	Spiophanes bombyx	34	42.4	0–138	1.71	38.19
14	Aonides paucibranchiata	37	40.8	1–180	1.64	39.84
15	HARMOTHOINAE indet.	34	38.8	0–334	1.56	41.40
16	Lumbrineris gracilis	32	35.2	0–226	1.42	42.82
17	Sabellaria spinulosa	27	30.4	0–231	1.22	44.04
18	Sphenia binghami	16	27.9	0–467	1.12	45.16
19	Timoclea ovata	31	27.2	0–133	1.09	46.25
20	Scalibregma inflatum	35	26.8	0–271	1.08	47.33
21	**Electra pilosa**	**37**	**P3**	**P–P5**	**1.02**	**48.36**
	Gibbula tumida	21	25.4	0–195	1.02	49.38
23	Gammaropsis cornuta	29	24.5	0–146	0.99	50.37
24	NEMERTEA indet.	37	23.2	3–58	0.93	51.30
25	Pholoe sp. B	28	19.1	0–165	0.77	52.07
	Caulleriella zetlandica	30	19.1	0–100	0.77	52.84
27	Amphilochus neapolitanus	34	18.9	0–63	0.76	53.60
28	Mysella bidentata	31	18.6	0–80	0.75	54.35
29	Bodotria scorpioides	28	18.4	0–122	0.74	55.09
30	Terebellides stroemi	30	18.3	0–116	0.74	55.82
31	Urothoe elegans	24	17.9	0–214	0.72	56.54
32	Balanus crenatus	14	17.1	0–219	0.69	57.23
33	Laonice sp.	25	17.0	0–172	0.68	57.92
34	Ericthonius punctatus	9	16.8	0–596	0.68	58.60
	Eusyllis blomstrandi	33	16.8	0–133	0.68	59.27
36	Echinocyamus pusillus	28	16.6	0–84	0.67	59.94
37	Exogone verugera	32	16.4	0–74	0.66	60.60
38	Dendrodoa grossularia	14	14.9	0–167	0.60	61.20
39	Protodorvillea kefersteini	31	14.6	0–120	0.59	61.79
40	Clymenura johnstoni	31	14.5	0–65	0.58	62.37
41	Caecum glabrum	21	13.7	0–142	0.55	62.92
42	Verruca stroemi	16	13.6	0–270	0.55	63.47
43	Streptosyllis bidentata	33	13.4	0–41	0.54	64.01
44	Gammaropsis maculata	22	13.3	0–167	0.54	64.55
45	Polycirrus spp.	37	13.1	1–46	0.53	65.07
46	Microjassa cumbrensis	24	12.3	0–93	0.49	65.57
47	Goodallia triangularis	31	12.2	0–53	0.49	66.06
	Abludomelita obtusata	30	12.2	0–52	0.49	66.55
49	Parvicardium scabrum	20	11.9	0–69	0.48	67.03

Table A9.4a: Top ranked taxa for Assemblage IV (37 stations)

A9.4b Assemblage IV

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Mediomastus fragilis	4.07	1.14	4.16	2.58	2.58
2	Spisula elliptica	3.66	1.04	2.06	2.36	4.95
3	Mytilus edulis juv.	3.86	1.02	1.89	2.31	7.25
4	Stenothoe marina	3.56	0.96	2.61	2.19	9.44
5	NEMERTEA indet.	2.98	0.88	4.01	2.00	11.45
6	Spiophanes bombyx	3.16	0.84	1.61	1.91	13.36
7	Lagis koreni	3.47	0.83	1.40	1.89	15.24
8	Aonides paucibranchiata	3.05	0.81	2.45	1.83	17.07
9	Ampelisca spinipes	2.95	0.69	1.84	1.58	18.65
10	Electra pilosa	2.65	0.68	1.88	1.54	20.19
11	HARMOTHOINAE indet.	2.88	0.66	1.83	1.50	21.69
12	Aora gracilis	2.81	0.65	1.74	1.47	23.16
13	Polycirrus spp.	2.34	0.63	2.81	1.43	24.58
14	Hesionura elongata	2.57	0.58	1.01	1.32	25.91
15	Timoclea ovata	2.63	0.58	1.34	1.31	27.21
16	Amphilochus neapolitanus	2.42	0.57	1.56	1.30	28.51
	Scalibregma inflatum	2.48	0.57	1.61	1.30	29.80
18	Streptosyllis bidentata	2.20	0.56	1.35	1.27	31.07
19	Lumbrineris gracilis	2.58	0.51	1.25	1.16	32.23
20	Abra alba	2.58	0.47	1.12	1.08	33.31
21	Eumida juv.	1.92	0.47	1.69	1.06	34.37
22	Eusyllis blomstrandi	2.14	0.46	1.39	1.05	35.42
23	Exogone hebes	1.93	0.46	1.50	1.04	36.46
24	Clymenura johnstoni	2.09	0.44	1.23	1.00	37.46
25	Lanice conchilega	1.68	0.44	1.66	0.99	38.45
	Gammaropsis cornuta	2.33	0.43	1.03	0.99	39.44
27	Protodorvillea kefersteini	2.03	0.42	1.25	0.96	40.40
28	Mysella bidentata	2.14	0.42	1.12	0.95	41.35
29	Caulleriella zetlandica	2.14	0.41	1.14	0.94	42.30
	Sphaerosyllis taylori	1.74	0.41	1.52	0.94	43.23
31	Grania spp.	1.83	0.41	1.08	0.93	44.16
32	Exogone verugera	2.06	0.41	1.23	0.92	45.08
33	Echinocyamus pusillus	1.97	0.39	0.91	0.89	45.97
34	Abludomelita obtusata	1.83	0.39	1.02	0.88	46.85
35	Phoronis spp.	1.76	0.39	1.40	0.87	47.73
	Glycera lapidum	1.88	0.38	1.30	0.87	48.60
37	Goodallia triangularis	1.77	0.38	0.89	0.85	49.45
38	NUDIBRANCHIA indet.	1.83	0.37	1.16	0.84	50.29
39	Anoplodactylus petiolatus	1.68	0.36	1.23	0.82	51.11
40	Glycera indet.	1.52	0.34	1.27	0.78	51.89
41	Terebellides stroemi	1.99	0.34	1.05	0.76	52.65
	Aurospio banyulensis	1.76	0.33	1.16	0.76	53.41
43	Notomastus juv.	1.47	0.33	1.41	0.75	54.16
44	Heteranomia squamula	2.20	0.33	0.84	0.74	54.90

Table A9.4b: Top ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage IV (37 stations: average similarity 44.06%)

A9.5a Assemblage V

Rank	Taxon	f	Mean/sample	Range/sample	%	Cumulative %
1	MYTILIDAE juv.	2	7011.3	0–14060	82.99	82.99
2	Achelia echinata	3	148.0	6–300	1.75	84.74
3	Heteranomia squamula	1	114.7	0–344	1.36	86.10
4	Pomatoceros lamarckii	3	74.3	22–123	0.88	86.98
5	Pisidia longicornis	3	67.7	33–103	0.80	87.78
6	**Alcyonidium parasiticum**	**3**	**52.0**	**P–P5**	**0.62**	**88.40**
7	Pomatoceros triqueter	2	51.0	0–151	0.60	89.00
8	HARMOTHOINAE indet.	3	50.7	19–93	0.60	89.60
9	Syllidia armata	3	50.3	2–102	0.60	90.20
10	**Bowerbankia citrina**	**1**	**49.3**	**0–P5**	**0.58**	**90.78**
11	Microphthalmus similis	2	48.3	0–137	0.57	91.35
12	Pholoe sp. B	3	38.0	10–61	0.45	91.80
13	Verruca stroemi	3	36.3	1–58	0.43	92.23
14	Dendrodoa grossularia	2	24.7	0–73	0.29	92.52
15	Corophium sextonae	3	22.0	2–45	0.26	92.78
16	Eusyllis blomstrandi	3	18.0	15–21	0.21	93.00
	Sertularia argentea	**1**	**18.0**	**0–P4**	**0.21**	**93.21**
	Calycella syringa	**1**	**18.0**	**0–P4**	**0.21**	**93.42**
	Halecium lankesteri	**1**	**18.0**	**0–P4**	**0.21**	**93.64**
	Alcyonidium diaphanum	**1**	**18.0**	**0–P4**	**0.21**	**93.85**
21	Pomatoceros indet.	1	15.3	0–46	0.18	94.03
22	Sabellaria spinulosa	3	15.0	1–38	0.18	94.21
	AMPHIURIDAE juv.	3	15.0	13–19	0.18	94.39
24	Phoronis spp.	2	14.0	0–39	0.17	94.55
25	Aora gracilis	3	13.7	1–26	0.16	94.71
26	Sphenia binghami	3	13.3	3–28	0.16	94.87
27	Autolytus prolifera	2	12.0	3–20	0.14	95.01
28	Anoplodactylus petiolatus	2	11.0	0–27	0.13	95.14
29	Lepidonotus squamatus	3	10.3	4–18	0.12	95.27
30	Ampelisca spinipes	3	9.7	1–27	0.11	95.38
	Autolytus alexandri	2	9.7	0–26	0.11	95.49
32	Photis reinhardi	2	9.3	0–28	0.11	95.60
	Bugula plumosa	**3**	**9.3**	**P–P3**	**0.11**	**95.72**
34	Stenothoe marina	2	8.0	0–18	0.09	95.81
	NUDIBRANCHIA indet.	3	8.0	2–16	0.09	95.90
36	Proceraea cornuta	2	7.7	0–14	0.09	96.00
37	Mediomastus fragilis	2	7.3	0–12	0.09	96.08
	Alcyonidium mytili	**3**	**7.3**	**P–P3**	**0.09**	**96.17**
39	**Electra pilosa**	**2**	**7.0**	**0–P3**	**0.08**	**96.25**
	Conopeum reticulum	**2**	**7.0**	**0–P3**	**0.08**	**96.33**
	Escharella immersa	**2**	**7.0**	**0–P3**	**0.08**	**96.42**
	Pedicellina cernua	**2**	**7.0**	**0–P3**	**0.08**	**96.50**

Table A9.5a: Top ranked taxa for Assemblage V (3 stations)

A9.5b Assemblage V

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Pisidia longicornis	4.13	1.74	7.07	4.67	4.67
2	Pomatoceros lamarckii	4.11	1.65	4.52	4.41	9.08
3	HARMOTHOINAE indet.	3.75	1.50	6.31	4.02	13.09
4	Pholoe sp. B	3.44	1.35	2.71	3.60	16.70
5	Achelia echinata	4.20	1.32	2.03	3.54	20.23
6	Eusyllis blomstrandi	2.94	1.31	10.00	3.52	23.75
7	MYTILIDAE juv.	6.13	1.24	0.58	3.31	27.06
8	AMPHIURIDAE juv.	2.76	1.22	10.65	3.28	30.34
9	Syllidia armata	3.20	0.90	1.43	2.40	32.74
10	Lepidonotus squamatus	2.29	0.84	7.64	2.26	35.00
11	Autolytus prolifera	2.36	0.82	3.26	2.19	37.19
12	Sphenia binghami	2.35	0.80	2.49	2.14	39.33
13	Corophium sextonae	2.64	0.77	1.86	2.07	41.40
	Verruca stroemi	2.90	0.77	1.02	2.07	43.47
15	NUDIBRANCHIA indet.	1.96	0.64	2.73	1.72	45.19
16	Aora gracilis	2.23	0.60	1.31	1.61	46.80
17	Ophiothrix fragilis	1.55	0.59	3.99	1.58	48.38
18	NEMERTEA indet.	1.50	0.58	6.90	1.56	49.94
19	Polydora sp.	1.48	0.56	4.39	1.49	51.43
20	Proceraea cornuta	1.87	0.53	1.58	1.42	52.85
21	Sabellaria spinulosa	2.10	0.52	1.52	1.38	54.24
	Alcyonidium parasiticum	**2.59**	**0.51**	**1.67**	**1.38**	**55.62**
	Bugula plumosa	**1.94**	**0.51**	**1.67**	**1.38**	**57.00**
24	Sthenelais boa	1.34	0.42	2.95	1.12	58.12
	Scrupocellaria scruposa	**1.16**	**0.42**	**2.95**	**1.12**	**59.24**
26	Modiolus modiolus	0.96	0.39	2.69	1.04	60.28
	Abra alba	1.25	0.39	2.69	1.04	61.32
28	Scalibregma inflatum	1.25	0.38	3.36	1.03	62.35
29	Protodorvillea kefersteini	1.36	0.38	5.20	1.01	63.37
	Cressa dubia	1.06	0.38	5.20	1.01	64.38
31	Mediomastus fragilis	1.65	0.33	0.58	0.90	65.28
32	ANTHOZOA indet.	0.69	0.32	10.65	0.86	66.14
	Sphaerosyllis taylori	0.83	0.32	10.65	0.86	67.00
	Polycirrus norvegicus	0.83	0.32	10.65	0.86	67.86
	Gitana sarsi	0.92	0.32	10.65	0.86	68.72
	Ampelisca spinipes	1.57	0.32	10.65	0.86	69.58
	Mysella bidentata	0.92	0.32	10.65	0.86	70.44
	Asterias rubens juv.	1.00	0.32	10.65	0.86	71.30
	Obelia dichotoma	**1.16**	**0.32**	**10.65**	**0.86**	**72.16**
	Alcyonidium mytili	**1.48**	**0.32**	**10.65**	**0.86**	**73.02**
	Bicellariella ciliata	**1.16**	**0.32**	**10.65**	**0.86**	**73.89**
	Cellepora pumicosa	**1.16**	**0.32**	**10.65**	**0.86**	**74.75**
43	Microphthalmus similis	2.37	0.31	0.58	0.82	75.57
44	Autolytus indet.	1.57	0.29	0.58	0.78	76.35

Table A9.5b: Top ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage V (3 stations: average similarity 37.33%)

A9.6 Unassigned Stations

Rank	Taxon	N	%	Cumulative %
1	Mediomastus fragilis	6355	49.01	49.01
2	Pariambus typicus	1731	13.35	62.36
3	Abra alba	1269	9.79	72.15
4	Nucula nitidosa	700	5.40	77.55
5	Pholoe juv.	656	5.06	82.61
6	Mysella bidentata	496	3.83	86.43
7	Pholoe tuberculata	273	2.11	88.54
8	Spiophanes bombyx	235	1.81	90.35
9	Amphiura brachiata	165	1.27	91.62
10	Nephtys hombergii	84	0.65	92.27
11	Anaitides groenlandica	67	0.52	92.79
12	Thyasira flexuosa	66	0.51	93.30
13	Ampelisca tenuicornis	65	0.50	93.80
14	Harmothoe andreapolis	54	0.42	94.22
15	Thracia phaseolina	53	0.41	94.62
16	NEMERTEA indet.	50	0.39	95.01
17	Scalibregma inflatum	43	0.33	95.34
	Melinna palmata	43	0.33	95.67
19	Galathowenia sp.	41	0.32	95.99
20	Owenia fusiformis	37	0.29	96.27
	Eteone cf. longa	37	0.29	96.56
22	Eumida bahusiensis	33	0.25	96.81
	TUBIFICIDAE spp.	33	0.25	97.07
24	Amphiura filiformis	25	0.19	97.26
25	Fabulina fabula	23	0.18	97.44
26	Podarkeopsis capensis	21	0.16	97.60
27	Mytilus edulis juv.	19	0.15	97.75
	Ampharete lindstroemi	19	0.15	97.89
29	Sthenelais limicola	18	0.14	98.03
30	Chaetozone gibber	14	0.11	98.14
31	Ampelisca brevicornis	13	0.10	98.24
32	Spisula subtruncata	11	0.08	98.33
	Tellimya ferruginosa	11	0.08	98.41
	Mya truncata	11	0.08	98.50
	Anaitides mucosa	11	0.08	98.58
36	Lanice conchilega	10	0.08	98.66
37	Pseudocuma similis	9	0.07	98.73
	Argissa hamatipes	9	0.07	98.80
39	Caulleriella zetlandica	8	0.06	98.86

Table A9.6a: Top-ranked taxa for Station 1 (Anglesey)

A9.6 Unassigned Stations

Rank	Taxon	N	%	Cumulative %
1	Mediomastus fragilis	17	14.53	14.53
2	Leptochelia dubia	11	9.40	23.93
3	Macrochaeta helgolandica	10	8.55	32.48
4	Mytilus edulis juv	8	6.84	39.32
5	Protodriloides chaetifer	7	5.98	45.30
	Elasmopus rapax	7	5.98	51.28
7	Grania spp.	6	5.13	56.41
	Nucula nitidosa	6	5.13	61.54
	Glycera oxycephala	6	5.13	66.67
10	NEMERTEA indet.	3	2.56	69.23
	TEREBELLIDAE juv.	3	2.56	71.79
	GASTROPODA indet.	3	2.56	74.36
	Mesopodopsis slabberi	3	2.56	76.92
14	TUBIFICIDAE spp.	2	1.71	78.63
	Sphaerosyllis taylori	2	1.71	80.34
	AMPHIURIDAE juv.	2	1.71	82.05
	Protodrilus? sp.	2	1.71	83.76
	HOLOTHURIOIDEA indet.	2	1.71	85.47

Table A9.6b: Top-ranked taxa for Station 2

Rank	Taxon	N	%	Cumulative %
1	Scoloplos armiger	215	37.72	37.72
2	Scalibregma inflatum	145	25.44	63.16
3	Spiophanes bombyx	66	11.58	74.74
4	Aricidea minuta	14	2.46	77.19
5	Pseudocuma longicornis	10	1.75	78.95
	NEMERTEA indet.	10	1.75	80.70
7	Spisula elliptica	9	1.58	82.28
8	Abra prismatica	8	1.40	83.68
9	Ophelia juv.	7	1.23	84.91
	Lovenella clausa	**P2**	**1.23**	**86.14**
11	Hesionura elongata	5	0.88	87.02
	Nephtys indet.	5	0.88	87.89
	Bodotria pulchella	5	0.88	88.77
	Atylus falcatus	5	0.88	89.65
	Bathyporeia elegans	5	0.88	90.53
16	Grania spp.	4	0.70	91.23
17	Lagis koreni	3	0.53	91.75
	Megaluropus agilis	3	0.53	92.28
	Nephtys cirrosa	3	0.53	92.81
	Pontocrates arenarius	3	0.53	93.33
	Polinices pulchellus	3	0.53	93.86

Table A9.6c: Top-ranked taxa for Station 135

Appendix 10

Top Ranked Species for each OBCMHS Assemblage Subgroup

(numerical values of species in **bold** converted from SACFOR scale - see Table 3.8)

A10.1a Assemblage IIa

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Magelona johnstoni	2	80.0	9–151	15.30	15.30
2	Pontocrates arenarius	2	51.0	28–74	9.75	25.05
3	Pseudocuma longicornis	2	44.0	3–85	8.41	33.46
4	Acteon tornatilis	2	40.5	8–73	7.74	41.20
5	Mactra stultorum	2	25.0	21–29	4.78	45.98
6	Magelona filiformis	2	22.5	7–38	4.30	50.29
	Spio sp. A	2	22.5	18–27	4.30	54.59
8	Lagis koreni	2	20.5	7–34	3.92	58.51
9	Glycera tridactyla	2	19.0	3–35	3.63	62.14
10	Spisula subtruncata	1	17.0	0–34	3.25	65.39
11	Spiophanes bombyx	2	14.5	10–19	2.77	68.16
12	Nephtys cirrosa	2	14.0	2–26	2.68	70.84
13	Megaluropus agilis	2	10.0	1–19	1.91	72.75
14	Mytilus edulis juv.	2	9.5	1–18	1.82	74.57
15	PAGURIDAE juv.	1	8.5	0–17	1.63	76.20
	Angulus tenuis	1	8.5	0–17	1.63	77.82
17	Donax vittatus	2	7.5	3–12	1.43	79.25
	NATICIDAE juv.	2	7.5	7–8	1.43	80.69
19	Magelona juv.	2	7.0	4–10	1.34	82.03
	Nephtys indet.	2	7.0	4–10	1.34	83.37
21	NEMERTEA indet.	2	5.5	2–9	1.05	84.42
	Bathyporeia tenuipes	1	5.5	0–11	1.05	85.47
23	Capitella capitata	2	5.0	3–7	0.96	86.42
	Iphinoe trispinosa	2	5.0	5	0.96	87.38
25	Tellimya ferruginosa	2	4.5	1–8	0.86	88.24
26	Cumopsis fagei	2	4.0	3–5	0.76	89.01
	Tannaissus lilljeborgi	1	4.0	0–8	0.76	89.77
28	Synchelidium maculatum	1	3.5	0–7	0.67	90.44
29	OPHIUROIDEA juv.	1	2.5	0–5	0.48	90.92
	Polinices pulchellus	2	2.5	2–3	0.48	91.40

Table A10.1a: Top ranked taxa for Assemblage group IIa (2 stations)

A10.1b Assemblage IIa

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Pontocrates arenarius	3.84	3.94		8.30	8.30
2	Mactra stultorum	3.25	3.62		7.62	15.93
3	Spio sp. A	3.14	3.45		7.26	23.19
4	Spiophanes bombyx	2.70	2.81		5.91	29.10
5	Magelona johnstoni	3.66	2.70		5.68	34.78
6	Acteon tornatilis	3.25	2.57		5.42	40.20
7	Magelona filiformis	2.87	2.44		5.13	45.33
	Lagis koreni	2.82	2.44		5.13	50.46
	NATICIDAE juv.	2.14	2.44		5.13	55.58
10	Iphinoe trispinosa	1.79	2.10		4.42	60.00
11	Nephtys indet.	2.00	1.88		3.97	63.97
	Magelona juv.	2.00	1.88		3.97	67.94
13	Glycera tridactyla	2.48	1.62		3.42	71.36
	Capitella capitata	1.73	1.62		3.42	74.78
	Cumopsis fagei	1.59	1.62		3.42	78.20
	Pseudocuma longicornis	2.92	1.62		3.42	81.62
	Donax vittatus	1.98	1.62		3.42	85.03
18	NEMERTEA indet.	1.70	1.29		2.71	87.74
	Nephtys cirrosa	2.20	1.29		2.71	90.45

Table A10.1b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIa (2 stations: average similarity 47.48%)

A10.2a Assemblage IIb

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	17	477.9	4–1910	24.67	24.67
2	Spisula subtruncata	16	150.2	0–858	7.75	32.42
3	Spiophanes bombyx	17	139.0	14–310	7.17	39.59
4	Pseudocuma longicornis	17	93.1	2–449	4.80	44.39
5	Magelona filiformis	15	81.1	0–341	4.19	48.58
6	Abra alba	17	70.6	3–371	3.65	52.23
7	Lutraria lutraria	17	59.2	5–313	3.05	55.28
8	Phaxas pellucidus	17	58.4	9–246	3.01	58.29
9	Chaetozone setosa	16	56.8	0–217	2.93	61.23
10	Poecilochaetus serpens	17	51.9	1–259	2.68	63.91
11	Spio sp. A	17	51.3	2–232	2.65	66.55
12	Magelona johnstoni	16	42.4	0–183	2.19	68.74
13	Phoronis spp.	17	35.4	3–148	1.83	70.57
14	Mytilus edulis juv.	17	30.1	1–156	1.55	72.12
15	NEMERTEA indet.	17	26.1	9–54	1.35	73.47
16	Pontocrates arenarius	15	24.8	0–118	1.28	74.75
17	Scalibregma inflatum	11	22.6	0–242	1.17	75.91
18	Capitella capitata	14	21.5	0–124	1.11	77.03
19	Pariambus typicus	16	17.5	0–90	0.90	77.93
20	Magelona juv.	15	17.4	0–68	0.90	78.82
21	SPATANGOIDA juv.	12	17.3	0–88	0.89	79.72
22	Owenia fusiformis	14	17.2	0–108	0.89	80.60
23	Fabulina fabula	14	17.1	0–54	0.88	81.49
24	Bathyporeia tenuipes	13	15.9	0–76	0.82	82.31
25	Glycera tridactyla	17	15.8	1–43	0.81	83.12
26	Ampharete lindstroemi	12	15.7	0–161	0.81	83.93
27	Megaluropus agilis	17	14.8	1–49	0.76	84.70
28	OPHIUROIDEA juv.	16	14.5	0–55	0.75	85.44
29	Perioculodes longimanus	17	14.3	2–36	0.74	86.18
30	Philine aperta	15	13.1	0–52	0.68	86.86
31	Lanice conchilega	15	8.9	0–59	0.46	87.32

Table A10.2a: Top ranked taxa for Assemblage group IIb (17 stations)

A10.2b Assemblage IIb

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Spiophanes bombyx	4.73	2.75	6.54	4.93	4.93
2	Lagis koreni	5.27	2.67	2.54	4.80	9.72
3	Phaxas pellucidus	3.72	2.06	4.31	3.70	13.42
4	Pseudocuma longicornis	3.90	2.04	2.42	3.67	17.09
5	Spio sp. A	3.55	1.92	3.10	3.44	20.53
6	Lutraria lutraria	3.59	1.90	4.73	3.41	23.95
7	Magelona filiformis	3.70	1.87	1.72	3.36	27.30
8	Spisula subtruncata	3.85	1.85	2.27	3.33	30.63
9	NEMERTEA indet.	3.15	1.79	7.40	3.21	33.84
10	Abra alba	3.53	1.75	2.68	3.14	36.99
11	Phoronis spp.	3.07	1.50	3.54	2.69	39.68
12	Mytilus edulis juv.	2.92	1.48	2.90	2.66	42.34
13	Magelona johnstoni	3.02	1.41	1.75	2.53	44.87
14	Chaetozone setosa	3.15	1.40	1.43	2.52	47.38
15	Poecilochaetus serpens	3.11	1.38	1.86	2.47	49.86
16	Perioculodes longimanus	2.40	1.21	2.27	2.18	52.03
17	Glycera tridactyla	2.40	1.16	2.05	2.08	54.11
18	Megaluropus agilis	2.34	1.13	2.40	2.02	56.14
19	Synchelidium maculatum	2.05	1.06	2.61	1.90	58.04
20	Magelona juv.	2.32	1.03	1.44	1.84	59.88
21	Pontocrates arenarius	2.42	1.01	1.22	1.81	61.70
22	Fabulina fabula	2.27	0.95	1.21	1.71	63.40
23	OPHIUROIDEA juv.	2.14	0.91	1.62	1.64	65.04
24	Pariambus typicus	2.16	0.87	1.58	1.56	66.60
25	Philine aperta	2.10	0.86	1.41	1.53	68.14
26	Eteone cf. longa	1.76	0.82	1.87	1.48	69.61
27	Chamelea gallina	1.65	0.80	2.00	1.43	71.04
28	Bathyporeia tenuipes	2.04	0.76	1.00	1.37	72.41
29	SPATANGOIDA juv.	2.07	0.76	0.92	1.36	73.76
30	Acteon tornatilis	1.69	0.75	1.44	1.34	75.10
31	CARIDEA juv.	1.61	0.70	1.37	1.26	76.36
32	Lanice conchilega	1.70	0.67	1.40	1.20	77.56
33	Owenia fusiformis	1.95	0.66	1.04	1.18	78.74
34	Capitella capitata	1.96	0.65	0.84	1.17	79.91
35	Nephtys indet.	1.35	0.52	1.23	0.93	80.84
36	Nephtys cirrosa	1.52	0.48	0.71	0.85	81.69
37	Lumbrineris gracilis	1.31	0.43	0.91	0.77	82.46
38	Magelona mirabilis	0.98	0.40	1.29	0.72	83.18
39	Thracia phaseolina	1.20	0.37	0.89	0.67	83.84
	Ampharete lindstroemi	1.45	0.37	0.77	0.67	84.51
41	Scalibregma inflatum	1.49	0.36	0.62	0.65	85.16

Table A10.2b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIb (17 stations: average similarity 55.73%)

A10.3a Assemblage IIc

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	5	2303.4	113–6527	65.95	65.95
2	Abra alba	5	306.0	21–625	8.76	74.72
3	Spiophanes bombyx	5	177.4	31–275	5.08	79.80
4	Scalibregma inflatum	5	148.2	45–284	4.24	84.04
5	Pseudocuma longicornis	5	104.0	25–246	2.98	87.02
6	Magelona filiformis	5	78.0	4–369	2.23	89.25
7	Magelona johnstoni	5	59.0	6–159	1.69	90.94
8	Argissa hamatipes	3	26.4	0–86	0.76	91.70
9	Phaxas pellucidus	5	19.4	6–28	0.56	92.25
10	Spio sp. A	5	18.6	12–28	0.53	92.78
11	Pariambus typicus	3	17.8	0–45	0.51	93.29
12	Hesionura elongata	3	17.6	0–83	0.50	93.80
13	Magelona juv.	5	15.2	7–25	0.44	94.23
14	Diastylis bradyi	4	13.8	0–29	0.40	94.63
15	Nephtys indet.	5	11.4	3–21	0.33	94.95
16	Cumopsis fagei	5	10.8	8–15	0.31	95.26
17	Capitella capitata	5	7.2	1–25	0.21	95.47
18	Megaluropus agilis	5	6.8	4–10	0.19	95.66
	Poecilochaetus serpens	4	6.6	0–19	0.19	95.85
	Fabulina fabula	3	6.6	0–19	0.19	96.04
	TURBELLARIA indet.	3	6.6	0–15	0.19	96.23
22	Glycera tridactyla	4	6.4	0–13	0.18	96.42
23	Mytilus edulis juv.	4	6.0	0–10	0.17	96.59
	Eteone cf. longa	5	6.0	1–19	0.17	96.76
	Nephtys cirrosa	5	6.0	2–13	0.17	96.93
26	Lutraria lutraria	4	4.6	0–16	0.13	97.06
	Lanice conchilega	5	4.6	1–8	0.13	97.19

Table A10.3a: Top ranked taxa for Assemblage IIc (5 stations)

A10.3b Assemblage IIc

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Lagis koreni	6.81	5.21	5.31	8.90	8.90
2	Spiophanes bombyx	4.96	4.11	5.04	7.02	15.92
3	Abra alba	5.22	4.05	3.73	6.91	22.83
4	Scalibregma inflatum	4.81	4.02	5.41	6.87	29.69
5	Pseudocuma longicornis	4.40	3.57	8.74	6.10	35.80
6	Magelona johnstoni	3.60	2.61	3.38	4.45	40.25
7	Spio sp. A	2.94	2.53	19.24	4.31	44.56
8	Phaxas pellucidus	2.91	2.38	5.61	4.06	48.61
9	Magelona juv.	2.70	2.21	6.01	3.78	52.39
10	Cumopsis fagei	2.44	2.10	19.32	3.59	55.98
11	Nephtys indet.	2.37	1.80	4.31	3.08	59.06
12	Megaluropus agilis	2.02	1.67	9.12	2.85	61.91
13	Magelona filiformis	2.64	1.61	8.41	2.75	64.66
14	Nephtys cirrosa	1.82	1.37	3.69	2.34	67.00
15	Diastylis bradyi	2.26	1.34	1.15	2.29	69.29
16	Lanice conchilega	1.59	1.11	2.70	1.89	71.18
17	Mytilus edulis juv.	1.70	1.09	1.15	1.87	73.05
18	Eteone cf. longa	1.57	0.95	2.65	1.61	74.67
19	NEMERTEA indet.	1.33	0.90	3.23	1.53	76.20
20	Glycera tridactyla	1.58	0.83	0.89	1.42	77.62
21	Capitella capitata	1.56	0.83	2.44	1.41	79.02
22	Scoloplos armiger	1.28	0.81	2.37	1.38	80.41
23	Magelona mirabilis	1.34	0.80	1.08	1.37	81.78
24	Goniada maculata	1.15	0.80	1.16	1.36	83.14
25	Poecilochaetus serpens	1.54	0.70	0.96	1.20	84.34
26	Argissa hamatipes	1.93	0.62	0.54	1.06	85.40
27	Lutraria lutraria	1.28	0.61	1.15	1.04	86.44
28	TURBELLARIA indet.	1.47	0.58	0.61	0.99	87.42
29	Spisula subtruncata	1.16	0.55	0.95	0.94	88.36
30	HARMOTHOINAE indet.	1.00	0.43	0.62	0.73	89.09
31	Pariambus typicus	1.66	0.42	0.44	0.72	89.82
32	Owenia fusiformis	0.91	0.41	1.14	0.71	90.52

Table A10.3b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIc (5 stations: average similarity 58.56%)

A10.4a Assemblage IId

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Scalibregma inflatum	10	528.3	42–1411	18.93	18.93
2	Spiophanes bombyx	10	356.1	23–1528	12.76	31.69
3	Ampharete lindstroemi	8	304.3	0–1241	10.91	42.60
4	Abra alba	10	258.1	6–1482	9.25	51.85
5	Lagis koreni	10	229.1	11–1020	8.21	60.06
6	Mysella bidentata	10	177.0	9–476	6.34	66.40
7	Mediomastus fragilis	9	63.3	0–396	2.27	68.67
8	Phoronis spp.	10	60.3	3–180	2.16	70.83
9	Ampharete sp.	6	59.3	0–214	2.13	72.96
10	Ampelisca spinipes	9	48.4	0–119	1.73	74.69
11	Hyala vitrea	10	40.1	1–139	1.44	76.13
12	Mytilus edulis juv.	10	38.4	1–262	1.38	77.51
13	Pseudocuma longicornis	9	33.3	0–82	1.19	78.70
14	Eumida bahusiensis	9	27.6	0–228	0.99	79.69
15	Spio sp. A	10	26.4	6–85	0.95	80.63
16	Lumbrineris gracilis	10	23.0	1–109	0.82	81.46
17	TUBIFICIDAE spp.	9	20.9	0–48	0.75	82.21
18	Scoloplos armiger	8	19.9	0–105	0.71	82.92
19	NEMERTEA indet.	10	18.1	6–40	0.65	83.57
20	Pseudocuma similis	5	14.9	0–94	0.53	84.10
21	Clymenura johnstoni	1	14.1	0–141	0.51	84.61
22	Pholoe juv.	8	13.0	0–59	0.47	85.07
23	Pholoe tuberculata	10	11.9	1–29	0.43	85.50
24	Aricidea minuta	8	11.8	0–57	0.42	85.92
25	Spisula elliptica	8	11.5	0–28	0.41	86.34
26	Pariambus typicus	7	9.5	0–57	0.34	86.68
	Anoplodactylus petiolatus	9	9.5	0–29	0.34	87.02
28	Pholoe sp. B	3	8.8	0–64	0.32	87.33
29	Amphiura filiformis	10	8.6	1–32	0.31	87.64
30	Podarkeopsis capensis	9	8.5	0–21	0.30	87.94
31	Eudorella truncatula	9	8.1	0–34	0.29	88.23
32	Goniada maculata	10	8.0	3–15	0.29	88.52
	Euclymene oerstedii	2	8.0	0–76	0.29	88.81

Table A10.4a: Top ranked taxa for Assemblage group IId

A10.4b Assemblage IId

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Scalibregma inflatum	5.85	3.16	3.46	6.41	6.41
2	Spiophanes bombyx	5.24	2.68	3.44	5.44	11.84
3	Mysella bidentata	4.75	2.46	3.06	4.99	16.83
4	Abra alba	4.78	2.37	3.10	4.80	21.63
5	Lagis koreni	4.51	2.08	3.63	4.22	25.86
6	Phoronis spp.	3.44	1.51	2.55	3.07	28.93
7	NEMERTEA indet.	2.81	1.45	5.74	2.94	31.87
8	Spio sp. A	2.97	1.43	5.26	2.91	34.78
9	Ampharete lindstroemi	3.98	1.34	1.19	2.73	37.50
10	Mediomastus fragilis	3.16	1.29	1.76	2.61	40.11
11	Ampelisca spinipes	3.19	1.25	1.78	2.53	42.65
12	Hyala vitrea	2.89	1.22	1.75	2.47	45.12
13	Goniada maculata	2.10	1.09	3.51	2.22	47.33
14	TUBIFICIDAE spp.	2.55	1.08	1.36	2.19	49.52
15	Pseudocuma longicornis	2.81	1.04	1.24	2.12	51.64
16	Pholoe tuberculata	2.26	1.01	2.06	2.06	53.70
17	Lumbrineris gracilis	2.46	0.97	2.58	1.96	55.66
18	Podarkeopsis capensis	1.90	0.81	1.51	1.64	57.30
19	Glycera alba	1.69	0.80	2.15	1.62	58.93
20	Nephtys sp. indet.	1.52	0.79	3.06	1.60	60.53
21	Megaluropus agilis	1.78	0.75	1.52	1.52	62.05
	Mytilus edulis juv.	2.21	0.75	2.10	1.52	63.57
23	Diastylis bradyi	1.81	0.73	1.29	1.48	65.04
24	Spisula elliptica	1.95	0.72	1.01	1.46	66.50
25	Anoplodactylus petiolatus	1.93	0.71	1.50	1.44	67.95
	Amphiura filiformis	1.76	0.71	1.63	1.44	69.39
27	Lanice conchilega	1.68	0.67	1.65	1.35	70.74
28	Scoloplos armiger	1.84	0.62	0.92	1.25	72.00
29	Pholoe juv.	1.79	0.60	1.11	1.21	73.21
30	Owenia fusiformis	1.23	0.55	3.75	1.12	74.32
31	Eumida bahusiensis	1.79	0.52	1.38	1.05	75.37
32	Ophiura ophiura	1.32	0.51	0.99	1.03	76.41
33	Eudorella truncatula	1.54	0.51	1.25	1.02	77.43
34	Aricidea minuta	1.64	0.49	0.79	1.00	78.43
35	Argissa hamatipes	1.44	0.47	0.90	0.95	79.38
36	Ampharete sp.	2.20	0.41	0.58	0.84	80.21
37	Eteone cf. longa	1.37	0.38	0.91	0.78	80.99
38	HARMOTHOINAE indet.	1.42	0.37	1.01	0.75	81.74
	Hermonia hystrix	1.24	0.37	0.89	0.75	82.49
40	Phaxas pellucidus	1.07	0.35	1.11	0.70	83.19

Table A10.4b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IId (10 stations: average similarity 49.31%)

A10.5a Assemblage IIIa

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Hesionura elongata	31	200.10	9–960	26.78	26.78
2	Spisula elliptica	30	77.94	0–312	10.43	37.20
3	Goodallia triangularis	31	60.58	3–260	8.11	45.31
4	Mytilus edulis juv.	29	41.68	0–183	5.58	50.89
5	Macrochaeta helgolandica	23	25.74	0–235	3.44	54.33
6	Grania spp.	31	23.55	1–107	3.15	57.48
7	Streptosyllis bidentata	30	22.48	0–71	3.01	60.49
8	NEMERTEA indet.	30	16.35	0–56	2.19	62.68
9	TEREBELLIDAE juv.	26	16.16	0–142	2.16	64.84
10	Lagis koreni	22	15.90	0–197	2.13	66.97
11	Pisione remota	26	14.45	0–79	1.93	68.90
12	Protodriloides chaetifer	24	13.94	0–128	1.86	70.77
13	Aonides paucibranchiata	27	11.10	0–79	1.48	72.25
14	Microphthalmus similis	21	9.45	0–107	1.26	73.52
15	Spio sp. A	23	8.55	0–67	1.14	74.66
16	Spiophanes bombyx	31	7.81	1–39	1.04	75.71
17	Nephtys cirrosa	30	7.03	0–22	0.94	76.65
18	Polygordius sp.	27	6.97	0–24	0.93	77.58
	Moerella pygmaea	22	6.97	0–32	0.93	78.51
20	Protodrilus? sp.	17	6.84	0–61	0.92	79.43
21	Mediomastus fragilis	27	6.68	0–27	0.89	80.32
22	Polygordius appendiculatus	26	6.26	0–57	0.84	81.16
23	Streptosyllis sp. A	21	5.77	0–35	0.77	81.93
24	Gastrosaccus spinifer	25	5.13	0–56	0.69	82.62
25	Polycirrus spp.	23	4.87	0–24	0.65	83.27
26	Glycera oxycephala	31	4.81	1–12	0.64	83.91
27	Unciola planipes	23	4.29	0–26	0.57	84.49
28	Thracia villosiuscula	18	3.65	0–14	0.49	84.97
29	Notomastus sp. juv.	27	3.58	0–15	0.48	85.45
30	Glycera sp.	21	3.45	0–19	0.46	85.92
31	Megaluropus agilis	22	3.29	0–48	0.44	86.36
32	Exogone naidina	19	3.03	0–33	0.41	86.76

Table A10.5a: Top ranked taxa for Assemblage group IIIa (31 stations)

A10.5b Assemblage IIIa

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Hesionura elongata	4.91	4.35	4.51	8.98	8.98
2	Spisula elliptica	3.86	3.11	2.98	6.42	15.39
3	Goodallia triangularis	3.59	2.92	2.90	6.02	21.42
4	Mytilus edulis juv.	3.29	2.66	2.16	5.50	26.92
5	Streptosyllis bidentata	2.76	2.16	2.32	4.47	31.39
6	Grania spp.	2.74	2.11	2.62	4.35	35.73
7	NEMERTEA indet.	2.43	1.85	2.41	3.82	39.56
8	Nephtys cirrosa	1.92	1.58	2.43	3.26	42.82
9	Spiophanes bombyx	1.92	1.52	2.42	3.13	45.96
10	TEREBELLIDAE juv.	2.10	1.37	1.21	2.83	48.79
11	Glycera oxycephala	1.64	1.35	3.04	2.79	51.58
12	Aonides paucibranchiata	1.90	1.19	1.38	2.47	54.04
13	Pisione remota	1.97	1.17	1.22	2.41	56.45
14	Polygordius sp.	1.73	1.16	1.44	2.40	58.85
15	Protodriloides chaetifer	1.76	1.03	0.94	2.12	60.98
16	Macrochaeta helgolandica	2.01	1.02	0.88	2.10	63.08
17	Lagis koreni	1.76	0.93	0.84	1.93	65.01
18	Polygordius appendiculatus	1.50	0.92	1.21	1.91	66.91
19	Mediomastus fragilis	1.55	0.89	1.30	1.83	68.74
20	Notomastus juv.	1.28	0.86	1.48	1.77	70.51
21	Gastrosaccus spinifer	1.31	0.78	1.11	1.62	72.13
22	Moerella pygmaea	1.47	0.73	0.87	1.50	73.64
23	Streptosyllis sp. A	1.31	0.71	0.81	1.46	75.10
24	Spio sp. A	1.38	0.63	0.87	1.31	76.41
	Unciola planipes	1.20	0.63	0.91	1.31	77.72
26	Polycirrus spp.	1.19	0.55	0.88	1.13	78.84
27	Glycera sp. indet.	1.07	0.51	0.78	1.04	79.89
	Microphthalmus similis	1.23	0.50	0.72	1.04	80.92
29	Protodrilus? sp.	1.15	0.44	0.56	0.91	81.84
30	Thracia villosiuscula	1.05	0.42	0.64	0.87	82.70
31	Megaluropus agilis	0.87	0.41	0.88	0.84	83.55
32	Syllis sp. H	0.84	0.37	0.76	0.77	84.31
33	Exogone naidina	0.83	0.33	0.67	0.69	85.00
34	Sphaerosyllis taylori	0.71	0.31	0.78	0.65	85.65
35	Nephtys sp. indet.	0.74	0.31	0.56	0.64	86.29
	Spio goniocephala	0.67	0.31	0.62	0.64	86.93
37	Glycera lapidum	0.74	0.26	0.54	0.54	87.46
	Electra pilosa	**0.60**	**0.26**	**0.47**	**0.54**	**88.00**
39	CARIDEA juv.	0.73	0.25	0.42	0.52	88.52
	Polinices pulchellus	0.52	0.25	0.75	0.52	89.05

Table A10.5b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIIa (31 stations: average similarity 48.42%)

Appendix 10

A10.6a Assemblage IIIb

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	20	536.05	1–5977	42.74	42.74
2	Mytilus edulis juv.	19	63.85	0–513	5.09	47.84
3	Spisula elliptica	20	57.20	5–191	4.56	52.40
4	Hesionura elongata	20	54.85	3–242	4.37	56.77
5	Spiophanes bombyx	20	51.30	5–181	4.09	60.86
6	Pseudocuma similis	7	29.15	0–220	2.32	63.18
7	Goodallia triangularis	18	27.70	0–247	2.21	65.39
8	Abra alba	14	24.80	0–216	1.98	67.37
9	Scalibregma inflatum	17	20.60	0–120	1.64	69.01
10	TEREBELLIDAE juv.	14	18.50	0–153	1.48	70.49
11	Grania spp.	19	17.05	0–87	1.36	71.85
12	Pseudocuma longicornis	18	16.20	0–108	1.29	73.14
13	Megaluropus agilis	20	15.95	4–45	1.27	74.41
14	MYTILIDAE juv.	2	14.40	0–250	1.15	75.56
15	Ampelisca spinipes	9	14.00	0–175	1.12	76.68
16	Nephtys cirrosa	20	11.25	4–22	0.90	77.57
17	Streptosyllis bidentata	17	11.20	0–70	0.89	78.47
18	Diastylis bradyi	19	10.35	0–30	0.83	79.29
19	Stenothoe marina	5	10.20	0–150	0.81	80.11
20	Nephtys indet.	17	8.35	0–24	0.67	80.77
21	NEMERTEA indet.	20	7.85	2–32	0.63	81.40
22	Macrochaeta helgolandica	11	6.45	0–63	0.51	81.91
23	Cumopsis fagei	15	6.25	0–33	0.50	82.41
24	Spio sp. A	17	5.65	0–22	0.45	82.86
25	CARIDEA juv.	6	5.55	0–50	0.44	83.30
26	Microphthalmus similis	8	5.40	0–58	0.43	83.73
	Gastrosaccus spinifer	15	5.40	0–33	0.43	84.16
28	Exogone naidina	13	4.70	0–30	0.37	84.54
29	Mediomastus fragilis	16	4.60	0–21	0.37	84.91
30	Unciola planipes	10	4.25	0–34	0.34	85.24
31	Aonides paucibranchiata	16	4.20	0–27	0.33	85.58
32	Abra prismatica	12	4.05	0–13	0.32	85.90
33	Protodriloides chaetifer	14	4.00	0–15	0.32	86.22
34	**Electra pilosa**	**8**	**P1**	**P1–P3**	**0.31**	**86.54**
35	Poecilochaetus serpens	12	3.75	0–19	0.30	86.84

Table A10.6a: Top ranked taxa for Assemblage group IIIb (20 stations)

A10.6b Assemblage IIIb

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Lagis koreni	4.90	3.13	2.81	6.89	6.89
2	Spiophanes bombyx	3.73	2.82	3.92	6.21	13.09
3	Spisula elliptica	3.79	2.81	3.66	6.18	19.27
4	Hesionura elongata	3.54	2.51	3.18	5.51	24.78
5	Mytilus edulis juv.	3.18	1.97	2.12	4.34	29.12
6	Megaluropus agilis	2.66	1.97	3.39	4.33	33.45
7	Nephtys cirrosa	2.40	1.83	3.00	4.02	37.47
8	Grania spp.	2.52	1.70	2.10	3.73	41.21
9	NEMERTEA indet.	2.01	1.38	3.62	3.03	44.24
10	Goodallia triangularis	2.41	1.29	1.36	2.84	47.08
11	Diastylis bradyi	2.06	1.23	1.71	2.70	49.78
12	Pseudocuma longicornis	2.13	1.20	1.45	2.64	52.42
13	Nephtys indet.	1.82	1.07	1.13	2.34	54.76
14	Scalibregma inflatum	2.09	0.98	1.26	2.14	56.91
15	Streptosyllis bidentata	1.78	0.83	1.19	1.82	58.73
16	Cumopsis fagei	1.52	0.78	1.00	1.72	60.44
17	TEREBELLIDAE juv.	1.86	0.76	0.90	1.68	62.12
18	Glycera oxycephala	1.27	0.73	1.32	1.60	63.72
19	Spio sp. A	1.45	0.71	1.28	1.56	65.28
	Spio goniocephala	1.17	0.71	1.42	1.56	66.83
21	Abra alba	1.84	0.60	0.77	1.33	68.16
22	Protodriloides chaetifer	1.17	0.53	0.75	1.16	69.32
23	Gastrosaccus spinifer	1.19	0.52	0.80	1.15	70.47
24	Synchelidium maculatum	1.19	0.51	0.89	1.13	71.60
25	Mediomastus fragilis	1.22	0.51	1.10	1.12	72.72
26	Glycera indet.	0.97	0.50	0.98	1.10	73.82
27	Aonides paucibranchiata	1.15	0.49	1.15	1.07	74.89
28	Abra prismatica	1.14	0.47	0.66	1.03	75.92
29	Bodotria pulchella	1.05	0.37	0.72	0.81	76.73
30	Lanice conchilega	0.91	0.37	0.75	0.80	77.53
31	Exogone naidina	1.11	0.35	0.71	0.78	78.31
32	Poecilochaetus serpens	1.03	0.34	0.68	0.75	79.06
33	Pseudocuma similis	1.38	0.31	0.34	0.68	79.74
34	**Lovenella clausa**	**0.76**	**0.30**	**0.62**	**0.66**	**80.40**
35	Sphaerosyllis taylori	0.91	0.28	0.74	0.61	81.01
36	Unciola planipes	0.92	0.27	0.51	0.59	81.60
37	Exogone hebes	0.90	0.25	0.57	0.55	82.15
	Atylus falcatus	0.87	0.25	0.50	0.55	82.70
39	**Sertularia indet.**	**0.78**	**0.24**	**0.52**	**0.53**	**83.22**
	Polinices pulchellus	0.63	0.24	0.58	0.53	83.75

Table A10.6b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIIb (20 stations: average similarity 45.51%)

Appendix 10

A10.7a Assemblage IIIc

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Hesionura elongata	2	14.0	7–21	11.34	11.34
2	Spisula elliptica	2	10.5	10–11	8.50	19.84
	Protodriloides chaetifer	2	10.5	9–12	8.50	28.34
4	Glycera oxycephala	2	9.5	2–17	7.69	36.03
5	TEREBELLIDAE juv.	2	8.0	7–9	6.48	42.51
	Urothoe brevicornis	1	8.0	0–16	6.48	48.99
7	Nephtys cirrosa	2	6.0	5–7	4.86	53.85
	Streptosyllis sp. A	2	6.0	5–7	4.86	58.70
9	Spiophanes bombyx	2	5.5	2–9	4.45	63.16
10	NEMERTEA indet.	2	3.5	3–4	2.83	65.99
11	Exogone naidina	2	3.0	2–4	2.43	68.42
12	Unciola planipes	2	2.5	1–4	2.02	70.45
13	Mytilus edulis juv.	2	2.0	2	1.62	72.06
	Megaluropus agilis	2	2.0	1–3	1.62	73.68
	Nephtys indet.	2	2.0	2	1.62	75.30
	Urothoe elegans	2	2.0	2	1.62	76.92
17	Lagis koreni	2	1.5	1–2	1.21	78.14
	Grania spp.	1	1.5	0–3	1.21	79.35
	Streptosyllis bidentata	2	1.5	1–2	1.21	80.57
	Tannaissus lilljeborgi	1	1.5	0–3	1.21	81.78
	Lovenella clausa	**1**	**P**	**0–P1**	**1.21**	**83.00**
22	Goodallia triangularis	1	1.0	0–2	0.81	83.81
	Macrochaeta helgolandica	1	1.0	0–2	0.81	84.62
	Pseudocuma similis	1	1.0	0–2	0.81	85.43
	Pseudocuma longicornis	1	1.0	0–2	0.81	86.23
	Gastrosaccus spinifer	1	1.0	0–2	0.81	87.04
	Notomastus juv.	2	1.0	1	0.81	87.85
	Spio goniocephala	1	1.0	0–2	0.81	88.66
	Tanaopsis graciloides	1	1.0	0–2	0.81	89.47
	Pontocrates arenarius	1	1.0	0–2	0.81	90.28
	Eurydice pulchra	1	1.0	0–2	0.81	91.09
	Malacoceros sp.	1	1.0	0–2	0.81	91.90

Table A10.7a: Top ranked taxa for Assemblage group IIIc (2 stations)

A10.7b Assemblage IIIc

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Spisula elliptica	2.44	5.45		10.04	10.04
2	Protodriloides chaetifer	2.43	5.24		9.64	19.68
3	Hesionura elongata	2.59	4.73		8.71	28.38
	TEREBELLIDAE juv.	2.19	4.73		8.71	37.09
5	Streptosyllis sp. A	1.94	4.08		7.50	44.59
	Nephtys cirrosa	1.94	4.08		7.50	52.09
7	NEMERTEA indet.	1.50	3.15		5.80	57.90
8	Glycera oxycephala	1.99	2.50		4.60	62.49
	Exogone naidina	1.35	2.50		4.60	67.09
	Nephtys indet.	1.10	2.50		4.60	71.69
	Spiophanes bombyx	1.70	2.50		4.60	76.29
	Urothoe elegans	1.10	2.50		4.60	80.89
	Mytilus edulis juv.	1.10	2.50		4.60	85.49
14	Streptosyllis bidentata	0.90	1.58		2.90	88.39
	Notomastus juv.	0.69	1.58		2.90	91.29

Table A10.7b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIIc (2 stations: average similarity 54.33%)

A10.8a Assemblage IIId

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Mytilus edulis juv.	4	300.00	4–1004	20.42	20.42
2	Spisula elliptica	4	262.50	12–612	17.87	38.29
3	Pisione remota	4	98.25	7–154	6.69	44.98
4	Sphaerosyllis bulbosa	3	94.00	0–332	6.40	51.38
5	Caecum glabrum	4	90.50	6–200	6.16	57.54
6	Hesionura elongata	4	57.50	6–117	3.91	61.45
7	Goodallia triangularis	4	49.50	4–91	3.37	64.82
8	Polygordius appendiculatus	3	34.25	0–119	2.33	67.15
9	Mediomastus fragilis	4	27.25	3–59	1.86	69.01
10	Polygordius sp.	2	21.00	0–78	1.43	70.44
11	Microphthalmus similis	4	20.75	6–58	1.41	71.85
12	Protodrilus? sp.	4	19.25	6–32	1.31	73.16
13	Lagis koreni	3	19.00	0–54	1.29	74.46
14	Aonides paucibranchiata	3	18.00	0–31	1.23	75.68
15	Spio sp. A	3	17.25	0–52	1.17	76.86
16	Protodorvillea kefersteini	4	16.00	2–48	1.09	77.94
17	Pseudocuma longicornis	1	15.50	0–62	1.06	79.00
18	NEMERTEA indet.	4	13.50	3–21	0.92	79.92
19	Glycera lapidum	4	12.75	1–22	0.87	80.79
20	Spiophanes bombyx	3	11.75	0–29	0.80	81.59
21	Moerella pygmaea	3	11.25	0–20	0.77	82.35
22	Macrochaeta helgolandica	3	11.00	0–41	0.75	83.10
	Leptosynapta juv.	1	11.00	0–44	0.75	83.85
24	Syllis sp. H	3	9.75	0–27	0.66	84.51
25	Megaluropus agilis	2	8.75	0–34	0.60	85.11
26	Ampelisca spinipes	3	7.00	0–13	0.48	85.59
27	Timoclea ovata	2	6.50	0–22	0.44	86.03
28	Thyone fusus	3	6.00	0–22	0.41	86.44
	HARMOTHOINAE indet.	1	6.00	0–24	0.41	86.84
30	Chitinopoma serrula	2	5.75	0–22	0.39	87.24
31	Streptosyllis bidentata	3	5.50	0–15	0.37	87.61
	Obtusella alderi	4	5.50	1–12	0.37	87.99
33	Glycera oxycephala	3	5.00	0–7	0.34	88.33
34	Bodotria scorpioides	2	4.75	0–15	0.32	88.65
35	Nephtys cirrosa	3	4.50	0–13	0.31	88.96
36	CARIDEA juv.	3	4.00	0–7	0.27	89.23
37	Thracia villosiuscula	4	3.75	1–9	0.26	89.48
38	Cumopsis fagei	1	3.50	0–14	0.24	89.72
	Electra pilosa	**4**	**P1**	**P-P2**	**0.24**	**89.96**
	Sphenotrochus andrewianus	3	3.50	0–6	0.24	90.20

Table A10.8a: Top ranked taxa for Assemblage group IIId

A10.8b Assemblage IIId

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Spisula elliptica	4.87	2.52	4.05	6.05	6.05
2	Pisione remota	4.16	2.21	3.37	5.32	11.37
3	Caecum glabrum	3.91	2.05	2.33	4.93	16.30
4	Hesionura elongata	3.66	2.00	2.63	4.80	21.10
5	Goodallia triangularis	3.43	1.70	3.03	4.09	25.19
6	Protodrilus? sp.	2.87	1.65	9.49	3.96	29.15
7	Mytilus edulis juv.	3.89	1.52	1.84	3.64	32.79
8	Microphthalmus similis	2.68	1.47	4.32	3.53	36.32
9	NEMERTEA indet.	2.50	1.41	2.46	3.38	39.70
10	Mediomastus fragilis	2.89	1.40	3.05	3.36	43.05
11	Glycera lapidum	2.31	1.07	1.84	2.57	45.62
12	Protodorvillea kefersteini	2.25	0.99	3.90	2.38	48.00
13	Aonides paucibranchiata	2.38	0.86	0.91	2.08	50.07
14	Moerella pygmaea	2.05	0.84	0.91	2.02	52.09
	Polinices pulchellus	1.37	0.84	16.79	2.02	54.11
16	Sphaerosyllis bulbosa	2.94	0.83	0.88	1.99	56.10
17	Obtusella alderi	1.61	0.71	2.45	1.70	57.80
18	**Electra pilosa**	**1.39**	**0.68**	**4.27**	**1.64**	**59.44**
	Glycera oxycephala	1.53	0.68	0.90	1.64	61.08
20	Polygordius appendiculatus	2.32	0.64	0.89	1.54	62.63
21	Thracia villosiuscula	1.37	0.63	4.88	1.51	64.13
22	Abra alba	1.00	0.62	2.95	1.50	65.63
23	CARIDEA juv.	1.37	0.60	0.89	1.45	67.08
24	Sphenotrochus andrewianus	1.28	0.55	0.88	1.32	68.41
25	Syllis sp. H	1.78	0.53	0.90	1.28	69.69
26	Ampelisca spinipes	1.59	0.52	0.84	1.25	70.94
27	Sphaerosyllis taylori	1.02	0.52	5.26	1.24	72.19
28	ANOMURA juv.	1.04	0.48	6.31	1.14	73.33
29	Lagis koreni	1.95	0.46	0.69	1.11	74.44
30	Spiophanes bombyx	1.75	0.44	0.70	1.07	75.51
31	Streptosyllis bidentata	1.42	0.44	0.90	1.06	76.57
32	Spio sp. A	1.87	0.44	0.71	1.05	77.62
33	Molgula indet.?	0.82	0.38	0.90	0.91	78.53
34	Nephtys cirrosa	1.24	0.36	0.73	0.85	79.39
	Caulleriella alata	1.12	0.36	0.73	0.85	80.24
36	Syllis sp. E	0.90	0.33	0.91	0.79	81.02
37	Lumbrineris gracilis	0.93	0.31	0.85	0.74	81.77
38	Synchelidium maculatum	1.06	0.29	0.80	0.70	82.47
	Polycirrus spp.	0.79	0.29	0.90	0.70	83.17
	Aurospio banyulensis	0.79	0.29	0.83	0.70	83.87

Table A10.8b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IIId (4 stations: average similarity 41.61%)

A10.9a Assemblage IVa

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Mediomastus fragilis	18	118.0	29–296	5.21	5.21
2	Spisula elliptica	18	96.8	9–619	4.28	9.49
3	Mytilus edulis	18	86.5	2–203	3.82	13.32
4	Stenothoe marina	18	81.0	8–403	3.58	16.90
5	Lagis koreni	17	72.2	0–417	3.19	20.09
6	Aonides paucibranchiata	18	60.2	5–180	2.66	22.75
7	Spiophanes bombyx	17	54.4	0–138	2.40	25.15
8	Aora gracilis	17	49.3	0–314	2.18	27.33
9	Gibbula tumida	16	45.4	0–195	2.01	29.34
10	Abra alba	18	45.3	1–210	2.00	31.34
11	Heteranomia squamula	17	37.2	0–145	1.64	32.99
12	Timoclea ovata	18	34.3	4–133	1.51	34.50
13	Ampelisca spinipes	18	33.3	3–98	1.47	35.97
14	HARMOTHOINAE indet.	17	31.8	0–101	1.41	37.38
15	Lumbrineris gracilis	18	31.2	2–82	1.38	38.76
16	Amphilochus neapolitanus	18	30.6	4–63	1.35	40.11
17	Ampharete lindstroemi	13	30.4	0–140	1.35	41.45
18	Urothoe elegans	14	29.3	0–214	1.30	42.75
19	Laonice sp.	14	28.7	0–172	1.27	44.02
20	Gammaropsis cornuta	18	28.3	1–102	1.25	45.27
21	Balanus crenatus	7	27.7	0–219	1.23	46.49
22	Bodotria scorpioides	15	27.3	0–122	1.21	47.70
23	NEMERTEA indet.	18	25.3	3–55	1.12	48.82
24	Caecum glabrum	14	25.1	0–142	1.11	49.93
25	Caulleriella zetlandica	17	24.8	0–68	1.10	51.02
26	Hesionura elongata	15	23.9	0–74	1.06	52.08
27	Exogone verugera	17	23.6	0–74	1.04	53.12
28	Mysella bidentata	16	22.1	0–75	0.98	54.10
29	Terebellides stroemi	17	21.8	0–69	0.96	55.06
30	**Electra pilosa**	**18**	**P3**	**P–P4**	**0.90**	**55.96**
31	Clymenura johnstoni	17	19.7	0–52	0.87	56.83
32	Scalibregma inflatum	18	18.6	3–68	0.82	57.66
33	Abludomelita obtusata	14	18.0	0–52	0.80	58.45
34	Modiolus adriaticus	14	17.6	0–99	0.78	59.23
35	Sabellaria spinulosa	12	17.3	0–137	0.77	59.99
36	Streptosyllis bidentata	17	16.4	0–41	0.72	60.72
37	OPHIUROIDEA juv.	12	15.6	0–118	0.69	61.41
38	Eusyllis blomstrandi	18	15.5	2–73	0.68	62.09
39	Protodorvillea kefersteini	16	15.3	0–50	0.68	62.77
	Parvicardium scabrum	14	15.3	0–66	0.68	63.45
41	Microjassa cumbrensis	16	14.8	0–87	0.66	64.10
42	Polycirrus spp.	18	14.7	2–42	0.65	64.75
43	Glycera lapidum	18	14.4	2–35	0.64	65.39
	Chone filicaudata	14	14.4	0–114	0.64	66.03
45	Echinocyamus pusillus	15	13.7	0–63	0.61	66.63

Table A10.9a: Top ranked taxa for Assemblage group IVa (18 stations)

A10.9b Assemblage IVa

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Mediomastus fragilis	4.56	1.28	7.70	2.38	2.38
2	Spisula elliptica	4.09	1.12	3.86	2.06	4.44
	Mytilus edulis juv.	4.10	1.11	2.72	2.06	6.49
4	Stenothoe marina	3.83	1.00	4.20	1.85	8.34
5	Aonides paucibranchiata	3.60	0.91	3.65	1.68	10.02
6	Timoclea ovata	3.29	0.88	4.67	1.63	11.66
7	Ampelisca spinipes	3.27	0.88	3.79	1.62	13.28
8	Spiophanes bombyx	3.46	0.86	1.79	1.59	14.87
	Amphilochus neapolitanus	3.21	0.86	3.68	1.59	16.46
10	NEMERTEA indet.	3.06	0.82	4.34	1.52	17.99
11	Gammaropsis cornuta	3.04	0.78	2.73	1.45	19.44
12	**Electra pilosa**	**2.82**	**0.75**	**2.87**	**1.39**	**20.83**
	Lagis koreni	3.30	0.75	1.76	1.39	22.22
14	Lumbrineris gracilis	3.00	0.73	2.23	1.36	23.58
15	HARMOTHOINAE indet.	3.01	0.71	2.39	1.32	24.90
16	Glycera lapidum	2.54	0.67	4.87	1.23	26.13
17	Aora gracilis	2.95	0.66	1.85	1.22	27.35
18	Caulleriella zetlandica	2.75	0.66	1.82	1.21	28.56
	Polycirrus spp.	2.51	0.65	3.66	1.21	29.77
20	Abra alba	2.95	0.64	2.23	1.19	30.96
21	Streptosyllis bidentata	2.56	0.64	2.27	1.18	32.14
22	Clymenura johnstoni	2.64	0.63	1.89	1.16	33.30
23	Heteranomia squamula	2.80	0.61	1.89	1.12	34.42
24	Eusyllis blomstrandi	2.41	0.59	4.25	1.09	35.51
25	Scalibregma inflatum	2.49	0.58	2.38	1.08	36.59
26	Exogone verugera	2.56	0.57	1.55	1.05	37.65
	Protodorvillea kefersteini	2.42	0.57	1.79	1.05	38.69
28	Caulleriella alata	2.05	0.56	5.28	1.04	39.73
29	Sphaerosyllis taylori	2.11	0.54	2.93	1.01	40.74
30	NUDIBRANCHIA indet.	2.21	0.54	2.79	1.00	41.74
31	Eumida juv.	2.18	0.53	2.90	0.98	42.72
32	Hesionura elongata	2.51	0.52	1.25	0.96	43.68
33	Gibbula tumida	2.72	0.51	1.38	0.95	44.63
34	Exogone hebes	2.19	0.51	1.58	0.94	45.57
	Terebellides stroemi	2.47	0.51	1.63	0.94	46.51
36	Aurospio banyulensis	2.04	0.50	2.37	0.93	47.44
37	Mysella bidentata	2.40	0.49	1.36	0.92	48.36
38	Laonice bahusiensis	2.17	0.48	1.81	0.89	49.24
39	Bodotria scorpioides	2.39	0.47	1.03	0.87	50.11
40	ANOMURA juv.	2.14	0.45	1.30	0.83	50.94
41	Urothoe elegans	2.34	0.44	1.00	0.81	51.75
42	Grania spp.	1.95	0.42	1.65	0.78	52.54
43	Thracia villosiuscula	2.02	0.42	1.37	0.77	53.31
44	Abludomelita obtusata	2.15	0.41	0.93	0.76	54.07
45	Echinocyamus pusillus	2.00	0.39	1.15	0.72	54.79

Table A10.9b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IVa (18 stations: average similarity 54.06%)

A10.10a Assemblage IVb

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Lagis koreni	6	343.5	17–1560	22.36	22.36
2	Pseudocuma similis	6	56.5	1–200	3.68	26.03
3	Spiophanes bombyx	6	51.8	14–86	3.37	29.41
4	Echinocyamus pusillus	6	47.3	17–84	3.08	32.49
5	Scalibregma inflatum	6	42.3	4–82	2.76	35.24
6	Spisula elliptica	6	40.3	19–93	2.63	37.87
7	Mediomastus fragilis	6	40.2	6–99	2.61	40.48
8	Ampharete lindstroemi	3	38.8	0–80	2.53	43.01
9	Aonides paucibranchiata	6	31.3	3–109	2.04	45.05
10	Mysella bidentata	5	29.2	0–80	1.90	46.95
11	Goodallia triangularis	6	23.5	1–51	1.53	48.48
12	Mytilus edulis	6	23.0	6–47	1.50	49.97
13	MYTILIDAE juv.	1	22.5	135	1.46	51.44
14	NEMERTEA indet.	6	22.2	11–42	1.44	52.88
15	Ampelisca spinipes	6	22.0	3–47	1.43	54.31
16	Timoclea ovata	6	18.8	2–38	1.23	55.54
17	Thracia villosiuscula	5	17.8	0–37	1.16	56.70
18	Gammaropsis cornuta	2	15.8	0–85	1.03	57.73
	Balanus crenatus	3	15.8	0–62	1.03	58.76
20	Hesionura elongata	6	15.0	3–24	0.98	59.74
21	Eumida juv.	6	12.5	1–52	0.81	60.55
22	ANTHOZOA indet.	5	11.8	0–44	0.77	61.32
	Unciola planipes	5	11.8	0–35	0.77	62.09
24	Thyone fusus	4	11.7	0–57	0.76	62.85
25	Stenothoe marina	6	11.3	3–19	0.74	63.59
26	Ophelia juv.	6	11.2	4–18	0.73	64.31
27	Exogone verugera	6	10.2	1–23	0.66	64.97
28	TEREBELLIDAE juv.	6	9.7	1–22	0.63	65.60
29	Sabellaria spinulosa	6	9.3	1–45	0.61	66.21
	Streptosyllis bidentata	6	9.3	2–25	0.61	66.82
	Anoplodactylus petiolatus	6	9.3	3–19	0.61	67.43
33	Phoronis spp.	5	9.2	0–33	0.60	68.02
33	Polycirrus spp.	6	9.0	2–14	0.59	68.61
34	Exogone hebes	6	8.8	2–26	0.57	69.18
35	Abra prismatica	6	8.7	1–33	0.56	69.75
36	Aurospio banyulensis	6	8.0	1–19	0.52	70.27
	Alcyonidium parasiticum	**4**	**P2**	**0–P3**	**0.52**	**70.79**
38	Owenia fusiformis	6	7.8	2–13	0.51	71.30
39	Lumbrineris gracilis	5	7.2	0–15	0.47	71.76
40	HARMOTHOINAE indet.	6	7.0	1–13	0.46	72.22
	Sertularia argentea	**4**	**P2**	**0–P3**	**0.46**	**72.68**

Table A10.10a: Top ranked taxa for Assemblage group IVb (6 stations)

A10.10b Assemblage IVb

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Lagis koreni	4.78	1.61	3.93	3.17	3.17
2	Spiophanes bombyx	3.80	1.43	3.68	2.82	5.99
3	Echinocyamus pusillus	3.70	1.36	7.68	2.68	8.67
4	Spisula elliptica	3.55	1.33	5.73	2.62	11.29
5	Mediomastus fragilis	3.42	1.18	5.03	2.34	13.63
6	NEMERTEA indet.	3.05	1.15	7.39	2.27	15.90
7	Mytilus edulis juv.	2.93	1.04	3.17	2.05	17.95
8	Scalibregma inflatum	3.17	0.95	2.93	1.88	19.83
9	Pseudocuma similis	3.29	0.95	2.01	1.87	21.70
10	Ampelisca spinipes	2.82	0.92	3.67	1.82	23.52
11	Timoclea ovata	2.70	0.90	2.52	1.78	25.30
12	Hesionura elongata	2.60	0.89	4.20	1.75	27.05
13	Aonides paucibranchiata	2.81	0.84	2.43	1.65	28.70
	Stenothoe marina	2.37	0.84	3.24	1.65	30.36
15	Ophelia juv.	2.34	0.81	5.86	1.60	31.96
16	Goodallia triangularis	2.64	0.74	1.61	1.46	33.42
17	Polycirrus spp.	2.15	0.73	3.08	1.44	34.86
18	Anoplodactylus petiolatus	2.16	0.72	4.68	1.42	36.28
19	Spio sp. A	1.97	0.70	3.90	1.39	37.67
20	Exogone hebes	2.02	0.67	2.84	1.32	38.99
21	Mysella bidentata	2.64	0.66	1.08	1.30	40.29
22	Streptosyllis bidentata	2.06	0.65	2.49	1.28	41.57
23	Owenia fusiformis	2.00	0.64	3.26	1.26	42.83
24	Lanice conchilega	1.85	0.63	2.46	1.24	44.07
25	HARMOTHOINAE indet.	1.92	0.62	2.56	1.23	45.30
26	TEREBELLIDAE juv.	2.01	0.60	1.70	1.18	46.49
27	Exogone verugera	2.06	0.59	2.58	1.15	47.64
28	Eumida juv.	2.00	0.58	2.25	1.14	48.79
29	Glycera indet.	1.81	0.56	5.60	1.11	49.89
30	Notomastus sp. E juv.	1.54	0.54	2.72	1.06	50.95
31	Clymenura sp.	1.59	0.51	4.23	1.02	51.97
32	Clymenura johnstoni	1.75	0.51	1.21	1.01	52.98
33	Amphilochus neapolitanus	1.69	0.51	3.50	1.00	53.98
	Molgula indet.?	1.56	0.51	1.35	1.00	54.98
35	Abludomelita obtusata	1.65	0.50	4.27	0.99	55.97
36	Grania spp.	1.69	0.50	2.81	0.98	56.95
	Thracia villosiuscula	2.16	0.49	0.97	0.98	57.93
38	Aurospio banyulensis	1.80	0.48	2.52	0.94	58.87
39	Aricidea cerrutii	1.42	0.47	3.07	0.93	59.80
	Caulleriella zetlandica	1.46	0.47	1.32	0.93	60.73
41	Nephtys cirrosa	1.47	0.44	1.25	0.88	61.60
42	Glycera oxycephala	1.36	0.44	4.89	0.86	62.47
	Unciola planipes	1.90	0.44	1.14	0.86	63.33
44	Poecilochaetus serpens	1.41	0.43	2.75	0.85	64.18

Table A10.10b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage group IVb (6 stations: average similarity 50.65%)

Appendix 10

A10.11 Assemblage IVc

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	**Electra pilosa**	**1**	**P5**		**5.87**	**5.87**
	Hydrallmania falcata	**1**	**P5**		**5.87**	**11.75**
3	Timoclea ovata	1	112		4.44	16.19
4	Aora gracilis	1	111		4.40	20.60
5	Stenothoe marina	1	82		3.25	23.85
6	Spiophanes bombyx	1	59		2.34	26.19
	Microjassa cumbrensis	1	59		2.34	28.53
8	Mysella bidentata	1	55		2.18	30.71
9	**Scrupocellaria scruposa**	**1**	**P4**		**2.14**	**32.86**
10	Mediomastus fragilis	1	50		1.98	34.84
11	Lumbrineris gracilis	1	48		1.90	36.75
12	Echinocyamus pusillus	1	46		1.83	38.57
13	Syllis sp. E	1	42		1.67	40.24
14	Eusyllis blomstrandi	1	41		1.63	41.87
15	Cressa dubia	1	39		1.55	43.41
16	Clymenura johnstoni	1	36		1.43	44.84
17	Mytilus edulis	1	32		1.27	46.11
18	Achelia echinata	1	31		1.23	47.34
19	Amphilochus neapolitanus	1	29		1.15	48.49
	Aurospio banyulensis	1	29		1.15	49.64
21	Notomastus sp. D	1	24		0.95	50.60
22	**Sertularia argentea**	**1**	**P3**		**0.79**	**51.39**
	Halecium spp.	**1**	**P3**		**0.79**	**52.18**
	Alcyonidium mytili	**1**	**P3**		**0.79**	**52.98**
	Alcyonidium parasiticum	**1**	**P3**		**0.79**	**53.77**
	Diphasia rosacea	**1**	**P3**		**0.79**	**54.56**
	Tubulipora liliacea	**1**	**P3**		**0.79**	**55.36**
	Halecium lankesteri	**1**	**P3**		**0.79**	**56.15**
	Vesicularia spinosa	**1**	**P3**		**0.79**	**56.94**
	Amathia lendigera	**1**	**P3**		**0.79**	**57.74**
	Escharina johnstoni	**1**	**P3**		**0.79**	**58.53**
	Scruparia ambigua	**1**	**P3**		**0.79**	**59.33**
	HADROMERIDA indet.	**1**	**P3**		**0.79**	**60.12**
	Crisia denticulata	**1**	**P3**		**0.79**	**60.91**
	Aetea anguina	**1**	**P3**		**0.79**	**61.71**
36	Gammaropsis cornuta	1	19		0.75	62.46
	Modiolus modiolus	1	19		0.75	63.21
38	HARMOTHOINAE indet.	1	18		0.71	63.93
	ANTHOZOA indet.	1	18		0.71	64.64
40	Polycirrus spp.	1	17		0.67	65.32
	Paradoneis lyra	1	17		0.67	65.99
42	Glycera lapidum	1	16		0.63	66.63

Table A10.11: Top ranked taxa for Assemblage group IVc (1 station, OBC 7)

A10.11 Assemblage IVc

This subgroup was only represented by a single station

A10.12a Assemblage IVd

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Ampharete lindstroemi	3	549.0	0–2080	17.23	17.23
2	Lagis koreni	4	540.3	94–1374	16.96	34.19
3	Spisula elliptica	4	272.0	27–894	8.54	42.72
4	Hesionura elongata	4	187.3	68–249	5.88	48.60
5	Ampelisca spinipes	4	144.8	4–562	4.54	53.14
6	Abra alba	3	106.5	0–213	3.34	56.48
7	Mytilus edulis	4	104.3	18–156	3.27	59.76
8	AMPHARETIDAE juv.	2	99.8	0–365	3.13	62.89
9	Mediomastus fragilis	4	82.0	11–243	2.57	65.46
10	Scalibregma inflatum	4	79.5	13–271	2.50	67.96
11	Microphthalmus similis	4	71.0	17–184	2.23	70.18
12	Protodorvillea kefersteini	4	49.5	3–120	1.55	71.74
13	Aonides paucibranchiata	4	44.3	14–113	1.39	73.13
14	Ampharete sp.	1	40.3	0–161	1.26	74.39
15	Gammaropsis cornuta	3	37.5	0–146	1.18	75.57
16	Spiophanes bombyx	4	34.5	17–77	1.08	76.65
17	Stenothoe marina	4	30.0	3–94	0.94	77.59
18	Grania spp.	4	29.5	14–36	0.93	78.52
19	Polycirrus spp.	4	25.8	3–46	0.81	79.33
20	Streptosyllis bidentata	4	25.0	9–34	0.78	80.11
21	Aora gracilis	4	24.5	1–88	0.77	80.88
22	Goodallia triangularis	4	24.0	2–53	0.75	81.63
23	Eteone cf. longa	4	23.3	6–69	0.73	82.36
24	**Electra pilosa**	**4**	**P3**	**P1–P4**	**0.66**	**83.02**
25	NEMERTEA indet.	4	20.3	11–26	0.64	83.66
26	HARMOTHOINAE sp. indet.	4	20.0	2–35	0.63	84.28
27	**Sertularia argentea**	**2**	**P3**	**0–P4**	**0.58**	**84.86**
28	Pariambus typicus	4	16.5	3–54	0.52	85.38
29	Eumida sp. juv.	4	16.3	4–38	0.51	85.89
30	Thracia villosiuscula	3	15.0	0–51	0.47	86.36
31	SIPUNCULA indet.	3	14.5	0–55	0.46	86.82
32	Phoronis spp. indet.	4	14.3	4–33	0.45	87.27
33	Pisione remota	4	13.3	5–22	0.42	87.68
34	Abludomelita obtusata	4	11.8	2–34	0.37	88.05
35	Lanice conchilega	4	10.5	7–14	0.33	88.38
36	Pholoe sp. juv.	1	10.3	41	0.32	88.70
37	Eumida bahusiensis	3	10.0	2–28	0.31	89.02
38	Sphaerosyllis taylori	3	9.5	2–33	0.30	89.31
39	Poecilochaetus serpens	3	9.0	2–31	0.28	89.60
40	Spio sp. A	4	8.5	2–17	0.27	89.86

Table A10.12a: Top ranked taxa for Assemblage group IVd (4 stations)

A10.12b Assemblage IVd

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Lagis koreni	5.87	2.33	27.63	4.60	4.60
2	Hesionura elongata	5.13	2.19	5.10	4.32	8.92
3	Mytilus edulis juv.	4.40	1.77	3.17	3.49	12.41
4	Spisula elliptica	4.74	1.75	4.84	3.45	15.86
5	Microphthalmus similis	3.86	1.44	11.23	2.85	18.71
6	Grania spp.	3.36	1.40	21.59	2.77	21.48
7	Spiophanes bombyx	3.38	1.35	12.24	2.67	24.15
8	Mediomastus fragilis	3.78	1.35	4.91	2.66	26.81
9	Aonides paucibranchiata	3.49	1.34	7.09	2.65	29.46
10	Streptosyllis bidentata	3.15	1.29	3.73	2.55	32.01
11	Scalibregma inflatum	3.51	1.25	15.12	2.46	34.47
12	NEMERTEA indet.	2.95	1.18	9.47	2.33	36.81
13	Polycirrus spp.	2.94	1.03	2.28	2.03	38.84
14	Lanice conchilega	2.41	1.01	5.32	1.99	40.83
15	Protodorvillea kefersteini	3.19	0.98	2.22	1.94	42.77
16	Eteone cf. longa	2.70	0.97	6.53	1.91	44.68
17	Pisione remota	2.48	0.92	5.18	1.82	46.50
18	HARMOTHOINAE indet.	2.72	0.90	2.30	1.78	48.28
	Abra alba	3.62	0.90	0.91	1.78	50.06
20	Eumida juv.	2.55	0.89	3.96	1.77	51.82
21	Phoronis spp.	2.48	0.89	8.88	1.75	53.57
22	**Electra pilosa**	**2.63**	**0.86**	**2.96**	**1.69**	**55.26**
23	Goodallia triangularis	2.68	0.85	1.70	1.68	56.94
24	Ampelisca spinipes	2.99	0.81	45.26	1.60	58.54
25	Stenothoe marina	2.59	0.77	1.99	1.52	60.06
26	Asterias rubens juv.	1.91	0.72	2.75	1.41	61.47
27	Spio sp. A	2.02	0.68	2.83	1.34	62.82
28	Pariambus typicus	2.18	0.67	8.25	1.32	64.13
29	Moerella pygmaea	1.77	0.64	2.51	1.27	65.40
30	Ampharete lindstroemi	3.66	0.63	0.82	1.25	66.64
31	Abludomelita obtusata	2.06	0.62	3.53	1.23	67.87
32	Glycera indet.	1.70	0.60	2.11	1.19	69.06
33	Anoplodactylus petiolatus	1.50	0.53	6.41	1.05	70.11
34	Aora gracilis	2.15	0.52	2.73	1.02	71.13
35	Liocarcinus juv.	1.67	0.51	2.32	1.01	72.14
36	Diastylis bradyi	1.34	0.47	2.04	0.92	73.06
37	Nephtys cirrosa	1.41	0.42	1.50	0.83	73.89
38	Polygordius sp.	1.38	0.41	0.89	0.80	74.69
39	Gastrosaccus spinifer	1.43	0.39	0.90	0.78	75.47
40	Eulalia mustela	1.28	0.39	2.35	0.77	76.24
41	Thracia villosiuscula	1.82	0.37	0.87	0.73	76.97
	Eumida bahusiensis	1.72	0.37	0.78	0.73	77.70
43	Pseudopolydora pulchra	1.10	0.36	3.60	0.71	78.41
44	Polygordius appendiculatus	1.42	0.35	0.91	0.70	79.11

Table A10.12b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage IVd (4 stations: average similarity 50.68%)

Appendix 10

A10.13a Assemblage IVe

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	Mytilus edulis juv.	5	300.2	20–925	7.37	7.37
2	Sphenia binghami	5	198.4	31–467	4.87	12.24
3	Heteranomia squamula	5	175.8	52–462	4.32	16.56
4	Sabellaria spinulosa	5	149.0	20–231	3.66	20.22
5	HARMOTHOINAE indet.	5	137.8	49–334	3.38	23.60
6	Mediomastus fragilis	5	134.0	24–231	3.29	26.89
7	Lumbrineris gracilis	5	128.2	43–226	3.15	30.04
8	Ericthonius punctatus	4	122.0	0–596	3.00	33.03
9	Ampelisca spinipes	5	106.0	3–239	2.60	35.63
10	Abra alba	5	105.8	11–315	2.60	38.23
11	Aora gracilis	5	102.4	3–456	2.51	40.74
12	Pholoe sp. B	5	101.6	59–165	2.49	43.24
13	Verruca stroemi	5	97.4	1–270	2.39	45.63
14	Gammaropsis maculata	5	89.6	10–167	2.20	47.83
15	Dendrodoa grossularia	4	84.0	0–167	2.06	49.89
16	Pisidia longicornis	5	57.8	1–129	1.42	51.31
17	Ampharete lindstroemi	5	52.2	2–143	1.28	52.59
18	Terebellides stroemi	5	52.0	17–116	1.28	53.87
19	Parvicardium ovale	3	51.0	0–187	1.25	55.12
20	Stenothoe marina	5	48.6	11–137	1.19	56.31
21	Caulleriella zetlandica	4	42.6	0–100	1.05	57.36
22	Achelia echinata	5	42.4	1–126	1.04	58.40
23	**Electra pilosa**	**5**	**P3/P4**	**P–P5**	**1.04**	**59.44**
24	**Hydrallmania falcata**	**5**	**P3/P4**	**P–P5**	**0.87**	**60.31**
25	Ampelisca diadema	2	33.2	0–165	0.82	61.12
26	Parvicardium scabrum	4	32.0	0–69	0.79	61.91
27	Lepidonotus squamatus	5	30.8	10–53	0.76	62.66
28	NEMERTEA indet.	5	30.6	5–58	0.75	63.41
	Eusyllis blomstrandi	5	30.6	1–133	0.75	64.17
30	Timoclea ovata	4	30.0	0–84	0.74	64.90
	Bodotria scorpioides	4	30.0	0–91	0.74	65.64
32	Pomatoceros lamarckii	5	29.4	5–86	0.72	66.36
33	Nephtys kersivalensis	4	29.0	0–66	0.71	67.07
34	Modiolus modiolus	4	27.0	0–67	0.66	67.74
35	Gammaropsis cornuta	5	26.8	2–71	0.66	68.39
36	Gibbula tumida	5	24.4	9–58	0.60	68.99
37	Leptochiton asellus	4	24.2	0–83	0.59	69.59
38	Lagis koreni	3	23.6	0–57	0.58	70.17
39	Exogone verugera	5	22.4	2–70	0.55	70.72
	AMPHIURIDAE juv.	4	22.4	0–60	0.55	71.27
41	Microjassa cumbrensis	3	21.0	0–93	0.52	71.78
42	**Bicellariella ciliata**	**5**	**P3**	**P1–P4**	**0.51**	**72.29**
43	Laonice sp.	5	20.4	9–34	0.50	72.79
44	Aurospio banyulensis	5	20.2	1–36	0.50	73.29
45	Pusillina inconspicua	4	19.8	0–75	0.49	73.77
	Chone juv.	3	19.8	0–46	0.49	74.26
	Cressa dubia	5	19.8	3–56	0.49	74.75
48	**Alcyonidium mytili**	**5**	**P3**	**P–P4**	**0.47**	**75.22**
49	Nucula nucleus	4	18.8	0–53	0.46	75.68
50	Praxillella affinis	5	18.6	3–38	0.46	76.14

Table A10.13a: Top ranked taxa for Assemblage group IVe (5 stations)

A10.13b Assemblage IVe

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Sphenia binghami	4.98	1.12	3.84	2.07	2.07
2	Sabellaria spinulosa	4.76	1.08	3.10	2.01	4.08
3	Pholoe sp. B	4.56	1.08	9.38	1.99	6.07
	Lumbrineris gracilis	4.71	1.07	10.30	1.99	8.06
5	Heteranomia squamula	4.82	1.07	6.99	1.98	10.04
6	HARMOTHOINAE indet.	4.68	1.05	9.95	1.94	11.98
7	Mediomastus fragilis	4.66	1.02	6.58	1.89	13.87
8	Mytilus edulis juv.	4.91	0.99	4.66	1.83	15.69
9	Gammaropsis maculata	4.10	0.84	3.73	1.55	17.25
10	Terebellides stroemi	3.75	0.82	7.57	1.52	18.76
11	Abra alba	3.99	0.77	5.95	1.43	20.19
12	Stenothoe marina	3.57	0.75	8.69	1.39	21.59
13	Lepidonotus squamatus	3.30	0.72	5.89	1.33	22.92
14	Ampelisca spinipes	3.78	0.66	2.20	1.23	24.15
15	Laonice sp.	2.97	0.66	12.81	1.22	25.37
	NEMERTEA indet.	3.21	0.66	4.28	1.22	26.59
17	Gibbula tumida	3.01	0.64	12.54	1.19	27.77
18	Caulleriella alata	2.87	0.64	6.56	1.18	28.95
19	Pomatoceros lamarckii	2.98	0.59	2.88	1.10	30.05
20	Aora gracilis	3.25	0.56	3.38	1.03	31.08
21	NUDIBRANCHIA indet.	2.46	0.54	4.65	1.00	32.08
	Verruca stroemi	3.41	0.54	1.09	1.00	33.08
	Phoronis spp.	2.45	0.54	6.68	1.00	34.08
24	Gammaropsis cornuta	2.89	0.53	2.43	0.99	35.06
	Bicellariella ciliata	**2.71**	**0.53**	**2.42**	**0.99**	**36.05**
26	Onoba semicostata	2.47	0.52	4.63	0.96	37.02
	Tapes rhomboides	2.31	0.52	8.80	0.96	37.98
28	Achelia echinata	3.04	0.51	1.66	0.95	38.93
29	Pisidia longicornis	3.24	0.51	1.51	0.94	39.87
	Dendrodoa grossularia	3.31	0.51	0.89	0.94	40.81
	Parvicardium scabrum	2.86	0.51	1.11	0.94	41.75
32	Ampharete lindstroemi	3.13	0.50	2.05	0.93	42.68
	Aurospio banyulensis	2.72	0.50	1.85	0.93	43.61
34	Praxillella affinis	2.63	0.49	3.23	0.92	44.52
35	Polycarpa fibrosa?	2.11	0.48	5.74	0.89	45.42
36	Exogone verugera	2.65	0.48	2.91	0.89	46.30
	Pholoe tuberculata	2.06	0.48	6.90	0.89	47.19
38	Sphaerosyllis sp. Y	2.32	0.48	4.83	0.88	48.08
39	ANTHOZOA indet.	2.30	0.45	2.22	0.84	48.92
40	Scalibregma celticum	2.30	0.45	3.28	0.83	49.75
41	Modiolus modiolus	2.73	0.44	1.13	0.82	50.57
42	Polycirrus spp.	2.05	0.43	6.46	0.81	51.37
43	Cressa dubia	2.42	0.42	2.35	0.78	52.16
	Scalibregma inflatum	2.46	0.42	2.08	0.78	52.93
45	Caulleriella zetlandica	2.93	0.42	1.07	0.77	53.70
46	Amphilochus manudens	2.07	0.41	3.39	0.76	54.46
47	TUBIFICIDAE spp.	2.15	0.41	3.87	0.75	55.21
	AMPHIURIDAE juv.	2.56	0.40	1.14	0.75	55.96
49	Timoclea ovata	2.71	0.40	1.14	0.74	56.70

Table A10.13b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage IVe (5 stations: average similarity 53.95%)

A10.14a Assemblage IVf

Rank	Taxon	f	Mean/0.2 m^2	Range/0.2 m^2	%	Cumulative %
1	MYTILIDAE juv.	2	792.7	0–1775	37.67	37.67
2	Stenothoe marina	3	239.0	132–441	11.36	49.03
3	Mytilus edulis	1	123.7	0–371	5.88	54.90
4	Hesionura elongata	3	98.0	10–217	4.66	59.56
5	Aora gracilis	3	91.7	19–237	4.36	63.92
6	Spisula elliptica	3	48.0	31–71	2.28	66.20
7	Goodallia triangularis	3	38.0	25–53	1.81	68.00
8	TEREBELLIDAE juv.	3	36.7	7–30	1.74	69.74
9	**Sertularia argentea**	**2**	**P3/P4**	**0–P4**	**1.71**	**71.46**
10	Eusyllis blomstrandi	3	35.7	16–59	1.69	73.15
11	**Electra pilosa**	**3**	**P3/P4**	**P3–P4**	**1.49**	**74.64**
12	NUDIBRANCHIA indet.	2	27.3	0–74	1.30	75.94
13	**Sertularella polyzonias**	**1**	**P3**	**0–P4**	**0.86**	**76.79**
14	ANOMURA juv.	3	16.0	2–41	0.76	77.55
15	Pseudocuma similis	2	15.0	0–39	0.71	78.27
16	Autolytus prolifera	3	13.7	5–28	0.65	78.92
	Alcyonidium parasiticum	**3**	**13.7**	**P–P3**	**0.65**	**79.57**
18	Streptosyllis bidentata	3	13.3	4–19	0.63	80.20
19	Grania spp.	2	13.0	0–24	0.62	80.82
20	Spiophanes bombyx	3	12.7	2–19	0.60	81.42
	Amphilochus neapolitanus	3	12.7	5–18	0.60	82.02
	Microphthalmus similis	1	12.7	0–38	0.60	82.62
23	QUESTIDAE sp.	1	12.0	0–36	0.57	83.19
24	Abludomelita obtusata	3	11.0	4–18	0.52	83.72
	Sabella sp.	3	11.0	3–20	0.52	84.24
26	HARMOTHOINAE indet.	1	10.7	0–32	0.51	84.75
27	Autolytus indet.	3	10.0	7–14	0.48	85.22
28	NEMERTEA indet.	3	9.3	7–12	0.44	85.66
	Diphasia rosacea	**3**	**P2**	**P–P3**	**0.44**	**86.11**
30	Aonides paucibranchiata	3	8.3	6–12	0.40	86.50
	Exogone hebes	3	8.3	1–20	0.40	86.90
32	Echinocyamus pusillus	2	7.7	0–17	0.36	87.26
	Lepidonotus squamatus	2	7.7	0–22	0.36	87.63
	Moerella pygmaea	3	7.7	4–10	0.36	87.99
35	Lagis koreni	3	7.3	2–11	0.35	88.34
36	Microjassa cumbrensis	2	7.0	0–20	0.33	88.67
	Nymphon brevirostre	3	7.0	1–14	0.33	89.01
38	**Calycella syringa**	**1**	**P2**	**0–P3**	**0.32**	**89.32**
	Tubularia indivisa	**1**	**P2**	**0–P3**	**0.32**	**89.64**
40	Mediomastus fragilis	3	6.0	4–9	0.29	89.93
	Proceraea cornuta	3	6.0	2–14	0.29	90.21
42	Clymenura johnstoni	3	5.7	1–8	0.27	90.48
	Protodriloides chaetifer	2	5.7	0–13	0.27	90.75
	Macrochaeta helgolandica	2	5.7	0–14	0.27	91.02

Table A10.14a: Top ranked taxa for Assemblage IVf (3 stations)

A10.14b Assemblage IVf

	Taxon	Average Abundance	Average Similarity	Sim./SD	%	Cumulative %
1	Stenothoe marina	5.32	2.70	10.73	5.15	5.15
2	Spisula elliptica	3.83	1.95	16.39	3.72	8.88
3	Goodallia triangularis	3.62	1.85	18.04	3.53	12.40
4	Hesionura elongata	4.00	1.68	2.25	3.21	15.61
5	**Electra pilosa**	**3.37**	**1.67**	**10.64**	**3.19**	**18.80**
6	Eusyllis blomstrandi	3.47	1.67	15.21	3.18	21.98
7	Aora gracilis	3.82	1.64	10.64	3.14	25.12
8	TEREBELLIDAE juv.	3.27	1.37	4.43	2.61	27.73
9	NEMERTEA indet.	2.32	1.19	6.57	2.26	29.99
	Autolytus indet.	2.36	1.18	9.59	2.26	32.25
11	Amphilochus neapolitanus	2.50	1.18	2.77	2.25	34.50
12	MYTILIDAE juv.	4.63	1.16	0.58	2.22	36.72
13	Streptosyllis bidentata	2.50	1.14	2.19	2.18	38.89
14	Aonides paucibranchiata	2.20	1.09	15.11	2.08	40.97
15	Autolytus prolifera	2.45	1.05	15.75	2.01	42.98
16	Abludomelita obtusata	2.35	1.04	3.71	1.99	44.97
17	Moerella pygmaea	2.10	1.00	7.14	1.91	46.87
18	Sabella sp.	2.28	0.94	2.95	1.80	48.68
19	Mediomastus fragilis	1.90	0.91	18.35	1.74	50.42
20	Spiophanes bombyx	2.33	0.90	1.91	1.72	52.14
21	Polycarpa fibrosa?	1.67	0.88	10.64	1.69	53.83
22	Sphaerosyllis taylori	1.79	0.83	11.66	1.58	55.41
23	Lagis koreni	1.96	0.82	2.17	1.57	56.98
24	**Sertularia argentea**	**2.67**	**0.80**	**0.58**	**1.54**	**58.51**
25	**Alcyonidium parasiticum**	**2.26**	**0.77**	**1.19**	**1.47**	**59.99**
26	**Bougainvillia ramosa**	**1.62**	**0.76**	**10.64**	**1.45**	**61.44**
	Clytia hemisphaerica	**1.62**	**0.76**	**10.64**	**1.45**	**62.89**
	Bugula avicularia	**1.39**	**0.76**	**10.64**	**1.45**	**64.34**
29	ANOMURA juv.	2.21	0.73	3.31	1.39	65.73
30	Nephtys cirrosa	1.66	0.72	4.58	1.37	67.10
31	Exogone naidina	1.43	0.65	6.38	1.25	68.35
32	Clymenura johnstoni	1.70	0.63	1.56	1.20	69.56
33	**Diphasia rosacea**	**1.94**	**0.61**	**1.65**	**1.17**	**70.73**
34	Proceraea cornuta	1.64	0.60	10.64	1.15	71.88
	Asterias rubens juv.	1.59	0.60	10.64	1.15	73.03
36	Nymphon brevirostre	1.78	0.59	1.77	1.12	74.15
37	Exogone hebes	1.78	0.56	1.61	1.08	75.23
38	Grania spp.	2.00	0.56	0.58	1.06	76.29
39	Glycera indet.	1.43	0.50	2.89	0.95	77.24
40	Eumida juv.	0.96	0.46	2.65	0.88	78.12
	Aricidea cerrutii	0.96	0.46	2.65	0.88	79.00
42	Opisthodonta pterochaeta	1.06	0.45	3.51	0.87	79.87
	Lanice conchilega	1.13	0.45	3.51	0.87	80.73
	Polycirrus spp.	1.13	0.45	3.51	0.87	81.60

Table A10.14b: Top-ranked taxa and contributions to average similarity (SIMPER analysis; log transformed abundances) for Assemblage IVf (3 stations: average similarity 52.38%)

Appendix 11

Diversity and Evenness Values for each OBCMHS Station

Group	Station	Annelida	Mollusca	Arthropoda	Others	Total
I	113	17	2	5	1	25
	114	13	5	5	0	23
	115	8	3	3	0	14
IIa	72	18	8	15	2	43
	92	15	13	20	3	51
IIb	68	42	16	17	9	84
	70	32	10	24	9	75
	71	24	19	9	7	59
	73	25	17	17	6	65
	74	36	17	15	7	75
	75	21	20	12	7	60
	76	30	17	13	8	68
	77	52	23	30	8	113
	82	35	10	18	6	69
	85	28	17	19	7	71
	86	36	18	23	9	86
	87	46	23	20	12	101
	88	23	17	22	9	71
	89	34	14	21	12	81
	90	31	13	29	11	84
	136	31	19	19	12	81
	137	37	20	24	12	93
IIc	57	25	7	16	4	52
	63	23	10	15	6	54
	83	28	10	9	8	55
	94	30	10	9	5	54
	95	30	6	10	3	49
IId	55	37	12	16	6	71
	56	39	11	14	10	74
	58	86	24	35	21	166
	61	63	11	28	15	117
	62	41	13	18	9	81
	79	36	11	8	7	62
	96	47	12	20	11	90
	97	57	13	17	10	97
	134	51	11	12	7	81
	144	29	10	21	8	68
II other	1	43	19	23	15	100
IIIa	8	33	5	14	3	55
	9	54	15	14	11	94
	10	49	14	11	7	81
	11	44	13	15	7	79
	24	57	13	8	7	85
	37	42	9	12	6	69
	40	51	10	8	8	77
	41	40	9	9	5	63
	43	31	11	7	4	53
	46	31	8	10	11	60
	47	31	9	10	3	53
	48	37	5	11	1	54
	49	35	8	14	8	65
	51	39	9	7	7	62
	107	32	3	9	3	47
	108	33	5	5	1	44
	109	34	7	4	4	49
	111	30	10	4	4	48
	122	38	10	2	6	56
	123	36	8	6	2	52
	131	28	7	11	4	50
	133	29	16	7	3	55
	138	31	10	14	7	62
	139	23	6	13	7	49
	140	30	5	6	6	47

Table A11.1: Number of taxa (S/0.2m^2) at each Outer Bristol Channel quantitative station

Group	Station	Annelida	Mollusca	Arthropoda	Others	Total
	141	47	10	15	6	78
	143	28	8	18	9	63
	145	21	6	14	4	45
	146	45	7	12	5	69
	147	28	3	7	3	41
	148	36	6	11	2	55
IIIb	53	32	6	14	3	55
	54	28	6	13	5	52
	59	49	15	21	13	98
	60	46	12	20	10	88
	65	56	14	25	10	105
	69	31	14	16	8	69
	78	32	12	15	6	65
	81	55	17	18	12	102
	84	21	7	7	1	36
	91	23	7	18	4	52
	93	17	8	10	2	37
	101	36	9	17	6	68
	102	37	8	28	4	77
	103	51	12	32	8	103
	104	23	7	15	1	46
	112	51	11	14	6	82
	124	44	10	13	4	71
	129	41	10	13	4	68
	130	46	11	18	5	80
	132	30	11	12	4	57
IIIc	105	17	3	8	2	30
	106	22	2	9	4	37
IIId	5	45	14	9	10	78
	26	59	21	19	6	105
	27	32	12	13	6	63
	64	49	21	17	11	98
Other	135	26	8	7	6	47
IVa	4	78	22	31	10	141
	6	85	31	35	14	165
	14	84	28	31	17	160
	15	81	22	25	10	138
	17	92	30	30	17	169
	18	94	24	42	8	168
	19	114	30	49	14	207
	22	89	28	38	14	169
	23	79	21	30	14	144
	29	95	31	40	15	181
	30	113	40	38	17	208
	31	97	30	39	14	180
	32	104	35	30	18	187
	34	81	26	34	19	160
	36	77	25	26	14	142
	38	98	24	31	15	168
	39	99	24	31	15	169
	42	45	7	11	5	68
IVb	25	61	17	22	11	111
	35	74	21	26	11	132
	98	86	20	24	17	147
	99	81	25	35	19	160
	100	63	16	25	13	117
	142	98	21	32	21	172
IVc	7	113	38	46	14	211
IVd	50	71	19	23	11	124
	52	49	7	21	6	83
	80	69	16	20	13	118
	110	71	14	19	7	111
IVe	16	100	29	36	16	181
	20	111	29	47	21	208
IVf	44	50	12	23	13	98
Other	2	16	6	8	3	33

Group	Station	Annelida	Mollusca	Arthropoda	Others	Total
I	113	217	80	45	2	344
	114	67	35	12	0	114
	115	46	14	10	0	70
IIa	72	330	143	130	13	616
	92	123	119	180	8	430
IIb	68	1029	373	112	223	1737
	70	445	139	155	57	796
	71	967	235	307	94	1603
	73	695	278	186	41	1200
	74	1075	234	226	115	1650
	75	313	213	120	31	677
	76	638	148	47	38	871
	77	1113	397	130	86	1726
	82	682	210	207	27	1126
	85	1248	395	150	50	1843
	86	1628	498	250	124	2500
	87	1802	246	112	142	2302
	88	1215	506	764	131	2616
	89	2323	439	233	88	3083
	90	1650	468	524	174	2816
	136	1301	1965	276	227	3769
	137	821	1170	275	255	2521
IIc	57	1704	434	375	21	2534
	63	1109	76	113	23	1321
	83	6991	705	203	19	7918
	94	3865	440	218	27	4550
	95	864	142	65	5	1076
IId	55	990	519	176	25	1710
	56	3372	1920	224	77	5593
	58	1791	651	399	122	2963
	61	2696	339	308	183	3526
	62	1141	465	156	173	1935
	79	446	272	23	69	810
	96	3763	336	311	271	4681
	97	2399	746	160	139	3444
	134	1965	241	93	101	2400
	144	275	105	178	57	615
II other	1	8144	2674	1866	269	12953
IIIa	8	208	125	19	10	362
	9	556	170	38	32	796
	10	587	378	32	47	1044
	11	406	339	38	53	836
	24	553	278	10	38	879
	37	128	169	20	37	354
	40	623	254	23	48	948
	41	245	130	10	38	423
	43	525	169	16	7	717
	46	375	463	13	118	969
	47	331	32	36	10	409
	48	646	15	20	2	683
	49	458	441	150	38	1087
	51	590	472	21	17	1100
	107	318	22	33	10	383
	108	210	57	30	4	301
	109	183	90	16	13	302
	111	509	408	15	8	940
	122	386	217	2	24	629
	123	372	177	19	5	573
	131	294	73	18	11	396
	133	491	386	41	9	927
	138	293	191	56	40	580
	139	85	136	45	21	287
	140	644	114	12	48	818
	141	562	197	55	56	870

Table A11.2: Number of individuals (N/0.2m^2) at each Outer Bristol Channel quantitative station

Group	Station	Annelida	Mollusca	Arthropoda	Others	Total
	143	371	82	67	87	607
	145	115	159	91	16	381
	146	1537	135	28	52	1752
	147	493	60	18	55	626
	148	1433	131	19	57	1640
IIIb	53	259	174	146	7	586
	54	292	104	53	17	466
	59	1464	193	239	138	2034
	60	525	167	81	29	802
	65	1519	923	347	39	2828
	69	246	123	107	29	505
	78	466	92	89	20	667
	81	6567	510	168	86	7331
	84	405	45	95	2	547
	91	463	62	92	16	633
	93	93	41	66	2	202
	101	329	97	320	17	763
	102	288	206	227	9	730
	103	1050	184	591	19	1844
	104	101	75	128	2	306
	112	442	313	249	17	1021
	124	543	70	62	17	692
	129	534	510	67	7	1118
	130	789	157	99	25	1070
	132	300	123	75	13	511
IIIc	105	58	14	15	4	91
	106	99	13	32	7	151
IIId	5	592	1043	12	43	1690
	26	670	241	49	29	989
	27	167	76	41	38	322
	64	877	1645	174	98	2794
Other	135	486	26	32	17	561
IVa	4	468	442	374	56	1340
	6	906	341	569	63	1879
	14	1406	473	135	72	2086
	15	612	275	348	91	1326
	17	851	925	304	66	2146
	18	802	232	744	94	1872
	19	1144	541	828	114	2627
	22	760	305	538	57	1660
	23	820	295	575	87	1777
	29	998	608	308	87	2001
	30	1925	1015	265	141	3346
	31	1199	698	1144	91	3132
	32	1653	1095	305	270	3323
	34	1568	594	645	313	3120
	36	462	486	195	73	1216
	38	1088	514	389	171	2162
	39	1557	341	199	117	2214
	42	389	206	21	65	681
IVb	25	363	117	66	53	599
	35	431	232	109	109	881
	98	735	230	199	192	1356
	99	2328	284	421	267	3300
	100	642	319	148	91	1200
	142	700	242	382	215	1539
IVc	7	725	365	519	119	1728
IVd	50	1389	1421	800	74	3684
	52	642	311	85	30	1068
	80	5286	293	143	158	5880
	110	1245	238	304	44	1831
IVe	16	1004	353	528	95	1980
	20	1795	1308	795	278	4176
IVf	44	409	523	258	50	1240
Other	2	60	20	26	7	113

Appendix 11

Group	Station	Taxa (qual.)	Taxa (quant.)	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
I	113	29	25	344	4.11	6.20	0.84	3.33	0.72	0.38
	114	24	23	114	4.65	8.69	0.89	3.64	0.81	0.52
	115	14	14	70	3.06	5.26	0.90	3.38	0.89	0.73
IIa	72	43	43	616	6.54	10.52	0.90	4.09	0.75	0.38
	92	51	51	430	8.25	15.06	0.93	4.53	0.80	0.44
IIb	68	88	84	1737	11.13	18.44	0.93	4.63	0.72	0.29
	70	78	75	796	11.08	20.30	0.95	4.93	0.79	0.40
	71	60	59	1603	7.86	12.04	0.92	4.31	0.73	0.33
	73	66	65	1200	9.03	14.73	0.94	4.65	0.77	0.38
	74	76	75	1650	9.99	16.18	0.94	4.68	0.75	0.33
	75	61	60	677	9.05	15.89	0.95	4.83	0.82	0.46
	76	68	68	871	9.90	17.25	0.91	4.49	0.74	0.32
	77	118	113	1726	15.03	27.10	0.93	4.86	0.71	0.25
	82	70	69	1126	9.68	16.22	0.86	3.81	0.62	0.19
	85	74	71	1843	9.31	14.66	0.88	4.01	0.65	0.22
	86	89	86	2500	10.86	17.26	0.81	3.81	0.59	0.15
	87	104	101	2302	12.92	21.59	0.82	4.00	0.60	0.15
	88	73	71	2616	8.90	13.46	0.87	4.01	0.65	0.22
	89	83	81	3083	9.96	15.24	0.61	2.78	0.44	0.07
	90	86	84	2816	10.45	16.28	0.82	3.86	0.60	0.16
	136	88	81	3769	9.72	14.57	0.91	4.26	0.67	0.23
	137	95	93	2521	11.75	19.00	0.87	4.18	0.64	0.19
IIc	57	57	52	2534	6.51	9.26	0.64	2.32	0.41	0.08
	63	55	54	1321	7.38	11.33	0.86	3.67	0.64	0.22
	83	60	55	7918	6.02	7.97	0.31	1.27	0.22	0.03
	94	58	54	4550	6.29	8.61	0.47	1.89	0.33	0.05
	95	52	49	1076	6.88	10.58	0.83	3.29	0.59	0.18
IId	55	76	71	1710	9.40	14.95	0.89	3.98	0.65	0.21
	56	75	74	5593	8.46	12.05	0.82	3.09	0.50	0.10
	58	184	166	2963	20.64	37.99	0.94	5.31	0.72	0.23
	61	126	117	3526	14.20	23.27	0.84	3.96	0.58	0.13
	62	81	81	1935	10.57	17.10	0.89	4.09	0.64	0.20
	79	64	62	810	9.11	15.63	0.90	4.12	0.69	0.27
	96	94	90	4681	10.53	15.81	0.83	3.48	0.54	0.11
	97	102	97	3444	11.79	18.55	0.88	3.91	0.59	0.15
	134	83	81	2400	10.28	16.18	0.74	3.34	0.53	0.11
	144	69	68	615	10.43	19.54	0.91	4.44	0.73	0.31
II other	1	111	100	12953	10.46	14.75	0.72	2.88	0.43	0.06
IIIa	8	57	55	362	9.17	18.05	0.87	4.05	0.70	0.29
	9	98	94	796	13.92	27.71	0.93	4.97	0.76	0.33
	10	88	81	1044	11.51	20.51	0.87	4.01	0.63	0.19
	11	80	79	836	11.59	21.41	0.89	4.42	0.70	0.26
	24	89	85	879	12.39	23.23	0.89	4.27	0.67	0.22
	37	72	69	354	11.59	25.58	0.93	4.83	0.79	0.40
	40	79	77	948	11.09	19.80	0.91	4.39	0.70	0.26
	41	66	63	423	10.25	20.49	0.94	4.73	0.79	0.41
	43	55	53	717	7.91	13.21	0.80	3.51	0.61	0.20
	46	91	60	969	8.58	14.15	0.89	4.12	0.70	0.28
	47	56	53	409	8.65	16.23	0.86	4.15	0.72	0.32
	48	56	54	683	8.12	13.76	0.71	3.13	0.54	0.15
	49	65	65	1087	9.15	15.17	0.91	4.16	0.69	0.26
	51	64	62	1100	8.71	14.21	0.85	3.66	0.61	0.19
	107	48	47	383	7.73	14.07	0.79	3.69	0.66	0.26
	108	50	44	301	7.53	14.19	0.92	4.38	0.80	0.46
	109	58	49	302	8.41	16.58	0.92	4.41	0.78	0.42
	111	54	48	940	6.87	10.70	0.87	3.67	0.66	0.25
	122	61	56	629	8.53	14.86	0.92	4.36	0.75	0.36
	123	57	52	573	8.03	13.89	0.90	4.19	0.73	0.34
	131	52	50	396	8.19	15.15	0.93	4.42	0.78	0.42
	133	57	55	927	7.90	12.80	0.89	3.85	0.67	0.25
	138	64	62	580	9.59	17.58	0.93	4.61	0.77	0.38
	139	57	49	287	8.48	16.99	0.91	4.34	0.77	0.40
	140	55	47	818	6.86	10.84	0.69	3.07	0.55	0.16
	141	81	78	870	11.38	20.75	0.92	4.67	0.74	0.32
	143	67	63	607	9.67	17.67	0.84	4.11	0.69	0.26
	145	49	45	381	7.40	13.27	0.89	3.92	0.71	0.32
	146	78	69	1752	9.10	14.33	0.68	2.98	0.49	0.10

Table A11.3: Diversity and evenness values for each Outer Bristol Channel station

Group	Station	Taxa (qual.)	Taxa (quant.)	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
	147	42	41	626	6.21	9.83	0.71	2.96	0.55	0.17
	148	68	55	1640	7.29	10.97	0.81	3.38	0.58	0.17
IIIb	53	59	55	586	8.47	14.87	0.93	4.48	0.78	0.40
	54	59	52	466	8.30	14.99	0.87	3.97	0.70	0.29
	59	101	98	2034	12.73	21.49	0.81	3.93	0.59	0.15
	60	91	88	802	13.01	25.21	0.86	4.30	0.67	0.22
	65	109	105	2828	13.09	21.48	0.83	3.85	0.57	0.13
	69	71	69	505	10.92	21.61	0.95	4.94	0.81	0.44
	78	67	65	667	9.84	17.81	0.84	3.88	0.64	0.21
	81	103	102	7331	11.35	16.77	0.33	1.61	0.24	0.02
	84	36	36	547	5.55	8.65	0.87	3.78	0.73	0.36
	91	53	52	633	7.91	13.42	0.82	3.79	0.66	0.25
	93	37	37	202	6.78	13.28	0.93	4.31	0.83	0.52
	101	70	68	763	10.09	18.05	0.91	4.54	0.75	0.33
	102	85	77	730	11.53	21.73	0.94	4.85	0.77	0.37
	103	112	103	1844	13.56	23.55	0.85	3.99	0.60	0.15
	104	47	46	306	7.86	15.02	0.92	4.32	0.78	0.42
	112	89	82	1021	11.69	21.00	0.91	4.38	0.69	0.24
	124	76	71	692	10.70	19.83	0.83	4.08	0.66	0.23
	129	81	68	1118	9.55	15.95	0.88	3.92	0.64	0.21
	130	88	80	1070	11.33	20.01	0.74	3.51	0.56	0.13
	132	57	57	511	8.98	16.43	0.89	4.15	0.71	0.30
IIIc	105	30	30	91	6.43	15.62	0.95	4.45	0.91	0.72
	106	40	37	151	7.18	15.64	0.94	4.42	0.85	0.57
IIId	5	91	78	1690	10.36	16.90	0.84	3.69	0.59	0.15
	26	117	105	989	15.08	29.70	0.94	5.07	0.75	0.31
	27	69	63	322	10.74	23.40	0.93	4.76	0.80	0.42
	64	104	98	2794	12.22	19.76	0.83	3.76	0.57	0.13
Other	135	50	47	561	7.27	12.21	0.77	3.07	0.55	0.16
IVa	4	153	141	1340	19.44	39.75	0.96	5.64	0.79	0.35
	6	181	165	1879	21.76	43.57	0.98	6.06	0.82	0.40
	14	187	160	2086	20.80	40.36	0.97	5.73	0.78	0.33
	15	149	138	1326	19.05	38.75	0.96	5.62	0.79	0.35
	17	188	169	2146	21.90	43.00	0.91	5.34	0.72	0.24
	18	185	168	1872	22.16	44.70	0.96	5.74	0.78	0.31
	19	231	207	2627	26.16	52.68	0.98	6.23	0.81	0.36
	22	184	169	1660	22.66	47.06	0.97	5.99	0.81	0.37
	23	155	144	1777	19.11	36.99	0.96	5.70	0.79	0.36
	29	196	181	2001	23.68	48.29	0.97	6.17	0.82	0.39
	30	238	208	3346	25.51	49.10	0.98	6.30	0.82	0.38
	31	197	180	3132	22.24	41.51	0.96	5.64	0.75	0.27
	32	204	187	3323	22.94	42.85	0.97	5.93	0.79	0.32
	34	173	160	3120	19.76	35.70	0.96	5.59	0.76	0.30
	36	160	142	1216	19.85	41.68	0.96	5.69	0.80	0.36
	38	183	168	2162	21.75	42.56	0.97	6.06	0.82	0.39
	39	181	169	2214	21.81	42.56	0.95	5.60	0.76	0.28
	42	162	68	681	10.27	18.80	0.91	4.29	0.71	0.28
IVb	25	123	111	599	17.20	40.09	0.96	5.59	0.82	0.43
	35	143	132	881	19.32	43.05	0.97	5.76	0.82	0.41
	98	160	147	1356	20.24	41.92	0.97	5.85	0.81	0.39
	99	166	160	3300	19.63	35.14	0.77	4.04	0.55	0.10
	100	131	117	1200	16.36	32.07	0.94	5.23	0.76	0.32
	142	186	172	1539	23.30	49.62	0.98	6.30	0.85	0.46
IVc	7	264	211	1728	28.17	63.05	0.98	6.39	0.83	0.40
IVd	50	130	124	3684	14.98	24.75	0.90	4.36	0.63	0.16
	52	91	83	1068	11.76	21.03	0.90	4.47	0.70	0.26
	80	126	118	5880	13.48	20.91	0.81	3.56	0.52	0.09
	110	125	111	1831	14.64	26.00	0.93	4.88	0.72	0.26
IVe	12	198	—	—	—	—	—	—	—	—
	13	179	—	—	—	—	—	—	—	—
	16	234	181	1980	23.71	48.47	0.98	6.22	0.83	0.41
	20	238	208	4176	24.83	46.03	0.97	6.01	0.78	0.31
	21	230	—	—	—	—	—	—	—	—
IVf	33	125	—	—	—	—	—	—	—	—
	44	110	98	1240	13.62	24.97	0.88	4.46	0.67	0.22
	45	91	—	—	—	—	—	—	—	—
V	28	130	—	—	—	—	—	—	—	—
	66	145	—	—	—	—	—	—	—	—
	67	149	—	—	—	—	—	—	—	—
Other	2	34	33	113	6.77	15.68	0.94	4.39	0.87	0.62

Appendix 11

Group	Station	ES(50)	ES(100)	ES(200)	ES(500)	ES(1000)	ES(5000)
I	113	13.72	17.94	22.07	—	—	—
	114	16.44	21.95	—	—	—	—
	115	12.76	—	—	—	—	—
IIa	72	18.39	25.32	32.61	41.29	—	—
	92	21.53	30.26	40.14	—	—	—
IIb	68	20.96	29.24	39.25	55.55	70.54	—
	70	24.01	33.90	44.84	62.89	—	—
	71	19.12	25.32	32.28	43.61	52.91	—
	73	21.25	28.55	36.49	48.70	61.01	—
	74	21.51	29.47	38.91	53.67	65.78	—
	75	23.44	31.95	41.03	54.68	—	—
	76	21.13	30.56	41.97	58.52	—	—
	77	23.02	33.91	47.63	71.08	93.26	—
	82	15.87	23.15	33.02	50.01	66.05	—
	85	17.19	24.56	34.05	49.00	60.95	—
	86	17.57	26.35	37.23	53.42	66.73	—
	87	19.01	28.81	41.06	60.30	77.32	—
	88	17.94	25.38	33.85	46.37	56.57	—
	89	13.51	20.29	28.87	42.67	55.14	—
	90	17.88	26.01	35.50	49.46	61.57	—
	136	18.36	25.36	33.91	47.19	58.48	—
	137	19.29	27.95	38.20	53.95	68.11	—
IIc	57	8.61	11.95	16.88	26.17	35.22	—
	63	14.98	20.98	28.27	39.46	49.33	—
	83	6.09	9.19	13.74	22.26	30.12	48.68
	94	8.43	12.06	17.05	26.33	35.32	—
	95	12.67	18.41	26.10	38.47	48.10	—
IId	55	16.18	22.47	30.83	45.47	59.40	—
	56	10.54	14.48	20.46	32.37	43.94	71.89
	58	26.09	39.56	56.87	85.46	112.64	—
	61	17.10	24.96	36.17	57.57	77.57	—
	62	17.49	25.37	35.55	51.55	65.23	—
	79	17.88	25.78	35.84	52.02	—	—
	96	13.95	20.08	28.20	42.30	55.04	—
	97	15.84	22.44	30.85	46.03	61.90	—
	134	15.14	21.92	30.80	46.71	61.44	—
	144	20.76	30.76	43.49	62.94	—	—
II other	1	11.30	15.62	21.59	32.56	42.81	75.14
IIIa	8	19.14	28.83	41.48	—	—	—
	9	24.93	37.53	52.88	77.92	—	—
	10	17.02	25.77	38.36	60.39	79.68	—
	11	21.10	31.01	43.09	63.94	—	—
	24	19.09	28.25	40.75	64.58	—	—
	37	24.69	37.81	53.89	—	—	—
	40	19.72	28.75	40.73	60.70	—	—
	41	22.94	33.06	45.62	—	—	—
	43	15.82	22.42	30.58	45.16	—	—
	46	18.57	26.13	34.76	47.84	—	—
	47	20.90	30.87	41.73	—	—	—
	48	14.70	22.06	31.72	48.09	—	—
	49	17.63	25.02	34.94	50.78	63.43	—
	51	15.29	22.53	32.06	47.29	60.13	—
	107	18.76	27.34	36.89	—	—	—
	108	20.54	28.39	37.85	—	—	—
	109	21.26	31.23	42.52	—	—	—
	111	14.56	19.87	26.92	38.38	—	—
	122	19.43	27.13	36.35	51.41	—	—
	123	18.89	26.45	35.79	49.84	—	—
	131	20.27	28.19	38.11	—	—	—
	133	15.61	22.21	30.62	44.38	—	—
	138	21.60	30.93	41.99	59.03	—	—
	139	21.14	30.61	42.17	—	—	—
	140	14.78	21.28	29.17	41.05	—	—

Table A11.4: Number of taxa (ES) per 50-5000 individuals as predicted by the Hurlbert rarefaction method

Group	Station	ES(50)	ES(100)	ES(200)	ES(500)	ES(1000)	ES(5000)
	141	22.53	32.63	44.95	64.92	—	—
	143	20.42	29.91	41.01	58.55	—	—
	145	17.30	25.20	34.91	—	—	—
	146	13.50	19.25	26.67	40.92	55.63	—
	147	13.34	18.80	25.48	37.08	—	—
	148	13.85	18.19	23.57	34.13	45.19	—
IIIb	53	20.22	27.89	37.17	51.94	—	—
	54	18.11	26.03	36.03	—	—	—
	59	18.61	28.00	39.82	59.92	78.43	—
	60	20.69	32.23	47.93	73.49	—	—
	65	16.83	25.29	36.84	57.51	76.46	—
	69	24.01	34.92	48.86	68.80	—	—
	78	17.98	26.39	36.93	56.54	—	—
	81	8.24	13.24	20.70	35.46	50.17	91.72
	84	16.68	22.18	27.82	35.36	—	—
	91	17.86	25.68	34.73	48.15	—	—
	93	20.28	27.62	36.85	—	—	—
	101	21.83	32.20	44.48	61.16	—	—
	102	23.10	33.96	47.72	68.59	—	—
	103	17.39	26.18	38.62	60.53	81.08	—
	104	20.42	29.26	39.49	—	—	—
	112	19.35	29.38	43.11	64.56	81.50	—
	124	20.38	30.58	43.22	63.29	—	—
	129	16.11	22.80	31.86	48.65	65.04	—
	130	16.95	25.46	36.64	56.73	77.71	—
	132	18.95	27.37	38.33	56.52	—	—
IIIc	105	23.19	—	—	—	—	—
	106	21.69	30.96	—	—	—	—
IIId	5	15.44	21.51	29.89	46.07	62.88	—
	26	24.68	36.89	52.34	78.60	—	—
	27	24.00	36.28	51.44	—	—	—
	64	15.99	23.28	32.96	49.77	66.15	—
Other	135	12.83	19.64	28.84	44.64	—	—
IVa	4	28.68	45.14	67.21	101.75	129.10	—
	6	32.32	48.94	69.43	104.35	135.83	—
	14	29.25	44.51	63.86	95.46	124.38	—
	15	28.38	42.71	62.18	96.24	125.68	—
	17	27.90	44.50	65.60	100.09	131.26	—
	18	29.44	45.01	65.02	99.57	131.84	—
	19	33.18	51.95	75.84	114.99	150.62	—
	22	31.59	49.21	71.77	108.99	142.44	—
	23	29.45	45.39	65.30	96.65	122.62	—
	29	32.76	51.90	76.99	116.94	149.28	—
	30	33.68	52.95	77.95	117.86	150.47	—
	31	28.34	43.84	64.08	97.81	127.74	—
	32	30.65	46.83	67.60	102.07	132.46	—
	34	28.10	42.97	62.27	93.10	118.26	—
	36	29.48	46.22	67.92	103.36	133.04	—
	38	32.05	49.60	71.90	107.24	136.20	—
	39	28.02	43.45	64.14	99.52	130.94	—
	42	18.96	27.51	39.34	59.93	68.00	—
IVb	25	29.53	45.55	66.01	102.02	—	—
	35	30.00	46.63	69.01	106.70	—	—
	98	30.54	47.30	69.08	104.20	133.68	—
	99	19.82	31.56	47.95	77.60	104.87	—
	100	26.04	40.16	58.89	88.97	111.66	—
	142	34.19	54.06	79.84	120.60	152.72	—
IVc	7	34.18	54.57	82.43	131.54	175.67	—
IVd	50	19.16	27.98	39.85	61.23	81.70	—
	52	20.84	31.48	44.76	64.48	81.25	—
	80	15.11	22.27	31.77	48.10	63.81	112.76
	110	23.11	34.96	50.38	74.46	94.01	—
IVe	16	33.28	51.77	75.89	115.24	148.06	—
	20	31.04	47.95	70.32	107.54	139.38	—
IVf	44	20.97	31.57	45.67	69.36	90.80	—
Other	2	21.91	31.09	—	—	—	—

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
I	113	17	217	2.97	4.32	0.74	2.75	0.67	0.36
	114	13	67	2.85	4.81	0.85	3.01	0.81	0.59
	115	8	46	1.83	2.80	0.81	2.51	0.84	0.67
IIa	72	18	330	2.93	4.09	0.75	2.82	0.68	0.36
	92	15	123	2.91	4.48	0.85	3.06	0.78	0.53
IIb	68	42	1029	5.91	8.81	0.86	3.56	0.66	0.26
	70	32	445	5.08	7.90	0.87	3.49	0.70	0.33
	71	24	967	3.35	4.46	0.81	2.97	0.65	0.30
	73	25	695	3.67	5.07	0.88	3.32	0.72	0.38
	74	36	1075	5.01	7.18	0.88	3.55	0.69	0.31
	75	21	313	3.48	5.07	0.84	3.21	0.73	0.41
	76	30	638	4.49	6.53	0.84	3.33	0.68	0.31
	77	52	1113	7.27	11.31	0.86	3.72	0.65	0.24
	82	35	682	5.21	7.81	0.71	2.61	0.51	0.15
	85	28	1248	3.79	5.08	0.76	2.66	0.55	0.20
	86	36	1628	4.73	6.52	0.58	2.21	0.43	0.10
	87	46	1802	6.00	8.60	0.70	2.83	0.51	0.14
	88	23	1215	3.10	4.03	0.59	2.13	0.47	0.15
	89	34	2323	4.26	5.65	0.32	1.27	0.25	0.04
	90	31	1650	4.05	5.42	0.52	1.83	0.37	0.09
	136	31	1301	4.18	5.70	0.85	3.22	0.65	0.28
	137	37	821	5.36	7.97	0.78	3.05	0.59	0.20
IIc	57	25	1704	3.23	4.15	0.28	1.03	0.22	0.04
	63	23	1109	3.14	4.11	0.81	2.90	0.64	0.29
	83	28	6991	3.05	3.71	0.13	0.59	0.12	0.02
	94	30	3865	3.51	4.43	0.28	1.06	0.22	0.04
	95	30	864	4.29	6.04	0.75	2.52	0.51	0.16
IId	55	37	990	5.22	7.58	0.76	2.72	0.52	0.16
	56	39	3372	4.68	6.19	0.71	2.29	0.43	0.10
	58	86	1791	11.35	18.84	0.89	4.46	0.69	0.25
	61	63	2696	7.85	11.54	0.74	2.95	0.49	0.11
	62	41	1141	5.68	8.32	0.74	2.81	0.53	0.15
	79	36	446	5.74	9.24	0.78	3.15	0.61	0.23
	96	47	3763	5.59	7.57	0.74	2.51	0.45	0.10
	97	57	2399	7.20	10.48	0.80	3.03	0.52	0.13
	134	51	1965	6.59	9.57	0.62	2.48	0.44	0.09
	144	29	275	4.99	8.18	0.73	2.91	0.60	0.23
II other	1	43	8144	4.66	5.95	0.38	1.50	0.28	0.04
IIIa	8	33	208	6.00	11.05	0.83	3.61	0.71	0.35
	9	54	556	8.39	14.78	0.88	4.19	0.73	0.33
	10	49	587	7.53	12.72	0.76	3.20	0.57	0.17
	11	44	406	7.16	12.54	0.88	3.97	0.73	0.34
	24	57	553	8.87	15.95	0.87	3.94	0.68	0.26
	37	42	128	8.45	21.78	0.97	4.95	0.92	0.73
	40	51	623	7.77	13.15	0.85	3.78	0.67	0.25
	41	40	245	7.09	13.57	0.89	4.22	0.79	0.45
	43	31	525	4.79	7.21	0.65	2.62	0.53	0.17
	46	31	375	5.06	8.02	0.89	3.85	0.78	0.45
	47	31	331	5.17	8.37	0.79	3.33	0.67	0.30
	48	37	646	5.56	8.52	0.67	2.78	0.53	0.16
	49	35	458	5.55	8.82	0.80	3.18	0.62	0.24
	51	39	590	5.96	9.38	0.71	3.07	0.58	0.19
	107	32	318	5.38	8.87	0.69	2.94	0.59	0.22
	108	33	210	5.98	11.00	0.88	3.92	0.78	0.44
	109	34	183	6.33	12.30	0.87	3.84	0.75	0.40
	111	30	509	4.65	6.97	0.84	3.26	0.66	0.30
	122	38	386	6.21	10.45	0.89	3.94	0.75	0.39
	123	36	372	5.91	9.84	0.86	3.75	0.73	0.36
	131	28	294	4.75	7.61	0.89	3.73	0.78	0.45
	133	29	491	4.52	6.74	0.77	2.95	0.61	0.24
	138	31	293	5.28	8.76	0.87	3.79	0.76	0.43
	139	23	85	4.95	10.36	0.93	3.98	0.88	0.67
	140	30	644	4.48	6.52	0.51	2.18	0.44	0.12

Table A11.5: Annelid diversity and evenness values for each Outer Bristol Channel quantitative station

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
	141	47	562	7.27	12.20	0.84	3.82	0.69	0.29
	143	28	371	4.56	7.03	0.61	2.54	0.53	0.18
	145	21	115	4.22	7.53	0.85	3.46	0.79	0.50
	146	45	1537	6.00	8.68	0.59	2.39	0.44	0.10
	147	28	493	4.35	6.43	0.55	2.19	0.46	0.13
	148	36	1433	4.82	6.70	0.76	2.86	0.55	0.18
IIIb	53	32	259	5.58	9.61	0.88	3.70	0.74	0.39
	54	28	292	4.76	7.63	0.72	2.77	0.58	0.21
	59	49	1464	6.59	9.77	0.64	2.52	0.45	0.10
	60	46	525	7.18	12.14	0.70	2.98	0.54	0.15
	65	56	1519	7.51	11.44	0.57	2.47	0.43	0.08
	69	31	246	5.45	9.38	0.91	3.94	0.79	0.48
	78	32	466	5.05	7.79	0.69	2.53	0.51	0.15
	81	55	6567	6.14	8.23	0.17	0.82	0.14	0.01
	84	21	405	3.33	4.70	0.78	2.90	0.66	0.32
	91	23	463	3.58	5.09	0.69	2.66	0.59	0.24
	93	17	93	3.53	6.10	0.83	3.11	0.76	0.48
	101	36	329	6.04	10.30	0.89	3.94	0.76	0.41
	102	37	288	6.36	11.29	0.88	3.92	0.75	0.39
	103	51	1050	7.19	11.21	0.61	2.34	0.41	0.08
	104	23	101	4.77	9.30	0.81	3.33	0.74	0.41
	112	51	442	8.21	14.90	0.84	3.86	0.68	0.27
	124	44	543	6.83	11.30	0.72	3.18	0.58	0.19
	129	41	534	6.37	10.35	0.85	3.60	0.67	0.28
	130	46	789	6.75	10.65	0.54	2.29	0.42	0.09
	132	30	300	5.08	8.30	0.75	3.02	0.62	0.25
IIIc	105	17	58	3.94	8.10	0.92	3.62	0.89	0.71
	106	22	99	4.57	8.77	0.90	3.65	0.82	0.55
IIId	5	45	592	6.89	11.32	0.89	3.81	0.69	0.30
	26	59	670	8.91	15.59	0.91	4.32	0.73	0.33
	27	32	167	6.06	11.76	0.82	3.40	0.68	0.31
	64	49	877	7.08	11.21	0.81	3.40	0.61	0.20
Other	135	26	486	4.04	5.87	0.70	2.29	0.49	0.16
IVa	4	78	468	12.52	26.73	0.95	5.14	0.82	0.45
	6	85	906	12.34	22.97	0.95	5.10	0.80	0.40
	14	84	1406	11.45	19.59	0.94	4.76	0.75	0.32
	15	81	612	12.47	25.02	0.93	4.79	0.76	0.33
	17	92	851	13.49	26.20	0.97	5.51	0.84	0.49
	18	94	802	13.91	27.63	0.95	5.16	0.79	0.37
	19	114	1144	16.05	31.50	0.97	5.71	0.84	0.45
	22	89	760	13.27	26.15	0.95	5.12	0.79	0.38
	23	79	820	11.63	21.56	0.95	5.13	0.81	0.44
	29	95	998	13.61	25.81	0.95	5.28	0.80	0.40
	30	113	1925	14.81	26.22	0.96	5.36	0.79	0.36
	31	97	1199	13.54	24.91	0.93	5.01	0.76	0.33
	32	104	1653	13.90	24.64	0.94	5.02	0.75	0.31
	34	81	1568	10.87	18.11	0.90	4.52	0.71	0.28
	36	77	462	12.39	26.39	0.97	5.40	0.86	0.54
	38	98	1088	13.87	26.11	0.95	5.18	0.78	0.36
	39	99	1557	13.33	23.53	0.92	4.76	0.72	0.27
	42	45	389	7.38	13.16	0.89	3.84	0.70	0.30
IVb	25	61	363	10.18	20.99	0.91	4.53	0.76	0.37
	35	74	431	12.03	25.72	0.93	4.81	0.77	0.37
	98	86	735	12.88	25.26	0.93	4.90	0.76	0.34
	99	81	2328	10.32	16.30	0.54	2.50	0.39	0.06
	100	63	642	9.59	17.31	0.86	4.14	0.69	0.27
	142	98	700	14.81	31.01	0.96	5.50	0.83	0.45
IVc	7	113	725	17.01	37.52	0.97	5.66	0.83	0.44
IVd	50	71	1389	9.67	15.83	0.89	4.15	0.68	0.24
	52	49	642	7.43	12.34	0.82	3.69	0.66	0.25
	80	69	5286	7.93	11.20	0.77	2.98	0.49	0.10
	110	71	1245	9.82	16.33	0.86	4.00	0.65	0.21
IVe	16	100	1004	14.32	27.62	0.96	5.37	0.81	0.41
	20	111	1795	14.68	26.16	0.94	5.03	0.74	0.29
IVf	44	50	409	8.15	14.95	0.92	4.46	0.79	0.43
Other	2	16	60	3.66	7.14	0.87	3.25	0.81	0.57

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
I	113	2	80	0.23	0.37	0.07	0.23	0.23	0.17
	114	5	35	1.13	1.60	0.36	1.09	0.47	0.28
	115	3	14	0.76	1.17	0.58	1.26	0.80	0.70
IIa	72	8	143	1.41	1.83	0.69	2.20	0.73	0.51
	92	13	119	2.51	3.72	0.83	2.94	0.80	0.56
IIb	68	16	373	2.53	3.40	0.78	2.72	0.68	0.37
	70	10	139	1.82	2.47	0.77	2.59	0.78	0.56
	71	19	235	3.30	4.88	0.85	3.26	0.77	0.48
	73	17	278	2.84	3.99	0.80	2.89	0.71	0.40
	74	17	234	2.93	4.21	0.86	3.26	0.80	0.53
	75	20	213	3.54	5.41	0.87	3.28	0.76	0.46
	76	17	148	3.20	4.96	0.89	3.45	0.84	0.62
	77	23	397	3.68	5.32	0.80	2.99	0.66	0.32
	82	10	210	1.68	2.19	0.60	1.97	0.59	0.33
	85	17	395	2.68	3.61	0.81	2.96	0.73	0.43
	86	18	498	2.74	3.66	0.73	2.41	0.58	0.25
	87	23	246	4.00	6.21	0.89	3.59	0.79	0.50
	88	17	506	2.57	3.39	0.76	2.80	0.69	0.37
	89	14	439	2.14	2.76	0.82	2.68	0.71	0.42
	90	13	468	1.95	2.48	0.83	2.82	0.76	0.51
	136	19	1965	2.37	2.92	0.73	2.39	0.56	0.24
	137	20	1170	2.69	3.43	0.52	1.83	0.42	0.13
IIc	57	7	434	0.99	1.19	0.15	0.56	0.20	0.08
	63	10	76	2.08	3.08	0.79	2.51	0.75	0.52
	83	10	705	1.37	1.65	0.21	0.80	0.24	0.08
	94	10	440	1.48	1.82	0.24	0.87	0.26	0.09
	95	6	142	1.01	1.27	0.46	1.41	0.55	0.33
IId	55	12	519	1.76	2.19	0.74	2.22	0.62	0.33
	56	11	1920	1.32	1.54	0.36	0.93	0.27	0.09
	58	24	651	3.55	4.90	0.72	2.35	0.51	0.18
	61	11	339	1.72	2.18	0.57	1.72	0.50	0.23
	62	13	465	1.95	2.48	0.66	2.01	0.54	0.25
	79	11	272	1.78	2.30	0.70	2.16	0.62	0.35
	96	11	326	1.73	2.20	0.58	1.58	0.46	0.20
	97	13	746	1.81	2.24	0.55	1.69	0.46	0.19
	134	11	241	1.82	2.38	0.53	1.60	0.46	0.20
	144	10	105	1.93	2.72	0.67	2.20	0.66	0.40
II other	1	19	2674	2.28	2.76	0.67	1.98	0.47	0.16
IIIa	8	5	125	0.83	1.04	0.40	1.12	0.48	0.29
	9	15	170	2.73	3.97	0.73	2.51	0.64	0.34
	10	14	378	2.19	2.86	0.62	1.82	0.48	0.19
	11	13	339	2.06	2.68	0.53	1.79	0.48	0.20
	24	13	278	2.13	2.83	0.44	1.53	0.41	0.16
	37	9	169	1.56	2.03	0.72	2.08	0.66	0.40
	40	10	254	1.63	2.08	0.65	1.85	0.56	0.29
	41	9	130	1.64	2.20	0.76	2.32	0.73	0.50
	43	11	169	1.95	2.63	0.73	2.21	0.64	0.36
	46	8	463	1.14	1.37	0.59	1.64	0.55	0.30
	47	9	32	2.31	4.16	0.81	2.57	0.81	0.62
	48	5	15	1.48	2.63	0.63	1.69	0.73	0.56
	49	8	441	1.15	1.39	0.67	1.82	0.61	0.36
	51	9	472	1.30	1.58	0.63	1.68	0.53	0.28
	107	3	22	0.65	0.94	0.64	1.44	0.91	0.85
	108	5	57	0.99	1.32	0.68	1.74	0.75	0.59
	109	7	90	1.33	1.77	0.62	1.86	0.66	0.44
	111	10	408	1.50	1.85	0.55	1.63	0.49	0.23
	122	10	217	1.67	2.17	0.70	1.99	0.60	0.33
	123	8	177	1.35	1.72	0.57	1.67	0.56	0.31
	131	7	73	1.40	1.91	0.68	1.84	0.66	0.43
	133	16	386	2.52	3.37	0.73	2.18	0.55	0.24
	138	10	191	1.71	2.24	0.70	1.97	0.59	0.32
	139	6	136	1.02	1.28	0.63	1.60	0.62	0.41
	140	5	114	0.84	1.07	0.69	1.73	0.75	0.58

Table A11.6: Mollusc diversity and evenness values for each Outer Bristol Channel quantitative station

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
	141	10	197	1.70	2.22	0.70	2.13	0.64	0.37
	143	8	82	1.59	2.19	0.69	1.97	0.66	0.42
	145	6	159	0.99	1.23	0.55	1.35	0.52	0.31
	146	7	135	1.22	1.57	0.49	1.39	0.50	0.27
	147	3	60	0.49	0.66	0.48	1.05	0.66	0.53
	148	6	131	1.03	1.30	0.66	1.69	0.65	0.45
IIIb	53	6	174	0.97	1.20	0.61	1.58	0.61	0.40
	54	6	104	1.08	1.39	0.64	1.85	0.72	0.52
	59	15	193	2.66	3.80	0.75	2.46	0.63	0.32
	60	12	167	2.15	2.96	0.71	2.20	0.61	0.33
	65	14	923	1.90	2.34	0.61	1.88	0.49	0.21
	69	14	123	2.70	4.07	0.70	2.32	0.61	0.31
	78	12	92	2.43	3.68	0.78	2.52	0.70	0.43
	81	17	510	2.57	3.39	0.67	2.14	0.52	0.21
	84	7	45	1.58	2.32	0.81	2.46	0.88	0.75
	91	7	62	1.45	2.03	0.70	2.08	0.74	0.54
	93	8	41	1.88	2.97	0.78	2.42	0.81	0.62
	101	9	97	1.75	2.42	0.64	2.08	0.66	0.40
	102	8	206	1.31	1.66	0.62	1.69	0.56	0.32
	103	12	184	2.11	2.87	0.76	2.48	0.69	0.42
	104	7	75	1.39	1.89	0.56	1.69	0.60	0.37
	112	11	313	1.74	2.22	0.65	1.98	0.57	0.29
	124	10	70	2.12	3.19	0.74	2.36	0.71	0.46
	129	10	510	1.44	1.76	0.61	1.57	0.47	0.22
	130	11	157	1.98	2.69	0.70	2.19	0.63	0.36
	132	11	123	2.08	2.92	0.60	1.69	0.49	0.22
IIIc	105	3	14	0.76	1.17	0.48	1.15	0.72	0.61
	106	2	13	0.39	0.66	0.28	0.62	0.62	0.54
IIId	5	14	1043	1.87	2.29	0.60	1.81	0.47	0.19
	26	21	241	3.65	5.53	0.73	2.82	0.64	0.30
	27	12	76	2.54	4.01	0.75	2.58	0.72	0.45
	64	21	1645	2.70	3.40	0.58	1.74	0.40	0.12
Other	135	8	26	2.15	3.95	0.79	2.42	0.81	0.62
IVa	4	22	442	3.45	4.87	0.77	2.80	0.63	0.28
	6	31	341	5.14	8.29	0.90	3.75	0.76	0.41
	14	28	473	4.38	6.51	0.90	3.74	0.78	0.46
	15	22	275	3.74	5.63	0.77	2.82	0.63	0.29
	17	30	925	4.25	5.93	0.54	2.08	0.42	0.11
	18	24	232	4.22	6.72	0.87	3.51	0.77	0.45
	19	30	541	4.61	6.85	0.89	3.68	0.75	0.41
	22	28	305	4.72	7.51	0.86	3.58	0.74	0.41
	23	21	295	3.52	5.17	0.70	2.67	0.61	0.27
	29	31	608	4.68	6.91	0.87	3.54	0.71	0.35
	30	40	1015	5.63	8.31	0.92	4.11	0.77	0.42
	31	30	698	4.43	6.38	0.89	3.67	0.75	0.40
	32	35	1095	4.86	6.90	0.90	3.80	0.74	0.38
	34	26	594	3.91	5.55	0.75	2.78	0.59	0.24
	36	25	486	3.88	5.58	0.82	3.18	0.68	0.34
	38	24	514	3.68	5.22	0.86	3.36	0.73	0.40
	39	24	341	3.94	5.89	0.76	2.84	0.62	0.27
	42	7	206	1.13	1.40	0.40	1.23	0.44	0.22
IVb	25	17	117	3.36	5.47	0.88	3.36	0.82	0.58
	35	21	232	3.67	5.60	0.86	3.30	0.75	0.44
	98	20	230	3.49	5.26	0.82	3.01	0.70	0.37
	99	25	284	4.25	6.61	0.84	3.34	0.72	0.38
	100	16	319	2.60	3.55	0.76	2.53	0.63	0.32
	142	21	242	3.64	5.52	0.90	3.64	0.83	0.57
IVc	7	38	365	6.27	10.67	0.87	3.86	0.74	0.36
IVd	50	19	1421	2.48	3.10	0.57	1.91	0.45	0.15
	52	7	311	1.05	1.27	0.63	1.72	0.61	0.38
	80	16	293	2.64	3.63	0.66	2.23	0.56	0.25
	110	14	238	2.38	3.25	0.70	2.30	0.60	0.30
IVe	16	29	353	4.77	7.48	0.88	3.70	0.76	0.43
	20	29	1308	3.90	5.25	0.84	3.29	0.68	0.31
IVf	44	12	523	1.76	2.19	0.47	1.44	0.40	0.16
Other	2	6	20	1.67	2.91	0.76	2.11	0.82	0.66

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' ($\log_2$)	J'	E (N10')
I	113	5	45	1.05	1.44	0.61	1.58	0.68	0.50
	114	5	12	1.61	3.22	0.80	2.12	0.91	0.83
	115	3	10	0.87	1.45	0.71	1.52	0.96	0.94
IIa	72	15	130	2.88	4.38	0.65	2.33	0.60	0.29
	92	20	180	3.66	5.76	0.74	2.76	0.64	0.31
IIb	68	17	112	3.39	5.58	0.82	2.97	0.73	0.43
	70	24	155	4.56	7.94	0.89	3.49	0.76	0.44
	71	9	307	1.40	1.74	0.71	2.08	0.66	0.40
	73	17	186	3.06	4.55	0.81	2.93	0.72	0.41
	74	15	226	2.58	3.61	0.65	2.29	0.59	0.28
	75	12	120	2.30	3.32	0.84	2.96	0.83	0.62
	76	13	47	3.12	5.95	0.87	3.16	0.85	0.66
	77	30	130	5.96	12.23	0.90	3.91	0.80	0.49
	82	18	207	3.19	4.74	0.48	1.87	0.45	0.16
	85	19	150	3.59	5.76	0.72	2.73	0.64	0.31
	86	23	250	3.98	6.17	0.88	3.52	0.78	0.48
	87	20	112	4.03	7.09	0.91	3.66	0.85	0.61
	88	22	764	3.16	4.23	0.63	2.30	0.52	0.19
	89	21	233	3.67	5.60	0.77	2.88	0.66	0.32
	90	29	524	4.47	6.61	0.78	3.02	0.62	0.25
	136	19	276	3.20	4.63	0.79	2.83	0.67	0.34
	137	24	275	4.09	6.32	0.87	3.50	0.76	0.45
IIc	57	16	375	2.53	3.39	0.52	1.58	0.39	0.13
	63	15	113	2.96	4.64	0.63	2.28	0.58	0.28
	83	9	203	1.51	1.93	0.67	2.12	0.67	0.42
	94	9	218	1.49	1.89	0.78	2.43	0.77	0.55
	95	10	65	2.16	3.30	0.79	2.57	0.77	0.55
IId	55	16	176	2.90	4.28	0.80	2.87	0.72	0.42
	56	14	224	2.40	3.31	0.78	2.71	0.71	0.43
	58	35	399	5.68	9.24	0.86	3.46	0.67	0.29
	61	28	308	4.71	7.48	0.84	3.33	0.69	0.34
	62	18	156	3.37	5.26	0.85	3.19	0.76	0.48
	79	8	23	2.23	4.35	0.77	2.37	0.79	0.59
	96	20	311	3.31	4.77	0.82	3.04	0.70	0.38
	97	17	160	3.15	4.81	0.67	2.52	0.62	0.30
	134	12	93	2.43	3.67	0.83	2.92	0.81	0.60
	144	21	178	3.86	6.19	0.68	2.57	0.59	0.25
II other	1	23	1866	2.92	3.69	0.14	0.59	0.13	0.02
IIIa	8	14	19	4.42	24.03	0.96	3.64	0.96	0.88
	9	14	38	3.57	8.01	0.88	3.23	0.85	0.64
	10	11	32	2.89	5.93	0.88	3.10	0.90	0.76
	11	15	38	3.85	9.15	0.88	3.36	0.86	0.66
	24	8	10	3.04	18.57	0.96	2.92	0.97	0.94
	37	12	20	3.67	12.67	0.94	3.38	0.94	0.86
	40	8	23	2.23	4.35	0.75	2.31	0.77	0.57
	41	9	10	3.47	43.45	0.98	3.12	0.98	0.96
	43	7	16	2.16	4.75	0.75	2.25	0.80	0.63
	46	10	13	3.51	19.86	0.95	3.18	0.96	0.90
	47	10	36	2.51	4.59	0.81	2.75	0.83	0.63
	48	11	20	3.34	10.03	0.93	3.28	0.95	0.87
	49	14	150	2.59	3.78	0.78	2.67	0.70	0.41
	51	7	21	1.97	3.68	0.86	2.59	0.92	0.84
	107	9	33	2.29	4.08	0.80	2.62	0.83	0.65
	108	5	30	1.18	1.71	0.25	0.83	0.36	0.20
	109	4	16	1.08	1.71	0.62	1.49	0.75	0.60
	111	4	15	1.11	1.78	0.66	1.56	0.78	0.65
	122	2	2	1.44		1.00	1.00	1.00	1.00
	123	6	19	1.70	3.02	0.81	2.33	0.90	0.81
	131	11	18	3.46	12.01	0.94	3.31	0.96	0.89
	133	7	41	1.62	2.43	0.71	2.05	0.73	0.52
	138	14	56	3.23	5.99	0.91	3.47	0.91	0.78
	139	13	45	3.15	6.13	0.89	3.25	0.88	0.71
	140	6	12	2.01	4.78	0.86	2.42	0.94	0.87

Table A11.7: Arthropod diversity and evenness values for each Outer Bristol Channel quantitative station

Group	Station	Taxa	N	d	Fisher (α)	D ($1-\lambda$)	H' ($\log_2$)	J'	E (N10')
	141	15	55	3.49	6.79	0.90	3.46	0.88	0.71
	143	18	67	4.04	8.07	0.88	3.44	0.83	0.58
	145	14	91	2.88	4.62	0.60	2.15	0.57	0.26
	146	12	28	3.30	7.96	0.91	3.27	0.91	0.79
	147	7	18	2.08	4.21	0.74	2.21	0.79	0.60
	148	11	19	3.40	10.90	0.89	3.08	0.89	0.74
IIIb	53	14	146	2.61	3.81	0.85	3.00	0.79	0.54
	54	13	53	3.02	5.50	0.78	2.70	0.73	0.46
	59	21	239	3.65	5.55	0.89	3.52	0.80	0.52
	60	20	81	4.32	8.49	0.94	3.97	0.92	0.77
	65	25	347	4.10	6.18	0.83	3.30	0.71	0.37
	69	16	107	3.21	5.21	0.75	2.83	0.71	0.41
	78	15	89	3.12	5.17	0.84	3.03	0.78	0.51
	81	18	168	3.32	5.11	0.89	3.37	0.81	0.55
	84	7	95	1.32	1.74	0.71	1.98	0.70	0.49
	91	18	92	3.76	6.69	0.73	2.74	0.66	0.33
	93	10	66	2.15	3.28	0.75	2.47	0.74	0.50
	101	17	320	2.77	3.83	0.63	2.36	0.58	0.26
	102	28	227	4.98	8.40	0.88	3.72	0.77	0.45
	103	32	591	4.86	7.25	0.79	3.11	0.62	0.25
	104	15	128	2.89	4.41	0.78	2.88	0.74	0.45
	112	14	249	2.36	3.21	0.49	1.74	0.46	0.18
	124	13	62	2.91	5.01	0.84	2.97	0.80	0.57
	129	13	67	2.85	4.81	0.73	2.60	0.70	0.42
	130	18	99	3.70	6.44	0.82	3.09	0.74	0.44
	132	12	75	2.55	4.03	0.85	2.99	0.83	0.63
IIIc	105	8	15	2.58	6.97	0.91	2.87	0.96	0.90
	106	9	32	2.31	4.16	0.74	2.44	0.77	0.55
IIId	5	9	12	3.22	16.36	0.91	2.92	0.92	0.82
	26	19	49	4.63	11.39	0.87	3.43	0.81	0.54
	27	13	41	3.23	6.56	0.88	3.21	0.87	0.69
	64	17	174	3.10	4.66	0.81	3.00	0.73	0.44
Other	135	7	32	1.73	2.77	0.84	2.58	0.92	0.83
IVa	4	31	374	5.06	8.03	0.87	3.72	0.75	0.40
	6	35	569	5.36	8.24	0.91	3.90	0.76	0.41
	14	31	135	6.12	12.60	0.90	4.06	0.82	0.52
	15	25	348	4.10	6.17	0.90	3.62	0.78	0.47
	17	30	304	5.07	8.26	0.91	3.89	0.79	0.48
	18	42	744	6.20	9.63	0.84	3.39	0.63	0.23
	19	49	828	7.14	11.40	0.87	3.66	0.65	0.24
	22	38	538	5.88	9.33	0.87	3.80	0.72	0.35
	23	30	575	4.56	6.73	0.82	3.33	0.68	0.31
	29	40	308	6.81	12.26	0.94	4.36	0.82	0.50
	30	38	265	6.63	12.15	0.95	4.61	0.88	0.63
	31	39	1144	5.40	7.81	0.79	3.07	0.58	0.20
	32	30	305	5.07	8.25	0.84	3.50	0.71	0.35
	34	34	645	5.10	7.65	0.85	3.55	0.70	0.32
	36	26	195	4.74	8.06	0.72	2.89	0.61	0.26
	38	31	389	5.03	7.92	0.91	3.84	0.78	0.44
	39	31	199	5.67	10.29	0.90	3.85	0.78	0.45
	42	11	21	3.28	9.33	0.85	2.93	0.85	0.66
IVb	25	22	66	5.01	11.56	0.90	3.69	0.83	0.57
	35	26	109	5.33	10.81	0.92	4.06	0.86	0.63
	98	24	199	4.35	7.14	0.84	3.32	0.72	0.39
	99	35	421	5.63	9.07	0.75	3.14	0.61	0.23
	100	25	148	4.80	8.62	0.91	3.85	0.83	0.56
	142	32	382	5.21	8.31	0.89	3.86	0.77	0.44
IVc	7	46	519	7.20	12.19	0.90	4.06	0.74	0.35
IVd	50	23	800	3.29	4.42	0.47	1.61	0.36	0.09
	52	21	85	4.50	8.92	0.90	3.72	0.85	0.61
	80	20	143	3.83	6.33	0.82	3.21	0.74	0.44
	110	19	304	3.15	4.49	0.80	2.89	0.68	0.36
IVe	16	36	528	5.58	8.74	0.91	3.93	0.76	0.41
	20	47	795	6.89	10.93	0.91	4.25	0.77	0.39
IVf	44	23	258	3.96	6.11	0.70	2.65	0.59	0.24
Other	2	8	26	2.15	3.95	0.76	2.30	0.77	0.56

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
I	113	1	2	—	0.80	—	—	—	—
	114	0	0	—	—	—	—	—	—
	115	0	0	—	—	—	—	—	—
IIa	72	2	13	0.39	0.66	0.46	0.89	0.89	0.85
	92	3	8	0.96	1.74	0.61	1.30	0.82	0.73
IIb	68	9	223	1.48	1.88	0.50	1.43	0.45	0.21
	70	9	57	1.98	3.01	0.86	2.83	0.89	0.76
	71	7	94	1.32	1.75	0.65	1.76	0.63	0.40
	73	6	41	1.35	1.94	0.73	2.07	0.80	0.64
	74	7	115	1.26	1.64	0.66	1.84	0.66	0.43
	75	7	31	1.75	2.82	0.77	2.27	0.81	0.64
	76	8	38	1.92	3.09	0.81	2.53	0.84	0.68
	77	8	86	1.57	2.16	0.64	1.83	0.61	0.36
	82	6	27	1.52	2.39	0.76	2.19	0.85	0.71
	85	7	50	1.53	2.22	0.74	2.21	0.79	0.60
	86	9	124	1.66	2.23	0.80	2.46	0.78	0.56
	87	12	142	2.22	3.13	0.74	2.33	0.65	0.37
	88	9	131	1.64	2.19	0.70	2.06	0.65	0.40
	89	12	88	2.46	3.75	0.87	3.07	0.86	0.67
	90	11	174	1.94	2.61	0.83	2.78	0.80	0.59
	136	12	227	2.03	2.70	0.78	2.51	0.70	0.43
	137	12	255	1.99	2.61	0.76	2.30	0.64	0.36
IIc	57	4	21	0.99	1.47	0.48	1.28	0.64	0.48
	63	6	23	1.59	2.64	0.75	2.14	0.83	0.68
	83	8	19	2.38	5.21	0.81	2.50	0.83	0.66
	94	5	27	1.21	1.81	0.72	1.94	0.83	0.71
	95	3	5	1.24	3.17	0.70	1.37	0.86	0.79
IId	55	6	25	1.55	2.50	0.72	2.03	0.79	0.62
	56	10	77	2.07	3.06	0.83	2.72	0.82	0.62
	58	21	122	4.16	7.31	0.86	3.34	0.76	0.46
	61	15	183	2.69	3.87	0.53	1.93	0.49	0.20
	62	9	173	1.55	2.02	0.46	1.56	0.49	0.24
	79	7	69	1.42	1.95	0.52	1.62	0.58	0.35
	96	11	271	1.79	2.30	0.54	1.88	0.54	0.27
	97	10	139	1.82	2.47	0.67	2.01	0.60	0.34
	134	7	101	1.30	1.71	0.75	2.27	0.81	0.64
	144	8	57	1.73	2.53	0.78	2.46	0.82	0.65
II other	1	15	269	2.50	3.43	0.58	1.91	0.49	0.20
IIIa	8	3	10	0.87	1.45	0.71	1.52	0.96	0.94
	9	11	32	2.89	5.93	0.83	2.82	0.82	0.61
	10	7	47	1.56	2.28	0.76	2.26	0.81	0.63
	11	7	53	1.51	2.16	0.70	2.01	0.72	0.50
	24	7	38	1.65	2.52	0.42	1.38	0.49	0.27
	37	6	37	1.38	2.03	0.79	2.27	0.88	0.77
	40	8	48	1.81	2.74	0.67	2.04	0.68	0.44
	41	5	38	1.10	1.54	0.29	0.91	0.39	0.22
	43	4	7	1.54	3.88	0.81	1.84	0.92	0.86
	46	11	118	2.10	2.97	0.78	2.55	0.74	0.49
	47	3	10	0.87	1.45	0.62	1.37	0.86	0.79
	48	1	2	—	—	—	—	—	—
	49	8	38	1.92	3.09	0.86	2.81	0.94	0.86
	51	7	17	2.12	4.45	0.77	2.32	0.83	0.67
	107	3	10	0.87	1.45	0.60	1.30	0.82	0.73
	108	1	4	—	0.43	—	—	—	—
	109	4	13	1.17	1.97	0.68	1.61	0.81	0.69
	111	4	8	1.44	3.18	0.75	1.75	0.88	0.79
	122	6	24	1.57	2.57	0.78	2.18	0.84	0.71
	123	2	5	0.62	1.24	0.60	0.97	0.97	0.96
	131	4	11	1.25	2.26	0.71	1.68	0.84	0.73
	133	3	9	0.91	1.58	0.56	1.22	0.77	0.67
	138	7	40	1.63	2.46	0.44	1.42	0.51	0.28
	139	7	21	1.97	3.68	0.76	2.22	0.79	0.61
	140	6	48	1.29	1.81	0.43	1.29	0.50	0.29

Table A11.8: 'Other Phyla' diversity and evenness values for each Outer Bristol Channel quantitative station

Group	Station	Taxa	N	d	Fisher (α)	D (1-λ)	H' (log_2)	J'	E (N10')
	141	6	56	1.24	1.70	0.60	1.58	0.61	0.40
	143	9	87	1.79	2.52	0.76	2.37	0.75	0.52
	145	4	16	1.08	1.71	0.66	1.67	0.83	0.73
	146	5	52	1.01	1.36	0.28	0.90	0.39	0.22
	147	3	55	0.50	0.68	0.07	0.26	0.17	0.10
	148	2	57	0.25	0.40	0.04	0.13	0.13	0.09
IIIb	53	3	7	1.03	1.99	0.52	1.15	0.72	0.61
	54	5	17	1.41	2.39	0.81	2.16	0.93	0.87
	59	13	138	2.44	3.52	0.77	2.63	0.71	0.43
	60	10	29	2.67	5.40	0.90	3.10	0.93	0.84
	65	10	39	2.46	4.35	0.88	3.02	0.91	0.79
	69	8	29	2.08	3.65	0.80	2.50	0.83	0.67
	78	6	20	1.67	2.91	0.74	2.08	0.80	0.64
	81	12	86	2.47	3.79	0.80	2.76	0.77	0.53
	84	1	2	—	—	—	—	—	—
	91	4	16	1.08	1.71	0.69	1.68	0.84	0.73
	93	2	2	1.44	—	1.00	1.00	1.00	1.00
	101	6	17	1.76	3.31	0.59	1.73	0.67	0.46
	102	4	9	1.37	2.76	0.58	1.45	0.72	0.58
	103	8	19	2.38	5.21	0.85	2.66	0.89	0.76
	104	1	2	—	—	—	—	—	—
	112	6	17	1.76	3.31	0.76	2.13	0.82	0.68
	124	4	17	1.06	1.65	0.60	1.45	0.73	0.58
	129	4	7	1.54	3.88	0.71	1.66	0.83	0.72
	130	5	25	1.24	1.88	0.68	1.80	0.78	0.62
	132	4	13	1.17	1.97	0.60	1.49	0.74	0.60
IIIc	105	2	4	0.72	1.59	0.50	0.81	0.81	0.75
	106	4	7	1.54	3.88	0.71	1.66	0.83	0.72
IIId	5	10	43	2.39	4.09	0.85	2.86	0.86	0.70
	26	6	29	1.48	2.30	0.47	1.44	0.56	0.34
	27	6	38	1.37	2.00	0.72	2.10	0.81	0.66
	64	11	98	2.18	3.18	0.73	2.42	0.70	0.43
Other	135	6	17	1.76	3.31	0.65	1.90	0.73	0.55
IVa	4	10	56	2.24	3.54	0.83	2.81	0.85	0.67
	6	14	63	3.14	5.58	0.82	2.93	0.77	0.51
	14	17	72	3.74	7.02	0.87	3.25	0.80	0.53
	15	10	91	2.00	2.87	0.51	1.70	0.51	0.25
	17	17	66	3.82	7.42	0.88	3.37	0.82	0.58
	18	8	94	1.54	2.09	0.70	2.08	0.69	0.46
	19	14	114	2.74	4.19	0.78	2.70	0.71	0.42
	22	14	57	3.22	5.93	0.81	2.98	0.78	0.53
	23	14	87	2.91	4.72	0.71	2.54	0.67	0.37
	29	15	87	3.13	5.23	0.91	3.55	0.91	0.77
	30	17	141	3.23	5.05	0.89	3.41	0.83	0.60
	31	14	91	2.88	4.62	0.83	3.00	0.79	0.54
	32	18	270	3.04	4.34	0.75	2.69	0.65	0.32
	34	19	313	3.13	4.45	0.81	2.96	0.70	0.38
	36	14	73	3.03	5.15	0.82	3.03	0.80	0.55
	38	15	171	2.72	3.96	0.82	2.98	0.76	0.49
	39	15	117	2.94	4.57	0.79	2.88	0.74	0.45
	42	5	65	0.96	1.26	0.68	1.83	0.79	0.64
IVb	25	11	53	2.52	4.22	0.77	2.48	0.72	0.46
	35	11	109	2.13	3.05	0.66	2.28	0.66	0.39
	98	17	192	3.04	4.50	0.88	3.36	0.82	0.58
	99	19	267	3.22	4.68	0.83	3.15	0.74	0.44
	100	13	91	2.66	4.15	0.85	2.99	0.81	0.58
	142	21	215	3.72	5.76	0.82	3.15	0.72	0.39
IVc	7	14	119	2.72	4.12	0.80	2.85	0.75	0.48
IVd	50	11	74	2.32	3.57	0.83	2.85	0.82	0.62
	52	6	30	1.47	2.26	0.78	2.20	0.85	0.72
	80	13	158	2.37	3.36	0.78	2.60	0.70	0.42
	110	7	44	1.59	2.35	0.82	2.48	0.88	0.76
IVe	16	16	95	3.29	5.51	0.76	2.78	0.69	0.39
	20	21	278	3.55	5.27	0.90	3.64	0.83	0.57
IVf	44	13	50	3.07	5.70	0.82	2.87	0.78	0.53
Other	2	3	7	1.03	1.99	0.76	1.56	0.98	0.97

Appendix 12

Diversity & Evenness Distribution Maps

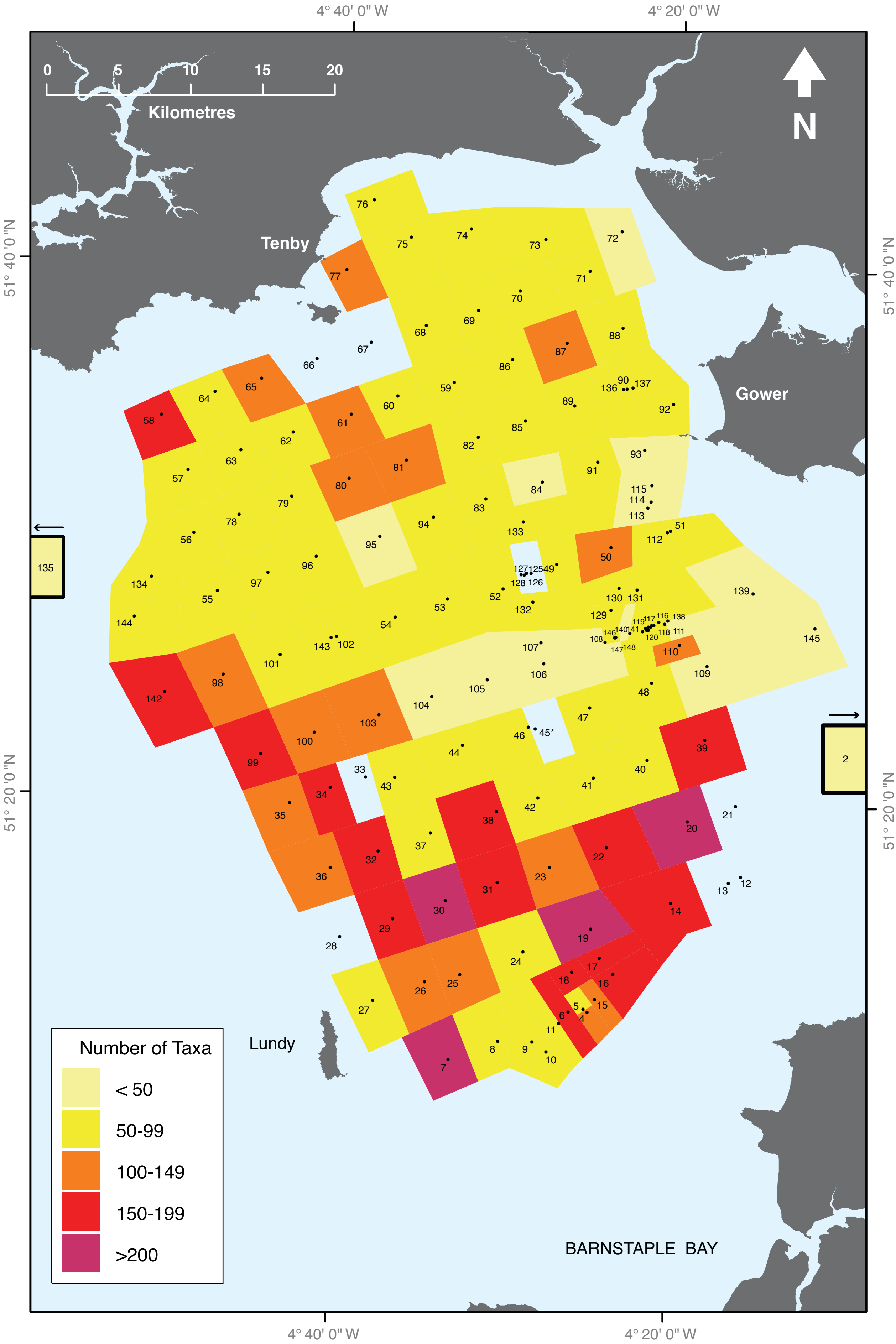


Fig. A12.1: Generalised distribution of quantitatively assessed taxa at each station in the Outer Bristol Channel

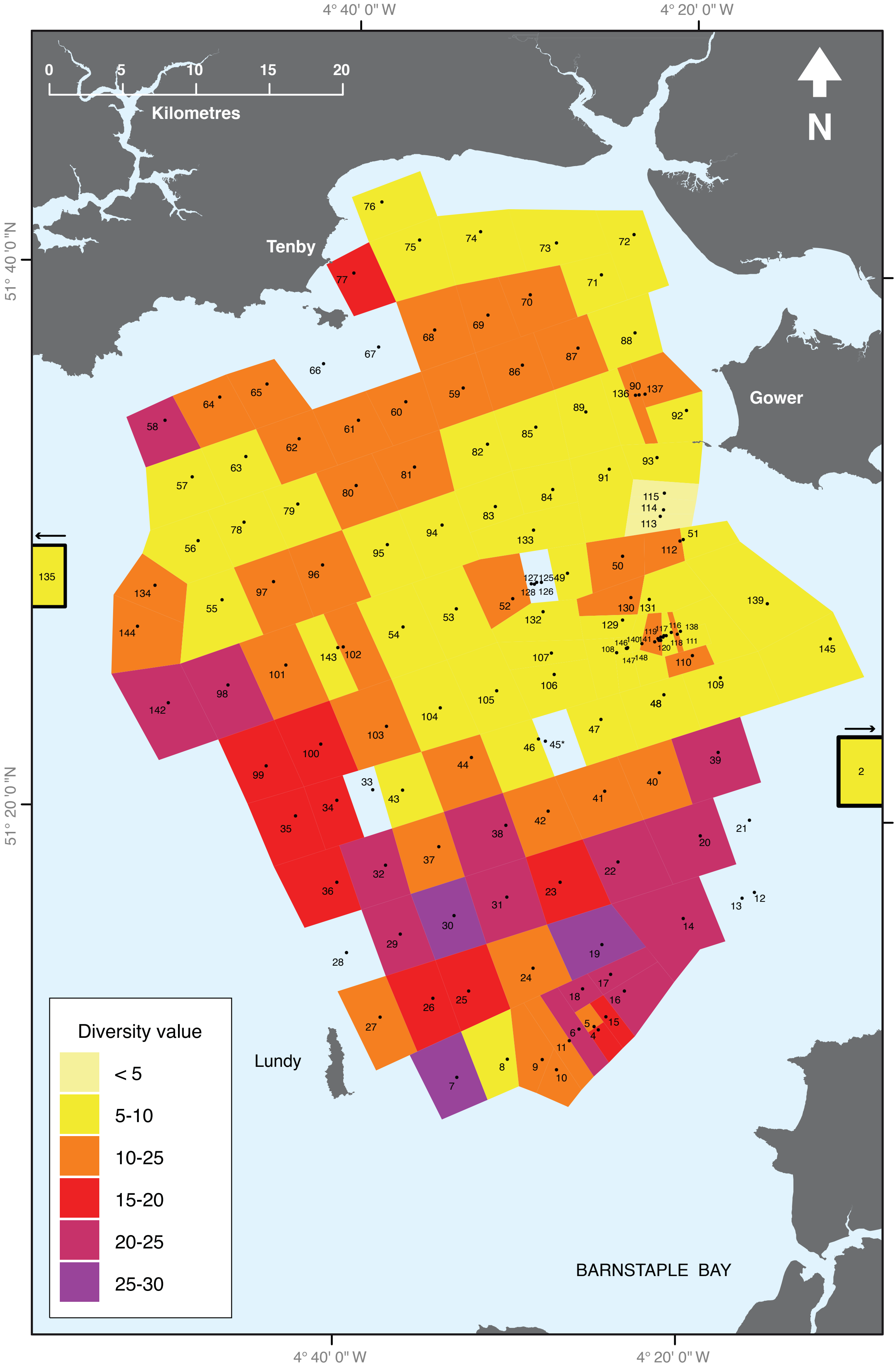


Fig. A12.2: Generalised distribution of Margalef's Index (d) at each station in the Outer Bristol Channel

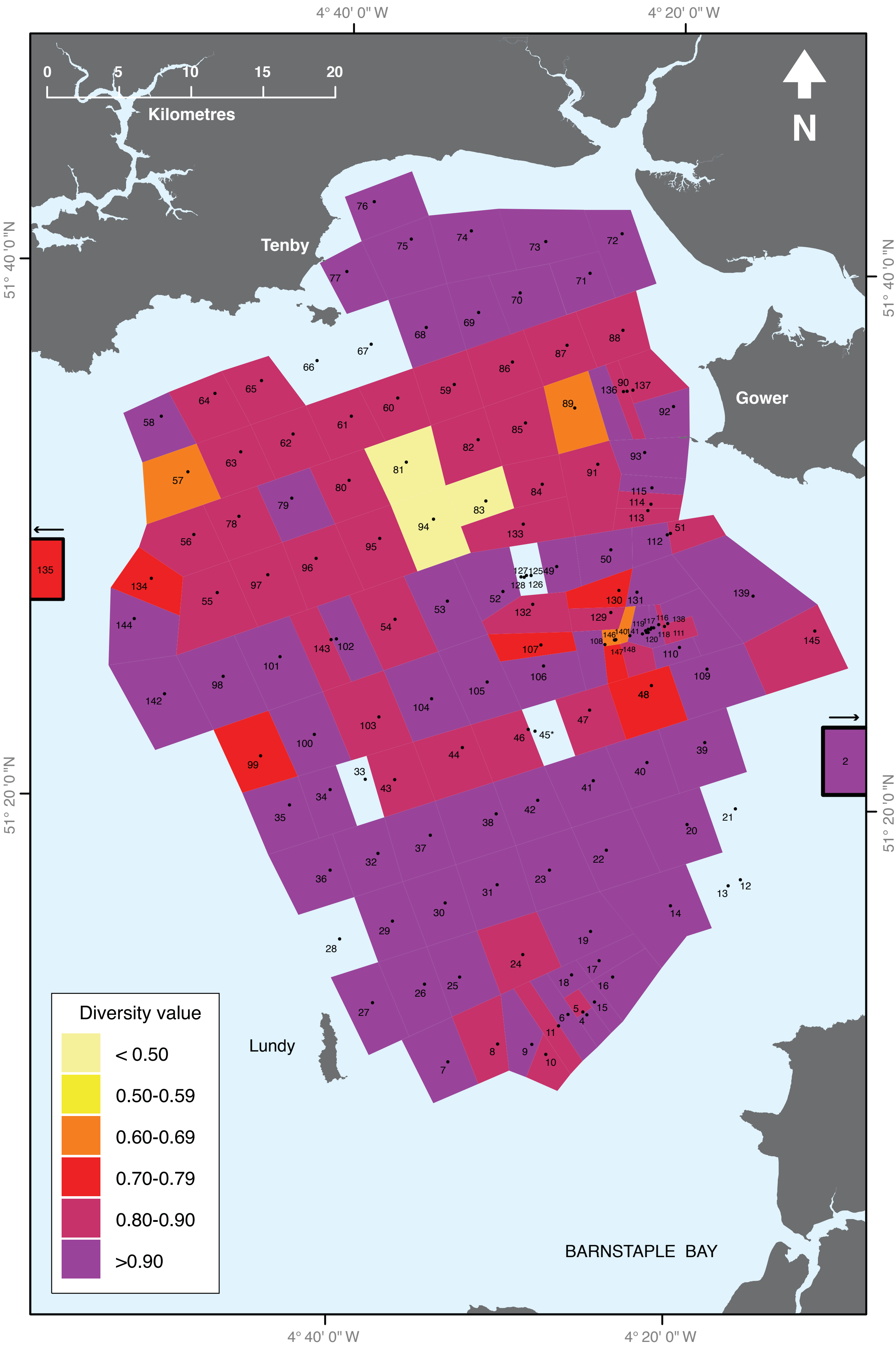


Fig. A12.3: Generalised distribution of Simpson's Index (1-λ) at each station in the Outer Bristol Channel

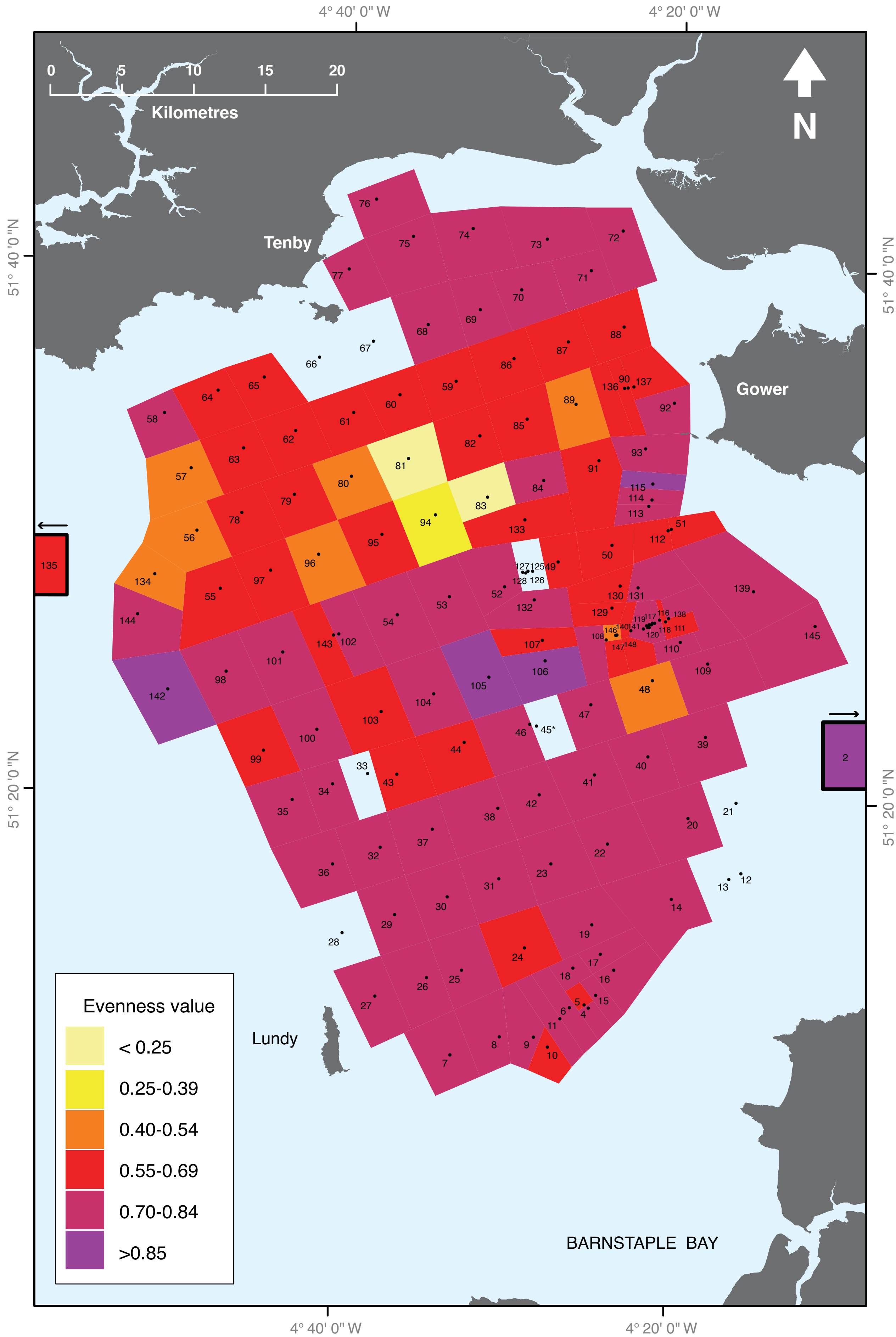


Fig. A12.4: Generalised distribution of Pielou Index (J') at each station in the Outer Bristol Channel

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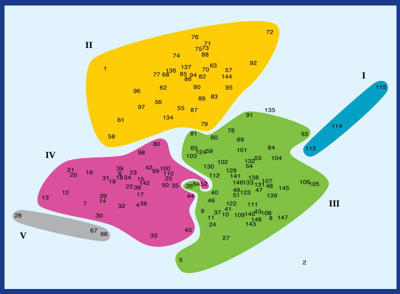

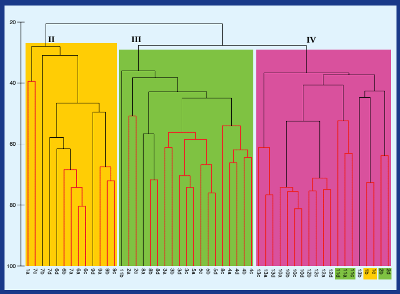

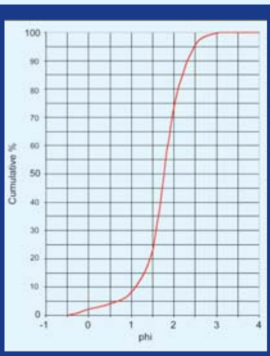

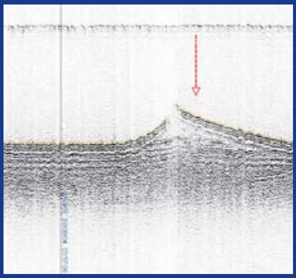

This Appendices volume contains additional analyses and data considered essential to the publication text. It includes:

• Full station locality data
• Sediment statistical data
• Metadata tables for video and trawl tows
• Ship logs from the biological cruises
• Abundance data for fauna from trawls & grabs
• Species list of all identified fauna
• Additional dendrograms, MDS plots & maps
• Ranked species lists

Also included with this volume is a DVD-ROM containing the main project interface '*Explore the Sea Floor*' plus the raw data , Report PDF files and a searchable data interface enabling the interactive search of information on a station by station basis:

• General station information
• A full geological profile for each station providing sediment analysis, Folk classification, phi & mm sediment curves, all multibeam, sidescan and sub-bottom images, with interpretations
• The biological profile includes diversity indices, top ranked species, biotope classification and assemblage information plus MDS plots and dendrograms
• Related sea bed photos and video footage
• PDF files of all station information

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