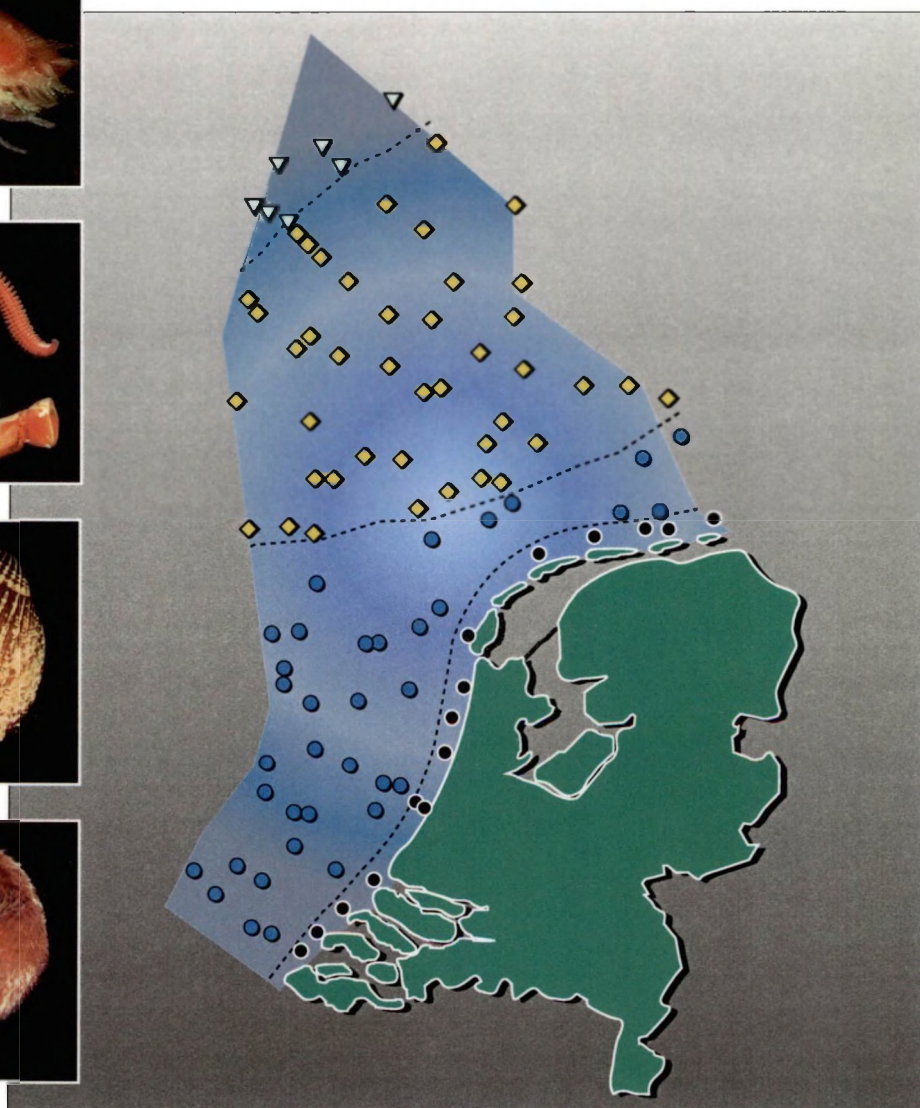
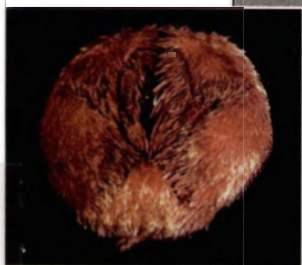


102

MACROBENTHIC FAUNA IN THE DUTCH SECTOR OF THE NORTH SEA IN 2000 AND A COMPARISON WITH PREVIOUS DATA

R. Daan and M. Mulder



Nederlands Instituut voor Onderzoek der Zee

Monitoring Macrozoobenthos of the North Sea

© 2001

This report is not to be cited without the
acknowledgement of the source:

Netherlands Institute for Sea Research (NIOZ)
P.O. Box 59, 1790 AB Den Burg, Texel
The Netherlands

ISSN 0923 - 3210

Cover design: H. Hobbelink

**THE MACROBENTHIC FAUNA IN THE DUTCH SECTOR OF THE NORTH
SEA IN 2000 AND A COMPARISON WITH PREVIOUS DATA**

21338

R. DAAN AND M. MULDER

VLIZ (vzw)
VLAAMS INSTITUUT VOOR DE ZEE
FLANDERS MARINE INSTITUTE
Oostende - Belgium

This report presents data of the monitoring program of macrozoobenthos in the Dutch Continental Shelf (DCS) of the North Sea, a cooperation between the National Institute for Coastal and Marine Management/RIKZ (Rijkswaterstaat), the North Sea Directorate (Rijkswaterstaat) and the Department of Marine Ecology (NIOZ)

NETHERLANDS INSTITUTE FOR SEA RESEARCH
Monitoring Macrozoobenthos of the North Sea

NIOZ-RAPPORT 2001-2

CONTENTS

1. SUMMARY	1
2. SAMENVATTING	3
3. INTRODUCTION.....	5
4. MATERIAL AND METHODS	6
4.1. Sampling	6
4.2. Sample treatments.....	6
4.3. Ashfree Dry weight.....	7
4.4. Statistics.....	7
4.5. Sediment analysis	8
5. RESULTS AND DISCUSSION.....	9
5.1. Sediment composition	9
5.2. Distribution of the macrobenthic fauna in 2000	9
5.2.1. Diversity, density and biomass	9
5.2.2. Temporal variation in density and biomass of individual species	11
7. ACKNOWLEDGEMENTS	14
8. REFERENCES.....	15
Tables and Figures	17
Appendices.....	52

1. SUMMARY

In this report the results are presented of a macrobenthos survey on the Dutch Continental Shelf (DCS), carried out in spring 2000. The survey forms part of the 'Biological monitoring programme of marine waters' (MON*BIOLOGIE, generally referred to as 'BIOMON') which was initiated by the National Institute for Coastal and Marine Management (RIKZ). The purpose of the programme is to obtain insight into the year-to-year variations of the macrobenthic assemblages and to detect trend-like changes, that possibly indicate anthropogenic influences on the marine environment (e.g. eutrophication, pollution, beam-trawl fishery).

Within the framework of this project fieldwork is carried out every year in spring. In 2000 the 100 BIOMON stations were sampled in the period between March 25 and June 8. On the basis of the results collected in 2000 and previous years an analysis is made of the trends and fluctuations of some selected species and of basic community attributes over the period 1986-1999. The community attributes studied were the diversity, abundance and biomass of the total macrofauna and of the 4 major taxonomic groups. Temporal variation or trends were investigated separately for each of the four subareas in the DCS *i.e.* the Coastal, Offshore areas, Dogger Bank and Oyster Ground. The conclusions of this study can be summarized as follows:

1. The spatial pattern in the sediment composition was quite similar to that found in 1999. This holds both for the median grain size as for the silt contents of the sediments. It seems that the sediment composition is very stable, also at the longer term.
2. Like in previous years, no clear trend-wise changes were observed at the community level. Nevertheless there seems to have been a shift in the contribution of the different taxonomic groups to the total biomass of the benthic fauna. The contribution of molluscs seems to have decreased particularly on the Dogger Bank, in the Oyster Ground and in the Offshore area, mainly due to the absence of older year classes of large bivalves. This trend was already noticed in 1999 and seemed to have continued in 2000.
3. On the Dogger Bank, most species were quite stable in their abundance compared to previous years. A mass colonisation of the Dogger Bank in 1999 by the brittle star *Amphiura chiajei* was not continued in 2000. Average densities had dropped from 150 to 25 per m², but were still substantially higher than in previous years. The gastropod *Retusa umbilicata*, found at station DOG 6, is new to the Dutch malacofauna.
4. In the Oyster Ground a strong decrease has been observed in the brittle star *Amphiura filiformis* from 1993 onwards and in 2000 there was not any sign of recovery of the *A.*

filiformis population. Particularly the Frisian Front has become very poor in *A. filiformis*. A similar trend was found in the polychaete *Nephtys hombergii*. Other species did not show clear trendwise changes. Two small bivalve species (*Altenaeum dawsoni* and *Semierycina nitida*) were found, both in 1999 and in 2000, in the Oyster Ground, which are new to the Dutch living malacofauna.

5. In the Offshore area a slightly increasing trend has been observed in the sea urchin *Echinocardium cordatum* from 1995 onwards, both in its numerical abundance and in biomass. This trend continued in 2000. An opposite, downward trend was observed simultaneously in the gastropod *Natica alderi*, but this trend might have come to an end in 2000. Other species did not show a trendwise change.

There was one station (OFF 33), which had a very rich fauna that was obviously different from that at the other Offshore stations. Particularly remarkable was the occurrence of 4 molluscs that are new to the Dutch living malacofauna. These are a still non identified polyplacophoran species, the gastropods *Alvania lactea* and *Tornus subcarinatus* of which, till now, only finds of empty shells have been reported, and a juvenile mussel (not *Mytilus edulis*).

6. In the Coastal area the sea urchin *Echinocardium cordatum*, the amphipod *Urothoe poseidonis* and the bivalve *Spisula subtruncata* showed a tendency to increase abundance in the second half of the nineties. This trend continued in 2000. The gastropod *Natica alderi* and the polychaete *Nephtys cirrosa*, which decreased during the nineties had not recovered in 2000.

2. SAMENVATTING

In dit rapport worden de resultaten gepresenteerd van een macrobenthos bemonstering die in 2000 werd uitgevoerd op het Nederlands Continentale Plat (NCP). De bemonstering vond plaats in het kader van het 'Biologische Monitoring Programma Zoute Wateren' (MON*BIOLOGIE, gewwonlyk aangeduid als 'BIOMON'), dat geïnitieerd is door het Rijksinstituut voor Kust en Zee. Met het project wordt beoogd inzicht te krijgen in de jaarlijkse fluctuaties van de macrobenthos gemeenschappen en vast te stellen of er op de langere termijn trendmatige veranderingen optreden. Dergelijke veranderingen zouden onder meer kunnen plaats vinden als gevolg van effecten van antropogene activiteiten (bijv. eutrofiëring, verontreiniging, boomkorvisserij).

In het kader van dit project wordt jaarlijks veldonderzoek uitgevoerd in het voorjaar. In 2000 zijn de 100 BIOMON stations tussen 25 maart en 8 juni bemonsterd. Aan de hand van de gegevens die in 2000 en voorgaande jaren zijn verzameld is een overzicht verkregen van de trends en fluctuaties bij een aantal geselecteerde soorten en kenmerken van de benthische gemeenschap over de periode 1986 - 2000. Deze set kenmerken bestaat uit de diversiteit, de dichtheid en biomassa van de totale fauna en de 4 belangrijkste taxa. Temporele variatie en trends zijn voor vier subgebieden van het NCP, de Kustzone, het Offshore gebied, de Doggersbank en de Oestergronden, afzonderlijk onderzocht. De conclusies van deze studie kunnen als volgt worden samengevat:

1. Het ruimtelijke patroon in de sediment samenstelling vertoonde grote overeenkomst met dat in 1999. Dit geldt zowel voor de mediane korrelgrootte als het slibgehalte van het sediment. De sedimentsamenstelling lijkt ook op de langere termijn zeer stabiel te zijn.
2. Net als in voorgaande jaren waren er op community niveau geen trendmatige veranderingen te zien. Niettemin schijnt er een verschuiving te zijn opgetreden in de bijdrage van de verschillende taxonomische groepen aan de totale biomassa van de benthische fauna. De bijdrage van de mollusken schijnt te zijn afgenomen, met name op de Doggersbank en in de Oestergronden, hoofdzakelijk als gevolg van de afwezigheid van oudere jaarklassen van grote bivalven. Deze trend werd al bespeurd in 1999 en schijnt in 2000 te hebben doorgezet.
3. Op de Doggersbank waren de dichtheden van de meeste soorten vrij stabiel in vergelijking tot vorige jaren. De massale kolonisatie van de Doggersbank door de slangster *Amphiura chiajei* zoals waargenomen in 1999 zette zich niet voort in 2000. Integendeel, de gemiddelde dichtheden van 150 per m² in 1999 waren in 2000 weer afgenomen to 25 per m², Maar daarmee nog wel aanzienlijk hoger dan in voorgaande

jaren. De gastropode *Retusa umbilicalis*, gevonden op station DOG 6, is nieuw voor de Nederlandse malacofauna.

4. In de Oestergronden is vanaf 1993 een duidelijke afname waargenomen in de dichtheden van de slangster *Amphiura filiformis*. In 2000 was er nog steeds geen teken van herstel van de populatie van *A. filiformis*. Met name op het Friese Front is de soort zeer sterk afgenomen. Een vergelijkbare trend werd waargenomen bij de polychaet *Nephtys hombergii*. Andere soorten vertoonden geen duidelijk trendmatige veranderingen. Twee kleine soorten bivalven (*Altenaeum dawsoni* en *Semierycina nitida*) die in de Oestergronden werden gevonden zijn nieuw voor de Nederlandse levende malacofauna.
5. In het Offshore-gebied kon een licht toenemende trend worden waargenomen bij de hartegel *Echinocardium cordatum* vanaf 1995, zowel qua aantallen als biomassa. Deze trend zette zich in 2000 voort. Een tegengestelde, neerwaartse trend deed zich tegelijkertijd voor bij de gastropode *Natica alderi*, maar aan deze trend leek in 2000 een einde te zijn gekomen. Andere soorten vertoonden geen trendmatige verandering. Op één station (OFF 33) kwam in 2000 een zeer rijke fauna voor die duidelijk afweek van die op alle andere Offshore-stations. Opvallend was vooral het voorkomen van 4 soorten mollusken die nieuw zijn voor de Nederlandse levende malacofauna. Het gaat om een nog niet gedetermineerde keverslak, de gastropoden *Alvania lactea* en *Tornus subcarinatus* (waarvan tot nog toe alleen lege huisjes waren gevonden) en een juveniele mossel (niet *Mytilus edulis*).
6. In het kustgebied vertoonden dichtheden van de hartegel *Echinocardium cordatum*, de ampipode *Urothoe poseidonis* en de bivalve *Spisula subtruncata* een opwaartse trend in de tweede helft van de negentiger jaren. Deze trend zette zich in 2000 voort. De gastropode *Natica alderi* en de polychaet *Nephtys cirrosa*, die in dezelfde periode waren afgenomen, vertoonden in 2000 geen tekenen van herstel.

3. INTRODUCTION

In 1989 the **BIO**logical **MON**itoring programme of marine waters (project MON* BIOLOGIE) was started with the goal to study the temporal variation of the marine ecosystems on the Dutch Continental Shelf (DCS) including the Wadden Sea and the Delta area (Dekker & de Bruin, 2000). It is an initiative of the National Institute for Coastal and Marine Management (RIKZ) of Rijkswaterstaat in association with several Dutch institutes (Yland, 1995). The biological monitoring programme comprises besides the macrobenthos also plankton, fish, seagrass, hard substrate populations, seabirds and mammals.

This report presents the data collected during the macrobenthos survey carried out in spring 2000. Further the results of the 2000 survey are compared with the BIOMON data collected in previous years (1991-1999) and those obtained during the ICES North Sea Benthos Survey (ICES-NSBS, 1986), the MILZON-BENTHOS programme (1988-1993) and some unpublished data collected at the Dogger Bank in 1986/1987 (Heyman, unpubl.). In 1990 a pilot study of the BIOMON project was carried out at 7 locations on the DCS and the results are also included in the data base.

The aim of the BIOMON programme is to obtain insight in the spatial and temporal variation in the composition of the macrobenthos and to detect possible trendlike changes on the DCS as a whole or in parts of it. During the first years (1991-1994) there were 25 stations located along 5 transects perpendicular to the Dutch coast. At these stations 5 replicate boxcore samples were collected each year. Although in this way a rather detailed picture was obtained of the fauna composition at each of these stations, it was argued that (changes in) the macrobenthos composition of the DCS as a whole could better be studied by spreading the sampling effort over a larger number of stations. Therefore, from 1995 onwards the sampling strategy changed and each year 100 stations were visited, that were selected according to a stratified random sampling design in each of the 4 subareas of the DCS, i.e. Dogger Bank, Oyster Ground, Offshore area and Coastal area (Fig. 1). The number of stations within each subarea was proportional to its surface area. At each station only one sample was taken. The 100 stations that were selected include the 25 original BIOMON stations. The selection procedure is described in more detail by Essink (1995) and Holtmann *et al.* (1996).

The analysis of the results obtained in previous years (Daan & Mulder, 2000) has shown that there were generally no clear trends at the community level (faunal density, biomass, biodiversity parameters) in the 4 subareas. However, in most subareas there seemed to be a slight decrease in the contribution of molluscs to the total benthic biomass. At the species level there was a clear downward trend in the abundance of the

brittle star *Amphiura filiformis* in the Oyster Ground from 1993 onwards. Particularly at the Frisian Front a dramatic decrease was observed in the abundance of this species. Further there was a decrease in the abundance of the polychaete *Nephtys cirrosa* and the gastropod *Natica alderi* in the Offshore area and the Coastal area. The latter species also decreased at the Dogger Bank. The new data will show to what extent the apparent trends observed in previous years continued in 1999.

4. MATERIAL AND METHODS

To ensure that any changes that are observed are not due to methodological differences, the procedures for sampling and processing the fauna samples are standardized (Essink, 1991) and have remained unaltered since the beginning of the monitoring project in 1991.

4.1. SAMPLING

In 2000 the BIOMON stations were sampled in the period March 25 to June 8. Nearly all stations were visited with the RV. Mitra (North Sea Directorate, RWS), except for two stations in the Coastal subarea with a water depth less than 10 m, viz. COA 13 & 14. These stations were sampled with the RV. Delta (RWS).

Fig. 1 shows the positions of the stations. The exact geographical positions of the 100 stations, together with the former station codes and selected abiotic characteristics (depth/sediment) of the stations are summarized in Table 1a/b. More general information about the cruise carried out with the RV. Mitra and the weather conditions during this part of the survey in 2000 can be found in the cruise report of Rijkswaterstaat (Anonymous, 2000).

4.2. SAMPLE TREATMENTS

At each station two boxcore samples (0.068 m², minimal depth 15 cm) were taken. One of the samples was used for sediment analysis and the other sample was washed through a sieve with round holes (1 mm) to collect the macrobenthic fauna. For sediment analysis 2 pooled subsamples (3.4 cm Ø, depth 10 cm) were immediately stored at -20°C. The residue of the macrobenthos samples was preserved in a borax-buffered solution of 4-6 % formaldehyde in seawater and stored at room temperature.

In the laboratory the macrobenthos samples were stained with rose-bengal and washed over a set of nested sieves with 0.7 mm as the smallest mesh size to facilitate

sorting. The macrofauna was identified to species level, except for some notoriously difficult taxa such as anthozoans, hydrozoans, phoronids, priapulids and nemerteans, and subsequently counted. Juvenile macrobenthic animals which because of their size could not be identified to species level were recorded on higher taxonomic levels, usually the genus level. Sizes (nearest 0.5 mm) were recorded for most molluscs and echinoderms.

4.3. ASHFREE DRY WEIGHT

The ash-free dry weight (AFDW) of the different taxa was determined in one of the following ways:

- Molluscs and echinoids:

By means of length-AFDW relationships of the form $W=a*L^b$ (W =AFDW in g and L =length in mm).

- Polychaetes, other worms, larger crustaceans and ophiuroids:

Indirectly, by converting the (blotted) wet weight into AFDW by means of conversion factors provided by Rumohr *et al.* (1987) and Ricciardi & Bourget (1998). Wet weights were measured with a Mettler PJ300 balance to the nearest mg.

- Remaining taxa:

Directly, by drying a sample at 60 °C for at least 60 hours and subsequently incinerating at 520 °C for 2 hours (Duineveld & Witte, 1987).

Small molluscs, amphipods and cumaceans were assigned an average individual AFDW of 0.2-0.5 mg. The same value is used by Holtmann & Groenewold (1992; 1994) in their analysis of macrobenthos from the MILZON-BENTHOS project in the southern North Sea between 1991 and 1993. This estimated individual weight is based on previous determinations of the AFDW of the taxa in question (Duineveld; Holtmann, unpubl.).

4.4. STATISTICS

In addition to the density (ind./m²) and biomass (g AFDW/m²), the diversity of each macrobenthos sample was calculated. In the literature a suit of biodiversity indices have been used to identify possible changes of the benthic fauna (Hill, 1973; Peterson, 1977; Pearson & Rosenberg, 1978; Harper & Hawksworth, 1994). In this report, we used three indices each representing a different aspect of the distribution of the sample diversity. The species richness (Hill₀) stands for the number of species per boxcore sample and is

the simplest index. The other two indices, the Shannon-Wiener index (H') (Shannon & Weaver, 1949) and the Simpson index (D) for dominance (Simpson, 1949), are based on the proportional abundances of the individual species in the samples. The Simpson index is sensitive to the abundance only of the more plentiful species and can therefore be regarded as a measure of dominance (Hill, 1973). A high value for Simpson's index means low diversity, whereas a high value for the H' or Shannon-Wiener index indicates high diversity.

4.5. SEDIMENT ANALYSIS

At each station shown in Fig. 1, two subsamples were taken from an intact boxcore sample and subsequently pooled for laboratory analysis of the sediment composition (e.g. grain size, content of calcium carbonate). The grain size was analysed with a Malvern Particle Sizer by the laboratory of the National Institute for Coastal and Marine Management (RIKZ, Middelburg). Two parameters were derived from the grain size data: the median grain size (μm) and the percentage (by weight) of mud. We here define mud as the total fraction mineral particles $< 63 \mu\text{m}$. However, for comparison with previous years we also calculated the fraction 16-63 μm .

Sediment types were classified on the basis of the median grain size as follows:

Characterisation of the sediment type according to the median grain size (after Gullentops *et al.*, 1977).

$< 175 \mu\text{m}$	Very fine sand
175 - 250 μm	Fine sand
250 - 300 μm	Medium-fine sand
300 - 350 μm	Medium-coarse sand
$> 350 \mu\text{m}$	Coarse sand

5. RESULTS AND DISCUSSION

5.1. SEDIMENT COMPOSITION

The median grain size and silt content of the sediment at the stations sampled are listed in Table 1 and spatial patterns are illustrated in Fig. 2 and 3. Mean values for the four subareas are given in Table 2.

The spatial pattern in the sediment composition in 2000 was quite similar to that in the preceding years. Medium-coarse to coarse (and very coarse sand) generally occurred in the southern part of the offshore area, whereas the northern part of the offshore area, the coastal area and the Dogger Bank were characterized by medium fine to fine sand. Very fine sand generally occurred in the Oyster Ground. The same pattern has been found in preceding years. The similarity in the grainsize distribution with preceding years was not confined to the areas mentioned. Also at individual stations the median grain size appeared to be very stable. An exception seems to be station OFF 2, north of Schiermonnikoog. In 2000 the median grain size at this station (218 μm) was well within the range of values found in 1995, 1996 and 1998 (208 – 219 μm). However in 1997 and 1999 values were found of 341 μm and 330 μm respectively. It seems likely that station OFF 2 is situated at a sharp local gradient where the sediment changes from fine sand into medium-coarse sand within a short distance. As a consequence, small year to year differences in sampling position could result in rather strong differences in sediment composition.

The silt contents of sediments also showed the same pattern as in preceding years. A substantial silt fraction in sediments only occurred in the Oyster Ground. The highest concentrations were found in a zone bordering the offshore area, including the Frisian Front, and the central Oyster Ground. The spatial distribution of silt within the Oyster Ground was almost identical to that in 1999. Outside the Oyster Ground, i.e. on the Dogger Bank, in the offshore area and the coastal area, silt concentrations were always below 2%.

5.2. DISTRIBUTION OF THE MACROBENTHIC FAUNA IN 2000

5.2.1 Diversity, density and biomass

A total number of 205 species/taxa were identified in the 100 boxcore samples in 2000, including 20 juvenile species (identified to genus level only) and 12 higher taxa (not identified to species level). The total number of taxa is within the range of previous years (181 – 231). The distribution of the species over the stations (presence/absence) and the

scientific names are given in Appendix-1. The basic data on macrobenthic abundance, biomass and diversity are listed in Appendix-2.

The mean number of species per sample (Hill 0) was, like in previous years, the highest on the Dogger Bank and the lowest in the coastal and offshore area (Table 2, Fig. 4,7). There is an overall pattern of high species richness in the North (below the 30 m depth contour) and low species richness in the south. In neither of the subareas a clear long term trend could be observed in species richness. A station that in previous years has been found to be extremely poor in its number of species is COA 13, west of Noord-Beveland. Upto 1998 the number of species was usually 3 per sample. In 2000 only one species (*Urothoe poseidonis*) was found at this station.

The highest Shannon Wiener diversity was also observed at the Dogger Bank, whereas Simpson's dominance was the lowest in this area (Table 2, Fig. 8,9). Numbers of individuals are more or less equally distributed over the different species and there are no species which strongly dominate the fauna community by number. The lowest Shannon Wiener diversity was found in the coastal area and Simpson's dominance was high here. This means that the fauna was generally dominated numerically by one or a few species in this area. At individual stations the dominant species were often *Spisula subtruncata*, *Magelona mirabilis* (formerly called *M. papillicornis*), *Spiophanes bombyx* or *Urothoe poseidonis*.

The mean fauna density was the highest at the Dogger Bank and in the coastal area (Table 2, Fig. 5). A cluster of 4 stations in the Frisian Front area, north of Terschelling, showed high densities as well. At the Dogger Bank crustaceans and polychaetes were the most abundant groups, in the Coastal area molluscs and polychaetes. The high densities in the Frisian Front cluster were mainly caused by molluscs, polychaetes and phoronids. The lowest numbers of individuals per m² were found in the Offshore area. There were no substantial changes compared to previous years (Fig. 10).

Biomass values were generally slightly higher than in 1999 (Fig. 11), but there does not seem to be a trendlike change. The highest mean biomass, but also the strongest variation in biomass values were found in the Coastal area (Fig. 6). This has also been found in previous years. The peak values found at some stations in the Coastal area are generally caused by dense populations of the mollusc *Spisula subtruncata*. Low biomass values were found at the Dogger Bank, in spite of the high faunal densities in this area. This means that the fauna at the Dogger Bank largely consists of small animals with low individual biomass. One station in this subarea, DOG 2, had a high biomass value, but this was caused by the presence of a few specimens of large *Echinocardium cordatum*, which accounted for 90% of the total biomass.

As has been observed in previous years too, there was no indication of any substantial change at the community level in the four subareas. In spite of strong annual fluctuations in the abundance of individual species, the overall faunal abundance and biomass as well as faunal diversity in the four subareas were in 2000 well within the range of values as observed in previous years. However it has been noticed already in 1999 that there seemed to be a slight shift in the contribution of the different taxonomic groups to the total community composition. Especially on the Dogger Bank and to a lesser extent in the Oyster Ground the share of molluscs in the total biomass per m² seemed to have decreased after 1995 (Daan & Mulder, 2000). We found that the molluscs in samples almost exclusively consisted of small specimens. Except for the Coastal area, where large specimens of *Spisula subtruncata* and *Ensis directus* are frequently found, adult specimens of large bivalve species occurred only very seldom in boxcore samples in the other subareas. This situation does not seem to have changed in 2000. Except for the Coastal area, bivalves were unvariably small. The numerical abundance of molluscs was not different from that in previous years, but mollusc biomass was the lowest since 1995 (the first year all 100 stations were sampled) in all four subareas. Also the relative contribution of molluscs was lower than in previous years.

5.2.2. TEMPORAL VARIATION IN DENSITY AND BIOMASS OF INDIVIDUAL SPECIES

Figs. 20-23 illustrate the temporal variation in density or biomass of a number of individual species in the 4 subareas during the period 1986-2000.

Dogger Bank (Fig. 20a-c)

On the Dogger Bank most of the common species showed more or less stable abundances, compared to 1999. Densities of the sand star *Acrocnida brachiata*, the amphipod *Urothoe poseidonis*, the bivalves *Mysella bidentata* and *Tellina fabula*, and the polychaetes *Magelona mirabilis*, *Chaetozone setosa* and *Spiophanes bombyx* were well within the range of those found in previous years. *Nephtys cirrosa* occurred in low abundance in 2000. In previous years there has not been any indication of a decreasing trend in this species, so the abundance of *N. cirrosa* is probably only in a temporal dip. The recovery of the amphipod *Bathyporeia elegans*, after a dip in the period 1995 – 1997, continued in 2000 and it reached densities that have not been observed before. Densities of the gastropod *Natica alderi*, which declined in recent years, had not recovered in 2000. Further, the polychaete *Aricidea minuta*, frequently found in the mid-nineties, was no longer observed in 1999 and 2000.

In 1999 a remarkable colonisation of the Dogger Bank area was observed by the brittle star *Amphiura chiajei* (Daan & Mulder, 2000). The species was not found at the Dogger

Bank up to 1998, but in 1999 it was found at all stations, in an average density of 150 indiv.m⁻². In 2000 *A. chiajei* again occurred at most stations but average densities had dropped to 25 indiv. m⁻².

At station DOG 6 we found a living specimen of the gastropod species *Retusa umbilicata*. The species is known from the English part of the North Sea (Thompson & Brown, 1976), but we couldn't find any earlier record from the DCS, so it seems that this species is new to the Dutch malacofauna.

Oyster Ground (Fig. 21a-c)

In previous years a declining trend has been observed in the brittle star *Amphiura filiformis*. The decline started in 1993 and continued upto 1999. In 2000 the densities of *A. filiformis* were invariably low compared to the period before 1993. Like in 1999 densities were particularly low at the Frisian Front stations OYS 8, 21, 34 and 36. A similar but less clear trend can be observed in the polychaete *Nephtys hombergii*. The other species do not indicate that there were trend-wise changes. The mean biomass of the sea urchin *Echinocardium cordatum* was very low in 2000 but this was not in line with a trendwise development.

Two small bivalve species were found in the Oyster Ground which are probably new to the Dutch living malacofauna: *Semierycina nitida* at OYS 5 and *Altenaeum dawsoni* at stations OYS 25, 26 and 37. Both have also been found in 1999, but, as far as we know, there are no other records of living specimens from the DCS. For both species (sub-) fossile material has been reported from the Wadden Isles and for *A. dawsoni* also from Brielle (Spaink, 1972) and Ouddorp (Bruyne et al., 1987).

Offshore area (Fig. 22a-c)

For eleven of the commonest species in the Offshore area the densities are plotted over the period 1985-2000. There seems to be a slightly increasing trend in the sea urchin *Echinocardium cordatum* from 1995 onwards, both in its numerical abundance and in biomass. Further, there was a slightly decreasing trend in the mollusc *Natica alderi* in the second half of the nineties. This trend seems to have come to an end in 2000. Most of the other species do not show a consistent trendwise development in their abundance over this period. Three polychaete species, which may be very abundant from time to time are *Chaetozone setosa*, *Lanice conchilega* and *Spiophanes bombyx*. (Note that the scales are logarithmic in Fig. 22c, so zero values are not plotted). The mean densities of these species show extremely large year to year variation.

The Offshore area had, as usual, the poorest benthic fauna. Total fauna densities, biomass and diversity were clearly the lowest in this area. The species density was at most stations

in the order of 5 to 25 per boxcore sample, which is substantially lower than in the Oyster Ground and on the Dogger Bank where the mean numbers were more than 30 per sample. Nevertheless, there was one station in the Offshore area with a remarkably rich fauna, that was clearly different from that at the other stations. The sample collected at this station (OFF 33) yielded 32 species and the occurrence of 6 of these species can be considered surprising. The occurrence of the burrowing shrimp *Callianassa subterranea* is surprising since this species normally only occurs in silty areas like the Oyster Ground. The number of specimens in the sample (4 adults and 14 juveniles) indicates that the animals are no incidental lost specimens, but that they have found a suitable substrate at station OFF 33.

However, a look at the sediment composition at the station shows that the median grain size (267 μm) was normal for the Offshore area and that the silt content (0.8%) was not higher than at surrounding stations. Usually *C. tyrrhena* is the characteristic representative of the genus *Callianassa* in sandy bottoms like those in the Offshore area. However *C. tyrrhena* is never so abundant in the Offshore area as *C. subterranea* can be in the Oyster Ground.

The occurrence of the brittle star *Amphiura chiajei* was surprising particularly because of the high density (17 specimens in one sample). *A. chiajei* is only sparsely found in the Offshore area and if so, there are seldom more than 1 or 2 specimens in a sample. *A. chiajei* is not a species with a strong sediment preference. It has found in large abundance in very silty bottoms (70-80% silt) west of Ireland (Munday & Keegan, 1992), but in 1999 and 2000 it was also common on the Dogger Bank, where silt concentrations are generally below 1%.

Remarkable was further the occurrence of 4 mollusc species, which, to our knowledge, have never or only very seldom been found in the North Sea before. The polyplacophorans we found (5 specimens) are not known from this area. We couldn't identify them and gave them to a specialist. Living specimens of the small gastropod *Alvania lactea* are known only from the Channel and southward (Graham, 1988). Shells found along the Dutch coast and further north were invariably dead specimens (de Boer & de Bruyne, 1991). We found 3 specimens of *A. lactea* alive at OFF 33. Further there was a juvenile mytilid (mussel) species that we couldn't identify but it was certainly not a *Mytilus edulis*. Finally the sample contained 2 living specimens of the gastropod *Tornus subcarinatus*. Living specimens of this species have been found only once during the BIOMON programme at 2 locations in the Oyster Ground (Holtmann et al., 1996). Further there is one record from a station in the Offshore area (Daan & Mulder, 1994). As far as we know these are the only records of living specimens in the North Sea till now.

There is one characteristic that these 4 mollusc species have in common and that is that their occurrence is associated with the presence of hard substrate. Substantial pieces of hard substrate were not present in the sample, but it suggests that hard substrate must

have been present in the immediate vicinity of the spot where the sample was collected. It is possible that the sample was taken close to a ship's wreck. Such a wreck could allow for very local deviant circumstances and the settlement of unusual organisms. This seems to provide a plausible explanation for the different fauna at OFF 33, only in 2000, when we assume that in other years samples were taken far enough from the wreck, to be outside the influence of the obstacle.

Coastal area (Fig. 23a-c)

The sea urchin *Echinocardium cordatum* occurred in the coastal area in the highest abundance in the early nineties and gradually decreased afterwards, both in numbers and biomass. In 1998 and 1999 there was a slight recovery. This recovery continued in 2000.

A similar development was observed in the amphipod *Urothoe poseidonis* and the bivalve *Spisula subtruncata*, and particularly the latter species showed a clear recovery in 2000. The gastropod *Natica alderi* and the polychaete *Nephtys cirrosa*, which also showed a decrease during the mid nineties, occurred invariably in low numbers in 2000. Extremely variable were the densities of the polychaetes *Lanice conchilega*, *Magelona mirabilis* and *Spiophanes bombyx*. There was no consistent trendwise development in the abundance of these species.

The Coastal area was the area with the highest mean biomass, but also with the largest variation in biomass. Biomass values are the highest at stations where banks of *Spisula subtruncata* or *Ensis* spp. (usually *Ensis directus*) occur. However, at stations where these species are absent, biomass values often belong to the lowest of the DCS. So in fact, the presence of banks of bivalves is the only cause of the overall high mean biomass in the Coastal area.

6. Acknowledgements

The monitoring programme is initiated by the National Institute for Coastal and Marine Management (RIKZ), with G.M. Janssen, M. Latuhihin and J. de Vlas respectively as project leaders, and is carried out in cooperation with the North Sea Directorate (DNZ) and the department of Marine Ecology of the NIOZ. We want to thank the captain and crew on board of the RV Mitra and RV Delta for their assistance during the fieldwork, W. Schreurs and G. den Hartog (RIKZ Middelburg) for the analysis of the sediment samples, J. de Vlas for critically reading the original manuscript, M. van Arkel for his contribution in the organisation and H. Hobbelink for the cover design.

7. REFERENCES

- ANONYMOUS, 2000. Meetverslag ms. Mitra, Arca week 09, 10, 12, 14, 17, 1999. EXP*BMN/ BENTHOS. -*Rijkswaterstaat, Directie Noordzee*: 68 pp.
- BOER, T.W. DE & R.H. DE BRUYNE, 1991. Schelpen van de Friese Waddeneilanden: 1-300. Oegstgeest.
- BRUYNE, R.H., A. DE GRAAF & D.F. HOEKSEMA, 1987. Marine molluscs new for the Netherlands, washed ashore at the beaches of Ouddorp (Goeree-Overflakkee, Province of Zuid-Holland) with some remarks on the occurrence of *Altenaum dawsoni* (Jeffreys, 1864). - *Basteria* 51: 67-78.
- DAAN, R. & M. MULDER, 1994. Long-term effects of OBM cutting discharges in the sandy erosion area of the Dutch Continental Shelf. NIOZ-report 1994-10, NIOZ, Texel, The Netherlands: 1-26
- DAAN, R. & M. MULDER, 2000. The macrobenthic fauna in the Dutch sector of the North Sea in 1999 and a comparison with previous data. -NIOZ-report 2000-7, NIOZ, Texel, The Netherlands: 1-89.
- DEKKER, R. & W. DE BRUIN, 2000. Het macrobenthos op 12 raaien in de Waddenzee en de Eems Dollard in 1999. -*NIOZ-rapport 2000-8*: 73 pp.
- DUINEVELD, G.C.A., H.J. WITTE, 1987. Report on an intercalibration exercise on methods for determining ashfree dry weight of macrozoobenthos. - *ICES CM 1987/L:39*: 6pp.
- ESSINK, K., 1995. Change of strategy for monitoring macrozoobenthos in the Dutch sector of the North Sea. -*National Institute for Coastal and Marine Management/RIKZ/ Working-document OS-95.606x*: 5pp.
- Graham, A.G., 1988. Molluscs: Prosobranch and pyramidellid gastropods. Synopses of the British fauna (new series) no. 2, 1-662. Brill & Backhuys, Leiden.
- GULLENTOPS, F., M. MOENS, A. RINGELE & R. SENGIER, 1977. Geologische kenmerken van de suspensies en de sedimenten. -In: J. Nihoul & F. Gullentops (eds): *Mathematisch Model Noordzee. Vol 4. Sedimentologie*.
- HARPER, J.L. & D.L. HAWKSWORTH, 1994. Biodiversity: measurement and estimation. *Phil. Trans. R. Soc., Ser. B*, 345: 5-12.
- HILL, M.O., 1973. Diversity and evenness: A unifying notation and its consequences. *Ecology* 54(2): 427-432.

- HOLTMANN, S.E. & A. GROENEWOLD, 1992. Distribution of the zoobenthos on the Dutch Continental Shelf: the Oyster Ground, Frisian Front, Vlieland Ground and Terschelling Bank (1991). -*NIOZ-report 1992-8, NIOZ, Texel, The Netherlands, NIOO-CEMO rapporten en verslagen 1992-6: 129pp.*
- HOLTMANN, S.E. & A. GROENEWOLD, 1994. Distribution of the zoobenthos on the Dutch Continental Shelf: The western Frisian Front, Brown Bank and Broad Fourteens (1992/1993). -*NIOZ-report 1994-1, NIOZ, Texel, The Netherlands, NIOO-CEMO rapporten en verslagen 1994-1: 136pp.*
- HOLTMANN, S.E., J.J.M. BELGERS, B. KRACHT & R. DAAN, 1996. The macrobenthic fauna in the Dutch sector of the North Sea in 1995 and a comparison with previous data. -*NIOZ-report 1996-8, NIOZ, Texel, The Netherlands: 102 pp.*
- MUNDAY, B.W. & B.F. KEEGAN, 1992. Population dynamics of *Amphiura chiajei* in Killary Harbour, on the west coast of Ireland. *Mar. Biol.* 114: 595-605.
- PEARSON, T.H. & R. ROSENBERG, 1978. Macrobenthic succession in relation to organic enrichment and pollution of the marine environment. -*Oceanogr. Mar. Biol. Ann. Rev.* 16: 229-311.
- PETERSON, C.H., 1977. Species diversity and perturbations: predictions of a non-interactive model. -*Oikos* 29: 239-244.
- RICCIARDI, A. & E. BOURGET, 1998. Weight-to-weight conversion factors for marine benthic macroinvertebrates. -*Mar. Ecol. Prog. Ser.* 163: 245-251.
- RUMOHR, H., T. BREY & S. ANKAR, 1987. A compilation of biometric conversion factors for benthic invertebrates in the Baltic Sea. -*Baltic Marine Biology Publ.* 9: 1-56.
- SHANNON, C.E. & W. WEAVER, 1949. The mathematical theory of communication. - *Univ. of Illinois Press, Urbana.*
- SIMPSON, E.H., 1949. Measurements of diversity. -*Nature*, 163: 688-688.
- SPAINK, G., (1972). *Altenaeum nortoni* nov. gen. nov. spec. (Lamellibranchia: Condyllocardiidae) from the Pleistocene of the southern North Sea basin. - *Basteria* 36: 143-147.
- THOMPSON, T.E. & G.H. BROWN, 1976. British opisthobranch molluscs. Synopses of the British Fauna no.8: 1-203
- YLAND, E., 1995. Biologisch monitoringprogramma zoute wateren, stand van zaken 1995. -*Werkdocument RIKZ IT-95.170X: 39pp.*

Tables and Figures

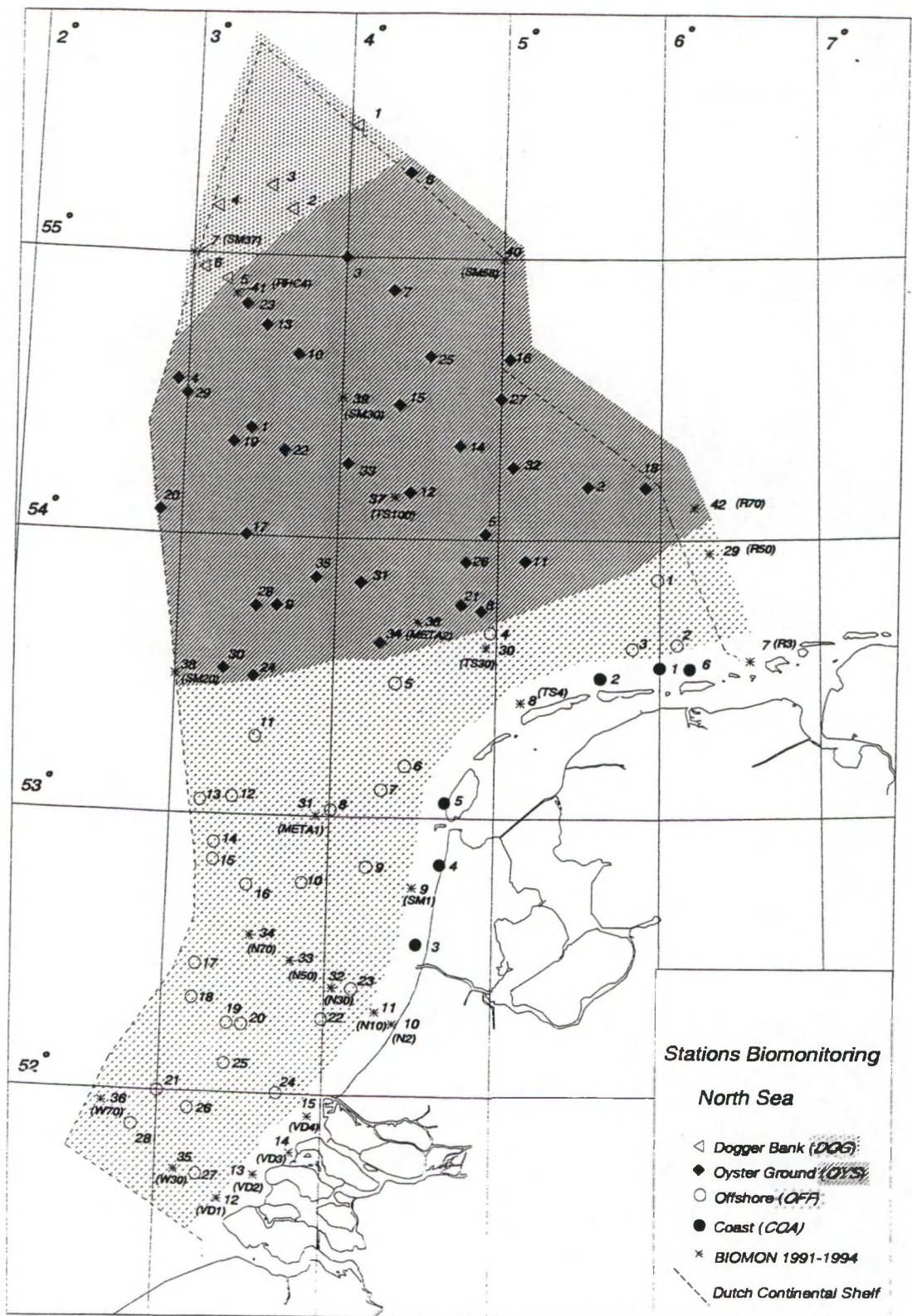


Fig. 1. Locations of the sampling stations

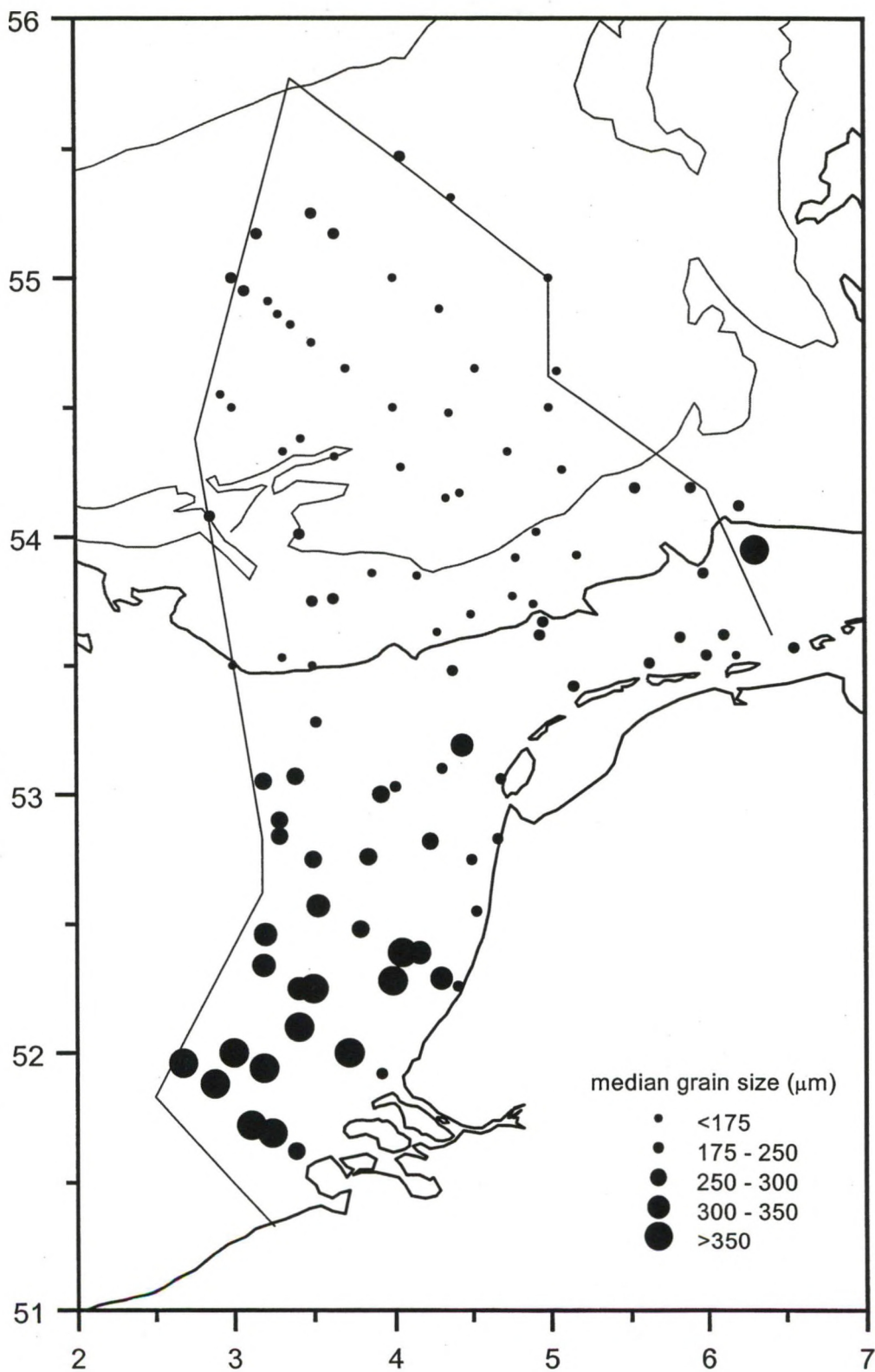


Fig. 2: Median grain size (μm) of the sediment in 2000

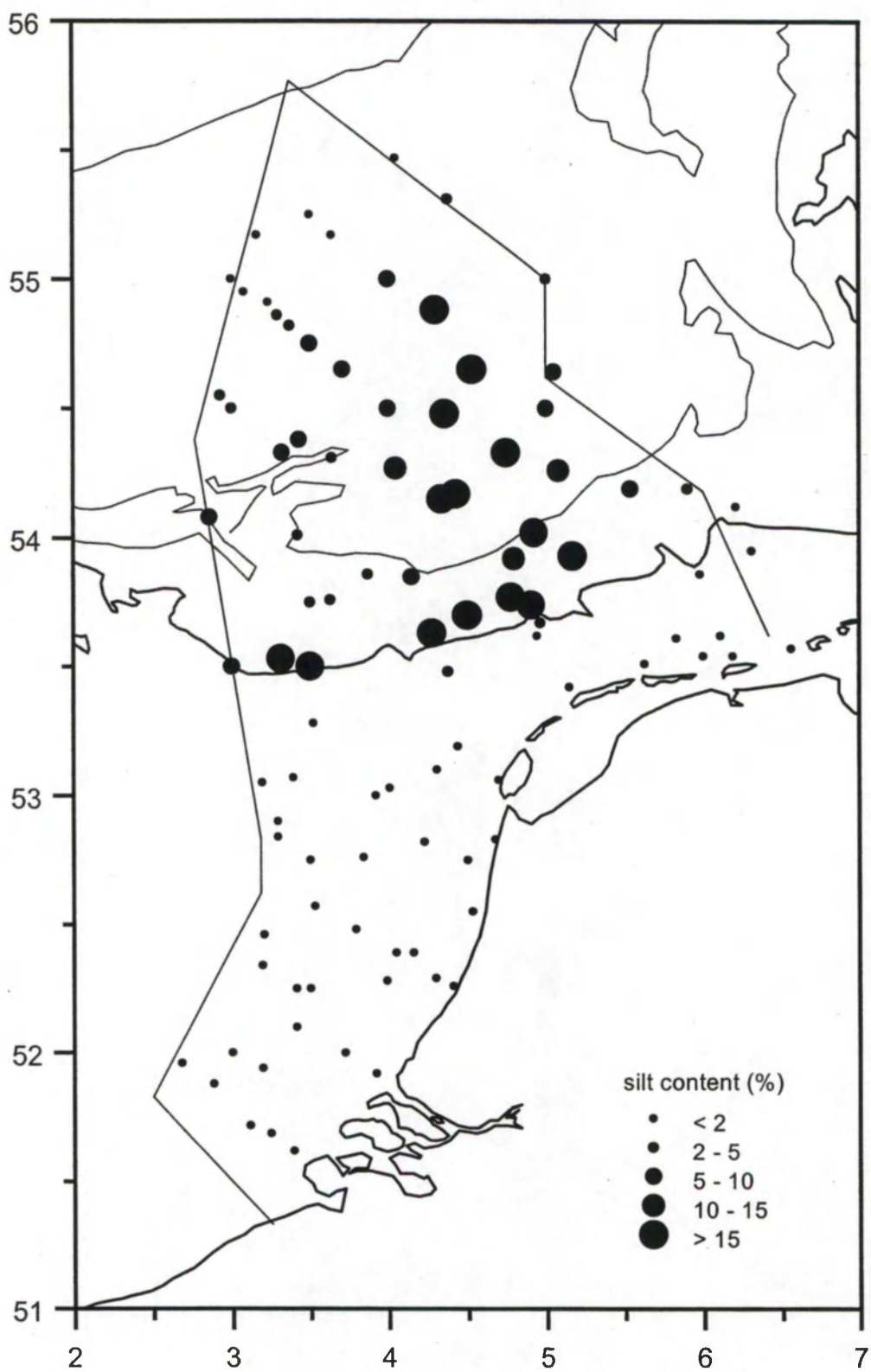


Fig. 3: Silt content (fraction <63 μm) of the sediment in 2000.

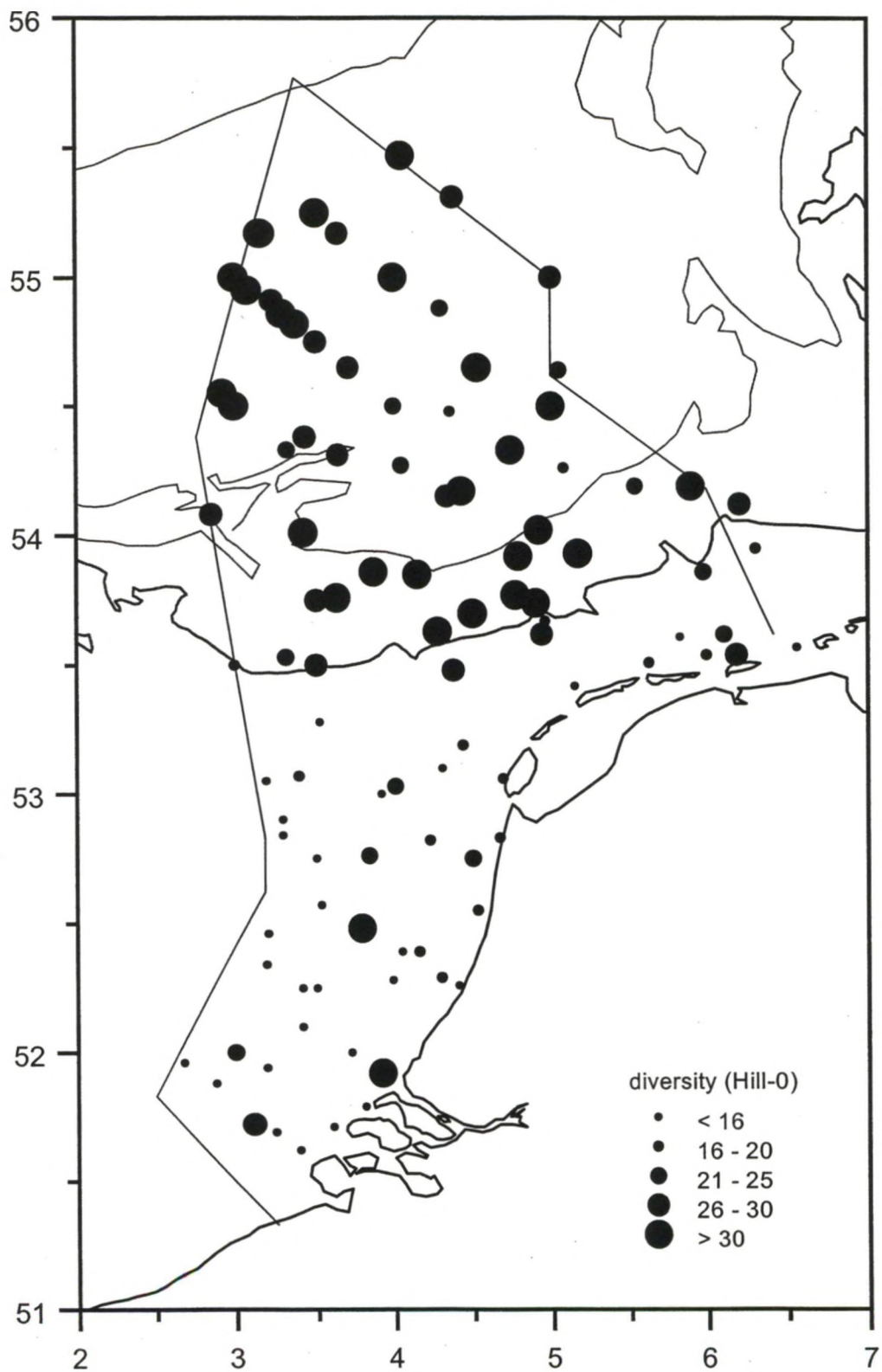


Fig. 4: The number of species per sample (Hill-0) in 2000.

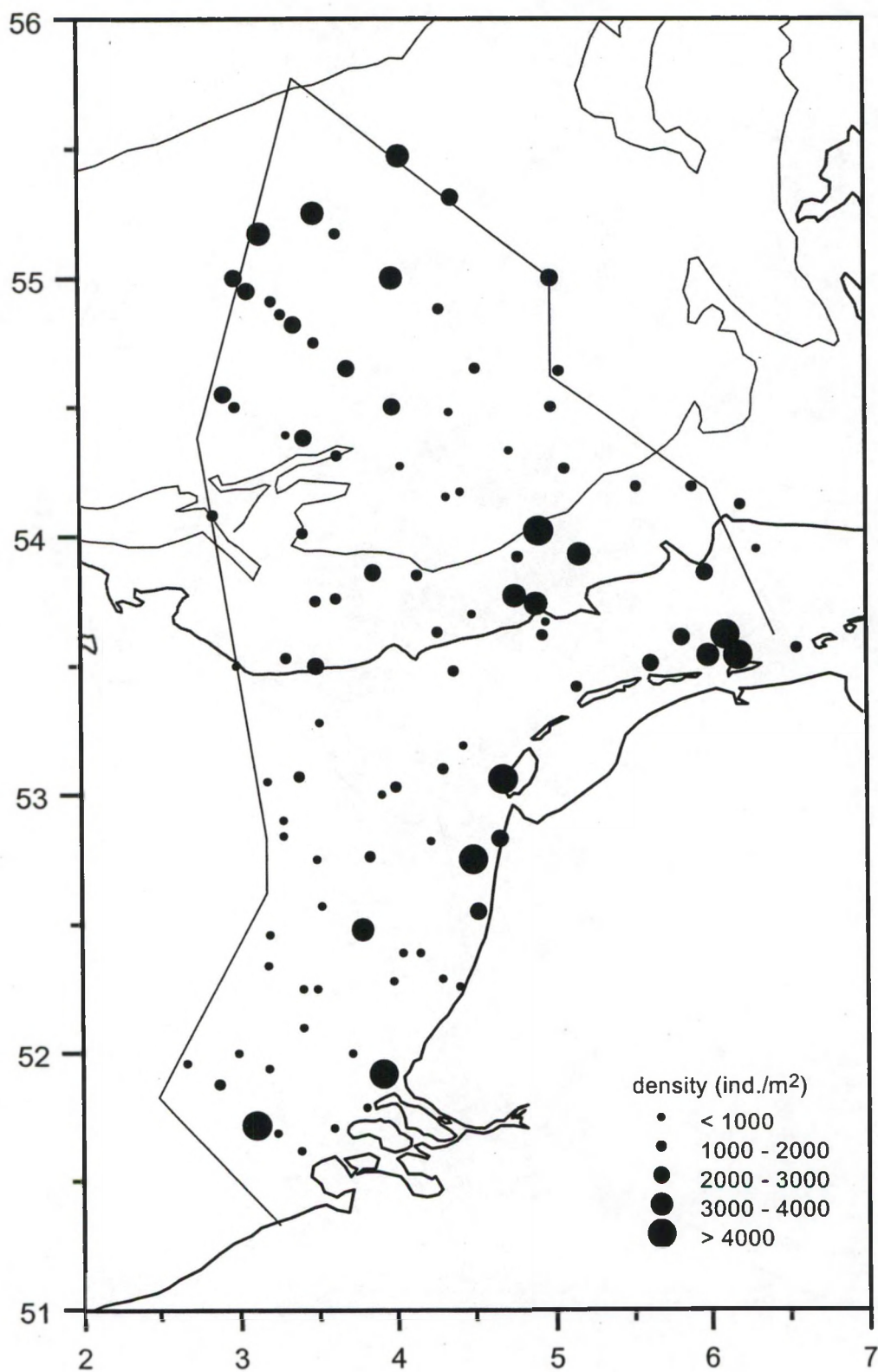


Fig. 5: The total fauna density in 2000.

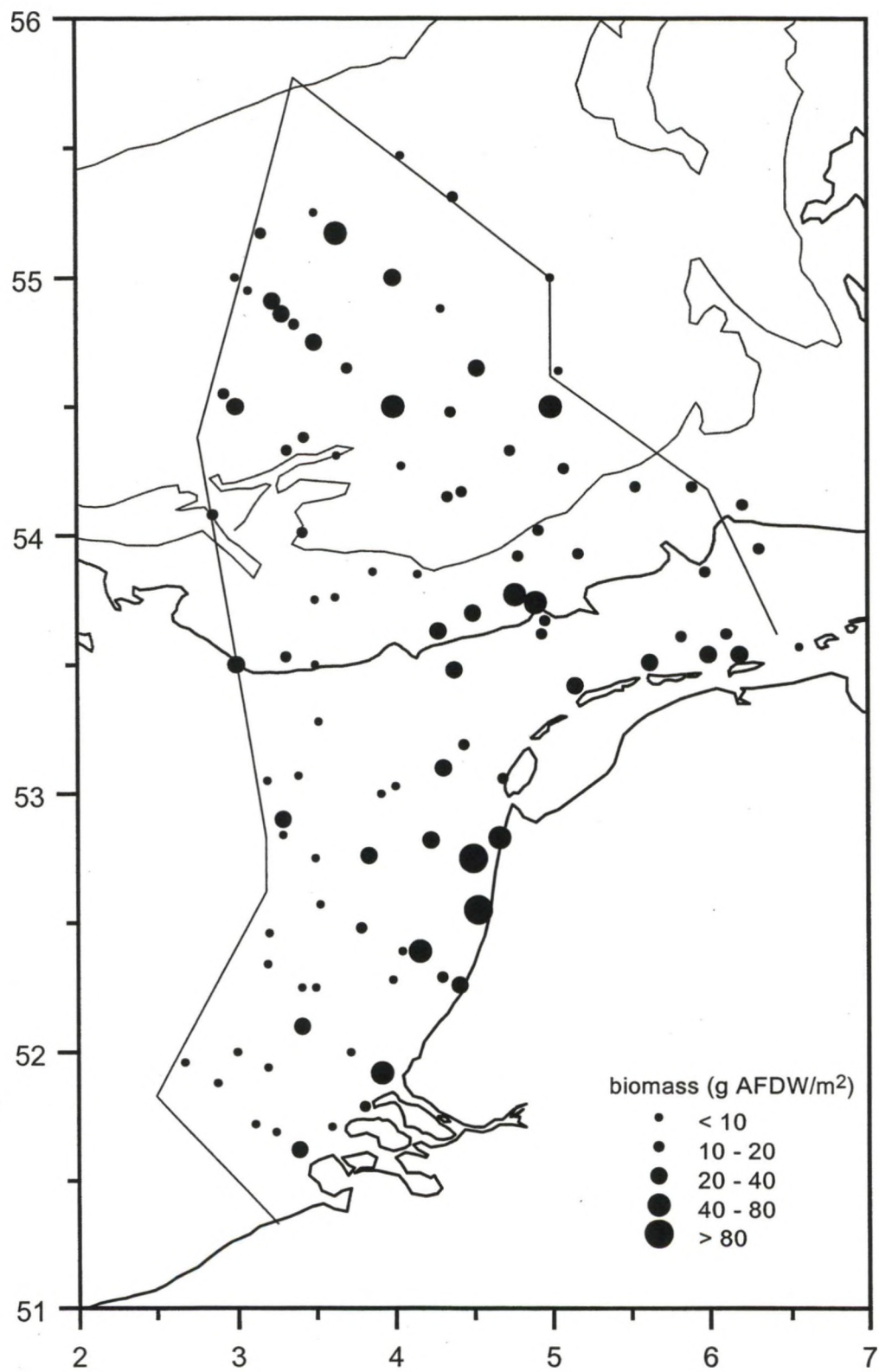


Fig. 6: The total biomass (g AFDW/m²) of the macrobenthos in 2000.

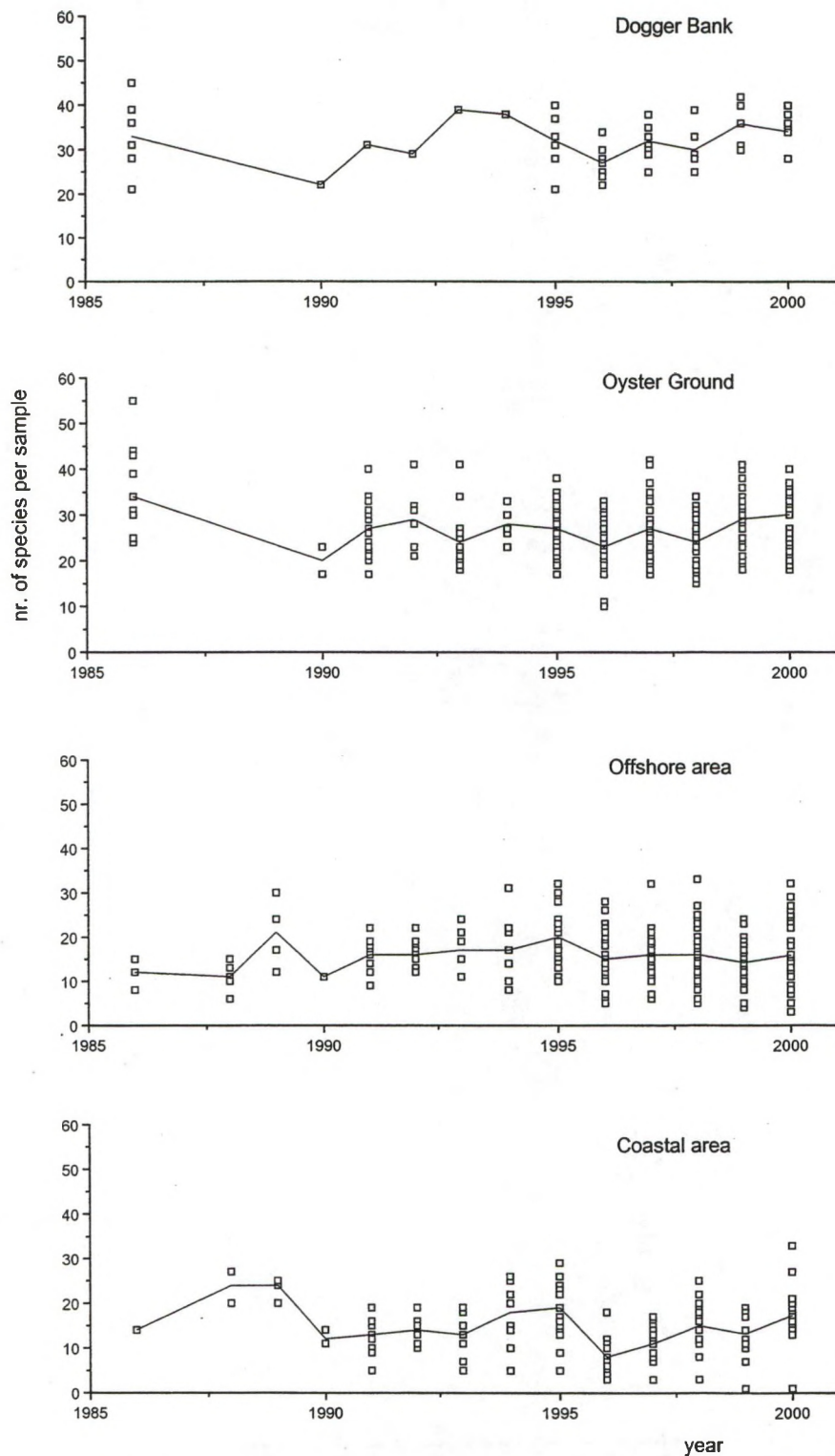


Fig. 7: Temporal patterns in species richness (Hill-0) between 1986 and 2000

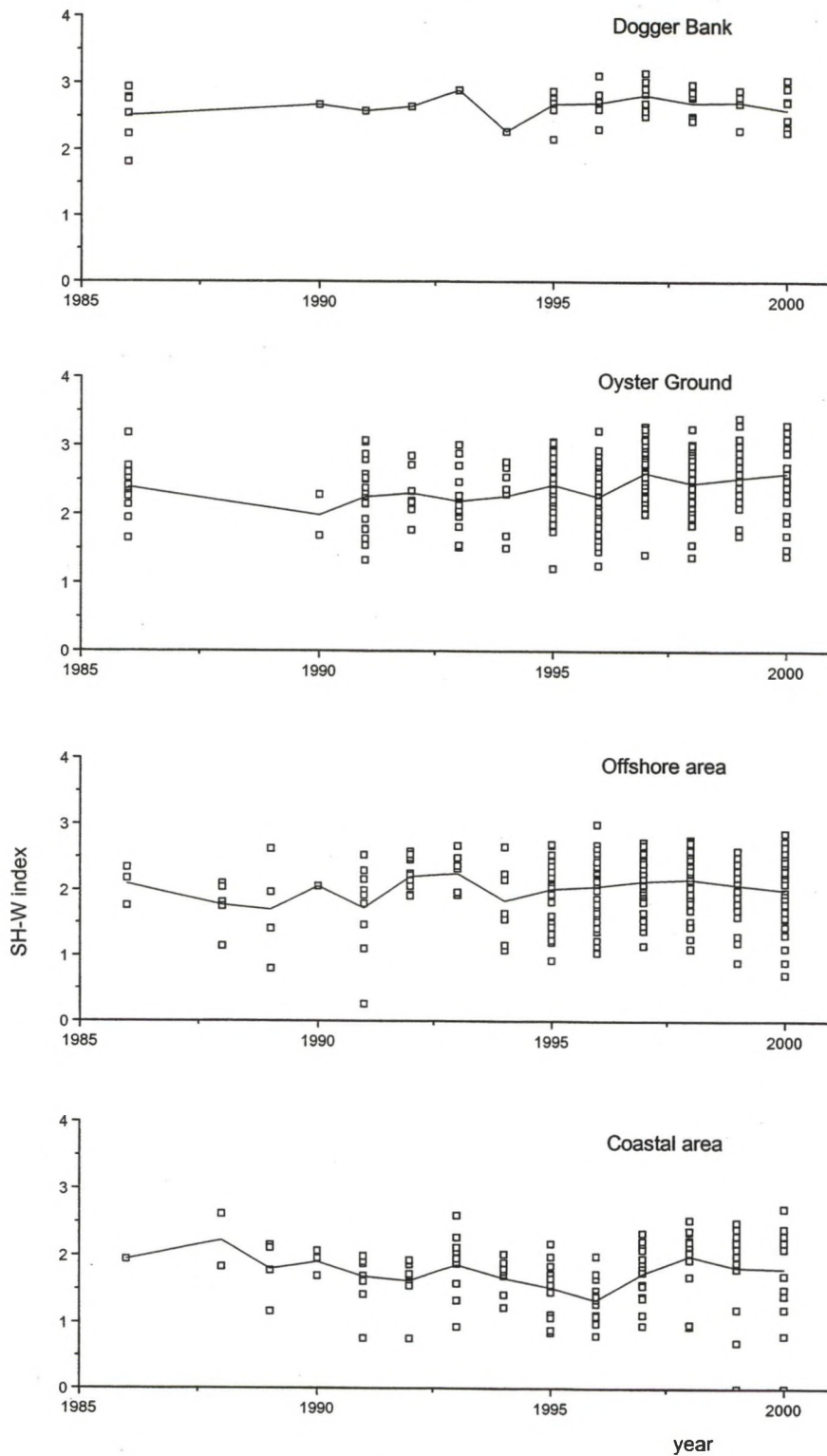


Fig. 8: Temporal patterns in Shannon-Wiener diversity between 1986 and 2000

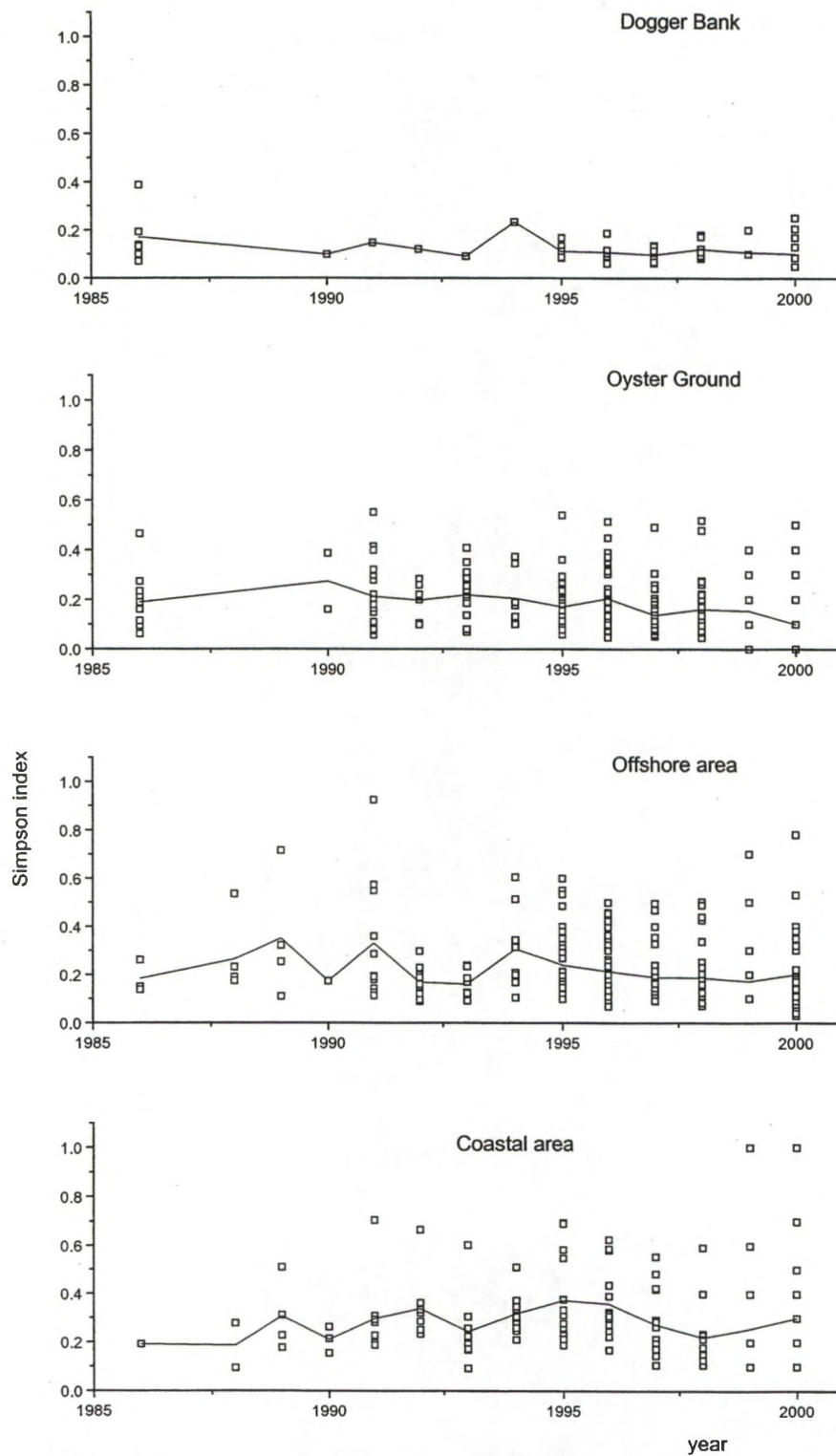


Fig. 9: Temporal patterns Simpson's dominance between 1986 and 2000

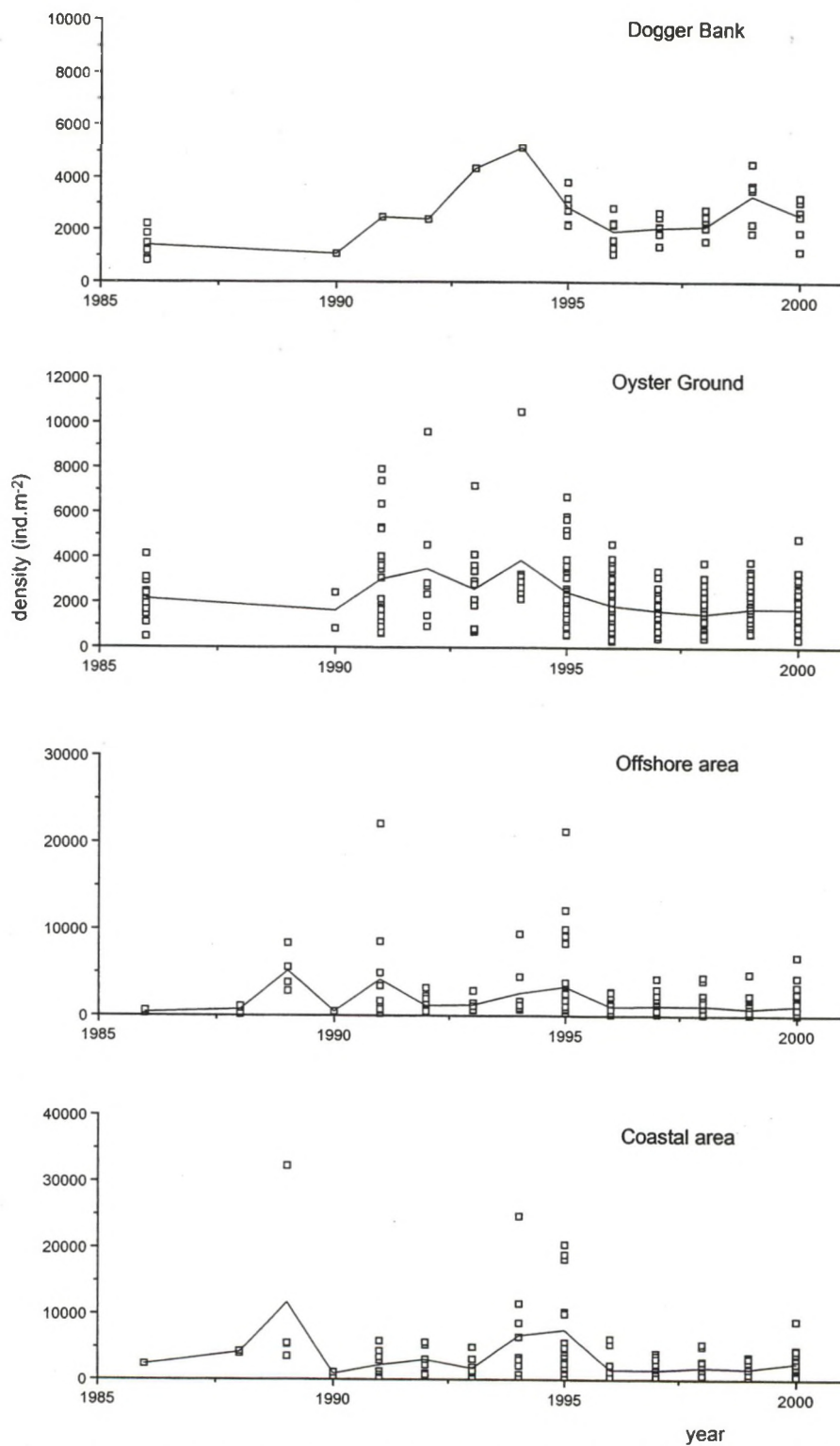


Fig. 10: Temporal patterns in macrobenthos density between 1986 and 2000

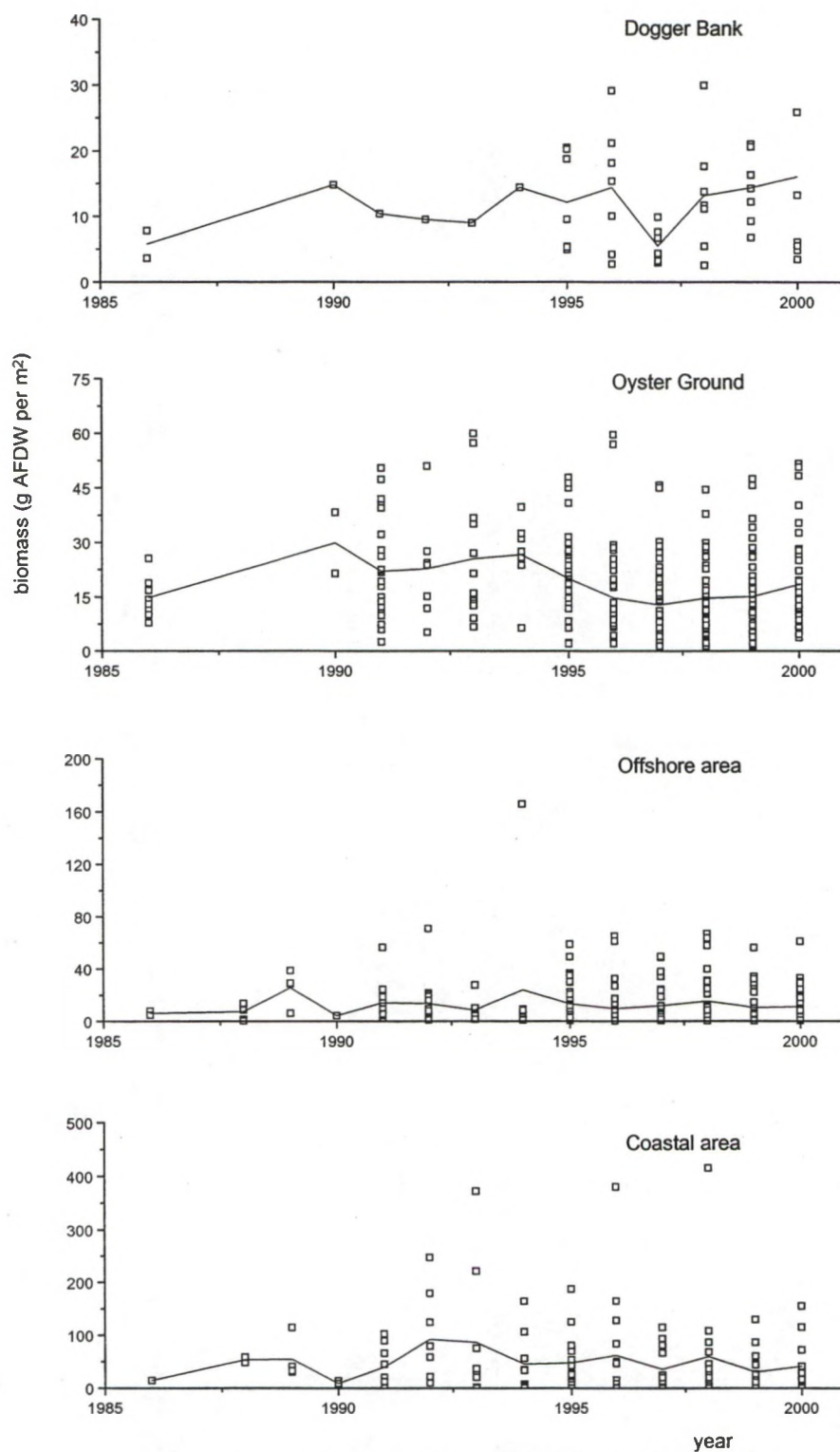


Fig. 11: Temporal patterns in biomass between 1986 and 2000

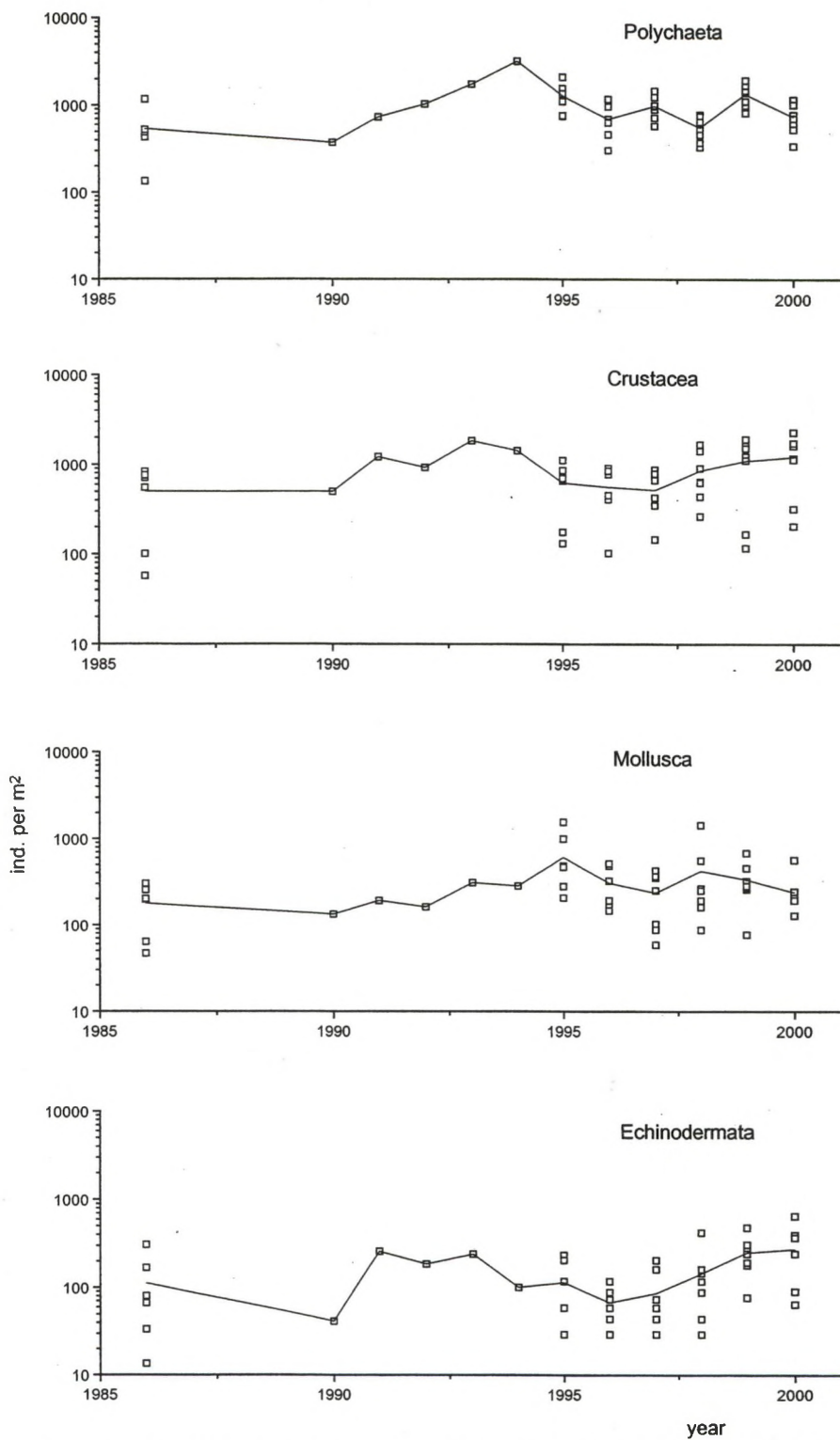


Fig. 12: Densities of 4 macrobenthos taxa at the Dogger Bank (1986-2000).

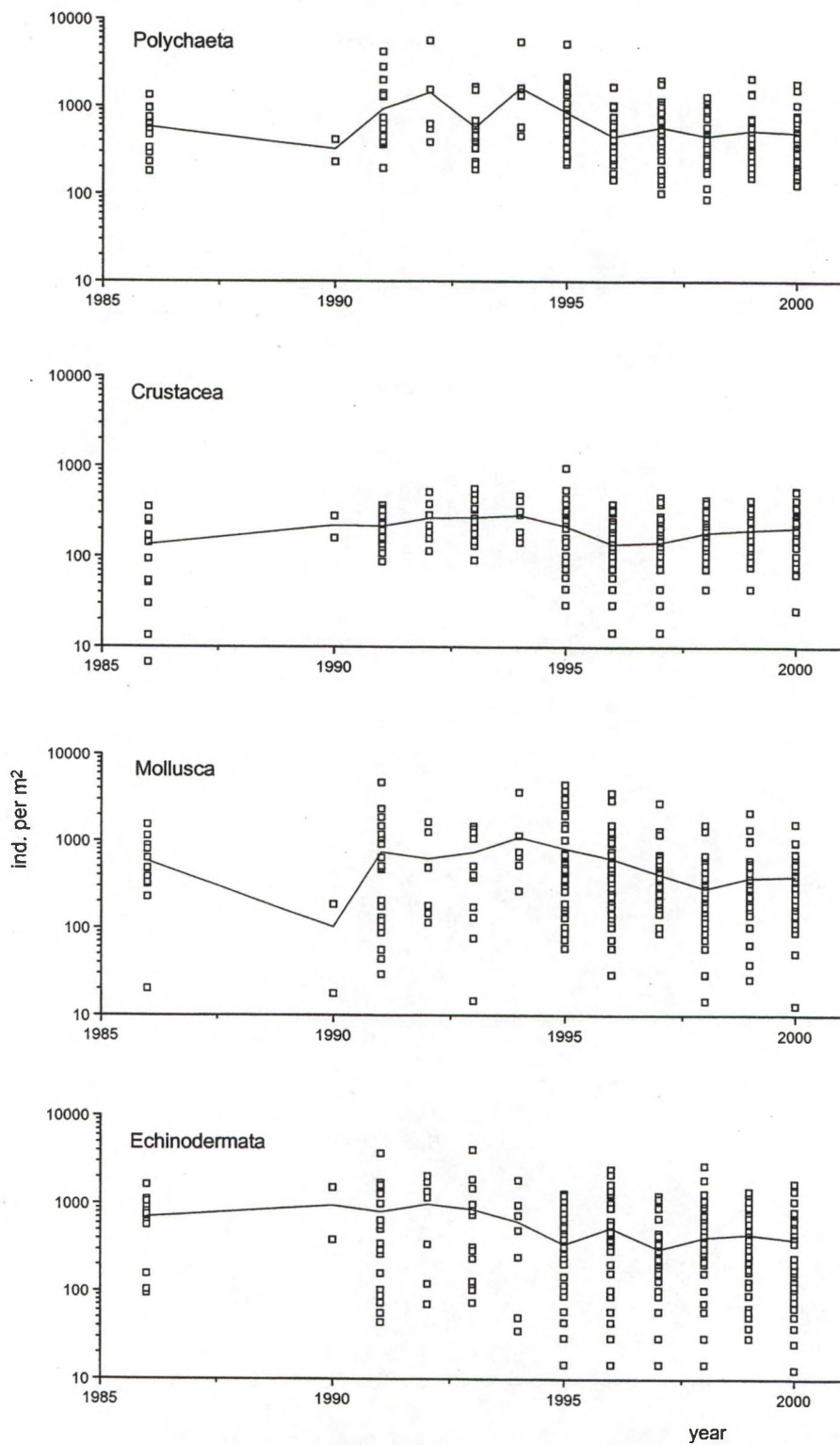


Fig. 13: Densities of 4 macrobenthos taxa in the Oyster Ground (1986-2000)

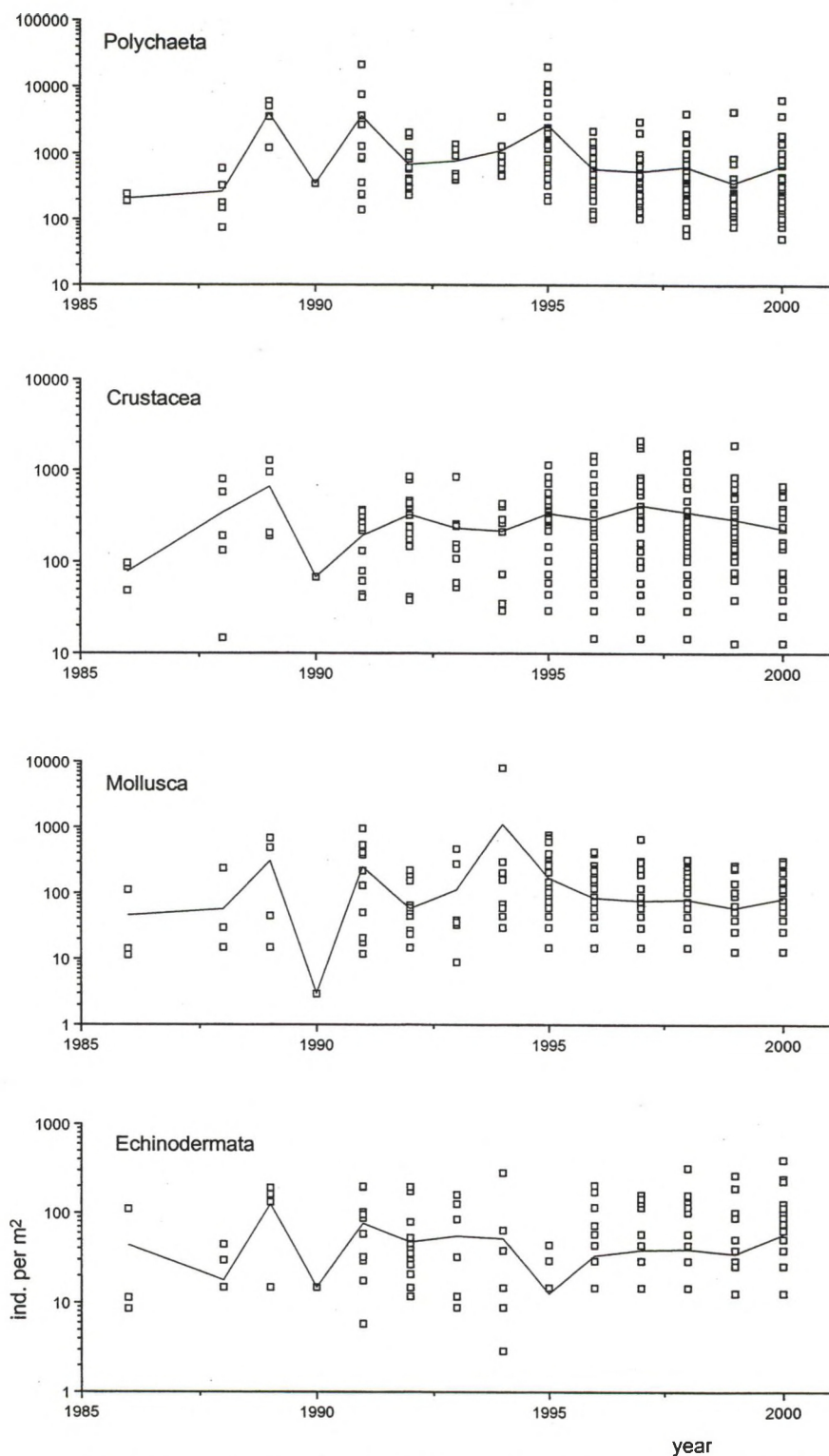


Fig. 14: Densities of 4 macrobenthos taxa in the offshore area (1986-2000)

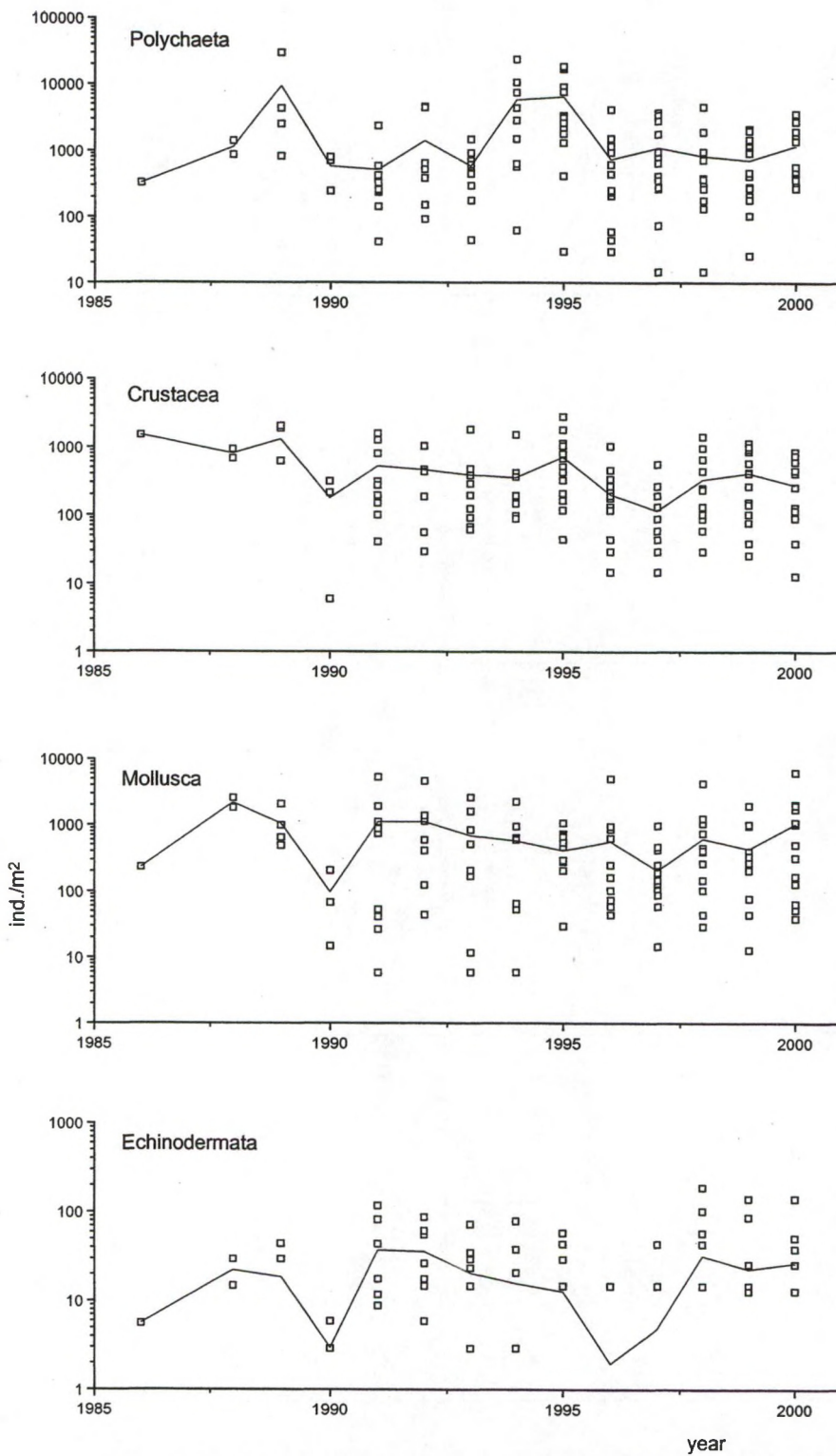


Fig. 15: Densities of 4 macrobenthic taxa in the coastal area (1986-2000)

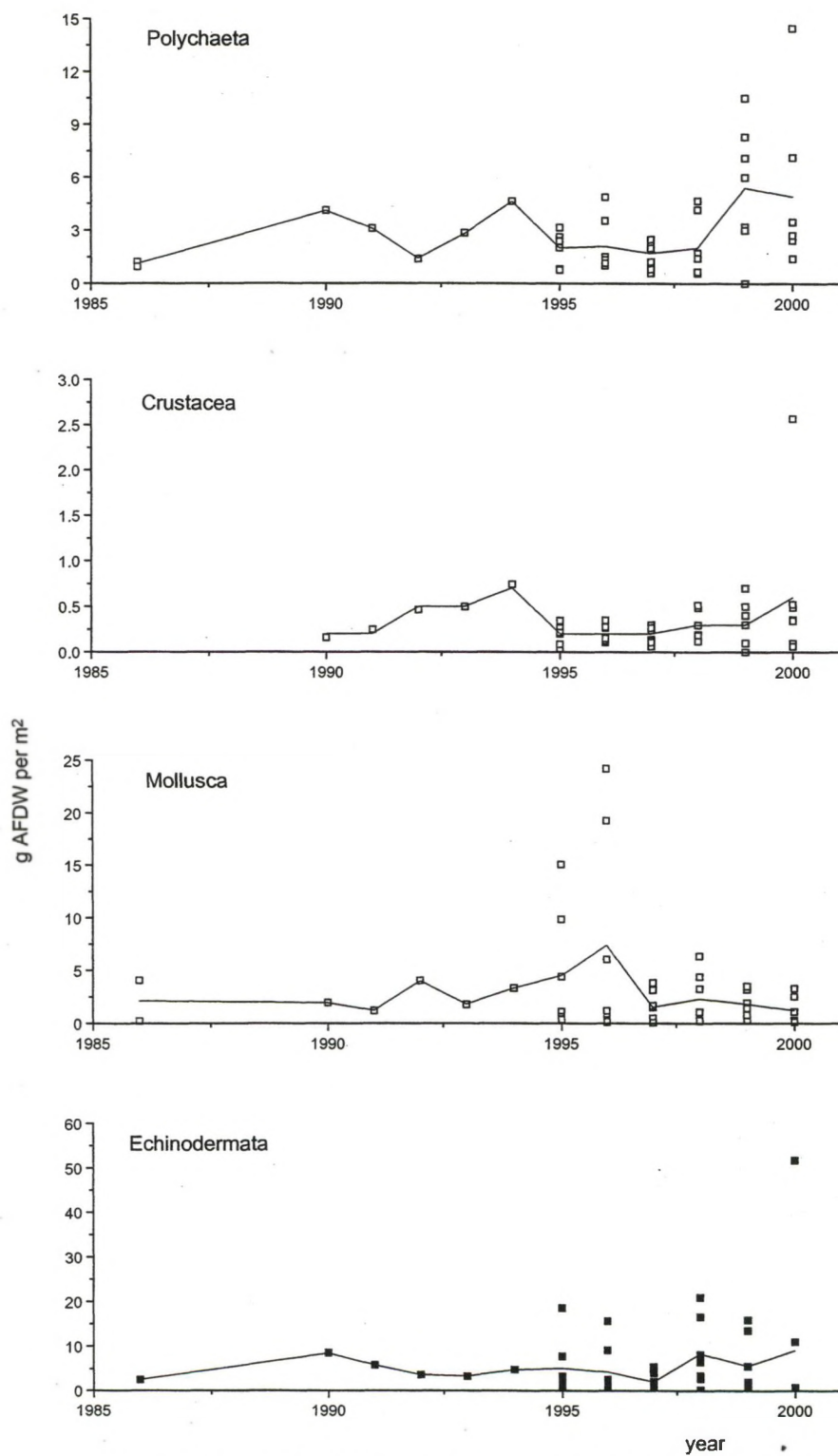


Fig. 16: Biomass of 4 macrobenthos taxa on the Dogger Bank (1986-2000)

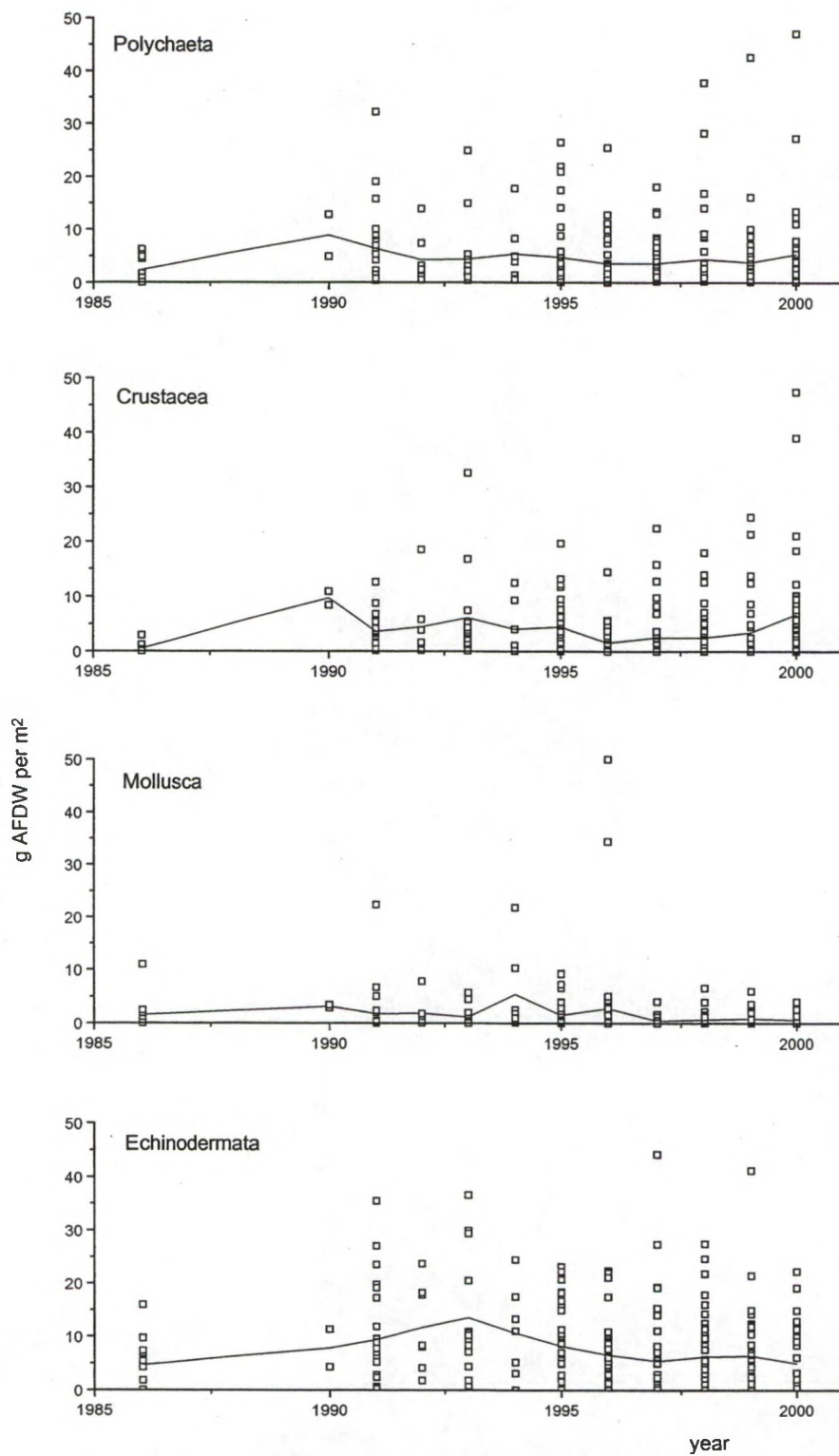


Fig. 17: Biomass of 4 macrobenthos taxa in the Oyster Ground (1986-2000)

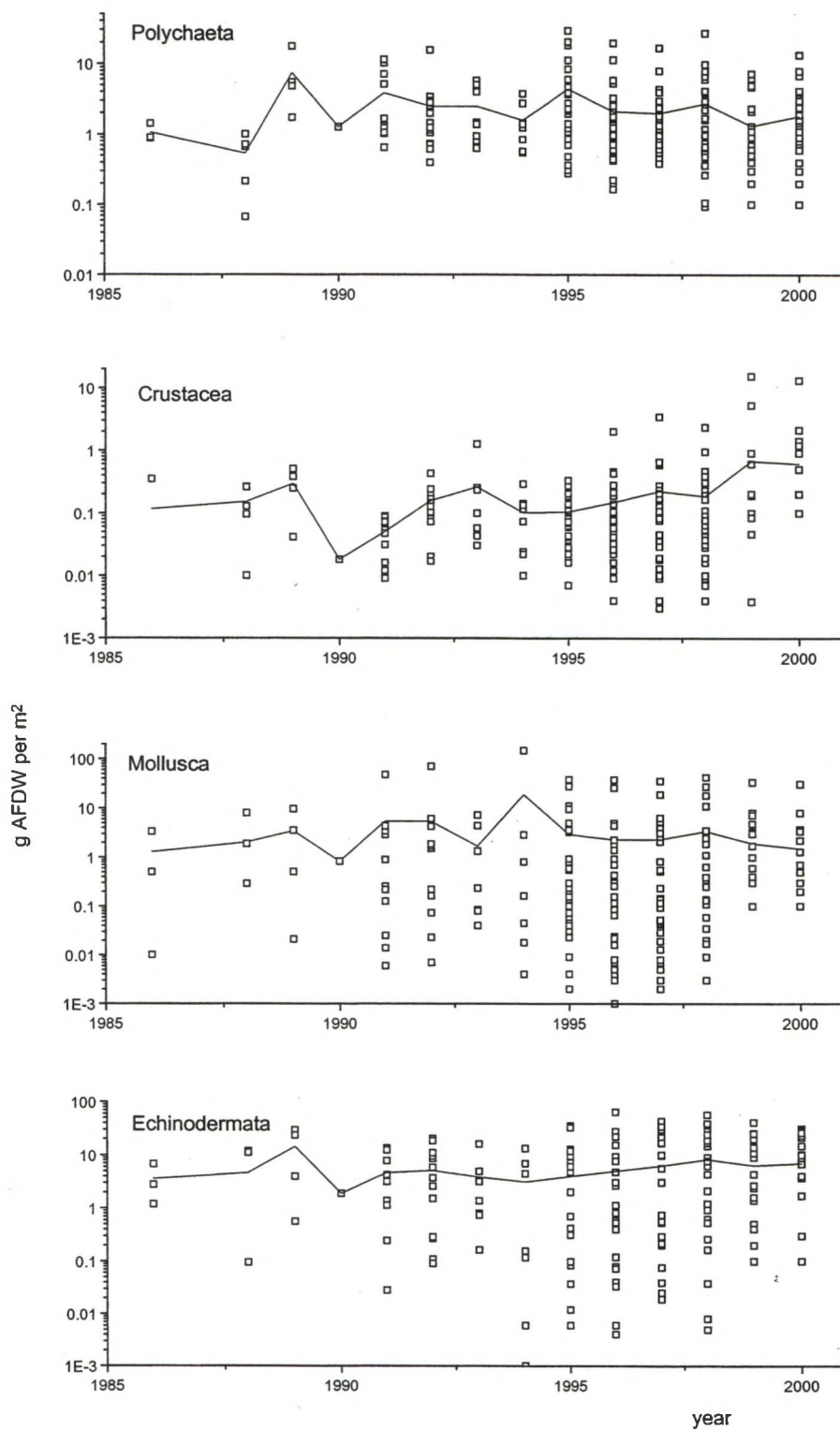


Fig. 18: Biomass of 4 macrobenthic taxa in the offshore area (1986-2000)

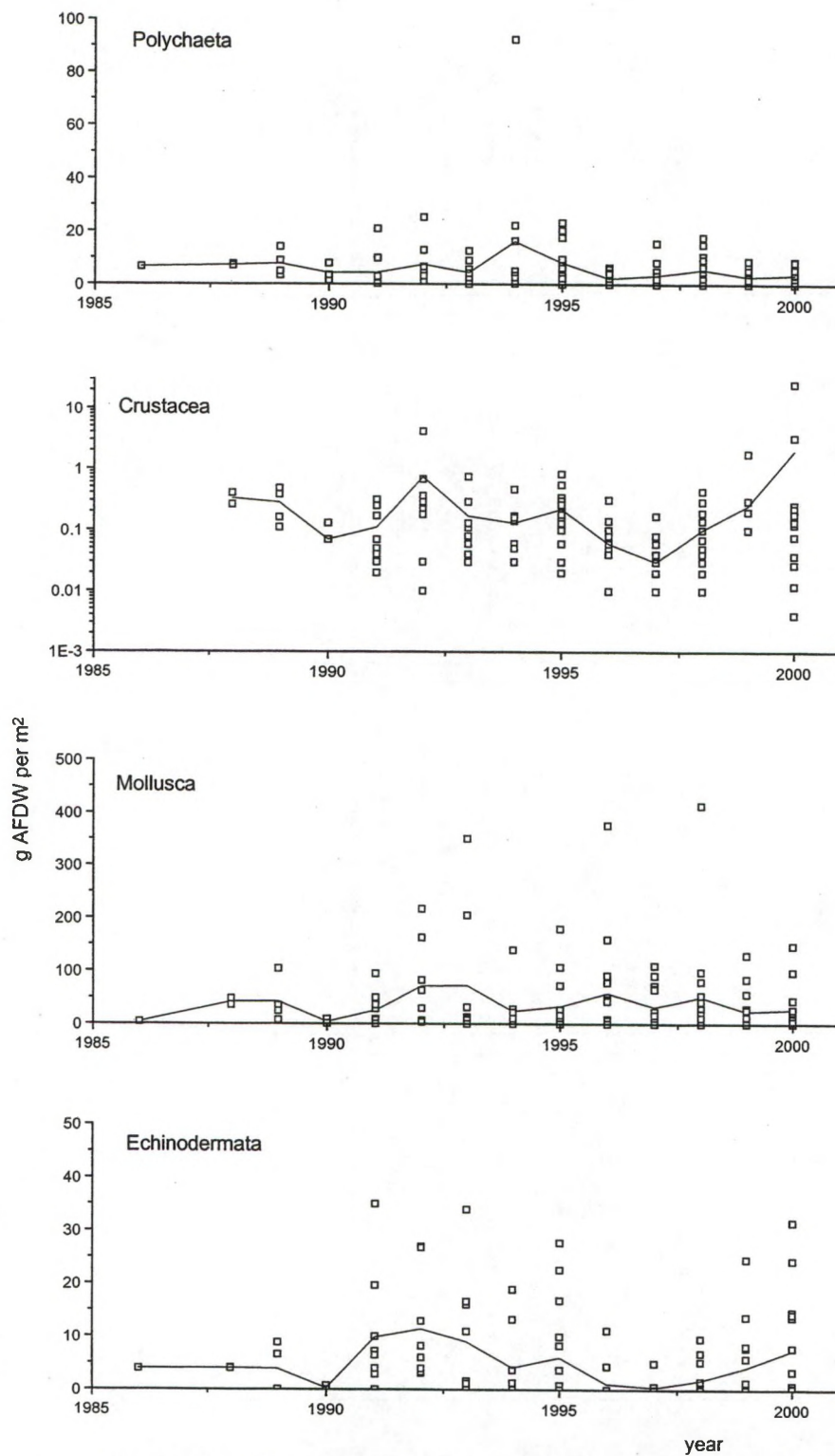


Fig. 19: Biomass of 4 macrobenthic taxa in the coastal area (1986-2000)

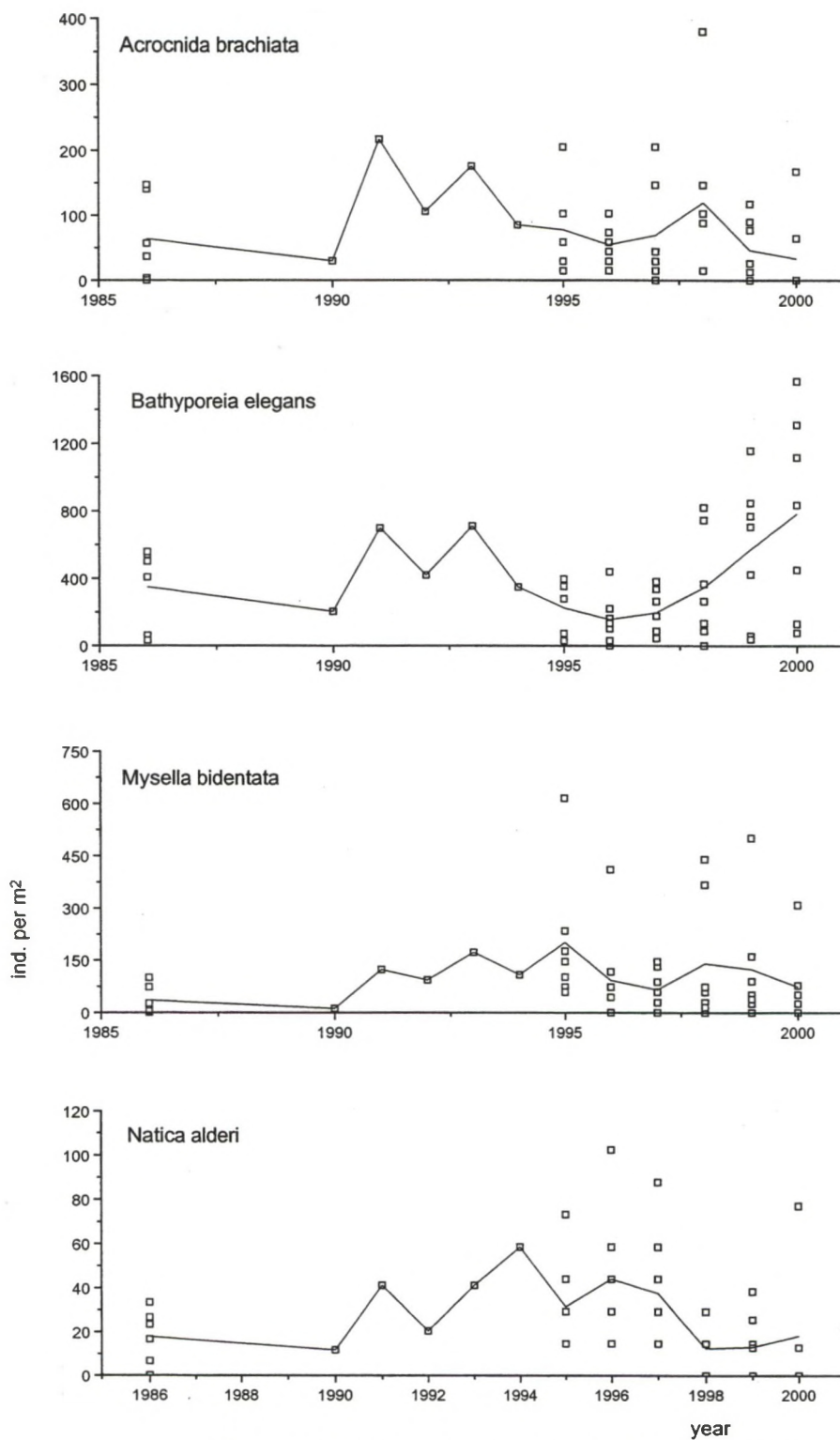


Fig. 20a: Densities of 4 species at the Dogger Bank (1986-2000)

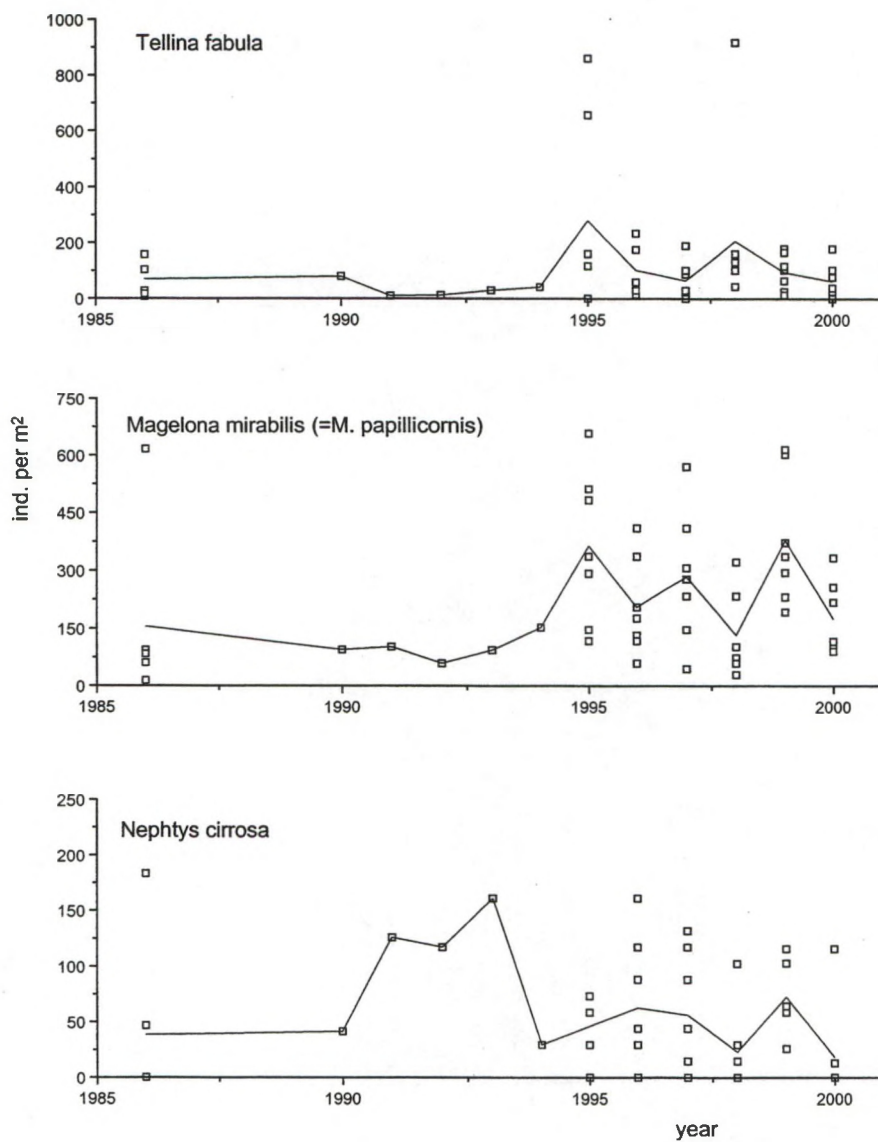


Fig. 20b: Densities of 3 species at the Dogger Bank (1986-2000)

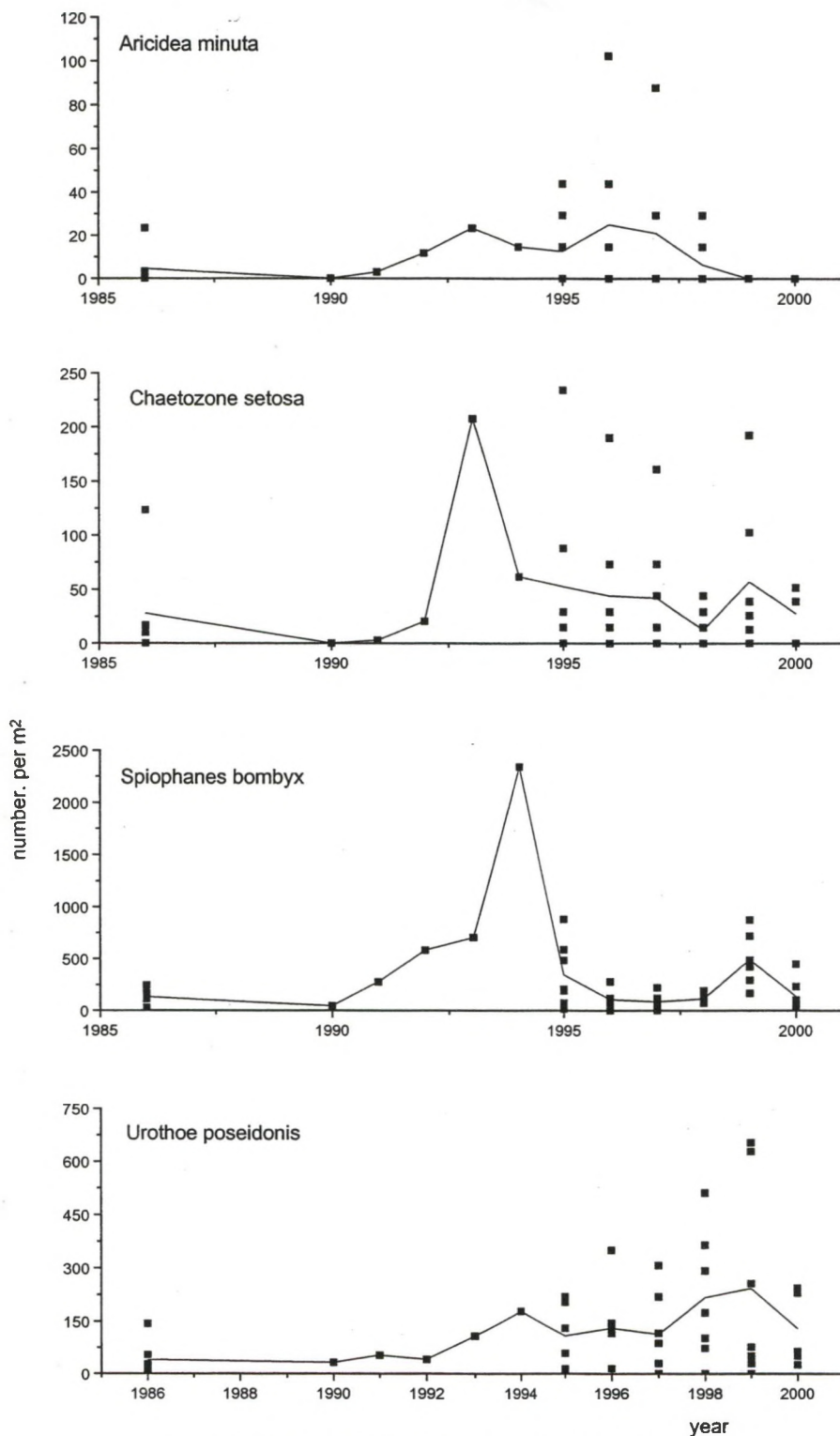


Fig. 20c: Densities of 4 species at the Dogger Bank (1986-2000)

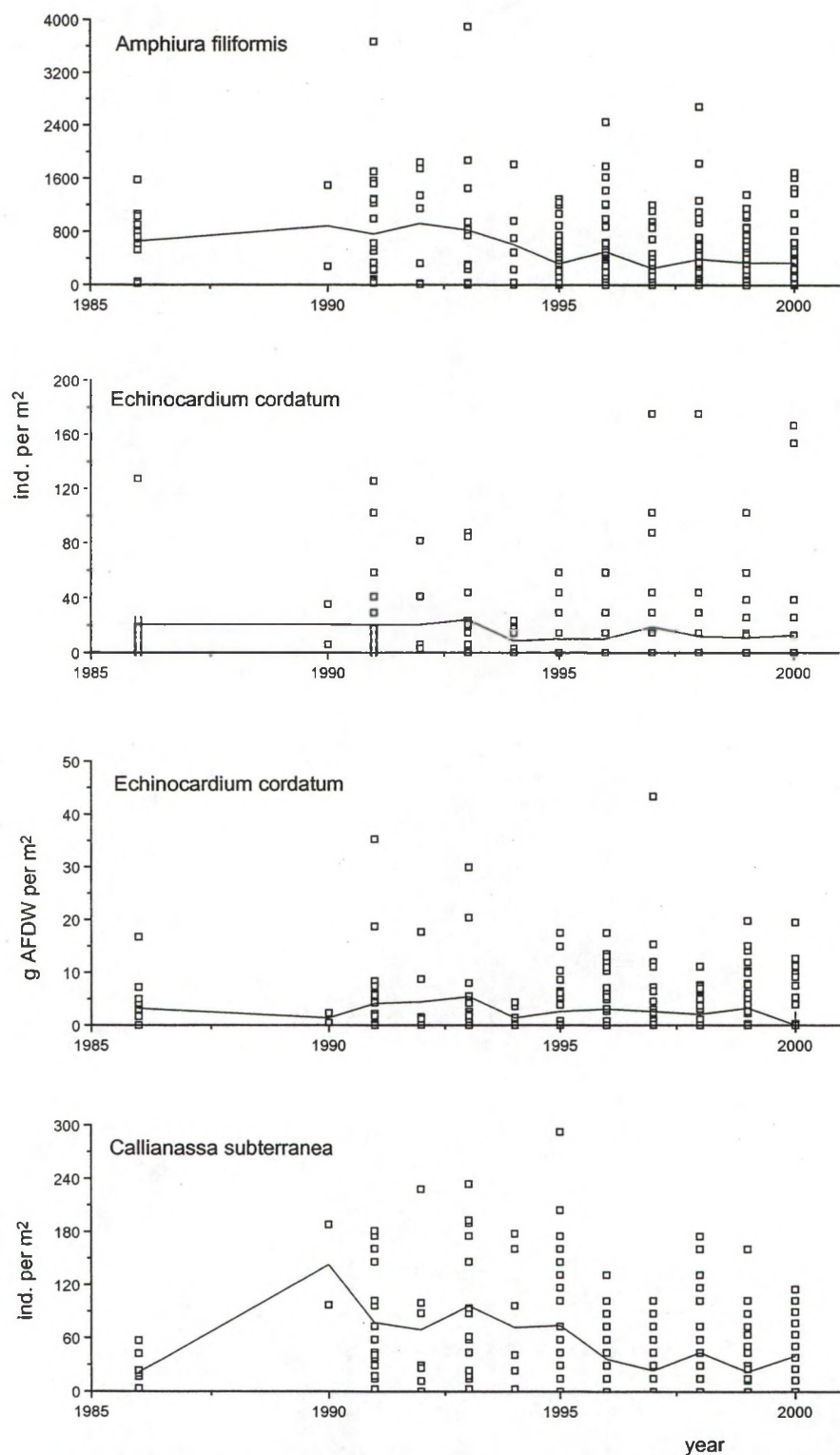


Fig. 21a: Densities (and biomass for *E. cordatum*) of 3 species in the Oyster Ground (1986-2000).

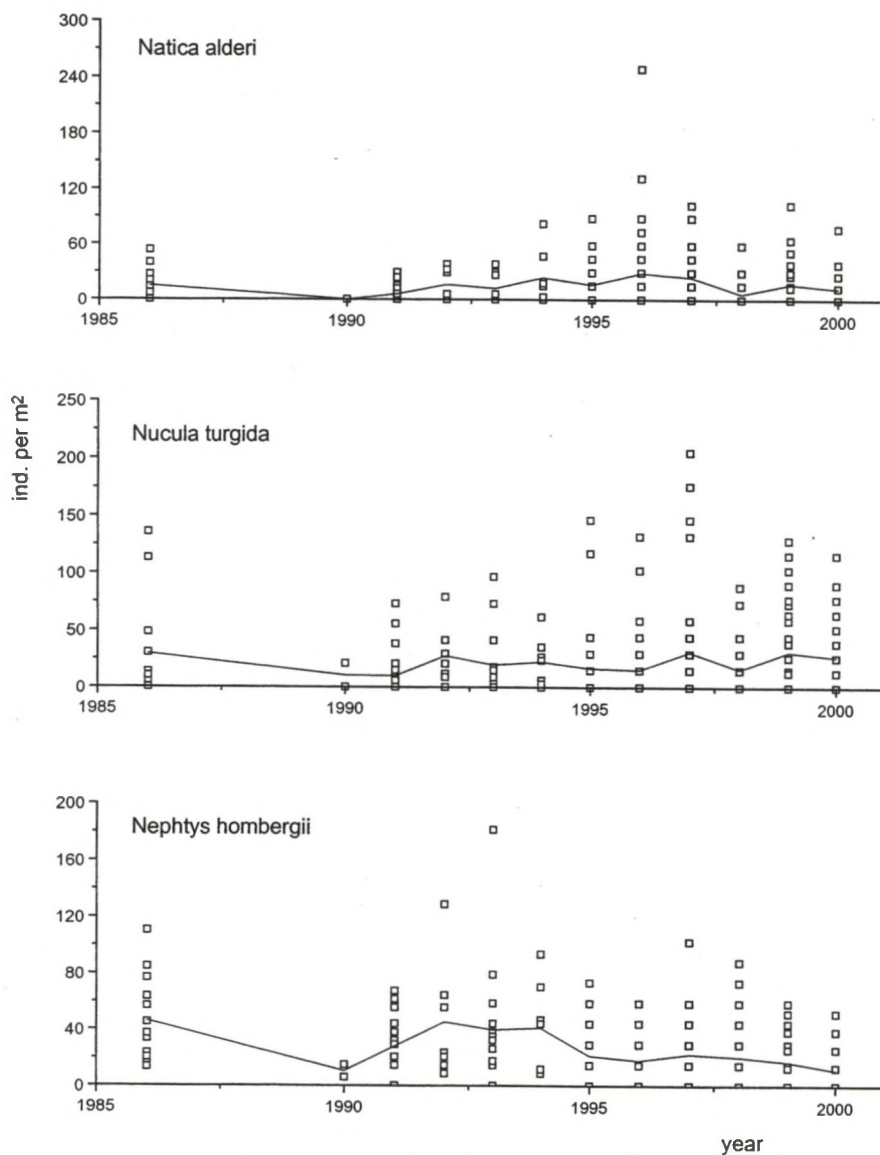


Fig. 21b: Densities of 3 species in the Oyster Ground (1986-2000)

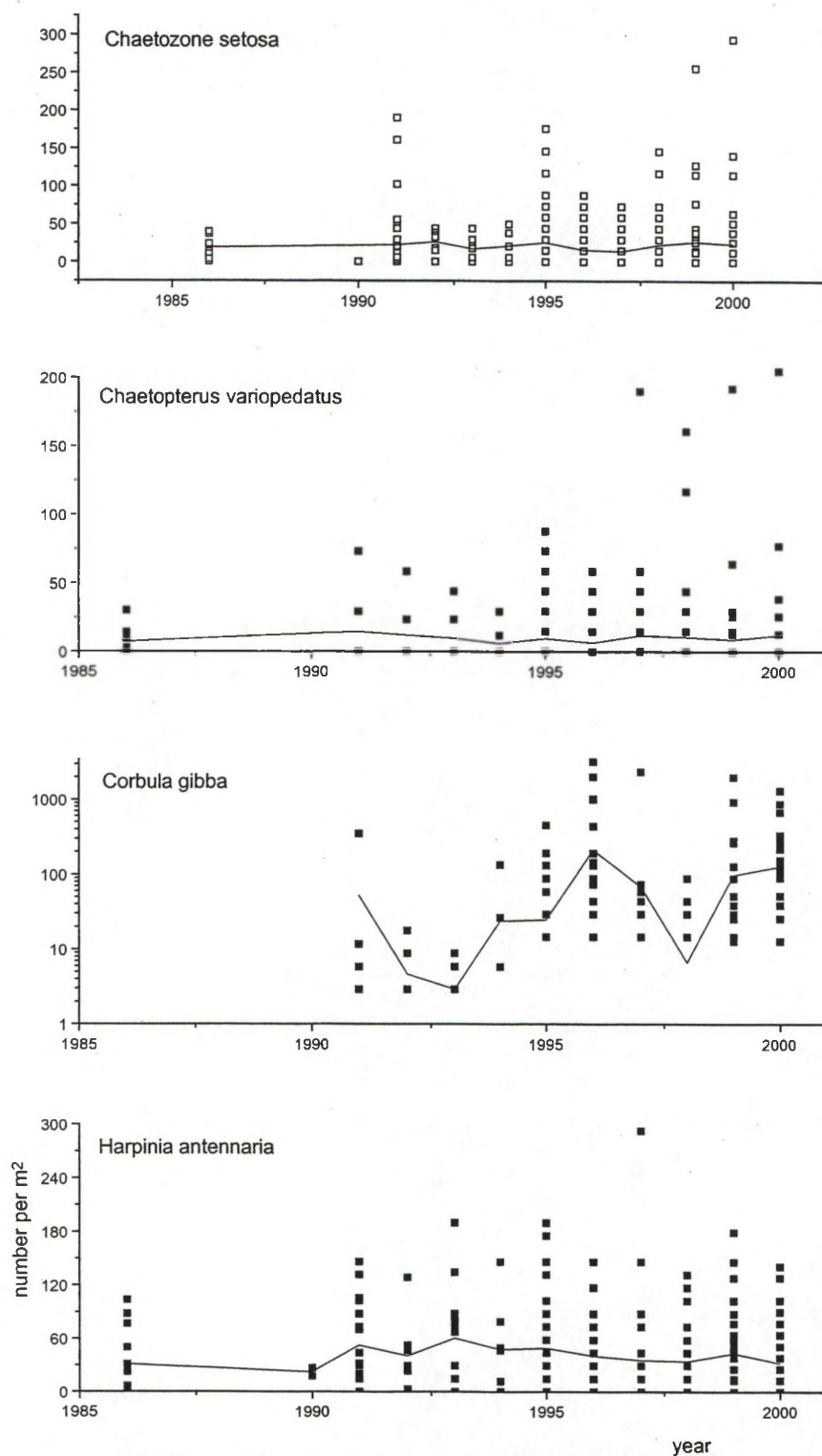


Fig. 21c: Densities of 4 species in the Oyster Ground (1986-2000).

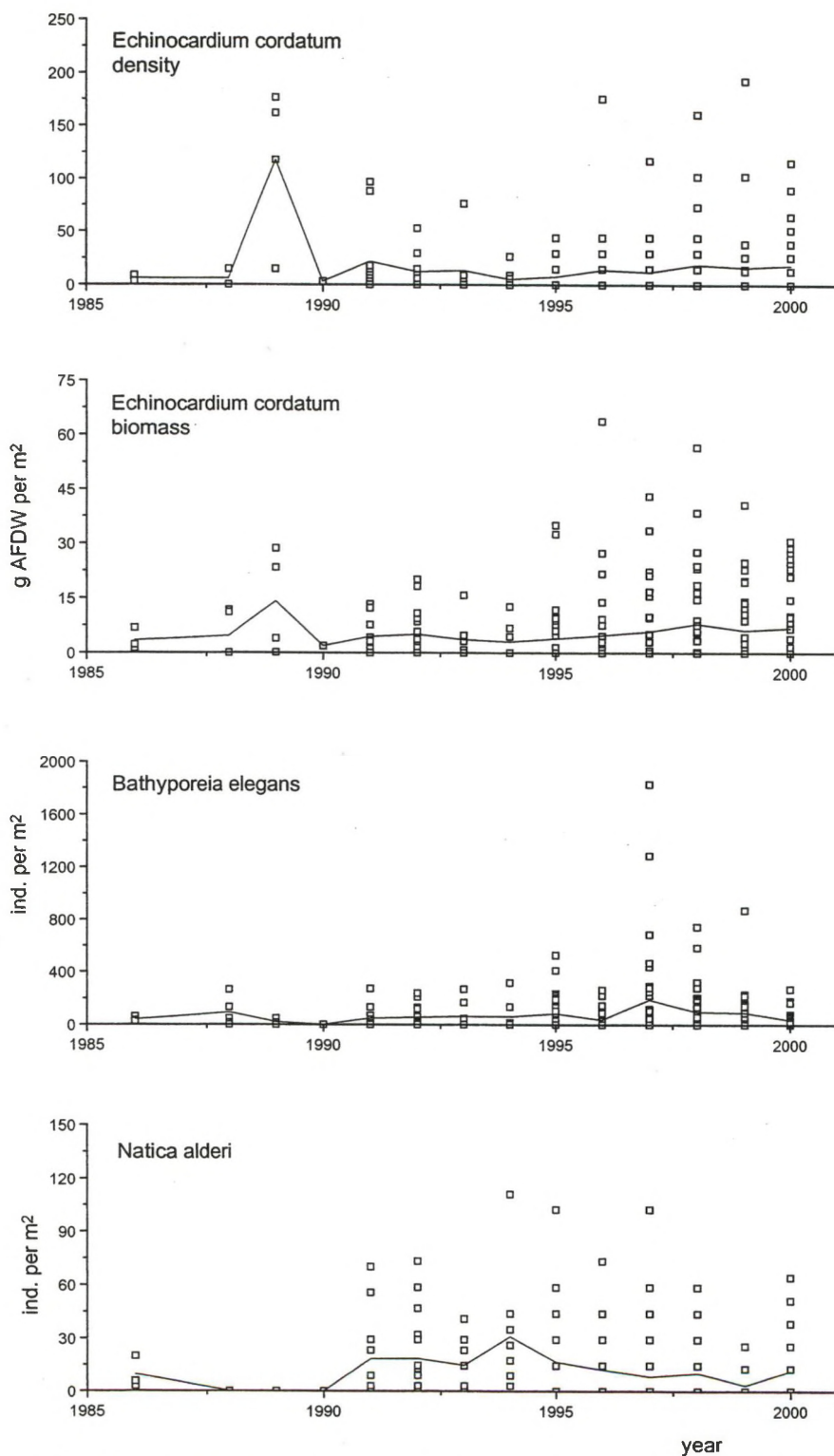


Fig. 22a: Densities (and biomass of *E. cordatum*) of 3 species in the offshore area (1986-2000).

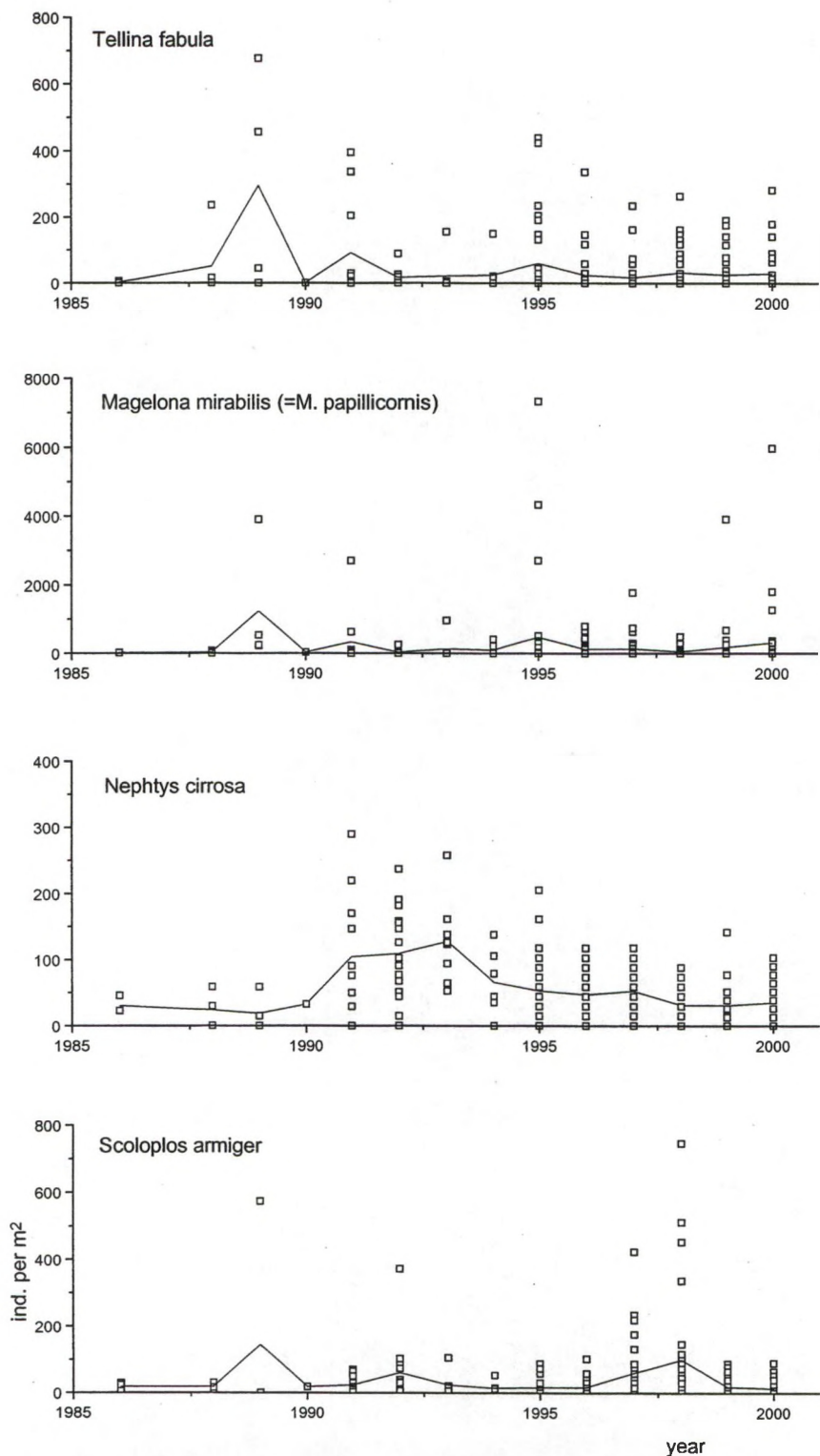


Fig. 22b: Densities of 4 species in the offshore area (1986-2000)

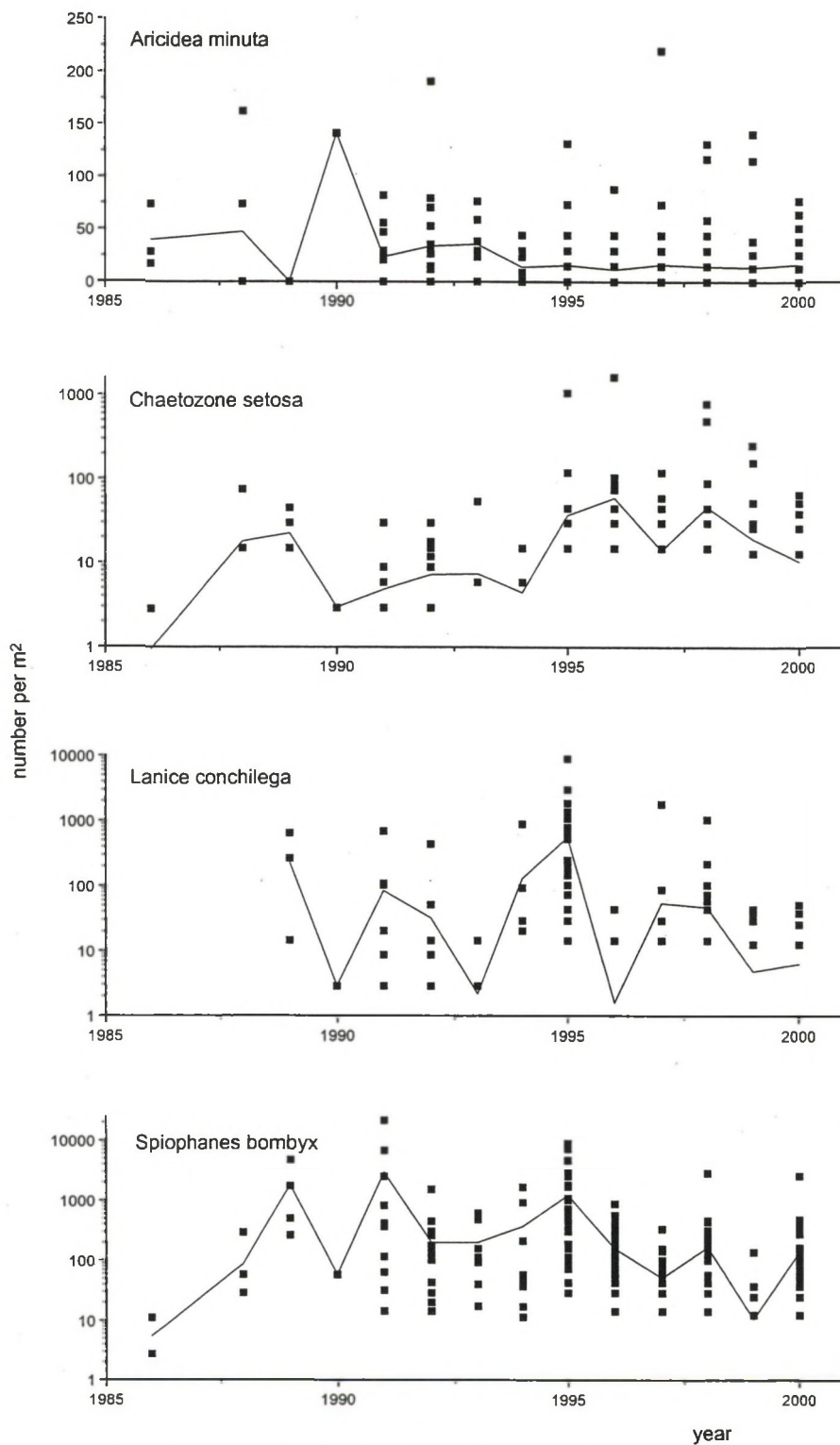


Fig. 22c: Densities of 4 species in the offshore area (1986-2000).

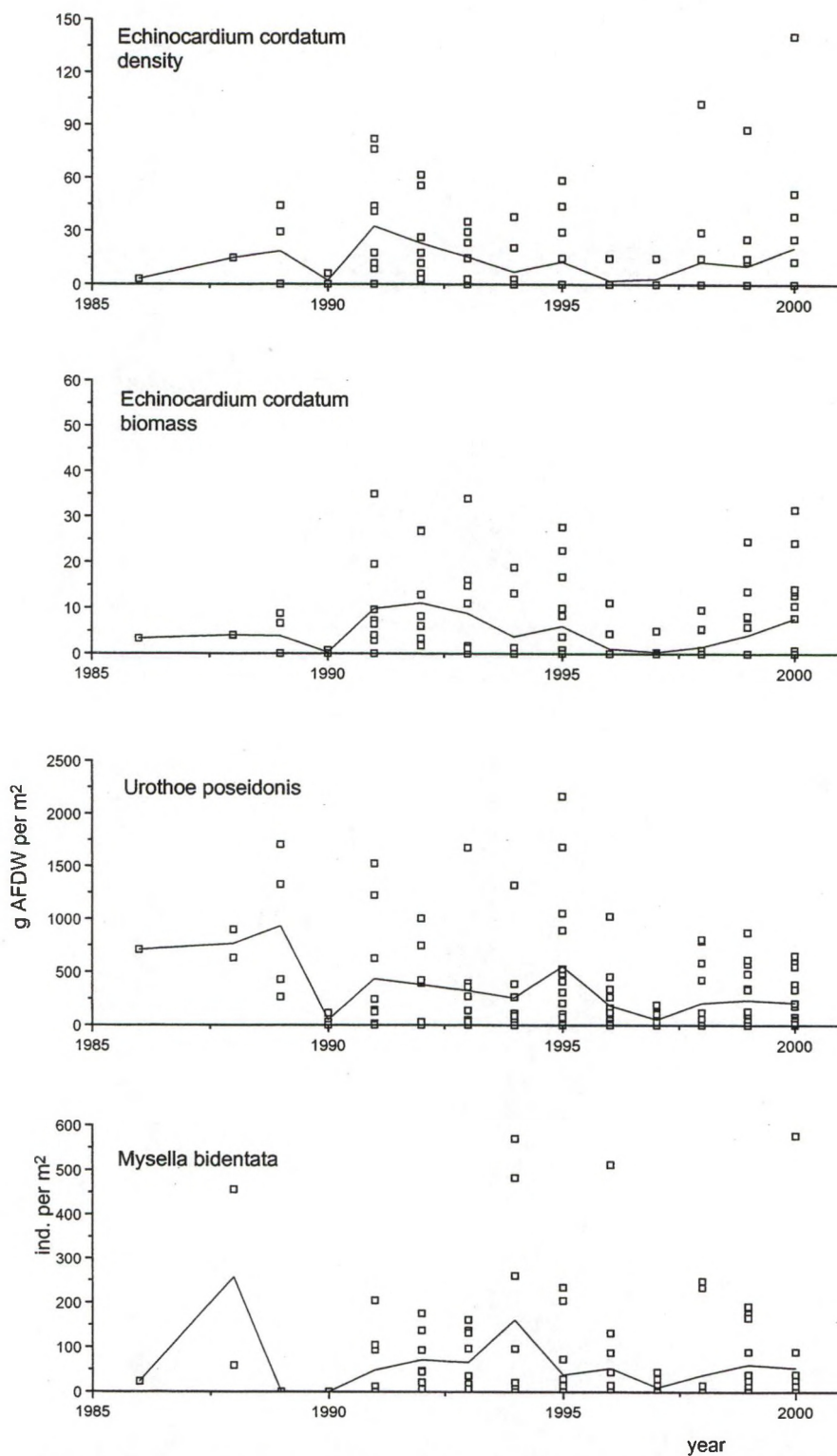


Fig. 23a: Densities (and biomass of *E. cordatum*) of 3 species in the coastal area (1986-2000).

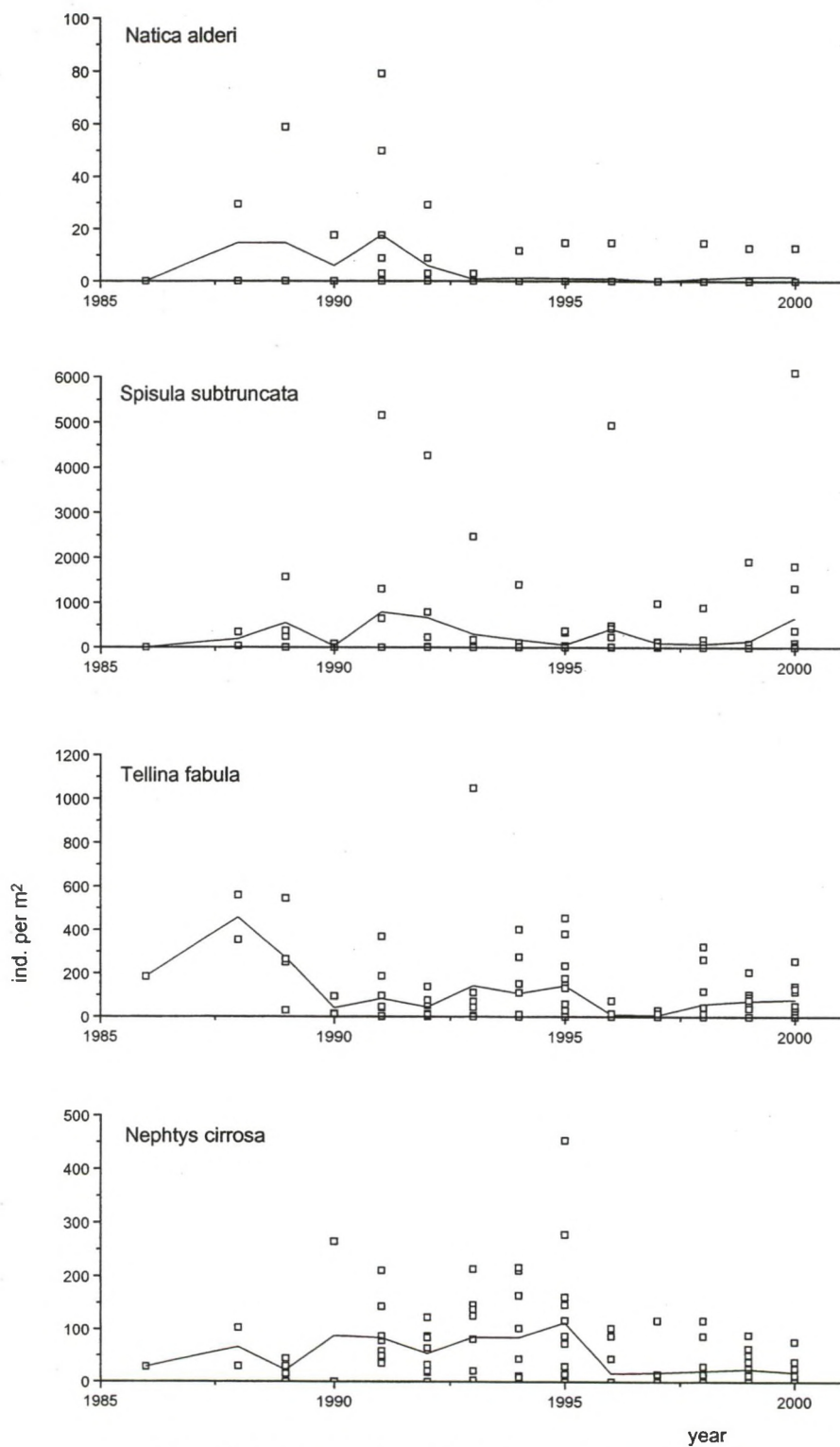


Fig. 23b: Densities of 4 species in the coastal area (1986-2000)

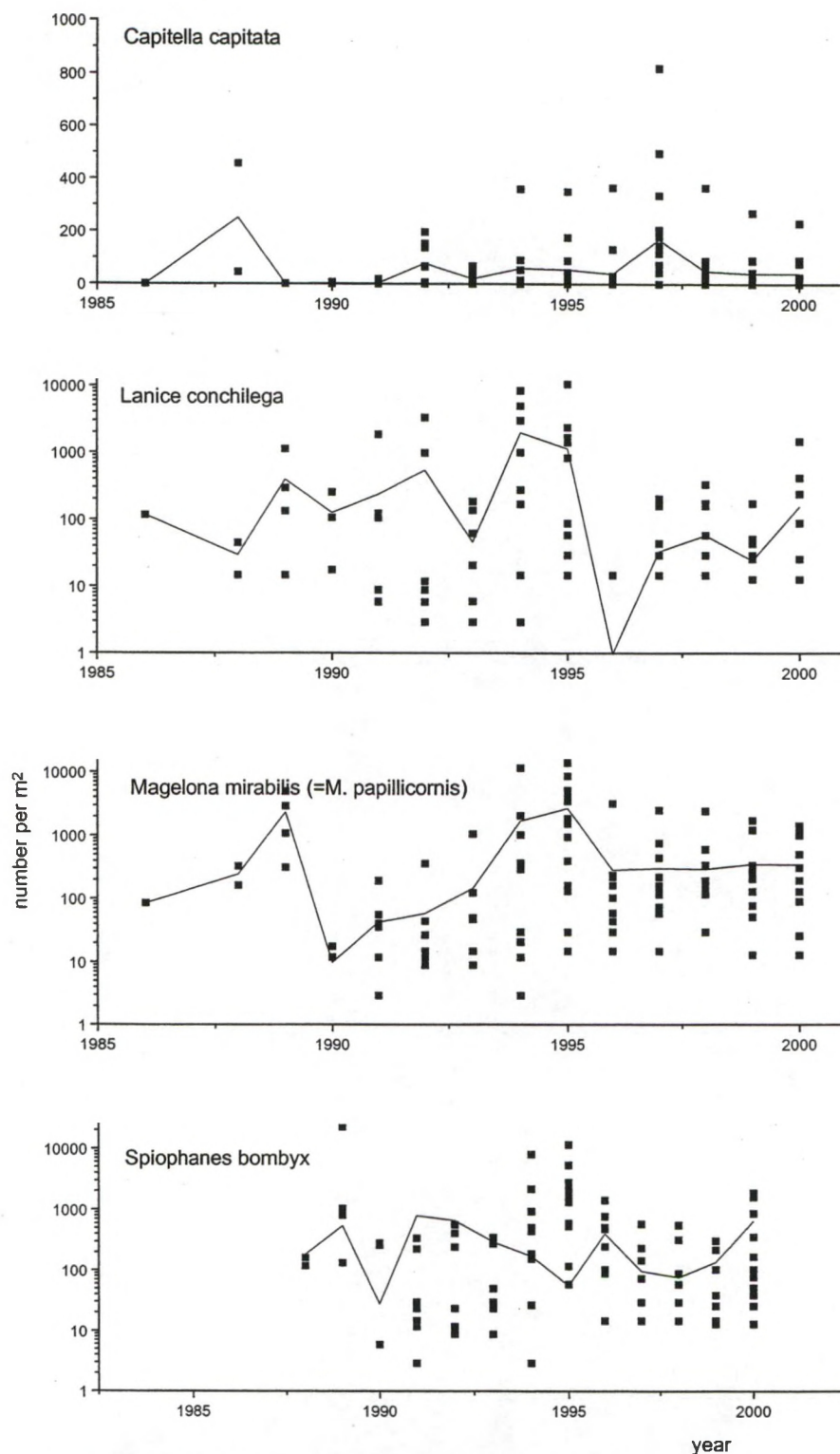


Fig. 23c: Densities of 3 species in the coastal area (1986-2000).

Table1a. Station number, position, date, depth and sediment composition of the survey in 2000.

Station (name)			Geographical position				Sediment		
new		previously	E	N	Date	Depth (m)	Med. Gr.	Mud (%)	Mud (%)
							Size (μm)	fr. < 63 μm	fr. 16-63 μm
DOG	1	Dog E5	04°03'00"	55°28'18"	19/04/00	29.8	232	0.5	0.0
DOG	2	Dog D3	03°38'30"	55°10'00"	20/04/00	36.7	184	1.4	0.0
DOG	3	ICES 97/SM38	03°30'00"	55°15'00"	20/04/00	28.1	204	0.5	0.0
DOG	4	TS 235	03°09'26"	55°10'14"	20/04/00	30.1	214	0.4	0.0
DOG	5	Dog C5	03°14'00"	54°54'42"	27/04/00	36.0	174	1.2	0.0
DOG	6	Dog C6	03°05'00"	54°57'06"	27/04/00	22.7	218	0.2	0.0
DOG	7	ICES 87/SM 37	03°00'00"	55°00'00"	27/04/00	24.7	190	0.4	0.0
OYS	1	MZ 1-3 '91	03°25'30"	54°23'00"	27/04/00	46.3	112	9.3	3.6
OYS	2	MZ 9-1 '91	05°32'30"	54°11'30"	18/04/00	40.4	202	7.1	1.8
OYS	3	ICES 88/SM 39	04°00'00"	55°00'00"	20/04/00	48.4	112	8.9	3.6
OYS	4	Dog B5	02°56'00"	54°33'00"	27/04/00	34.4	137	2.1	0.0
OYS	5	MZ 8-3 '91	04°55'00"	54°01'10"	26/04/00	41.6	125	19.1	9.7
OYS	6	Dog E2	04°22'48"	55°18'24"	19/04/00	45.9	149	3.7	0.0
OYS	7	MZ 2-1 '91	04°18'00"	54°53'00"	20/04/00	50.6	87	19.8	12.0
OYS	8	MZ 12-4 '91	04°54'00"	53°44'40"	26/04/00	36.5	142	28.0	14.6
OYS	9	MZ 15-1 '93	03°37'50"	53°45'20"	11/05/00	37.5	187	2.6	0.0
OYS	10	MZ 1-1 '91	03°42'30"	54°39'00"	27/04/00	45.0	110	8.9	3.6
OYS	11	MZ 12-1 '91	05°10'00"	53°55'30"	26/04/00	39.2	105	28.5	18.0
OYS	12	MZ 5-4 '91	04°26'00"	54°10'00"	26/04/00	48.2	93	20.6	11.4
OYS	13	ICES 78/SM 31	03°30'00"	54°45'00"	27/04/00	43.0	111	7.9	3.7
OYS	14	MZ 5-3 '91	04°44'30"	54°20'00"	19/04/00	46.3	118	18.5	10.2
OYS	15	MZ 5-1 '91	04°21'20"	54°28'30"	19/04/00	50	90	21.8	13.5
OYS	16	MZ 3-4 '91	05°03'00"	54°38'30"	19/04/00	46.1	141	8.9	3.6
OYS	17	MZ 17-2 '93	03°25'08"	54°00'21"	10/05/00	42.8	189	2.0	0.0
OYS	18	MZ 10-2 '91	05°54'00"	54°11'20"	18/04/00	37.7	211	2.3	0.0
OYS	19	Dog B2	03°19'00"	54°20'00"	27/04/00	49.2	123	6.9	1.8
OYS	20	Dog A1	02°51'51"	54°05'00"	10/05/00	50.9	197	5.8	0.0
OYS	21	TS 50	04°46'03"	53°46'04"	26/04/00	38.0	103	27.5	15.6
OYS	22	MZ 1-4 '91	03°38'30"	54°18'30"	27/04/00	44.3	149	4.0	0.9
OYS	23	Dog C3	03°22'00"	54°49'24"	27/04/00	42.0	131	4.7	0.9
OYS	24	MZ 11-3 '93	03°29'46"	53°30'00"	11/05/00	32.7	128	17.6	8.7
OYS	25	MZ 2-3 '91	04°32'00"	54°39'00"	19/04/00	49.5	101	18.2	12.4
OYS	26	MZ 8-5 '91	04°47'30"	53°55'20"	26/04/00	41.3	133	13.1	3.2
OYS	27	ICES 70/SM 60	05°00'00"	54°30'00"	19/04/00	43.0	163	9.1	3.6
OYS	28	ICES 42/SM 19	03°30'00"	53°45'00"	11/05/00	35.6	200	2.5	0.0
OYS	29	ICES 68/SM 32	03°00'00"	54°30'00"	27/04/00	36.8	124	3.7	0.9
OYS	30	MZ 11-1 '93	03°18'21"	53°31'30"	11/05/00	34.4	122	17.3	9.8
OYS	31	MZ 19-2 '93	04°09'06"	53°50'42"	10/05/00	43.0	136	6.3	0.9
OYS	32	MZ 6-5 '91	05°05'00"	54°15'30"	19/04/00	44.2	144	13.9	5.1
OYS	33	MZ 4-1 '91	04°03'00"	54°16'00"	26/04/00	47.8	103	11.6	5.3
OYS	34	MZ 16-3 '93	04°16'37"	53°37'40"	10/05/00	37.0	107	20.4	14.5
OYS	35	MZ 18-3 '93	03°52'24"	53°51'31"	10/05/00	39.6	153	4.5	0.9
OYS	36	META 2	04°30'00"	53°42'05"	10/05/00	38.3	104	24.7	12.5
OYS	37	TS 100	04°20'27"	54°09'04"	26/04/00	48.6	94	17.8	10.1
OYS	38	ICES 34/SM 20	03°00'00"	53°30'00"	11/05/00	31.6	139	5.8	1.8
OYS	39	ICES 69/SM 30	04°00'00"	54°30'00"	26/04/00	45.0	114	6.2	1.8
OYS	40	ICES 89/SM 58	05°00'00"	55°00'00"	19/04/00	41.1	151	4.0	0.0
OYS	41	RHC 4/Dog C4	03°17'36"	54°51'42"	27/04/00	39.6	145	2.6	0.0
OYS	42	R 70	06°12'51"	54°07'03"	18/04/00	32.0	229	1.1	0.0

Table1b. Station number, position, date, depth and sediment composition of the survey in 2000.

Station (name)			Geographical position		Date	Depth (m)	Sediment		
new	previously		E	N			Med. Gr. Size (μm)	Mud (%) fr. < 63 μm	Mud (%) fr. 16-63 μm
OFF	1	MZ 18-2 '91	05°59'00"	53°51'30"	18/04/00	29.5	210	1.9	0.0
OFF	2	MZ VIA-12-25-2 '89	06°06'25"	53°37'29"	18/04/00	23.5	218	0.9	0.0
OFF	3	MZ VA-12-25-3 '89	05°49'37"	53°36'40"	18/04/00	23.0	189	1.4	0.0
OFF	4	MZ 16-3 '91	04°57'30"	53°40'00"	26/04/00	31.0	198	2.8	0.0
OFF	5	MZ 14-1 '91	04°22'30"	53°29'00"	10/05/00	28.1	211	2.4	0.0
OFF	6	MZ IIA-12-25-2 '89	04°26'32"	53°11'16"	25/04/00	30.5	302	0.4	0.0
OFF	7	MZ IA-25-40-4 '89	04°18'22"	53°05'59"	25/04/00	35.6	225	1.6	0.0
OFF	8	MZ C-40-65-4 '88	04°00'30"	53°01'30"	28/04/00	30.4	233	1.3	0.0
OFF	9	MZ B-25-40-2 '88	04°13'50"	52°49'20"	25/04/00	26.2	267	0.2	0.0
OFF	10	MZ W-40-65-3 '88	03°50'30"	52°45'40"	07/04/00	30.5	277	0.6	0.0
OFF	11	MZ 10-4 '92	03°31'18"	53°17'00"	11/05/00	27.0	204	1.5	0.0
OFF	12	MZ 9-2 '92	03°23'30"	53°03'55"	11/05/00	28.2	252	0.6	0.0
OFF	13	MZ 9-1 '92	03°11'36"	53°02'58"	11/05/00	29.5	273	0.7	0.0
OFF	14	MZ 8-2 '92	03°17'20"	52°53'53"	07/04/00	32.8	285	0.7	0.0
OFF	15	MZ 8-5 '92	03°17'18"	52°50'12"	07/04/00	33.4	290	0.7	0.0
OFF	16	ICES 20/SM 3	03°30'00"	52°45'00"	04/04/00	32.0	263	0.6	0.0
OFF	17	MZ 6-2 '92	03°12'12"	52°27'43"	06/04/00	34.4	314	0.6	0.0
OFF	18	MZ 6-1 '92	03°11'25"	52°20'25"	06/04/00	31.6	341	0.5	0.0
OFF	19	MZ 1-1 '92	03°24'42"	52°15'10"	06/04/00	31.6	345	0.4	0.0
OFF	20	ICES 15/SM 5	03°30'00"	52°15'00"	06/04/00	30.5	403	0.3	0.0
OFF	21	ICES 12/SM 10	03°00'00"	52°00'00"	08/06/00	35.0	529	0.0	0.0
OFF	22	MZ T-25-40-3 '88	03°59'15"	52°16'30"	04/04/00	23.8	366	0.6	0.0
OFF	23	MZ N-12-25-1 '88	04°09'50"	52°23'08"	03/04/00	23.3	337	0.4	0.0
OFF	24	/	03°42'58"	52°00'00"	06/04/00	25.5	511	0.3	0.0
OFF	25	/	03°24'26"	52°06'12"	06/04/00	33.0	365	0.8	0.0
OFF	26	/	03°11'34"	51°56'07"	08/06/00	31.3	462	0.0	0.0
OFF	27	/	03°14'28"	51°41'40"	07/06/00	28.8	412	0.2	0.0
OFF	28	/	02°52'48"	51°52'40"	08/06/00	33.5	496	0.0	0.0
OFF	29	R 50	06°18'36"	53°57'14"	18/04/00	30.0	357	0.8	0.0
OFF	30	TS 30	04°56'17"	53°36'56"	26/04/00	24.9	214	0.6	0.0
OFF	31	META 1	03°55'01"	52°59'53"	28/04/00	27.0	252	0.5	0.0
OFF	32	N 30	04°02'53"	52°23'15"	03/04/00	23.0	352	0.5	0.0
OFF	33	N 50	03°47'07"	52°28'30"	03/04/00	30.0	267	0.8	0.0
OFF	34	N 70	03°31'53"	52°34'10"	04/04/00	31.4	313	0.5	0.0
OFF	35	W 30	03°06'49"	51°43'06"	07/06/00	32.5	351	0.2	0.0
OFF	36	W 70	02°40'45"	51°57'25"	08/06/00	43.0	491	0.2	0.0
COA	1	MZ VIA-05-12-1 '89	05°59'53"	53°32'34"	18/04/00	18.3	218	1.1	0.0
COA	2	MZ VA -00-05-5 '89	05°37'48"	53°30'19"	18/04/00	8.8	186	1.2	0.0
COA	3	MZ W-00-05-5 '88	04°31'50"	52°32'50"	17/04/00	17.5	222	1.7	0.0
COA	4	MZ C-00-05-5 '88	04°40'00"	52°50'00"	12/05/00	10.1	200	1.2	0.0
COA	5	MZ IB-00-05-5 '89	04°41'20"	53°03'23"	12/05/00	11.4	209	0.7	0.0
COA	6	MZ VIB-00-05-3 '89	06°11'03"	53°32'09"	18/04/00	9.0	166	1.8	0.0
COA	7	R 3	06°32'46"	53°34'57"	18/04/00	10.3	183	0.6	0.0
COA	8	TS 4	05°09'02"	53°24'54"	26/04/00	13.1	232	0.2	0.0
COA	9	ICES 21/SM 1	04°30'00"	52°45'00"	21/04/00	20.1	230	1.7	0.0
COA	10	N 2	04°24'20"	52°15'36"	03/04/00	14.1	250	1.5	0.0
COA	11	N 10	04°18'01"	52°17'41"	03/04/00	19.7	329	0.7	0.0
COA	12	VD 1	03°23'15"	51°37'04"	07/06/00	12.3	272	1.0	0.0
COA	13	VD 2	03°36'02"	51°42'23"	25/03/00	3.6			
COA	14	VD 3	03°48'48"	51°47'26"	25/03/00	3.4			
COA	15	VD 4	03°55'09"	51°55'20"	07/06/00	14.8	200	1.2	0.0

Table 2. Mean values of abiotic and biotic parameters in the 4 areas in 1999.

	AREA			
	Dogger Bank	Oyster Ground	Offshore area	Coastal area
No. of stations	7	42	36	15
Median Grain Size (μm)	204.0	138.0	312.0	230.0
Mud content (fr. < 63 μm , %)	1.5	13.0	1.0	0.9
Mud (fr. 16- 63 μm , %)	0.0	6.4	0.0	0.0
Depth (m)	30	42	29	12
Diversity:				
Total number of species	80	135	87	54
Number of species per core	35.9	29.1	14.2	13.2
Shannon- Wiener diversity	2.72	2.53	2.08	1.83
Simpson's dominance	0.11	0.15	0.17	0.26
No. individuals (ind./m²):				
Crustaceans	1098	197	290	410
Echinoderms	250	453	35	23
Molluscs	334	377	58	433
Polychaetes	1367	532	354	701
Miscellaneous	240	155	28	23
TOTAL DENSITY	3289	1714	765	1590
Biomass (g AFDW/m²):				
Crustaceans	0.29	3.38	0.67	0.25
Echinoderms	5.40	6.42	6.29	4.16
Molluscs	1.80	0.80	1.92	23.47
Polychaetes	6.41	3.73	1.31	2.76
Miscellaneous	0.50	0.72	0.11	0.14
TOTAL BIOMASS	14.40	15.05	10.30	30.78

Appendix-1 Biomonitoring 2000 (+ = presence)

	Dogger Bank							Oyster Ground																		
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
Species name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Code
DOSINIA LUPINUS		+	+																						+	DOSILUPI
EBALIA TUBEROSA																										EBALTUBE
ECHINOCARDIUM CORDATUM		+							+	+						+			+					+		ECHICORD
E. CORDATUM JUV.																										ECHIJUVE
ECHINOCYAMUS PUSILLUS			+													+								+		ECHIPUSI
EDWARDSIA CLAPAREDI	+					+					+															EDWACLAP
ENSIS DIRECTUS																										ENSIDIR
ENSIS ENSIS				+		+																				ENSIENSI
ENSIS SPEC.	+																									ENSISPEC
ETEONE FOLIOSA																										ETEOFOLI
ETEONE LONGA			+																							ETEOLONG
ETEONE SPEC. JUV.																										ETEOSPEC
EUDORELLA TRUNCATULA								+	+	+			+		+		+	+	+	+				+		EUDOTRUN
EUDORELLOPSIS DEFORMIS													+			+								+		EUDODEFO
EUMIDA SANGUINEA	+	+															+									EUMISANG
EUPOLYMNIA NEBULOSA									+																	EUPONEBU
EURIDYCE PULCHRA																+										EURIPULC
EUZONUS FLABELLIGERUS																										EUZOFLAB
EXOGONE HEBES																										EXOGHEBE
EXOGONE NAIDINA																										EXOGBNAID
GARI FERVENSIS	+					+																				GARIFERV
GATTYANA CIRROSA									+	+		+		+				+			+	+			+	GATTCCR
GLYCERA LAPIDUM																										GLYCLAPI
GLYCERA ROUXI																				+						GLYCROUX
GLYCERA SPEC. JUV.										+					+			+	+							GLYCSPEC
GLYCIDINDE NORDMANNI																										GLYCNORD
GOLFINGIA PROCERA												+			+			+								GOLFFPROC
GOLFINGIA VULGARIS																										GOLFFVULG
GONIADA MACULATA	+	+	+	+	+	+	+	+			+	+			+			+	+	+		+		+	+	GONIMACU
GYPTIS CAPENSIS			+		+	+			+		+				+	+		+	+		+				+	GYPTCAPE
HARMOTHOE GLABRA																										HARMGLAB
HARMOTHOE LONGISETIS																										HARMLONG
HARMOTHOE SPEC. JUV.					+	+					+				+	+			+							HARMSPEC
HARPINIA ANTENNARIA	+	+				+		+				+	+	+	+	+	+	+	+	+	+	+		+		HARPANTE
HIPPOMEDON DENTICULATUS	+	+															+							+		HIPPDENT
HYALA VITREA									+			+						+	+					+		HYALVITR
HYPERIIDAE SPEC.						+	+								+											HYPERIID
IONE THORACICA								+	+	+			+		+		+	+	+			+				IONETHOR
IPHINOE TRISPINOSA	+		+	+		+	+																		+	IPHITRIS
LABIDOPLAX BUSKY																										LABIBUSK
LANICE CONCHILEGA							+																			LANICONC
LEMBOS LONGIPES																							+			LEMBLONG
LEPIDOPECREUM LONGICORNE	+			+																						LEPILONG
LEPTON SQUAMOSUM												+			+											LEPTSQUA
LEPTOSYNAPTA INHAERENS																										LEPTINHAE
LEUCOTHOE INCISA		+		+	+	+				+						+		+	+					+		LEUCINCI
LIOCARCINUS HOLSATUS																										LIOCHOLS
LIOCARCINUS SPEC. JUV.																										LIOSPEC
LUCINOMA BOREALIS			+																							LUCIBORE
LUMBRINERIS FRAGILIS												+						+		+						LUMBFRAG
LUMBRINERIS LATREILLI												+			+			+		+		+				LUMBLATR
LUMBRINERIS SPEC. JUV.												+			+											LUMBSPEC
LYSILLA LOVENI																								+		LYSILOVE

Appendix-1 Biomonitoring 2000 (+ = presence)

	Dogger Bank													Oyster Ground																
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys				
Species name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Code				
MAGELONA ALLENI							+	+			+									+					+	MAGEALLE				
MAGELONA MIRABILIS	+	+	+	+	+	+	+		+		+		+			+				+	+			+	+	MAGEMIRA				
MEDIOMASTUS FRAGILIS										+						+			+	+		+		+	+	MEDIFRAG				
MEGALUROPUS AGILIS	+		+	+		+	+						+											+		MEGAAGIL				
MELANELLA ALBA													+													MELAALBA				
MONTACUTA FERRUGINOSA		+							+											+			+	+		MONTFERR				
MYA TRUNCATA JUV.															+											MYATRUNC				
MYRIOCHELE HEERI															+	+			+	+						MYRIHEER				
MYSELLA BIDENTATA	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			+		+	MYSEBIDE				
MYSIA UNDATA												+														MYSIUNDA				
MYTILIDAE SPEC. JUV.																										MYTISPEC				
NATICA ALDERI	+	+	+	+	+	+			+							+	+		+						+	NATIALDE				
NEBALIA BIPES																	+									NEBABIPE				
NEMATODA																										NEMATODA				
NEMERTINI	+	+	+	+	+	+	+			+	+					+	+			+			+	+	+	NEMERTIN				
NEPHTYS CAECA					+											+										NEPHCAEC				
NEPHTYS CIRROSA				+		+																			+	NEPHCIRR				
NEPHTYS HOMBERGII	+		+		+	+		+		+	+	+	+	+		+	+	+		+	+					NEPHHOMB				
NEPHTYS INCISA											+	+					+		+		+					NEPHINCI				
NEPHTYS SPEC. JUV.	+	+	+	+	+	+				+	+		+		+	+		+	+	+	+			+		NEPHSPEC				
NEREIS LONGISSIMA						+			+			+				+			+	+	+				+	NERELONG				
NEREIS SPEC. JUV.																+										NERESPEC				
NOTOMASTUS LATERICEUS	+	+	+	+	+		+			+	+		+	+			+	+	+		+	+				NOTOLATE				
NUCULA TENUIS											+							+								NUCUTENU				
NUCULA TURGIDA								+			+					+	+		+	+	+			+		NUCUTURG				
OPHELINA ACUMINATA									+										+							OPHEACUM				
OPHIODROMUS FLEXUOSUS																		+	+	+	+		+	+	+	OPHIFLEX				
OPHIURA ALBIDA												+				+			+							OPHIALBI				
OPHIURA TEXTURATA																										OPHITEXT				
OPHIURA SPEC. JUV.								+	+		+				+	+	+		+	+					+	OPHISPEC				
ORBINIA SERTULATA							+			+																ORBISERT				
ORCHOMENE HUMILIS							+																			ORCHHUMI				
ORCHOMENE NANA	+		+		+																					ORCHNANA				
ORCHOMENE SPEC. JUV.				+																						ORCHSPEC				
OWENIA FUSIFORMIS				+		+	+	+			+		+											+		OWENFUSI				
PARAONIS FULGENS															+						+	+	+			PARAFULG				
PECTINARIA AURICOMA										+																PECTAURI				
PECTINARIA KORENI								+		+		+				+			+		+			+		PECTKORE				
PERIOCULODES LONGIMANUS		+	+	+			+	+			+							+		+					+	PERILONG				
PHOLOE MINUTA	+						+	+		+			+				+	+		+			+			PHOLMINU				
PHORONIDA				+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	PHORONID				
PHYLLODOCE MACULATA																										PHYLMACU				
PHYLLODOCIDAE SPEC.																										PHYLSPEC				
PISIONE REMOTA																										PISIREMO				
POECILOCHAETUS SERPENS				+					+										+				+	+		POECSERP				
POLYDORA CILIATA																										POLYCILI				
POLYDORA SPEC.																+			+		+		+			POLYDORA				
POLYNOE KINBERGI													+													POLYKINB				
POLYPLACOPHORA																										POLYPLAC				
PONTOCRATES ALTAMARINUS			+			+	+	+																		PONTALTA				
PONTOPHILUS TRISPINOSUS																										PONTTRIS				
PRIONOSPIO STEENSTRUPI																										PRIOSTEE				
PROCESSA PARVA																										PROCPARV				

Appendix-1 Biomonitoring 2000 (+ = presence)

	Dogger Bank							Oyster Ground																		
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
Species name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Code
RETUSA UMBILICATA						+																				RETUUMBI
RHODINE SPEC.							+																			RHODSPEC
SAXICAVA ARCTICA											+															SAXIARCT
SAXICAVELLA JEFFREYSI																										SAXJEFF
SCALIBREGMA INFLATUM																										SCALINFL
SCOLELEPIS BONNIERI				+			+	+				+														SCOLBONN
SCOLELEPIS FOLIOSA																										SCOLFOLI
SCOLOPLOS ARMIGER								+				+		+	+	+	+	+		+		+				SCOLARMI
SCOPELOCHEIRUS HOPEI																										SCOPHOPE
SEMIERYCINA NITIDA													+													SEMINITI
SIGALION MATHILDAE				+		+	+	+				+												+		SIGAMATH
SIPUNCULIDA SPEC.																		+	+		+	+	+			SIPUCULI
SPHAERODORUM FLAVUM											+															SPHAFLAV
SPHAEROSYLLIS SPEC.																										SPHASPEC
SPIO FILICORNIS	+			+	+	+	+	+	+																	SPIOFILI
SPIOPHANES BOMBYX	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+		+	+			+	+	SPIOBOMB
SPIOPHANES KROEYERI											+	+														SPIOKROE
SPISULA ELLIPTICA																+										SPISELLI
SPISULA SUBTRUNCATA																										SPISSUBT
STHENELAIS LIMICOLA	+	+						+		+	+		+			+			+	+	+			+	+	STHELIMI
SYLLIDAE SPEC.																										SYLLIDAE
SYNCHELIDIUM HAPLOCHELES					+		+								+									+		SYNCHAPL
SYNCHELIDIUM MACULATUM	+		+																	+						SYNCMACU
SYNELMIS KLATTI								+		+			+	+			+		+	+				+		SYNEKLAT
TELLINA FABULA	+	+	+	+	+		+				+		+	+		+									+	TELLFABU
TELLINA PYGMEA																										TELLPYGM
TELLINA TENUIS																										TELLTENU
TEREBELLIDAE SPEC. JUV.							+																	+		TERESPEC
TEREBELLIDES STROEMI															+						+					TERESTRO
THARYX KILLARIENSIS																										THARKILL
THIA SCUTELLATA																										THIASCUT
THRACIA CONVEXA																										THRACONV
THRACIA PHASEOLINA	+			+	+		+	+				+				+								+		THRAPHAS
THYASIRA FLEXUOSA								+				+		+						+						THYAFLEX
TORNUS SUBCARINATUS																+										TORNUSUBC
TRAVISIA FORBESII																										TRAVFORB
TURBELLARIA SPEC.												+	+	+	+		+			+						TURBELLA
TURRITELLA COMMUNIS									+																	TURRCOMM
UPOGEBIA DELTAURA																+			+	+						UPOGDELT
UPOGEBIA STELLATA																					+					UPOGSTEL
UROTHOE BREVICORNIS					+		+	+																		UROTBREV
UROTHOE ELEGANS				+																						UROTELEG
UROTHOE POSEIDONIS	+	+	+	+	+	+	+									+				+				+		UROTPOSE
UROTHOE SPEC. JUV.																					+					UROTSPEC

Appendix-1 Biomonitoring 2000 (+ = presence)

	Oyster Ground																																																						
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys													
Species name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code																														
ABRA ALBA	+	+	+			+	+	+				+	+	+			+	+	+		+																								ABRAALBA										
ABRA NITIDA						+																		+																						ABRANITI									
ABRA PRISMATICA																																															ABRAPRIS								
ABRA TENUIS												+																																			ABRATENU								
ACANTHOCARDIA ECHINATA																																															ACANECHI								
ACROCNIDA BRACHIATA																					+																										ACROBRAC								
ACTEON TORNATILIS										+																																					ACTETORN								
ALTENAEUM DAWSONI								+	+												+																										ALTEDAWS								
ALVANIA LACTEA																																															ALVALACT								
AMPELISCA BREVICORNIS												+					+																														AMPEBREV								
AMPELISCA TENUICORNIS			+						+								+				+		+																							AMPETENU									
AMPELISCA SPEC.		+																																													AMPESPEC								
AMPHARETE FINMARCHICA													+					+																													AMPHFINM								
AMPHIOXUS LANCEOLATUS					+		+						+								+																											AMPHLANC							
AMPHIURA CHIAJEI																																																	AMPHCHIA						
AMPHIURA FILIFORMIS		+	+	+		+	+	+	+			+	+		+	+	+		+		+	+	+	+																								AMPHFILI							
AMPHIURA SPEC. JUV.												+																																			AMPHJUVE								
ANAITIDES GROENLANDICA																																																	ANAIGROE						
ANAITIDES SPEC. JUV.																																																	ANAI SPEC						
ANTHOZOA SPEC.																	+					+																										ANTHOZOA							
APHELOCHAETA MARIONI																																																	APHEMARI						
APHERUSA JURINEI									+																																								APHEJURI						
APHERUSA OVALIPES																																																	APHEOVAL						
APHRODITE ACULEATA																		+		+																													APHRACUL						
ARCTICA ISLANDICA JUV.						+												+																															ARCTISLA						
ARICIDEA MINUTA																																																	ARICMINU						
ARICIDEA SUECICA																																																	ARICSUEC						
ASTARTE TRIANGULARIS																																																	ASTATRIA						
ASTROPECTEN IRREGULARIS																																																	ASTRIRRE						
ATYLUS FALCATUS																																																	ATYLFALC						
ATYLUS SWAMMERDAMI																						+																											ATYLSWAM						
ATYLUS SPEC. JUV.																																																	ATYLSPEC						
BATHYPOREIA ELEGANS		+				+				+	+	+																																					+		BATHELEG				
BATHYPOREIA GUILLIAMSONIANA												+							+																													+			BATHGUIL				
BATHYPOREIA TENUIPES																			+																														BATHTENU						
BRISSOPSIS LYRIFERA																																																	BRISLYRI						
CALLIANASSA JUV.		+	+	+			+	+	+	+	+		+	+		+	+	+	+	+	+	+																												CALLJUVE					
CALLIANASSA SUBTERRANEA		+	+	+	+	+	+	+	+	+	+	+	+	+		+		+	+	+	+	+																												CALLSUBT					
CAPITELLA CAPITATA																																																				CAPICAPI			
CAPRELLIDAE SPEC.							+																																										+			CAPRELLI			
CHAETOPTERUS VARIOPEDATUS		+	+					+	+	+					+					+																															CHAEVARI				
CHAETOZONE SETOSA					+		+	+	+	+	+		+			+						+	+	+	+																									CHAESETO					
CHAMELEA GALLINA						+	+			+									+																																CHAMGALL				
CORBULA GIBBA					+	+		+	+	+	+	+	+	+	+	+	+	+		+																														CORBGIBB					
COROPHIUM INSIDIOSUM																																																		+		COROINSI			
COROPHIUM SPEC.																																																				COROSPEC			
CORYSTES CASSIVELAUNUS												+																																								CORYCASS			
CRANGON CRANGON																																																				CRANCRAN			
CUCUMARIA ELONGATA																																																				CUCUELON			
CULTELLUS PELLUCIDUS						+	+				+	+					+		+																																+				CULTEPELL
CYLICHNA CYLINDRACEA			+	+		+		+	+	+					+		+	+	+	+																																			

Appendix-1 Biomonitoring 2000 (+ = presence)

	Oyster Ground																								
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
Species name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
DOSINIA LUPINUS					+		+	+	+	+													+	+	DOSILUPI
EBALIA TUBEROSA									+		+														EBALTUBE
ECHINOCARDIUM CORDATUM					+						+	+		+						+	+		+	+	ECHICORD
E. CORDATUM JUV.						+																			ECHIJUVE
ECHINOCYAMUS PUSILLUS																									ECHIPUSI
EDWARDSIA CLAPAREDI	+																	+	+						EDWACLAP
ENSIS DIRECTUS																								+	ENSIDIR
ENSIS ENSIS																									ENSIENSI
ENSIS SPEC.																									ENSISPEC
ETEONE FOLIOSA					+																	+			ETEOFOLI
ETEONE LONGA																									ETEOLONG
ETEONE SPEC. JUV.																									ETEOSPEC
EUDORELLA TRUNCATULA			+				+		+		+	+				+	+								EUDOTRUN
EUDORELLOPSIS DEFORMIS				+	+				+													+	+		EUDODEFO
EUMIDA SANGUINEA																+								+	EUMISANG
EUPOLYMNIA NEBULOSA																									EUPONEBU
EURIDYCE PULCHRA																									EURIPULC
EUZONUS FLABELLIGERUS																									EUZOFLAB
EXOgone HEBES																									EXOgoneHEBE
EXOgone NAIDINA																									EXOgoneNAID
GARI FERVENSIS																									GARIFERV
GATTYANA CIRROSA		+					+		+										+						GATTcirr
GLYCERA LAPIDUM																									GLYCLAPI
GLYCERA ROUXI								+											+						GLYCRoux
GLYCERA SPEC. JUV.								+																	GLYCSPEC
GLYCIDINORDMANNI	+											+	+					+							GLYCNORD
GOLFINGIA PROCERA			+																+	+					GOLFPROC
GOLFINGIA VULGARIS							+	+	+					+	+			+	+						GOLFVULG
GONIADA MACULATA				+	+	+				+	+		+	+	+	+	+	+				+		+	GONIMACU
GYPTIS CAPENSIS			+					+	+		+					+			+				+		GYPTCAPE
HARMOTHOE GLABRA																		+							HARMGLAB
HARMOTHOE LONGISETIS		+						+											+						HARMLONG
HARMOTHOE SPEC. JUV.								+		+			+												HARMSPEC
HARPINIA ANTENNARIA		+	+	+	+		+	+		+			+		+	+	+	+			+	+	+		HARPANTE
HIPPOMEDON DENTICULATUS											+	+					+							+	HIPPdENT
HYALA VITREA	+		+			+	+	+						+	+										HYALVITR
HYPERIIDAE SPEC.																					+				HYPERIID
IONE THORACICA			+	+	+	+	+					+						+	+						IONETHOR
IPHINOE TRISPINOSA																									IPHITRIS
LABIDOPLEX BUSKY								+																	LABIBUSK
LANICE CONCHILEGA									+	+	+														LANICONC
LEMBOS LONGIPES																			+						LEMBLONG
LEPIDOPECREUM LONGICORNE						+																			LEPILONG
LEPTON SQUAMOSUM			+					+																	LEPTSQUA
LEPTOSYNAPTA INHAERENS																					+				LEPTINHA
LEUCOTHOE INCISA			+			+				+											+				LEUCINCI
LIOCARCINUS HOLSATUS																									LIOCHOLS
LIOCARCINUS SPEC. JUV.																									LIOCSPEC
LUCINOMA BOREALIS																							+		LUCIBORE
LUMBRINERIS FRAGILIS																									LUMBFRAG
LUMBRINERIS LATREILLI	+	+	+			+		+				+	+			+		+							LUMBLATR
LUMBRINERIS SPEC. JUV.																									LUMBSPEC
LYSILLA LOVENI																		+							LYSILOVE

Appendix-1 Biomonitoring 2000 (+ = presence)

	Oyster Ground																								
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
Species name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
MAGELONA ALLENI				+	+	+	+				+			+			+					+	+		MAGEALLE
MAGELONA MIRABILIS				+	+				+	+	+		+	+			+			+		+	+	+	MAGEMIRA
MEDIOMASTUS FRAGILIS		+	+			+		+	+			+		+		+		+	+						MEDIFRAG
MEGALUROPIUS AGILIS											+						+								MEGAAGIL
MELANELLA ALBA																									MELAALBA
MONTACUTA FERRUGINOSA										+	+		+												MONTFERR
MYA TRUNCATA JUV.																+									MYATRUNC
MYRIOCHELE HEERI			+	+					+		+					+						+			MYRIHEER
MYSELLA BIDENTATA	+	+	+	+	+	+		+	+	+		+	+	+	+	+					+	+	+	+	MYSEBIDE
MYSIA UNDATA																									MYSIUNDA
MYTILIDAE SPEC. JUV.																									MYTISPEC
NATICA ALDERI	+	+						+	+		+					+	+	+		+		+	+	+	NATIALDE
NEBALIA BIPES																									NEBABIFE
NEMATODA																									NEMATODA
NEMERTINI				+		+	+		+	+	+		+				+	+					+	+	NEMERTIN
NEPHTYS CAECA	+																						+		NEPHCAEC
NEPHTYS CIRROSA												+													NEPHCIRR
NEPHTYS HOMBERGII	+	+			+	+		+	+		+		+		+	+						+			NEPHHOMB
NEPHTYS INCISA			+					+									+	+							NEPHINCI
NEPHTYS SPEC. JUV.			+			+		+		+	+	+		+	+	+	+	+		+	+	+			NEPHSPEC
NEREIS LONGISSIMA			+				+									+		+							NERELONG
NEREIS SPEC. JUV.																									NERESPEC
NOTOMASTUS LATERICEUS		+	+			+	+	+	+		+			+	+	+	+	+	+						NOTOLATE
NUCULA TENUIS																									NUCUTENU
NUCULA TURGIDA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	NUCUTURG
OPHELINA ACUMINATA		+					+																		OPHEACUM
OPHIODROMUS FLEXUOSUS	+	+	+	+	+		+				+		+			+	+	+				+			OPHIFLEX
OPIHURA ALBIDA			+			+		+				+				+		+						+	OPHIALBI
OPIHURA TEXTURATA																									OPHITEXT
OPIHURA SPEC. JUV.	+	+	+		+	+	+		+	+													+		OPHISPEC
ORBINIA SERTULATA																									ORBISERT
ORCHOMENE HUMILIS																									ORCHHUMI
ORCHOMENE NANA				+																				+	ORCHNANA
ORCHOMENE SPEC. JUV.																									ORCHSPEC
OWENIA FUSIFORMIS																						+		+	OWENFUSI
PARAONIS FULGENS							+											+			+				PARAFULG
PECTINARIA AURICOMA																									PECTAURI
PECTINARIA KORENI												+				+	+	+				+	+		PECTKORE
PERIOCULODES LONGIMANUS			+						+				+			+	+	+	+			+		+	PERILONG
PHOLOE MINUTA			+		+	+	+	+	+		+					+			+	+	+				PHOLMINU
PHORONIDA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	PHORONID
PHYLLODOCE MACULATA																									PHYLMACU
PHYLLODOCIDAE SPEC.																							+		PHYLSPEC
PISIONE REMOTA																									PISIREMO
POECILOCHAETUS SERPENS					+		+										+							+	POECSERP
POLYDORA CILIATA			+													+									POLYCILI
POLYDORA SPEC.	+								+									+							POLYDORA
POLYNOE KINBERGI																									POLYKINB
POLYPLACOPHORA																									POLYPLAC
PONTOCRATES ALTAMARINUS																									PONTALTA
PONTOPHILUS TRISPINOSUS																									PONTTRIS
PRIONOSPIO STEENSTRUPI																									PRIOSTEE
PROCESSA PARVA																									PROCPARV

Appendix-1 Biomonitoring 2000 (+ = presence)

	Oyster Ground																								
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
Species name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
RETUSA UMBILICATA																									RETUUMBI
RHODINE SPEC.																									RHODSPEC
SAXICAVA ARCTICA																									SAXIARCT
SAXICAVELLA JEFFREYSI																					+				SAXJEFF
SCALIBREGMA INFLATUM																+		+							SCALINFL
SCOLELEPIS BONNIERI																							+		SCOLBONN
SCOLELEPIS FOLIOSA																									SCOLFOLI
SCOLOPLOS ARMIGER			+	+	+						+	+									+	+	+		SCOLARMI
SCOPELOCHEIRUS HOPEI																									SCOPHOPE
SEMIERYCINA NITIDA		+																							SEMINITI
SIGALON MATHILDAE				+						+	+						+			+				+	SIGAMATH
SIPUNCULIDA SPEC.																									SIPUCULI
SPHAERODORUM FLAVUM																									SPHAFLAV
SPHAEROSYLLIS SPEC.																									SPHASPEC
SPIO FILICORNIS	+			+	+		+	+					+				+						+	+	SPIOFILI
SPIOPHANES BOMBYX	+	+	+	+	+	+	+		+	+	+	+	+			+	+	+		+	+	+	+	+	SPIOBOMB
SPIOPHANES KROEYERI				+																					SPIOKROE
SPISULA ELLIPTICA																							+		SPISELLI
SPISULA SUBTRUNCATA																									SPISSUBT
STHENELAIS LIMICOLA	+				+	+	+										+				+		+		STHELIMI
SYLLIDAE SPEC.																									SYLLIDAE
SYNCHELIDIUM HAPLOCHELES				+	+																				SYNCHAPL
SYNCHELIDIUM MACULATUM																									SYNCMACU
SYNELMIS KLATTI	+	+			+		+		+	+			+	+	+		+		+				+		SYNEKLAT
TELLINA FABULA					+						+	+										+		+	TELLFABU
TELLINA PYGMEA																									TELLPYGM
TELLINA TENUIS																									TELLTENU
TEREBELLIDAE SPEC. JUV.	+	+											+												TERESPEC
TEREBELLIDES STROEMI																									TERESTRO
THARYX KILLARIENSIS																					+				THARKILL
THIA SCUTELLATA																									THIASCUT
THRACIA CONVEXA																+									THRACONV
THRACIA PHASEOLINA										+		+					+	+						+	THRAPHAS
THYASIRA FLEXUOSA				+	+						+											+	+		THYAFLEX
TORNUS SUBCARINATUS			+														+								TORNUSUBC
TRAVISIA FORBESII																									TRAVFORB
TURBELLARIA SPEC.							+		+	+			+										+		TURBELLARIA
TURRITELLA COMMUNIS									+																TURRCOMM
UPOGEBIA DELTAURA			+										+			+		+	+						UPOGDELT
UPOGEBIA STELLATA																									UPOGSTEL
UROTHOE BREVICORNIS																							+		UROTBREV
UROTHOE ELEGANS																									UROTELEG
UROTHOE POSEIDONIS													+			+								+	UROTPOSE
UROTHOE SPEC. JUV.																									UROTSPEC

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area																										
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Species name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Code
ABRA ALBA	+																										ABRAALBA
ABRA NITIDA											+	+															ABRANITI
ABRA PRISMATICA																											ABRAPRIS
ABRA TENUIS																											ABRATENU
ACANTHOCARDIA ECHINATA																											ACANECHI
ACROCNIDA BRACHIATA																											ACROBRAC
ACTEON TORNATILIS																											ACTETORN
ALTENAEUM DAWSONI																											ALTEDAWS
ALVANIA LACTEA																											ALVALACT
AMPELISCA BREVICORNIS																											AMPEBREV
AMPELISCA TENUICORNIS																											AMPETENU
AMPELISCA SPEC.	+																										AMPESPEC
AMPHARETE FINMARCHICA																											AMPHFINM
AMPHIOXUS LANCEOLATUS										+																	AMPHLANC
AMPHIURA CHIAJEI																											AMPHCHIA
AMPHIURA FILIFORMIS																											AMPHFILI
AMPHIURA SPEC. JUV.						+																					AMPHJUVE
ANAITIDES GROENLANDICA						+																					ANAIGROE
ANAITIDES SPEC. JUV.																											ANAIPEC
ANTHOZOA SPEC.																											ANTHOZOA
APHELOCHAETA MARIONI																											APHEMARI
APHERUSA JURINEI																											APHEJURI
APHERUSA OVALIPES									+																		APHEOVAL
APHRODITE ACULEATA																											APHRACUL
ARCTICA ISLANDICA JUV.																											ARCTISLA
ARICIDEA MINUTA						+		+		+		+				+	+		+	+		+			+	+	ARICMINU
ARICIDEA SUECICA																											ARICSUEC
ASTARTE TRIANGULARIS						+																					ASTATRIA
ASTROPECTEN IRREGULARIS																											ASTRIRRE
ATYLUS FALCATUS					+																						ATYLFALC
ATYLUS SWAMMERDAMI		+																									ATYLSWAM
ATYLUS SPEC. JUV.																											ATYLSPEC
BATHYPOREIA ELEGANS	+	+		+	+	+		+	+	+	+	+	+	+	+	+			+		+						BATHELEG
BATHYPOREIA GUILLIAMSONIANA	+	+			+			+	+	+	+	+					+									+	BATHGUIL
BATHYPOREIA TENUIPES					+		+																				BATHTENU
BRISSOPSIS LYRIFERA																											BRISLYRI
CALLIANASSA JUV.																											CALLJUVE
CALLIANASSA SUBTERRANEA	+					+																	+				CALLSUBT
CAPITELLA CAPITATA				+																							CAPICAPI
CAPRELLIDAE SPEC.				+																							CAPRELLI
CHAETOPTERUS VARIOPEDATUS																											CHAEVARI
CHAETOZONE SETOSA	+	+	+				+		+	+		+					+			+							CHAESETO
CHAMELEA GALLINA											+																CHAMGALL
CORBULA GIBBA																											CORBGIBB
COROPHIUM INSIDIOSUM																											COROINSI
COROPHIUM SPEC.																											COROSPEC
CORYSTES CASSIVELAUNUS					+																						CORYCASS
CRANGON CRANGON																											CRANCRAN
CUCUMARIA ELONGATA																											CUCUELON
CULTELLUS PELLUCIDUS						+																					CULTEPELL
CYLICHNA CYLINDRACEA	+			+	+																						CYLICYLI
DIASTYLIS BRADYI		+	+		+																						DIASBRAD

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area																										
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Species name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Code
DOSINIA LUPINUS																											DOSILUPI
EBALIA TUBEROSA																											EBALTUBE
ECHINOCARDIUM CORDATUM	+	+	+	+	+	+	+		+	+			+	+						+		+	+		+		ECHICORD
E. CORDATUM JUV.																											ECHIJUVE
ECHINOCYAMUS PUSILLUS	+										+	+									+						ECHIPUSI
EDWARDSIA CLAPAREDII							+			+													+				EDWACLAP
ENSIS DIRECTUS																								+			ENSIDIR
ENSIS ENSIS																											ENSIENSI
ENSIS SPEC.																											ENSISPEC
ETEONE FOLIOSA									+			+															ETEOFOLI
ETEONE LONGA	+	+																									ETEOLONG
ETEONE SPEC. JUV.																											ETEOSPEC
EUDORELLA TRUNCATULA																											EUDOTRUN
EUDORELLOPSIS DEFORMIS																											EUDODEFO
EUMIDA SANGUINEA		+										+													+		EUMISANG
EUPOLYMNIA NEBULOSA																											EUPONEBU
EURIDYCE PULCHRA																											EURIPULC
EUZONUS FLABELLIGERUS																					+					+	EUZOFLAB
EXOGONE HEBES										+																	EXOGHEBE
EXOGONE NAIDINA								+																			EXOINAID
GARI FERVENSIS																											GARIFERV
GATTYANA CIRROSA																											GATTICIRR
GLYCERA LAPIDUM																					+				+		GLYCLAPI
GLYCERA ROUXI																											GLYCROUX
GLYCERA SPEC. JUV.																					+						GLYCSPEC
GLYCIDINORDMANNI																											GLYCNORD
GOLFINGIA PROCERA																											GOLFPROC
GOLFINGIA VULGARIS																											GOLFVULG
GONIADA MACULATA		+			+			+		+	+	+	+	+	+	+											GONIMACU
GYPTIS CAPENSIS	+			+	+			+																			GYPTCAPE
HARMOTHOE GLABRA																											HARMGLAB
HARMOTHOE LONGISETIS																											HARMLONG
HARMOTHOE SPEC. JUV.		+									+																HARMSPEC
HARPINIA ANTENNARIA					+																						HARPANTE
HIPPOMEDON DENTICULATUS																											HIPPIDENT
HYALA VITREA																											HYALVITR
HYPERIIDAE SPEC.																											HYPERIID
IONE THORACICA																											IONETHOR
IPHINOE TRISPINOSE			+	+																							IPHITRIS
LABIDOPLEX BUSKY																											LABIBUSK
LANICE CONCHILEGA					+	+		+												+					+	+	LANICONC
LEMBOS LONGIPES																											LEMBLONG
LEPIDOPECREUM LONGICORNE	+																										LEPILONG
LEPTON SQUAMOSUM																											LEPTSQUA
LEPTOSYNAPTA INHAERENS																											LEPTINHA
LEUCOTHOE INCISA	+									+													+				LEUCINCI
LIOCARCINUS HOLSATIS																											LIOCHOLS
LIOCARCINUS SPEC. JUV.																		+									LIOCSPEC
LUCINOMA BOREALIS																											LUCIBORE
LUMBRINERIS FRAGILIS																											LUMBFRAG
LUMBRINERIS LATREILLI																											LUMBLATR
LUMBRINERIS SPEC. JUV.																											LUMBSPEC
LYSILLA LOVENI																											LYSILOVE

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area																										
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Species name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Code
MAGELONA ALLENI																											MAGEALLE
MAGELONA MIRABILIS	+	+	+	+	+	+	+	+	+	+	+	+		+	+			+		+							MAGEMIRA
MEDIOMASTUS FRAGILIS																											MEDIFRAG
MEGALUROPUS AGILIS		+				+	+	+		+											+		+		+		MEGAAGIL
MELANELLA ALBA																											MELAALBA
MONTACUTA FERRUGINOSA	+	+		+			+		+	+	+		+	+						+			+		+		MONTFERR
MYA TRUNCATA JUV.																											MYATRUNC
MYRIOCHELE HEERI																											MYRIHEER
MYSELLA BIDENTATA				+																			+				MYSEBIDE
MYSIA UNDATA																											MYSIUUNDA
MYTILIDAE SPEC. JUV.																											MYTISPEC
NATICA ALDERI			+	+	+					+		+	+	+	+			+		+	+			+			NATIALDE
NEBALIA BIPES																											NEBABIPE
NEMATODA					+	+															+				+	+	NEMATODA
NEMERTINI	+	+	+	+	+	+		+	+	+	+				+					+	+		+			+	NEMERTIN
NEPHTYS CAECA				+	+																						NEPHCAEC
NEPHTYS CIRROSA					+			+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	NEPHCIRR
NEPHTYS HOMBERGII																									+		NEPHHOMB
NEPHTYS INCISA																											NEPHINCI
NEPHTYS SPEC. JUV.		+					+	+	+		+	+					+									+	NEPHSPEC
NEREIS LONGISSIMA						+																					NERELONG
NEREIS SPEC. JUV.																											NERESPEC
NOTOMASTUS LATERICEUS	+			+	+																+				+		NOTOLATE
NUCULA TENUIS																											NUCUTENU
NUCULA TURGIDA																											NUCUTURG
OPHELINA ACUMINATA																											OPHEACUM
OPHIODROMUS FLEXUOSUS																											OPHIFLEX
OPHIURA ALBIDA		+			+													+									OPHIALBI
OPHIURA TEXTURATA			+																								OPHITEXT
OPHIURA SPEC. JUV.	+			+									+		+			+			+						OPHISPEC
ORBINIA SERTULATA																											ORBISERT
ORCHOMENE HUMILIS																											ORCHHUMI
ORCHOMENE NANA																											ORCHNANA
ORCHOMENE SPEC. JUV.																											ORCHSPEC
OWENIA FUSIFORMIS																											OWENFUSI
PARAONIS FULGENS										+							+			+			+				PARAFULG
PECTINARIA AURICOMA																											PECTAURI
PECTINARIA KORENI					+																						PECTKORE
PERIOCULODES LONGIMANUS					+																						PERILONG
PHOLOE MINUTA																											PHOLMINU
PHORONIDA	+					+		+		+				+								+	+				PHORONID
PHYLLODOCE MACULATA																											PHYLMACU
PHYLLODOCIDAE SPEC.																											PHYLSPEC
PISIONE REMOTA																					+						PISIREMO
POECILOCHAETUS SERPENS	+	+						+																			POECSERP
POLYDORA CILIATA																											POLYCILI
POLYDORA SPEC.																											POLYDORA
POLYNOE KINBERGI																											POLYKINB
POLYPLACOPHORA																											POLYPLAC
PONTOCRATES ALTAMARINUS												+															PONTALTA
PONTOPHILUS TRISPINOSUS																									+		PONTTRIS
PRIONOSPIO STEENSTRUPI									+																		PRIOSTEE
PROCESSA PARVA										+												+					PROCPARV

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area																										
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
Species name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Code
RETUSA UMBILICATA																											RETUUMBI
RHODINE SPEC.																											RHODSPEC
SAXICAVA ARCTICA																											SAXIARCT
SAXICAVELLA JEFFREYSI																											SAXJEFF
SCALIBREGMA INFLATUM																											SCALINFL
SCOLELEPIS BONNIERI									+									+		+							SCOLBONN
SCOLELEPIS FOLIOSA																											SCOLFOLI
SCOLOPLOS ARMIGER	+	+		+	+	+		+					+			+	+					+	+	+			SCOLARMI
SCOPELOCHEIRUS HOPEI												+															SCOPHOPE
SEMIERYCINA NITIDA																											SEMINITI
SIGALION MATHILDAE					+						+																SIGAMATH
SIPUNCULIDA SPEC.																											SIPUCULI
SPHAERODORUM FLAVUM																											SPHAFLAV
SPHAEROSYLLIS SPEC.									+																		SPHASPEC
SPIO FILICORNIS		+	+			+		+		+		+	+				+				+			+		+	SPIOFILI
SPIOPHANES BOMBYX	+	+		+	+	+	+	+	+		+	+	+	+						+	+				+		SPIOBOMB
SPIOPHANES KROEYERI																											SPIOKROE
SPISULA ELLIPTICA																											SPISELLI
SPISULA SUBTRUNCATA	+		+																						+		SPISSUBT
STHENELAIS LIMICOLA																											STHELIMI
SYLLIDAE SPEC.																					+						SYLLIDAE
SYNCHELIDIUM HAPLOCHELES														+													SYNCHAPL
SYNCHELIDIUM MACULATUM				+				+		+							+										SYNCMACU
SYNELMIS KLATTI																											SYNEKLAT
TELLINA FABULA	+	+	+	+	+		+	+		+	+	+	+										+				TELLFABU
TELLINA PYGMEA																										+	TELLPYGM
TELLINA TENUIS																											TELLTENU
TEREBELLIDAE SPEC. JUV.																											TERESPEC
TEREBELLIDES STROEMI																											TERESTRO
THARYX KILLARIENSIS																											THARKILL
THIA SCUTELLATA														+							+						THIASCUT
THRACIA CONVEXA																											THRACONV
THRACIA PHASEOLINA																											THRAPHAS
THYASIRA FLEXUOSA																											THYAFLEX
TORNUS SUBCARINATUS																											TORNUSUBC
TRAVISIA FORBESII									+																		TRAVFORB
TURBELLARIA SPEC.																											TURBELLA
TURRITELLA COMMUNIS																											TURRCOMM
UPOGEBIA DELTAURA																											UPOGDELT
UPOGEBIA STELLATA																											UPOGSTEL
UROTHOE BREVICORNIS					+		+	+	+	+			+	+	+	+						+			+		UROTBBREV
UROTHOE ELEGANS																											UROTELEG
UROTHOE POSEIDONIS		+	+		+	+	+	+	+	+		+	+	+	+	+					+	+			+		UROTPOSE
UROTHOE SPEC. JUV.																											UROTSPEC

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
Species name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code
ABRA ALBA														+		+										ABRAALBA
ABRA NITIDA																										ABRANITI
ABRA PRISMATICA																										ABRAPRIS
ABRA TENUIS																	+									ABRATENU
ACANTHOCARDIA ECHINATA																										ACANECHI
ACROCNIDA BRACHIATA																										ACROBRAC
ACTEON TORNATILIS																										ACTETORN
ALTENAEUM DAWSONI																										ALTEDAWS
ALVANIA LACTEA										+																ALVALACT
AMPELISCA BREVICORNIS																										AMPEBREV
AMPELISCA TENUICORNIS																										AMPETENU
AMPELISCA SPEC.																										AMPESPEC
AMPHARETE FINMARCHICA																										AMPHFINM
AMPHIOXUS LANCEOLATUS			+			+																				AMPHLANC
AMPHIURA CHIAJEI									+	+																AMPHCHIA
AMPHIURA FILIFORMIS																										AMPHFILI
AMPHIURA SPEC. JUV.																										AMPHJUVE
ANAITIDES GROENLANDICA																										ANAIGROE
ANAITIDES SPEC. JUV.																			+							ANAIPEC
ANTHOZOA SPEC.									+															+		ANTHOZOA
APHELOCHAETA MARIONI																										APHEMARI
APHERUSA JURINEI																										APHEJURI
APHERUSA OVALIPES																										APHEOVAL
APHRODITE ACULEATA																										APHRACUL
ARCTICA ISLANDICA JUV.																										ARCTISLA
ARICIDEA MINUTA					+	+			+	+	+															ARICMINU
ARICIDEA SUECICA																										ARICSUEC
ASTARTE TRIANGULARIS																										ASTATRIA
ASTROPECTEN IRREGULARIS																										ASTIRRE
ATYLUS FALCATUS		+								+	+			+			+		+						+	ATYLFALC
ATYLUS SWAMMERDAMI													+				+									ATYLSWAM
ATYLUS SPEC. JUV.																										ATYLSPEC
BATHYPOREIA ELEGANS			+		+	+	+		+	+	+					+	+	+	+						+	BATHELEG
BATHYPOREIA GUILLIAMSONIANA			+	+	+		+					+						+								BATHGUIL
BATHYPOREIA TENUIPES								+		+																BATHTENU
BRISSOPSIS LYRIFERA																										BRISLYRI
CALLIANASSA JUV.																										CALLJUVE
CALLIANASSA SUBTERRANEA								+																		CALLSUBT
CAPITELLA CAPITATA											+	+		+	+	+	+			+					+	CAPICAPI
CAPRELLIDAE SPEC.																									+	CAPRELLI
CHAETOPTERUS VARIOPEDATUS																										CHAEVARI
CHAETOZONE SETOSA				+	+		+								+										+	CHAESETO
CHAMELEA GALLINA																			+							CHAMGALL
CORBULA GIBBA																										CORBGIBB
COROPHIUM INSIDIOSUM																										COROINSI
COROPHIUM SPEC.																										COROSPEC
CORYSTES CASSIVELAUNUS																										CORYCASS
CRANGON CRANGON														+	+							+				CRANCRAN
CUCUMARIA ELONGATA																										CUCUELON
CUTELLUS PELLUCIDUS																										CULTPELL
CYLICHA CYLINDRACEA																										CYLICYLI
DIASTYLIS BRADYI			+														+								+	DIASBRAD

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
Species name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code
DOSINIA LUPINUS																										DOSILUPI
EBALIA TUBEROSA																										EBALTUBE
ECHINOCARDIUM CORDATUM			+	+							+	+	+		+	+			+		+				+	ECHICORD
E. CORDATUM JUV.									+																	ECHIJUVE
ECHINOCYAMUS PUSILLUS			+	+					+																	ECHIPUSI
EDWARDSIA CLAPAREDI														+												EDWACLA
ENSIS DIRECTUS			+									+	+		+					+		+			+	ENSIDIR
ENSIS ENSIS												+									+					ENSIENSI
ENSIS SPEC.												+									+					ENSISPEC
ETEONE FOLIOSA																										ETEOFOLI
ETEONE LONGA	+								+		+					+		+	+		+	+			+	ETEOLONG
ETEONE SPEC. JUV.															+											ETEOSPEC
EUDORELLA TRUNCATULA																										EUDOTRUN
EUDORELLOPSIS DEFORMIS																										EUDODEFO
EUMIDA SANGUINEA																			+						+	EUMISANG
EUPOLYMNIA NEBULOSA																										EUPONEBU
EURIDYCE PULCHRA																										EURIPULC
EUZONUS FLABELLIGERUS										+																EUZOFLAB
EXOGONE HEBES							+																			EXOGHEBE
EXOGONE NAIDINA		+																								EXOGNAID
GARI FERVENSIS																										GARIFERV
GATTYANA CIRROSA																										GATTTCIRR
GLYCERA LAPIDUM			+																							GLYCLAPI
GLYCERA ROUXI																										GLYCROUX
GLYCERA SPEC. JUV.									+																	GLYCSPEC
GLYCIDINE NORDMANNI																										GLYCNORD
GOLFINGIA PROCERA																										GOLFPROC
GOLFINGIA VULGARIS																										GOLFVULG
GONIADA MACULATA																										GONIMACU
GYPTIS CAPENSIS				+																						GYPTCAPE
HARMOTHOE GLABRA																										HARMGLAB
HARMOTHOE LONGISETIS																										HARMLONG
HARMOTHOE SPEC. JUV.				+																						HARMSPEC
HARPINIA ANTENNARIA																										HARPANTE
HIPPOMEDON DENTICULATUS																										HIPPIDENT
HYALA VITREA																										HYALVITR
HYPERIIDAE SPEC.																										HYPERIID
IONE THORACICA																										IONETHOR
IPHINOE TRISPINOSA			+	+																					+	IPHITRIS
LABIDOPLEX BUSKY																										LABIBUSK
LANICE CONCHILEGA	+	+					+	+			+	+	+	+		+	+			+	+			+	+	LANICONC
LEMBOS LONGIPES																										LEMBLONG
LEPIDEPECREUM LONGICORNE				+																						LEPILONG
LEPTON SQUAMOSUM																										LEPTSQUA
LEPTOSYNAPTA INHAERENS																										LEPTINHAE
LEUCOTHOE INCISA							+	+												+				+		LEUCINCI
LIOCARCINUS HOLSATUS														+												LIOCHOLS
LIOCARCINUS SPEC. JUV.																										LIOCSPEC
LUCINOMA BOREALIS																										LUCIBORE
LUMBRINERIS FRAGILIS																										LUMBFRAG
LUMBRINERIS LATREILLI																										LUMBLATR
LUMBRINERIS SPEC. JUV.																										LUMBSPEC
LYSILLA LOVENI																										LYSILOVE

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area										Coastal area																
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
Species name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code	
MAGELONA ALLENI																											MAGEALLE
MAGELONA MIRABILIS	+			+	+	+					+	+	+	+	+	+	+	+	+	+	+	+		+	+		MAGEMIRA
MEDIOMASTUS FRAGILIS	+								+																		MEDIFRAG
MEGALUROPUS AGILIS	+	+					+		+	+	+								+			+			+		MEGAAGIL
MELANELLA ALBA																											MELAALBA
MONTACUTA FERRUGINOSA			+	+					+	+	+	+	+		+						+				+		MONTFERR
MYA TRUNCATA JUV.																											MYATRUNC
MYRIOCHELE HEERI																											MYRIHEER
MYSELLA BIDENTATA	+		+	+								+	+	+		+			+		+	+			+		MYSEBIDE
MYSIA UNDATA																											MYSIUNDA
MYTILIDAE SPEC. JUV.								+																			MYTISPEC
NATICA ALDERI	+	+		+			+		+	+				+							+						NATIALDE
NEBALIA BIPES																											NEBABIBE
NEMATODA							+		+												+						NEMATODA
NEMERTINI	+	+	+	+	+	+	+	+	+	+	+	+			+	+		+	+	+		+			+	+	NEMERTIN
NEPHTYS CAECA											+						+	+		+							NEPHCAEC
NEPHTYS CIRROSA	+	+		+	+	+	+	+	+	+		+					+	+	+	+	+	+					NEPHCIRR
NEPHTYS HOMBERGII	+						+				+	+	+	+	+	+	+		+	+				+	+		NEPHHOMB
NEPHTYS INCISA																											NEPHINCI
NEPHTYS SPEC. JUV.		+		+			+		+		+					+		+	+	+							NEPHSPEC
NEREIS LONGISSIMA																+			+		+						NERELONG
NEREIS SPEC. JUV.																											NERESPEC
NOTOMASTUS LATERICEUS				+					+																+		NOTOLATE
NUCULA TENUIS																											NUCUTENU
NUCULA TURGIDA																											NUCUTURG
OPHELINA ACUMINATA																											OPHEACUM
OPHIODROMUS FLEXUOSUS																											OPHIFLEX
OPHIURA ALBIDA			+				+		+													+	+		+		OPHIALBI
OPHIURA TEXTURATA											+																OPHITEXT
OPHIURA SPEC. JUV.	+	+	+						+	+																	OPHISPEC
ORBINIA SERTULATA																											ORBISERT
ORCHOMENE HUMILIS																											ORCHHUMI
ORCHOMENE NANA				+																							ORCHNANA
ORCHOMENE SPEC. JUV.																											ORCHSPEC
OWENIA FUSIFORMIS																									+		OWENFUSI
PARAONIS FULGENS			+																								PARAFULG
PECTINARIA AURICOMA																											PECTAURI
PECTINARIA KORENI							+							+				+							+		PECTKORE
PERIOCULODES LONGIMANUS																											PERILONG
PHOLOE MINUTA							+																		+		PHOLMINU
PHORONIDA							+		+				+														PHORONID
PHYLLODOCE MACULATA																									+		PHYLMACU
PHYLLODOCIDAE SPEC.									+																		PHYLSPEC
PISIONE REMOTA																											PISIREMO
POECILOCHAETUS SERPENS							+																				POECSERP
POLYDORA CILIATA																											POLYCILI
POLYDORA SPEC.																											POLYDORA
POLYNOE KINBERGI																											POLYKINB
POLYPLACOPHORA								+																			POLYPLAC
PONTOCRATES ALTAMARINUS																											PONTALTA
PONTOPHILUS TRISPINOSUS																											PONTTRIS
PRIONOSPIO STEENSTRUPI																											PRIOSTEE
PROCESSA PARVA																											PROCPARV

Appendix-1 Biomonitoring 2000 (+ = presence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
<i>Species name</i>	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	<i>Code</i>
RETUSA UMBILICATA																										RETUUMBI
RHODINE SPEC.																										RHODSPEC
SAXICAVA ARCTICA																										SAXIARCT
SAXICAVELLA JEFFREYSI																										SAXJEFF
SCALIBREGMA INFLATUM																										SCALINFL
SCOLELEPIS BONNIERI									+													+				+ SCOLBONN
SCOLELEPIS FOLIOSA				+																						SCOLFOLI
SCOLOPLOS ARMIGER			+	+					+		+					+		+				+		+		SCOLARMI
SCOPELOCHEIRUS HOPEI																										SCOPHOPE
SEMIERYCINA NITIDA																										SEMINITI
SIGALION MATHILDAE				+																+						+ SIGAMATH
SIPUNCULIDA SPEC.																										SIPUCULI
SPHAERODORUM FLAVUM																										SPHAFLAV
SPHAEROSYLLIS SPEC.																										SPHASPEC
SPIO FILICORNIS	+	+					+		+	+	+					+	+			+				+	+	SPIOFILI
SPIOPHANES BOMBYX		+		+	+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	SPIOBOMB
SPIOPHANES KROEYERI																										SPIOKROE
SPIGULA ELLIPTICA																										SPISELLI
SPIGULA SUBTRUNCATA				+					+				+	+	+	+		+	+	+						SPISSUBT
STHENELAIS LIMICOLA																										STHELIMI
SYLLIDAE SPEC.		+																								SYLLIDAE
SYNCHELIDIUM HAPLOCHELES																										SYNCHAPL
SYNCHELIDIUM MACULATUM											+															SYNCMACU
SYNELMIS KLATTI																										SYNEKLAT
TELLINA FABULA				+							+	+	+	+	+	+		+	+	+	+				+	TELLFABU
TELLINA PYGMEA		+																								TELLPYGM
TELLINA TENUIS												+		+	+	+								+	+	TELLTENU
TEREBELLIDAE SPEC. JUV.												+														TERESPEC
TEREBELLIDES STROEMI																										TERESTRO
THARYX KILLARIENSIS																										THARKILL
THIA SCUTELLATA									+																	THIASCUT
THRACIA CONVEXA																										THRACONV
THRACIA PHASEOLINA																										THRAPHAS
THYASIRA FLEXUOSA																										THYAFLEX
TORNUS SUBCARINATUS							+																			TORNUSUBC
TRAVISIA FORBESII			+						+																	TRAVFORB
TURBELLARIA SPEC.																										TURBELLA
TURRITELLA COMMUNIS																										TURRCOMM
UPOGEBIA DELTAURA																										UPOGDELT
UPOGEBIA STELLATA																										UPOGSTEL
UROTHOE BREVICORNIS							+				+	+			+	+			+		+					UROTREV
UROTHOE ELEGANS																										UROTELEG
UROTHOE POSEIDONIS				+	+	+	+	+			+	+	+	+	+	+		+	+	+			+	+	+	UROTPOSE
UROTHOE SPEC. JUV.																										UROTSPEC

Appendix-2, Biomonitoring 2000

Station:	DOG 1		DOG 2		DOG 3		DOG 4		DOG 5	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalci	12.8	0.004					12.8	0.004		
batheleg	1116.2	0.335	128.3	0.038	1308.7	0.393	1565.3	0.470	77.0	0.023
bathguil	64.2	0.019	25.7	0.008	141.1	0.042	154.0	0.046	12.8	0.004
bathtenu					12.8	0.004	25.7	0.008		
coroinsi	25.7	0.008	12.8	0.004	25.7	0.008				
corycass							12.8	1.882		
diasbrad			12.8	0.004						
harpante	12.8	0.004	12.8	0.004						
hippdent	12.8	0.004	12.8	0.004						
iphitris	25.7	0.008			12.8	0.004	12.8	0.004		
lepilong	12.8	0.004					12.8	0.004		
leucinci			12.8	0.004			12.8	0.004	25.7	0.008
megaagil	25.7	0.008			12.8	0.004	77.0	0.023		
orchnana	25.7	0.008			38.5	0.012			12.8	0.004
orchspec							25.7	0.008		
perilong			51.3	0.015	25.7	0.008	25.7	0.008		
pontalta					38.5	0.012				
pseulong	38.5	0.012			25.7	0.008	25.7	0.008	12.8	0.004
syncmacu	12.8	0.004			38.5	0.012	77.0	0.023		
urotbrev							25.7	0.008		
uroteleg					12.8	0.004				
urotpose	243.8	0.073	51.3	0.015	51.3	0.015	230.9	0.069	64.2	0.019
Echinodermata										
acrobrac			64.2	5.543					166.8	11.125
amphchia	51.3	0.309			25.7	0.659	25.7	0.037		
amphjuve	346.4	0.041	141.1	0.021	615.8	0.092	64.2	0.006	205.3	0.019
echicord			38.5	46.188						
echipusi					12.8	0.014				
Mollusca										
abraalba									25.7	0.126
abrapris							12.8	0.055		
arctisla							38.5	0.005		
chamgall	25.7	0.005	12.8	0.000			12.8	0.001	12.8	0.001
corbgibb									25.7	0.009
dosilupi			12.8	0.001	51.3	0.015				
ensiensi							12.8	2.883		
ensispec	12.8	1.849								
gariferv	12.8	0.559								
lucibore					12.8	0.754				
montferr			51.3	0.019						
mysebide	25.7	0.001	77.0	0.019			25.7	0.005	307.9	0.038
natialde	12.8	0.064	64.2	0.033	77.0	0.123	12.8	0.009	12.8	0.023
tellfabu	12.8	0.001	25.7	0.213	38.5	0.175	77.0	0.311	179.6	0.018
thraphas	25.7	0.037			12.8	0.006	12.8	0.006		
Polychaeta										
chaeseto	51.3	0.020	38.5	0.086					51.3	0.051
eteolong					25.7	0.030				
eumisang	38.5	0.036	12.8	0.029						
gonimacu	12.8	0.036	51.3	0.185	51.3	0.071	51.3	0.154	12.8	0.012
gyptcape					12.8	0.015			51.3	0.051
harmlunu			25.7	0.058						
harmspec									51.3	0.051
magemira	102.6	0.076	102.6	0.073	89.8	0.014	256.6	0.271	333.6	0.368
nephcaec									12.8	2.012
nephcirr							12.8	0.058		
nephhomb	12.8	1.297			25.7	0.224			25.7	0.212
nephspec	77.0	0.030	38.5	0.086	154.0	0.183	12.8	0.014	12.8	0.012
notolate	12.8	0.632	38.5	0.769	25.7	1.043	77.0	6.427	89.8	11.447
ophelima					12.8	0.015				

Appendix-2, Biomonitoring 2000

owenfusi							25.7	0.113		
pholminu	12.8	0.005								
poecserp							12.8	0.014		
scolbonn					12.8	0.254				
sigamath					25.7	0.381			12.8	0.195
spiofili	397.7	0.156			77.0	0.091	38.5	0.041	25.7	0.025
spiobomb	38.5	0.015	25.7	0.058	102.6	0.122	51.3	0.054	38.5	0.037
sthelimi	38.5	0.312	12.8	0.100						
Miscellaneous taxa										
edwaclap	64.2	0.071								
nemertin	64.2	0.066	25.7	0.025	38.5	0.053	89.8	0.222	25.7	0.003
phoronid							12.8	0.037	25.7	0.019
sum	3079.2	6.106	1180.4	53.601	3246.0	4.857	3233.2	13.290	1911.7	25.913
diversity										
nspc	35		28		34		36		28	
SH-W	2.46		3.05		2.33		2.27		2.74	
Simp	0.17		0.05		0.20		0.25		0.09	

Station:	DOG 6		DOG 7		OYS 1		OYS 2		OYS 3	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc			12.8	0.004						
batheleg	834.0	0.250	449.1	0.135	12.8	0.004			12.8	0.004
bathguil	128.3	0.038	77.0	0.023						
bathtenu	25.7	0.008								
calljuve					77.0	0.650	38.5	0.629	25.7	0.090
callsubt					12.8	2.627	25.7	3.809	12.8	0.624
coroinsi	12.8	0.004	38.5	0.012						
corospec									12.8	0.004
diasbrad	12.8	0.004								
eudotrur					25.7	0.008	12.8	0.004	12.8	0.004
harpante	12.8	0.004			12.8	0.004				
hyperiid	12.8	0.004	12.8	0.004						
ionethor					25.7	0.025	25.7	0.025	12.8	0.025
iphitris	12.8	0.004	38.5	0.012						
leucinci	12.8	0.004								
megaagil	12.8	0.004	38.5	0.012						
orchhumi			25.7	0.008						
perilong			51.3	0.015	12.8	0.004				
pontalta	12.8	0.004	51.3	0.015	12.8	0.004				
pseulong	25.7	0.008	77.0	0.023						
synchapl	25.7	0.008								
urotbrev	12.8	0.004	25.7	0.008						
urotpose	25.7	0.008	243.8	0.073						
Echinodermata										
amphfili					1616.6	6.097	51.3	0.299	1693.6	15.171
amphchia	51.3	0.346	25.7	0.084						
amphjuve	38.5	0.006	38.5	0.004						
bristlyri					12.8	0.003				
echicord							12.8	9.393	12.8	3.949
ophialbi					12.8	0.000	25.7	0.000		
Mollusca										
arctisia			12.8	0.003						
chamgall	12.8	0.001	12.8	0.003					12.8	0.000
corbgibb					12.8	0.010	218.1	0.046	12.8	0.004
cultpell					25.7	0.007				
cylicyli					12.8	0.001			25.7	0.011
ensiensi	12.8	0.559								

Appendix-2, Biomonitoring 2000

gariferv	38.5	0.485								
hyalitr							12.8	0.004		
montferr							25.7	0.025		
mysebide	25.7	0.002	51.3	0.005	154.0	0.023	102.6	0.015	397.7	0.040
natialde	12.8	0.004					38.5	0.102		
nucutenu									12.8	0.007
nucuturg					12.8	0.007				
retuumbi	12.8	0.013								
saxiarct									12.8	0.020
tellfabu			102.6	0.089						
thraphas	12.8	0.015	12.8	0.008						
thyaflax					25.7	0.010				
turrcomm							12.8	0.064		
Polychaeta										
amphfinm									12.8	0.147
anaigroe							12.8	0.053		
aphemari									12.8	0.008
chaevvari							12.8	2.461	25.7	8.773
chaeseto			51.3	0.034	25.7	0.014			295.1	0.164
dipglau					25.7	0.032				
euponebu							12.8	0.008		
gattcirr							12.8	0.139	38.5	2.273
glycspec									12.8	0.008
gonimacu	77.0	0.215	25.7	0.017	12.8	0.010				
gyptcape	51.3	0.058					25.7	0.015		
harmspec	12.8	0.015								
laniconc			12.8	0.273						
magealle			12.8	0.086	12.8	0.058				
magemira	115.5	0.068	218.1	0.115			51.3	0.030		
medifrag									12.8	0.008
nephcirr	115.5	0.168								
nephhomb	25.7	1.565			12.8	0.007			12.8	0.027
nephspec	89.8	0.051							12.8	0.008
nerelong	12.8	0.083					25.7	1.875		
notolate			12.8	0.518					12.8	0.090
ophelima			12.8	0.008						
opheacum							12.8	0.066		
orbisert			38.5	0.025					12.8	0.207
owenfusi	384.9	0.789	51.3	0.158	12.8	0.064				
pectauri									25.7	0.047
pectkore					12.8	0.007			12.8	0.076
pholminu			12.8	0.008	12.8	0.007			141.1	0.097
poecserp							38.5	0.024		
rhodspec			12.8	0.008						
scolbonn	25.7	0.103	12.8	0.173						
scolarmi					25.7	0.014				
sigamath	25.7	0.086	51.3	0.957						
sphaflav									25.7	0.017
spiofili	12.8	0.015	12.8	0.008	25.7	0.014				
spiobomb	230.9	0.263	449.1	0.296	38.5	0.020	25.7	0.069	12.8	0.008
spiokroe									12.8	0.041
sthelimi					25.7	0.051			12.8	0.019
syneklart					12.8	0.007			38.5	0.025
terespec			51.3	0.034						

Appendix-2, Biomonitoring 2000

Miscellaneous taxa

edwaclap	12.8	0.019								
nemertin	51.3	0.012	12.8	0.014					25.7	0.300
phoronid	51.3	0.242	64.2	0.198			307.9	0.339	64.2	0.041
sum	2694.3	5.536	2514.7	3.468	2335.1	10.113	1141.9	19.550	3104.9	32.675
diversity										
nspc	40		38		30		24		35	
SH-W	2.72		2.93		1.55		2.56		1.88	
Simp	0.13		0.09		0.48		0.12		0.32	

Station:	OYS 4		OYS 5		OYS 6		OYS 7		OYS 8	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev					12.8	0.004				
ampetenu	12.8	0.004	12.8	0.004						
atylspec					12.8	0.004				
batheleg	12.8	0.004			12.8	0.004				
calljuve			25.7	0.304					218.1	2.827
callsubt	12.8	1.946	64.2	3.691	25.7	2.973			51.3	7.558
coroinsi							12.8	0.004		
diasbrad	12.8	0.004								
eudotrunc					12.8	0.004			12.8	0.004
eudodefo					38.5	0.012				
harpante			89.8	0.027	128.3	0.038	25.7	0.008	12.8	0.004
hyperiid							12.8	0.004		
ionethor					12.8	0.004			38.5	0.012
leucinci	12.8	0.004								
megaagil					12.8	0.004				
perilong	38.5	0.012								
pseulong									12.8	0.004
synchapl							12.8	0.004		
upogdelt									77.0	28.648
Echinodermata										
acrobrac	25.7	2.384								
amphfili			1449.8	1.355	821.1	12.954	538.9	1.081	77.0	0.033
ophialbi	166.8	0.014	12.8	0.069			77.0	0.001	320.8	0.772
Mollusca										
abraalba									51.3	0.814
abraniti	64.2	0.126	12.8	0.011	12.8	0.017				
abratenu			12.8	0.001						
arctisla	51.3	0.003			12.8	0.000				
chamgall	102.6	0.007	25.7	0.001	218.1	0.052				
corbgibb	25.7	0.005	1321.5	0.335					333.6	0.166
cultpell	64.2	0.016								
cylicyli			77.0	0.155	12.8	0.017	25.7	0.014	12.8	0.002
hyalvitr			51.3	0.008						
leptsqua			12.8	0.002					25.7	0.133
mactcora	12.8	0.001								
melaalba					12.8	0.006				
myatrunc							12.8	0.001		
mysebide	64.2	0.006	64.2	0.004	641.5	0.060			38.5	0.003
mysiunda	12.8	0.271								
natialde									38.5	0.024
nucuturg	25.7	0.068							89.8	0.255
seminiti			12.8	0.001						
spiselli									12.8	0.002
tellfabu	154.0	0.033			12.8	0.121	12.8	0.181		
thrapphas	12.8	0.012							38.5	0.006
thyaflex	89.8	0.340			38.5	0.051				

Appendix-2, Biomonitoring 2000

tornsubc										12.8	0.002
Polychaeta											
apthemari						12.8	0.007				
aphracul			25.7	0.010							
chaevvari			12.8	1.909							
chaeseto	12.8	0.007				12.8	4.552			12.8	0.010
diplglau	12.8	0.007				25.7	0.014			38.5	0.032
gattcirr			12.8	0.583		25.7	0.498				
glycspec										12.8	0.010
gonimacu	115.5	0.156	12.8	0.044						12.8	0.010
gyptcape			12.8	0.005						12.8	0.010
harmspec	12.8	0.007								12.8	0.010
lumbfrag			12.8	0.005							
lumblatr			12.8	0.027						12.8	0.051
lumbspec			25.7	0.010						12.8	0.010
magealle	51.3	0.518									
magemira	910.9	0.530			25.7	0.008					
medifrag										25.7	0.020
myriheer								12.8	0.010	64.2	0.053
nephcaec										12.8	5.181
nephhomb	25.7	1.148	25.7	0.108	38.5	1.016	12.8	0.085			
nephinci	12.8	0.119	128.3	0.569							
nephspec	38.5	0.019			12.8	0.005				12.8	0.010
nerelong			25.7	0.025						51.3	0.268
nerespec										12.8	0.010
notolate	25.7	3.082			12.8	0.508	12.8	0.376			
owenfusi	25.7	0.071			12.8	0.005					
parafulg							51.3	0.025			
pholminu					141.1	0.046					
polydora										89.8	0.075
polykinb			12.8	0.005							
pseupulc			64.2	0.025							
scolbonn	12.8	0.007									
scolarmi	64.2	0.113			166.8	0.378	25.7	0.014	12.8	0.010	
sigamath	25.7	0.528									
spiobomb	487.5	0.251			77.0	0.141				38.5	0.032
spiokroe	12.8	0.044									
sthelimi	25.7	0.122			12.8	0.005					
syneklat					12.8	0.005	25.7	0.014			
terestro							12.8	0.007			
Miscellaneous taxa											
edwaclap	12.8	0.004									
golfproc			12.8	0.224						12.8	0.017
nemertin	38.5	0.093								77.0	0.198
phoronid	38.5	0.036	1180.4	0.395	12.8	0.003	25.7	0.024	1039.2	0.820	
turbella			12.8	0.002	12.8	0.002	38.5	0.041	12.8	0.169	
sum	2938.1	12.445	4836.9	10.003	2591.7	18.447	1141.9	7.018	3066.4	48.274	
diversity											
nspc	40		31		30		23		40		
SH-W	2.72		1.92		2.26		2.17		2.65		
Simp	0.13		0.22		0.18		0.24		0.15		
Station:	OYS 9		OYS 10		OYS 11		OYS 12		OYS 13		
Crustacea	N	B	N	B	N	B	N	B	N	B	
ampespec			12.8	0.004							
ampetenu					12.8	0.004					
batheleg	141.1	0.042			12.8	0.004			12.8	0.004	
bathguil									25.7	0.008	

Appendix-2, Biomonitoring 2000

calljuve	12.8	0.008	25.7	0.160	89.8	1.749	102.6	1.103	12.8	0.019
callsubt	51.3	5.444	25.7	2.458	64.2	3.660	64.2	5.315	12.8	2.252
diasbrad			25.7	0.008	25.7	0.008				
eudodefo	25.7	0.008								
eudotrunc			51.3	0.015	25.7	0.008	12.8	0.004	12.8	0.004
euripulc	12.8	1.176								
harpante	38.5	0.012	12.8	0.004	25.7	0.008	25.7	0.008	51.3	0.015
hippdent	12.8	0.004								
ionethor			25.7	0.008	25.7	0.008	12.8	0.004		
leucinci	12.8	0.004			12.8	0.004	25.7	0.008		
nebabipe	12.8	0.004								
perilong			12.8	0.004						
pseulong			12.8	0.004	12.8	0.004				
syncmacu									12.8	0.004
upogdelt					12.8	4.771	12.8	0.187		
urotpose	51.3	0.015							12.8	0.004
Echinodermata										
amphfili	12.8	0.032	1077.7	8.678	141.1	0.466	77.0	0.037	641.5	6.576
echicord	25.7	0.276							38.5	12.598
echipusi	51.3	0.010								
ophialbi	12.8	0.000			102.6	0.155			12.8	0.000
Mollusca										
abraalba	25.7	0.001			192.5	0.011			38.5	0.008
arctisla	12.8	0.001					12.8	0.001		
chamgall							25.7	0.000		
corbgibb	38.5	0.009			680.0	0.177	51.3	0.027		
cultpell	38.5	0.160	12.8	0.000					38.5	0.136
cylicyli			51.3	0.034	12.8	0.001	25.7	0.017		
hyalvitr					12.8	0.004	12.8	0.001		
mactcora					38.5	0.012				
mysebide			282.3	0.033	12.8	0.001			77.0	0.014
natialde	12.8	0.047			12.8	0.064				
nucutenu			12.8	0.004						
nucuturg	25.7	0.013			12.8	0.002			38.5	0.015
tellfabu	12.8	0.000								
thyaflax									38.5	0.056
Polychaeta										
amphfinm					38.5	0.024				
chaevvari					12.8	5.655				
chaeseto	12.8	0.008					12.8	0.015	51.3	0.037
diplglau			12.8	0.005	38.5	0.024			12.8	0.010
eumisang			12.8	0.047						
gattcirr					12.8	0.054				
glycspec					25.7	0.015			12.8	0.010
gonimacu					12.8	0.008	25.7	0.029	12.8	0.010
gyptcape	12.8	0.008			12.8	0.008	12.8	0.015		
harmspec	12.8	0.008							12.8	0.010
lumbfrag							12.8	0.068		
lumblatr							12.8	0.076		
magemira	128.3	0.088							64.2	0.047
medifrag					12.8	0.008	25.7	0.029		
myriheer					1231.7	0.135	12.8	0.015		
nephhomb	12.8	0.816	12.8	0.454	12.8	0.008				
nephinci			38.5	0.068			38.5	0.442		
nephspec	12.8	0.008					25.7	0.029		
nerelong					64.2	0.186	12.8	0.102		
notolate			25.7	2.755	12.8	0.008	12.8	0.608		
opheacum							25.7	0.174		

Appendix-2, Biomonitoring 2000

ophiflex	115.5	0.444	12.8	0.030	25.7	0.024	12.8	0.015	12.8	0.064
pectkore	12.8	0.008					25.7	2.532		
pholminu			89.8	0.036	25.7	0.015			166.8	0.124
poecserp							12.8	0.015		
polydora					25.7	0.015				
scolarmi	12.8	0.008	25.7	0.010					12.8	0.010
spiobomb	243.8	0.168	102.6	0.041	25.7	0.015			12.8	0.010
sthelimi	25.7	0.017					38.5	0.181	12.8	0.010
syneklat			12.8	0.005			12.8	0.015	25.7	0.019

Miscellaneous taxa

golfproc					51.3	0.428				
nemertin	25.7	0.051								
oligocha	25.7	0.007								
phoronid	64.2	0.036	25.7	0.027	154.0	0.110	38.5	0.027	38.5	0.093
sipuculi					12.8	0.017	12.8	0.017		
turbella			12.8	0.002					12.8	0.005
sum	1360.0	8.944	2027.1	19.316	3348.6	17.880	846.8	11.117	1539.6	22.171
diversity										
nspc	35		26		40		32		30	
SH-W	3.07		1.93		2.42		3.23		2.44	
Simp	0.06		0.31		0.18		0.04		0.19	

Station:

	OYS 14		OYS 15		OYS 16		OYS 17		OYS 18	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev	12.8	0.004								
ampetenu	12.8	0.004			12.8	0.004				
batheleg							128.3	0.038	25.7	0.008
bathguil							12.8	0.004		
calljuve	25.7	0.250	12.8	0.002					38.5	0.062
callsubt	12.8	1.187	77.0	10.052	12.8	1.262	25.7	0.978	77.0	3.720
corycass							12.8	7.092		
diasbrad					12.8	0.004			12.8	0.004
eudotrun					25.7	0.008	38.5	0.012		
harpante	51.3	0.015	25.7	0.008			64.2	0.019		
hippdent							12.8	0.004		
ionethor			12.8	0.004						
iphitris									12.8	0.004
lemlong			12.8	0.004						
leucinci							12.8	0.004		
megaagil							12.8	0.004		
perilong							25.7	0.008		
pseulong							12.8	0.004		
synchapl									12.8	0.004
upogstel	12.8	0.727								
urotpose							179.6	0.054		
urotspec	12.8	0.004								
Echinodermata										
amphfili	64.2	0.069	25.7	0.014	500.4	1.696	141.1	0.239		
astrirre									12.8	2.289
echicord							12.8	9.737		
echipusi							12.8	0.000		
ophispec									77.0	0.002
Mollusca										
acanechi							12.8	0.001		
arctisla					12.8	0.000				
chamgall	12.8	0.000					12.8	0.000	12.8	0.000
corbgibb	25.7	0.231			295.1	0.167	102.6	0.031	269.4	0.140
cylicyli	12.8	0.000								

Appendix-2, Biomonitoring 2000

cultpell						25.7	0.001		
dosijuve								25.7	0.005
hyalvitr				12.8	0.001				
mactcora	12.8	0.003	12.8	0.002				38.5	0.004
montferr	12.8	0.039				25.7	0.037	25.7	0.055
mysebide					77.0	0.009		12.8	0.001
natialde								38.5	0.089
nucuturg	12.8	0.010				38.5	0.163		
tellfabu								12.8	0.001
thraphas						12.8	0.004		
Polychaeta									
chaevvari	25.7	7.819	12.8	0.550				12.8	1.661
chaeseto	141.1	0.115				12.8	0.003	38.5	0.019
dipglau								12.8	0.007
gattcirr	25.7	1.040	12.8	0.671				12.8	0.594
glycroux	12.8	1.119							
gonimacu			12.8	0.022		38.5	0.012	12.8	0.054
gyptcape	25.7	0.020						51.3	0.025
harmlong					12.8	0.053			
lumbfrag	12.8	0.010							
lumblatr	25.7	0.020			12.8	0.054			
lysilove					12.8	0.264			
magealle	12.8	0.010						12.8	0.081
magemira	12.8	0.010				192.5	0.210	346.4	0.127
medifrag	12.8	0.010				12.8	0.003	25.7	0.012
nephcirr								25.7	0.068
nephhomb	12.8	0.010	12.8	0.022					
nephinci			12.8	0.022					
nephspec	12.8	0.010				12.8	0.003		
nerelong	12.8	0.063						12.8	0.108
notolate	12.8	0.344	25.7	0.992					
ophiflex			25.7	0.154	38.5	0.271	12.8	0.086	12.8
owenfusi					12.8	0.037			0.007
parafulg	25.7	0.020	25.7	0.042	12.8	0.007			
pectkore	12.8	0.173					12.8	0.003	
pholminu					12.8	0.007			
poecserp					12.8	0.007	25.7	0.053	
polydora	12.8	0.010			12.8	0.007			
scolarmi			12.8	0.022					
sigamath						25.7	0.351		
spiobomb	12.8	0.010				359.2	0.115	25.7	0.012
sthelimi	12.8	0.039				25.7	0.058	12.8	0.522
syneklat						38.5	0.012		
terestro	12.8	0.059							
terespec						25.7	0.008		
Miscellaneous taxa									
nemertin	12.8	0.010			12.8	0.051	12.8	0.008	25.7
phoronid	64.2	0.076	12.8	0.005	192.5	0.254	89.8	0.122	282.3
sipuculi	12.8	0.003	25.7	0.024	12.8	0.010			
sum	834.0	13.694	372.1	12.6	1321.5	4.3	1834.7	19.5	1629.4
diversity									10.3
nspc	37		18.0		21.0		37.0		32.0
SH-W	3.29		2.7		2.0		3.0		2.7
Simp	0.04		0.1		0.2		0.1		0.1

Appendix-2, Biomonitoring 2000

Station:	OYS 19		OYS 20		OYS 21		OYS 22		OYS 23	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu			12.8	0.004						
ampespec	12.8	0.004								
batheleg	12.8	0.004					51.3	0.015		
calljuve	12.8	0.004	77.0	0.173	102.6	0.847				
callsubt	38.5	5.712	77.0	9.407	102.6	10.023	25.7	2.502	12.8	0.204
diasbrad	12.8	0.004								
eudodefo							12.8	0.004	12.8	0.004
eudotrun					12.8	0.004				
harpante			77.0	0.023	25.7	0.008	77.0	0.023	25.7	0.008
ionethor					25.7	0.008	12.8	0.004	25.7	0.008
leucinci					12.8	0.004				
orchnana							12.8	0.004		
perilong					12.8	0.004				
pseulong									12.8	0.004
synchapl							12.8	0.004	12.8	0.004
upogdelt					128.3	36.554				
Echinodermata										
amphfili	423.4	2.583	423.4	2.030	128.3	1.354	474.7	0.639	487.5	3.143
echicord									25.7	5.278
ophialbi					12.8	0.174				
ophispec	38.5	0.000	12.8	0.001	38.5	0.002			141.1	0.003
Mollusca										
abraalba	25.7	0.002	25.7	0.000	128.3	0.587			51.3	0.003
abraniti									25.7	0.018
arctisla									12.8	0.001
chamgall							12.8	2.584	12.8	0.000
corbgibb					89.8	0.031	25.7	0.005		
cultpell									12.8	0.073
cylicyli			12.8	0.009	25.7	0.018			12.8	0.017
dosijuve									12.8	0.001
hyalvitr	12.8	0.001			38.5	0.008				
leptsqua					12.8	0.001				
mactcora			38.5	0.004						
mysebide	64.2	0.006	141.1	0.013	115.5	0.012	51.3	0.004	500.4	0.060
natialde	12.8	0.002			38.5	0.015				
nucuturg	38.5	0.019	12.8	0.014	38.5	0.079	115.5	0.059	38.5	0.084
seminiti			12.8	0.001						
tellfabu									12.8	0.001
thyaflax							25.7	0.046	12.8	0.004
tornsubc					12.8	0.009				
Polychaeta										
chaevani	12.8	4.446	12.8	1.092						
chaeseto							25.7	0.017		
diplglau					38.5	0.027	12.8	0.008	12.8	0.010
eteofoli									12.8	0.010
gattcirr			12.8	0.210						
glycnord	12.8	0.007								
gonimacu							25.7	0.017	12.8	0.010
gyptcape					38.5	0.027				
harmlong			12.8	0.007						
lumblatr	12.8	0.007	25.7	0.039	102.6	0.108				
magealle							12.8	0.008	12.8	0.010
magemira							77.0	0.049	102.6	0.085
medifrag			25.7	0.012	12.8	0.008				
myriheer					603.0	0.024	12.8	0.008		
nephcaec	12.8	0.965								

Appendix-2, Biomonitoring 2000

nephhomb	12.8	0.313	12.8	0.007					12.8	0.010
nephinci					12.8	0.383				
nephspec					12.8	0.008				
nerelong					12.8	0.078				
notolate			12.8	0.906	25.7	0.335				
opheacum			12.8	0.039						
ophiflex	12.8	0.110	12.8	0.007	25.7	0.058	25.7	0.149	25.7	0.097
pholminu					12.8	0.008			154.0	0.129
poecserp									38.5	0.032
polycili					128.3	0.090				
polydora			12.8	0.007						
scolarmi					25.7	0.019	25.7	0.015	77.0	0.064
sigamath							12.8	0.008		
spiofili	25.7	0.015					12.8	0.008	12.8	0.010
spiobomb	64.2	0.037	89.8	0.042	12.8	0.008	89.8	0.058	154.0	0.129
spiokroe									12.8	0.024
sthelimi	12.8	0.007							38.5	0.135
syneklat	25.7	0.015	12.8	0.007					25.7	0.022
terespec	12.8	0.007	25.7	0.012						
Miscellaneous taxa										
amphlanc							12.8	0.008		
edwaclap	12.8	0.405								
golproc					25.7	0.152				
nemertin							25.7	0.019		
phoronid			89.8	0.085	846.8	0.562	89.8	0.103	51.3	0.064
sum	936.6	14.7	1295.8	14.4	3040.7	51.6	1372.8	6.5	2219.6	10.3
diversity										
nspc	24.0		26.0		36.0		27.0		36.0	
SH-W	2.3		2.5		2.7		2.6		2.7	
Simp	0.2		0.1		0.1		0.1		0.1	
Station: OYS 24 OYS 25 OYS 26 OYS 27 OYS 28										
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu					12.8	0.004				
aphejuri					12.8	0.004				
batheleg							12.8	0.004	25.7	0.008
bathguil									25.7	0.008
calljuve	166.8	0.244	25.7	0.037	25.7	0.158	38.5	0.316	25.7	0.013
callsbt	89.8	2.286	51.3	3.048	89.8	6.959	38.5	2.529	51.3	2.113
caprelli	12.8	0.004								
diasbrad			12.8	0.004	12.8	0.004				
ebaltube							12.8	0.004		
eudotrun			38.5	0.012			12.8	0.004	12.8	0.004
harpante			64.2	0.019	12.8	0.004			64.2	0.019
hippdent									12.8	0.004
ionethor	12.8	0.004	12.8	0.004						
lepilong	12.8	0.004								
leucinci	25.7	0.008							12.8	0.004
perilong							12.8	0.004		
Echinodermata										
amphfili			51.3	0.010	500.4	0.578	89.8	0.065	25.7	0.019
echijuve	128.3	0.615								
labibusk					12.8	0.639				
ophialbi	12.8	0.210			12.8	0.017				
ophispec	12.8	0.002	12.8	0.000			64.2	0.001	12.8	0.000
Mollusca										
abraalba	590.2	0.064	12.8	0.000						
actetom									12.8	0.002

Appendix-2, Biomonitoring 2000

altered			25.7	0.002	12.8	0.001				
chamgall					25.7	0.002				
corbgibb	12.8	0.004	51.3	0.011	154.0	0.043	89.8	0.045	38.5	0.054
cultpell	12.8	0.001							38.5	0.006
cylicyli			12.8	0.001	12.8	0.023	12.8	0.002		
dosijuve					12.8	0.000	25.7	0.006	12.8	0.014
dosilupi			12.8	1.585						
hyalvitr	12.8	0.002	25.7	0.004	141.1	0.031				
leptsqua					12.8	0.054				
mactcora					12.8	0.009				
mysebide	12.8	0.001			12.8	0.001			12.8	0.003
natialde					12.8	0.015	38.5	0.145		
nucuturg	77.0	0.525	12.8	0.002	25.7	0.007	12.8	0.002	51.3	0.422
tellfabu									25.7	0.002
thrapphas									12.8	0.028
turrcomm							12.8	0.257		
Polychaeta										
chaevvari			77.0	20.035	12.8	2.376	205.3	38.754		
chaeseto	12.8	0.005	64.2	0.027	12.8	0.007	12.8	0.007	25.7	0.008
diplglau	12.8	0.005			12.8	0.008				
gattcirr			77.0	4.713			154.0	5.912		
glycroux					25.7	2.103				
glycspec					12.8	0.008				
gonimacu	12.8	0.005							25.7	0.176
gyptcape					12.8	0.008	12.8	0.007		
harmlong					12.8	0.135				
harmspec					12.8	0.008			12.8	0.005
laniconc							12.8	0.007	12.8	0.005
lumblatr	38.5	0.234			25.7	0.015				
magealle	12.8	0.098	12.8	0.149						
magemira							25.7	0.014	282.3	0.242
medifrag	38.5	0.015			12.8	0.008	102.6	0.054		
myriheer									12.8	0.005
nephhomb	12.8	0.132			12.8	0.112	51.3	0.196		
nephspec	25.7	0.010			25.7	0.317				
nephspec							12.8	0.007		
nerelong			12.8	0.005						
notolate	154.0	4.622	89.8	1.155	12.8	0.274	115.5	1.904		
opheacum			12.8	0.068						
ophiflex			12.8	0.039						
parafulg			25.7	0.012						
pholminu	25.7	0.010	38.5	0.017	12.8	0.008	25.7	0.014		
poecserp			12.8	0.005						
polydora							12.8	0.007		
sigamath									12.8	0.285
spiofili			12.8	0.005	12.8	0.007				
spiobomb	89.8	0.037	12.8	0.005			25.7	0.014	64.2	0.022
sthelimi	12.8	0.005	12.8	0.207						
syneklar			25.7	0.012			38.5	0.020	12.8	0.005
Miscellaneous taxa										
amphlanc	12.8	0.003								
golfvulg			128.3	3.247	38.5	0.100	128.3	0.059		
nemertin	12.8	0.049	12.8	0.014			12.8	0.022	12.8	0.015
phoronid	461.9	0.508	12.8	0.017	256.6	0.135	64.2	0.085	38.5	0.132

Appendix-2, Biomonitoring 2000

turbella			12.8	0.003			12.8	0.003	12.8	0.008
sum	2129.8	9.8	1090.6	35.4	1655.1	14.3	1501.1	50.7	1000.7	3.7
diversity										
nspc	30.0		34.0		37.0		32.0		30.0	
SH-W	2.5		3.2		2.7		3.0		2.9	
Simp	0.1		0.0		0.1		0.1		0.1	

Station:	OYS 29		OYS 30		OYS 31		OYS 32		OYS 33	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev	12.8	0.004								
batheleg	12.8	0.004							12.8	0.004
calljuve			102.6	0.647	25.7	0.362			38.5	0.377
callsubt			115.5	8.818	115.5	6.487	12.8	1.536		
corycass	25.7	8.443								
diasbrad							12.8	0.004	12.8	0.004
ebaltube	12.8	0.004								
eudotrun			12.8	0.004	64.2	0.019				
harpante					64.2	0.019			102.6	0.031
hippdent	12.8	0.004								
ionethor					12.8	0.004				
megaagil			12.8	0.004						
perilong					12.8	0.004				
pseulong					12.8	0.004				
upogdelt					12.8	0.075				
urotpose					12.8	0.004				
Echinodermata										
amphili			12.8	0.032	115.5	0.329			243.8	0.593
amphjuve	115.5	0.040								
echicord	12.8	11.200	154.0	9.137			12.8	0.227		
ophijuve					12.8	0.001				
Mollusca										
abraalba	64.2	0.002	166.8	0.010	25.7	0.002				
abratenu	12.8	0.001								
arctisla									12.8	0.003
corbgibb			25.7	0.009	128.3	0.084	872.4	3.910	25.7	0.005
cultpell	25.7	0.338							25.7	0.193
cylicyli							12.8	0.023		
dosijuve	12.8	0.001								
hyalvitr							38.5	0.005	38.5	0.005
montferr	25.7	0.060	25.7	0.028			12.8	0.028		
mysebide	51.3	0.004			51.3	0.004	12.8	0.001	12.8	0.001
natialde	12.8	0.002								
nucuturg	89.8	0.090	64.2	0.049	51.3	0.135	25.7	0.012	12.8	0.004
tellfabu	25.7	0.001								
thraconv									12.8	2.108
thraphas			12.8	0.002						
thyaflax	77.0	0.155								
Polychaeta										
aphracul									25.7	0.088
chaevvari							38.5	13.284		
chaeseto			12.8	0.010					12.8	0.044
dipiglau	64.2	0.063			12.8	0.008			12.8	0.044
glycnord			12.8	0.010	12.8	0.112				
gonimacu	51.3	0.051			12.8	0.008	12.8	0.007	12.8	0.044
gyptcape			25.7	0.019						
harmspec					12.8	0.008				
laniconc	12.8	0.632								
lumblatr			25.7	0.019	12.8	0.008				

Appendix-2, Biomonitoring 2000

magealle	12.8	0.068				12.8	0.007			
magemira	372.1	0.300			25.7	0.017	12.8	0.007		
medifrag			89.8	0.068			25.7	0.015		
myriheer			25.7	0.019						
nephcirr			12.8	0.049						
nephhomb	38.5	1.058			12.8	0.674			25.7	0.088
nephspec	38.5	0.037	51.3	0.037	12.8	0.008			38.5	0.132
notolate	38.5	2.071					12.8	0.142	12.8	0.044
ophiflex	12.8	0.012			25.7	0.017				
pectkore					25.7	0.017				
pholminu			12.8	0.010						
scolarmi	25.7	0.025	12.8	0.010						
sigamath	25.7	0.742								
spiofili					51.3	0.034				
spiobomb	102.6	0.098	25.7	0.019	38.5	0.025				
syneklai					25.7	0.017	12.8	0.007	12.8	0.044
terespec					12.8	0.003				
Miscellaneous taxa										
amphlanc			12.8	0.002						
golfulg							38.5	0.008	12.8	0.002
nemertin	12.8	0.007			38.5	0.039				
oligocha			38.5	0.029						
phoronid	12.8	0.017	230.9	0.098	179.6	0.102	38.5	0.047	64.2	0.054
turbella							12.8	0.025		
sum	1424.1	25.5	1295.8	19.2	1231.7	8.6	1231.7	19.3	782.6	4.9
diversity										
nspc	31.0		25.0		31.0		19.0		22.0	
SH-W	2.9		2.7		3.0		1.4		2.5	
Simp	0.1		0.1		0.1		0.5		0.1	
Station: OYS 34 OYS 35 OYS 36 OYS 37 OYS 38										
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev	12.8	0.004								
ampetenu							12.8	0.004		
atylswam									12.8	0.004
bathguil			25.7	0.008						
bathtenu			64.2	0.019						
calljuve	64.2	1.143	38.5	0.556	51.3	0.822	64.2	0.296	12.8	0.123
callsbt	51.3	2.617			89.8	9.715	25.7	2.996	38.5	4.353
corycass									12.8	7.771
eudotrui	12.8	0.004	25.7	0.008						
harpante			141.1	0.042	25.7	0.008				
hippdent			12.8	0.004						
ionethor					12.8	0.004	25.7	0.008		
lemblong							12.8	0.004		
leucinci									12.8	0.004
megaagil					12.8	0.004				
perilong	12.8	0.004	12.8	0.004	12.8	0.004	12.8	0.004		
pseulong			25.7	0.008	12.8	0.004			38.5	0.012
upogdelt	25.7	14.605			25.7	10.523	38.5	4.301		
urotpose	12.8	0.004								
Echinodermata										
acrobrac									12.8	0.051
amphfili	25.7	0.159	89.8	0.252			115.5	0.329		
cucuelon					12.8	2.689				
echicord									166.8	11.270
ophialbi	25.7	0.807			12.8	0.532				

Appendix-2, Biomonitoring 2000

Mollusca										
abraalba	243.8	0.085	89.8	0.004	38.5	0.003			64.2	0.002
alteredaws							12.8	0.001		
chamgall			12.8	0.013						
corbgibb	51.3	0.010	307.9	0.060			12.8	0.002		
cultpell			25.7	0.002						
cylicyli	25.7	0.069	12.8	0.049	12.8	0.002	12.8	0.017		
myatrunc	12.8	0.000								
mysebide	25.7	0.001	154.0	0.018						
natialde	77.0	0.128	12.8	0.064	25.7	0.013			38.5	0.061
nucuturg	38.5	0.176	38.5	0.024	12.8	0.031	12.8	0.004	77.0	0.673
tellfabu									12.8	0.001
thraphas			51.3	0.015	12.8	0.004				
tornsubc	12.8	0.004								
Polychaeta										
aphracul			12.8	0.012						
aricsuec									12.8	0.005
chaevvari							12.8	3.738		
chaeseto									25.7	0.010
eumisang	25.7	0.097								
gattcirr							12.8	0.767		
glycnord					12.8	0.007				
glycroux							12.8	0.030		
gonimacu	12.8	0.058	38.5	0.037			12.8	0.008		
gyptcape	89.8	0.049					12.8	0.008		
harmglab			12.8	0.191						
harmlong							12.8	0.008		
lumblatr	64.2	0.036			25.7	0.012				
lysilove			12.8	1.575						
magealle			25.7	0.125						
magemira			243.8	0.232					64.2	0.025
medifrag	25.7	0.014			12.8	0.007	12.8	0.008		
myriheer	12.8	0.007								
nephhomb			25.7	1.099						
nephinci			12.8	0.012	12.8	1.323				
nephspec	12.8	0.007	25.7	0.024	12.8	0.007			51.3	0.020
nerelong	12.8	0.378			12.8	0.007				
notolate	256.6	5.350	12.8	0.012	12.8	0.007	25.7	0.676		
ophiflex	25.7	0.161	25.7	0.158	51.3	0.110				
parafulg							38.5	0.025		
pectkore	141.1	0.078	38.5	0.036	38.5	0.019				
pholminu			12.8	0.012					38.5	0.020
poecserp			12.8	0.012						
polycili	38.5	0.020								
polydora					38.5	0.019				
scalinfl	12.8	0.007			25.7	0.012				
sigamath			25.7	0.024					38.5	0.334
spiofili			12.8	0.012						
spiobomb	38.5	0.020	115.5	0.110	38.5	0.019			12.8	0.005
sthelimi			12.8	0.012						
syneklat			25.7	0.024			25.7	0.017		
Miscellaneous taxa										
amphlanc							12.8	0.002		
anthozoa	12.8	0.017								
edwaclap			25.7	0.010			12.8	0.022		
golfproc					12.8	0.003	12.8	0.240		
golfvulg					12.8	2.092	64.2	0.537		
nemertin			51.3	0.014	12.8	0.015				

Appendix-2, Biomonitoring 2000

phoronid	333.6	0.061	230.9	0.163	256.6	0.169	64.2	0.034	192.5	0.178
sum	1847.5	26.2	2155.4	5.1	962.3	28.2	705.7	14.2	936.6	25.1
diversity										
nspc	33.0		40.0		31.0		27.0		20.0	
SH-W	2.9		3.1		2.9		3.0		2.6	
Simp	0.1		0.1		0.1		0.1		0.1	

Station:	OYS 39		OYS 40		OYS 41		OYS 42		OFF 1	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu	51.3	0.015								
ampespec									12.8	0.004
batheleg							12.8	0.004	51.3	0.015
bathguil							25.7	0.008	38.5	0.012
callsubt	12.8	1.597			12.8	0.268			12.8	0.445
caprelli							25.7	0.008		
coroins							51.3	0.015		
eudodefo			12.8	0.004	25.7	0.008				
harpante	77.0	0.023	12.8	0.004	12.8	0.004				
hippdent							12.8	0.004		
hyperiid	12.8	0.004								
lepilong									12.8	0.004
leucinci									12.8	0.004
orchnana							12.8	0.004		
perilong			12.8	0.004			38.5	0.012		
pseulong			38.5	0.012	12.8	0.004	51.3	0.015	25.7	0.008
urotbrev							12.8	0.004		
urotpose							282.3	0.085		
Echinodermata										
acrobrac					51.3	2.765				
amphili	1385.6	6.869	359.2	2.026	12.8	0.019	12.8	0.010		
echicord	12.8	7.502			25.7	19.482	12.8	11.200	12.8	8.411
echipusi									12.8	0.007
leptinha	12.8	0.527								
ophialbi							25.7	0.251		
ophispec					115.5	0.001			51.3	0.010
Mollusca										
abraalba									12.8	0.086
abraniti					38.5	0.160				
arctisla			12.8	0.000						
corbgibb			25.7	0.003						
cultpell	12.8	0.180					51.3	0.169		
cylicyli									12.8	0.060
dosilupi					12.8	0.001	12.8	0.003		
ensidir							25.7	1.566		
lucibore					12.8	0.709				
montferr							12.8	0.002	38.5	0.038
mysebide	295.1	0.023	38.5	0.006	25.7	0.004	25.7	0.001		
natialde			12.8	0.023	25.7	0.019	38.5	0.064		
nucuturg	25.7	0.076	12.8	0.055						
saxijeff	205.3	0.058								
spiselli					12.8	0.002				
spissubt									12.8	0.025
tellfabu					51.3	0.319	25.7	0.537	64.2	0.005
thraphas							64.2	0.251		
thyaflax			12.8	0.023	38.5	0.151				
Polychaeta										
chaeseto	12.8	0.008	25.7	0.008	12.8	0.003			12.8	0.017
dipiglau	12.8	0.008			89.8	0.029				

11

Station:	OFF 2		OFF 3		OFF 4		OFF 5		OFF 6	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc					12.8	0.004				
atylswam	12.8	0.004								
batheleg	38.5	0.012			12.8	0.004	38.5	0.012	12.8	0.004
bathguil	25.7	0.008					12.8	0.004		
bathtenu							51.3	0.015		
callsubt									12.8	0.021
caprelli			12.8	0.004						
corycass					12.8	1.257				
diasbrad	38.5	0.012	12.8	0.004			12.8	0.004		
harpante							12.8	0.004		
iphitris			12.8	0.004	25.7	0.008				
megaagil	12.8	0.004							25.7	0.008
perilong							25.7	0.008		
pseulong	25.7	0.008					25.7	0.008	12.8	0.004
syncmacu					12.8	0.004				
urotpose	12.8	0.004	12.8	0.004			25.7	0.008		
urotpose							154.0	0.046	102.6	0.031

Appendix-2, Biomonitoring 2000

Echinodermata

amphjuve							12.8	0.001		
echicord	25.7	0.256	115.5	1.330	38.5	10.107	25.7	20.937	25.7	8.377
ophialbi	25.7	0.006					12.8	0.010		
ophitext			12.8	2.354						
ophispec					12.8	0.001				

Mollusca

astatria									12.8	0.001
cultpell							12.8	0.003		
cylicyli					12.8	0.004	12.8	0.009		
mactcora	12.8	0.999							12.8	0.001
montferr	12.8	0.009			12.8	0.002				
mysebide					12.8	0.001				
natialde			12.8	0.817	12.8	0.481	25.7	0.038		
spissubt			12.8	0.159						
tellfabu	89.8	1.235	282.3	7.013	64.2	0.002	77.0	0.009		

Polychaeta

anaigroe							12.8	0.552		
aricminu									25.7	0.044
capicapi			12.8	0.007						
chaeseto	64.2	0.056	38.5	0.020						
eteolong	25.7	0.022								
eumisang	25.7	0.022								
gonimacu	25.7	0.022					12.8	0.005		
gyptcape					25.7	0.041	38.5	0.017		
harmspec	12.8	0.119								
laniconc							25.7	0.012	25.7	1.788
magemira	5978.8	12.690	1796.2	2.151	141.1	0.061	359.2	0.342	38.5	0.066
nephcaec					25.7	5.369	38.5	5.350		
nephcirr									102.6	0.628
nephspec	38.5	0.034								
nerelong									12.8	1.230
notolate					77.0	1.253	51.3	0.923		
pectkore							12.8	0.005		
poecserp	64.2	0.056								
scolarmi	64.2	0.125			12.8	0.020	89.8	0.124	12.8	0.022
sigamath							51.3	0.442		
spiofilii	12.8	0.119	12.8	0.007					12.8	0.022
spiobomb	25.7	0.022			25.7	0.041	333.6	0.149	51.3	0.088

Miscellaneous taxa

nematoda							12.8	0.056	77.0	0.008
nemertin	115.5	0.738	154.0	0.327	12.8	0.007	38.5	0.044	64.2	2.305
phoronid									282.3	0.240
sum	6787.1	16.579	2501.9	14.200	564.5	18.966	1616.6	29.136	923.8	14.889
diversity										
nspc	24.0		14.0		19.0		29.0		19.0	
SH-W	0.7		1.1		2.6		2.7		2.4	
Simp	0.8		0.5		0.1		0.1		0.1	

Station:	OFF 7		OFF 8		OFF 9		OFF 10		OFF 11	
Crustacea	N	B	N	B	N	B	N	B	N	B
apheoval					12.8	0.004				
batheleg			77.0	0.023	51.3	0.015	51.3	0.015	64.2	0.019
bathguil			38.5	0.012	12.8	0.004	12.8	0.004	38.5	0.012
bathtenu	12.8	0.004								
leucinci							12.8	0.004		
megaagil	51.3	0.015	12.8	0.004			12.8	0.004		
procarv							12.8	0.398		

Appendix-2, Biomonitoring 2000

pseulong	25.7	0.008	51.3	0.015	51.3	0.015			38.5	0.012
syncmacu			77.0	0.023			12.8	0.004		
urotbrev	38.5	0.012	12.8	0.004	12.8	0.004	12.8	0.004		
urotpose	551.7	0.166	269.4	0.081	89.8	0.027	230.9	0.069		
Echinodermata										
echicord	64.2	24.252			25.7	23.011	38.5	30.674		
echipusi									12.8	0.002
Mollusca										
abraniti									12.8	0.001
chamgall									12.8	0.000
donavitt					12.8	0.263	12.8	0.263		
montferr	12.8	0.002			25.7	0.009	51.3	0.012	12.8	0.002
natialde							12.8	0.064		
tellfabu	25.7	0.010	141.1	3.713			25.7	0.336	12.8	0.002
Polychaeta										
aricminu			12.8	0.003			64.2	0.059		
chaeseto	12.8	0.003			25.7	0.003	51.3	0.047		
eteofoli					12.8	0.029				
exognaid			12.8	0.003			102.6	0.095		
gonimacu			12.8	0.176			12.8	0.059	12.8	0.005
gyptcape			12.8	0.003						
harmsars			12.8	0.003						
harmspec									12.8	0.005
laniconc			12.8	0.003						
magemira	205.3	0.273	141.1	0.168	51.3	0.158	51.3	0.047	115.5	0.151
nephcirr					64.2	0.166	51.3	0.386		
nephspec	25.7	0.008	12.8	0.003	12.8	0.002			64.2	0.025
parafulg							12.8	0.012		
poecserp			12.8	0.003						
priostee					12.8	0.002				
scolbonn					12.8	0.720				
scolarmi			12.8	0.173						
sigamath									12.8	0.054
sphaspec			12.8	0.003						
spiofili			12.8	0.003			12.8	0.012		
spiobomb	38.5	0.012	487.5	0.129	102.6	0.014			64.2	0.025
travforb					12.8	0.235				
Miscellaneous taxa										
amphlanc							12.8	0.037		
edwaclap	12.8	0.008					25.7	0.019		
nemertin			12.8	0.010	25.7	0.034	12.8	0.017	12.8	0.056
phoronid			12.8	0.012			333.6	0.457		
sum	1077.7	24.773	1475.5	4.572	628.7	24.714	1244.5	33.099	500.4	0.372
diversity										
nspc	13.0		23.0		19.0		25.0		15.0	
SH-W	1.7		2.3		2.7		2.6		2.4	
Simp	0.3		0.2		0.1		0.1		0.1	
Station:										
OFF 12			OFF 13		OFF 14		OFF 15		OFF 16	
Crustacea	N	B	N	B	N	B	N	B	N	B
batheleg	269.4	0.081	12.8	0.004	51.3	0.015			38.5	0.012
bathguil	38.5	0.012								
pontalta	25.7	0.008								
pseulong	102.6	0.031	89.8	0.027						
scophope	25.7	0.008								
synchapl					12.8	0.004				
thiascut					12.8	0.735				
urotbrev			12.8	0.004	12.8	0.004	12.8	0.004	12.8	0.004

Appendix-2, Biomonitoring 2000

urotpose	64.2	0.019	128.3	0.038	513.2	0.154	295.1	0.089	25.7	0.008
Echinodermata										
echicord			12.8	3.949	25.7	28.703				
echipusi	12.8	0.001								
ophispec			38.5	0.002			12.8	0.000		
Mollusca										
abraniti	25.7	0.001								
donavitt					38.5	0.047	38.5	0.041	12.8	0.018
montferr			102.6	0.033	64.2	0.046				
natialde	12.8	0.047	25.7	0.056	12.8	0.034	12.8	0.004		
telffabu	12.8	0.001	25.7	0.006						
Polychaeta										
aricminu	38.5	0.012							12.8	0.068
chaeseto			12.8	0.008						
eteofoli	12.8	0.058								
eumisang	12.8	0.003								
gonimacu	12.8	0.003	38.5	0.046	25.7	0.012	12.8	0.044		
magemira	38.5	0.085			25.7	0.046	38.5	0.134		
nephcirr	38.5	0.112	25.7	0.064	77.0	0.178	64.2	0.037	25.7	0.247
nephspec	64.2	0.020								
scolarmi			25.7	0.208					12.8	0.068
spiofili	141.1	0.044	12.8	0.008						
spiobomb	89.8	0.029	38.5	0.025	38.5	0.176				
Miscellaneous taxa										
nemertin							12.8	0.185		
phoronid					12.8	0.005				
sum	1039.2	0.574	603.0	4.481	923.8	30.158	500.4	0.537	141.1	0.423
diversity										
nspc	19.0		15.0		14.0		9.0		7.0	
SH-W	2.5		2.4		1.7		1.4		1.8	
Simp	0.1		0.1		0.3		0.4		0.1	
Station: OFF 17 OFF 18 OFF 19 OFF 20 OFF 21										
Crustacea										
batheleg							38.5	0.012		
bathguil	12.8	0.004								
liocspec	12.8	1.391								
megaagil									12.8	0.004
pseulong	12.8	0.004							12.8	0.004
syncmacu	25.7	0.008								
thiascut									12.8	0.004
Echinodermata										
echicord							12.8	6.664		
echipusi									38.5	0.051
ophialbi			12.8	0.037						
ophispec			12.8	0.000					64.2	0.004
Mollusca										
donavitt									51.3	0.012
mactcora									12.8	0.003
montferr							12.8	0.004		
natialde			25.7	0.006			25.7	0.017	12.8	0.004
Polychaeta										
aricminu	25.7	0.014			77.0	0.034	38.5	0.020		
chaeseto	12.8	0.007					12.8	0.007		
euzoflab									64.2	0.010
glyclapi									12.8	0.190
glycspec									12.8	0.002
laniconc							12.8	0.007		

Appendix-2, Biomonitoring 2000

magemira			12.8	0.042			38.5	0.434		
nephcirr	12.8	0.030	12.8	0.263	89.8	0.352	25.7	0.181	25.7	0.398
nephspec	12.8	0.007								
notolate									12.8	0.005
ophelima	12.8	0.007								
parafulg	25.7	0.014							12.8	0.002
pisiremo									12.8	0.005
scolbonn					12.8	0.330			25.7	0.920
scolarmi	12.8	0.007								
spiofili	25.7	0.014							64.2	0.010
spiobomb							166.8	0.588	51.3	0.008
syllidae									64.2	0.010
Miscellaneous taxa										
nematoda									38.5	0.003
nemertin							12.8	0.195	38.5	0.015
oligocha									89.8	0.014
sum	205.3	1.505	77.0	0.348	179.6	0.716	397.7	8.127	744.1	1.678
diversity										
nspc	12.0		5.0		3.0		11.0		22.0	
SH-W	2.4		1.6		0.9		1.9		2.9	
Simp	0.0		0.1		0.4		0.2		0.1	
Station: OFF 22 OFF 23 OFF 24 OFF 25 OFF 26										
Crustacea	N	B	N	B	N	B	N	B	N	B
batheleg	12.8	0.004								
callsubt			12.8	1.801					12.8	0.004
leucinci			205.3	0.062						
megaagil			25.7	0.008			25.7	0.008		
pontrris									12.8	0.004
procparr			12.8	0.071						
pseulong			12.8	0.004						
urotbrev			51.3	0.015			12.8	0.004		
urotpose	359.2	0.108	320.8	0.096			25.7	0.008		
Echinodermata										
echicord	51.3	1.706	51.3	27.207			89.8	25.975		
Mollusca										
ensiamer			25.7	30.744						
montferr			38.5	0.026			12.8	0.034		
mysebide					12.8	0.001				
natialde					51.3	0.030				
spissubt							12.8	0.070		
tellfabu			12.8	0.003						
tellpygm									25.7	0.017
Polychaeta										
aricminu	25.7	0.007					64.2	0.012	25.7	0.010
eumisang							12.8	0.003		
euzoflab									12.8	0.007
glyclapi									38.5	0.210
gyptspec					25.7	0.020				
laniconc							12.8	1.797	12.8	0.317
nephcirr	38.5	0.788	51.3	0.427	51.3	0.549	89.8	0.413	25.7	0.381
nephhomb							12.8	0.290		
nephspec									38.5	0.034
notolate									25.7	0.141
ophelima					12.8	0.010				
parafulg					12.8	0.010				
scolarmi	12.8	0.024	51.3	0.354	12.8	0.010				
spiofili					25.7	0.020			243.8	0.083

Appendix-2, Biomonitoring 2000

spiobomb								128.3	0.459		
Miscellaneous taxa											
edwaclop			12.8	0.003							
nematoda								12.8	0.002	38.5	0.005
nemertin			12.8	0.042						12.8	0.002
phoronid	179.6	0.025	12.8	0.003							
sum	680.0	2.661	910.9	60.867	205.3	0.651	513.2	29.073	526.0	1.336	
diversity											
nspc	7.0		16.0		8.0		13.0		13.0		
SH-W	1.3		2.1		1.9		2.2		2.0		
Simp	0.3		0.2		0.1		0.1		0.2		
Station:	OFF 27		OFF 28		OFF 29		OFF 30		OFF 31		
Crustacea	N	B	N	B	N	B	N	B	N	B	
atylfalc			12.8	0.004							
batheleg					12.8	0.004			179.6	0.054	
bathguil					12.8	0.004	12.8	0.004	25.7	0.008	
diasbrad					12.8	0.004					
iphitris					12.8	0.004	25.7	0.008			
lepilong							12.8	0.004			
megaagil	12.8	0.004	12.8	0.004							
orchnana							12.8	0.004			
pseulong			25.7	0.008			38.5	0.012	51.3	0.015	
urotpose							282.3	0.085	102.6	0.031	
Echinodermata											
echicord					12.8	9.737	25.7	14.553			
echipusi					51.3	0.039	12.8	0.002			
ophialbi					25.7	0.022					
ophispec	12.8	0.000	243.8	0.030	25.7	0.001					
Mollusca											
donavitt							38.5	0.815	25.7	0.213	
ensiamer					25.7	3.372					
montferr					12.8	0.002	12.8	0.004			
mysebide	12.8	0.001			12.8	0.004	25.7	0.007			
natialde	12.8	0.064	38.5	0.065			12.8	0.004			
spissubt							12.8	0.002			
tellfabu							179.6	0.472			
tellpygm			230.9	0.231							
Polychaeta											
aricminu									51.3	0.014	
chaeseto							51.3	0.041	25.7	0.020	
eteolong	102.6	0.047									
exognaid			12.8	0.003							
glyclapi					12.8	0.207					
gyptcape							12.8	0.002			
harmspec							12.8	0.002			
laniconc	25.7	0.012	12.8	0.003							
magemira	12.8	0.007					307.9	0.374	25.7	0.007	
medifrag	12.8	0.007									
nephcirr	12.8	0.117	12.8	0.142			12.8	0.125	77.0	0.022	
nephhomb	12.8	0.566									
nephspec			12.8	0.003			89.8	0.030			
notolate							25.7	1.531			
ophelima	12.8	0.007			12.8	0.003	12.8	0.020			
parafulg					38.5	0.010					
scolarmi					51.3	0.129	25.7	0.069			
sigamath							12.8	0.141			
spiofili	25.7	0.012	179.6	0.054							

Appendix-2, Biomonitoring 2000

spiobomb			384.9	0.115			141.1	0.019	12.8	0.003
syllidae			51.3	0.015						
travforb					38.5	0.716				
Miscellaneous taxa										
amphlanc					12.8	0.036				
nemertin	12.8	0.008	12.8	0.003	25.7	0.024	38.5	0.124	25.7	0.030
oligocha	12.8	0.007								
sum	295.1	0.858	1244.5	0.682	410.6	14.318	1449.8	18.548	603.0	0.417
diversity										
nspc	14.0		14.0		18.0		26.0		11.0	
SH-W	2.3		1.9		2.7		2.6		2.1	
Simp	0.1		0.2		0.0		0.1		0.1	
Station: OFF 32 OFF 33 OFF 34 OFF 35 OFF 36										
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc							12.8	0.004	25.7	0.008
batheleg	12.8	0.004	25.7	0.008			166.8	0.050	12.8	0.004
bathguil			12.8	0.004						
bathtenu			25.7	0.008			256.6	0.077		
calljuve			179.6	1.842						
callsubt			51.3	11.004						
leucinci			38.5	0.012	12.8	0.004				
megaagil			12.8	0.004			77.0	0.023	102.6	0.031
pseulong									12.8	0.004
thiascut							12.8	1.074		
urotbrev			115.5	0.035						
urotpose	25.7	0.008	218.1	0.065	25.7	0.008				
Echinodermata										
amphchia			218.1	0.051	12.8	0.010				
echijuve							12.8	0.000		
echipusi							12.8	0.075		
ophialbi			12.8	0.026			12.8	0.037		
ophispec			38.5	0.053			38.5	0.002	397.7	0.052
Mollusca										
donavitt					25.7	0.172				
montferr									25.7	0.004
mytispec			12.8	0.000						
natialde			64.2	0.070			25.7	0.013	38.5	0.026
polyplac			64.2	0.030						
spissubt							38.5	0.001		
alvalact			38.5	0.053						
tormsubc			25.7	0.003						
Polychaeta										
aricminu	25.7	0.003			51.3	0.012	38.5	0.019	12.8	0.007
chaeseto			51.3	0.015						
eteolong							64.2	0.032		
euzoflab									12.8	0.007
exoghebe			64.2	0.019						
glycspec							12.8	0.007		
laniconc			51.3	1.553			38.5	0.019		
magemira	38.5	0.381								
medifrag							12.8	0.007		
nephcirr	25.7	0.378	89.8	0.596	89.8	0.403	12.8	0.256	51.3	0.561
nephhomb			12.8	0.032						
nephspec			12.8	0.003			12.8	0.007		
notolate							12.8	0.007		
pectkore			12.8	1.338						
pholminu			218.1	0.064						

Appendix-2, Biomonitoring 2000

phylspec								38.5	0.019		
poecserp			12.8	0.049							
scolbonn					12.8	0.457					
scolarmi								38.5	0.020		
spiofili				0.003				782.6	0.356	12.8	0.007
spiobomb			282.3	0.435				2566.0	1.185	12.8	0.007
travforb								25.7	0.014		
Miscellaneous taxa											
nematoda			12.8	0.002				12.8	0.002		
amphlanc	12.8	0.005									
anthozoa			12.8	0.003							
nemertin	12.8	0.014	38.5	0.313	12.8	0.046	12.8	0.025	12.8	0.010	
oligocha			898.1	0.059							
phoronid			410.6	0.239			12.8	0.005			
sum	154.0	0.792	3310.1	18.024	243.8	1.111	4362.2	3.334	731.3	0.725	
diversity											
nspc	7.0		32.0		8.0		27.0		13.0		
SH-W	1.9		2.7		1.8		1.6		1.7		
Simp	0.1		0.1		0.2		0.4		0.3		
Station:											
COA 1			COA 2		COA 3		COA 4		COA 5		
Crustacea	N	B	N	B	N	B	N	B	N	B	
atylfalc					12.8	0.004					
batheleg	12.8	0.004							12.8	0.004	
bathguil			12.8	0.004							
crancran							25.7	0.008	12.8	3.239	
liochois							12.8	25.440			
megaagil	12.8	0.004									
pseulong	12.8	0.004	12.8	0.004			25.7	0.008			
syncmacu	12.8	0.004									
urotbrev			166.8	0.050	12.8	0.004			51.3	0.015	
urotpose	77.0	0.023	654.3	0.196	384.9	0.115	51.3	0.015	179.6	0.054	
Echinodermata											
echicord	12.8	12.808	51.3	31.572	12.8	13.669			12.8	10.451	
ophitext	12.8	1.852									
Mollusca											
abraalba							12.8	0.160			
donavitt	12.8	0.003									
ensiamer					25.7	51.157	12.8	15.144			
ensiensi					12.8	0.582					
macobalt			154.0	2.354	12.8	0.157	38.5	1.432	12.8	0.353	
montferr	51.3	0.111	731.3	0.705	25.7	0.048	12.8	0.009			
mysebide			12.8	0.004	25.7	0.014	25.7	0.004			
natialde							12.8	0.109			
spissubt					1809.0	42.522	1321.5	26.790	102.6	2.635	
tellfabu	256.6	4.870	115.5	1.681	128.3	2.861	51.3	0.996	12.8	0.401	
telltenu			12.8	0.017			256.6	0.025	38.5	0.004	
Polychaeta											
capicapi	77.0	0.058	89.8	0.044			12.8	0.012	77.0	0.037	
chaeseto									38.5	0.019	
eteolong	25.7	0.019									
eteospec									25.7	0.012	
harmlunu					12.8	0.051					
laniconc			25.7	0.627	25.7	0.752	243.8	0.220	1488.3	0.676	
magemira	1411.3	2.000	307.9	0.285	12.8	0.017	12.8	0.012	89.8	0.208	
nephcaec	25.7	4.225									
nephcirr			25.7	0.378							
nephhomb	12.8	0.068	25.7	0.278	51.3	1.021	102.6	1.641	12.8	0.151	

Appendix-2, Biomonitoring 2000

nephspec	38.5	0.029									
pectkore							12.8	0.591			
scolarmi	1206.0	2.173									
spiofili			51.3	0.025							
spiobomb			25.7	0.012	359.2	1.450	102.6	0.164	1860.4	1.004	
terespec			12.8	0.007							
Miscellaneous taxa											
edwaclap							12.8	0.081			
nemertin	38.5	0.073	12.8	0.300					12.8	0.254	
phoronid					25.7	0.025					
sum	3310.1	28.327	2501.9	38.541	2950.9	115.756	2360.7	72.860	4041.5	19.517	
diversity											
nspc	18.0		19.0		17.0		20.0		17.0		
SH-W	1.5		2.1		1.4		1.7		1.4		
Simp	0.3		0.2		0.4		0.3		0.3		
Station:											
COA 6			COA 7		COA 8		COA 9		COA 10		
Crustacea	N	B	N	B	N	B	N	B	N	B	
atylfalc	12.8	0.004			12.8	0.004					
atylswam	12.8	0.004									
batheleg	25.7	0.008	51.3	0.015	64.2	0.019					
bathguil			12.8	0.004							
diasbrad	38.5	0.012									
megaagil							12.8	0.004			
pseulong	25.7	0.008	12.8	0.004	12.8	0.004	12.8	0.004			
urotbrev	38.5	0.012					25.7	0.008			
urotpose	590.2	0.177	12.8	0.004			551.7	0.166	38.5	0.012	
Echinodermata											
echicord	141.1	14.167					25.7	0.770			
Mollusca											
abraalba	25.7	0.749									
abratenu	12.8	0.000									
chamgall							12.8	0.100			
donavitt			12.8	0.003	320.8	17.895					
ensiamer	12.8	3.738							25.7	22.191	
macobalt	243.8	4.006	38.5	0.032							
montferr	1052.1	0.393									
mysebide	89.8	0.020					12.8	0.003			
spissubt	372.1	3.856			38.5	0.288	6094.3	143.916	12.8	0.211	
tellfabu	141.1	3.237			141.1	1.123	141.1	3.399	25.7	0.364	
telltenu	38.5	0.001									
Polychaeta											
anaisspec							12.8	0.008			
capicapi	230.9	0.254	12.8	0.014					77.0	0.091	
eteolong	25.7	0.029			12.8	0.007	12.8	0.008			
eumisang							64.2	0.042			
laniconc			12.8	0.014	25.7	0.014					
magemira	987.9	0.554	1283.0	1.165	128.3	0.264	89.8	0.220	192.5	0.340	
nephcaec			12.8	1.231	25.7	0.354			12.8	1.829	
nephcirr			12.8	0.461	77.0	0.730	38.5	0.176	12.8	0.119	
nephhomb	12.8	0.440	12.8	0.373			38.5	1.924	25.7	0.532	
nephspec	12.8	0.014			51.3	0.027	38.5	0.025	12.8	0.015	
nerelong	12.8	0.014					12.8	0.129			
ophelima			12.8	0.014							
pectkore							25.7	1.722			
scolarmi	307.9	1.565			12.8	0.244					
sigamath							12.8	0.008			
spiofili	77.0	0.085	12.8	0.014					154.0	0.183	

Appendix-2, Biomonitoring 2000

spiobomb	38.5	0.042	12.8	0.014	38.5	0.020	1590.9	1.712	77.0	0.091
Miscellaneous taxa										
nemertin	25.7	0.071			51.3	0.076	205.3	1.351	25.7	0.098
sum	4606.0	33.458	1526.8	3.359	1013.6	21.070	9032.3	155.697	692.8	26.076
diversity										
nspc	27.0		15.0		15.0		21.0		13.0	
SH-W	2.4		0.8		2.2		1.2		2.1	
Simp	0.1		0.7		0.1		0.5		0.1	
Station:										
Crustacea	COA 11		COA 12		COA 13		COA 14		COA 15	
	N	B	N	B	N	B	N	B	N	B
atylfalci									12.8	0.004
batheleg									12.8	0.004
caprelli									12.8	0.004
crancran			12.8	0.004						
diasbrad									12.8	0.004
iphitris									12.8	0.004
leucinci	12.8	0.004							12.8	0.004
megaagil			12.8	0.004					25.7	0.008
pseulong			12.8	0.004					12.8	0.004
urotbrev	38.5	0.012								
urotpose	205.3	0.062			12.8	0.004	12.8	0.004	333.6	0.100
Echinodermata										
echicord	12.8	7.797							38.5	24.314
ophialbi	25.7	0.047	12.8	0.297			38.5	0.159		
Mollusca										
ensiamer			115.5	26.884					25.7	2.230
ensiensi	38.5	7.918								
montferr	64.2	0.064							346.4	0.238
mysebide	38.5	0.015	12.8	0.004					577.4	0.138
natialde	12.8	0.023								
tellfabu	12.8	0.488							128.3	1.495
telltenu							38.5	0.002	12.8	0.000
Polychaeta										
capicapi							25.7	0.017		
chaeseto									12.8	0.003
eteolong	38.5	0.073	64.2	0.034					192.5	0.051
eumisang									38.5	0.010
harmlunu							25.7	0.151	102.6	0.152
hetefili									12.8	0.003
laniconc	12.8	0.279	12.8	0.007			89.8	4.251	423.4	4.740
magemira	25.7	0.049	25.7	0.142			25.7	0.034	500.4	0.689
nephcirr	77.0	0.801	25.7	0.264						
nephhomb							38.5	0.547	89.8	0.505
notolate									12.8	0.108
owenfusi									51.3	0.344
pectkore									25.7	0.718
pholminu									12.8	0.003
phylmacu									218.1	0.058
scolbonn			89.8	0.047					25.7	0.007
scolarmi			25.7	0.733			89.8	0.410		
sigamath									25.7	0.291
spiofili							12.8	0.017	154.0	0.041
spiobomb	166.8	0.315	25.7	0.014			51.3	0.068	859.6	0.566

Appendix-2, Biomonitoring 2000

Miscellaneous taxa

anthozoa							12.8	10.923		
nematoda	12.8	0.014								
nemertin			12.8	0.288			25.7	0.064	154.0	3.833
sum	795.5	17.960	461.9	28.726	12.8	0.004	487.5	16.647	4490.5	41.294
diversity										
nspc	16.0		14.0		1.0		13.0		33.0	
SH-W	2.3		2.3		0.0		2.4		2.7	
Simp	0.1		0.1		1.0		0.1		0.1	

CONTENTS

1. SUMMARY	1
2. SAMENVATTING	3
3. INTRODUCTION.....	5
4. MATERIAL AND METHODS	6
4.1. Sampling	6
4.2. Sample treatments.....	6
4.3. Ashfree Dry weight.....	7
4.4. Statistics	7
4.5. Sediment analysis	8
5. RESULTS AND DISCUSSION.....	9
5.1. Sediment composition	9
5.2. Distribution of the macrobenthic fauna in 2000	9
5.2.1. Diversity, density and biomass	9
5.2.2. Temporal variation in density and biomass of individual species	11
7. ACKNOWLEDGEMENTS	14
8. REFERENCES.....	15
Tables and Figures	17
Appendices.....	52