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M. Mulder, W.E. Lewis, M.A. van Arkel



Nederlands Instituut voor Onderzoek der Zee

Ecologisch Onderzoek Noordzee en Waddenzee: Boorspoeling II

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This study was commissioned by the North Sea Directorate (RWS) and carried out in 1986.

NETHERLANDS INSITUTE FOR SEA RESEARCH

Ecologisch Onderzoek Noordzee en Waddenzee

Boorspoeling II
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SUMMARY

In this study the effects of the discharges of contaminated drill-cuttings and water-based drilling fluids on the macrobenthic fauna were investigated. It was a continuation of a tentative study on biological effects carried out in 1985.

Research was undertaken in the Dutch sector of the continental shelf of the North Sea. This programme was initiated by the Ministry of Transport and Public Works, North Sea Directorate, and carried out under contract and responsibility of the above-mentioned ministry, the Ministry of Housing, Physical Planning and the Environment and the State Supervision of Mines of the Ministry of Economic Affairs.

This study had three aims:

1. Study of short-term effects of the use of oil-based muds (OBM). The chosen location L4a was surveyed twice, before (May) and after (September) the start of the drilling with OBM. The location is situated in an area with stable fine sandy sediments mixed with silt with a rich benthic fauna.
2. Study of long-term effects of the use of OBM. Location K12a was visited for this purpose for the second time in the present study (previously sampled in 1985). K12a is situated in an area with fine sandy sediments.
3. Study of effects of the use of water-based muds (WBM). Location F18/8 was surveyed, situated in a sedimentation area with very silty sediments and a rich fauna.

All locations were sampled along two transects, *i.e.* a 5-km-long transect in the direction of the residual current and another 3-km-long transect perpendicular to the first one. For most sampling stations at least 6 grab samples were analysed, collected with a 0.2 m^2 Van Veen grab.

The results of the baseline survey near location L4a showed a homogeneously composed fauna with approximately 120 species. No gradient was found on the two transects in terms of the number of species or the densities of the individual species.

The results of the second survey near L4a showed changes in the faunal composition due to seasonal effects. The fauna consisted of approximately 100 species. There were indications that effects occurred in a zone of 250-500 m off the platform due to the discharges of cuttings with adhering OBM. At the time of the second survey only a limited amount of cuttings had been discharged.

Near location K12a biological effects were detected three years after the last drilling activities with diesel-based OBM. The fauna consisted of approximately 90 species. The situation at a distance of 250 m off the platform had become aggravated, compared with the survey of 1985, regarding both number of species per station as well as the densities of individual species.

It is hypothesized that this is caused by the redistribution of contaminated bottom-deposits by wave-action during storms. Such redistribution creates secondary effects of OBM on the fauna, long after drilling has been terminated.

The results of the survey near location F18/8 showed no spatial pattern in the distribution and composition of the fauna which could be related to the discharges of WBM a few months before. Approximately 100 species were found. This result was confirmed by the results of the baseline survey near L4a. At this location water-based drilling fluids were discharged 2 years before, but no biological effects could be detected.

At the present study at two stations a comparison between the Reineck boxcorer and the Van Veen grab was made. Except for a few deep-living species, which were underestimated, the fauna of the areas investigated were sampled representatively by the Van Veen grab.

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SAMENVATTING

Dit rapport beschrijft het onderzoek naar de effecten van boorgruislozingen met aangehechte oliecomponenten en boorvloeistoffen op water basis, op de bodemfauna van de Noordzee. Het betreft een vervolg op een verkennend onderzoek naar biologische effecten, uitgevoerd in 1985.

Het onderzoek werd uitgevoerd in de Nederlandse sector van het continentaal plat en geïnitieerd door Rijkswaterstaat, Directie Noordzee. Uitvoering geschiedde onder contract en verantwoordelijkheid van RWS, VROM en EZ (Staatstoezicht op de Mijnen).
Er waren 3 doelstellingen geformuleerd:

1. Onderzoek naar korte-termijn effecten t.g.v. het gebruiken van oil-based muds (OBM). De gekozen locatie L4a werd tweemaal bemonsterd, vóór (in mei) en ná (in september) de booractiviteiten met gebruikmaking van OBM. De locatie ligt in een gebied met een rijke fauna en met fijn-zandige sedimenten, bijgemengd met slib.
2. Onderzoek naar lange-termijn effecten t.g.v. het gebruik van OBM. Locatie K12a werd voor dit doel een tweede maal bemonsterd (eerste maal in 1985). K12a ligt in een gebied met fijnzandig sediment.
3. Onderzoek naar effecten t.g.v. het gebruik van water-based muds (WBM). Locatie F18/8 werd bemonsterd. Deze is gelegen in een sedimentatiegebied met slibrijk sediment en een rijke fauna.

Bij elke locatie werden 2 raaien bemonsterd, n.l. een raai van 5 km lengte in de richting van de reststroom en een raai loodrecht op de reststroom met een lengte van 3 km. Van ieder monsterstation werden tenminste 6 bodemhappen uitgewerkt, die m.b.v. een Van Veen happer (0.2 m^2) waren verzameld.

De resultaten van de baseline survey bij locatie L4a lieten een fauna zien met een homogene samenstelling en bestaand uit ongeveer 120 soorten. Er kon geen gradient aangetoond worden in het aantal soorten en in de dichtheden van de individuele soorten op beide raaien. Tijdens de tweede survey bij L4a werden veranderingen in de fauna t.g.v. seizoensvariatie geconstateerd. Er werden ± 100 soorten aangetroffen. Effecten konden worden aangetoond in een zone van 250-500 m vanaf het platform, die mogelijk te wijten zijn aan de lozingen van boorgruis met aangehechte oliecomponenten. Tijdens de tweede survey was er nog maar weinig materiaal geloosd.

Bij locatie K12a konden 3 jaar na de boringen met gebruik van dieselhoudende OBM, effecten worden aangetoond. De fauna bestond uit ongeveer 90 soorten. Vergeleken met de eerste survey in 1985 bij K12a was de situatie tot op 250 meter van het platform verslechterd. Het betrof zowel een vermindering van het aantal soorten per station als de dichtheden van de individuele soorten. De auteurs veronderstellen dat de verslechtering veroorzaakt wordt door redistributie van met olie verontreinigde sediment als gevolg van golfinwerking op de bodem. Deze golfinwerking kan veroorzaakt worden door stormen. Daardoor kunnen secundaire effecten ontstaan op de bodemfauna, lang nadat de booraktiviteiten zelf beëindigd zijn.

Bij locatie F18/8 konden geen veranderingen in verspreiding en samenstelling van de fauna worden aangetoond op beide raaien, welke gerelateerd zouden kunnen worden aan de lozingen van WBM kort daarvoor. Ongeveer 100 soorten werden bij F18/8 aangetroffen. Dit resultaat stemt overeen met de resultaten van de baseline survey bij L4a. Vanaf deze locatie werden ook boorvloeistoffen op waterbasis geloosd. De baseline survey werd uitgevoerd 2 jaar na de lozingen van WBM, maar er konden geen biologische effecten worden aangetoond.

In dit onderzoek is een vergelijking opgenomen tussen de Reineck boxcorer en de Van Veen bodemhapper. Voor dit doel werden enkele stations met beide samplers bemonsterd. Vastgesteld kan worden dat de bezochte locaties kwantitatief bemonsterd zijn m.b.v. de Van Veen happer; slechts de aantallen van enkele diep-levende soorten kunnen aan onderschatting onderhevig zijn.

1. INTRODUCTION

1.1. GENERAL PART

Oil-based and water-based muds are often used in the Dutch sector of the Continental Shelf during drilling operations. The oil-based muds (OBM's) are partly recovered. However, large quantities of cuttings contaminated with drilling muds (OBM) are being discharged. In the worst case situation the amount of oil-based drilling fluid attached to the cuttings discharged is approx. 75 to 100 tons of oil per well. While drilling with water-based muds both cuttings and drilling fluid are being discharged. In 1985 a tentative research programme was carried out in order to detect possible effects on benthic fauna and sediments due to the discharge of cuttings with adhering OBM. This programme was initiated by the Ministry of Transport and Public Works, North Sea Directorate. The main aim of the 1985 programme was to answer the question whether the research methods available were suitable to detect biological effects of the discharges in this part of the North Sea. According to British and Norwegian investigations it was expected that effects would appear (DAVIES *et al.*, 1981, 1984; DICKS, 1982; ANONYMOUS, 1986; HANNAM *et al.*, 1987).

In 1985 two different locations were chosen. One near the Dutch coast in an area with coarse sediments and another one situated more northerly in an area with finer sediments. In the vicinity of the latter a richer fauna occurs. At both locations wells had been drilled using OBM. This preliminary investigation showed anomalies in the spatial distribution of the fauna up to 1000 m from the platform in the direction of the residual current (MULDER, LEWIS & VAN ARKEL, 1987). It was concluded that these biological effects were most probably caused by the discharges of cuttings with adhering OBM. Oil analyses in the sediments supported this conclusion. (KUIPER & VAN HET GROENEWOUD, 1986).

In 1986 research was continued. The aims of the study were extended to:

a. investigations on long-term effects caused by the discharges of cuttings with adhering OBM;
b. investigations on the biological effects due to the discharge of water-based muds (WBM's) and cuttings during drilling and
c. effects of OBM near a platform where a proper baseline study could be carried out before drilling with OBM's started.

This report deals with the results of four surveys of the macrobenthic fauna in the vicinity of three production/drilling platforms in the Dutch sector of the Continental Shelf (Table 1), in an area with stable fine sediments.

Research was carried out by the Netherlands Institute for Sea Research (NIOZ), dept. Ecological Research North Sea, in cooperation with the Netherlands Organization for Applied Scientific Research, TNO and the North Sea Directorate of the Ministry of Transport and Public Works.

Samples were collected with the research vessels "Smal Agt" and "Holland".

NIOZ was responsible for the inventory of the macrobenthic fauna around the different locations, whilst TNO carried out the analyses of barium and hydrocarbon levels in the sediment and in organisms. Furthermore this institute studied the biodegradation potential of oil-derived hydrocarbons and some abiotic parameters in sediments. In cooperation with the State Universities of Utrecht and

TABLE 1

Locations investigated in 1985 and 1986

location	*position*	*drilling activity*	*sediment*	*sampling*
K12a	53°28'36.2"N 03°47'19.4"E	6 wells, drilled with diesel and low-tox OBM; drilling between February and November 1985	Fine sand with silt	September 1985 and September 1986
P6b	52°42'?"N 03°50'?"E	1 well, drilled with low-tox OBM with high aromatic content; drilled in April-June 1985	Sand	September 1985
L4a	53°43'40"N 04°06'15"E	Previous drilling with WBM in 1985; drilling of 2 wells in 1986 using low-aromatic OBM	Fine sand mixed with silt	May and September 1986
F18/8	54°05'30"N 04°59'15"E	1 well drilled with WBM in April 1986	Fine sand mixed with silt	May/June 1986

Gent (Belgium) stress-parameters in mussels were measured. TNO also carried out experiments with active biological monitoring in the pelagic system, using mussels (*Mytilus edulis*). The TNO investigations are reported in KUIPER & VAN HET GROENEWOUD (1986) and VAN HET GROENEWOUD *et al.* (1988).

This project was carried out under contract with and responsibility of the Ministry of Transport and Public Works, North Sea Directorate (RWS), the Ministry of Housing, Physical Planning and the Environment (VROM) and the State Supervision of Mines of the Ministry of Economic Affairs (EZ). The project was guided by a Working Group Monitoring Off-Shore. Members of this Working Group are:
—Dr. W. Zevenboom (Ministry of Transport and Public Works, North Sea Directorate), chairwoman
—R.J. de Vreugd (Ministry of Transport and Public Works, North Sea Directorate), secretary
—Dr. M. Scholten (Netherlands Organization of Applied Scientific Reseach, TNO)
—H.J. van het Groenewoud (Netherlands Organization of Applied Scientific Research, TNO)
—Drs. M.A. van Arkel (Netherlands Institute for Sea Research, NIOZ)
—M. Mulder (Netherlands Institute for Sea Research, NIOZ)
—Ir. D.J. Kylstra (Ministry of Transport and Public Works, Tidal Waters Division)
—Ing. W. van Soelen (Ministry of Housing, Physical Planning and the Environment)
—Ir. C. Bootsma (Ministry of Housing, Physical Planning and the Environment)
—Ir. L. Henriquez (Ministry of Economic Affairs, State Supervision of Mines)
—Dr. R. Jacobs (Oil-companies, NOGEPA)

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1.2. AIMS

The research programme of 1985 had a tentative character. It showed that biological effects could be detected in the Dutch sector of the Continental Shelf. The present study was meant to be a follow-up and an extension of the 1985 programme.

Therefore the general aim for 1986 was: improvement and selection of methods for the detection of the distribution of oil-derived hydrocarbons and detection of effects due to the discharge of cuttings with adhering drilling-muds.

The following research plan was developed:
—a. To carry out a survey of the benthic fauna and sediment parameters near a platform where no oil-based muds were used. This survey had to serve as a baseline.
—b. A follow-up survey during drilling with OBM near the same platform. This should give information on direct and short-term effects of the discharges.
—c. To investigate the benthic fauna and sediment parameters near a location where drilling had recently taken place, using water-based muds (WBM's).
—d. Revisiting an earlier investigated platform (1985) where OBM was used in order to study long-term effects.
—e. Extension of the experiments with active biological monitoring using biochemical stress-parameters.
—f. To determine the suitability of biodegradation potential measurements as a monitoring tool.

1.3. LOCATIONS

Three platforms were chosen in the Dutch sector of the Continental Shelf in an area with a relatively rich benthic fauna and rather stable fine sediments (Fig. 1).

a. Platform L4a.

This location consists of an existing production platform, having several gas-production wells which were drilled in the past with water-based muds (last well drilled in 1985). It was expected that the bottom fauna had recovered after the last discharge of cuttings with WBM. New drilling activities would start in May/June of 1986 using so-called low-toxic oil-based mud.

The baseline survey was carried out at the end of May 1986 before two new wells were drilled. The follow-up survey was carried out during drilling.

b. Location F18/8.

This was an abandoned location. Drilling activities ended in April 1986. WBM had been used at this location. This survey was carried out in May/June 1986.

c. Platform K12a.

This platform was already visited in 1985 during the tentative research programme. No drilling activities were carried out since. The survey was undertaken in September 1986.

Near each platform two transects were laid: a 5-km-long transect, lying in the direction of the residual current and a transect perpendicular to the first one with a length of 3 km. On each transect sampling stations were laid.

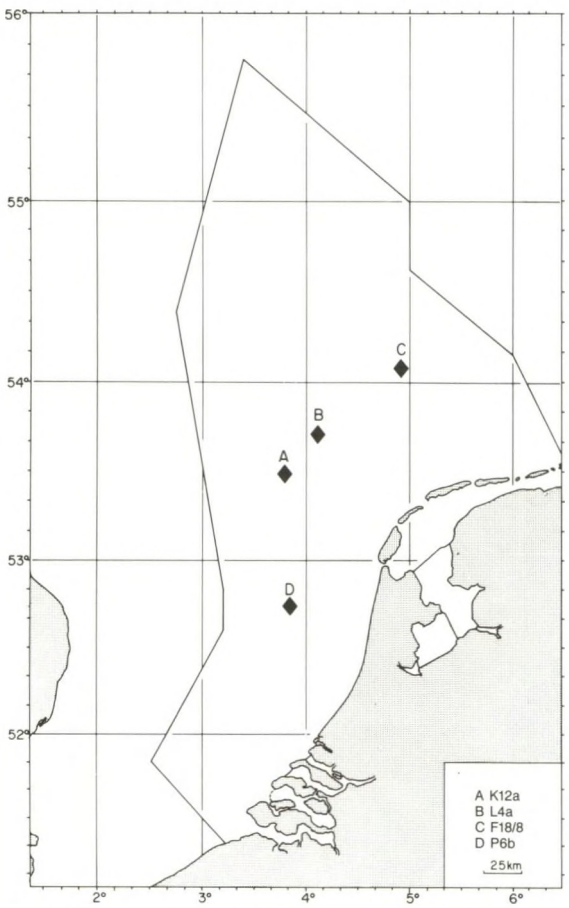


Fig. 1. Positions of the sampling locations in the Dutch sector of the Continental Shelf. Locations A, B and C were sampled in 1986; locations A and D were sampled in 1985. B and C are situated in an area with stable fine sediments where sedimentation occurs. D is situated in an area with coarse sediments, where erosion occurs. A is situated in a transitory zone.

The positions of these stations on the transects are given in Fig. 2. Station 5000 m, residual current transect, was used as a reference station.

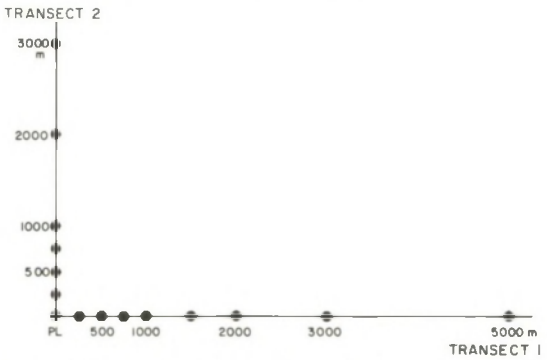


Fig. 2. Positions of the sampled stations on the transects (PL=platform). Distance in meters.
Transect 1=residual current transect; transect 2=transect perpendicular to residual current.

2. MATERIAL AND METHODS

2.1. SAMPLING

All stations indicated in Fig. 2 were sampled. At each station 10 grab samples were collected with a 0.2 m^2 Van Veen grab to guarantee a high degree of representativeness of the data, except for station PL (platform). This station was situated in the close vicinity of the platform (50-100 m, residual current direction). For safety reasons only 2 samples could be taken at this station. This sampling strategy was followed near each platform, with one exception: during the baseline survey of platform L4a in May it was impossible to sample station PL due to bad weather. The fact that an excess of samples (10) were collected at each station gave us the opportunity to make selections during analysing. If necessary extra stations or samples could be handled, collected under the same conditions at the same time.

During the baseline survey of L4a and the survey of the WBM location F18/8, one station was additionally sampled with 10 boxcore samples using the .071 m^2 Reineck boxcore. This would enable us to compare the sampling efficiency of both samplers in terms of sediment characteristics and fauna composition in that part of the North Sea. For both locations, station 5000 m (residual current transect) was used for this comparison.

From the grab samples small cores were collected for hydrocarbon, barium, biodegradation and grain-size analyses. The rest of the grabsamples were washed through a sieve with a mesh of 1 mm^2 in order to collect the macrobenthic fauna. The residue

was preserved in a 6% neutralized formaldehyde solution.

2.2. TREATMENT OF THE SAMPLES IN THE LABORATORY

In the laboratory the samples were stained with Bengal rose and sorted by hand. Molluscs, crustaceans, polychaetes and echinoderms were identified and counted on species level using a stereomicroscope. The other taxa including hydrozoa, nematods, nemertineans, etc. were not further identified. Fragments of the animals were not counted, unless the head was present in the sorted samples.

2.3. SELECTION PROCEDURE OF THE STATIONS

For the baseline survey at L4a, it was decided to analyse all sampling stations. For the September survey at L4a, analysis was restricted to the stations near the platform, because possible effects were expected there. The reference station was also analysed.

For the same reason it was decided to analyse the samples of the reference stations and stations in the vicinity of the platforms for location F18/8 and platform K12a. The choice for the latter was also based on the results of the 1985 survey.

The list of stations and number of samples per station analysed are given in Table 2.

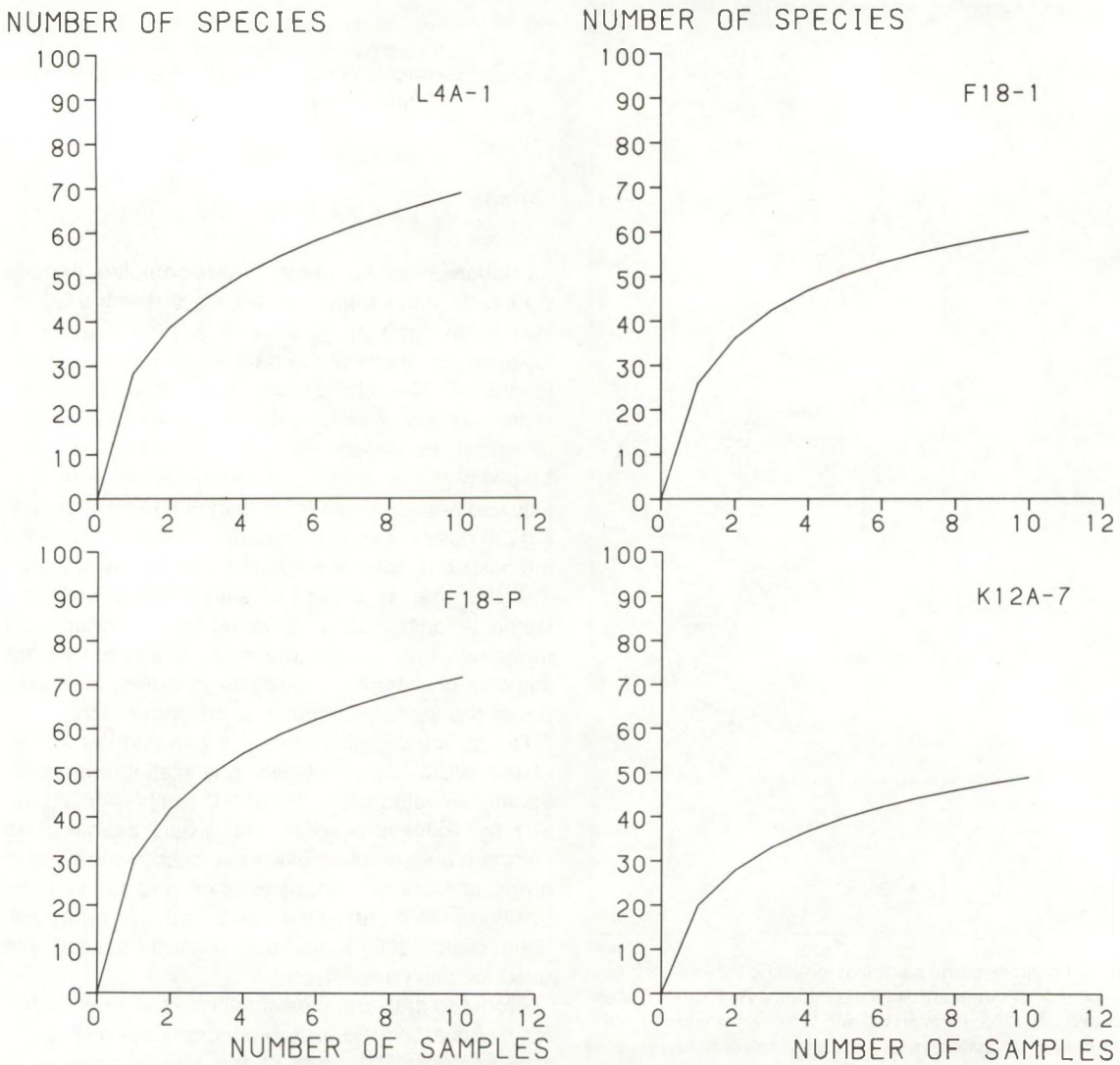


Fig. 3. Relation between number of species and number of analysed samples for a few stations near the platforms L4a, F18/8 and K12a.

TABLE 2

Station data and number of analysed samples per station.

Data platform L4a baseline survey May

Station	*Transect*	*Distance to platform*	*Number of analysed samples*
14	perpendicular	3000 m	6
13	"	2000 m	6
12	"	1000 m	6
11	"	750 m	6
10	"	500 m	6
9	"	250 m	6
8	residual current	250 m	6
7	"	500 m	6
6	"	750 m	6
5	"	1000 m	6
4	"	1500 m	6
3	"	2000 m	6
2	"	3000 m	6
1	"	5000 m	10
			88

Data platform L4a follow-up survey Sept.

Station	*Transect*	*Distance to platform*	*Number of analysed samples*
9	perpendicular	250 m	6
PL	platform	50 - 75 m	2
8	residual current	250 m	6
7	"	500 m	6
6	"	750 m	6
5	"	1000 m	6
1	"	5000 m	6
			38

Data platform F18/8 survey May/June ("PL"=former location drilling-rig)

Station	*Transect*	*Distance to "platform"*	*Number of analysed samples*
9	perpendicular	250 m	6
"PL"	"platform"	0 m	10
8	residual current	250 m	6
7	"	500 m	6
6	"	750 m	6
5	"	1000 m	6
1	"	5000 m	10
			50

Data platform K12a survey Sept.

Station	*Transect*	*Distance to platform*	*Number of analysed samples*
6	perpendicular	250 m	7
PL	platform	50 - 75 m	2
7	residual current	250 m	10
8	"	500 m	7
9	"	750 m	7
10	"	1000 m	7
14	"	5000 m	7
			47

2.4. RELATION BETWEEN NUMBER OF SAMPLES AND NUMBER OF SPECIES CAUGHT

In order to get representative data with a minimal effort of analysing samples, rarefaction curves were constructed.

For each location the rarefaction curve of at least one station was made. For such a station all 10 samples were analysed. From these data the mean number of species was calculated that can be expected in 1, 2, 3 or more samples together. The results are given in Fig. 3.

From these curves the number of samples per station can be deduced which have to be analysed in order to find the major part of the fauna. As an arbitrary limit, at least 80% of the species, identified to species level, had to be present in the samples of one station. From platform L4a (baseline May), station 5000 m (residual current transect) was used to make a rarefaction curve, because this was the reference station which is thus fully described.

The curve for this station shows that in total 69 species, identified to species level were present. In 6 samples nearly 58 species could be expected, which represents 84% of the total number of species. Therefore it was decided to analyse 6 samples per station for both May and September surveys at location L4a.

This procedure is based on the assumption that a similarity in fauna composition exists at the stations from one location. This assumption was justified by the results (see chapter 3). 6 samples per station were also analysed for location F18/8. The data of station "PL" and station 5000 m (residual current transect) were used to make the rarefaction curves. 62 and 53 species could be expected in 6 samples from those stations (86 and 88% of the total number of species).

Station 250 m (residual current transect) from platform K12a was used to calculate the number of samples which had to be analysed for that platform. It appeared that 7 samples per station were sufficient to catch 90% of the species (44 out of 49) (See Fig. 3).

2.5. DIVERSITY AND EVENNESS

Diversity is given with two indices: the Shannon-Wiener-index (H') and the Brillouin-index (H).

Evenness is calculated with the Heip-index (E) (HEIP, 1974).

$$H' = -\sum_{i=1}^{S} Pi \, {}^2\log Pi$$

$$H = \frac{1}{N} \, {}^2\log \frac{N!}{n_1!n_2!....n_s!}$$

$$E = \frac{2^{H'} - 1}{S - 1}$$

S=total number of species
n_i=number of individuals of species i
N=total number of individuals

$$Pi = \frac{n_i}{N}$$

Although there is some confusion in Heip's paper, about the use of l_n and $^2\log$ in H' and about 2 and e in E, we have used these formulas according to Heip's intentions (Pers. comm.).

3. RESULTS

In this section the results of each investigated location will be discussed separately.

3.1. PLATFORM L4a, BASELINE SURVEY

This platform is situated in an area where the sediment consists of fine sand mixed with silt. The silt fraction varies from 10% to 18%. The complete results of the grain-size analyses, as carried out by TNO, are given in VAN HET GROENEWOUD, *et al.*, 1988. The water-depth was approximately 40-45 meters.

3.1.1. COMPOSITION AND DISTRIBUTION OF THE FAUNA

The macrobenthic fauna around this location consists of 122 species (identified to species level, excluding juveniles and other taxa), mainly polychaetes, crustaceans, molluscs and a few echinoderms. The species composition of the different stations is given in the appendix, Tables 1a and 1b. These tables give the mean density per species at each station, the total number of individuals per m^{-2} and the total number of species per station on both transects.

As mentioned before, no samples have been collected near the platform (station PL) during the baseline survey because of bad weather conditions. The number of species per station varies from 54 to 79 (Table 4).

TABLE 3

Data platform L4A, baseline May 1986. Percentage of occurrence of each species in the total number of analysed samples (98, incl. 10 boxcore samples).

POLYCHAETA		*Capitella capitata*	10.20	*Eudorella truncatula*	55.10
		Notomastus latericeus	60.20	*Iphinoe trispinosa*	9.18
Aphrodita aculeata	11.22	*Heteromastus filiformis*	47.96	*Pseudocuma longicornis*	1.02
Harmothoe lunulata	14.29	*Owenia fusiformis*	64.29	*Diastylis bradyi*	61.22
Harmothoe longisetis	25.51	*Polycirrus medusa*	2.04	*Cirolana borealis*	10.20
Gattyana cirrosa	29.59	*Lagis koreni*	41.84	*Ione thoracica*	10.20
Polynoe kinbergi	46.94	*Ampharete finmarchica*	1.02	*Megaluropus agilis*	1.02
Sigalion mathildae	1.02	*Ampharete acutifrons*	1.02	*Melita obtusata*	1.02
Pholoe minuta	94.90	*Amphicteis gunneri*	23.47	*Atylus swammerdami*	1.02
Sthenelais limicola	59.18	*Lysilla loveni*	46.94	*Orchomenella nana*	4.08
Eteone longa	10.20	*Terebellides stroemi*	31.63	*Leucothoe incisa*	8.16
Eteone lactea	1.02			*Ampelisca brevicornis*	15.31
Anaitides groenlandica	21.43	MOLLUSCA		*Ampelisca tenuicornis*	39.80
Eumida sanguinea	1.02			*Urothoe poseidonis*	11.22
Ophiodromus flexuosus	37.76	*Nucula turgida*	67.35	*Cheirocratus intermedius*	1.02
Gyptis capensis	25.51	*Thyasira flexuosa*	6.12	*Bathyporeia guilliamsona*	3.06
Synelmis klatti	15.31	*Lepton squamosum*	6.12	*Bathyporeia elegans*	12.24
Exogone hebes	2.04	*Montacuta ferruginosa*	36.73	*Harpinia antennaria*	94.90
Nereis longissima	19.39	*Mysella bidentata*	95.92	*Perioculodes longimanus*	13.27
Nephtys hombergii	86.73	*Arctica islandica*	24.49	*Synchelidium haplocheles*	1.02
Nephtys incisa	3.06	*Acanthocardia echinata*	11.22	*Westwoodilla caecula*	2.04
Nephtys cirrosa	9.18	*Dosinia lupinus*	10.20	*Aora typica*	5.10
Nephtys longosetosa	2.04	*Venus striatula*	25.51	*Photis longicaudata*	1.02
Nephtys spec. juv.	14.29	*Mysia undata*	22.45	*Caprella linearis*	1.02
Glycera capitata	4.08	*Abra prismatica*	1.02	*Endeis spinosa*	1.02
Glycera rouxii	70.41	*Abra alba*	16.33		
Glycera alba	13.27	*Abra nitida*	1.02	ECHINODERMATA	
Glycera spec. juv.	7.14	*Cultellus pellucidus*	2.04		
Glycinde nordmanni	41.84	*Corbula gibba*	28.57	*Astropecten irregularis*	2.04
Goniada maculata	75.51	*Thracia convexa*	19.39	*Amphiura filiformis*	100.00
Lumbrineris latreilli	100.00	*Cingula nitida*	34.69	*Amphiura chiajei*	73.47
Lumbrineris fragilis	44.90	*Turritella communis*	90.82	*Ophiura texturata*	2.04
Drilonerís filum	4.08	*Natica alderi*	1.02	*Ophiura albida*	70.41
Scoloplos armiger	5.10	*Cylichna cilindracea*	77.55	*Echinocardium cordatum*	66.33
Orbinia sertulata	10.20			*Echinocyamus pusillus*	1.02
Poecilochaetus serpens	9.18	CRUSTACEA			
Spio filicornis	10.20			OTHER TAXA	
Polydora pulchra	2.04	*Crangon crangon*	1.02		
Polydora guillei	28.57	*Processa parva*	9.18	Nemertinea	98.98
Spiophanes kroyeri	15.31	*Pontophilus trispinosus*	1.02	Amphioxus	1.02
Spiophanes bombyx	32.65	*Pagurus bernhardus*	1.02	Fish eggs	61.22
Aonides paucibranchiata	2.04	*Macropipus holsatus*	4.08	Turbellaria	20.41
Scolelepis foliosa	1.02	*Ebalia cranchii*	9.18	Phoroniden	78.57
Magelona papillicornis	7.14	*Corystes cassivelaunus*	7.14	Harp. copepoda	1.02
Chaetopterus variopedatus	38.78	*Macropodia rostrata*	1.02	Oligochaeta	48.98
Tharyx marioni	55.10	*Upogebia stellata*	53.06	Holothuroidea	42.86
Chaetozone setosa	93.88	*Callianassa subterranea*	90.82	*Sagitta* spec.	2.04
Diplocirrus glaucus	77.55	*Nebalia bipes*	10.20	Echiurida	6.12
Scalibregma inflatum	1.02	*Gastrosaccus spinifer*	4.08	Sipinculida	61.22
Ophelina acuminata	17.35	*Schistomysis ornata*	2.04		

From the total number of 122 species (Table 3), 48 can be classed as common species, because they occur in more than 20% of the total number of samples. Within this group, 24 species can be classed as very common, because they occur in more than 50% of the samples.

The frequency of occurrence of each species in the entire baseline survey is given in Table 3. The fact that a large fraction of the species is common or even very common shows a great similarity in the composition of the fauna between the samples (within and between sampling stations). This was confirmed

TABLE 4

Data L4a baseline survey. Total species number and the number of common and very common species per station for both transects

Residual current transect								
station number	*8*	*7*	*6*	*5*	*4*	*3*	*2*	*1*
Distance in m	*250*	*500*	*750*	*1000*	*1500*	*2000*	*3000*	*5000*
Tot. number of species	73	61	68	64	68	65	54	69
Number of common species	47	38	40	44	48	45	37	46
Number of very common species	34	31	28	31	34	31	27	26
% common	64	62	59	69	71	69	69	67
% very common	47	51	41	48	50	48	50	38
Transect perpendicular to residual current								
station number	*9*	*10*	*11*	*12*	*13*	*14*		
Distance in m	*250*	*500*	*750*	*1000*	*2000*	*3000*		
Tot. number of species	72	59	64	72	67	79		
Number of common species	47	39	40	44	44	50		
Number of very common species	35	28	32	32	33	37		
% common	65	66	63	61	66	63		
% very common	49	48	50	44	49	49		

by the small differences in species number per station. Table 4 gives the total number of species per station (identified to species level) and the number of common and very common species. This is visualized in Fig. 4.

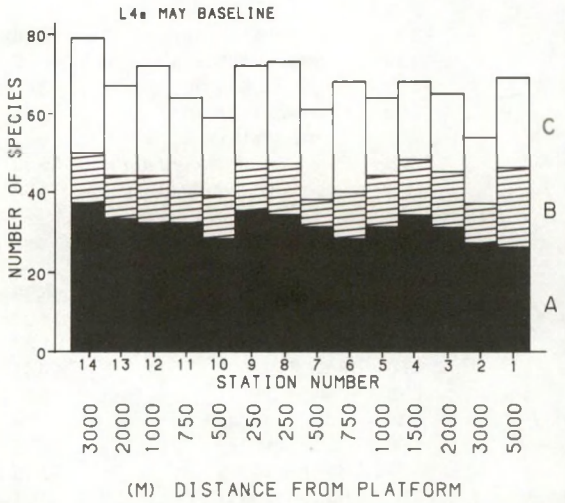


Fig. 4. Number of species per station divided in very common (A), common (B) and rare species (C) for platform L4a, baseline survey.

Table 4 shows that the fraction of common and very common species within each station is larger than for the entire survey. This can also be seen in the appendix, Tables 2-15 inclusive. This means that the composition of the fauna within a station is even more homogeneous than the fauna of the entire area. Still the stations have a great resemblance regarding the total number of species and the number of the common and very common species. Furthermore the results show that there is no explicit gradient on both transects in terms of species number.

Although the fauna around L4a at the time of the baseline consists of many species, the densities of most species are rather low, with a few exceptions; the polychaete *Lumbrineris latreilli*, the bivalve *Mysella bidentata* and the echinoderm *Amphiura filiformis* have fairly high densities (see appendix, Tables 2 to 15 inclusive).

These appendix tables give the frequency of occurrence and abundancy per separate station for both transects (mean densities and standard deviations).

The mean densities and standard deviations of the very common species have been compared, to see how these species are distributed within each station. In most cases the standard deviation is smaller or equal to the mean, indicating a somewhat regular or random distribution. For a few species, the standard deviation exceeds the mean, but never more than by a factor of 2, indicating a slight patchiness.

Summarizing it can be concluded that the composition of the fauna shows a great similarity, both within and between stations, so the area has a homogeneous composition of the fauna. No clear spatial distribution-patterns have been found, neither in the fauna composition nor in the distribution of individual species. These data form the baseline with which following surveys can be compared to detect

possible effects of drilling operations, in which OBM's are used.

3.1.2. DIVERSITY AND EVENNESS PLATFORM L4a BASELINE SURVEY

Values per station are given in Table 5. These values are based on the data from the appendix tables 1a and b (excluding juveniles and other taxa).

TABLE 5

Diversity and evenness of platform L4a baseline survey. H(S-W) is diversity according to Shannon-Wiener; H(B) according to Brillouin. E is evenness according to Heip.

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
14	3.27	3.18	0.11	79
13	2.62	2.55	0.08	67
12	2.67	2.58	0.08	72
11	2.48	2.43	0.07	64
10	2.84	2.75	0.11	59
9	2.97	2.89	0.10	72
8	2.43	2.37	0.06	73
7	2.38	2.32	0.07	61
6	2.44	2.35	0.07	68
5	3.19	3.07	0.13	64
4	2.51	2.43	0.07	68
3	2.38	2.30	0.07	65
2	2.43	2.36	0.08	54
1	2.50	2.45	0.07	69

The diversity values of the stations do not differ very much. There is just a slight variation in the values indicating that the area around L4a at the time of the baseline is a stable one in terms of fauna composition and distribution.

3.2. PLATFORM L4a, SURVEY SEPTEMBER 1986

3.2.1. COMPOSITION AND DISTRIBUTION OF THE FAUNA

This survey was carried out in the 2nd week of September. The sampling strategy was identical to that of the baseline survey of May.

Initially drilling was planned for the period between May and September 1986. Unfortunately the drilling-operations were delayed. So the oil-company started drilling only three weeks before the follow-up survey and few discharges were made at that time. Analysis of the samples was restricted to the stations 250 m (transect perpendicular to residual current), PL (=platform) and the stations 250, 500, 750, 1000 and 5000 meters on the residual current transect. This choice was based on the expectation that biological effects would appear up to 1000 meter off the platform (residual current) (MULDER *et al.*, 1987). The number of analysed samples per station was 6 (see section 2.4).

In total 108 species, identified to species level, were collected from the samples. Table 17 (appendix) gives the species composition at the sampled stations (mean density per species, total number of species and total number of individuals per station). The frequency of occurrence of each species from this survey (all stations together) is given in Table 6.

Table 7 shows that the number of species per station (identified to species level) varied from 44 to 80 species. The lowest number of species (44) was found at station PL because only two samples were collected there. The rarefaction curves are given in Fig. 5.

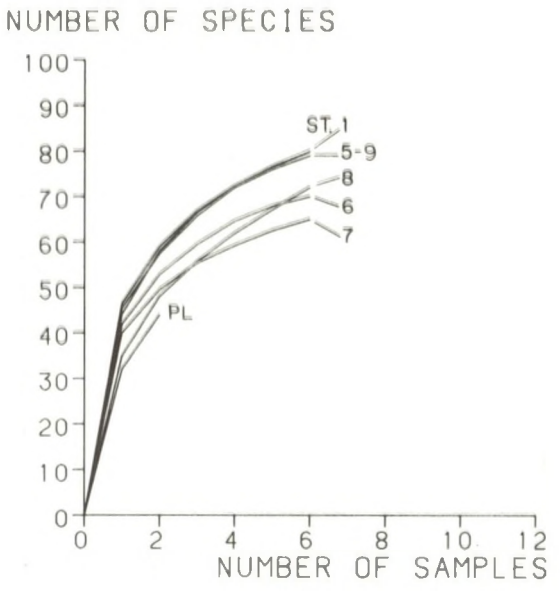


Fig. 5. Rarefaction curves of all stations from platform L4a, survey September.

These are based on data excluding juveniles and other taxa. The curves show that station PL has a reduced number of species, compared with the other stations.

The difference between station PL and the other stations in the median number of species per sample was tested using the Mann-Whitney U-test (SIEGEL, 1956). It appeared that station PL did not differ significantly from station 8 (250 m residual current transect), but it did differ significantly from the other stations.

From the total of 108 species present around L4a

TABLE 6

Data platform L4A, survey Sept. 1986 Percentage of occurrence of each species in the total number of treated samples (38).

POLYCHAETA	
Aphrodita aculeata	21.05
Harmothoe lunulata	10.53
Harmothoe longisetis	18.42
Gattyana cirrosa	86.84
Polynoe kinbergi	42.11
Pholoe minuta	97.37
Sthenelais limicola	60.53
Eteone longa	21.05
Eteone lactea	2.63
Eteone flava	2.63
Anaitides groenlandica	86.84
Anaitides mucosa	63.16
Anaitides maculata	26.32
Eumida sanguinea	21.05
Ophiodromus flexuosus	57.89
Gyptis capensis	26.32
Synelmis klatti	42.11
Nereis longissima	52.63
Nereis spec. juv.	10.53
Nephtys hombergii	97.37
Nephtys cirrosa	5.26
Glycera rouxii	65.79
Glycera alba	15.79
Glycera spec. juv.	5.26
Glycinde nordmanni	73.68
Goniada maculata	89.47
Lumbrineris latreilli	100.00
Lumbrineris fragilis	44.74
Driloneris filum	2.63
Scoloplos armiger	2.63
Orbinia sertulata	15.79
Poecilochaetus serpens	13.16
Spio filicornis	18.42
Polydora pulchra	18.42
Polydora guillei	31.58
Spiophanes kroyeri	2.63
Spiophanes bombyx	86.84
Scolelepis bonnieri	2.63
Scolelepis foliosa	7.89
Magelona papillicornis	7.89
Chaetopterus variopedatus	92.11
Tharyx marioni	55.26
Chaetozone setosa	92.11
Diplocirrus glaucus	100.00
Scalibregma inflatum	100.00
Ophelina acuminata	65.79
Capitella capitata	15.79
Notomastus latericeus	63.16
Heteromastus filiformis	63.16
Owenia fusiformis	73.68
Lanice conchilega	2.63
Lagis koreni	100.00
Amphicteis gunneri	5.26
Lysilla loveni	89.47
Terebellides stroemi	23.68
MOLLUSCA	
Nucula turgida	76.32
Thyasira flexuosa	2.63
Lepton squamosum	10.53
Montacuta ferruginosa	31.58
Mysella bidentata	94.74
Arctica islandica	26.32
Acanthocardia echinata	13.16
Dosinia exoleta	2.63
Dosinia lupinus	13.16
Venus striatula	50.00
Mysia undata	31.58
Abra alba	18.42
Cultellus pellucidus	10.53
Mya spec. juv.	42.11
Corbula gibba	23.68
Thracia convexa	18.42
Cingula nitida	26.32
Turritella communis	94.74
Natica alderi	18.42
Cylichna cilindracea	86.84
Philine catena	34.21
CRUSTACEA	
Processa parva	68.42
Pontophilus trispinosus	5.26
Pontophilus spec.	2.63
Pagurus bernhardus	5.26
Macropipus holsatus	26.32
Macropipus spec. juv.	31.58
Ebalia cranchii	39.47
Corystes cassivelaunus	13.16
Upogebia stellata	60.53
Callianassa subterranea	92.11
Decapoda larven	100.00
Nebalia bipes	5.26
Schistomysis ornata	2.63
Eudorella truncatula	7.89
Iphinoe trispinosa	23.68
Diastylis bradyi	94.74
Cirolana borealis	18.42
Ione thoracica	15.79
Melita obtusata	2.63
Hippomedon denticulatus	13.16
Orchomenella nana	7.89
Leucothoe incisa	5.26
Ampelisca brevicornis	52.63
Ampelisca tenuicornis	31.58
Ampelisca spec. juv.	10.53
Urothoe poseidonis	13.16
Bathyporeia guilliamsoniana	5.26
Harpinia antennaria	73.68
Perioculodes longimanus	21.05
Aora typica	10.53
ECHINODERMATA	
Astropecten irregularis	2.63
Amphiura filiformis	100.00
Amphiura chiajei	86.84
Ophiura albida	65.79
Echinocardium cordatum	42.11
Psammechinus miliaris	2.63
OTHER TAXA	
Nemertinea	100.00
Turbellaria	55.26
Phoroniden	94.74
Harp. copepoda	2.63
Oligochaeta	44.74
Holothuroidea	34.21
Sagitta spec.	23.68
Sipinculida	76.32

at the time of the September survey, 61 species were common *i.e.* present in more than 20% of the sample, while 38 species can be classed as very common (≥50% of the samples). The data for the separate stations are given in Table 7: the total number of species per station (identified to species level) and the number of common and very common species. This is visualized in Fig. 6.

Because of the low number of samples collected at station PL, no distinction is made between common and very common species. The total number of species at the stations 1, 5, 6, 7, 8 and 9 does not show a gradient along the transects.

Considering the large fraction of common and very common species for all stations together and for all separate stations, the composition of the fauna can be classed as homogeneous.

In this survey juveniles of some species were present. These are young settled animals which are big enough in September to be caught. There were also

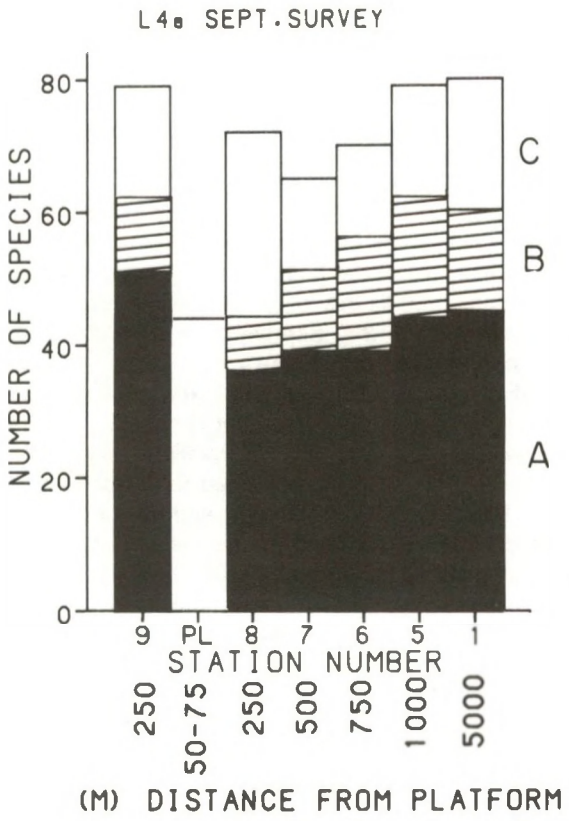


Fig. 6. Number of species per station, divided in very common (A), common (B) and rare species (C) per station for platform L4a, September survey.

many decapod larvae in the September sampling (no distinction could be made between the different species).

The fauna around L4a at the time of this survey consisted of many species. Despite the occurrence of juveniles most species showed low densities. Exceptions in this survey were the polychaetes *Lumbrineris latreilli, Scalibregma inflatum, Lagis koreni,* the bivalve *Mysella bidentata* and the echinoderm *Amphiura filiformis. L. latreilli, M. bidentata* and *A. filiformis* were also present in the baseline samples in fairly high numbers. In order to see whether the fauna has a patchy distribution the mean densities and the standard deviations of the very common species were compared (see also appendix Tables 18 to 24 inclusive).

For most species the standard deviations are equal to or smaller than the mean. This indicates a more or less random distribution. For a few species, the standard deviation exceeds the mean (but never more than a factor of 1.5), indicating a slightly patchy distribution.

To study the variation in the distribution of the fauna around platform L4a, the Kruskal-Wallis test (SOKAL & ROHLF, 1969; SIEGEL, 1956) was used.

For each of the very common species the densities at all stations were compared in this test to see whether the difference among the stations signify genuine population differences or whether they represent merely chance variation between samples from the same population (population in a statistical sense). The test was carried out, including and excluding the data of station PL to see what the contribution of this specific station was.

For only two species *viz.* the polychaete *Owenia fusiformis* and *Notomastus latericeus* did the contribution of station PL give a significant difference. This can be an effect of the discharges of drill-cuttings with adhering OBM.

3.2.2. DIVERSITY AND EVENNESS PLATFORM L4a, SURVEY SEPTEMBER

Values per station are given in Table 8. These values are based on the mean densities, given in the appendix Table 17, excluding juveniles and other taxa. Because of the relatively large influence of a species with high densities and irregular distribution, diversi-

TABLE 7

Data L4a, September survey. Total number of species and the number of common and very common species per station for both transects

Station (distances in m)	*250 (PT)*	*PL*	*250 (RT)*	*500 (RT)*	*750 (RT)*	*1000 (RT)*	*5000 (RT)*
Tot. number of species	79	44	72	65	70	79	80
Number of common species	62		44	51	56	62	60
Number of very common species	51		36	39	39	44	45
% common	78		61	79	80	79	75
% very common	65		50	60	56	56	56

(PT)=transect perpendicular to residual current
(RT)=residual current transect
PL =platform

ty and evenness are calculated with and without the very dominant species *Amphiura filiformis*.

TABLE 8

Diversity and evenness of platform L4a, September survey. H(S-W) is diversity according to Shannon-Wiener; H(B) according to Brillouin. E is evenness according to Heip. (PT=transect perpendicular to residual current; RT=residual current transect).

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
9 (250 m, PT)	3.67	3.59	0.15	79
PL (platform)	4.64	4.25	0.56	44
8 (250 m, RT)	3.45	3.36	0.14	72
7 (500 m, RT)	3.70	3.63	0.19	65
6 (750 m, RT)	3.35	3.29	0.13	70
5 (1000 m, RT)	3.16	3.11	0.10	79
1 (5000 m, RT)	4.22	4.10	0.22	80

The values per station, calculated without *Amphiura filiformis* are given in Table 9.

TABLE 9

Diversity and evenness of platform L4a, September survey. Values calculated without *Amphiura filiformis*.

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
9 (250 m, PT)	4.29	4.17	0.24	78
PL (platform)	4.58	4.19	0.54	43
8 (250 m, RT)	4.19	4.05	0.25	71
7 (500 m, RT)	4.47	4.35	0.34	64
6 (750 m, RT)	4.10	4.00	0.24	69
5 (1000 m, RT)	4.10	4.27	0.26	78
1 (5000 m, RT)	4.66	4.50	0.31	79

Diversity values do not differ very much, although station PL and station 1 have increased diversities. The evenness at station PL also shows a deviate value. This is applicable to the values with and without the echinoderm *Amphiura filiformis*. Exclusion of *A. filiformis* increases the diversity.

The different diversity values at station PL indicate a difference in the composition of the fauna compared with the fauna from the other stations (PIELOU, 1969). This also holds for the higher evenness at station PL. The reference station 1 (5000 m) shows a less marked difference from the rest of the area around L4a.

3.2.3. COMPARISON BETWEEN BASELINE SURVEY AND FOLLOW-UP SURVEY NEAR PLATFORM L4a

In this section the data of the baseline survey and the follow-up survey in September are compared in order to describe possible changes in the composition and distribution of the macrobenthic fauna around platform L4a.

First a comparison is made between the characteristics of both surveys based on the joint data of all stations. In the September survey 61 species occurred in 20% or more of the total number of collected samples (see section 3.2.1.). Compared with the results of the baseline (48 species ≥20%; 38 species ≥50%) this is an increase in species. In the samples of the September survey 24 rare species which occurred in the sample of the baseline had disappeared. On the other hand 10 new species were identified in the September samples.

Five out of these ten species consisted of juvenile animals which were not identified to species level. They belonged to the common and very common categories in September. 19 species were found in the samples of the September survey which increased in frequency of occurrence, compared with the baseline survey. 3 species decreased in frequency of occurrence.

In September 9 species increased both in frequency of occurrence and densities. They were very common in the samples of the September survey. These species are the polychaetes *Gattyana cirrosa, Anaitides groenlandica, Glycinde nordmanni, Spiophanes bombyx, Scalibregma inflatum, Ophelina accuminata* and *Lagis koreni*, the decapod *Processa parva* and the amphipod *Ampelisca brevicornis*. Most of these species were present with both juveniles and adults.

The changes in the composition of the fauna between May and September and especially the increase in juveniles are probably caused by a seasonal effect. For a more detailed comparison between May and September, the data of individual sampling stations can be compared. This was done for the very common species (≥50% of the samples).

From Table 10 it is clear that most species had increased in density at the time of the September survey. However, for a few species a decrease in density is shown at stations in the vicinity of the platform (station 250 and sometimes station 500 meters, residual current transect).

By means of the Mann-Whitney U-test (SIEGEL, 1956) the significance of the differences in densities between May and September was tested, using a 5% level of significance.

The results of the testing are given in Table 10. When densities of species differ significantly at a station, it is indicated by an asterisk. In Table 10 station

TABLE 10

Comparison of baseline survey, May and September survey near platform L4a. Increased (+), decreased (−) and no change (=) in densities for the very common species. (*) Significant change. (PT=transect perpendicular to residual current, RT=residual current transect).

Distance to platform *Station number*	*250 m PT* *ST.9*	*250 m RT* *ST.8*	*500 m RT* *ST.7*	*750 m RT* *ST.6*	*1000 m RT* *ST.5*	*5000 m RT* *ST.1*
Polychaeta						
Gattyana cirrosa	+	+	+	+	+	+
Polynoë kinbergi	+	−	−	+	−	−
Pholoë minuta	−*	−	−*	+	+*	+
Sthenelais limicola	+	=	+	+	+	+
Anaitides groenlandica	+	+	+	+	+	+
Anaitides mucosa	+	+	+	+	+	+
Ophiodromus flexuosus	+	+	+	=	+	+
Nereis longissima	+	−	+	−	+	+
Nephtys hombergii	+	+	+	+	+	+
Glycera rouxii	−	−	−	+	−	−
Glycinde nordmanni	+	−	+	+	+*	+
Goniada maculata	+	+	+	+	+	+
Lumbrineris latreilli	−	−	−	+	+	−
Spiophanes bombyx	+	+	+	+	+	+
Chaetopterus variopedatus	+	+	+	+	+	+
Tharyx marioni	+	−	−	+	=	−
Chaetozone setosa	−	−	−	+	+	−
Diplocirrus glaucus	+	+	+	+	+	+
Scalibregma inflatum	+	+	+	+	+	+
Ophelina acuminata	+	+	+	+	+	+
Notomastus latericeus	−	+	+	+	+	−
Heteromastus filiformis	−	−	+	+	+	+
Owenia fusiformis	−	+	+	−	=	+
Lagis koreni	+	+	+	+	+	+
Lysilla loveni	+	+	+	+	+	+
Mollusca						
Nucula turgida	+	−	+	+	+	−
Mysella bidentata	−	−	−	+	+	−
Venus striatula	+	−	+	+	+	+
Turritella communis	+	+	+	+	−	+
Cylichna cilindracea	−	−	−	=	+	−
Crustacea						
Processa parva	+	+	+	+	+	+
Upogebia stellata	−	−	+	+	+	+
Callianassa subterranea	+*	−	−	−	−	+
Eudorella truncatula	−	−	−	−	−	−
Diastylis bradyi	−	+	−	=	+	+
Ampelisca brevicornis	+	−	+	+*	+	+*
Harpinia antennaria	−	−	−	+	−	−
Echinodermata						
Amphiura filiformis	−	−	−	+	+	−
Amphiura chiajei	=	+	+	+	+	−
Ophiura albida	+	−	−	−	−	−
Echinocardium cordatum	=	−*	−	=	+	+

PL is absent, because this station had not been sampled during the baseline survey. The testing shows that in general the decreases are not significant. The only significant changes regard increase. Most of these changes are not significant.

The general tendency of increased densities in September can be attributed to a seasonal effect.

There are two species *i.e.* the polychaete *Pholoë minuta* and the echinoderm *Echinocardium cordatum* which showed a significant decrease in the vicinity of the platform. These decreases can be an effect of the presence of the platform. The Mann-Whitney U-test is also used to test the differences in the number of species per station between the two surveys. It appeared that for almost all stations the number of species per station increased significantly in the September survey; however, station 250 meters (residual current transect) had almost the same number of species as the baseline survey. This was confirmed by the resemblance between the rarefaction curves of that station for both surveys (Fig. 7a and b).

the fauna present at the individual stations (during both surveys) showed a great resemblance. The changes in abundance can be attributed to seasonal effects.

In the baseline samples of May, hardly any juveniles were present, while in the September samples many young animals occurred.

These results lead to the conclusion that distribution and composition of the benthic fauna near platform L4a had not been changed much by the discharges of cuttings with adhering OBM. A possible explanation is the limited discharge because drilling activities had started only three weeks before the September survey was undertaken.

Still it is likely that biological effects on the benthic fauna occurred at station PL (platform) because of the diminished number of species. Whether this is caused by the presence of the platform itself or by the discharges of cuttings with adhering OBM cannot be distinguished, because this station was not sampled during the baseline in May (bad weather conditions).

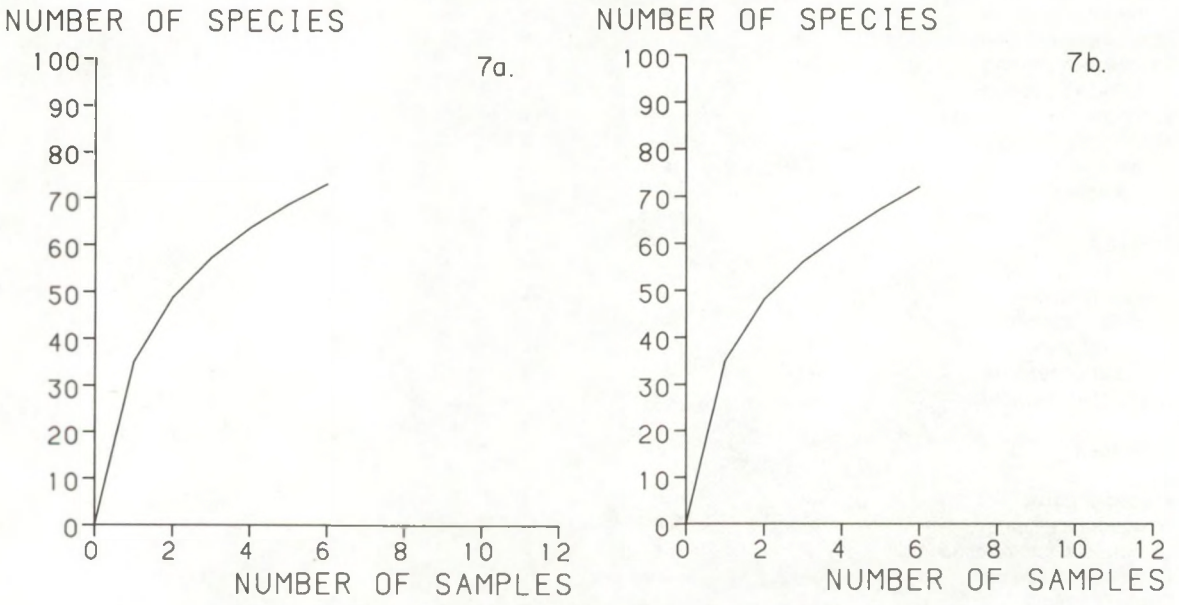


Fig. 7a and b. Rarefaction curves from station 250 meters (residual current transect); Fig 7a: baseline survey May; Fig. 7b: September survey.

Comparison of the Tables 4 and 7 shows that also the number of common and very common species per station has increased in September, except at station 8 (250 m, residual current transect).

Summarizing it can be said that the composition of

The fact that at station 250 meters (residual current transect) the species number per station remained the same, while at the other stations a significant increase occurred, is a possible effect of the discharge of cuttings with OBM at this station.

3.2.4. COMPARISON OF THE EFFICIENCIES OF THE REINECK BOXCORER AND THE VAN VEEN GRAB NEAR LOCATION L4a

The International Council for Exploration of the Sea (ICES) recommends the use of a boxcorer for the study of benthic organisms, but in practice it is impossible to collect benthic samples with the boxcorer from the North Sea at wind force 5 and higher (which often occurs). Therefore the Van Veen grab was chosen for this investigation. It has the advantage that it is much easier to handle, but it penetrates the sediment less deeply than the boxcorer. In order to compare the sampling-efficiency of both samplers under the specific sediment and fauna conditions of the investigated area, sampling was carried out with both samplers simultaneously during the baseline near platform L4a. Station 1 (5000 m, residual current transect) was used for this comparison. For this purpose all 10 samples of both sampling gear were analysed.

In the 10 Van Veen samples 69 species were identified to species level. 57 species occurred in the 10 boxcorer samples.

The mean density per species, the number of species per station and the total number of individuals for the boxcorer samples are given in the appendix, Table 1a, column 1b. The frequency of occurrence and abundance is given in the appendix, Table 16.

Rarefaction curves for both samples were made. These are given in Fig. 8.

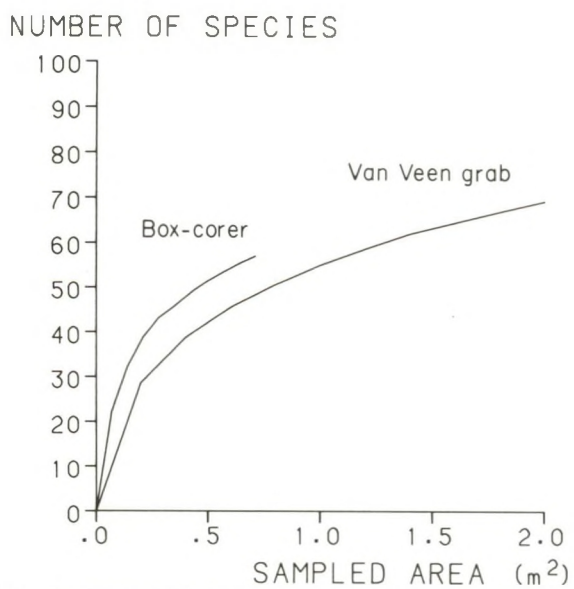


Fig. 8. Relation between sampled area and number of species for Van Veen grab and Reineck boxcorer samples.

The boxcorer contained only few more species per unit area. The difference could not be tested for significance, because the number of species per sample, collected by each of the samplers were incomparable, due to the difference in sampled area (Van Veen 0.2 m^2, Reineck 0.071 m^2). However, the densities of the individual species as calculated from the samples could be tested with the Mann-Whitney U-test. This was done for most species which are classed as very common (in $\geq 50\%$ of the samples). Table 11 gives the results of the testing.

It appeared that 10 species show a higher density in the boxcorer samples, but for only 4 species were these differences significant.

Of these four, the polychaetes *Chaetopterus variopedatus, Notomastus latericeus* and the crustacean *Callianassa subterranea* are known as deeper-burrowing species. This can explain why these species are underestimated by the Van Veen grab.

In the Van Veen grab samples the densities of 5 species were significantly higher than the boxcorer samples. These results and the difference in density of *Turritella communis* may possibly be attributed to effects of small scale patchiness in connection with the different size of the samplers.

Considering the results of this comparison, it is concluded that sampling with the Van Veen grab was suitable for collecting benthic organisms in the investigated area of the North Sea.

3.3. PLATFORM K12a, SURVEY SEPTEMBER 1986

3.3.1. COMPOSITION AND DISTRIBUTION OF THE FAUNA

K12a is situated in an area with fine, sandy sediments. The survey near this platform was undertaken in the last week of September. This platform was visited earlier in September 1985 during a tentative research programme on the effects of the use of oil-based muds (MULDER, LEWIS & VAN ARKEL, 1987). The present study was carried out in order to meet aim nr. 1 of the 1986 programme *i.e.* to study possible long-term effects near a platform where OBM was used during the drilling operations. Six wells were drilled at that location using OBM's which were based on diesel-oil.

The samples of 7 stations were analysed (see also sections 2.3 and 2.4), *viz.* station 6 (250 meters, transect perpendicular to residual current) and on the residual current transect the stations PL (=50-75 m), 7 (250 m), 8 (500 m), 9 (750 m), 10 (1000 m) and 14 (5000 m). The positions of the stations were identical to the first survey in 1985. At the time of this

TABLE 11

Comparison of densities for Van Veen grab and Reineck boxcorer samples, tested with Mann-Whitney U-test at 5% level of significance. The difference is significant (S) or not significant (NS).

			Densities per m^2	
Species	*U-values*	*S/NS*	*Reineck boxcorer*	*Van Veen grab*
Polychaetes				
Nephtys hombergii	36	NS	11	20
Glycera rouxii	21	S	4	9
Lumbrineris latreilli	22	S	94	130
Chaetopterus variopedatus	22	S	20	1
Diplocirrus glaucus	36	NS	11	7
Notomastus latericeus	7.5	S	55	2.5
Gattyana cirrosa	27.5	NS	22	1
Mollusca				
Nucula turgida	28	NS	8	13
Mysella bidentata	19	S	18	58
Turritella communis	23	S	31	8
Cylichna cilindracea	24	NS	9	22
Crustacea				
Callianassa subterranea	2	S	75	6
Upogebia stellata	24	NS	10	1
Eudorella truncatula	45	NS	10	3
Harpinia antennaria	47	NS	65	52
Echinodermata				
Amphiura filiformis	16	S	590	1045
Amphiura chiajei	19	S	4	18
Ophiura albida	48	NS	25	18
Echinocardium cordatum	38	NS	8	12

survey the fauna consisted of 90 macrobenthic species, identified to species level. 48 species belonged to the common species (≥20% of the samples) and within this group 19 species could be classed as very common (≥50% of the samples). The frequency of occurrence of each species is given in Table 12.

The species composition (mean densities, total number of species and total number of individuals per station) is given in the appendix, Table 25.

The total number of species per station varied between 49 and 67, except for station PL. At that station 25 species were collected, identified to species level. This was partly caused by the fact that only 2 samples were taken there. Rarefaction curves were calculated for all stations from platform K12a to see whether the decreased number of species at station PL (compared with the other stations) was caused by the limited number of samples taken at that station.

The rarefaction curves are given in Fig. 9. Values are calculated using all species identified to species level.

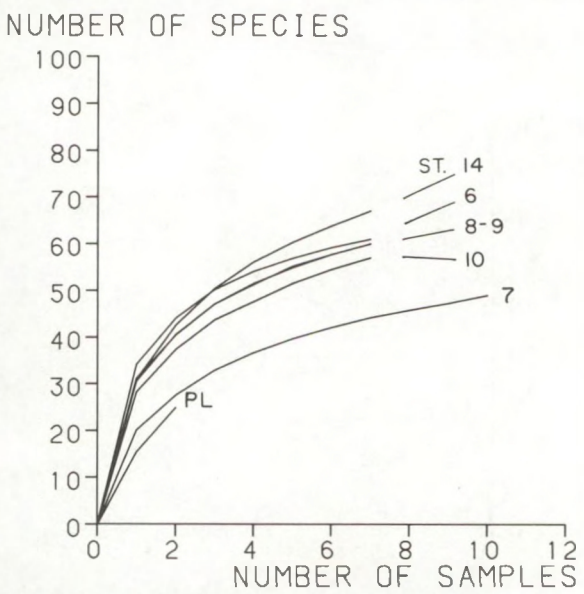


Fig. 9. Rarefaction curves of all stations from platform K12a, September survey.

TABLE 12

Data platform K12A survey Sept. 1986. Percentage of occurrence of each species in the total number of analysed samples (47).

POLYCHAETA		*Owenia fusiformis*	36.17	*Eudorella truncatula*	55.32
		Lanice conchilega	48.94	*Iphinoe trispinosa*	4.26
Harmothoe lunulata	10.64	*Lagis koreni*	100.00	*Diastylis bradyi*	12.77
Harmothoe longisetis	23.40	*Amphicteis gunneri*	2.13	*Diastylis* spec. juv.	8.51
Gattyana cirrosa	12.77			*Melita obtusata*	2.13
Sigalion mathildae	10.64	MOLLUSCA		*Orchomenella nana*	14.89
Pholoe minuta	80.85			*Leucothoe incisa*	46.81
Sthenelais limicola	36.17	*Nucula turgida*	100.00	*Ampelisca brevicornis*	42.55
Eteone longa	34.04	*Modiolus modiolus*	2.13	*Ampelisca tenuicornis*	4.26
Anaitides groenlandica	40.43	*Thyasira flexuosa*	14.89	*Bathyporeia guilliamsoniana*	10.64
Anaitides mucosa	29.79	*Montacuta ferruginosa*	12.77	*Bathyporeia elegans*	19.15
Anaitides maculata	12.77	*Mysella bidentata*	34.04	*Bathyporeia tenuipes*	68.09
Eumida sanguinea	21.28	*Acanthocardia echinata*	23.40	*Argissa hamatipes*	2.13
Ophiodromus flexuosus	29.79	*Dosinia exoleta*	10.64	*Harpinia antennaria*	34.04
Gyptis capensis	23.40	*Dosinia lupinus*	2.13	*Perioculodes longimanus*	4.26
Nereis longissima	44.68	*Venus striatula*	51.06	*Aora typica*	14.89
Nereis spec. juv.	63.83	*Mactra corallina*	27.66	*Caprella septentrionalis*	4.26
Nephtys hombergii	97.87	*Spisula* spec. juv.	25.53		
Nephtys cirrosa	6.38	*Tellina fabula*	42.55		
Nephtys caeca	8.51	*Abra prismatica*	6.38	ECHINODERMATA	
Nephtys spec. juv.	21.28	*Abra alba*	87.23		
Glycera rouxii	12.77	*Abra* spec. juv.	14.89	*Astropecten irregularis*	2.13
Glycera spec. juv.	6.38	*Cultellus pellucidus*	48.94	*Asterias rubens*	8.51
Glycinde nordmanni	65.96	*Mya* spec. juv.	23.40	*Amphiura filiformis*	40.43
Goniada maculata	91.49	*Natica alderi*	82.98	*Amphiura chiajei*	4.26
Lumbrineris latreilli	100.00	*Buccinum undatum*	10.64	*Ophiura texturata*	6.38
Scoloplos armiger	4.26	*Cylichna cilindracea*	4.26	*Ophiura albida*	21.28
Poecilochaetus serpens	87.23			*Ophiura* spec. juv.	2.13
Spio filicornis	42.55	CRUSTACEA		*Echinocardium cordatum*	74.47
Spiophanes bombyx	100.00			*Psammechinus miliaris*	2.13
Scolelepis bonnieri	2.13	*Crangon crangon*	6.38		
Magelona papillicornis	93.62	*Processa parva*	19.15	OTHER TAXA	
Tharyx marioni	2.13	*Pontophilus trispinosus*	2.13		
Chaetozone setosa	68.09	*Macropipus holsatus*	23.40	Nemertinea	100.00
Diplocirrus glaucus	36.17	*Macropipus* spec. juv.	8.51	Turbellaria	8.51
Scalibregma inflatum	91.49	*Ebalia cranchii*	12.77	Phoroniden	21.28
Ophelina acuminata	2.13	*Corystes cassivelaunus*	65.96	Harp. copepoda	4.26
Capitella capitata	14.89	*Callianassa subterranea*	25.53	Oligochaeta	61.70
Notomastus latericeus	21.28	*Decapoda larven*	55.32	*Sagitta* spec.	19.15
Heteromastus filiformis	21.28	*Schistomysis ornata*	4.26	Anthozoa	23.40

Both station PL and station 7 (250 m, residual current transect) showed a diminished number of species compared with the other stations. The difference between the stations PL and 7 (250 m, residual current transect) was not significant. However, these stations differed significantly from all other stations, regarding the median number of species per sample (Mann-Whitney U-test). Thus station PL and 7 have an impoverished fauna compared with the other stations.

Table 13 gives the total number of species (identified to species level) and the number of common and very common species for each station near platform K12a. This is visualized in Fig. 10.

From Table 13 it is clear that also the common and the very common species showed lower species numbers at station 7. To see whether the differences in species number were significant, the values per station were tested with the Kruskall-Wallis test. It appeared that there is no significant difference in species numbers for the stations 6, 8, 9, 10 and 14. Adding station PL and station 7 to the dataset, it causes a significant deviation from single (statistical) population. So the number of species for these stations differs significantly from the rest of the stations.

From Table 13 it is concluded that the composition of the benthic fauna within the stations can be regarded as homogeneous, concerning the fairly high number of very common species per station. Like in the case of platform L4a, standard deviations and means were compared to detect a possible pat-

TABLE 13

Data K124a, September survey. Total number of species and the number of common and very common species per station

Station number	*6*	*PL*	*7*	*8*	*9*	*10*	*14*
Distance off platform (m)	*250 (PT)*	*25-50*	*250 (RT)*	*500 (RT)*	*750 (RT)*	*1000 (RT)*	*5000 (RT)*
Tot. number of species	61	25	49	60	60	57	67
Number of common species	48		35	45	44	39	44
Number of very common species	33		18	29	26	24	24
% common	79		71	75	73	68	66
% very common	54		37	48	43	42	36

(PT)=transect perpendicular to residual current
(RT)=residual current transect
PL =platform

chiness for certain species. In the appendix, Tables 26 to 32 inclusive, frequency of occurrence and abundance is given for each station of the September survey of platform K12a. When the standard deviations and means from the very common species are compared, it appears that the standard deviation in most cases is equal or smaller than the mean. For a few species the standard deviation exceeds the mean, but it is always less than a factor of 1.5. The same holds for a comparison of means and standard deviations calculated for all stations together, *i.e.* the entire area around platform K12a. Therefore it is concluded that the very common species within the separate stations as well as for the entire area near K12a are distributed at random. There is hardly any patchiness.

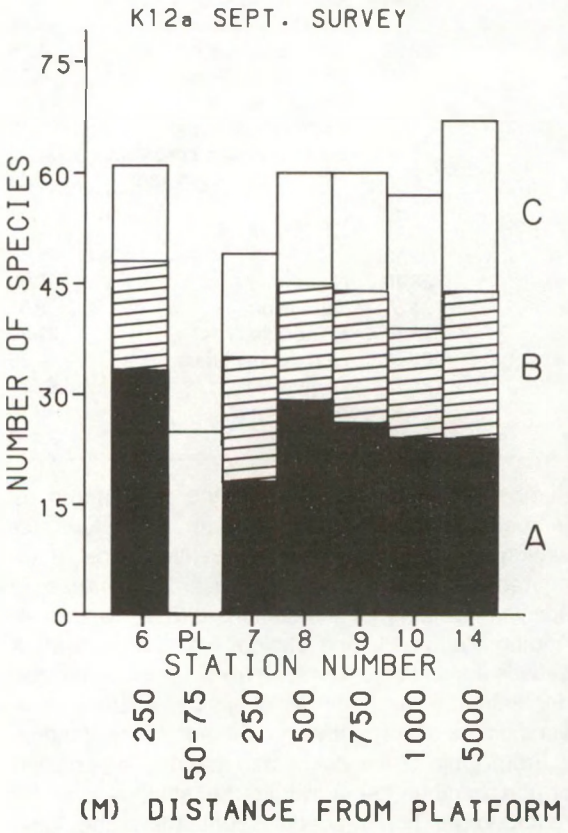


Fig. 10. Number of species per station, divided into very common (A), common (B) and rare species (C) per station for platform K12a.

Possible effects of the oil discharges on the fauna can be deduced from the existence of gradients in the distribution of individual species along the transects. Only the data of the common and very common species have been screened for possible gradients because the data of the rare species are unreliable for this purpose.

Seven species were found which had equal densities at stations 6, 8, 9, 10 and 14, but had diminished densities or were completely absent at station PL and station 7 (250 m, residual current transect) (Table 14).

The difference in densities between stations PL and 7 and the other stations is significant (tested with Kruskall-Wallis test). This is definitely an effect of the discharges of cuttings with adhering diesel-based OBM.

A number of other species showed gradients in their densities along the sampled transects. This can be read from appendix Table 25. A first group are the polychaetes *Harmothoë longisetis, Eumida sanguinea* and *Gyptis capensis*. They hardly occur up to 750-1000 m along the residual current transect.

A second group consisted of the five polychaetes *Lubrineris latreilli, Anaitides groenlandica, Spiophanes bombyx, Chaetozone setosa, Owenia fusiformis* and the two crustaceans *Corystes cassivelaunus* and *Ampelisca brevicornis*. These species have in common that they occur in low densities either at station PL, or both at stations PL and 7.

Both groups consist of species which are possibly sensitive to pollution.

As a third group the polychaetes *Nereis longissima* and *Glycera rouxii* and the gastropod *Buccinum undatum* can be mentioned. These species show higher densities at station PL or at stations PL and 7, indicating stress-resistant or opportunistic behaviour. All species in these three groups have such low densities that it cannot be proven by means of statistics whether their deviate spatial distribution around platform K12a is a result of natural variation or an effect of the discharges.

For stations PL and 7 it is clear that biological effects occur, caused by the discharges. All other data are an indication that biological effects may still occur up to 750-1000 m in the direction of the residual current, as was concluded for the data of the 1985 survey.

TABLE 14

List of species which show diminished occurrence or absence at stations PL and 7 (250 m, residual current transect) from platform K12a.

Polychaeta
Pholoë minuta
Nephtys hombergii
Poecilochaetus serpens
Mollusca
Mysella bidentata
Acanthocardia echinata
Crustacea
Decopod larvae
Leucothoë incisa

3.3.2. DIVERSITY AND EVENNESS PLATFORM K12a, SURVEY SEPTEMBER

The diversity and evenness values show rather large variation. For the greater part this is caused by the high densities of the polychaete *Lagis koreni* at several stations. The values based on data from the appendix Table 25, excluding juveniles and other taxa, are given in Table 15.

The values per station, calculated without *Lagis koreni*, are given in Table 16 (see also section 3.2.2).

In Table 16 it is shown that diversity and evenness calculated without *L. koreni* give a clear and fair picture. The values of the stations PL and 7 deviate strongly from the values of the other stations, indicating a difference in the composition of the fauna compared to the fauna from the rest of the area investigated.

TABLE 15

Diversity and eveness of platform K12a. H(S-W) is diversity according to Shannon-Wiener; H(B) according to Brillouin. E is eveness according to Heip. (PT=transect perpendicular to residual current; RT=residual current transect).

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
6 (250 m, PT)	2.81	2.76	0.10	61
PL (platform)	3.02	2.73	0.30	25
7 (250 m, RT)	2.62	2.54	0.11	49
8 (500 m, RT)	2.58	2.53	0.08	60
9 (750 m, RT)	2.51	2.47	0.08	60
10 (1000 m, RT)	3.43	3.36	0.17	57
14 (5000 m, RT)	4.27	4.17	0.28	67

3.3.3. COMPARISON BETWEEN THE SURVEY OF 1985 AND THE SURVEY OF 1986 NEAR PLATFORM K12a

In September 1985 platform K12a was visited for the first time. The survey had a tentative character. No baseline was undertaken near that platform, so possible effects of discharges could only be detected by means of deviations in the spatial distribution of the fauna.

The present survey was carried out in September, which thus precludes the influence of seasonal variation. Since the previous survey of 1985 there had been no drilling activities nor any discharges of cuttings from this platform.

TABLE 16

Diversity and evenness of platform K12a, survey September. Values calculated without *Lagis koreni*.

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
6 (250 m, PT)	4.19	4.09	0.29	60
PL (platform)	3.65	3.17	0.50	24
7 (250 m, RT)	2.49	2.42	0.10	48
8 (500 m, RT)	4.03	3.92	0.26	59
9 (750 m, RT)	4.09	3.98	0.28	59
10 (1000 m, RT)	4.00	3.89	0.27	56
14 (5000 m, RT)	4.28	4.16	0.28	66

A comparison of the two surveys shows that the number of common species ($\geq$20% of the samples) increased slightly, from 49 to 51. The number of the very common species ($\geq$50% of the samples) decreased from 29 to 20 species. The species diversity remained the same. These results regard the data of all stations together. Furthermore, 15 species did not reappear in 1986, but 9 new species were

identified. They all belonged to the category of rare species (<20% of the samples). 19 very common species showed a decrease in frequency of occurrence. They also decreased in density, while 9 very common species showed an increase in frequency of occurrence.

In order to compare the number of species (identified to species level) per station, rarefaction curves of all stations from both surveys were calculated (Fig. 11a and b).

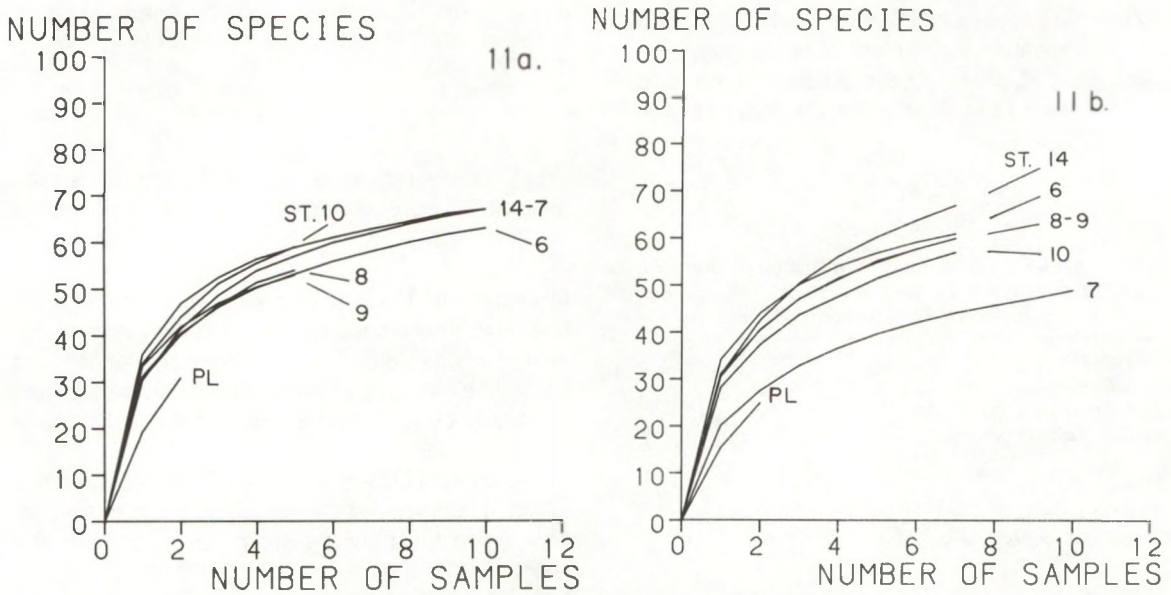


Fig. 11a and b. Rarefaction curves of all stations from both surveys near platform K12a; a) survey 1985; b) survey 1986.

The curves show a decrease in the number of species at station PL and a strong decrease at station 7 (250 m residual current transect). The number of species at the other stations has remained more or less the same.

So in terms of the total number of species, the situation at station PL and 7 had become aggravated.

A more detailed comparison between both surveys is made by means of the (different) densities of the very common species. By means of the Mann-Whitney U-test all changes in densities of these species were tested for significance. Table 17 gives the increase or decrease in 1986 compared to 1985 for the separate stations. When changes are significant, this is marked with an asterisk. Station PL is used for the comparison between the two surveys (Table 17), but the changes could not be tested for significance, because only two samples were taken at that station at the time of the two surveys.

Table 17 shows that the number of decreases exceeds the number of increases to a great extent, so there is a general tendency towards decreasing densities. Some species, for instance the polychaetes *Anaitides groenlandica* and *A. mucosa*, show a significant decrease at almost all stations. The opposite also occurs, like for instance the bivalve *Nucula turgida*. These changes are probably due to mortality and recruitment during the period between the two surveys, because they do not show any spatial pattern related to the presence of the platform. For other species both increases and decreases occurred. This may be natural variation due to variation in mortality and recruitment, but the high number of decreases at station PL and station 7 shows that also the presence of the location can be a cause of decrease.

In the 1986 survey, 7 species showed a significantly diminished occurrence at the stations PL and 7 (see section 3.3.1). None of these species showed such a distribution in the 1985 survey.

The appendix Table 25 shows that other species had a deviant distribution, like for instance the polychaetes *Harmothoë lunulata, Gattyana cirrosa* and *Lanice congilega* and the bivalve *Montacuta ferruginosa*. These species could be classed as very sensitive in both surveys, *i.e.* occurring mainly at great distance from the platform. However, it is not possible to give statistical proof to relate their deviant distribution to the presence of the platform, due to the low densities of these species. This holds also for

the group of less-sensitive species. In both surveys the polychaetes *Harmothoë longisetis*, *Magelona papillicornis* and *Lagis koreni* as well as the crustacean *Callianassa subterranea* and the echinoderm *Echinocardium cordatum* belong to this group, *i.e.* they show a resemblance in distribution. The spatial distribution of these species indicates that biological effects may occur up to 750-1000 m off the platform. Due to the low densities, however, the effects of the discharges cannot be distinguished from other causes of variation.

Summarizing it can be concluded from this comparison that during both surveys the composition and distribution of the fauna shows great resemblance in terms of the number of species per station and the number of species for the entire area.

The situation around K12a had deteriorated in 1986 at the stations PL and 7 (250 m, residual current transect) in respect of both a decreasing number of species and decreasing densities of the very common species. Biological effects may occur even up to 750-1000 m off the platform, but this cannot be proven statistically.

TABLE 17

Comparison of survey 1985 and survey 1986 near platform K12a. Increased (+), decreased(-) and no change (=) in densities for the very common species, (*) significant change, ABS= absent. (PT=transect perpendicular to residual current, RT=residual current transect).

Distance to platform Station number	250 m PT ST 6	PLATF. ST PL	250 m RT ST 7	500 m RT ST 8	750 m RT ST 9	1000 m RT ST10	5000 m RT ST14
POLYCHAETA							
Pholoe minuta	+*	+	-*	+	+*	+	+*
Sthenelais limicola	-	ABS	-	+	-	-*	-
Eteone longa	-	ABS	-*	-	-	-*	-
Anaitides groenlandica	-	-	-*	-*	-*	-*	-*
Anaitides mucosa	-*	-	-*	-*	-*	-*	-*
Anaitides maculata	-	-	-*	-*	-	-	-
Nephtys hombergii	+*	-	-	+	+	+	-
Glycinde nordmanni	-*	-	-*	-*	-*	-*	-
Goniada maculata	+	+	+	+*	+	-	-
Lumbrineris latreilli	+*	-	-	-	-	+	-*
Poecilochaetus serpens	+*	=	+	+*	+*	+*	+*
Spiophanes bombyx	-*	-	-*	-*	-*	-*	-*
Magelona papillicornis	-	+	+	+*	+	+	-
Chaetozone setosa	+	ABS	-*	+*	+*	+*	-
Scalibregma inflatum	+	-	-*	-	-*	-*	-*
Owenia fusiformis	-	-	-*	-	=	-	-*
Lagis koreni	-	-	-*	-	-*	-*	-*
MOLLUSCA							
Nucula turgida	+*	-	+*	+*	+*	+*	-
Mysella bidentata	-	ABS	-	-	+	+	-*
Dosinia lupinus	-*	-	-*	-*	-*	-*	-
Venus striatula	+	-	+	+	-	-	-
Tellina fabula	-	ABS	-*	-	-*	-*	+
Abra alba	+*	+	+	+	+	-	-*
Mya spec. juv.	+	-	-*	-*	-	+	-*
Natica alderi	=	+	-	-	+	+	+
CRUSTACEA							
Macropipus spec. juv.	-*	ABS	-*	-*	-*	-*	-
Corystes cassivelaunus	-	+	+	+	-	-*	-*
Decapoda larven	=	-	-	+*	+*	+*	+
Eudorella truncatula	+*	+	+	+	+	+	-
Diastylis bradyi	-	-	-*	-*	-	-	-
Leucothoe incisa	-	ABS	-*	=	+	-*	-
ECHINODERMATA							
Amphiura filiformis	-*	-	-*	-*	-*	-*	-*
Echinocardium cordatum	-	ABS	-	+*	-	-*	-

3.4. LOCATION F18/8, SURVEY JUNE 1986

3.4.1. COMPOSITION AND DISTRIBUTION OF THE FAUNA

This location was sampled in the second week of June. It was an abandoned location. Drilling activities had ended in April 1986. The survey was undertaken in order to meet aim nr. 3 of the 1986 programme, *viz.* to study the benthic fauna and sediment parameters near a platform where drilling had recently taken place, using water-based muds (WBM's). Stations on two transects were sampled as follows: a. station 250 m (transect perpendicular to residual current) and b. the stations "PL" (50-100 m), 250, 500, 750, 1000 and the reference station 5000 m on the residual current transect. 6 samples per station were analysed, except for the stations "PL" and 5000 m (residual cur-

TABLE 18

Data location F18/8, survey June 1986. Percentage of occurrence of each species in the total number of treated samples (60, incl. 10 boxcore samples).

POLYCHAETA	
Aphrodita aculeata	10.00
Harmothoe lunulata	5.00
Harmothoe longisetis	13.33
Gattyana cirrosa	93.33
Polynoe kinbergi	18.33
Pholoe minuta	93.33
Sthenelais limicola	13.33
Eteone lactea	1.67
Eteone flava	1.67
Anaitides groenlandica	6.67
Anaitides subulifera	1.67
Eumida sanguinea	1.67
Ophiodromus flexuosus	38.33
Gyptis capensis	13.33
Synelmis klatti	16.67
Nereis longissima	3.33
Nereis spec. juv.	1.67
Nephtys hombergii	86.67
Nephtys incisa	21.67
Nephtys cirrosa	1.67
Nephtys caeca	1.67
Nephtys spec. juv.	15.00
Glycera rouxii	90.00
Glycera alba	6.67
Glycera spec. juv.	46.67
Glycinde nordmanni	28.33
Goniada maculata	71.67
Lumbrineris latreilli	100.00
Lumbrineris fragilis	83.33
Driloneris filum	1.67
Orbinia sertulata	3.33
Paraonis gracilis	53.33
Poecilochaetus serpens	8.33
Spio filicornis	1.67
Polydora pulchra	1.67
Polydora guillei	6.67
Spiophanes kroyeri	13.33
Spiophanes bombyx	40.00
Scolelepis foliosa	5.00
Magelona papillicornis	11.67
Chaetopterus variopedatus	70.00
Chaetozone setosa	85.00
Diplocirrus glaucus	1.67
Scalibregma inflatum	3.33
Tharyx marioni	35.00
Ophelina acuminata	10.00
Capitella capitata	8.33
Notomastus latericeus	75.00
Heteromastus filiformis	33.33
Owenia fusiformis	56.67
Lanice conchilega	6.67
Lagis koreni	81.67
Ampharete finmarchica	5.00
Amphicteis gunneri	13.33
Sosane gracilis	48.33
Eupolymnia nebulosa	3.33
Lysilla loveni	16.67
Terebellides stroemi	26.67
MOLLUSCA	
Nucula turgida	20.00
Thyasira flexuosa	3.33
Lepton squamosum	1.67
Montacuta ferruginosa	58.33
Mysella bidentata	66.67
Arctica islandica	16.67
Dosinia exoleta	6.67
Venus striatula	61.67
Mysia undata	8.33
Spisula spec. juv.	1.67
Abra alba	33.33
Cultellus pellucidus	10.00
Mya arenaria	1.67
Mya spec. juv.	1.67
Corbula gibba	80.00
Thracia convexa	3.33
Cingula nitida	20.00
Turritella communis	35.00
Natica alderi	20.00
Cylichna cilindracea	48.33
Philine catena	1.67
CRUSTACEA	
Pagurus bernhardus	1.67
Ebalia cranchii	5.00
Corystes cassivelaunus	5.00
Upogebia stellata	20.00
Callianassa subterranea	70.00
Decapoda larven	13.33
Nebalia bipes	5.00
Gastrosaccus spinifer	1.67
Eudorella truncatula	20.00
Iphinoe trispinosa	1.67
Diastylis rathkei	3.33
Diastylis bradyi	40.00
Diastylis spec. juv.	1.67
Ione thoracica	6.67
Scopelocheirus hopei	3.33
Orchomenella nana	5.00
Leucothoe incisa	1.67
Ampelisca brevicornis	23.33
Ampelisca tenuicornis	23.33
Ampelisca spec. juv.	8.33
Cheirocratus sundevalli	20.00
Bathyporeia elegans	6.67
Bathyporeia tenuipes	1.67
Harpinia antennaria	83.33
Perioculodes longimanus	8.33
Aora typica	23.33
Lembos longipes	11.67
Photis longicaudata	5.00
Caprella septentrionalis	1.67
ECHINODERMATA	
Amphiura filiformis	100.00
Amphiura chiajei	3.33
Ophiura texturata	45.00
Ophiura albida	83.33
Echinocardium cordatum	76.67
OTHER TAXA	
Nemertinea	81.67
Hydrozoa	3.33
Viseieren	48.33
Vislarven	1.67
Turbellaria	40.00
Phoroniden	36.67
Oligochaeta	6.67
Holothuroidea	11.67
Sagitta spec.	11.67
Echiurida	11.67
Sipinculida	98.33
Anthozoa	6.67
Ascidia	3.33

TABLE 19

Data location F18/8. Total number of species per station and the number of common and very common species

Station	*9*	*"PL"*	*8*	*7*	*6*	*5*	*1*
Distance in m	*250 PT*	*50-100 RT*	*250 RT*	*500 RT*	*750 RT*	*1000 RT*	*5000 RT*
Tot. number of species	55	72	67	66	68	56	60
Number of common species	40	52	41	43	40	41	46
Number of very common species	32	30	24	32	32	27	23
% common	73	72	61	65	59	73	77
% very common	58	42	36	48	47	48	38

PT=transect perpendicular to residual current
RT=residual current transect
PL =platform

rent transect), from which all 10 samples were analysed.

The samples of station "PL" were analysed to derive a rarefaction curve (see section 2.4). All samples of the reference station were analysed to allow a comparison between two different samplers (see section 3.4.3).

In all samples together, representing the entire area, 107 species (indentified to species level) were found. Of these 107 species, 44 occurred in more than 20% of the samples, and are indicated as common species. Within this group 22 species could be classed as very common ($\geq$50% of the samples). Table 18 gives the frequency of occurrence of each species near location F18/8.

Table 33 (appendix) gives the species composition at the sampled stations (mean densities, total number of individuals and total number of species, per station). The number of species, identified to species level, per station varied for this location from 55 to 72, indicating a rich fauna. The total number of species per station and the number of common and very common species is given in Table 19 and is visualized in Fig. 12.

Testing of the total number of species per station (identified to species level) with the Kruskall-Wallis test showed that there are no significant differences between the stations for this parameter. Table 19 also shows that there is no station which has a deviate composition of the fauna, regarding the number of the common and very common species.

Although the fauna around F18/8 consists of a fairly high number of species, it can be said that in general the densities of these species are rather low. The polychaete *Lumbrineris latreilli* and the echinoderm *Amphiura filiformis* showed the highest densities (76-163 and 39-580 m^{-2} respectively) (Table 33).

To see whether patchiness plays a role near F18/8, comparisons between standard deviations and means for all common and very common species were made. In the appendix, Tables 34 to 40 inclusive, frequency of occurrence and abundance are given for each station. It appeared that most very common species are distributed at random within the stations, because the standard deviations are equal or smaller than the means. For a few species the standard deviation exceeds the mean, but this is always less than a factor of 1.5. Regarding the entire area, it gives the same clear picture. Most species

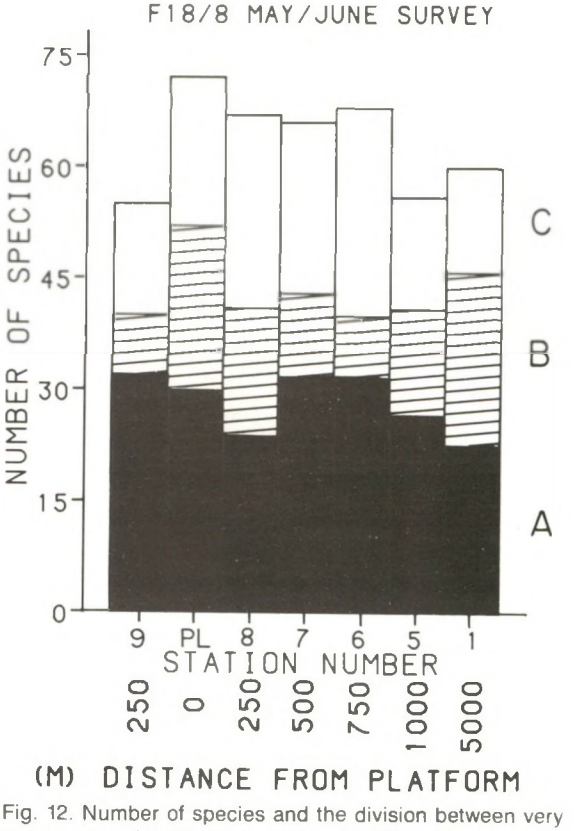


Fig. 12. Number of species and the division between very common species (A), common species (B) and rare species (C) per station for location F18/8.

show a random distribution. So conclusions from this data set will not be invalidated by patchiness in the distribution of the fauna.

A study was made to look for possible effects of the drilled well and the discharged cuttings on the distribution of individual species. The data of the very common species were used for this purpose, because they are best suited for distinguishing possible effects. By means of the Kruskall-Wallis test, the differences in density between the stations were tested for significance. After testing it appeared that 17 species are distributed homogeneously over all stations, *i.e.* they are derived from the same (statistical) population. 7 species showed significant differences in densities at a few stations. The deviant densities appeared to occur at station 250 m (transect perpendicular to residual current); and at the stations "PL", 500, 750 and 5000 m on the residual current transect. These deviations do not seem to have any relation with the presence of the location. Therefore it is concluded that differences in densities of the very common species near F18/8 are not imputed to the discharges of cuttings with adhered water-based muds. The differences are probably caused by the natural variability in the investigated area.

3.4.2. DIVERSITY AND EVENNESS LOCATION F18/8

As for the other locations in the present study, diversity and evenness were also calculated for F18/8. The values, based on the data from the appendix Table 33, excluding juveniles and other taxa, are given in Table 20.

TABLE 20

Diversity and evenness values for location F18/8. H(S-W) is diversity according to Shannon-Wiener; H(B) according to Brillouin; E is eveness according to Heip. PT=transect perpendicular to residual current; RT=residual current transect.

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
9 (250 m, PT)	3.84	3.72	0.25	55
PL (platform)	4.26	4.12	0.26	72
8 (250 m, RT)	4.15	3.92	0.25	67
7 (500 m, RT)	3.24	3.13	0.13	66
6 (750 m, RT)	4.28	4.09	0.28	68
5 (1000 m, RT)	4.10	3.90	0.29	56
1 (5000 m, RT)	4.68	4.48	0.42	60

The values show a considerable variation, caused for the greater part by the high densities of the echinoderm *Amphiura filiformis* at most stations. Therefore diversity and evenness were calculated without this species. Values are given in Table 21.

TABLE 21

Diversity and evenness of location F18/8. Values calculated without *Amphiura filiformis*

Station	*H(S-W)*	*H(B)*	*E*	*Number of species*
9 (250 m, PT)	4.17	4.00	0.32	54
PL (platform)	4.79	4.61	0.38	71
8 (250 m, RT)	4.74	4.41	0.39	66
7 (500 m, RT)	4.52	4.30	0.34	65
6 (750 m, RT)	4.69	4.43	0.37	67
5 (1000 m, RT)	4.63	4.35	0.44	55
1 (5000 m, RT)	4.68	4.47	0.43	59

When *A. filiformis* is excluded from the calculations, it appears that diversity and evenness values show a great resemblance for all sampled stations, indicating a great similarity in the composition of the fauna between those stations, including station "PL" (position of the drilled well).

3.4.3. COMPARISON OF THE EFFICIENCIES OF REINECK BOXCORER AND VAN VEEN GRAB AT ONE STATION NEAR LOCATION F18/8

As for platform L4a, baseline survey, station 5000 m on the residual current transect was used for this comparison (see also sections 2.1 and 3.2.4). With both samplers 10 samples were collected which were all analysed in the laboratory.

The total number of species identified to species level in the Van Veen grab samples was 60. 46 species could be classed as common (in $\geq 20\%$ of the samples). Within this group 23 species were very common (in $\geq 50\%$ of the samples). The number of species identified in the boxcorer samples was 50; 37 common species (in $\geq 20\%$ of the samples) and 16 very common species (in $\geq 50\%$ of the samples).

The mean densities per species, the number of species per station and the total number of individuals for the boxcorer samples are given in the appendix, Table 33, column 1B. Frequency of occurrence and abundance is given in the appendix Table 41.

Rarefaction curves for both samplers were calculated. These are given in Fig. 13.

Like the results of the comparison of both samplers near L4a, the boxcorer contained few more species per unit area than the Van Veen grab. The difference in the number of species could not be tested statistically due to the difference in sampled area

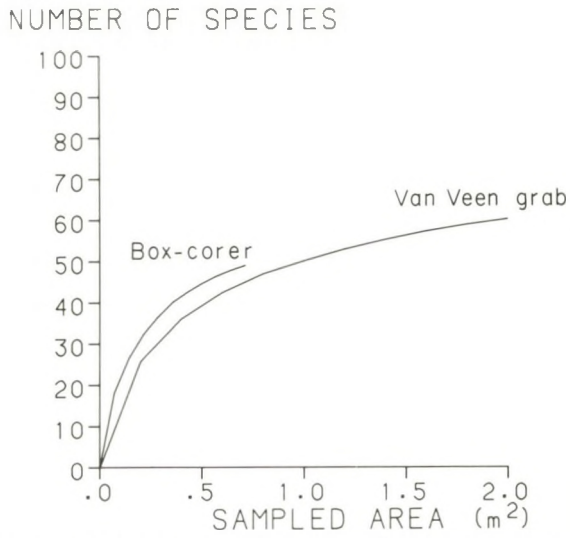


Fig. 13. Relation between sampled area and number of species for Van Veen grab and Reineck boxcorer samples.

(Van Veen 0.2 m^2, Reineck 0.071 m^2). However, differences in densities of individual species could be tested by means of the Mann-Whitney U-test. This was done for the very common species. The results are given in Table 22.

15 species showed higher densities in the boxcorer samples. For only 3 species were differences significant, *viz.* the polychaetes *Gattyana cirrosa* and *Chaetopterus variopedatus* and the crustacean *Callianassa subterranea*. Both *C. variopedatus* and *C. subterranea* also had significantly higher densities in the boxcorer samples of the comparison near L4a. These species may be underestimated in the Van Veen samples because they belong to the deep-living species.

9 species occurred in higher densities in the Van Veen grab samples, but only the bivalve *Mysella bidentata* had a significantly higher density. The deviate densities of *Gattyana cirrosa* and *Mysella bidentata* and possibly also the non-significantly higher densities of other species can be caused by small-scale patchiness in connection with the different size of the samplers (ELLIOTT, 1977).

From these results, the same conclusion can be drawn as was done for the comparison near L4a: apart from a few deep-living species, the Van Veen grab was a suitable sampler for representative sampling of the fauna near location F18/8.

3.5. ECOLOGY AND BIOLOGY OF SOME INDIVIDUAL SPECIES

In this section some important biological and ecological characteristics are given for some species. The species which are not discussed here are described in MULDER & STAM (1982), MULDER (1985), MULDER (1986) and MULDER, LEWIS & VAN ARKEL (1987). Only the distribution in W-Europe is mentioned. The characteristics originate from identification literature mostly.

NEW SPECIES FOUND NEAR L4a.

Polychaeta (HARTMANN-SCHRÖDER, 1971)

Polynoë kinbergi Malmgren, 1865
Feeding: carnivore.
Distribution: Scandinavian waters, North Sea (BLEGVAD, 1930), W-Baltic.
Sediment preference: muddy substrates.
Reproduction: unknown.

Synelmis klatti Friedrich, 1950
Feeding: unknown.
Distribution: North Sea, Scandinavian waters.
Sediment preference: muddy substrates.
Reproduction: unknown.

Nephtys incisa Malmgren, 1865
Feeding: predator, sometimes feeding on detritus (SANDERS, 1960).
Distribution: northern Atlantic, North Sea, Scandinavian waters.
Sediment preference: muddy substrates.
Reproduction: unknown.

Lumbrineris latreilli Adouin & Milne-Edwards, 1834
Feeding: predator (WOLFF, 1973).
Distribution: North Sea, English Channel.
Sediment preference: all types of sediments (SOUTHWARD, 1956, 1957).
Reproduction: according to Hartmann-Schröder, probably non-pelagic development.

Drilonereis filum Claparède, 1868
Feeding: carnivore?; sometimes parasitic in the polychaete *Cirratulus filiformis*.
Distribution: North Sea, English Channel.
Sediment preference: unknown.
Reproduction: unknown.

TABLE 22

Comparison of densities for Van Veen grab and Reineck boxcorer samples, tested with Mann-Whitney U-test at 5% level of significance. The difference is significant (S) or not significant (NS).

			Densities per m^2	
Species	*U-values*	*S/NS*	*Reineck boxcorer*	*Van Veen grab*
Polychaeta				
Nephtys hombergii	38	NS	13	15
Glycera rouxii	44	NS	24	19
Lumbrineris latreilli	43	NS	87	76
L. fragilis	24	NS	7	12
Chaetopterus variopedatus	6	S	41	7
Notomastus latericeus	34.5	NS	21	10
Gattyana cirrosa	16	S	42	16
Pholoë minuta	35	NS	24	26
Goniada maculata	43	NS	7	7
Paraonis gracilis	37.5	NS	10	3
Chaetozone setosa	40	NS	11	12
Heteromastus filiformis	34.	NS	3	4
Lagis koreni	47	NS	10	5
Sosane gracilis	32.5	NS	7	2
Mollusca				
Mysella bidentata	16	S	3	16
Cylichna cilindracea	27	NS	4	8
Montacuta ferruginosa	41.5	NS	10	4
Venus striatula	31	NS	4	10
Corbula gibba	46	NS	10	9
Crustacea				
Callianassa subterranea	7.5	S	28	4
Harpinia antennaria	43	NS	95	7
Echinodermata				
Amphiura filiformis	24	NS	65	39
Ophiura albida	29	NS	37	18
O. texturata	34	NS	3	6
Echinocardium cordatum	40	NS	14	5

Polydora pulchra Carazzi, 1895
Feeding: suspension-feeder (ELEFTHERIOU, 1970), sometimes deposit-feeder (WOLFF, 1973).
Distribution: northern Atlantic, North Sea, Scandinavian waters, English Channel.
Sediment preference: muddy sand or mud.
Reproduction: pelagic larvae from May-December (HANNERZ, 1956).

Spiophanes kröyeri Grube, 1860
Feeding: deposit-feeder.
Distribution: northern Atlantic, North Sea, Scandinavian waters.
Sediment preference: muddy substrates, but also on mixed sediments.
Reproduction: in winter (HANNERZ, 1956), pelagic larvae from November till the end of February.

Chaetopterus variopedatus Remier, 1804
Feeding: deposit-/suspension-feeder.
Distribution: North Sea, Scandinavian waters.
Sediment preference: muddy sands, often mixed with gravel.
Reproduction: in summer; pelagic larvae until October.

Lyselli loveni Malmgren, 1865
Feeding: deposit-feeder?
Distribution: northern Atlantic, North Sea, Scandinavian waters.
Sediment preference: muddy substrates, sometimes mixed bottoms.
Reproduction: unknown.

Terebellides stroemi Sars, 1835
Feeding: detritus (BLEGVAD, 1914).
Distribution: North Sea, Scandinavian waters, Baltic; in estuaries.
Sediment preference: muddy substrates, mixed bottoms.
Reproduction: eggs formed in cocoons, no real pelagic stage (THORSON, 1946); mature ♀♀ and ♂♂ in Kiel Bight in May.

Ampharete acutifrons Grube, 1860
Feeding: selective deposit-feeder (PEARSON, 1971).
Distribution: northern Atlantic, Scandinavian waters, Baltic, North Sea, English Channel.
Sediment preference: all types of substrates.
Reproduction: non-pelagic development, eggs are shed in early spring (THORSON, 1946).

Amphicteis gunneri Sars, 1835
Feeding: selective deposit-feeder.
Distribution: North Sea, Scandinavian waters, Baltic.
Sediment preference: all types of substrates.
Reproduction: in summer.

Mollusca Bivalvia (TEBBLE, 1966)

Lepton squamosum Montagu
Feeding: probably suspension-feeder.
Distribution: North Sea, Irish Sea, Baltic.
Sediment preference: muddy sand, sometimes mixed with shelly gravel.
Reproduction: unknown.
Often lives in and around the burrows of the crustacean *Upogebia stellata*, which is also present at most stations.

Arctica islandica Linnaeus
Feeding: suspension-feeder?
Distribution: northern Atlantic, North Sea.
Sediment preference: muddy substrates mixed with fine sand.
Reproduction: unknown.

Dosinia exoleta Linneaus
Feeding: suspension-feeder.
Distribution: North Sea.
Sediment preference: shelly and muddy gravel.
Reproduction: unknown.

Mysia undata
Feeding: suspension-feeder?
Distribution: North Sea, Norwegian Sea.
Sediment preference: muddy substrates.
Reproduction: unknown.

Abra alba Wood, 1802
Feeding: selective deposit-feeder (POHLO, 1969).
Distribution: Norwegian Sea, North Sea, Baltic.
Sediment preference: muddy substrates.
Reproduction: pelagic larvae (THORSON, 1946), spawning in Scotland in June-July (STEPHEN, 1932).

Abra nitida Müller
Feeding: deposit-feeder?
Distribution: northern Atlantic, North Sea.
Sediment preference: muddy substrates.
Reproduction: unknown.

Corbula gibba Olivi
Feeding: unknown.
Distribution: Norwegian Sea, North Sea.
Sediment preference: silty sand and muddy gravel.
Reproduction: unknown.

Thracia convexa Wood
Feeding: unknown.
Distribution: Norwegian Sea, North Sea.
Sediment preference: sand and mud.
Reproduction: unknown.

Mollusca Gastropoda (GRAHAM, 1971)

Cingula nitida
Feeding: deposit-feeder (detritus).
Distribution: North Sea.
Sediment preference: muddy substrates.
Reproduction: unknown.

Turritella communis Risso
Feeding: suspension-feeder.
Distribution: North Sea.
Sediment preference: muddy substrates.
Reproduction: larva a-veliger type.

Cylichna cilindracea
Feeding: probably feeding on meiofauna (foraminifera).
Distribution: North Sea.
Sediment preference: muddy substrates.
Reproduction: unknown.

Crustacea Decapoda

Pagurus bernhardus Linneaus, 1758
Feeding: deposit-feeder.
Distribution: North Sea, northern Atlantic.

Sediment preference: sand mixed with silt.
Reproduction: unknown.

Upogebia stellata Montagu
Feeding: predator, deposit-feeder.
Distribution: North Sea.
Sediment preference: muddy substrates.
Reproduction: ovigerous ♀♀ from February-August.

Crustacea Isopoda HUWAE, 1977)

Cirolana borealis Liljeborg
Feeding: sometimes parasitic on fishes.
Distribution: North Sea.
Sediment preference: unknown.
Reproduction: unknown.

Crustacea Amphipoda (LINCOLN, 1979; SCHELLENBERG, 1942)

Cheirocratus intermedius Sars
Feeding: in general amphipods are carnivores/herbivores, as well as deposit-feeders.
Distribution: N.E. Atlantic, North Sea, Irish Sea, English Channel.
Sediment preference: muddy substrates, coarse sand.
Reproduction: unknown.

Westwoodilla caecula Bate, 1862
Feeding: see *Cheirocratus intermedius*.
Distribution: North Sea, Irish Sea, English Channel.
Sediment preference: muddy substrates and sand.
Reproduction: unknown.

Photis longicaudata Bate & Westwood, 1862
Feeding: see *Cheirocratus intermedius*.
Distribution: N. & N.E. Atlantic, North Sea, Irish Sea, English Channel.
Sediment preference: muddy substrates.
Reproduction: ovigerous ♀♀ in the North Sea in May and July. Spawning is ended in November.

Caprella linearis Linnaeus, 1767
Feeding: predator.
Distribution: North Sea, Baltic.
Sediment preference: unknown, lives on Bryozoa, Algae, seagrass etc.
Reproduction: unknown.

Arthropoda Pycnogonida (KING, 1974)
Endeis spinosa Montagu, 1808
Feeding: probably deposit-feeder; feeding on Hydrozoa.
Distribution: North Sea, Irish Sea.
Sediment preference: unknown, but *E. spinosa* usually lives between seaweeds, hydroids attached to rocks.
Reproduction: unamorphic type of development.

Echinodermata (MORTENSEN, 1927)

Astropecten irregularis
Feeding: predator.
Distribution: Norwegian Sea, North Sea.
Sediment preference: sandy bottoms.
Reproduction: unknown.

NEW SPECIES FOUND NEAR K12a.

Mollusca Bivalvia (TEBBLE, 1966)

Abra tenuis Montagu
Feeding: deposit-feeder.
Distribution: North Sea, Irish Sea.
Sediment preference: muddy substrates.
Reproduction: probably pelagic larvae.

Crustacea amphipoda (LINCOLN, 1979)

Bathyporeia tenuipes Meinert
Feeding: carnivore/herbivore as well as deposit-feeder.
Distribution: a wide distribution which cannot be confirmed because of the confusion with other species of *Bathyporeia*.
Sediment preference: unknown.
Reproduction: unknown.

Argissa hamatipes Norman
Feeding: see *B. tenuipes*.
Distribution: North-Atlantic, North Sea.
Sediment preference: soft substrates.
Reproduction: unknown.

NEW SPECIES FOUND NEAR F18/8.

Polychaeta (HARTMANN-SCHRÖDER, 1971)

Paraonis gracilis Tauber, 1879
Feeding: feeding on detritus.
Distribution: northern Atlantic, North Sea, Scandinavian waters, W-Baltic.
Sediment preference: muddy substrates, often mixed with sand, gravel, etc.
Reproduction: unknown.

Sosane gracilis Malmgren, 1865
Feeding: probably deposit-feeder.
Distribution: N-Atlantic, North Sea, Scandinavian waters.
Sediment preference: muddy substrates, sometimes mixed sediments.
Reproduction: probably no pelagic larvae (THORSON, 1946).

Eupolymnia nebulosa Montagu, 1818
Feeding: deposit-feeder (detritus and micro-organisms).
Sediment preference: mixed sediments.
Distribution: North Sea, Scandinavian waters, English Channel.
Reproduction: unknown.

Mollusca Bivalvia (TEBBLE, 1966)

Mya arenaria Linnaeus
Feeding: deposit/suspension feeder.
Distribution: very common in European waters.
Sediment preference: various types of sediments.
Reproduction: in summer; planktonic larvae from June to September. (JUTTING, 1943).

Crustacea Amphipoda (LINCOLN, 1979)

Scopelocheirus hopei Costa
Feeding: in general amphipods are carnivores/herbivores, as well as deposit-feeders.
Distribution: North Sea, Irish Sea, English Channel.
Sediment preference: muddy substrates.
Reproduction: unknown.

Cheirocratus sundevalli Rathke, 1843
Feeding: see *S. hopei*.
Distribution: North Sea.
Sediment preference: various types of sediments.
Reproduction: unknown.

Lembos longipes Liljeborg, 1852
Feeding: see *S. hopei*.
Distribution: N.E. Atlantic, North Sea, Irish Sea.
Sediment preference: muddy substrates, sometimes mixed sediments.
Reproduction: unknown.

4. DISCUSSION

In 1985 a Dutch preliminary investigation was started in order to study the possible effects on the benthic community due to discharges of cuttings with adhered oil-based drilling muds in the vicinity of drilling locations. The study had a tentative character. It was possible to detect biological effects up to 1000 m distance from the platform in the direction of the residual current (MULDER, LEWIS & VAN ARKEL, 1987).

The 1985 surveys only allowed conclusions based on the spatial distribution of the fauna, assuming that the fauna of such an area is homogeneous and evenly distributed. It is, however, better to establish this beforehand.

Location L4a was chosen to carry out such a baseline survey and a second one after the start of drilling with OBM. The platform is situated in an area with stable, fine sediments with a relatively rich benthic fauna. The area was not totally unaffected because several wells had been drilled using water-based muds before the baseline survey was carried out. However, this was finished in January 1985 and it was expected that, if there had been effects at all, the area had recovered since.

During the baseline around L4a a relatively rich and stable benthic fauna was discovered consisting of many species of which a considerable part appeared to be very common in the samples. The composition of the fauna within the stations as well as within the entire area was homogeneous. No gradient in terms of species number was found on the two transects. For a few species a slight patchiness occurred but for most very common species there was no patchy distribution.

The reference station (5000 m, residual current transect) showed great similarity with the other stations sampled, indicating a good representativeness for the area. The data for the baseline showed that the area had a uniform fauna, representing a good starting-point for the study on effects of discharges of cuttings with adhering OBM. Unfortunately drilling-operations were delayed. At the time of the follow-up survey in September only one well had been drilled using OBM. The cuttings were discharged by means of flexible pipe, movable with the tides in order to spread out the cuttings.

The mean oil content adhered to the cuttings varied between 126-181 g oil per 1000 g of dry matter. Totally, 117 tons of oil were discharged, drilling well L4a5, of which 82 tons were adhered to the cuttings (Henriquez, pers. comm.). The OBM used was of the low-aromatic type. Oil-contents of the sediment at the stations PL, 250 and 500 meters were respectively 9.19, 3.40 and 3.90 mg/kg dry sediment (VAN HET GROENEWOUD *et al.*, 1988). These are low values compared with the oil-contents in sediments in the vicinity of the platforms K12a and P6b (values 10-1000 times higher, KUIPER & VAN HET GROENEWOUD, 1986). During the September survey

near L4a a low dose of OBM was probably discharged. Drilling continued during and after the survey.

Several anomalies in the fauna composition were detected at the time of the September survey, for instance the number of species at station PL was lower than at the other stations. This can be caused by the discharge of OBM's during the new drilling activities, perhaps the presence of the rig itself. Although it cannot be proven to be an effect because this station was not sampled during the baseline survey, it is, however, very likely to be an effect of the discharges. The diversity and evenness values too showed differences in the composition of the fauna at station PL compared with the other stations.

For two species, *viz.* the polychaetes *Owenia fusiformis* and *Notomastus latericeus*, the density at station PL was significantly lower. Other very common species did not show significant differences between the sampling stations.

In September there was a reduced number of common and very common species at station 250 m.

In comparing the baseline and the September survey there are changes due to seasonal effects. In September more common species were found in the samples and the densities of most very common species increased at all stations. Many juveniles were present in the samples. Despite this trend two species had significantly lower densities at the stations 250 and 500 meters (residual current transect), *viz.* the echinoderm *Echinocardium cordatum* and the polychaete *Pholoë minuta*, indicating a possible biological effect of the discharges. From the literature it is known that *Pholoë minuta* can be regarded as a species which lives in the transitory zone (between normal and polluted zones) (RACHOR, 1982).

The observed biological effects near L4a were found up to 250 (and possibly up to 500) m in the residual current direction. In the same zone slightly increased oil-contents were measured.

This leads to the conclusion that minor biological effects of the discharges occurred near L4a, but that the distribution and composition of the benthic fauna around this location had not changed much, because a limited amount of cuttings had been discharged at the time of the September survey. Therefore it is recommended to sample this location again, soon after the completion of the total drilling operations.

Platform K12a had earlier been investigated in September 1985 during the tentative research programme. The results showed that biological effects occurred within a zone of 750-1000 m off the platform, where also increased oil-levels in the sediment were detected. This location was revisited in 1986 to study the long-term effects of discharges of cuttings with adhering OBM. The main questions were: how long do effects last and does the fauna recover? There had been no drilling or discharge activities between the two surveys, so the survey described in the present study represents the situation about 4 years after the last drilling activities. The survey was also undertaken in September in order to eliminate seasonal effects. Compared with the survey of 1985 the situation at the stations PL and 7 (250 m residual current transect) had aggravated instead of recovered (see sections 3.3.1 and 3.3.3).

The number of species showed a decrease and the densities of several very common species at those stations had diminished significantly or they were absent. The hydrocarbon levels detected at the stations PL and 7 were respectively 362 and 244 mg/kg dry weight sediment. The values for the other stations on the residual current transect varied from 2.5 to 8.1 (VAN HET GROENEWOUD *et al.*, 1988). These values mean an increase at station PL and a decrease at station 7, compared with the values of 1985 for these stations. The changes only took place in the vicinity of the platform and coincide with the aggravated biological effects. As an explanation of this phenomenon we have hypothesized that during storms, redistribution of the contaminated sediments occurs around K12a. The water depth is approx. 30 m. According to Veth (NIOZ, pers. comm.) waves have an impact at the seafloor if the wavelength exceeds four times the water depth. For location K12a this comes to waves with a period of at least 9.2 sec. Such waves can be generated for instance by a storm blowing at force 7 (Beaufort) for 24 hours (GROEN & DORRESTEIN, 1976). Low-frequency waves, generated in other parts of the North Sea, with the same wave period can also be responsible for disturbance of bottom-deposits (Bouws, KNMI, pers. comm.). Perturbation of contaminated sediments makes oil previously buried in the sediment available to the benthic community of other places, thus causing a secondary effect of the discharges on the fauna.

In the year between the two surveys near K12a (Sept. '85-till Sept. '86) windforce 7 (and higher) occurred on several occasions for more than 24 hours (KNMI, monthly weather reports; BOUWS *et al.*, 1986).

Also considerable low-frequency waves were observed in the same period at location K13, which is not far from K12a and which had more or less a similar water depth (BOUWS *et al.*, 1986). We therefore recommend that the Royal Netherlands Meteorological Institute (KNMI) be requested to carry out a study on the expected frequency of disturbances of the sea floor by wave action for the different parts of the Dutch sector of the Continental

Shelf.

From the results of 1985, 3 groups of species with a deviate distribution could be deduced, *viz.* a group of sensitive, less sensitive and opportunistic/resistant species. It was, however, difficult to deduce these groups from the results of 1986, due to the low densities of many species in the samples of the 1986 survey. Therefore it was impossible to prove a specific distribution statistically, but the trend in their distribution could be observed (see sections 3.3.1 and 3.3.3).

The polychaetes *Harmothoë lunulata, Gattyana cirrosa* and *Lanice conchilega* and the mollusc *Montacuta ferruginosa* occurred mainly at great distance from the platform in the 1986 survey, indicating a sensitiveness to the discharges. These species also appeared to occur in the group "very sensitive" in 1985.

A group of 7 species showed diminished occurrence or were completely absent at the stations PL and 250 m residual current transect. Of several species, belonging to this group, it is known from literature that they can be indicated as transitory species, which means that they may be abundant near the edge of a polluted area and mostly not in it. For instance the polychaete *Nephtys hombergii* is found in Byfjord, North Sea, on the edge of anoxic areas (ROSENBERG, 1977). RACHOR (1982) found, in an area for TiO_2 waste acid in the German Bight, that the polychaete *Pholoë minuta* and the mollusc *Mysella bidentata* also belong to the transitory group of species.

The polychaetes *Nereis longissima* and *Glycera rouxii* and the gastropod *Buccinum undatum* belonged to the resistant/opportunistic species during the survey of 1986. Unfortunately these species did not occur in the same group in 1985. Due to their low densities it is not possible to prove their deviate distribution statistically. Of *Nereis* spec. it is known that this genus is common in polluted and anoxic sediments.

The results of the survey of 1986 near platform K12a show, that long-term effects exist. The effects at the stations PL and 250 m had become aggravated. It is hypothesized that four years after the discharges of cuttings with adhering OBM, and possibly much longer afterwards secondary effects may occur which are caused by the redistribution of contaminated sediments.

The results of the present study indicate that biological effects may have occurred up to 750-1000 m off the platform K12a in the direction of the residual current.

In order to meet aim no. 3, *i.e.* to investigate possible effects of the discharges of cuttings with water-based muds (WBM), a survey was carried out near the abandoned location F18/8, situated in an area of net-sedimentation, with very fine sediments. Drilling of one well took about 2 months and ended on April 8 1986. During this operation WBM, containing 2100 tons of barite was discharged. The survey was carried out in May/June. Two mechanisms can be responsible for effects on the fauna near location F18/8: 1. toxicity of the WBM itself and 2. smothering by the cuttings discharged.

Effects of toxicity are not likely to occur because WBM is less toxic than OBM, very soluble and therefore easily dispersed. This is reflected in the low barite values near F18/8 (VAN HET GROENEWOUD *et al.*, 1988). During fieldwork no signs of smothering were observed near any of the locations investigated. The composition of the fauna was very similar to the fauna near platform L4a. No baseline survey was undertaken near F18/8, so only spatial changes in the composition and distribution of the fauna could be detected. From the results it became clear that the fauna was quite uniform in the number of species per station and that little differences in densities for the very common species could not be related with the discharges of WBM. Most probably they are due to natural variability of the fauna in the investigated area.

The baseline survey near location L4a was not only a baseline before using OBM but also a survey of a location where drilling with WBM had taken place about one-and-a-half years before the survey was undertaken. Four wells had been drilled and approx. 2200 m^3 of cuttings were discharged (Henriquez, pers. comm.). In the survey near L4a no spatial distribution-patterns could be detected, neither in the number of species per station, nor in the densities of the very common species.

No biological effects could be detected near the locations F18/8 and L4a after drilling with water-based muds. This is not a proof because of the lack of a proper baseline study, but the results are confirmed by the work of ADDY *et al.*, 1984. They investigated the effects of drilling discharges in the Beatrice oilfield. The results showed that after drilling 13 wells with WBM the fauna was affected locally. A limited area was found with reduced species diversity. The biological effects were marked at stations close to the platform; comparatively weak at 250 m and undetectable at 750 m. In our study one well was drilled using WBM. It is likely that the difference in the amount of discharged cuttings of the two studies (one well versus thirteen wells) will have caused the different results.

5. CONCLUSIONS

1. The chosen locations (L4a, K12a and F18/8) are situated in an area of the North Sea with a stable and relatively rich fauna, allowing a detailed study of spatial and temporal distribution patterns of the fauna.

2. Species composition, distribution of individual species and the diversity values in the baseline study near L4a appeared to be uniform and therefore suitable to serve as a baseline.

3. The follow-up survey in September near L4a, after the drilling of only one well, showed few effects within 250 m (and possibly up to 500 m) of the platform. These effects are limited because only a relatively small amount of cuttings had been discharged at the time of the survey, which is also reflected in the low hydrocarbon levels in the sediment. This result meets the aim of studying short-term effects of the use of OBM.

4. The survey of September 1986 near location K12a showed clear effects within 250 m of the platform. There are indications that biological effects may occur up to 1000 m from the platform, but these cannot be proven statistically because of the low densities of most species. This result meets the aim of studying long-term effects of OBM (three years).

5. The situation within the 250 m zone is aggravated compared with the survey of 1985 near K12a, regarding the number of species present and the density of the individual species. This result also meets the aim of studying long-term effects.

6. The species composition, distribution of individual species and the diversity values of the fauna around location F18/8 were uniform. No spatial effects on the fauna could be detected due to the discharge of WBM, meeting the aim of studying the short-term effects due to the use of water-based muds.

7. The results of the baseline survey near location L4a also serve as an investigation on the effects of long past WBM discharges. No effects were detected.

8. In shallow parts of the North Sea bottom-deposits can be disturbed and redistributed by wave action during storms. It is likely that this mechanism has caused a redistribution of contaminated sediments near location K12a, thus creating secondary effects of OBM on the fauna, long after the drilling has been terminated.

9. Comparisons of the efficiencies of the Reineck boxcorer and the Van Veen grab showed that the latter was suitable for collecting benthic organisms both in an area with muddy sediments, where net-sedimentation occurs, and in an area with fine, sandy sediments which can be classed as a transition zone between the erosion and sedimentation area. Only a few deep-living species were not sampled quantitatively by the Van Veen grab.

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APPENDIX

Table 1a. Data platform L4a, baseline May 1986.
Residual current transect.
Mean densities per m2.
Total ind. per m2 per station.
Total number of species per station.

Station number	8	7	6	5	4	3	2	1V	1B
Distance from platform (m)	250	500	750	1000	1500	2000	3000	5000	5000
POLYCHAETA									
Aphrodita aculeata	2.5	--	.8	1.7	--	.8	--	.5	1.4
Harmothoe lunulata	4.2	.8	5.0	1.7	1.7	.8	--	--	--
Harmothoe longisetis	1.7	--	.8	--	2.5	1.7	.8	.5	4.2
Gattyana cirrosa	1.7	5.0	1.7	5.0	1.7	.8	2.5	1.0	22.5
Polynoe kinbergi	9.2	5.0	.8	10.0	1.7	2.5	--	7.0	2.8
Sigalion mathildae	--	--	.8	--	--	--	--	--	--
Pholoe minuta	48.3	42.5	13.3	15.8	31.7	17.5	20.8	25.0	28.2
Sthenelais limicola	1.7	4.2	2.5	6.7	5.0	4.2	2.5	4.5	4.2
Eteone longa	.8	--	.8	--	1.7	.8	--	.5	--
Eteone lactea	--	--	--	--	--	--	--	--	--
Eteone flava	--	--	--	--	--	--	--	--	--
Anaitides groenlandica	.8	--	--	1.7	2.5	.8	--	3.0	--
Anaitides mucosa	--	--	--	--	--	--	--	--	--
Anaitides maculata	--	--	--	--	--	--	--	--	--
Eumida sanguinea	--	--	.8	--	--	--	--	--	--
Ophiodromus flexuosus	2.5	.8	1.7	3.3	1.7	.8	2.5	.5	4.2
Gyptis capensis	1.7	.8	3.3	1.7	.8	.8	.8	.5	1.4
Synelmis klatti	.8	1.7	--	.8	--	.8	.8	--	7.0
Exogone hebes	--	--	--	--	--	--	.8	--	1.4
Nereis longissima	5.0	.8	2.5	.8	1.7	3.3	--	--	5.6
Nereis spec. juv.	--	--	--	--	--	--	--	--	--
Nephtys hombergii	19.2	15.0	9.2	9.2	8.3	10.0	17.5	19.5	11.3
Nephtys incisa	--	--	--	--	.8	--	.8	--	--
Nephtys cirrosa	2.5	--	--	--	.8	2.5	--	--	--
Nephtys longosetosa	--	--	.8	--	--	--	--	--	--
Nephtys spec. juv.	4.2	3.3	--	.8	2.5	--	3.3	1.0	2.8
Glycera capitata	.8	1.7	.8	--	--	--	--	--	--
Glycera rouxii	7.5	7.5	4.2	6.7	8.3	14.2	8.3	9.0	4.2
Glycera alba	.8	2.5	--	1.7	.8	.8	--	--	1.4
Glycera spec. juv.	.8	--	--	--	1.7	--	--	.5	1.4
Glycinde nordmanni	6.7	1.7	.8	5.0	6.7	4.2	5.0	3.5	1.4
Goniada maculata	10.0	10.8	8.3	5.8	4.2	4.2	8.3	6.5	7.0
Lumbrineris latreilli	184.2	155.8	72.5	102.5	130.8	150.0	129.2	129.5	94.4
Lumbrineris fragilis	.8	--	.8	4.2	5.8	3.3	4.2	1.5	8.5
Driloneris filum	--	--	--	1.7	--	--	--	--	--
Scoloplos armiger	--	.8	.8	--	--	--	--	1.0	--
Orbinia sertulata	--	.8	.8	.8	.8	2.5	--	--	--
Poecilochaetus serpens	--	1.7	--	--	.8	--	--	--	4.2
Spio filicornis	--	--	--	--	--	1.7	1.7	.5	4.2
Polydora pulchra	--	--	--	--	--	--	--	--	--
Polydora guillei	1.7	--	.8	1.7	3.3	.8	4.2	1.0	12.7
Spiophanes kroyeri	--	.8	--	1.7	--	.8	.8	--	--
Spiophanes bombyx	4.2	1.7	1.7	1.7	2.5	1.7	.8	2.0	2.8
Aonides paucibranchiata	--	--	--	.8	--	--	--	.5	--
Scolelepis bonnieri	--	--	--	--	--	--	--	--	--
Scolelepis foliosa	--	--	--	--	--	--	--	--	--
Magelona papillicornis	--	.8	.8	--	--	--	--	.5	--
Chaetopterus variopedatus	2.5	1.7	2.5	5.8	2.5	2.5	5.8	1.0	19.7
Tharyx marioni	9.2	7.5	.8	5.8	7.5	8.3	3.3	4.0	2.8
Chaetozone setosa	36.7	27.5	6.7	15.0	18.3	32.5	15.0	32.5	36.6
Diplocirrus glaucus	18.3	20.0	3.3	3.3	13.3	4.2	5.0	7.5	11.3
Scalibregma inflatum	--	--	--	--	--	--	--	--	--
Ophelina acuminata	.8	.8	3.3	--	2.5	2.5	--	.5	--
Capitella capitata	--	--	--	.8	.8	--	--	--	16.9
Notomastus latericeus	5.8	7.5	3.3	1.7	8.3	5.0	5.0	2.5	54.9

Table 1a. continued

Station number	8	7	6	5	4	3	2	1V	1B
Heteromastus filiformis	7.5	3.3	11.7	6.7	5.0	4.2	4.2	2.5	1.4
Owenia fusiformis	2.5	7.5	5.0	10.8	5.8	8.3	5.8	6.5	4.2
Lanice conchilega	--	--	--	--	--	--	--	--	--
Polycirrus medusa	--	--	.8	--	--	--	--	--	--
Lagis koreni	2.5	5.8	.8	3.3	2.5	7.5	5.8	1.5	--
Ampharete finmarchica	--	--	--	--	--	--	--	--	--
Ampharete acutifrons	--	.8	--	--	--	--	--	--	--
Amphicteis gunneri	1.7	--	2.5	.8	1.7	3.3	.8	1.0	--
Lysilla loveni	9.2	6.7	4.2	8.3	.8	1.7	--	2.5	--
Terebellides stroemi	7.5	4.2	5.0	3.3	2.5	--	1.7	1.0	--
MOLLUSCA									
Nucula turgida	6.7	5.8	.8	5.8	9.2	1.7	5.0	13.5	8.5
Thyasira flexuosa	--	--	--	--	--	--	--	1.5	1.4
Lepton squamosum	.8	--	.8	--	--	--	--	--	--
Montacuta ferruginosa	9.2	--	.8	.8	1.7	5.0	--	8.5	8.5
Mysella bidentata	277.5	120.8	157.5	136.7	110.0	96.7	117.5	58.0	18.3
Arctica islandica	.8	.8	--	--	.8	1.7	2.5	1.5	--
Acanthocardia echinata	--	--	--	--	2.5	1.7	--	.5	--
Dosinia exoleta	--	--	--	--	--	--	--	--	--
Dosinia lupinus	.8	.8	1.7	.8	--	.8	.8	.5	--
Venus striatula	4.2	1.7	.8	--	--	.8	2.5	3.0	--
Mysia undata	.8	.8	2.5	1.7	5.8	1.7	1.7	--	--
Abra prismatica	--	--	--	--	--	--	--	--	--
Abra alba	.8	--	--	.8	3.3	--	--	1.5	1.4
Abra nitida	.8	--	--	--	--	--	--	--	--
Cultellus pellucidus	--	.8	--	--	--	--	--	--	--
Mya spec. juv.	--	--	--	--	--	--	--	--	--
Corbula gibba	.8	1.7	2.5	.8	--	.8	1.7	3.5	2.8
Thracia convexa	2.5	--	3.3	--	1.7	.8	--	--	1.4
Cingula nitida	4.2	13.3	10.0	1.7	--	--	.8	13.0	12.7
Turritella communis	9.2	10.0	9.2	35.0	13.3	10.8	18.3	8.0	31.0
Natica alderi	--	--	--	--	--	--	--	1.0	--
Cylichna cilindracea	21.7	22.5	10.0	5.0	5.0	10.0	5.0	22.5	9.9
Philine catena	--	--	--	--	--	--	--	--	--
CRUSTACEA									
Crangon crangon	.8	--	--	--	--	--	--	--	--
Processa parva	.8	--	.8	--	--	1.7	.8	.5	--
Pontophilus trispinosus	--	--	--	--	--	--	--	--	--
Pontophilus spec.	--	--	--	--	--	--	--	--	--
Pagurus bernhardus	--	--	--	--	--	--	.8	--	--
Macropipus holsatus	--	.8	--	--	--	--	--	--	--
Macropipus spec. juv.	--	--	--	--	--	--	--	--	--
Ebalia cranchii	.8	.8	--	--	.8	--	.8	.5	--
Corystes cassivelaunus	.8	--	--	.8	.8	--	--	.5	--
Macropodia rostrata	--	--	--	--	--	--	--	--	--
Upogebia stellata	4.2	2.5	6.7	2.5	5.8	5.8	3.3	1.0	9.9
Callianassa subterranea	11.7	45.0	49.2	40.0	23.3	33.3	30.0	6.0	74.6
Callianassa spec. juv.	--	--	--	--	--	--	--	--	--
Decapoda larven	--	--	--	--	--	--	--	--	--
Nebalia bipes	--	--	1.7	--	.8	--	--	2.0	--
Gastrosaccus spinifer	--	--	.8	--	.8	--	--	--	--
Schistomysis ornata	--	--	--	--	--	--	--	--	--
Eudorella truncatula	6.7	3.3	2.5	5.8	3.3	3.3	2.5	3.5	9.9
Iphinoe trispinosa	.8	--	1.7	--	--	--	--	--	1.4
Pseudocuma longicornis	--	--	--	--	--	--	--	.5	--
Diastylis bradyi	12.5	11.7	10.0	9.2	6.7	5.8	4.2	1.5	2.8
Diastylis spec. juv.	--	--	--	--	--	--	--	--	--
Cumacea juv.	--	--	--	--	--	--	--	--	--
Cirolana borealis	.8	--	--	--	--	--	--	29.5	--

Table1a. continued

Station number	8	7	6	5	4	3	2	1V	1B
Ione thoracica	--	--	.8	.8	1.7	--	--	--	5.6
Megaluropus agilis	--	--	--	--	--	--	--	--	1.4
Melita obtusata	--	--	--	--	--	--	--	--	--
Atylus swammerdami	--	--	--	--	--	--	--	--	--
Hippomedon denticulatus	--	--	--	--	--	--	--	--	--
Orchomenella nana	1.7	--	--	.8	--	--	--	--	--
Leucothoe incisa	.8	--	--	--	1.7	--	--	--	--
Ampelisca brevicornis	.8	.8	.8	.8	1.7	.8	1.7	--	1.4
Ampelisca tenuicornis	5.0	1.7	7.5	4.2	5.0	4.2	--	1.5	2.8
Ampelisca spec. juv.	--	--	--	--	--	--	--	--	--
Urothoe poseidonis	1.7	2.5	--	.8	--	1.7	--	.5	--
Cheirocratus intermedius	--	--	--	--	--	--	--	--	--
Bathyporeia guilliamsoniana	--	--	--	.8	.8	--	--	--	--
Bathyporeia elegans	--	.8	1.7	2.5	--	.8	.8	.5	--
Harpinia antennaria	22.5	45.8	8.3	19.2	30.0	27.5	29.2	52.5	64.8
Perioculodes longimanus	1.7	--	--	--	.8	5.0	--	1.5	1.4
Synchelidium haplocheles	--	--	--	--	--	--	--	--	--
Westwoodilla caecula	--	--	--	--	.8	.8	--	--	--
Aora typica	--	--	--	.8	--	--	.8	.5	1.4
Photis longicaudata	--	--	--	--	--	--	--	--	--
Caprella linearis	1.7	--	--	--	--	--	--	--	--
Endeis spinosa	--	--	--	--	--	--	--	--	--
ECHINODERMATA									
Astropecten irregularis	--	--	--	--	.8	--	--	--	--
Amphiura filiformis	1480.8	1313.3	885.0	543.3	1053.3	1107.5	909.2	1045.0	662.0
Amphiura chiajei	19.2	15.0	8.3	15.0	20.0	25.0	16.7	18.5	4.2
Ophiura texturata	--	.8	--	--	--	--	--	--	1.4
Ophiura albida	8.3	16.7	5.8	7.5	15.8	3.3	12.5	18.0	25.4
Echinocardium cordatum	11.7	5.0	2.5	1.7	7.5	7.5	3.3	12.0	8.5
Echinocyamus pusillus	--	--	--	--	--	--	--	.5	--
Psammechinus miliaris	--	--	--	--	--	--	--	--	--
OTHER TAXA									
Nemertinea	P	P	P	P	P	P	P	P	P
Amphioxus	--	--	--	--	--	--	--	--	1.4
Viseieren	6.7	7.5	6.7	4.2	2.5	2.5	7.5	11.5	39.4
Turbellaria	3.3	--	2.5	1.7	.8	--	--	1.0	1.4
Phoroniden	P	P	P	P	P	P	P	P	P
Harp. copepoda	--	--	--	--	--	--	--	--	1.4
Oligochaeta	P	P	P	P	P	P	P	P	P
Holothuroidea	4.2	1.7	3.3	4.2	15.0	5.0	.8	4.5	5.6
Sagitta spec.	--	--	--	.8	--	--	--	--	--
Echiurida	.8	--	--	--	.8	--	--	1.5	--
Sipinculida	7.5	7.5	4.2	12.5	5.0	9.2	11.7	8.5	19.7
Tot. ind. per m2	2387	2023	1398	1128	1662	1696	1461	1643	1433
Tot. number of species	83	68	75	72	78	71	61	79	68

P= present, not counted.

Table 1b. Data platform L4a, baseline May 1986.
Transect perpendicular to residual current
Mean densities per m2.
Total ind. per m2 per station.
Total number of species per station.

Station number	14	13	12	11	10	9
Distance from platform (m)	3000	2000	1000	750	500	250
POLYCHAETA						
Aphrodita aculeata	.8	--	.8	--	1.7	.8
Harmothoe lunulata	.8	--	--	--	.8	.8
Harmothoe longisetis	1.7	--	.8	1.7	2.5	8.3
Gattyana cirrosa	1.7	1.7	1.7	--	--	4.2
Polynoe kinbergi	13.3	6.7	2.5	2.5	8.3	2.5
Sigalion mathildae	--	--	--	--	--	--
Pholoe minuta	26.7	60.0	19.2	78.3	26.7	77.5
Sthenelais limicola	4.2	3.3	4.2	7.5	10.0	5.8
Eteone longa	--	.8	1.7	.8	--	--
Eteone lactea	--	--	--	1.7	--	--
Eteone flava	--	--	--	--	--	--
Anaitides groenlandica	2.5	.8	1.7	.8	.8	--
Anaitides mucosa	--	--	--	--	--	--
Anaitides maculata	--	--	--	--	--	--
Eumida sanguinea	--	--	--	--	--	--
Ophiodromus flexuosus	4.2	5.0	7.5	2.5	2.5	4.2
Gyptis capensis	.8	2.5	3.3	4.2	1.7	1.7
Synelmis klatti	.8	1.7	1.7	.8	--	1.7
Exogone hebes	--	--	--	--	--	--
Nereis longissima	2.5	--	--	--	--	.8
Nereis spec. juv.	--	--	--	--	--	--
Nephtys hombergii	10.0	22.5	21.7	17.5	15.8	14.2
Nephtys incisa	--	--	.8	--	--	--
Nephtys cirrosa	.8	--	.8	--	4.2	.8
Nephtys longosetosa	--	--	--	--	--	.8
Nephtys spec. juv.	--	.8	.8	.8	--	--
Glycera capitata	--	--	--	--	--	--
Glycera rouxii	10.0	2.5	6.7	5.0	3.3	8.3
Glycera alba	.8	1.7	1.7	--	1.7	1.7
Glycera spec. juv.	--	--	.8	.8	--	--
Glycinde nordmanni	1.7	7.5	3.3	2.5	1.7	.8
Goniada maculata	6.7	7.5	6.7	8.3	10.0	11.7
Lumbrineris latreilli	174.2	203.3	135.0	148.3	175.0	199.2
Lumbrineris fragilis	12.5	3.3	2.5	2.5	2.5	6.7
Driloneris filum	--	--	.8	--	--	.8
Scoloplos armiger	--	--	--	--	--	.8
Orbinia sertulata	--	1.7	.8	--	.8	--
Poecilochaetus serpens	1.7	.8	.8	.8	--	.8
Spio filicornis	--	.8	.8	--	--	1.7
Polydora pulchra	.8	--	.8	--	--	--
Polydora guillei	3.3	--	2.5	2.5	--	18.3
Spiophanes kroyeri	2.5	2.5	2.5	--	--	1.7
Spiophanes bombyx	1.7	2.5	.8	2.5	.8	6.7
Aonides paucibranchiata	--	--	--	--	--	--
Scolelepis bonnieri	--	--	--	--	--	--
Scolelepis foliosa	.8	--	--	--	--	--
Magelona papillicornis	.8	.8	--	--	.8	.8
Chaetopterus variopedatus	1.7	2.5	1.7	.8	.8	3.3
Tharyx marioni	5.8	8.3	4.2	5.0	1.7	5.8
Chaetozone setosa	14.2	26.7	26.7	25.8	24.2	37.5
Diplocirrus glaucus	6.7	13.3	14.2	19.2	4.2	15.8
Scalibregma inflatum	--	--	--	--	.8	--
Ophelina acuminata	1.7	.8	--	1.7	1.7	--
Capitella capitata	--	1.7	--	1.7	--	.8
Notomastus latericeus	5.0	5.0	4.2	4.2	1.7	9.2

Table 1b continued.

Station number	14	13	12	11	10	9
Heteromastus filiformis	13.3	1.7	6.7	4.2	5.0	3.3
Owenia fusiformis	5.8	5.0	3.3	4.2	5.0	11.7
Lanice conchilega	--	--	--	--	--	--
Polycirrus medusa	.8	--	--	--	--	--
Lagis koreni	2.5	3.3	4.2	1.7	2.5	10.8
Ampharete finmarchica	--	--	--	.8	--	--
Ampharete acutifrons	--	--	--	--	--	--
Amphicteis gunneri	3.3	3.3	1.7	--	--	2.5
Lysilla loveni	15.0	5.8	1.7	2.5	8.3	2.5
Terebellides stroemi	5.0	3.3	.8	4.2	--	2.5
MOLLUSCA						
Nucula turgida	9.2	7.5	3.3	11.7	4.2	8.3
Thyasira flexuosa	--	.8	--	--	.8	--
Lepton squamosum	.8	--	.8	.8	--	.8
Montacuta ferruginosa	5.0	6.7	1.7	1.7	5.0	.8
Mysella bidentata	185.0	139.2	58.3	160.8	116.7	118.3
Arctica islandica	2.5	.8	1.7	4.2	2.5	1.7
Acanthocardia echinata	1.7	.8	1.7	--	--	--
Dosinia exoleta	--	--	--	--	--	--
Dosinia lupinus	--	--	.8	--	.8	--
Venus striatula	6.7	.8	1.7	.8	1.7	1.7
Mysia undata	1.7	.8	.8	.8	.8	.8
Abra prismatica	--	--	--	.8	--	--
Abra alba	1.7	--	2.5	2.5	.8	.8
Abra nitida	--	--	--	--	--	--
Cultellus pellucidus	--	--	--	--	--	.8
Mya spec. juv.	--	--	--	--	--	--
Corbula gibba	1.7	4.2	.8	--	.8	2.5
Thracia convexa	1.7	.8	3.3	1.7	--	1.7
Cingula nitida	2.5	2.5	--	17.5	--	17.5
Turritella communis	48.3	29.2	19.2	9.2	13.3	10.8
Natica alderi	--	--	--	--	--	--
Cylichna cilindracea	10.8	5.8	3.3	23.3	15.8	18.3
Philine catena	--	--	--	--	--	--
CRUSTACEA						
Crangon crangon	--	--	--	--	--	--
Processa parva	.8	1.7	--	--	--	--
Pontophilus trispinosus	--	--	--	--	--	.8
Pontophilus spec.	--	--	--	--	--	--
Pagurus bernhardus	--	--	--	--	--	--
Macropipus holsatus	.8	--	--	.8	--	.8
Macropipus spec. juv.	--	--	--	--	--	--
Ebalia cranchii	1.7	--	--	.8	--	.8
Corystes cassivelaunus	--	--	.8	--	1.7	--
Macropodia rostrata	--	--	--	.8	--	--
Upogebia stellata	10.0	4.2	4.2	7.5	--	9.2
Callianassa subterranea	146.7	38.3	32.5	50.0	14.2	35.8
Callianassa spec. juv.	--	--	--	--	--	--
Decapoda larven	--	--	--	--	--	--
Nebalia bipes	--	.8	--	--	1.7	1.7
Gastrosaccus spinifer	--	.8	--	.8	--	--
Schistomysis ornata	.8	.8	--	--	--	--
Eudorella truncatula	7.5	5.0	2.5	3.3	1.7	7.5
Iphinoe trispinosa	.8	.8	.8	.8	1.7	--
Pseudocuma longicornis	--	--	--	--	--	--
Diastylis bradyi	10.0	8.3	5.0	4.2	.8	19.2
Diastylis spec. juv.	--	--	--	--	--	--
Cumacea juv.	--	--	--	--	--	--
Cirolana borealis	.8	2.5	--	.8	.8	2.5
Ione thoracica	1.7	--	--	1.7	--	.8
Megaluropus agilis	--	--	--	--	--	--
Melita obtusata	.8	--	--	--	--	--

Table 1b continued.

Station number	14	13	12	11	10	9
Atylus swammerdami	--	--	--	.8	--	--
Hippomedon denticulatus	--	--	--	--	--	--
Orchomenella nana	--	--	1.7	--	--	--
Leucothoe incisa	.8	.8	.8	--	--	2.5
Ampelisca brevicornis	4.2	.8	.8	--	.8	--
Ampelisca tenuicornis	5.0	6.7	4.2	3.3	--	8.3
Ampelisca spec. juv.	--	--	--	--	--	--
Urothoe poseidonis	--	--	.8	--	.8	--
Cheirocratus intermedius	--	.8	--	--	--	--
Bathyporeia guilliamsoniana	--	--	.8	--	--	--
Bathyporeia elegans	.8	--	2.5	--	1.7	--
Harpinia antennaria	27.5	51.7	32.5	50.0	38.3	46.7
Perioculodes longimanus	--	--	.8	--	.8	.8
Synchelidium haplocheles	.8	--	--	--	--	--
Westwoodilla caecula	--	--	--	--	--	--
Aora typica	.8	--	--	--	--	--
Photis longicaudata	--	--	--	.8	--	--
Caprella linearis	--	--	--	--	--	--
Endeis spinosa	.8	--	--	--	--	--
ECHINODERMATA						
Astropecten irregularis	.8	--	--	--	--	--
Amphiura filiformis	777.5	1195.8	857.5	1437.5	648.3	1037.5
Amphiura chiajei	35.8	30.8	20.0	100.8	10.8	21.7
Ophiura texturata	--	--	--	--	--	--
Ophiura albida	.8	1.7	6.7	14.2	9.2	5.8
Echinocardium cordatum	5.8	14.2	6.7	5.0	5.0	1.7
Echinocyamus pusillus	--	--	--	--	--	--
Psammechinus miliaris	--	--	--	--	--	--
OTHER TAXA						
Nemertinea	P	P	P	P	P	P
Amphioxus	--	--	--	--	--	--
Viseieren	2.5	1.7	2.5	7.5	1.7	3.3
Turbellaria	3.3	.8	.8	.8	1.7	.8
Phoroniden	P	P	P	P	P	P
Harp. copepoda	--	--	--	--	--	--
Oligochaeta	P	P	P	P	P	P
Holothuroidea	7.5	2.5	5.0	.8	3.3	3.3
Sagitta spec.	--	--	--	--	.8	--
Echiurida	--	--	--	--	--	2.5
Sipinculida	8.3	10.8	6.7	12.5	3.3	13.3
Tot. ind. per m2	1714	2004	1402	2310	1240	1903
Tot. number of species	86	75	81	73	67	80

P= present, not counted.

Table 2. Data platform L4a, baseline May 1986.
Station 14, 3000 m (transect perpendicular to residual current).
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	1.00	16.67	1.67	---
Polynoe kinbergi	6.00	100.00	13.33	6.06
Pholoe minuta	5.00	83.33	26.67	30.77
Sthenelais limicola	5.00	83.33	4.17	2.04
Anaitides groenlandica	3.00	50.00	2.50	2.74
Ophiodromus flexuosus	4.00	66.67	4.17	3.76
Gyptis capensis	1.00	16.67	.83	---
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	2.00	33.33	2.50	4.18
Nephtys hombergii	5.00	83.33	10.00	8.37
Nephtys cirrosa	1.00	16.67	.83	---
Glycera rouxii	6.00	100.00	10.00	4.47
Glycera alba	1.00	16.67	.83	---
Glycinde nordmanni	2.00	33.33	1.67	2.58
Goniada maculata	5.00	83.33	6.67	5.16
Lumbrineris latreilli	6.00	100.00	174.17	47.16
Lumbrineris fragilis	6.00	100.00	12.50	8.80
Poecilochaetus serpens	1.00	16.67	1.67	---
Polydora pulchra	1.00	16.67	.83	---
Polydora guillei	3.00	50.00	3.33	4.08
Spiophanes kroyeri	3.00	50.00	2.50	2.74
Spiophanes bombyx	1.00	16.67	1.67	---
Scolelepis foliosa	1.00	16.67	.83	---
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	1.00	16.67	1.67	---
Tharyx marioni	3.00	50.00	5.83	6.65
Chaetozone setosa	6.00	100.00	14.17	8.61
Diplocirrus glaucus	6.00	100.00	6.67	2.58
Notomastus latericeus	3.00	50.00	5.00	6.32
Heteromastus filiformis	5.00	83.33	13.33	9.83
Owenia fusiformis	5.00	83.33	5.83	3.76
Polycirrus medusa	1.00	16.67	.83	---
Lagis koreni	3.00	50.00	2.50	2.74
Amphicteis gunneri	3.00	50.00	3.33	4.08
Lysilla loveni	6.00	100.00	15.00	6.32
Terebellides stroemi	3.00	50.00	5.00	6.32
MOLLUSCA				
Nucula turgida	5.00	83.33	9.17	7.36
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	2.00	33.33	5.00	8.37
Mysella bidentata	6.00	100.00	185.00	60.33
Arctica islandica	2.00	33.33	2.50	4.18
Acanthocardia echinata	2.00	33.33	1.67	2.58
Venus striatula	5.00	83.33	6.67	4.08
Mysia undata	2.00	33.33	1.67	2.58
Abra alba	2.00	33.33	1.67	2.58
Corbula gibba	1.00	16.67	1.67	---

Table 2 continued.	A	B	C	D
Thracia convexa	2.00	33.33	1.67	2.58
Cingula nitida	2.00	33.33	2.50	4.18
Turritella communis	6.00	100.00	48.33	31.09
Cylichna cilindracea	4.00	66.67	10.83	10.68
CRUSTACEA				
Processa parva	1.00	16.67	.83	---
Macropipus holsatus	1.00	16.67	.83	---
Ebalia cranchii	2.00	33.33	1.67	2.58
Upogebia stellata	3.00	50.00	10.00	12.65
Callianassa subterranea	6.00	100.00	146.67	211.08
Schistomysis ornata	1.00	16.67	.83	---
Eudorella truncatula	4.00	66.67	7.50	7.58
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	5.00	83.33	10.00	8.37
Cirolana borealis	1.00	16.67	.83	---
Ione thoracica	2.00	33.33	1.67	2.58
Melita obtusata	1.00	16.67	.83	---
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	3.00	50.00	4.17	4.92
Ampelisca tenuicornis	4.00	66.67	5.00	4.47
Bathyporeia elegans	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	27.50	9.35
Synchelidium haplocheles	1.00	16.67	.83	---
Aora typica	1.00	16.67	.83	---
Endeis spinosa	1.00	16.67	.83	---
ECHINODERMATA				
Astropecten irregularis	1.00	16.67	.83	---
Amphiura filiformis	6.00	100.00	777.50	156.68
Amphiura chiajei	6.00	100.00	35.83	18.55
Ophiura albida	1.00	16.67	.83	---
Echinocardium cordatum	4.00	66.67	5.83	4.92
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	3.00	50.00	2.50	2.74
Turbellaria	3.00	50.00	3.33	4.08
Phoroniden	5.00	83.33	---	---
Oligochaeta	5.00	83.33	---	---
Holothuroidea	4.00	66.67	7.50	6.89
Sipinculida	3.00	50.00	8.33	13.66

Table 3. Data platform L4a, baseline May 1986.
Station 13, 2000 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	2.00	33.33	1.67	2.58
Polynoe kinbergi	3.00	50.00	6.67	7.53
Pholoe minuta	6.00	100.00	60.00	9.49
Sthenelais limicola	4.00	66.67	3.33	2.58
Eteone longa	1.00	16.67	.83	---
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	4.00	66.67	5.00	4.47
Gyptis capensis	1.00	16.67	2.50	---
Synelmis klatti	2.00	33.33	1.67	2.58
Nephtys hombergii	6.00	100.00	22.50	14.40
Nephtys spec. juv.	1.00	16.67	.83	---
Glycera rouxii	2.00	33.33	2.50	4.18
Glycera alba	1.00	16.67	1.67	---
Glycinde nordmanni	5.00	83.33	7.50	5.24
Goniada maculata	6.00	100.00	7.50	4.18
Lumbrineris latreilli	6.00	100.00	203.33	28.23
Lumbrineris fragilis	3.00	50.00	3.33	4.08
Orbinia sertulata	2.00	33.33	1.67	2.58
Poecilochaetus serpens	1.00	16.67	.83	---
Spio filicornis	1.00	16.67	.83	---
Spiophanes kroyeri	2.00	33.33	2.50	4.18
Spiophanes bombyx	2.00	33.33	2.50	4.18
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	2.00	33.33	2.50	4.18
Tharyx marioni	6.00	100.00	8.33	6.06
Chaetozone setosa	6.00	100.00	26.67	12.91
Diplocirrus glaucus	5.00	83.33	13.33	14.72
Ophelina acuminata	1.00	16.67	.83	---
Capitella capitata	1.00	16.67	1.67	---
Notomastus latericeus	4.00	66.67	5.00	4.47
Heteromastus filiformis	2.00	33.33	1.67	2.58
Owenia fusiformis	5.00	83.33	5.00	3.16
Lagis koreni	3.00	50.00	3.33	4.08
Amphicteis gunneri	4.00	66.67	3.33	2.58
Lysilla loveni	4.00	66.67	5.83	5.85
Terebellides stroemi	3.00	50.00	3.33	4.08
MOLLUSCA				
Nucula turgida	4.00	66.67	7.50	6.89
Thyasira flexuosa	1.00	16.67	.83	---
Montacuta ferruginosa	4.00	66.67	6.67	7.53
Mysella bidentata	6.00	100.00	139.17	54.54
Arctica islandica	1.00	16.67	.83	---
Acanthocardia echinata	1.00	16.67	.83	---
Venus striatula	1.00	16.67	.83	---
Mysia undata	1.00	16.67	.83	---
Corbula gibba	4.00	66.67	4.17	3.76
Thracia convexa	1.00	16.67	.83	---
Cingula nitida	2.00	33.33	2.50	4.18
Turritella communis	6.00	100.00	29.17	19.08
Cylichna cilindracea	4.00	66.67	5.83	5.85

Table 3 continued.	A	B	C	D
CRUSTACEA				
Processa parva	2.00	33.33	1.67	2.58
Upogebia stellata	3.00	50.00	4.17	4.92
Callianassa subterranea	6.00	100.00	38.33	8.16
Nebalia bipes	1.00	16.67	.83	---
Gastrosaccus spinifer	1.00	16.67	.83	---
Schistomysis ornata	1.00	16.67	.83	---
Eudorella truncatula	4.00	66.67	5.00	5.48
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	5.00	83.33	8.33	6.06
Cirolana borealis	3.00	50.00	2.50	2.74
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	2.00	33.33	6.67	10.80
Cheirocratus intermedius	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	51.67	22.06
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1195.83	418.84
Amphiura chiajei	6.00	100.00	30.83	19.60
Ophiura albida	1.00	16.67	1.67	---
Echinocardium cordatum	5.00	83.33	14.17	14.29
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	2.00	33.33	1.67	2.58
Turbellaria	1.00	16.67	.83	---
Phoroniden	5.00	83.33	---	---
Oligochaeta	5.00	83.33	---	---
Holothuroidea	1.00	16.67	2.50	---
Sipinculida	4.00	66.67	10.83	11.14

Table 4. Data platform L4a, baseline May 1986.
Station 12, 1000 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	2.00	33.33	1.67	2.58
Polynoe kinbergi	2.00	33.33	2.50	4.18
Pholoe minuta	6.00	100.00	19.17	20.35
Sthenelais limicola	4.00	66.67	4.17	3.76
Eteone longa	2.00	33.33	1.67	2.58
Anaitides groenlandica	2.00	33.33	1.67	2.58
Ophiodromus flexuosus	5.00	83.33	7.50	5.24
Gyptis capensis	3.00	50.00	3.33	4.08
Synelmis klatti	1.00	16.67	1.67	---
Nephtys hombergii	6.00	100.00	21.67	10.80
Nephtys incisa	1.00	16.67	.83	---
Nephtys cirrosa	1.00	16.67	.83	---
Nephtys spec. juv.	1.00	16.67	.83	---
Glycera rouxii	6.00	100.00	6.67	4.08
Glycera alba	1.00	16.67	1.67	---
Glycera spec. juv.	1.00	16.67	.83	---
Glycinde nordmanni	3.00	50.00	3.33	4.08
Goniada maculata	4.00	66.67	6.67	7.53
Lumbrineris latreilli	6.00	100.00	135.00	33.91
Lumbrineris fragilis	3.00	50.00	2.50	2.74
Driloneris filum	1.00	16.67	.83	---
Orbinia sertulata	1.00	16.67	.83	---
Poecilochaetus serpens	1.00	16.67	.83	---
Spio filicornis	1.00	16.67	.83	---
Polydora pulchra	1.00	16.67	.83	---
Polydora guillei	3.00	50.00	2.50	2.74
Spiophanes kroyeri	3.00	50.00	2.50	2.74
Spiophanes bombyx	1.00	16.67	.83	---
Chaetopterus variopedatus	1.00	16.67	1.67	---
Tharyx marioni	2.00	33.33	4.17	6.65
Chaetozone setosa	6.00	100.00	26.67	8.16
Diplocirrus glaucus	6.00	100.00	14.17	11.14
Notomastus latericeus	4.00	66.67	4.17	3.76
Heteromastus filiformis	4.00	66.67	6.67	6.06
Owenia fusiformis	4.00	66.67	3.33	2.58
Lagis koreni	4.00	66.67	4.17	3.76
Amphicteis gunneri	1.00	16.67	1.67	---
Lysilla loveni	2.00	33.33	1.67	2.58
Terebellides stroemi	1.00	16.67	.83	---
MOLLUSCA				
Nucula turgida	4.00	66.67	3.33	2.58
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	1.00	16.67	1.67	---
Mysella bidentata	6.00	100.00	58.33	35.59
Arctica islandica	2.00	33.33	1.67	2.58
Acanthocardia echinata	2.00	33.33	1.67	2.58
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	2.00	33.33	1.67	2.58

Table 4 continued.	A	B	C	D
Mysia undata	1.00	16.67	.83	---
Abra alba	2.00	33.33	2.50	4.18
Corbula gibba	1.00	16.67	.83	---
Thracia convexa	3.00	50.00	3.33	4.08
Turritella communis	6.00	100.00	19.17	7.36
Cylichna cilindracea	3.00	50.00	3.33	4.08
CRUSTACEA				
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	4.00	66.67	4.17	3.76
Callianassa subterranea	6.00	100.00	32.50	9.35
Eudorella truncatula	3.00	50.00	2.50	2.74
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	4.00	66.67	5.00	4.47
Orchomenella nana	1.00	16.67	1.67	---
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	2.00	33.33	4.17	8.01
Urothoe poseidonis	1.00	16.67	.83	---
Bathyporeia guilliamsoniana	1.00	16.67	.83	---
Bathyporeia elegans	2.00	33.33	2.50	4.18
Harpinia antennaria	6.00	100.00	32.50	12.14
Perioculodes longimanus	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	857.50	389.73
Amphiura chiajei	5.00	83.33	20.00	20.25
Ophiura albida	3.00	50.00	6.67	8.76
Echinocardium cordatum	4.00	66.67	6.67	6.06
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	3.00	50.00	2.50	2.74
Turbellaria	1.00	16.67	.83	---
Phoroniden	4.00	66.67	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	2.00	33.33	5.00	7.75
Sipinculida	3.00	50.00	6.67	11.69

Table 5. Data platform L4a, baseline May 1986.
Station 11, 750 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe longisetis	2.00	33.33	1.67	2.58
Polynoe kinbergi	3.00	50.00	2.50	2.74
Pholoe minuta	6.00	100.00	78.33	46.01
Sthenelais limicola	4.00	66.67	7.50	7.58
Eteone longa	1.00	16.67	.83	---
Eteone lactea	1.00	16.67	1.67	---
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	2.50	4.18
Gyptis capensis	4.00	66.67	4.17	3.76
Synelmis klatti	1.00	16.67	.83	---
Nephtys hombergii	6.00	100.00	17.50	9.35
Nephtys spec. juv.	1.00	16.67	.83	---
Glycera rouxii	5.00	83.33	5.00	3.16
Glycera spec. juv.	1.00	16.67	.83	---
Glycinde nordmanni	2.00	33.33	2.50	4.18
Goniada maculata	5.00	83.33	8.33	6.83
Lumbrineris latreilli	6.00	100.00	148.33	29.27
Lumbrineris fragilis	2.00	33.33	2.50	4.18
Poecilochaetus serpens	1.00	16.67	.83	---
Polydora guillei	3.00	50.00	2.50	2.74
Spiophanes bombyx	2.00	33.33	2.50	4.18
Chaetopterus variopedatus	1.00	16.67	.83	---
Tharyx marioni	3.00	50.00	5.00	6.32
Chaetozone setosa	6.00	100.00	25.83	6.65
Diplocirrus glaucus	6.00	100.00	19.17	10.21
Ophelina acuminata	2.00	33.33	1.67	2.58
Capitella capitata	1.00	16.67	1.67	---
Notomastus latericeus	1.00	16.67	4.17	---
Heteromastus filiformis	3.00	50.00	4.17	4.92
Owenia fusiformis	3.00	50.00	4.17	4.92
Lagis koreni	1.00	16.67	1.67	---
Ampharete finmarchica	1.00	16.67	.83	---
Lysilla loveni	3.00	50.00	2.50	2.74
Terebellides stroemi	3.00	50.00	4.17	4.92
MOLLUSCA				
Nucula turgida	4.00	66.67	11.67	11.25
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	1.00	16.67	1.67	---
Mysella bidentata	6.00	100.00	160.83	61.11
Arctica islandica	4.00	66.67	4.17	3.76
Venus striatula	1.00	16.67	.83	---
Mysia undata	1.00	16.67	.83	---
Abra prismatica	1.00	16.67	.83	---
Abra alba	2.00	33.33	2.50	4.18
Thracia convexa	2.00	33.33	1.67	2.58
Cingula nitida	5.00	83.33	17.50	21.15
Turritella communis	6.00	100.00	9.17	3.76
Cylichna cilindracea	6.00	100.00	23.33	12.11

Table 5 continued.	A	B	C	D
CRUSTACEA				
Macropipus holsatus	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Macropodia rostrata	1.00	16.67	.83	---
Upogebia stellata	6.00	100.00	7.50	2.74
Callianassa subterranea	6.00	100.00	50.00	11.83
Gastrosaccus spinifer	1.00	16.67	.83	---
Eudorella truncatula	4.00	66.67	3.33	2.58
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	3.00	50.00	4.17	4.92
Cirolana borealis	1.00	16.67	.83	---
Ione thoracica	1.00	16.67	1.67	---
Atylus swammerdami	1.00	16.67	.83	---
Ampelisca tenuicornis	3.00	50.00	3.33	4.08
Harpinia antennaria	6.00	100.00	50.00	24.90
Photis longicaudata	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1437.50	527.11
Amphiura chiajei	6.00	100.00	100.83	72.35
Ophiura albida	4.00	66.67	14.17	14.97
Echinocardium cordatum	4.00	66.67	5.00	5.48
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	4.00	66.67	7.50	6.89
Turbellaria	1.00	16.67	.83	---
Phoroniden	5.00	83.33	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	1.00	16.67	.83	---
Sipinculida	5.00	83.33	12.50	10.37

Table 6. Data platform L4a, baseline May 1986.
Station 10, 500 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	2.00	33.33	1.67	2.58
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	3.00	50.00	2.50	2.74
Polynoe kinbergi	4.00	66.67	8.33	8.16
Pholoe minuta	6.00	100.00	26.67	16.02
Sthenelais limicola	6.00	100.00	10.00	4.47
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	2.50	4.18
Gyptis capensis	2.00	33.33	1.67	2.58
Nephtys hombergii	6.00	100.00	15.83	7.36
Nephtys cirrosa	3.00	50.00	4.17	4.92
Glycera rouxii	3.00	50.00	3.33	4.08
Glycera alba	2.00	33.33	1.67	2.58
Glycinde nordmanni	1.00	16.67	1.67	---
Goniada maculata	6.00	100.00	10.00	6.32
Lumbrineris latreilli	6.00	100.00	175.00	45.50
Lumbrineris fragilis	3.00	50.00	2.50	2.74
Orbinia sertulata	1.00	16.67	.83	---
Spiophanes bombyx	1.00	16.67	.83	---
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	1.00	16.67	.83	---
Tharyx marioni	2.00	33.33	1.67	2.58
Chaetozone setosa	6.00	100.00	24.17	8.01
Diplocirrus glaucus	3.00	50.00	4.17	5.85
Scalibregma inflatum	1.00	16.67	.83	---
Ophelina acuminata	2.00	33.33	1.67	2.58
Notomastus latericeus	2.00	33.33	1.67	2.58
Heteromastus filiformis	3.00	50.00	5.00	6.32
Owenia fusiformis	3.00	50.00	5.00	7.75
Lagis koreni	3.00	50.00	2.50	2.74
Lysilla loveni	4.00	66.67	8.33	11.25
MOLLUSCA				
Nucula turgida	4.00	66.67	4.17	3.76
Thyasira flexuosa	1.00	16.67	.83	---
Montacuta ferruginosa	3.00	50.00	5.00	6.32
Mysella bidentata	6.00	100.00	116.67	117.80
Arctica islandica	3.00	50.00	2.50	2.74
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	2.00	33.33	1.67	2.58
Mysia undata	1.00	16.67	.83	---
Abra alba	1.00	16.67	.83	---
Corbula gibba	1.00	16.67	.83	---
Turritella communis	5.00	83.33	13.33	11.69
Cylichna cilindracea	6.00	100.00	15.83	9.17

Table 6 continued.	A	B	C	D
CRUSTACEA				
Corystes cassivelaunus	2.00	33.33	1.67	2.58
Callianassa subterranea	5.00	83.33	14.17	8.61
Nebalia bipes	1.00	16.67	1.67	---
Eudorella truncatula	2.00	33.33	1.67	2.58
Iphinoe trispinosa	1.00	16.67	1.67	---
Diastylis bradyi	1.00	16.67	.83	---
Cirolana borealis	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Urothoe poseidonis	1.00	16.67	.83	---
Bathyporeia elegans	2.00	33.33	1.67	2.58
Harpinia antennaria	6.00	100.00	38.33	12.52
Perioculodes longimanus	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	648.33	349.49
Amphiura chiajei	4.00	66.67	10.83	12.01
Ophiura albida	5.00	83.33	9.17	10.68
Echinocardium cordatum	4.00	66.67	5.00	4.47
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseleren	2.00	33.33	1.67	2.58
Turbellaria	2.00	33.33	1.67	2.58
Phoroniden	3.00	50.00	---	---
Oligochaeta	3.00	50.00	---	---
Holothuroidea	3.00	50.00	3.33	4.08
Sagitta spec.	1.00	16.67	.83	---
Sipinculida	2.00	33.33	3.33	5.16

Table 7. Data platform L4a, baseline May 1986.
Station 9, 250 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	5.00	83.33	8.33	6.06
Gattyana cirrosa	3.00	50.00	4.17	4.92
Polynoe kinbergi	2.00	33.33	2.50	4.18
Pholoe minuta	6.00	100.00	77.50	45.80
Sthenelais limicola	4.00	66.67	5.83	4.92
Ophiodromus flexuosus	4.00	66.67	4.17	3.76
Gyptis capensis	1.00	16.67	1.67	---
Synelmis klatti	1.00	16.67	1.67	---
Nereis longissima	1.00	16.67	.83	---
Nephtys hombergii	6.00	100.00	14.17	7.36
Nephtys cirrosa	1.00	16.67	.83	---
Nephtys longosetosa	1.00	16.67	.83	---
Glycera rouxii	6.00	100.00	8.33	4.08
Glycera alba	1.00	16.67	1.67	---
Glycinde nordmanni	1.00	16.67	.83	---
Goniada maculata	5.00	83.33	11.67	7.53
Lumbrineris latreilli	6.00	100.00	199.17	30.40
Lumbrineris fragilis	4.00	66.67	6.67	6.06
Driloneris filum	1.00	16.67	.83	---
Scoloplos armiger	1.00	16.67	.83	---
Poecilochaetus serpens	1.00	16.67	.83	---
Spio filicornis	1.00	16.67	1.67	---
Polydora guillei	4.00	66.67	18.33	21.60
Spiophanes kroyeri	2.00	33.33	1.67	2.58
Spiophanes bombyx	5.00	83.33	6.67	4.08
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	4.00	66.67	3.33	2.58
Tharyx marioni	5.00	83.33	5.83	3.76
Chaetozone setosa	6.00	100.00	37.50	18.37
Diplocirrus glaucus	5.00	83.33	15.83	11.14
Capitella capitata	1.00	16.67	.83	---
Notomastus latericeus	5.00	83.33	9.17	4.92
Heteromastus filiformis	2.00	33.33	3.33	6.06
Owenia fusiformis	6.00	100.00	11.67	9.83
Lagis koreni	6.00	100.00	10.83	3.76
Amphicteis gunneri	2.00	33.33	2.50	4.18
Lysilla loveni	2.00	33.33	2.50	4.18
Terebellides stroemi	3.00	50.00	2.50	2.74
MOLLUSCA				
Nucula turgida	5.00	83.33	8.33	5.16
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	118.33	68.75
Arctica islandica	2.00	33.33	1.67	2.58
Venus striatula	2.00	33.33	1.67	2.58
Mysia undata	1.00	16.67	.83	---
Abra alba	1.00	16.67	.83	---
Cultellus pellucidus	1.00	16.67	.83	---

Table 7 continued.

	A	B	C	D
Corbula gibba	3.00	50.00	2.50	2.74
Thracia convexa	2.00	33.33	1.67	2.58
Cingula nitida	4.00	66.67	17.50	28.77
Turritella communis	5.00	83.33	10.83	8.61
Cylichna cilindracea	6.00	100.00	18.33	11.25
CRUSTACEA				
Pontophilus trispinosus	1.00	16.67	.83	---
Macropipus holsatus	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Upogebia stellata	5.00	83.33	9.17	5.85
Callianassa subterranea	6.00	100.00	35.83	10.68
Nebalia bipes	2.00	33.33	1.67	2.58
Eudorella truncatula	5.00	83.33	7.50	6.12
Diastylis bradyi	6.00	100.00	19.17	11.14
Cirolana borealis	2.00	33.33	2.50	4.18
Ione thoracica	1.00	16.67	.83	---
Leucothoe incisa	2.00	33.33	2.50	4.18
Ampelisca tenuicornis	4.00	66.67	8.33	8.16
Harpinia antennaria	6.00	100.00	46.67	18.62
Perioculodes longimanus	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1037.50	374.36
Amphiura chiajei	5.00	83.33	21.67	21.60
Ophiura albida	3.00	50.00	5.83	8.01
Echinocardium cordatum	2.00	33.33	1.67	2.58
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseleren	2.00	33.33	3.33	5.16
Turbellaria	1.00	16.67	.83	---
Phoroniden	5.00	83.33	---	---
Oligochaeta	2.00	33.33	---	---
Holothuroidea	2.00	33.33	3.33	6.06
Echiurida	2.00	33.33	2.50	4.18
Sipinculida	4.00	66.67	13.33	13.29

Table 8. Data platform L4a, baseline May 1986.
Station 8, 250 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	2.50	---
Harmothoe lunulata	3.00	50.00	4.17	4.92
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	2.00	33.33	1.67	2.58
Polynoe kinbergi	5.00	83.33	9.17	6.65
Pholoe minuta	6.00	100.00	48.33	13.29
Sthenelais limicola	2.00	33.33	1.67	2.58
Eteone longa	1.00	16.67	.83	---
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	2.50	4.18
Gyptis capensis	2.00	33.33	1.67	2.58
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	3.00	50.00	5.00	6.32
Nephtys hombergii	5.00	83.33	19.17	13.93
Nephtys cirrosa	1.00	16.67	2.50	---
Nephtys spec. juv.	2.00	33.33	4.17	6.65
Glycera capitata	1.00	16.67	.83	---
Glycera rouxii	5.00	83.33	7.50	5.24
Glycera alba	1.00	16.67	.83	---
Glycera spec. juv.	1.00	16.67	.83	---
Glycinde nordmanni	4.00	66.67	6.67	7.53
Goniada maculata	4.00	66.67	10.00	8.94
Lumbrineris latreilli	6.00	100.00	184.17	42.24
Lumbrineris fragilis	1.00	16.67	.83	---
Polydora guillei	2.00	33.33	1.67	2.58
Spiophanes bombyx	4.00	66.67	4.17	3.76
Chaetopterus variopedatus	3.00	50.00	2.50	2.74
Tharyx marioni	4.00	66.67	9.17	11.14
Chaetozone setosa	6.00	100.00	36.67	16.93
Diplocirrus glaucus	6.00	100.00	18.33	8.76
Ophelina acuminata	1.00	16.67	.83	---
Notomastus latericeus	4.00	66.67	5.83	7.36
Heteromastus filiformis	3.00	50.00	7.50	8.80
Owenia fusiformis	3.00	50.00	2.50	2.74
Lagis koreni	2.00	33.33	2.50	4.18
Amphicteis gunneri	2.00	33.33	1.67	2.58
Lysilla loveni	6.00	100.00	9.17	5.85
Terebellides stroemi	4.00	66.67	7.50	6.89
MOLLUSCA				
Nucula turgida	5.00	83.33	6.67	5.16
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	5.00	83.33	9.17	7.36
Mysella bidentata	6.00	100.00	277.50	236.28
Arctica islandica	1.00	16.67	.83	---
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	3.00	50.00	4.17	5.85
Mysia undata	1.00	16.67	.83	---
Abra alba	1.00	16.67	.83	---
Abra nitida	1.00	16.67	.83	---
Corbula gibba	1.00	16.67	.83	---
Thracia convexa	2.00	33.33	2.50	4.18

Table 8 continued.	A	B	C	D
Cingula nitida	1.00	16.67	4.17	---
Turritella communis	6.00	100.00	9.17	3.76
Cylichna cilindracea	6.00	100.00	21.67	4.08
CRUSTACEA				
Crangon crangon	1.00	16.67	.83	---
Processa parva	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	2.00	33.33	4.17	8.01
Callianassa subterranea	4.00	66.67	11.67	11.69
Eudorella truncatula	4.00	66.67	6.67	6.06
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	5.00	83.33	12.50	7.58
Cirolana borealis	1.00	16.67	.83	---
Orchomenella nana	2.00	33.33	1.67	2.58
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	4.00	66.67	5.00	4.47
Urothoe poseidonis	2.00	33.33	1.67	2.58
Harpinia antennaria	6.00	100.00	22.50	6.89
Perioculodes longimanus	2.00	33.33	1.67	2.58
Caprella linearis	1.00	16.67	1.67	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1480.83	483.96
Amphiura chiajei	4.00	66.67	19.17	17.72
Ophiura albida	5.00	83.33	8.33	8.76
Echinocardium cordatum	5.00	83.33	11.67	6.83
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	4.00	66.67	6.67	6.06
Turbellaria	4.00	66.67	3.33	4.08
Phoroniden	4.00	66.67	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	4.00	66.67	4.17	3.76
Echiurida	1.00	16.67	.83	---
Sipinculida	4.00	66.67	7.50	6.89

Table 9. Data platform L4a, baseline May 1986.
Station 7, 500 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe lunulata	1.00	16.67	.83	---
Gattyana cirrosa	4.00	66.67	5.00	4.47
Polynoe kinbergi	4.00	66.67	5.00	4.47
Pholoe minuta	6.00	100.00	42.50	12.14
Sthenelais limicola	3.00	50.00	4.17	5.85
Ophiodromus flexuosus	1.00	16.67	.83	---
Gyptis capensis	1.00	16.67	.83	---
Synelmis klatti	2.00	33.33	1.67	2.58
Nereis longissima	1.00	16.67	.83	---
Nephtys hombergii	4.00	66.67	15.00	15.49
Nephtys spec. juv.	2.00	33.33	3.33	5.16
Glycera capitata	2.00	33.33	1.67	2.58
Glycera rouxii	3.00	50.00	7.50	10.37
Glycera alba	2.00	33.33	2.50	4.18
Glycinde nordmanni	2.00	33.33	1.67	2.58
Goniada maculata	6.00	100.00	10.83	4.92
Lumbrineris latreilli	6.00	100.00	155.83	39.93
Scoloplos armiger	1.00	16.67	.83	---
Orbinia sertulata	1.00	16.67	.83	---
Poecilochaetus serpens	1.00	16.67	1.67	---
Spiophanes kroyeri	1.00	16.67	.83	---
Spiophanes bombyx	2.00	33.33	1.67	2.58
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	2.00	33.33	1.67	2.58
Tharyx marioni	4.00	66.67	7.50	7.58
Chaetozone setosa	6.00	100.00	27.50	18.37
Diplocirrus glaucus	6.00	100.00	20.00	13.42
Ophelina acuminata	1.00	16.67	.83	---
Notomastus latericeus	4.00	66.67	7.50	7.58
Heteromastus filiformis	3.00	50.00	3.33	4.08
Owenia fusiformis	4.00	66.67	7.50	6.89
Lagis koreni	4.00	66.67	5.83	4.92
Ampharete acutifrons	1.00	16.67	.83	---
Lysilla loveni	5.00	83.33	6.67	4.08
Terebellides stroemi	3.00	50.00	4.17	5.85
MOLLUSCA				
Nucula turgida	4.00	66.67	5.83	7.36
Mysella bidentata	6.00	100.00	120.83	53.42
Arctica islandica	1.00	16.67	.83	---
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	1.00	16.67	1.67	---
Mysia undata	1.00	16.67	.83	---
Cultellus pellucidus	1.00	16.67	.83	---
Corbula gibba	2.00	33.33	1.67	2.58
Cingula nitida	4.00	66.67	13.33	20.90
Turritella communis	5.00	83.33	10.00	7.07
Cylichna cilindracea	6.00	100.00	22.50	6.89

Table 9 continued.	A	B	C	D
CRUSTACEA				
Macropipus holsatus	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Upogebia stellata	1.00	16.67	2.50	---
Callianassa subterranea	6.00	100.00	45.00	10.00
Eudorella truncatula	3.00	50.00	3.33	4.08
Diastylis bradyi	5.00	83.33	11.67	8.16
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	1.00	16.67	1.67	---
Urothoe poseidonis	3.00	50.00	2.50	2.74
Bathyporeia elegans	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	45.83	31.85
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1313.33	501.98
Amphiura chiajei	4.00	66.67	15.00	20.74
Ophiura texturata	1.00	16.67	.83	---
Ophiura albida	5.00	83.33	16.67	16.33
Echinocardium cordatum	4.00	66.67	5.00	5.48
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	4.00	66.67	7.50	8.22
Phoroniden	5.00	83.33	---	---
Oligochaeta	1.00	16.67	---	---
Holothuroidea	1.00	16.67	1.67	---
Sipinculida	4.00	66.67	7.50	6.89

Table 10.Data platform L4a, baseline May 1986.
Station 6, 750 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	2.00	33.33	5.00	10.00
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	2.00	33.33	1.67	2.58
Polynoe kinbergi	1.00	16.67	.83	---
Sigalion mathildae	1.00	16.67	.83	---
Pholoe minuta	4.00	66.67	13.33	20.90
Sthenelais limicola	2.00	33.33	2.50	4.18
Eteone longa	1.00	16.67	.83	---
Eumida sanguinea	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	1.67	2.58
Gyptis capensis	3.00	50.00	3.33	4.08
Nereis longissima	2.00	33.33	2.50	4.18
Nephtys hombergii	5.00	83.33	9.17	8.61
Nephtys longosetosa	1.00	16.67	.83	---
Glycera capitata	1.00	16.67	.83	---
Glycera rouxii	3.00	50.00	4.17	5.85
Glycinde nordmanni	1.00	16.67	.83	---
Goniada maculata	6.00	100.00	8.33	6.06
Lumbrineris latreilli	6.00	100.00	72.50	49.47
Lumbrineris fragilis	1.00	16.67	.83	---
Scoloplos armiger	1.00	16.67	.83	---
Orbinia sertulata	1.00	16.67	.83	---
Polydora guillei	1.00	16.67	.83	---
Spiophanes bombyx	1.00	16.67	1.67	---
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	3.00	50.00	2.50	2.74
Tharyx marioni	1.00	16.67	.83	---
Chaetozone setosa	3.00	50.00	6.67	11.69
Diplocirrus glaucus	3.00	50.00	3.33	4.08
Ophelina acuminata	3.00	50.00	3.33	4.08
Notomastus latericeus	3.00	50.00	3.33	4.08
Heteromastus filiformis	5.00	83.33	11.67	6.83
Owenia fusiformis	3.00	50.00	5.00	5.48
Polycirrus medusa	1.00	16.67	.83	---
Lagis koreni	1.00	16.67	.83	---
Amphicteis gunneri	2.00	33.33	2.50	4.18
Lysilla loveni	3.00	50.00	4.17	5.85
Terebellides stroemi	2.00	33.33	5.00	8.37
MOLLUSCA				
Nucula turgida	1.00	16.67	.83	---
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	157.50	108.43
Dosinia lupinus	2.00	33.33	1.67	2.58
Venus striatula	1.00	16.67	.83	---
Mysia undata	3.00	50.00	2.50	2.74
Corbula gibba	3.00	50.00	2.50	2.74
Thracia convexa	3.00	50.00	3.33	4.08
Cingula nitida	2.00	33.33	10.00	22.14
Turritella communis	5.00	83.33	9.17	5.85
Cylichna cilindracea	6.00	100.00	10.00	5.48

Table 10 continued.	A	B	C	D
CRUSTACEA				
Processa parva	1.00	16.67	.83	---
Upogebia stellata	6.00	100.00	6.67	2.58
Callianassa subterranea	6.00	100.00	49.17	16.56
Nebalia bipes	2.00	33.33	1.67	2.58
Gastrosaccus spinifer	1.00	16.67	.83	---
Eudorella truncatula	2.00	33.33	2.50	4.18
Iphinoe trispinosa	2.00	33.33	1.67	2.58
Diastylis bradyi	5.00	83.33	10.00	8.94
Ione thoracica	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	3.00	50.00	7.50	8.80
Bathyporeia elegans	1.00	16.67	1.67	---
Harpinia antennaria	5.00	83.33	8.33	6.06
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	885.00	434.59
Amphiura chiajei	1.00	16.67	8.33	---
Ophiura albida	6.00	100.00	5.83	2.04
Echinocardium cordatum	3.00	50.00	2.50	2.74
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	4.00	66.67	6.67	6.83
Turbellaria	2.00	33.33	2.50	4.18
Phoroniden	5.00	83.33	---	---
Oligochaeta	1.00	16.67	---	---
Holothuroidea	3.00	50.00	3.33	4.08
Sipinculida	2.00	33.33	4.17	8.01

Table 11. Data platform L4a, baseline May 1986.
Station 5, 1000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	1.67	---
Harmothoe lunulata	2.00	33.33	1.67	2.58
Gattyana cirrosa	3.00	50.00	5.00	5.48
Polynoe kinbergi	5.00	83.33	10.00	10.49
Pholoe minuta	6.00	100.00	15.83	12.81
Sthenelais limicola	3.00	50.00	6.67	11.69
Anaitides groenlandica	2.00	33.33	1.67	2.58
Ophiodromus flexuosus	2.00	33.33	3.33	5.16
Gyptis capensis	2.00	33.33	1.67	2.58
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	1.00	16.67	.83	---
Nephtys hombergii	4.00	66.67	9.17	8.01
Nephtys spec. juv.	1.00	16.67	.83	---
Glycera rouxii	4.00	66.67	6.67	6.06
Glycera alba	1.00	16.67	1.67	---
Glycinde nordmanni	4.00	66.67	5.00	4.47
Goniada maculata	5.00	83.33	5.83	3.76
Lumbrineris latreilli	6.00	100.00	102.50	38.57
Lumbrineris fragilis	4.00	66.67	4.17	3.76
Driloneris filum	2.00	33.33	1.67	2.58
Orbinia sertulata	1.00	16.67	.83	---
Polydora guillei	1.00	16.67	1.67	---
Spiophanes kroyeri	2.00	33.33	1.67	2.58
Spiophanes bombyx	2.00	33.33	1.67	2.58
Aonides paucibranchiata	1.00	16.67	.83	---
Chaetopterus variopedatus	5.00	83.33	5.83	3.76
Tharyx marioni	4.00	66.67	5.83	4.92
Chaetozone setosa	5.00	83.33	15.00	13.42
Diplocirrus glaucus	3.00	50.00	3.33	4.08
Capitella capitata	1.00	16.67	.83	---
Notomastus latericeus	2.00	33.33	1.67	2.58
Heteromastus filiformis	5.00	83.33	6.67	4.08
Owenia fusiformis	5.00	83.33	10.83	12.42
Lagis koreni	2.00	33.33	3.33	5.16
Amphicteis gunneri	1.00	16.67	.83	---
Lysilla loveni	5.00	83.33	8.33	6.83
Terebellides stroemi	3.00	50.00	3.33	4.08
MOLLUSCA				
Nucula turgida	4.00	66.67	5.83	5.85
Montacuta ferruginosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	136.67	70.76
Dosinia lupinus	1.00	16.67	.83	---
Mysia undata	2.00	33.33	1.67	2.58
Abra alba	1.00	16.67	.83	---
Corbula gibba	1.00	16.67	.83	---
Cingula nitida	2.00	33.33	1.67	2.58
Turritella communis	6.00	100.00	35.00	17.61
Cylichna cilindracea	4.00	66.67	5.00	4.47

Table 11 continued.	A	B	C	D
CRUSTACEA				
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	3.00	50.00	2.50	2.74
Callianassa subterranea	6.00	100.00	40.00	15.81
Eudorella truncatula	5.00	83.33	5.83	3.76
Diastylis bradyi	4.00	66.67	9.17	9.70
Ione thoracica	1.00	16.67	.83	---
Orchomenella nana	1.00	16.67	.83	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	3.00	50.00	4.17	4.92
Urothoe poseidonis	1.00	16.67	.83	---
Bathyporeia guilliamsoniana	1.00	16.67	.83	---
Bathyporeia elegans	2.00	33.33	2.50	4.18
Harpinia antennaria	6.00	100.00	19.17	8.61
Aora typica	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	543.33	194.64
Amphiura chiajei	4.00	66.67	15.00	12.65
Ophiura albida	5.00	83.33	7.50	5.24
Echinocardium cordatum	2.00	33.33	1.67	2.58
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	3.00	50.00	4.17	5.85
Turbellaria	2.00	33.33	1.67	2.58
Phoroniden	6.00	100.00	---	---
Holothuroidea	3.00	50.00	4.17	4.92
Sagitta spec.	1.00	16.67	.83	---
Sipinculida	6.00	100.00	12.50	9.87

Table 12. Data platform L4a, baseline May 1986.
Station 4, 1500 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHEATA				
Harmothoe lunulata	2.00	33.33	1.6	2.58
Harmothoe longisetis	3.00	50.00	2.5	2.74
Gattyana cirrosa	2.00	33.33	1.6	2.58
Polynoe kinbergi	2.00	33.33	1.6	2.58
Pholoe minuta	6.00	100.00	31.6	15.71
Sthenelais limicola	4.00	66.67	5.0	5.48
Eteone longa	2.00	33.33	1.6	2.58
Anaitides groenlandica	3.00	50.00	2.5	2.74
Ophiodromus flexuosus	2.00	33.33	1.6	2.58
Gyptis capensis	1.00	16.67	.8	---
Nereis longissima	2.00	33.33	1.6	2.58
Nephtys hombergii	5.00	83.33	8.3	8.76
Nephtys incisa	1.00	16.67	.8	---
Nephtys cirrosa	1.00	16.67	.8	---
Nephtys spec. juv.	2.00	33.33	2.5	4.18
Glycera rouxii	5.00	83.33	8.3	6.06
Glycera alba	1.00	16.67	.8	---
Glycera spec. juv.	2.00	33.33	1.6	2.58
Glycinde nordmanni	3.00	50.00	6.6	8.16
Goniada maculata	3.00	50.00	4.1	4.92
Lumbrineris latreilli	6.00	100.00	130.8	44.77
Lumbrineris fragilis	3.00	50.00	5.8	6.65
Orbinia sertulata	1.00	16.67	.8	---
Poecilochaetus serpens	1.00	16.67	.	---
Polydora guillei	2.00	33.33	3.	6.06
Spiophanes bombyx	3.00	50.00	2	2.74
Chaetopterus variopedatus	2.00	33.33	2.	4.18
Tharyx marioni	6.00	100.00	7	2.74
Chaetozone setosa	6.00	100.00	18.	13.29
Diplocirrus glaucus	5.00	83.33	13.	9.83
Ophelina acuminata	2.00	33.33	2.	4.18
Capitella capitata	1.00	16.67	.	---
Notomastus latericeus	4.00	66.67	8.	9.83
Heteromastus filiformis	2.00	33.33	5.	10.00
Owenia fusiformis	3.00	50.00	5.	7.36
Lagis koreni	2.00	33.33	2.	4.18
Amphicteis gunneri	2.00	33.33	1.	2.58
Lysilla loveni	1.00	16.67	.	---
Terebellides stroemi	3.00	50.00	2.	2.74
MOLLUSCA				
Nucula turgida	6.00	100.00	9.	4.92
Montacuta ferruginosa	1.00	16.67	1.	---
Mysella bidentata	6.00	100.00	110.	59.50
Arctica islandica	1.00	16.67	.	---
Acanthocardia echinata	3.00	50.00	2.	2.74
Mysia undata	4.00	66.67	5.	5.85
Abra alba	3.00	50.00	3.	4.08
Thracia convexa	2.00	33.33	1.	2.58
Turritella communis	5.00	83.33	13.	12.52
Cylichna cilindracea	5.00	83.33	5.	3.16

Table 12 continued.	A	B	C	D
CRUSTACEA				
Ebalia cranchii	1.00	16.67	.83	---
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	3.00	50.00	5.83	7.36
Callianassa subterranea	4.00	66.67	23.33	21.13
Nebalia bipes	1.00	16.67	.83	---
Gastrosaccus spinifer	1.00	16.67	.83	---
Eudorella truncatula	4.00	66.67	3.33	2.58
Diastylis bradyi	4.00	66.67	6.67	6.06
Ione thoracica	1.00	16.67	1.67	---
Leucothoe incisa	2.00	33.33	1.67	2.58
Ampelisca brevicornis	1.00	16.67	1.67	---
Ampelisca tenuicornis	4.00	66.67	5.00	5.48
Bathyporeia guilliamsoniana	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	30.00	15.17
Perioculodes longimanus	1.00	16.67	.83	---
Westwoodilla caecula	1.00	16.67	.83	---
ECHINODERMATA				
Astropecten irregularis	1.00	16.67	.83	---
Amphiura filiformis	6.00	100.00	1053.33	271.56
Amphiura chiajei	5.00	83.33	20.00	17.89
Ophiura albida	6.00	100.00	15.83	12.42
Echinocardium cordatum	5.00	83.33	7.50	6.89
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	3.00	50.00	2.50	2.74
Turbellaria	1.00	16.67	.83	---
Phoroniden	5.00	83.33	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	5.00	83.33	15.00	11.83
Echiurida	1.00	16.67	.83	---
Sipinculida	2.00	33.33	5.00	7.75

Table 13. Data platform L4a, baseline May 1986.
Station 3, 2000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	1.00	16.67	.83	---
Polynoe kinbergi	2.00	33.33	2.50	4.18
Pholoe minuta	6.00	100.00	17.50	7.58
Sthenelais limicola	5.00	83.33	4.17	2.04
Eteone longa	1.00	16.67	.83	---
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	1.00	16.67	.83	---
Gyptis capensis	1.00	16.67	.83	---
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	3.00	50.00	3.33	4.08
Nephtys hombergii	5.00	83.33	10.00	10.95
Nephtys cirrosa	1.00	16.67	2.50	---
Glycera rouxii	6.00	100.00	14.17	3.76
Glycera alba	1.00	16.67	.83	---
Glycinde nordmanni	4.00	66.67	4.17	3.76
Goniada maculata	3.00	50.00	4.17	5.85
Lumbrineris latreilli	6.00	100.00	150.00	27.02
Lumbrineris fragilis	3.00	50.00	3.33	4.08
Orbinia sertulata	2.00	33.33	2.50	4.18
Spio filicornis	2.00	33.33	1.67	2.58
Polydora guillei	1.00	16.67	.83	---
Spiophanes kroyeri	1.00	16.67	.83	---
Spiophanes bombyx	2.00	33.33	1.67	2.58
Chaetopterus variopedatus	3.00	50.00	2.50	2.74
Tharyx marioni	6.00	100.00	8.33	4.08
Chaetozone setosa	6.00	100.00	32.50	13.32
Diplocirrus glaucus	4.00	66.67	4.17	3.76
Ophelina acuminata	2.00	33.33	2.50	4.18
Notomastus latericeus	5.00	83.33	5.00	3.16
Heteromastus filiformis	2.00	33.33	4.17	6.65
Owenia fusiformis	5.00	83.33	8.33	6.83
Lagis koreni	4.00	66.67	7.50	9.35
Amphicteis gunneri	3.00	50.00	3.33	4.08
Lysilla loveni	1.00	16.67	1.67	---
MOLLUSCA				
Nucula turgida	2.00	33.33	1.67	2.58
Montacuta ferruginosa	5.00	83.33	5.00	3.16
Mysella bidentata	6.00	100.00	96.67	46.12
Arctica islandica	2.00	33.33	1.67	2.58
Acanthocardia echinata	2.00	33.33	1.67	2.58
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	1.00	16.67	.83	---
Mysia undata	2.00	33.33	1.67	2.58
Corbula gibba	1.00	16.67	.83	---
Thracia convexa	1.00	16.67	.83	---
Turritella communis	5.00	83.33	10.83	8.01
Cylichna cilindracea	5.00	83.33	10.00	7.07

Table 13 continued.

	A	B	C	D
CRUSTACEA				
Processa parva	2.00	33.33	1.67	2.58
Upogebia stellata	5.00	83.33	5.83	4.92
Callianassa subterranea	6.00	100.00	33.33	13.29
Eudorella truncatula	3.00	50.00	3.33	4.08
Diastylis bradyi	5.00	83.33	5.83	3.76
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	4.00	66.67	4.17	3.76
Urothoe poseidonis	2.00	33.33	1.67	2.58
Bathyporeia elegans	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	27.50	20.68
Perioculodes longimanus	4.00	66.67	5.00	4.47
Westwoodilla caecula	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1107.50	275.79
Amphiura chiajei	6.00	100.00	25.00	16.12
Ophiura albida	2.00	33.33	3.33	5.16
Echinocardium cordatum	5.00	83.33	7.50	5.24
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	3.00	50.00	2.50	2.74
Phoroniden	5.00	83.33	---	---
Oligochaeta	5.00	83.33	---	---
Holothuroidea	3.00	50.00	5.00	7.75
Sipinculida	4.00	66.67	9.17	8.61

Table 14. Data platform L4a, baseline May 1986.
Station 2, 3000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	1.00	16.67	2.50	---
Pholoe minuta	6.00	100.00	20.83	6.65
Sthenelais limicola	3.00	50.00	2.50	2.74
Ophiodromus flexuosus	2.00	33.33	2.50	4.18
Gyptis capensis	1.00	16.67	.83	---
Synelmis klatti	1.00	16.67	.83	---
Exogone hebes	1.00	16.67	.83	---
Nephtys hombergii	6.00	100.00	17.50	6.89
Nephtys incisa	1.00	16.67	.83	---
Nephtys spec. juv.	2.00	33.33	3.33	6.06
Glycera rouxii	4.00	66.67	8.33	7.53
Glycinde nordmanni	4.00	66.67	5.00	5.48
Goniada maculata	4.00	66.67	8.33	9.31
Lumbrineris latreilli	6.00	100.00	129.17	38.78
Lumbrineris fragilis	4.00	66.67	4.17	3.76
Spio filicornis	2.00	33.33	1.67	2.58
Polydora guillei	3.00	50.00	4.17	5.85
Spiophanes kroyeri	1.00	16.67	.83	---
Spiophanes bombyx	1.00	16.67	.83	---
Chaetopterus variopedatus	3.00	50.00	5.83	8.01
Tharyx marioni	2.00	33.33	3.33	5.16
Chaetozone setosa	4.00	66.67	15.00	14.83
Diplocirrus glaucus	4.00	66.67	5.00	4.47
Notomastus latericeus	4.00	66.67	5.00	4.47
Heteromastus filiformis	4.00	66.67	4.17	3.76
Owenia fusiformis	5.00	83.33	5.83	3.76
Lagis koreni	4.00	66.67	5.83	4.92
Amphicteis gunneri	1.00	16.67	.83	---
Terebellides stroemi	1.00	16.67	1.67	---
MOLLUSCA				
Nucula turgida	4.00	66.67	5.00	5.48
Mysella bidentata	6.00	100.00	117.50	51.74
Arctica islandica	2.00	33.33	2.50	4.18
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	2.00	33.33	2.50	4.18
Mysia undata	2.00	33.33	1.67	2.58
Corbula gibba	2.00	33.33	1.67	2.58
Cingula nitida	1.00	16.67	.83	---
Turritella communis	6.00	100.00	18.33	4.08
Cylichna cilindracea	2.00	33.33	5.00	10.00
CRUSTACEA				
Processa parva	1.00	16.67	.83	---
Pagurus bernhardus	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Upogebia stellata	3.00	50.00	3.33	4.08
Callianassa subterranea	6.00	100.00	30.00	20.49
Eudorella truncatula	2.00	33.33	2.50	4.18
Diastylis bradyi	4.00	66.67	4.17	3.76

Table 14 continued.	A	B	C	D
Ampelisca brevicornis	2.00	33.33	1.67	2.58
Bathyporeia elegans	1.00	16.67	.83	---
Harpinia antennaria	4.00	66.67	29.17	26.16
Aora typica	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	909.17	280.36
Amphiura chiajei	6.00	100.00	16.67	8.16
Ophiura albida	6.00	100.00	12.50	10.37
Echinocardium cordatum	3.00	50.00	3.33	4.08
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	5.00	83.33	7.50	4.18
Phoroniden	4.00	66.67	---	---
Oligochaeta	3.00	50.00	---	---
Holothuroidea	1.00	16.67	.83	---
Sipinculida	5.00	83.33	11.67	10.33

Table 15. Data platform L4a, baseline May 1986.
Station 1, 5000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	10.00	.50	---
Harmothoe longisetis	1.00	10.00	.50	---
Gattyana cirrosa	1.00	10.00	1.00	---
Polynoe kinbergi	5.00	50.00	7.00	12.29
Pholoe minuta	9.00	90.00	25.00	19.29
Sthenelais limicola	6.00	60.00	4.50	4.97
Eteone longa	1.00	10.00	.50	---
Anaitides groenlandica	6.00	60.00	3.00	2.58
Ophiodromus flexuosus	1.00	10.00	.50	---
Gyptis capensis	1.00	10.00	.50	---
Nephtys hombergii	10.00	100.00	19.50	10.92
Nephtys spec. juv.	1.00	10.00	1.00	---
Glycera rouxii	9.00	90.00	9.00	6.15
Glycera spec. juv.	1.00	10.00	.50	---
Glycinde nordmanni	4.00	40.00	3.50	4.74
Goniada maculata	8.00	80.00	6.50	5.80
Lumbrineris latreilli	10.00	100.00	129.50	25.87
Lumbrineris fragilis	2.00	20.00	1.50	3.37
Scoloplos armiger	2.00	20.00	1.00	2.11
Spio filicornis	1.00	10.00	.50	---
Polydora guillei	2.00	20.00	1.00	2.11
Spiophanes bombyx	3.00	30.00	2.00	3.50
Aonides paucibranchiata	1.00	10.00	.50	---
Magelona papillicornis	1.00	10.00	.50	---
Chaetopterus variopedatus	1.00	10.00	1.00	---
Tharyx marioni	4.00	40.00	4.00	6.15
Chaetozone setosa	10.00	100.00	32.50	25.74
Diplocirrus glaucus	8.00	80.00	7.50	4.25
Ophelina acuminata	1.00	10.00	.50	---
Notomastus latericeus	5.00	50.00	2.50	2.64
Heteromastus filiformis	3.00	30.00	2.50	4.25
Owenia fusiformis	7.00	70.00	6.50	6.69
Lagis koreni	2.00	20.00	1.50	3.37
Amphicteis gunneri	2.00	20.00	1.00	2.11
Lysilla loveni	4.00	40.00	2.50	3.54
Terebellides stroemi	2.00	20.00	1.00	2.11
MOLLUSCA				
Nucula turgida	10.00	100.00	13.50	9.14
Thyasira flexuosa	3.00	30.00	1.50	2.42
Montacuta ferruginosa	7.00	70.00	8.50	8.18
Mysella bidentata	10.00	100.00	58.00	60.10
Arctica islandica	3.00	30.00	1.50	2.42
Acanthocardia echinata	1.00	10.00	.50	---
Dosinia lupinus	1.00	10.00	.50	---
Venus striatula	4.00	40.00	3.00	4.22
Abra alba	2.00	20.00	1.50	3.37
Corbula gibba	6.00	60.00	3.50	3.37
Cingula nitida	7.00	70.00	13.00	16.53
Turritella communis	9.00	90.00	8.00	4.83
Natica alderi	1.00	10.00	1.00	---
Cylichna cilindracea	9.00	90.00	22.50	15.68

Table 15 continued.	A	B	C	D
CRUSTACEA				
Processa parva	1.00	10.00	.50	---
Ebalia cranchii	1.00	10.00	.50	---
Corystes cassivelaunus	1.00	10.00	.50	---
Upogebia stellata	2.00	20.00	1.00	2.11
Callianassa subterranea	6.00	60.00	6.00	6.15
Nebalia bipes	3.00	30.00	2.00	3.50
Eudorella truncatula	5.00	50.00	3.50	4.12
Pseudocuma longicornis	1.00	10.00	.50	---
Diastylis bradyi	2.00	20.00	1.50	3.37
Cirolana borealis	1.00	10.00	29.50	---
Ampelisca tenuicornis	3.00	30.00	1.50	2.42
Urothoe poseidonis	1.00	10.00	.50	---
Bathyporeia elegans	1.00	10.00	.50	---
Harpinia antennaria	10.00	100.00	52.50	23.24
Perioculodes longimanus	2.00	20.00	1.50	3.37
Aora typica	1.00	10.00	.50	---
ECHINODERMATA				
Amphiura filiformis	10.00	100.00	1045.00	273.85
Amphiura chiajei	8.00	80.00	18.50	15.10
Ophiura albida	10.00	100.00	18.00	11.83
Echinocardium cordatum	9.00	90.00	12.00	10.06
Echinocyamus pusillus	1.00	10.00	.50	---
OTHER TAXA				
Nemertinea	10.00	100.00	---	---
Viseieren	9.00	90.00	11.50	10.01
Turbellaria	1.00	10.00	1.00	---
Phoroniden	7.00	70.00	---	---
Oligochaeta	5.00	50.00	---	---
Holothuroidea	6.00	60.00	4.50	4.97
Echiurida	2.00	20.00	1.50	3.37
Sipinculida	7.00	70.00	8.50	6.69

Table 16. Data platform L4a, baseline May 1986.
Station 1B, 5000 m residual current transect; boxcorer.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	10.00	1.41	---
Harmothoe longisetis	2.00	20.00	4.23	9.51
Gattyana cirrosa	5.00	50.00	22.54	31.98
Polynoe kinbergi	2.00	20.00	2.82	5.94
Pholoe minuta	9.00	90.00	28.17	17.57
Sthenelais limicola	3.00	30.00	4.23	6.80
Ophiodromus flexuosus	3.00	30.00	4.23	6.80
Gyptis capensis	1.00	10.00	1.41	---
Synelmis klatti	3.00	30.00	7.04	13.69
Exogone hebes	1.00	10.00	1.41	---
Nereis longissima	4.00	40.00	5.63	7.27
Nephtys hombergii	6.00	60.00	11.27	11.11
Nephtys spec. juv.	1.00	10.00	2.82	---
Glycera rouxii	2.00	20.00	4.23	9.51
Glycera alba	1.00	10.00	1.41	---
Glycera spec. juv.	1.00	10.00	1.41	---
Glycinde nordmanni	1.00	10.00	1.41	---
Goniada maculata	4.00	40.00	7.04	9.96
Lumbrineris latreilli	10.00	100.00	94.37	37.59
Lumbrineris fragilis	5.00	50.00	8.45	9.85
Poecilochaetus serpens	2.00	20.00	4.23	9.51
Spio filicornis	2.00	20.00	4.23	9.51
Polydora guillei	3.00	30.00	12.68	30.75
Spiophanes bombyx	2.00	20.00	2.82	5.94
Chaetopterus variopedatus	6.00	60.00	19.72	20.14
Tharyx marioni	2.00	20.00	2.82	5.94
Chaetozone setosa	10.00	100.00	36.62	16.53
Diplocirrus glaucus	6.00	60.00	11.27	11.11
Capitella capitata	5.00	50.00	16.90	20.78
Notomastus latericeus	9.00	90.00	54.93	47.62
Heteromastus filiformis	1.00	10.00	1.41	---
Owenia fusiformis	2.00	20.00	4.23	9.51
MOLLUSCA				
Nucula turgida	4.00	40.00	8.45	11.88
Thyasira flexuosa	1.00	10.00	1.41	---
Montacuta ferruginosa	4.00	40.00	8.45	11.88
Mysella bidentata	6.00	60.00	18.31	19.97
Abra alba	1.00	10.00	1.41	---
Corbula gibba	2.00	20.00	2.82	5.94
Thracia convexa	1.00	10.00	1.41	---
Cingula nitida	4.00	40.00	12.68	19.30
Turritella communis	8.00	80.00	30.99	24.66
Cylichna cilindracea	4.00	40.00	9.86	14.92
CRUSTACEA				
Upogebia stellata	6.00	60.00	9.86	9.51
Callianassa subterranea	10.00	100.00	74.65	33.23
Eudorella truncatula	4.00	40.00	9.86	17.63
Iphinoe trispinosa	1.00	10.00	1.41	---
Diastylis bradyi	2.00	20.00	2.82	5.94

Table 16 continued.	A	B	C	D
Ione thoracica	3.00	30.00	5.63	9.85
Megaluropus agilis	1.00	10.00	1.41	---
Ampelisca brevicornis	1.00	10.00	1.41	---
Ampelisca tenuicornis	2.00	20.00	2.82	5.94
Harpinia antennaria	8.00	80.00	64.79	64.10
Perioculodes longimanus	1.00	10.00	1.41	---
Aora typica	1.00	10.00	1.41	---
ECHINODERMATA				
Amphiura filiformis	10.00	100.00	661.97	493.96
Amphiura chiajei	2.00	20.00	4.23	9.51
Ophiura texturata	1.00	10.00	1.41	---
Ophiura albida	7.00	70.00	25.35	30.28
Echinocardium cordatum	6.00	60.00	8.45	7.27
OTHER TAXA				
Nemertinea	9.00	90.00	---	---
Amphioxus	1.00	10.00	1.41	---
Viseieren	9.00	90.00	39.44	24.66
Turbellaria	1.00	10.00	1.41	---
Phoroniden	9.00	90.00	---	---
Harp. copepoda	1.00	10.00	1.41	---
Oligochaeta	2.00	20.00	---	---
Holothuroidea	3.00	30.00	5.63	9.85
Sipinculida	5.00	50.00	19.72	24.12

Table 17. Data platform L4a, survey Sept. 1986.
All stations
Mean densities per m2.
Total ind. per m2 per station.
Total number of species per station.

Station number	9	P1	8	7	6	5	1
Distance from platform (m)	250	0	250	500	750	1000	5000
POLYCHAETA							
Aphrodita aculeata	1.7	--	.8	--	1.7	1.7	2.5
Harmothoe lunulata	.8	--	--	--	.8	2.5	--
Harmothoe longisetis	3.3	--	.8	.8	1.7	.8	--
Gattyana cirrosa	22.5	2.5	8.3	15.8	14.2	26.7	6.7
Polynoe kinbergi	5.8	--	.8	2.5	4.2	5.0	.8
Sigalion mathildae	--	--	--	--	--	--	--
Pholoe minuta	28.3	2.5	30.0	20.8	30.0	45.0	27.5
Sthenelais limicola	6.7	10.0	1.7	5.0	4.2	8.3	6.7
Eteone longa	2.5	--	1.7	.8	.8	.8	--
Eteone lactea	--	--	--	--	--	.8	--
Eteone flava	--	--	.8	--	--	--	--
Anaitides groenlandica	8.3	15.0	20.0	8.3	20.8	4.2	7.5
Anaitides mucosa	4.2	2.5	5.8	14.2	1.7	10.0	9.2
Anaitides maculata	.8	10.0	1.7	--	1.7	1.7	2.5
Eumida sanguinea	2.5	15.0	--	--	--	1.7	2.5
Ophiodromus flexuosus	5.0	15.0	3.3	7.5	1.7	5.8	3.3
Gyptis capensis	3.3	--	--	3.3	2.5	--	1.7
Synelmis klatti	4.2	2.5	1.7	2.5	5.0	5.0	1.7
Exogone hebes	--	--	--	--	--	--	--
Nereis longissima	5.8	10.0	4.2	1.7	1.7	2.5	4.2
Nereis spec. juv.	--	2.5	--	--	.8	--	1.7
Nephtys hombergii	22.5	35.0	20.8	46.7	21.7	27.5	22.5
Nephtys cirrosa	--	--	--	--	--	1.7	--
Glycera rouxii	6.7	5.0	.8	4.2	6.7	5.0	5.8
Glycera alba	--	--	.8	--	1.7	1.7	.8
Glycera spec. juv.	.8	--	--	--	--	--	1.7
Glycinde nordmanni	5.0	--	5.0	8.3	9.2	16.7	10.8
Goniada maculata	25.0	7.5	10.8	19.2	20.8	19.2	7.5
Lumbrineris latreilli	145.0	17.5	110.0	119.2	146.7	187.5	110.8
Lumbrineris fragilis	3.3	--	1.7	2.5	--	5.8	5.0
Driloneris filum	--	--	--	--	--	--	.8
Scoloplos armiger	--	--	--	--	--	.8	--
Orbinia sertulata	.8	2.5	--	--	1.7	.8	.8
Poecilochaetus serpens	--	5.0	--	--	--	.8	1.7
Spio filicornis	--	12.5	--	.8	1.7	2.5	.8
Polydora pulchra	--	--	--	1.7	5.8	.8	.8
Polydora guillei	9.2	--	--	--	.8	8.3	7.5
Spiophanes kroyeri	.8	--	--	--	--	--	--
Spiophanes bombyx	8.3	12.5	7.5	29.2	10.0	23.3	72.5
Scolelepis bonnieri	--	--	--	--	--	--	.8
Scolelepis foliosa	2.5	--	--	--	--	--	--
Magelona papillicornis	--	5.0	.8	.8	--	--	--
Chaetopterus variopedatus	39.2	15.0	10.8	22.5	31.7	40.0	8.3
Tharyx marioni	10.0	2.5	.8	5.0	5.0	5.8	.8
Chaetozone setosa	21.7	17.5	20.0	25.8	20.0	36.7	4.2
Diplocirrus glaucus	48.3	30.0	74.2	65.0	46.7	84.2	20.8
Scalibregma inflatum	296.7	97.5	280.0	212.5	392.5	317.5	130.0
Ophelina acuminata	2.5	--	3.3	8.3	8.3	5.0	19.2
Capitella capitata	7.5	2.5	1.7	--	--	--	--
Notomastus latericeus	4.2	--	9.2	8.3	19.2	10.8	1.7
Heteromastus filiformis	1.7	--	4.2	5.8	16.7	7.5	5.8
Owenia fusiformis	7.5	--	4.2	8.3	2.5	10.8	10.0
Lanice conchilega	--	--	--	--	--	--	.8
Lagis koreni	235.0	62.5	38.3	126.7	205.0	189.2	198.3
Amphicteis gunneri	.8	--	--	--	--	--	.8

Table 17 continued.

Station number	9	P1	8	7	6	5	1
Lysilla loveni	10.8	--	28.3	40.8	65.8	53.3	18.3
Terebellides stroemi	--	--	1.7	--	2.5	2.5	1.7
MOLLUSCA							
Nucula turgida	9.2	2.5	4.2	10.8	8.3	20.8	9.2
Thyasira flexuosa	--	--	.8	--	--	--	--
Lepton squamosum	.8	--	--	--	--	1.7	.8
Montacuta ferruginosa	1.7	--	--	.8	.8	9.2	7.5
Mysella bidentata	95.0	5.0	99.2	115.0	172.5	180.8	33.3
Arctica islandica	1.7	--	--	2.5	--	1.7	5.8
Acanthocardia echinata	--	10.0	.8	.8	.8	--	--
Dosinia exoleta	--	--	.8	--	--	--	--
Dosinia lupinus	1.7	--	--	--	.8	1.7	.8
Venus striatula	3.3	--	2.5	5.8	4.2	3.3	4.2
Mysia undata	1.7	--	2.5	2.5	1.7	1.7	1.7
Abra alba	--	7.5	--	--	--	2.5	15.8
Cultellus pellucidus	.8	--	--	--	--	.8	1.7
Mya spec. juv.	1.7	2.5	9.2	1.7	.8	2.5	14.2
Corbula gibba	1.7	--	.8	1.7	.8	1.7	1.7
Thracia convexa	2.5	--	.8	--	.8	.8	2.5
Cingula nitida	1.7	45.0	5.8	.8	--	--	3.3
Turritella communis	21.7	2.5	10.8	15.8	10.0	19.2	35.0
Natica alderi	.8	--	.8	--	1.7	--	2.5
Cylichna cilindracea	9.2	2.5	14.2	9.2	10.0	6.7	15.0
Philine catena	9.2	5.0	7.5	.8	--	1.7	--
CRUSTACEA							
Processa parva	5.0	10.0	17.5	15.0	7.5	4.2	6.7
Pontophilus trispinosus	--	--	1.7	--	.8	--	--
Pontophilus spec.	--	--	--	--	--	.8	--
Pagurus bernhardus	.8	--	--	--	--	.8	--
Macropipus holsatus	5.0	--	.8	.8	1.7	2.5	.8
Macropipus spec. juv.	1.7	2.5	1.7	.8	.8	3.3	2.5
Ebalia cranchii	3.3	5.0	3.3	1.7	2.5	--	2.5
Corystes cassivelaunus	--	--	--	1.7	1.7	.8	--
Upogebia stellata	5.0	--	3.3	3.3	9.2	3.3	4.2
Callianassa subterranea	42.5	17.5	10.0	40.8	45.0	32.5	25.0
Decapoda larven	24.2	30.0	15.0	29.2	23.3	35.8	72.5
Nebalia bipes	--	2.5	.8	--	--	--	--
Schistomysis ornata	.8	--	--	--	--	--	--
Eudorella truncatula	--	--	.8	.8	--	--	.8
Iphinoe trispinosa	--	2.5	3.3	--	3.3	.8	1.7
Diastylis bradyi	11.7	27.5	21.7	10.8	10.0	28.3	8.3
Cirolana borealis	1.7	--	1.7	--	.8	2.5	.8
Ione thoracica	.8	--	--	1.7	--	1.7	.8
Melita obtusata	--	--	--	.8	--	--	--
Hippomedon denticulatus	1.7	2.5	--	--	--	1.7	--
Orchomenella nana	--	--	--	--	.8	.8	.8
Leucothoe incisa	--	--	.8	--	--	--	.8
Ampelisca brevicornis	2.5	--	--	4.2	12.5	1.7	6.7
Ampelisca tenuicornis	.8	--	2.5	1.7	1.7	3.3	3.3
Ampelisca spec. juv.	--	--	1.7	.8	--	.8	1.7
Urothoe poseidonis	2.5	--	--	2.5	--	1.7	--
Bathyporeia guilliamsoniana	.8	--	.8	--	--	--	--
Harpinia antennaria	20.0	--	.8	24.2	19.2	10.0	5.0
Perioculodes longimanus	2.5	--	--	1.7	.8	--	1.7
Aora typica	--	2.5	1.7	--	--	--	4.2

Table 17 continued.

Station number	9	P1	8	7	6	5	1
ECHINODERMATA							
Astropecten irregularis	.8	--	--	--	--	--	--
Amphiura filiformis	762.5	25.0	686.7	740.8	1124.2	1635.8	391.7
Amphiura chiajei	21.7	--	30.0	41.7	63.3	30.8	5.8
Ophiura albida	8.3	--	4.2	5.0	5.0	6.7	5.8
Echinocardium cordatum	1.7	--	.8	.8	2.5	16.7	30.0
Psammechinus miliaris	--	--	.8	--	--	--	--
OTHER TAXA							
Nemertinea	P	P	P	P	P	P	P
Turbellaria	3.3	--	5.0	6.7	3.3	5.0	3.3
Phoroniden	P	P	P	P	P	P	P
Harp. copepoda	--	--	--	--	--	--	.8
Oligochaeta	P	P	P	P	P	P	P
Holothuroidea	2.5	--	.8	4.2	--	7.5	4.2
Sagitta spec.	.8	5.0	3.3	--	--	1.7	2.5
Sipinculida	5.8	2.5	5.8	8.3	13.3	13.3	8.3
Tot. ind. per m2	2127	635	1705	1963	2703	3300	1508
Tot. number of species	89	51	82	74	78	90	92

P= present, not counted.

Table 18. Data platform L4a, survey Sept. 1986.
Station 9, 250 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	1.67	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	3.33	5.16
Gattyana cirrosa	6.00	100.00	22.50	18.10
Polynoe kinbergi	5.00	83.33	5.83	3.76
Pholoe minuta	6.00	100.00	28.33	16.63
Sthenelais limicola	5.00	83.33	6.67	5.16
Eteone longa	3.00	50.00	2.50	2.74
Anaitides groenlandica	6.00	100.00	8.33	2.58
Anaitides mucosa	3.00	50.00	4.17	5.85
Anaitides maculata	1.00	16.67	.83	---
Eumida sanguinea	2.00	33.33	2.50	4.18
Ophiodromus flexuosus	4.00	66.67	5.00	5.48
Gyptis capensis	3.00	50.00	3.33	4.08
Synelmis klatti	4.00	66.67	4.17	3.76
Nereis longissima	5.00	83.33	5.83	3.76
Nephtys hombergii	6.00	100.00	22.50	9.35
Glycera rouxii	5.00	83.33	6.67	5.16
Glycera spec. juv.	1.00	16.67	.83	---
Glycinde nordmanni	5.00	83.33	5.00	3.16
Goniada maculata	6.00	100.00	25.00	8.94
Lumbrineris latreilli	6.00	100.00	145.00	36.88
Lumbrineris fragilis	4.00	66.67	3.33	2.58
Orbinia sertulata	1.00	16.67	.83	---
Polydora guillei	4.00	66.67	9.17	11.58
Spiophanes kroyeri	1.00	16.67	.83	---
Spiophanes bombyx	5.00	83.33	8.33	6.83
Scolelepis foliosa	3.00	50.00	2.50	2.74
Chaetopterus variopedatus	6.00	100.00	39.17	16.86
Tharyx marioni	6.00	100.00	10.00	6.32
Chaetozone setosa	6.00	100.00	21.67	9.83
Diplocirrus glaucus	6.00	100.00	48.33	28.23
Scalibregma inflatum	6.00	100.00	296.67	99.98
Ophelina acuminata	2.00	33.33	2.50	4.18
Capitella capitata	3.00	50.00	7.50	11.73
Notomastus latericeus	3.00	50.00	4.17	4.92
Heteromastus filiformis	2.00	33.33	1.67	2.58
Owenia fusiformis	6.00	100.00	7.50	4.18
Lagis koreni	6.00	100.00	235.00	68.99
Amphicteis gunneri	1.00	16.67	.83	---
Lysilla loveni	5.00	83.33	10.83	6.65
MOLLUSCA				
Nucula turgida	4.00	66.67	9.17	9.70
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	2.00	33.33	1.67	2.58
Mysella bidentata	6.00	100.00	95.00	41.59
Arctica islandica	2.00	33.33	1.67	2.58
Dosinia lupinus	1.00	16.67	1.67	---
Venus striatula	3.00	50.00	3.33	4.08
Mysia undata	2.00	33.33	1.67	2.58

Table 18 continued.	A	B	C	D
Cultellus pellucidus	1.00	16.67	.83	---
Mya spec. juv.	2.00	33.33	1.67	2.58
Corbula gibba	2.00	33.33	1.67	2.58
Thracia convexa	1.00	16.67	2.50	---
Cingula nitida	2.00	33.33	1.67	2.58
Turritella communis	6.00	100.00	21.67	8.16
Natica alderi	1.00	16.67	.83	---
Cylichna cilindracea	6.00	100.00	9.17	5.85
Philine catena	6.00	100.00	9.17	3.76
CRUSTACEA				
Processa parva	2.00	33.33	5.00	10.00
Pagurus bernhardus	1.00	16.67	.83	---
Macropipus holsatus	4.00	66.67	5.00	4.47
Macropipus spec. juv.	2.00	33.33	1.67	2.58
Ebalia cranchii	4.00	66.67	3.33	2.58
Upogebia stellata	5.00	83.33	5.00	3.16
Callianassa subterranea	6.00	100.00	42.50	11.29
Decapoda larven	6.00	100.00	24.17	10.68
Schistomysis ornata	1.00	16.67	.83	---
Diastylis bradyi	5.00	83.33	11.67	9.31
Cirolana borealis	2.00	33.33	1.67	2.58
Ione thoracica	1.00	16.67	.83	---
Hippomedon denticulatus	2.00	33.33	1.67	2.58
Ampelisca brevicornis	3.00	50.00	2.50	2.74
Ampelisca tenuicornis	1.00	16.67	.83	---
Urothoe poseidonis	2.00	33.33	2.50	4.18
Bathyporeia guilliamsoniana	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	20.00	10.00
Perioculodes longimanus	3.00	50.00	2.50	2.74
ECHINODERMATA				
Astropecten irregularis	1.00	16.67	.83	---
Amphiura filiformis	6.00	100.00	762.50	118.48
Amphiura chiajei	6.00	100.00	21.67	9.83
Ophiura albida	5.00	83.33	8.33	6.83
Echinocardium cordatum	2.00	33.33	1.67	2.58
OTER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	2.00	33.33	3.33	6.06
Phoroniden	5.00	83.33	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	1.00	16.67	2.50	---
Sagitta spec.	1.00	16.67	.83	---
Sipinculida	4.00	66.67	5.83	5.85

Table 19. Data platform L4a, survey Sept. 1986.
Station P1, the platform itself.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (2) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	1.00	50.00	2.50	---
Pholoe minuta	1.00	50.00	2.50	---
Sthenelais limicola	2.00	100.00	10.00	7.07
Anaitides groenlandica	1.00	50.00	15.00	---
Anaitides mucosa	1.00	50.00	2.50	---
Anaitides maculata	2.00	100.00	10.00	7.07
Eumida sanguinea	2.00	100.00	15.00	.00
Ophiodromus flexuosus	2.00	100.00	15.00	.00
Synelmis klatti	1.00	50.00	2.50	---
Nereis longissima	1.00	50.00	10.00	---
Nereis spec. juv.	1.00	50.00	2.50	---
Nephtys hombergii	2.00	100.00	35.00	28.28
Glycera rouxii	1.00	50.00	5.00	---
Goniada maculata	2.00	100.00	7.50	3.54
Lumbrineris latreilli	2.00	100.00	17.50	3.54
Orbinia sertulata	1.00	50.00	2.50	---
Poecilochaetus serpens	2.00	100.00	5.00	.00
Spio filicornis	1.00	50.00	12.50	---
Spiophanes bombyx	2.00	100.00	12.50	3.54
Magelona papillicornis	1.00	50.00	5.00	---
Chaetopterus variopedatus	2.00	100.00	15.00	14.14
Tharyx marioni	1.00	50.00	2.50	---
Chaetozone setosa	2.00	100.00	17.50	10.61
Diplocirrus glaucus	2.00	100.00	30.00	7.07
Scalibregma inflatum	2.00	100.00	97.50	24.75
Capitella capitata	1.00	50.00	2.50	---
Lagis koreni	2.00	100.00	62.50	3.54
MOLLUSCA				
Nucula turgida	1.00	50.00	2.50	---
Mysella bidentata	1.00	50.00	5.00	---
Acanthocardia echinata	2.00	100.00	10.00	.00
Abra alba	1.00	50.00	7.50	---
Mya spec. juv.	1.00	50.00	2.50	---
Cingula nitida	2.00	100.00	45.00	56.57
Turritella communis	1.00	50.00	2.50	---
Cylichna cilindracea	1.00	50.00	2.50	---
Philine catena	1.00	50.00	5.00	---
CRUSTACEA				
Processa parva	2.00	100.00	10.00	7.07
Macropipus spec. juv.	1.00	50.00	2.50	---
Ebalia cranchii	1.00	50.00	5.00	---
Callianassa subterranea	2.00	100.00	17.50	17.68
Decapoda larven	2.00	100.00	30.00	.00
Nebalia bipes	1.00	50.00	2.50	---
Iphinoe trispinosa	1.00	50.00	2.50	---
Diastylis bradyi	2.00	100.00	27.50	24.75
Hippomedon denticulatus	1.00	50.00	2.50	---
Aora typica	1.00	50.00	2.50	---

Table 19 continued.	A	B	C	D
ECHINODERMATA				
Amphiura filiformis	2.00	100.00	25.00	21.21
OTHER TAXA				
Nemertinea	2.00	100.00	---	---
Phoroniden	2.00	100.00	---	---
Sagitta spec.	1.00	50.00	5.00	---
Sipinculida	1.00	50.00	2.50	---

Table 20. Data platform L4a, survey Sept. 1986.
Station 8, 250 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	3.00	50.00	8.33	11.69
Polynoe kinbergi	1.00	16.67	.83	---
Pholoe minuta	6.00	100.00	30.00	18.97
Sthenelais limicola	1.00	16.67	1.67	---
Eteone longa	2.00	33.33	1.67	2.58
Eteone flava	1.00	16.67	.83	---
Anaitides groenlandica	6.00	100.00	20.00	8.37
Anaitides mucosa	4.00	66.67	5.83	4.92
Anaitides maculata	2.00	33.33	1.67	2.58
Ophiodromus flexuosus	2.00	33.33	3.33	5.16
Synelmis klatti	1.00	16.67	1.67	---
Nereis longissima	4.00	66.67	4.17	3.76
Nephtys hombergii	5.00	83.33	20.83	18.82
Glycera rouxii	1.00	16.67	.83	---
Glycera alba	1.00	16.67	.83	---
Glycinde nordmanni	4.00	66.67	5.00	4.47
Goniada maculata	4.00	66.67	10.83	10.21
Lumbrineris latreilli	6.00	100.00	110.00	39.62
Lumbrineris fragilis	1.00	16.67	1.67	---
Spiophanes bombyx	3.00	50.00	7.50	9.87
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	5.00	83.33	10.83	6.65
Tharyx marioni	1.00	16.67	.83	---
Chaetozone setosa	6.00	100.00	20.00	13.42
Diplocirrus glaucus	6.00	100.00	74.17	40.42
Scalibregma inflatum	6.00	100.00	280.00	95.81
Ophelina acuminata	4.00	66.67	3.33	2.58
Capitella capitata	2.00	33.33	1.67	2.58
Notomastus latericeus	5.00	83.33	9.17	6.65
Heteromastus filiformis	3.00	50.00	4.17	5.85
Owenia fusiformis	3.00	50.00	4.17	4.92
Lagis koreni	6.00	100.00	38.33	30.77
Lysilla loveni	5.00	83.33	28.33	20.90
Terebellides stroemi	2.00	33.33	1.67	2.58
MOLLUSCA				
Nucula turgida	4.00	66.67	4.17	3.76
Thyasira flexuosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	99.17	62.08
Acanthocardia echinata	1.00	16.67	.83	---
Dosinia exoleta	1.00	16.67	.83	---
Venus striatula	2.00	33.33	2.50	4.18
Mysia undata	2.00	33.33	2.50	4.18
Mya spec. juv.	3.00	50.00	9.17	10.21
Corbula gibba	1.00	16.67	.83	---
Thracia convexa	1.00	16.67	.83	---
Cingula nitida	4.00	66.67	5.83	7.36
Turritella communis	6.00	100.00	10.83	9.17
Natica alderi	1.00	16.67	.83	---
Cylichna cilindracea	5.00	83.33	14.17	11.58
Philine catena	3.00	50.00	7.50	8.80

Table 20 continued.	A	B	C	D
CRUSTACEA				
Processa parva	5.00	83.33	17.50	11.73
Pontophilus trispinosus	1.00	16.67	1.67	---
Macropipus holsatus	1.00	16.67	.83	---
Macropipus spec. juv.	2.00	33.33	1.67	2.58
Ebalia cranchii	3.00	50.00	3.33	4.08
Upogebia stellata	4.00	66.67	3.33	2.58
Callianassa subterranea	4.00	66.67	10.00	15.17
Decapoda larven	6.00	100.00	15.00	7.07
Nebalia bipes	1.00	16.67	.83	---
Eudorella truncatula	1.00	16.67	.83	---
Iphinoe trispinosa	3.00	50.00	3.33	4.08
Diastylis bradyi	6.00	100.00	21.67	10.80
Cirolana borealis	1.00	16.67	1.67	---
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca tenuicornis	2.00	33.33	2.50	4.18
Ampelisca spec. juv.	1.00	16.67	1.67	---
Bathyporeia guilliamsoniana	1.00	16.67	.83	---
Harpinia antennaria	1.00	16.67	.83	---
Aora typica	1.00	16.67	1.67	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	686.67	217.94
Amphiura chiajei	6.00	100.00	30.00	23.02
Ophiura albida	4.00	66.67	4.17	3.76
Echinocardium cordatum	1.00	16.67	.83	---
Psammechinus miliaris	1.00	16.67	.83	---
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	4.00	66.67	5.00	4.47
Phoroniden	5.00	83.33	---	---
Oligochaeta	1.00	16.67	---	---
Holothuroidea	1.00	16.67	.83	---
Sagitta spec.	3.00	50.00	3.33	4.08
Sipinculida	4.00	66.67	5.83	5.85

Table 21. Data platform L4a, survey Sept. 1986.
Station 7, 500 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	6.00	100.00	15.83	8.61
Polynoe kinbergi	3.00	50.00	2.50	2.74
Pholoe minuta	6.00	100.00	20.83	10.68
Sthenelais limicola	3.00	50.00	5.00	5.48
Eteone longa	1.00	16.67	.83	---
Anaitides groenlandica	5.00	83.33	8.33	6.06
Anaitides mucosa	6.00	100.00	14.17	8.61
Ophiodromus flexuosus	6.00	100.00	7.50	4.18
Gyptis capensis	2.00	33.33	3.33	6.06
Synelmis klatti	1.00	16.67	2.50	---
Nereis longissima	2.00	33.33	1.67	2.58
Nephtys hombergii	6.00	100.00	46.67	16.63
Glycera rouxii	4.00	66.67	4.17	3.76
Glycinde nordmanni	4.00	66.67	8.33	9.31
Goniada maculata	6.00	100.00	19.17	12.01
Lumbrineris latreilli	6.00	100.00	119.17	37.47
Lumbrineris fragilis	3.00	50.00	2.50	2.74
Spio filicornis	1.00	16.67	.83	---
Polydora pulchra	2.00	33.33	1.67	2.58
Spiophanes bombyx	6.00	100.00	29.17	25.77
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	5.00	83.33	22.50	17.25
Tharyx marioni	4.00	66.67	5.00	5.48
Chaetozone setosa	6.00	100.00	25.83	13.20
Diplocirrus glaucus	6.00	100.00	65.00	35.78
Scalibregma inflatum	6.00	100.00	212.50	76.73
Ophelina acuminata	5.00	83.33	8.33	7.53
Notomastus latericeus	4.00	66.67	8.33	8.16
Heteromastus filiformis	5.00	83.33	5.83	3.76
Owenia fusiformis	5.00	83.33	8.33	7.53
Lagis koreni	6.00	100.00	126.67	50.17
Lysilla loveni	6.00	100.00	40.83	12.01
MOLLUSCA				
Nucula turgida	6.00	100.00	10.83	5.85
Montacuta ferruginosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	115.00	58.57
Arctica islandica	2.00	33.33	2.50	4.18
Acanthocardia echinata	1.00	16.67	.83	---
Venus striatula	3.00	50.00	5.83	8.01
Mysia undata	2.00	33.33	2.50	4.18
Mya spec. juv.	1.00	16.67	1.67	---
Corbula gibba	2.00	33.33	1.67	2.58
Cingula nitida	1.00	16.67	.83	---
Turritella communis	6.00	100.00	15.83	3.76
Cylichna cilindracea	5.00	83.33	9.17	5.85
Philine catena	1.00	16.67	.83	---

Table 21 continued.	A	B	C	D
CRUSTACEA				
Processa parva	6.00	100.00	15.00	8.94
Macropipus holsatus	1.00	16.67	.83	---
Macropipus spec. juv.	1.00	16.67	.83	---
Ebalia cranchii	2.00	33.33	1.67	2.58
Corystes cassivelaunus	2.00	33.33	1.67	2.58
Upogebia stellata	3.00	50.00	3.33	4.08
Callianassa subterranea	6.00	100.00	40.83	18.00
Decapoda larven	6.00	100.00	29.17	13.93
Eudorella truncatula	1.00	16.67	.83	---
Diastylis bradyi	6.00	100.00	10.83	7.36
Ione thoracica	2.00	33.33	1.67	2.58
Melita obtusata	1.00	16.67	.83	---
Ampelisca brevicornis	4.00	66.67	4.17	3.76
Ampelisca tenuicornis	2.00	33.33	1.67	2.58
Ampelisca spec. juv.	1.00	16.67	.83	---
Urothoe poseidonis	2.00	33.33	2.50	4.18
Harpinia antennaria	5.00	83.33	24.17	24.38
Perioculodes longimanus	2.00	33.33	1.67	2.58
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	740.83	175.40
Amphiura chiajei	6.00	100.00	41.67	19.66
Ophiura albida	4.00	66.67	5.00	4.47
Echinocardium cordatum	1.00	16.67	.83	---
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	5.00	83.33	6.67	4.08
Phoroniden	6.00	100.00	---	---
Oligochaeta	4.00	66.67	---	---
Holothuroidea	3.00	50.00	4.17	5.85
Sipinculida	4.00	66.67	8.33	8.16

Table 22. Data platform L4a, survey Sept. 1986.
Station 6, 750 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	2.00	33.33	1.67	2.58
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	6.00	100.00	14.17	12.81
Polynoe kinbergi	4.00	66.67	4.17	3.76
Pholoe minuta	6.00	100.00	30.00	15.49
Sthenelais limicola	3.00	50.00	4.17	4.92
Eteone longa	1.00	16.67	.83	---
Anaitides groenlandica	6.00	100.00	20.83	10.68
Anaitides mucosa	2.00	33.33	1.67	2.58
Anaitides maculata	2.00	33.33	1.67	2.58
Ophiodromus flexuosus	2.00	33.33	1.67	2.58
Gyptis capensis	3.00	50.00	2.50	2.74
Synelmis klatti	4.00	66.67	5.00	5.48
Nereis longissima	2.00	33.33	1.67	2.58
Nereis spec. juv.	1.00	16.67	.83	---
Nephtys hombergii	6.00	100.00	21.67	11.69
Glycera rouxii	5.00	83.33	6.67	5.16
Glycera alba	2.00	33.33	1.67	2.58
Glycinde nordmanni	4.00	66.67	9.17	11.58
Goniada maculata	6.00	100.00	20.83	8.01
Lumbrineris latreilli	6.00	100.00	146.67	36.70
Orbinia sertulata	2.00	33.33	1.67	2.58
Spio filicornis	2.00	33.33	1.67	2.58
Polydora pulchra	3.00	50.00	5.83	7.36
Polydora guillei	1.00	16.67	.83	---
Spiophanes bombyx	5.00	83.33	10.00	7.75
Chaetopterus variopedatus	6.00	100.00	31.67	11.69
Tharyx marioni	4.00	66.67	5.00	4.47
Chaetozone setosa	6.00	100.00	20.00	8.37
Diplocirrus glaucus	6.00	100.00	46.67	17.80
Scalibregma inflatum	6.00	100.00	392.50	115.79
Ophelina acuminata	6.00	100.00	8.33	4.08
Notomastus latericeus	5.00	83.33	19.17	13.93
Heteromastus filiformis	6.00	100.00	16.67	9.31
Owenia fusiformis	2.00	33.33	2.50	4.18
Lagis koreni	6.00	100.00	205.00	30.66
Lysilla loveni	6.00	100.00	65.83	30.24
Terebellides stroemi	2.00	33.33	2.50	4.18
MOLLUSCA				
Nucula turgida	4.00	66.67	8.33	7.53
Montacuta ferruginosa	1.00	16.67	.83	---
Mysella bidentata	6.00	100.00	172.50	71.12
Acanthocardia echinata	1.00	16.67	.83	---
Dosinia lupinus	1.00	16.67	.83	---
Venus striatula	3.00	50.00	4.17	4.92
Mysia undata	2.00	33.33	1.67	2.58
Mya spec. juv.	1.00	16.67	.83	---
Corbula gibba	1.00	16.67	.83	---
Thracia convexa	1.00	16.67	.83	---
Turritella communis	5.00	83.33	10.00	7.07

Table 22 continued.	A	B	C	D
Natica alderi	2.00	33.33	1.67	2.58
Cylichna cilindracea	5.00	83.33	10.00	7.07
CRUSTACEA				
Processa parva	4.00	66.67	7.50	9.35
Pontophilus trispinosus	1.00	16.67	.83	---
Macropipus holsatus	1.00	16.67	1.67	---
Macropipus spec. juv.	1.00	16.67	.83	---
Ebalia cranchii	2.00	33.33	2.50	4.18
Corystes cassivelaunus	2.00	33.33	1.67	2.58
Upogebia stellata	5.00	83.33	9.17	5.85
Callianassa subterranea	6.00	100.00	45.00	18.71
Decapoda larven	6.00	100.00	23.33	6.06
Iphinoe trispinosa	2.00	33.33	3.33	6.06
Diastylis bradyi	6.00	100.00	10.00	6.32
Cirolana borealis	1.00	16.67	.83	---
Orchomenella nana	1.00	16.67	.83	---
Ampelisca brevicornis	5.00	83.33	12.50	8.22
Ampelisca tenuicornis	2.00	33.33	1.67	2.58
Harpinia antennaria	6.00	100.00	19.17	18.82
Perioculodes longimanus	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1124.17	384.62
Amphiura chiajei	6.00	100.00	63.33	22.73
Ophiura albida	4.00	66.67	5.00	5.48
Echinocardium cordatum	3.00	50.00	2.50	2.74
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	3.00	50.00	3.33	4.08
Phoroniden	6.00	100.00	---	---
Oligochaeta	2.00	33.33	---	---
Sipinculida	5.00	83.33	13.33	10.80

Table 23. Data platform L4a, survey Sept. 1986.
Station 5, 1000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	2.00	33.33	1.67	2.58
Harmothoe lunulata	2.00	33.33	2.50	4.18
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	6.00	100.00	26.67	6.83
Polynoe kinbergi	2.00	33.33	5.00	10.00
Pholoe minuta	6.00	100.00	45.00	17.03
Sthenelais limicola	5.00	83.33	8.33	6.83
Eteone longa	1.00	16.67	.83	---
Eteone lactea	1.00	16.67	.83	---
Anaitides groenlandica	4.00	66.67	4.17	3.76
Anaitides mucosa	4.00	66.67	10.00	10.49
Anaitides maculata	1.00	16.67	1.67	---
Eumida sanguinea	2.00	33.33	1.67	2.58
Ophiodromus flexuosus	4.00	66.67	5.83	4.92
Synelmis klatti	4.00	66.67	5.00	4.47
Nereis longissima	3.00	50.00	2.50	2.74
Nephtys hombergii	6.00	100.00	27.50	2.74
Nephtys cirrosa	2.00	33.33	1.67	2.58
Glycera rouxii	4.00	66.67	5.00	4.47
Glycera alba	2.00	33.33	1.67	2.58
Glycinde nordmanni	6.00	100.00	16.67	9.83
Goniada maculata	6.00	100.00	19.17	10.68
Lumbrineris latreilli	6.00	100.00	187.50	39.72
Lumbrineris fragilis	5.00	83.33	5.83	3.76
Scoloplos armiger	1.00	16.67	.83	---
Orbinia sertulata	1.00	16.67	.83	---
Poecilochaetus serpens	1.00	16.67	.83	---
Spio filicornis	2.00	33.33	2.50	4.18
Polydora pulchra	1.00	16.67	.83	---
Polydora guillei	4.00	66.67	8.33	11.25
Spiophanes bombyx	6.00	100.00	23.33	22.06
Chaetopterus variopedatus	6.00	100.00	40.00	13.42
Tharyx marioni	4.00	66.67	5.83	5.85
Chaetozone setosa	6.00	100.00	36.67	17.80
Diplocirrus glaucus	6.00	100.00	84.17	48.31
Scalibregma inflatum	6.00	100.00	317.50	150.72
Ophelina acuminata	2.00	33.33	5.00	7.75
Notomastus latericeus	5.00	83.33	10.83	7.36
Heteromastus filiformis	4.00	66.67	7.50	7.58
Owenia fusiformis	6.00	100.00	10.83	3.76
Lagis koreni	6.00	100.00	189.17	115.73
Lysilla loveni	6.00	100.00	53.33	33.71
Terebellides stroemi	3.00	50.00	2.50	2.74
MOLLUSCA				
Nucula turgida	6.00	100.00	20.83	20.84
Lepton squamosum	2.00	33.33	1.67	2.58
Montacuta ferruginosa	4.00	66.67	9.17	13.20
Mysella bidentata	6.00	100.00	180.83	122.86
Arctica islandica	2.00	33.33	1.67	2.58
Dosinia lupinus	2.00	33.33	1.67	2.58
Venus striatula	4.00	66.67	3.33	2.58

Table 23 continued.	A	B	C	D
Mysia undata	2.00	33.33	1.67	2.58
Abra alba	1.00	16.67	2.50	---
Cultellus pellucidus	1.00	16.67	.83	---
Mya spec. juv.	3.00	50.00	2.50	2.74
Corbula gibba	1.00	16.67	1.67	---
Thracia convexa	1.00	16.67	.83	---
Turritella communis	6.00	100.00	19.17	12.81
Cylichna cilindracea	5.00	83.33	6.67	5.16
Philine catena	2.00	33.33	1.67	2.58
CRUSTACEA				
Processa parva	3.00	50.00	4.17	4.92
Pontophilus spec.	1.00	16.67	.83	---
Pagurus bernhardus	1.00	16.67	.83	---
Macropipus holsatus	2.00	33.33	2.50	4.18
Macropipus spec. juv.	2.00	33.33	3.33	6.06
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	3.00	50.00	3.33	4.08
Callianassa subterranea	6.00	100.00	32.50	16.66
Decapoda larven	6.00	100.00	35.83	15.30
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	6.00	100.00	28.33	13.29
Cirolana borealis	2.00	33.33	2.50	4.18
Ione thoracica	2.00	33.33	1.67	2.58
Hippomedon denticulatus	2.00	33.33	1.67	2.58
Orchomenella nana	1.00	16.67	.83	---
Ampelisca brevicornis	2.00	33.33	1.67	2.58
Ampelisca tenuicornis	3.00	50.00	3.33	4.08
Ampelisca spec. juv.	1.00	16.67	.83	---
Urothoe poseidonis	1.00	16.67	1.67	---
Harpinia antennaria	5.00	83.33	10.00	10.95
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	1635.83	320.71
Amphiura chiajei	6.00	100.00	30.83	20.84
Ophiura albida	5.00	83.33	6.67	4.08
Echinocardium cordatum	4.00	66.67	16.67	21.13
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	4.00	66.67	5.00	4.47
Phoroniden	6.00	100.00	---	---
Oligochaeta	6.00	100.00	---	---
Holothuroidea	4.00	66.67	7.50	6.89
Sagitta spec.	2.00	33.33	1.67	2.58
Sipinculida	5.00	83.33	13.33	8.76

Table 24. Data platform L4a, survey Sept. 1986.
Station 1, 5000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	2.00	33.33	2.50	4.18
Gattyana cirrosa	5.00	83.33	6.67	5.16
Polynoe kinbergi	1.00	16.67	.83	---
Pholoe minuta	6.00	100.00	27.50	19.17
Sthenelais limicola	4.00	66.67	6.67	6.83
Anaitides groenlandica	5.00	83.33	7.50	6.12
Anaitides mucosa	4.00	66.67	9.17	13.20
Anaitides maculata	2.00	33.33	2.50	4.18
Eumida sanguinea	2.00	33.33	2.50	4.18
Ophiodromus flexuosus	2.00	33.33	3.33	5.16
Gyptis capensis	2.00	33.33	1.67	2.58
Synelmis klatti	1.00	16.67	1.67	---
Nereis longissima	3.00	50.00	4.17	4.92
Nereis spec. juv.	2.00	33.33	1.67	2.58
Nephtys hombergii	6.00	100.00	22.50	12.94
Glycera rouxii	5.00	83.33	5.83	4.92
Glycera alba	1.00	16.67	.83	---
Glycera spec. juv.	1.00	16.67	1.67	---
Glycinde nordmanni	5.00	83.33	10.83	8.61
Goniada maculata	4.00	66.67	7.50	6.89
Lumbrineris latreilli	6.00	100.00	110.83	30.73
Lumbrineris fragilis	4.00	66.67	5.00	4.47
Drilonerís filum	1.00	16.67	.83	---
Orbinia sertulata	1.00	16.67	.83	---
Poecilochaetus serpens	2.00	33.33	1.67	2.58
Spio filicornis	1.00	16.67	.83	---
Polydora pulchra	1.00	16.67	.83	---
Polydora guillei	3.00	50.00	7.50	8.80
Spiophanes bombyx	6.00	100.00	72.50	52.23
Scolelepis bonnieri	1.00	16.67	.83	---
Chaetopterus variopedatus	5.00	83.33	8.33	6.06
Tharyx marioni	1.00	16.67	.83	---
Chaetozone setosa	3.00	50.00	4.17	4.92
Diplocirrus glaucus	6.00	100.00	20.83	8.61
Scalibregma inflatum	6.00	100.00	130.00	55.05
Ophelina acuminata	6.00	100.00	19.17	8.01
Notomastus latericeus	2.00	33.33	1.67	2.58
Heteromastus filiformis	4.00	66.67	5.83	5.85
Owenia fusiformis	6.00	100.00	10.00	5.48
Lanice conchilega	1.00	16.67	.83	---
Lagis koreni	6.00	100.00	198.33	122.05
Amphicteis gunneri	1.00	16.67	.83	---
Lysilla loveni	6.00	100.00	18.33	6.83
Terebellides stroemi	2.00	33.33	1.67	2.58
MOLLUSCA				
Nucula turgida	4.00	66.67	9.17	8.01
Lepton squamosum	1.00	16.67	.83	---
Montacuta ferruginosa	4.00	66.67	7.50	9.35
Mysella bidentata	5.00	83.33	33.33	25.63
Arctica islandica	4.00	66.67	5.83	5.85
Dosinia lupinus	1.00	16.67	.83	---

Table 24 continued.	A	B	C	D
Venus striatula	4.00	66.67	4.17	3.76
Mysia undata	2.00	33.33	1.67	2.58
Abra alba	5.00	83.33	15.83	15.94
Cultellus pellucidus	2.00	33.33	1.67	2.58
Mya spec. juv.	5.00	83.33	14.17	13.20
Corbula gibba	2.00	33.33	1.67	2.58
Thracia convexa	3.00	50.00	2.50	2.74
Cingula nitida	1.00	16.67	3.33	---
Turritella communis	6.00	100.00	35.00	42.90
Natica alderi	3.00	50.00	2.50	2.74
Cylichna cilindracea	6.00	100.00	15.00	8.94
CRUSTACEA				
Processa parva	4.00	66.67	6.67	6.06
Macropipus holsatus	1.00	16.67	.83	---
Macropipus spec. juv.	3.00	50.00	2.50	2.74
Ebalia cranchii	3.00	50.00	2.50	2.74
Upogebia stellata	3.00	50.00	4.17	5.85
Callianassa subterranea	5.00	83.33	25.00	17.61
Decapoda larven	6.00	100.00	72.50	36.43
Eudorella truncatula	1.00	16.67	.83	---
Iphinoe trispinosa	2.00	33.33	1.67	2.58
Diastylis bradyi	5.00	83.33	8.33	8.76
Cirolana borealis	1.00	16.67	.83	---
Ione thoracica	1.00	16.67	.83	---
Orchomenella nana	1.00	16.67	.83	---
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	6.00	100.00	6.67	2.58
Ampelisca tenuicornis	2.00	33.33	3.33	5.16
Ampelisca spec. juv.	1.00	16.67	1.67	---
Harpinia antennaria	5.00	83.33	5.00	3.16
Perioculodes longimanus	2.00	33.33	1.67	2.58
Aora typica	2.00	33.33	4.17	8.01
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	391.67	250.95
Amphiura chiajei	3.00	50.00	5.83	8.01
Ophiura albida	3.00	50.00	5.83	8.01
Echinocardium cordatum	5.00	83.33	30.00	28.64
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	3.00	50.00	3.33	4.08
Phoroniden	6.00	100.00	---	---
Harp. copepoda	1.00	16.67	.83	---
Holothuroidea	4.00	66.67	4.17	3.76
Sagitta spec.	2.00	33.33	2.50	4.18
Sipinculida	6.00	100.00	8.33	8.16

Table 25. Data platform K12a, survey Sept. 1986.
All stations
Mean densities per m2.
Total ind. per m2 per station.
Total number of species per station.

Station number	6	P1	7	8	9	10	14
Distance from platform (m)	250	0	250	500	750	1000	5000
POLYCHAETA							
Harmothoe lunulata	--	--	--	.7	.7	--	15.0
Harmothoe longisetis	--	--	--	.7	2.9	--	68.6
Gattyana cirrosa	--	--	.5	--	--	--	5.0
Sigalion mathildae	--	--	--	--	1.4	1.4	2.1
Pholoe minuta	27.1	2.5	1.5	20.7	36.4	27.1	37.1
Sthenelais limicola	1.4	--	1.0	3.6	4.3	5.0	.7
Eteone longa	4.3	--	.5	5.0	4.3	.7	1.4
Anaitides groenlandica	8.6	2.5	--	15.7	2.9	2.1	.7
Anaitides mucosa	2.9	--	--	2.9	.7	5.0	.7
Anaitides maculata	.7	--	--	--	.7	1.4	4.3
Eumida sanguinea	--	--	.5	1.4	--	--	12.9
Ophiodromus flexuosus	2.9	--	--	.7	3.6	2.1	1.4
Gyptis capensis	3.6	--	--	--	.7	2.1	2.9
Nereis longissima	2.9	17.5	3.0	6.4	1.4	.7	8.6
Nereis spec. juv.	10.7	--	6.0	5.7	7.1	2.9	6.4
Nephtys hombergii	45.7	7.5	17.0	42.9	53.6	50.0	33.6
Nephtys cirrosa	.7	--	--	2.1	--	--	--
Nephtys caeca	1.4	--	--	--	1.4	--	--
Nephtys spec. juv.	5.0	--	1.0	1.4	2.9	--	--
Glycera rouxii	--	10.0	.5	.7	.7	--	.7
Glycera alba	--	--	--	--	--	--	--
Glycera spec. juv.	--	--	--	1.4	--	--	.7
Glycinde nordmanni	6.4	2.5	6.0	3.6	8.6	7.1	4.3
Goniada maculata	20.7	32.5	11.5	12.1	17.1	17.1	7.9
Lumbrineris latreilli	153.6	10.0	121.0	194.3	87.1	98.6	82.1
Scoloplos armiger	.7	--	--	--	--	.7	--
Poecilochaetus serpens	37.1	2.5	3.5	40.7	25.0	20.0	28.6
Spio filicornis	8.6	2.5	.5	2.9	9.3	5.7	--
Spiophanes bombyx	130.0	25.0	21.5	100.0	95.7	84.3	59.3
Scolelepis bonnieri	--	--	--	--	--	.7	--
Magelona papillicornis	43.6	7.5	5.5	29.3	49.3	64.3	30.0
Tharyx marioni	--	--	.5	--	--	--	--
Chaetozone setosa	41.4	--	3.5	78.6	47.9	61.4	.7
Diplocirrus glaucus	3.6	--	4.0	2.9	.7	1.4	1.4
Scalibregma inflatum	142.9	--	15.5	59.3	33.6	12.9	22.1
Ophelina acuminata	.7	--	--	--	--	--	--
Capitella capitata	5.0	--	--	1.4	--	.7	--
Notomastus latericeus	2.1	--	.5	2.1	--	.7	2.1
Heteromastus filiformis	7.1	--	2.0	.7	2.1	1.4	--
Owenia fusiformis	5.0	--	1.0	7.1	2.9	.7	.7
Lanice conchilega	5.7	--	--	5.7	7.9	.7	217.9
Lagis koreni	1447.1	170.0	24.5	1515.7	1634.3	537.1	147.1
Amphicteis gunneri	--	--	--	.7	--	--	--
MOLLUSCA							
Nucula turgida	192.9	57.5	435.5	192.1	175.0	200.7	112.9
Modiolus modiolus	--	--	.5	--	--	--	--
Thyasira flexuosa	1.4	--	--	--	--	.7	4.3
Montacuta ferruginosa	.7	--	--	--	--	--	21.4
Mysella bidentata	2.1	--	--	1.4	1.4	5.0	5.7
Acanthocardia echinata	4.3	--	--	2.1	2.1	1.4	--
Dosinia exoleta	.7	--	1.0	--	--	2.1	--
Dosinia lupinus	--	--	--	.7	--	--	--
Venus striatula	4.3	2.5	4.5	4.3	2.1	3.6	.7
Mactra corallina	2.1	--	1.5	1.4	1.4	3.6	1.4
Spisula spec. juv.	2.1	--	2.0	2.1	1.4	1.4	.7

Table 25 continued.

Station number	6	P1	7	8	9	10	14
Tellina fabula	3.6	--	1.0	2.1	3.6	14.3	5.0
Abra prismatica	.7	--	--	--	.7	--	.7
Abra tenuis	--	--	--	--	--	--	--
Abra alba	50.0	5.0	3.5	17.9	35.0	18.6	42.9
Abra spec. juv.	4.3	--	--	--	.7	--	2.9
Cultellus pellucidus	4.3	2.5	3.0	2.9	2.9	2.1	.7
Mya spec. juv.	2.1	2.5	.5	--	.7	4.3	1.4
Natica alderi	15.0	2.5	7.5	7.1	16.4	11.4	12.9
Buccinum undatum	--	2.5	2.0	.7	--	--	--
Cylichna cilindracea	--	--	--	--	--	--	1.4
CRUSTACEA							
Crangon crangon	1.4	--	--	--	1.4	--	--
Processa parva	--	2.5	--	.7	1.4	.7	6.4
Pontophilus trispinosus	--	--	--	--	--	--	.7
Macropipus holsatus	2.1	2.5	.5	1.4	2.1	.7	.7
Macropipus spec. juv.	--	--	1.0	--	--	.7	.7
Ebalia cranchii	--	--	2.0	--	--	.7	.7
Corystes cassivelaunus	7.9	2.5	10.5	10.7	7.1	1.4	1.4
Callianassa subterranea	3.6	--	--	3.6	6.4	1.4	--
Decapoda larven	2.9	--	.5	6.4	5.0	6.4	7.1
Schistomysis ornata	--	--	.5	--	--	--	.7
Eudorella truncatula	24.3	5.0	4.5	1.4	6.4	5.0	2.1
Iphinoe trispinosa	.7	--	--	--	--	.7	--
Diastylis bradyi	--	--	--	--	1.4	--	8.6
Diastylis spec. juv.	.7	--	--	--	--	1.4	.7
Melita obtusata	--	--	--	--	--	--	.7
Orchomenella nana	.7	2.5	1.0	1.4	3.6	--	.7
Leucothoe incisa	3.6	--	1.0	7.1	7.9	2.1	4.3
Ampelisca brevicornis	2.9	--	14.0	1.4	2.9	2.9	.7
Ampelisca tenuicornis	--	--	--	--	.7	--	.7
Bathyporeia guilliamsonia	--	--	5.0	1.4	--	--	--
Bathyporeia elegans	--	--	1.5	2.9	3.6	--	.7
Bathyporeia tenuipes	10.0	--	5.5	12.9	10.0	14.3	--
Argissa hamatipes	--	--	--	--	--	--	.7
Harpinia antennaria	5.0	--	--	1.4	.7	2.9	5.0
Perioculodes longimanus	.7	--	--	--	.7	--	--
Aora typica	--	--	--	8.6	--	.7	15.7
Caprella septentrionalis	--	--	--	--	--	--	2.1
ECHINODERMATA							
Astropecten irregularis	--	--	--	.7	--	--	--
Asterias rubens	--	--	--	--	.7	--	2.1
Amphiura filiformis	12.9	--	.5	3.6	3.6	2.9	2.1
Amphiura chiajei	.7	--	--	--	--	--	.7
Ophiura texturata	--	--	1.0	--	--	--	.7
Ophiura albida	.7	--	2.0	1.4	.7	.7	4.3
Ophiura spec. juv.	--	--	--	--	--	--	.7
Echinocardium cordatum	34.3	--	--	63.6	191.4	82.9	34.3
Psammechinus miliaris	--	--	--	.7	--	--	--
OTHER TAXA							
Nemertinea	P	P	P	P	P	P	P
Turbellaria	1.4	--	--	1.4	--	--	--
Phoroniden	P	--	--	P	P	P	P
Harp. copepoda	--	--	--	--	.7	.7	--
Oligochaeta	P	--	P	P	P	P	P
Sagitta spec.	--	--	1.0	.7	--	2.1	4.3
Anthozoa	2.1	--	--	2.9	.7	2.1	1.4
Tot. ind. per m2	2589	383	767	2541	2650	1419	1134
Tot. number of species	71	26	56	70	69	67	78

P= present, not counted.

Table 26. Data platform K12a, survey Sept. 1986.
Station 6, 250 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (7) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Pholoe minuta	7.00	100.00	27.14	16.29
Sthenelais limicola	1.00	14.29	1.43	---
Eteone longa	4.00	57.14	4.29	4.50
Anaitides groenlandica	4.00	57.14	8.57	8.02
Anaitides mucosa	3.00	42.86	2.86	3.93
Anaitides maculata	1.00	14.29	.71	---
Ophiodromus flexuosus	4.00	57.14	2.86	2.67
Gyptis capensis	5.00	71.43	3.57	2.44
Nereis longissima	3.00	42.86	2.86	3.93
Nereis spec. juv.	5.00	71.43	10.71	9.76
Nephtys hombergii	7.00	100.00	45.71	16.18
Nephtys cirrosa	1.00	14.29	.71	---
Nephtys caeca	2.00	28.57	1.43	2.44
Nephtys spec. juv.	3.00	42.86	5.00	6.45
Glycinde nordmanni	6.00	85.71	6.43	3.78
Goniada maculata	7.00	100.00	20.71	8.86
Lumbrineris latreilli	7.00	100.00	153.57	52.81
Scoloplos armiger	1.00	14.29	.71	---
Poecilochaetus serpens	7.00	100.00	37.14	17.53
Spio filicornis	5.00	71.43	8.57	7.48
Spiophanes bombyx	7.00	100.00	130.00	32.66
Magelona papillicornis	7.00	100.00	43.57	20.76
Chaetozone setosa	7.00	100.00	41.43	34.12
Diplocirrus glaucus	3.00	42.86	3.57	5.56
Scalibregma inflatum	7.00	100.00	142.86	66.64
Ophelina acuminata	1.00	14.29	.71	---
Capitella capitata	4.00	57.14	5.00	5.77
Notomastus latericeus	3.00	42.86	2.14	2.67
Heteromastus filiformis	3.00	42.86	7.14	10.75
Owenia fusiformis	4.00	57.14	5.00	5.77
Lanice conchilega	5.00	71.43	5.71	4.50
Lagis koreni	7.00	100.00	1447.14	362.55
MOLLUSCA				
Nucula turgida	7.00	100.00	192.86	37.06
Thyasira flexuosa	2.00	28.57	1.43	2.44
Montacuta ferruginosa	1.00	14.29	.71	---
Mysella bidentata	3.00	42.86	2.14	2.67
Acanthocardia echinata	4.00	57.14	4.29	5.35
Dosinia exoleta	1.00	14.29	.71	---
Venus striatula	6.00	85.71	4.29	1.89
Mactra corallina	2.00	28.57	2.14	3.93
Spisula spec. juv.	2.00	28.57	2.14	3.93
Tellina fabula	4.00	57.14	3.57	3.78
Abra prismatica	1.00	14.29	.71	---
Abra alba	7.00	100.00	50.00	14.43
Abra spec. juv.	4.00	57.14	4.29	4.50
Cultellus pellucidus	5.00	71.43	4.29	3.45
Mya spec. juv.	2.00	28.57	2.14	3.93
Natica alderi	7.00	100.00	15.00	6.45

Table 26 continued.	A	B	C	D
CRUSTACEA				
Crangon crangon	2.00	28.57	1.43	2.44
Macropipus holsatus	2.00	28.57	2.14	3.93
Corystes cassivelaunus	5.00	71.43	7.86	8.59
Callianassa subterranea	3.00	42.86	3.57	5.56
Decapoda larven	4.00	57.14	2.86	2.67
Eudorella truncatula	7.00	100.00	24.29	36.34
Iphinoe trispinosa	1.00	14.29	.71	---
Diastylis spec. juv.	1.00	14.29	.71	---
Orchomenella nana	1.00	14.29	.71	---
Leucothoe incisa	4.00	57.14	3.57	3.78
Ampelisca brevicornis	3.00	42.86	2.86	3.93
Bathyporeia tenuipes	7.00	100.00	10.00	7.64
Harpinia antennaria	7.00	100.00	5.00	.00
Perioculodes longimanus	1.00	14.29	.71	---
ECHINODERMATA				
Amphiura filiformis	5.00	71.43	12.86	13.80
Amphiura chiajei	1.00	14.29	.71	---
Ophiura albida	1.00	14.29	.71	---
Echinocardium cordatum	7.00	100.00	34.29	17.18
OTHER TAXA				
Nemertinea	7.00	100.00	---	---
Turbellaria	2.00	28.57	1.43	2.44
Phoroniden	1.00	14.29	---	---
Oligochaeta	7.00	100.00	---	---
Anthozoa	2.00	28.57	2.14	3.93

Table 27. Data platform K12a, survey Sept. 1986.
Station P1, the platform itself.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (2) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Pholoe minuta	1.00	50.00	2.50	---
Anaitides groenlandica	1.00	50.00	2.50	---
Nereis longissima	2.00	100.00	17.50	10.61
Nephtys hombergii	1.00	50.00	7.50	---
Glycera rouxii	2.00	100.00	10.00	7.07
Glycinde nordmanni	1.00	50.00	2.50	---
Goniada maculata	1.00	50.00	32.50	---
Lumbrineris latreilli	2.00	100.00	10.00	7.07
Poecilochaetus serpens	1.00	50.00	2.50	---
Spio filicornis	1.00	50.00	2.50	---
Spiophanes bombyx	2.00	100.00	25.00	14.14
Magelona papillicornis	2.00	100.00	7.50	3.54
Lagis koreni	2.00	100.00	170.00	162.63
MOLLUSCA				
Nucula turgida	2.00	100.00	57.50	3.54
Venus striatula	1.00	50.00	2.50	---
Abra alba	2.00	100.00	5.00	---
Cultellus pellucidus	1.00	50.00	2.50	---
Mya spec. juv.	1.00	50.00	2.50	---
Natica alderi	1.00	50.00	2.50	---
Buccinum undatum	1.00	50.00	2.50	---
CRUSTACEA				
Processa parva	1.00	50.00	2.50	---
Macropipus holsatus	1.00	50.00	2.50	---
Corystes cassivelaunus	1.00	50.00	2.50	---
Eudorella truncatula	2.00	100.00	5.00	---
Orchomenella nana	1.00	50.00	2.50	---
OTHER TAXA				
Nemertinea	2.00	100.00	---	---

Table 28. Data platform K12a, survey Sept. 1986.
Station 7, 250 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	1.00	10.00	.50	---
Pholoe minuta	3.00	30.00	1.50	2.42
Sthenelais limicola	2.00	20.00	1.00	2.11
Eteone longa	1.00	10.00	.50	---
Eumida sanguinea	1.00	10.00	.50	---
Nereis longissima	3.00	30.00	3.00	5.37
Nereis spec. juv.	6.00	60.00	6.00	6.99
Nephtys hombergii	10.00	100.00	17.00	10.06
Nephtys spec. juv.	2.00	20.00	1.00	2.11
Glycera rouxii	1.00	10.00	.50	---
Glycinde nordmanni	7.00	70.00	6.00	4.59
Goniada maculata	9.00	90.00	11.50	8.83
Lumbrineris latreilli	10.00	100.00	121.00	43.51
Poecilochaetus serpens	5.00	50.00	3.50	4.74
Spio filicornis	1.00	10.00	.50	---
Spiophanes bombyx	10.00	100.00	21.50	14.54
Magelona papillicornis	7.00	70.00	5.50	4.97
Tharyx marioni	1.00	10.00	.50	---
Chaetozone setosa	3.00	30.00	3.50	5.80
Diplocirrus glaucus	5.00	50.00	4.00	6.15
Scalibregma inflatum	9.00	90.00	15.50	15.89
Notomastus latericeus	1.00	10.00	.50	---
Heteromastus filiformis	2.00	20.00	2.00	4.22
Owenia fusiformis	2.00	20.00	1.00	2.11
Lagis koreni	10.00	100.00	24.50	15.89
MOLLUSCA				
Nucula turgida	10.00	100.00	435.50	137.89
Modiolus modiolus	1.00	10.00	.50	---
Dosinia exoleta	2.00	20.00	1.00	2.11
Venus striatula	6.00	60.00	4.50	4.97
Mactra corallina	3.00	30.00	1.50	2.42
Spisula spec. juv.	4.00	40.00	2.00	2.58
Tellina fabula	2.00	20.00	1.00	2.11
Abra alba	5.00	50.00	3.50	4.74
Cultellus pellucidus	5.00	50.00	3.00	3.50
Mya spec. juv.	1.00	10.00	.50	---
Natica alderi	6.00	60.00	7.50	8.58
Buccinum undatum	3.00	30.00	2.00	3.50
CRUSTACEA				
Macropipus holsatus	1.00	10.00	.50	---
Macropipus spec. juv.	2.00	20.00	1.00	2.11
Ebalia cranchii	4.00	40.00	2.00	2.58
Corystes cassivelaunus	9.00	90.00	10.50	7.25
Decapoda larven	1.00	10.00	.50	---
Schistomysis ornata	1.00	10.00	.50	---
Eudorella truncatula	5.00	50.00	4.50	5.99
Orchomenella nana	1.00	10.00	1.00	---
Leucothoe incisa	1.00	10.00	1.00	---
Ampelisca brevicornis	8.00	80.00	14.00	8.76

Table 28 continued.	A	B	C	D
Bathyporeia guilliamsoniana	3.00	30.00	5.00	8.50
Bathyporeia elegans	2.00	20.00	1.50	3.37
Bathyporeia tenuipes	7.00	70.00	5.50	5.99
ECHINODERMATA				
Amphiura filiformis	1.00	10.00	.50	---
Ophiura texturata	2.00	20.00	1.00	2.11
Ophiura albida	3.00	30.00	2.00	3.50
OTHER TAXA				
Nemertinea	10.00	100.00	---	---
Oligochaeta	6.00	60.00	---	---
Sagitta spec.	2.00	20.00	1.00	2.11

Table 29. Data platform K12a, survey Sept. 1986.
Station 8, 500 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (7) in which the species occurs
C= mean number of individuals per m2.
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe lunulata	1.00	14.29	.71	---
Harmothoe longisetis	1.00	14.29	.71	---
Pholoe minuta	6.00	85.71	20.71	15.92
Sthenelais limicola	3.00	42.86	3.57	5.56
Eteone longa	4.00	57.14	5.00	5.77
Anaitides groenlandica	7.00	100.00	15.71	3.45
Anaitides mucosa	4.00	57.14	2.86	2.67
Eumida sanguinea	2.00	28.57	1.43	2.44
Ophiodromus flexuosus	1.00	14.29	.71	---
Nereis longissima	4.00	57.14	6.43	7.48
Nereis spec. juv.	5.00	71.43	5.71	5.35
Nephtys hombergii	7.00	100.00	42.86	24.64
Nephtys cirrosa	2.00	28.57	2.14	3.93
Nephtys spec. juv.	2.00	28.57	1.43	2.44
Glycera rouxii	1.00	14.29	.71	---
Glycera spec. juv.	2.00	28.57	1.43	2.44
Glycinde nordmanni	2.00	28.57	3.57	6.27
Goniada maculata	7.00	100.00	12.14	4.88
Lumbrineris latreilli	7.00	100.00	194.29	59.40
Poecilochaetus serpens	7.00	100.00	40.71	23.35
Spio filicornis	2.00	28.57	2.86	4.88
Spiophanes bombyx	7.00	100.00	100.00	26.61
Magelona papillicornis	7.00	100.00	29.29	13.05
Chaetozone setosa	7.00	100.00	78.57	27.04
Diplocirrus glaucus	4.00	57.14	2.86	2.67
Scalibregma inflatum	7.00	100.00	59.29	38.02
Capitella capitata	2.00	28.57	1.43	2.44
Notomastus latericeus	2.00	28.57	2.14	3.93
Heteromastus filiformis	1.00	14.29	.71	---
Owenia fusiformis	6.00	85.71	7.14	6.36
Lanice conchilega	4.00	57.14	5.71	6.07
Lagis koreni	7.00	100.00	1515.71	278.05
Amphicteis gunneri	1.00	14.29	.71	---
MOLLUSCA				
Nucula turgida	7.00	100.00	192.14	42.51
Mysella bidentata	1.00	14.29	1.43	---
Acanthocardia echinata	3.00	42.86	2.14	2.67
Dosinia lupinus	1.00	14.29	.71	---
Venus striatula	4.00	57.14	4.29	4.50
Mactra corallina	2.00	28.57	1.43	2.44
Spisula spec. juv.	3.00	42.86	2.14	2.67
Tellina fabula	3.00	42.86	2.14	2.67
Abra alba	6.00	85.71	17.86	13.80
Cultellus pellucidus	4.00	57.14	2.86	2.67
Natica alderi	6.00	85.71	7.14	4.88
Buccinum undatum	1.00	14.29	.71	---

Table 29 continued.	A	B	C	D
CRUSTACEA				
Processa parva	1.00	14.29	.71	---
Macropipus holsatus	2.00	28.57	1.43	2.44
Corystes cassivelaunus	6.00	85.71	10.71	6.07
Callianassa subterranea	4.00	57.14	3.57	3.78
Decapoda larven	6.00	85.71	6.43	4.76
Eudorella truncatula	1.00	14.29	1.43	---
Orchomenella nana	1.00	14.29	1.43	---
Leucothoe incisa	6.00	85.71	7.14	6.36
Ampelisca brevicornis	2.00	28.57	1.43	2.44
Bathyporeia guilliamsoniana	2.00	28.57	1.43	2.44
Bathyporeia elegans	4.00	57.14	2.86	2.67
Bathyporeia tenuipes	6.00	85.71	12.86	7.56
Harpinia antennaria	2.00	28.57	1.43	2.44
Aora typica	1.00	14.29	8.57	---
ECHINODERMATA				
Astropecten irregularis	1.00	14.29	.71	---
Amphiura filiformis	5.00	71.43	3.57	2.44
Ophiura albida	2.00	28.57	1.43	2.44
Echinocardium cordatum	7.00	100.00	63.57	27.04
Psammechinus miliaris	1.00	14.29	.71	---
OTHER TAXA				
Nemertinea	7.00	100.00	---	---
Turbellaria	2.00	28.57	1.43	2.44
Phoroniden	3.00	42.86	---	---
Oligochaeta	6.00	85.71	---	---
Sagitta spec.	1.00	14.29	.71	---
Anthozoa	3.00	42.86	2.86	3.93

Table 30. Data platform K12a, survey Sept. 1986.
Station 9, 750 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (7) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe lunulata	1.00	14.29	.71	---
Harmothoe longisetis	3.00	42.86	2.86	3.93
Sigalion mathildae	2.00	28.57	1.43	2.44
Pholoe minuta	7.00	100.00	36.43	13.14
Sthenelais limicola	4.00	57.14	4.29	4.50
Eteone longa	4.00	57.14	4.29	4.50
Anaitides groenlandica	4.00	57.14	2.86	2.67
Anaitides mucosa	1.00	14.29	.71	---
Anaitides maculata	1.00	14.29	.71	---
Ophiodromus flexuosus	5.00	71.43	3.57	2.44
Gyptis capensis	1.00	14.29	.71	---
Nereis longissima	2.00	28.57	1.43	2.44
Nereis spec. juv.	7.00	100.00	7.14	2.67
Nephtys hombergii	7.00	100.00	53.57	14.92
Nephtys caeca	2.00	28.57	1.43	2.44
Nephtys spec. juv.	3.00	42.86	2.86	3.93
Glycera rouxii	1.00	14.29	.71	---
Glycinde nordmanni	6.00	85.71	8.57	6.27
Goniada maculata	6.00	85.71	17.14	16.04
Lumbrineris latreilli	7.00	100.00	87.14	35.92
Poecilochaetus serpens	7.00	100.00	25.00	8.16
Spio filicornis	6.00	85.71	9.29	6.07
Spiophanes bombyx	7.00	100.00	95.71	39.42
Magelona papillicornis	7.00	100.00	49.29	30.20
Chaetozone setosa	7.00	100.00	47.86	25.31
Diplocirrus glaucus	1.00	14.29	.71	---
Scalibregma inflatum	7.00	100.00	33.57	26.88
Heteromastus filiformis	2.00	28.57	2.14	3.93
Owenia fusiformis	3.00	42.86	2.86	3.93
Lanice conchilega	6.00	85.71	7.86	6.36
Lagis koreni	7.00	100.00	1634.29	619.31
MOLLUSCA				
Nucula turgida	7.00	100.00	175.00	34.88
Mysella bidentata	2.00	28.57	1.43	2.44
Acanthocardia echinata	3.00	42.86	2.14	2.67
Venus striatula	2.00	28.57	2.14	3.93
Mactra corallina	1.00	14.29	1.43	---
Spisula spec. juv.	1.00	14.29	1.43	---
Tellina fabula	3.00	42.86	3.57	4.76
Abra prismatica	1.00	14.29	.71	---
Abra alba	7.00	100.00	35.00	23.27
Abra spec. juv.	1.00	14.29	.71	---
Cultellus pellucidus	4.00	57.14	2.86	2.67
Mya spec. juv.	1.00	14.29	.71	---
Natica alderi	6.00	85.71	16.43	11.80

Table 30 continued.	A	B	C	D
CRUSTACEA				
Crangon crangon	1.00	14.29	1.43	---
Processa parva	2.00	28.57	1.43	2.44
Macropipus holsatus	3.00	42.86	2.14	2.67
Corystes cassivelaunus	6.00	85.71	7.14	6.36
Callianassa subterranea	3.00	42.86	6.43	9.45
Decapoda larven	5.00	71.43	5.00	5.00
Eudorella truncatula	4.00	57.14	6.43	6.90
Diastylis bradyi	2.00	28.57	1.43	2.44
Orchomenella nana	2.00	28.57	3.57	6.27
Leucothoe incisa	5.00	71.43	7.86	8.59
Ampelisca brevicornis	3.00	42.86	2.86	3.93
Ampelisca tenuicornis	1.00	14.29	.71	---
Bathyporeia elegans	2.00	28.57	3.57	7.48
Bathyporeia tenuipes	5.00	71.43	10.00	9.57
Harpinia antennaria	1.00	14.29	.71	---
Perioculodes longimanus	1.00	14.29	.71	---
ECHINODERMATA				
Asterias rubens	1.00	14.29	.71	---
Amphiura filiformis	3.00	42.86	3.57	5.56
Ophiura albida	1.00	14.29	.71	---
Echinocardium cordatum	7.00	100.00	191.43	83.95
OTHER TAXA				
Nemertinea	7.00	100.00	---	---
Phoroniden	3.00	42.86	---	---
Harp. copepoda	1.00	14.29	.71	---
Oligochaeta	5.00	71.43	---	---
Anthozoa	1.00	14.29	.71	---

Table 31. Data platform K12a, survey Sept. 1986.
Station 10, 1000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (7) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Sigalion mathildae	2.00	28.57	1.43	2.44
Pholoe minuta	7.00	100.00	27.14	16.29
Sthenelais limicola	6.00	85.71	5.00	2.89
Eteone longa	1.00	14.29	.71	---
Anaitides groenlandica	2.00	28.57	2.14	3.93
Anaitides mucosa	5.00	71.43	5.00	5.00
Anaitides maculata	1.00	14.29	1.43	---
Ophiodromus flexuosus	2.00	28.57	2.14	3.93
Gyptis capensis	2.00	28.57	2.14	3.93
Nereis longissima	1.00	14.29	.71	---
Nereis spec. juv.	3.00	42.86	2.86	3.93
Nephtys hombergii	7.00	100.00	50.00	11.18
Glycinde nordmanni	6.00	85.71	7.14	4.88
Goniada maculata	7.00	100.00	17.14	8.59
Lumbrineris latreilli	7.00	100.00	98.57	27.95
Scoloplos armiger	1.00	14.29	.71	---
Poecilochaetus serpens	7.00	100.00	20.00	8.16
Spio filicornis	5.00	71.43	5.71	6.73
Spiophanes bombyx	7.00	100.00	84.29	38.45
Scolelepis bonnieri	1.00	14.29	.71	---
Magelona papillicornis	7.00	100.00	64.29	15.66
Chaetozone setosa	7.00	100.00	61.43	31.05
Diplocirrus glaucus	2.00	28.57	1.43	2.44
Scalibregma inflatum	6.00	85.71	12.86	11.50
Capitella capitata	1.00	14.29	.71	---
Notomastus latericeus	1.00	14.29	.71	---
Heteromastus filiformis	2.00	28.57	1.43	2.44
Owenia fusiformis	1.00	14.29	.71	---
Lanice conchilega	1.00	14.29	.71	---
Lagis koreni	7.00	100.00	537.14	199.52
MOLLUSCA				
Nucula turgida	7.00	100.00	200.71	75.08
Thyasira flexuosa	1.00	14.29	.71	---
Mysella bidentata	5.00	71.43	5.00	4.08
Acanthocardia echinata	1.00	14.29	1.43	---
Dosinia exoleta	2.00	28.57	2.14	3.93
Venus striatula	4.00	57.14	3.57	3.78
Mactra corallina	3.00	42.86	3.57	5.56
Spisula spec. juv.	1.00	14.29	1.43	---
Tellina fabula	5.00	71.43	14.29	10.97
Abra alba	7.00	100.00	18.57	10.69
Cultellus pellucidus	3.00	42.86	2.14	2.67
Mya spec. juv.	4.00	57.14	4.29	4.50
Natica alderi	7.00	100.00	11.43	8.52
CRUSTACEA				
Processa parva	1.00	14.29	.71	---
Macropipus holsatus	1.00	14.29	.71	---
Macropipus spec. juv.	1.00	14.29	.71	---
Ebalia cranchii	1.00	14.29	.71	---

Table 31 continued.	A	B	C	D
Corystes cassivelaunus	2.00	28.57	1.43	2.44
Callianassa subterranea	2.00	28.57	1.43	2.44
Decapoda larven	6.00	85.71	6.43	4.76
Eudorella truncatula	4.00	57.14	5.00	5.00
Iphinoe trispinosa	1.00	14.29	.71	---
Diastylis spec. juv.	2.00	28.57	1.43	2.44
Leucothoe incisa	3.00	42.86	2.14	2.67
Ampelisca brevicornis	3.00	42.86	2.86	3.93
Bathyporeia tenuipes	7.00	100.00	14.29	12.72
Harpinia antennaria	3.00	42.86	2.86	3.93
Aora typica	1.00	14.29	.71	---
ECHINODERMATA				
Amphiura filiformis	3.00	42.86	2.86	3.93
Ophiura albida	1.00	14.29	.71	---
Echinocardium cordatum	7.00	100.00	82.86	39.25
OTHER TAXA				
Nemertinea	7.00	100.00	---	---
Phoroniden	2.00	28.57	---	---
Harp. copepoda	1.00	14.29	.71	---
Oligochaeta	5.00	71.43	---	---
Sagitta spec.	2.00	28.57	2.14	3.93
Anthozoa	3.00	42.86	2.14	2.67

Table 32. Data platform K12a, survey Sept. 1986.
Station 14, 5000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (7) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe lunulata	3.00	42.86	15.00	33.29
Harmothoe longisetis	7.00	100.00	68.57	44.60
Gattyana cirrosa	5.00	71.43	5.00	4.08
Sigalion mathildae	1.00	14.29	2.14	---
Pholoe minuta	7.00	100.00	37.14	14.96
Sthenelais limicola	1.00	14.29	.71	---
Eteone longa	2.00	28.57	1.43	2.44
Anaitides groenlandica	1.00	14.29	.71	---
Anaitides mucosa	1.00	14.29	.71	---
Anaitides maculata	3.00	42.86	4.29	7.32
Eumida sanguinea	7.00	100.00	12.86	4.88
Ophiodromus flexuosus	2.00	28.57	1.43	2.44
Gyptis capensis	3.00	42.86	2.86	3.93
Nereis longissima	6.00	85.71	8.57	4.76
Nereis spec. juv.	4.00	57.14	6.43	9.00
Nephtys hombergii	7.00	100.00	33.57	9.00
Glycera rouxii	1.00	14.29	.71	---
Glycera spec. juv.	1.00	14.29	.71	---
Glycinde nordmanni	3.00	42.86	4.29	6.07
Goniada maculata	6.00	85.71	7.86	8.09
Lumbrineris latreilli	7.00	100.00	82.14	17.76
Poecilochaetus serpens	7.00	100.00	28.57	11.07
Spiophanes bombyx	7.00	100.00	59.29	31.42
Magelona papillicornis	7.00	100.00	30.00	26.46
Chaetozone setosa	1.00	14.29	.71	---
Diplocirrus glaucus	2.00	28.57	1.43	2.44
Scalibregma inflatum	7.00	100.00	22.14	12.86
Notomastus latericeus	3.00	42.86	2.14	2.67
Owenia fusiformis	1.00	14.29	.71	---
Lanice conchilega	7.00	100.00	217.86	110.11
Lagis koreni	7.00	100.00	147.14	163.88
MOLLUSCA				
Nucula turgida	7.00	100.00	112.86	71.23
Thyasira flexuosa	4.00	57.14	4.29	4.50
Montacuta ferruginosa	5.00	71.43	21.43	19.94
Mysella bidentata	5.00	71.43	5.71	4.50
Venus striatula	1.00	14.29	.71	---
Mactra corallina	2.00	28.57	1.43	2.44
Spisula spec. juv.	1.00	14.29	.71	---
Tellina fabula	3.00	42.86	5.00	9.13
Abra prismatica	1.00	14.29	.71	---
Abra alba	7.00	100.00	42.86	19.55
Abra spec. juv.	2.00	28.57	2.86	4.88
Cultellus pellucidus	1.00	14.29	.71	---
Mya spec. juv.	2.00	28.57	1.43	2.44
Natica alderi	6.00	85.71	12.86	8.59
Cylichna cilindracea	2.00	28.57	1.43	2.44

Table 32 continued.	A	B	C	D
CRUSTACEA				
Processa parva	4.00	57.14	6.43	6.27
Pontophilus trispinosus	1.00	14.29	.71	---
Macropipus holsatus	1.00	14.29	.71	---
Macropipus spec. juv.	1.00	14.29	.71	---
Ebalia cranchii	1.00	14.29	.71	---
Corystes cassivelaunus	2.00	28.57	1.43	2.44
Decapoda larven	4.00	57.14	7.14	8.09
Schistomysis ornata	1.00	14.29	.71	---
Eudorella truncatula	3.00	42.86	2.14	2.67
Diastylis bradyi	4.00	57.14	8.57	9.45
Diastylis spec. juv.	1.00	14.29	.71	---
Melita obtusata	1.00	14.29	.71	---
Orchomenella nana	1.00	14.29	.71	---
Leucothoe incisa	3.00	42.86	4.29	5.35
Ampelisca brevicornis	1.00	14.29	.71	---
Ampelisca tenuicornis	1.00	14.29	.71	---
Bathyporeia elegans	1.00	14.29	.71	---
Argissa hamatipes	1.00	14.29	.71	---
Harpinia antennaria	3.00	42.86	5.00	9.13
Aora typica	5.00	71.43	15.71	17.90
Caprella septentrionalis	2.00	28.57	2.14	3.93
ECHINODERMATA				
Asterias rubens	3.00	42.86	2.14	2.67
Amphiura filiformis	2.00	28.57	2.14	3.93
Amphiura chiajei	1.00	14.29	.71	---
Ophiura texturata	1.00	14.29	.71	---
Ophiura albida	2.00	28.57	4.29	9.32
Ophiura spec. juv.	1.00	14.29	.71	---
Echinocardium cordatum	7.00	100.00	34.29	23.17
OTHER TAXA				
Nemertinea	7.00	100.00	---	---
Phoroniden	1.00	14.29	---	---
Sagitta spec.	4.00	57.14	4.29	4.50
Anthozoa	2.00	28.57	1.43	2.44

Table 33. Data location F18/8, survey May/June 1986
All stations
Mean densities per m2.
Total ind. per m2 per station.
Total number of species per station.

Station number	9	P1	8	7	6	5	1V	1B
Distance from platform (m)	250	0	250	500	750	1000	5000	5000
Aphrodita aculeata	--	2.0	--	.8	.8	--	.5	--
Harmothoe lunulata	--	--	--	.8	.8	.8	--	--
Harmothoe longisetis	--	1.5	--	1.7	.8	1.7	--	--
Gattyana cirrosa	40.0	26.0	15.0	15.0	6.7	7.5	16.0	42.3
Polynoe kinbergi	2.5	1.5	--	1.7	.8	--	2.0	--
Pholoe minuta	25.0	36.0	21.7	34.2	23.3	15.8	25.5	23.9
Sthenelais limicola	1.7	--	1.7	--	--	--	2.5	--
Eteone lactea	--	--	--	--	--	.8	--	--
Eteone flava	--	--	--	--	--	--	.5	--
Anaitides groenlandica	.8	.5	.8	--	--	--	--	1.4
Anaitides subulifera	--	.5	--	--	--	--	--	--
Eumida sanguinea	--	--	.8	--	--	--	--	--
Ophiodromus flexuosus	4.2	3.0	1.7	3.3	.8	1.7	1.5	2.8
Gyptis capensis	--	.5	.8	1.7	--	1.7	--	2.8
Synelmis klatti	1.7	--	1.7	.8	.8	--	.5	5.6
Nereis longissima	--	--	--	.8	.8	--	--	--
Nereis spec. juv.	--	--	1.7	--	--	--	--	--
Nephtys hombergii	15.8	14.0	11.7	12.5	6.7	9.2	15.0	12.7
Nephtys incisa	--	--	2.5	4.2	--	2.5	.5	2.8
Nephtys cirrosa	--	--	--	--	.8	--	--	--
Nephtys caeca	--	--	--	--	--	.8	--	--
Nephtys longosetosa	--	--	--	--	--	--	--	--
Nephtys spec. juv.	4.2	2.0	--	--	3.3	4.2	--	2.8
Glycera rouxii	14.2	15.5	20.8	28.3	25.0	25.0	14.0	22.5
Glycera alba	.8	1.5	--	--	1.7	--	--	--
Glycera spec. juv.	8.3	4.5	3.3	6.7	2.5	3.3	1.5	5.6
Glycinde nordmanni	--	3.0	.8	1.7	4.2	3.3	1.0	2.8
Goniada maculata	14.2	7.0	3.3	9.2	6.7	10.0	6.5	7.0
Lumbrineris latreilli	106.7	90.5	81.7	162.5	115.0	88.3	75.5	87.3
Lumbrineris fragilis	19.2	14.0	12.5	35.8	16.7	25.0	12.0	5.6
Driloneris filum	--	--	--	.8	--	--	--	--
Orbinia sertulata	--	--	--	--	--	.8	.5	--
Paraonis gracilis	3.3	3.0	3.3	4.2	14.2	2.5	3.0	9.9
Poecilochaetus serpens	--	1.0	--	.8	.8	--	.5	--
Spio filicornis	--	--	--	--	.8	--	--	--
Polydora pulchra	--	--	.8	--	--	--	--	--
Polydora guillei	--	1.0	.8	6.7	--	--	--	--
Spiophanes kroyeri	--	--	1.7	--	1.7	--	2.5	--
Spiophanes bombyx	3.3	6.5	1.7	4.2	3.3	1.7	2.0	--
Scolelepis foliosa	--	--	--	.8	1.7	--	--	--
Magelona papillicornis	.8	1.0	.8	--	--	--	1.0	1.4
Chaetopterus variopedatus	7.5	6.5	10.8	10.8	3.3	5.0	6.5	40.8
Tharyx marioni	5.0	3.5	1.7	1.7	2.5	1.7	--	2.8
Chaetozone setosa	25.0	15.5	10.8	25.8	16.7	19.2	12.0	11.3
Diplocirrus glaucus	--	.5	--	--	--	--	--	--
Scalibregma inflatum	--	.5	--	--	.8	--	--	--
Ophelina acuminata	--	--	1.7	.8	.8	--	--	2.8
Capitella capitata	--	1.5	--	--	.8	--	1.0	--
Notomastus latericeus	5.0	5.0	10.0	13.3	15.8	10.8	9.5	21.1
Heteromastus filiformis	4.2	3.0	--	3.3	1.7	.8	4.0	2.8
Owenia fusiformis	8.3	3.5	4.2	9.2	1.7	5.8	2.0	5.6
Lanice conchilega	--	1.0	.8	1.7	--	--	--	--
Lagis koreni	16.7	28.0	10.8	16.7	30.0	13.3	8.0	9.9
Ampharete finmarchica	--	--	.8	5.0	--	--	--	--
Amphicteis gunneri	--	1.5	.8	.8	--	.8	1.0	--
Sosane gracilis	5.8	4.0	1.7	4.2	3.3	2.5	2.0	7.0
Eupolymnia nebulosa	--	.5	--	.8	--	--	--	--

Table 33 continued.

Station number	9	P1	8	7	6	5	1V	1B
Lysilla loveni	3.3	1.0	.8	.8	.8	--	1.5	--
Terebellides stroemi	.8	1.0	1.7	3.3	3.3	--	1.5	1.4
MOLLUSCA								
Nucula turgida	.8	2.5	.8	.8	--	3.3	1.5	4.2
Thyasira flexuosa	--	--	.8	.8	--	--	--	--
Lepton squamosum	--	.5	--	--	--	--	--	--
Montacuta ferruginosa	5.8	7.0	1.7	6.7	6.7	6.7	3.5	9.9
Mysella bidentata	13.3	11.5	5.0	8.3	23.3	8.3	16.0	2.8
Arctica islandica	2.5	1.0	.8	--	.8	--	2.5	--
Dosinia exoleta	--	.5	--	--	--	.8	.5	1.4
Venus striatula	4.2	3.5	3.3	5.0	10.0	5.0	9.5	4.2
Mysia undata	--	.5	1.7	.8	.8	--	--	--
Spisula spec. juv.	--	--	.8	--	--	--	--	--
Abra alba	1.7	3.5	1.7	2.5	3.3	3.3	2.0	--
Cultellus pellucidus	.8	--	--	.8	1.7	1.7	.5	--
Mya arenaria	--	.5	--	--	--	--	--	--
Mya spec. juv.	--	--	.8	--	--	--	--	--
Corbula gibba	11.7	16.5	10.8	6.7	13.3	10.8	8.5	9.9
Thracia convexa	.8	--	--	--	--	.8	--	--
Cingula nitida	3.3	1.5	.8	2.5	--	.8	1.5	2.8
Turritella communis	3.3	8.0	.8	3.3	3.3	3.3	2.0	1.4
Natica alderi	.8	1.0	--	.8	2.5	.8	2.0	1.4
Cylichna cilindracea	10.0	6.5	2.5	1.7	5.0	2.5	7.5	4.2
Philine catena	--	--	--	--	--	--	1.0	--
CRUSTACEA								
Pagurus bernhardus	--	--	.8	--	--	--	--	--
Ebalia cranchii	--	--	.8	.8	.8	--	--	--
Corystes cassivelaunus	--	--	--	.8	--	--	1.0	--
Upogebia stellata	--	1.0	1.7	6.7	.8	.8	--	4.2
Callianassa subterranea	6.7	5.0	12.5	11.7	10.0	6.7	3.5	28.2
Decapoda larven	.8	2.5	--	--	--	--	1.0	1.4
Nebalia bipes	--	.5	.8	--	.8	--	--	--
Gastrosaccus spinifer	--	--	--	--	--	.8	--	--
Eudorella truncatula	1.7	2.0	.8	--	.8	.8	.5	4.2
Iphinoe trispinosa	--	--	.8	--	--	--	--	--
Diastylis rathkei	.8	--	--	--	.8	--	--	--
Diastylis bradyi	4.2	3.0	3.3	4.2	3.3	2.5	1.5	2.8
Diastylis spec. juv.	--	--	--	--	--	--	--	1.4
Ione thoracica	--	.5	.8	1.7	--	--	--	1.4
Scopelocheirus hopei	187.5	--	--	--	--	--	--	--
Orchomenella nana	12.5	.5	--	--	--	--	--	--
Leucothoe incisa	--	--	--	--	.8	--	--	--
Ampelisca brevicornis	1.7	1.0	1.7	.8	3.3	1.7	1.5	1.4
Ampelisca tenuicornis	1.7	2.0	2.5	5.8	1.7	1.7	.5	--
Ampelisca spec. juv.	--	.5	--	.8	--	--	1.0	2.8
Cheirocratus sundevalli	.8	.5	3.3	--	4.2	1.7	1.0	1.4
Bathyporeia elegans	--	.5	--	--	.8	--	1.5	--
Bathyporeia tenuipes	--	--	.8	--	--	--	--	--
Harpinia antennaria	13.3	23.0	13.3	16.7	21.7	15.0	7.0	8.5
Perioculodes longimanus	--	--	--	--	1.7	1.7	1.0	--
Aora typica	--	2.0	2.5	3.3	5.0	2.5	--	--
Lembos longipes	1.7	.5	.8	.8	.8	.8	--	1.4
Photis longicaudata	--	1.5	--	--	--	--	--	1.4
Caprella septentrionalis	--	.5	--	--	--	--	--	--

Table 33 continued.

Station number	9	P1	8	7	6	5	1V	1B
ECHINODERMATA								
Amphiura filiformis	264.2	188.5	159.2	579.2	172.5	167.5	38.5	64.8
Amphiura chiajei	.8	--	--	--	.8	--	--	--
Ophiura texturata	5.8	5.5	1.7	5.0	3.3	8.3	5.5	2.8
Ophiura albida	8.3	20.0	12.5	17.5	19.2	10.0	17.5	36.6
Echinocardium cordatum	16.7	13.0	12.5	20.8	13.3	15.8	4.5	14.1
OTHER TAXA								
Nemertinea	P	P	P	P	P	P	P	P
Hydrozoa	--	--	--	--	--	--	--	P
Viseieren	--	1.5	1.7	5.0	3.3	5.8	9.5	14.1
Vislarven	--	--	--	--	.8	--	--	--
Turbellaria	5.0	3.0	.8	--	2.5	4.2	3.5	2.8
Phoroniden	P	P	P	P	P	P	P	P
Oligochaeta	P	P	--	--	--	--	--	--
Holothuroidea	--	--	1.7	2.5	1.7	1.7	.5	--
Sagitta spec.	2.5	.5	--	.8	1.7	--	.5	--
Echiurida	1.7	--	--	1.7	--	.8	1.5	--
Sipinculida	95.0	161.5	134.2	152.5	181.7	137.5	137.0	125.4
Anthozoa	--	1.0	--	--	--	.8	.5	1.4
Ascidia	.8	--	--	.8	--	--	--	--
Tot. ind. per m2	1042	819	653	1318	852	704	533	711
Tot. number of species	66	84	76	76	78	66	72	61

P= present, not counted.

Table 34. Data location F18/8, survey May/June 1986
Station 9, 250 m (transect perpendicular to residual current)
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	6.00	100.00	40.00	19.24
Polynoe kinbergi	3.00	50.00	2.50	2.74
Pholoe minuta	6.00	100.00	25.00	16.12
Sthenelais limicola	2.00	33.33	1.67	2.58
Anaitides groenlandica	1.00	16.67	.83	---
Ophiodromus flexuosus	4.00	66.67	4.17	3.76
Synelmis klatti	2.00	33.33	1.67	2.58
Nephtys hombergii	6.00	100.00	15.83	5.85
Nephtys spec. juv.	1.00	16.67	4.17	---
Glycera rouxii	6.00	100.00	14.17	8.61
Glycera alba	1.00	16.67	.83	---
Glycera spec. juv.	4.00	66.67	8.33	11.25
Goniada maculata	6.00	100.00	14.17	6.65
Lumbrineris latreilli	6.00	100.00	106.67	32.96
Lumbrineris fragilis	6.00	100.00	19.17	7.36
Paraonis gracilis	3.00	50.00	3.33	4.08
Spiophanes bombyx	3.00	50.00	3.33	4.08
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	3.00	50.00	7.50	11.73
Tharyx marioni	4.00	66.67	5.00	5.48
Chaetozone setosa	6.00	100.00	25.00	15.81
Notomastus latericeus	3.00	50.00	5.00	6.32
Heteromastus filiformis	3.00	50.00	4.17	4.92
Owenia fusiformis	6.00	100.00	8.33	2.58
Lagis koreni	5.00	83.33	16.67	12.11
Sosane gracilis	3.00	50.00	5.83	8.01
Lysilla loveni	3.00	50.00	3.33	4.08
Terebellides stroemi	1.00	16.67	.83	---
MOLLUSCA				
Nucula turgida	1.00	16.67	.83	---
Montacuta ferruginosa	4.00	66.67	5.83	5.85
Mysella bidentata	5.00	83.33	13.33	9.83
Arctica islandica	2.00	33.33	2.50	4.18
Venus striatula	4.00	66.67	4.17	3.76
Abra alba	2.00	33.33	1.67	2.58
Cultellus pellucidus	1.00	16.67	.83	---
Corbula gibba	6.00	100.00	11.67	5.16
Thracia convexa	1.00	16.67	.83	---
Cingula nitida	2.00	33.33	3.33	6.06
Turritella communis	2.00	33.33	3.33	6.06
Natica alderi	1.00	16.67	.83	---
Cylichna cilindracea	5.00	83.33	10.00	7.75
CRUSTACEA				
Callianassa subterranea	3.00	50.00	6.67	9.83
Decapoda larven	1.00	16.67	.83	---
Eudorella truncatula	1.00	16.67	1.67	---
Diastylis rathkei	1.00	16.67	.83	---
Diastylis bradyi	4.00	66.67	4.17	3.76

Table 34 continued.	A	B	C	D
Scopelocheirus hopei	2.00	33.33	187.50	444.74
Orchomenella nana	2.00	33.33	12.50	28.24
Ampelisca brevicornis	1.00	16.67	1.67	---
Ampelisca tenuicornis	1.00	16.67	1.67	---
Cheirocratus sundevalli	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	13.33	6.06
Lembos longipes	1.00	16.67	1.67	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	264.17	163.32
Amphiura chiajei	1.00	16.67	.83	---
Ophiura texturata	4.00	66.67	5.83	4.92
Ophiura albida	3.00	50.00	8.33	9.31
Echinocardium cordatum	5.00	83.33	16.67	13.29
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Turbellaria	4.00	66.67	5.00	4.47
Phoroniden	1.00	16.67	---	---
Oligochaeta	1.00	16.67	---	---
Sagitta spec.	2.00	33.33	2.50	4.18
Echiurida	2.00	33.33	1.67	2.58
Sipinculida	6.00	100.00	95.00	46.15
Ascidia	1.00	16.67	.83	---

Table 35. Data location F18/8, survey May/June 1986
Station PL, location of the well itself
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	3.00	30.00	2.00	3.50
Harmothoe longisetis	3.00	30.00	1.50	2.42
Gattyana cirrosa	10.00	100.00	26.00	11.74
Polynoe kinbergi	2.00	20.00	1.50	3.37
Pholoe minuta	8.00	80.00	36.00	26.33
Anaitides groenlandica	1.00	10.00	.50	---
Anaitides subulifera	1.00	10.00	.50	---
Ophiodromus flexuosus	5.00	50.00	3.00	3.50
Gyptis capensis	1.00	10.00	.50	---
Nephtys hombergii	10.00	100.00	14.00	4.59
Nephtys spec. juv.	3.00	30.00	2.00	3.50
Glycera rouxii	9.00	90.00	15.50	11.65
Glycera alba	2.00	20.00	1.50	3.37
Glycera spec. juv.	6.00	60.00	4.50	4.97
Glycinde nordmanni	5.00	50.00	3.00	3.50
Goniada maculata	8.00	80.00	7.00	5.87
Lumbrineris latreilli	10.00	100.00	90.50	19.36
Lumbrineris fragilis	9.00	90.00	14.00	8.43
Paraonis gracilis	6.00	60.00	3.00	2.58
Poecilochaetus serpens	2.00	20.00	1.00	2.11
Polydora guillei	1.00	10.00	1.00	---
Spiophanes bombyx	8.00	80.00	6.50	4.74
Magelona papillicornis	2.00	20.00	1.00	2.11
Chaetopterus variopedatus	7.00	70.00	6.50	7.47
Tharyx marioni	6.00	60.00	3.50	3.37
Chaetozone setosa	10.00	100.00	15.50	6.43
Diplocirrus glaucus	1.00	10.00	.50	---
Scalibregma inflatum	1.00	10.00	.50	---
Capitella capitata	3.00	30.00	1.50	2.42
Notomastus latericeus	5.00	50.00	5.00	7.07
Heteromastus filiformis	3.00	30.00	3.00	4.83
Owenia fusiformis	5.00	50.00	3.50	4.12
Lanice conchilega	1.00	10.00	1.00	---
Lagis koreni	9.00	90.00	28.00	20.71
Amphicteis gunneri	3.00	30.00	1.50	2.42
Sosane gracilis	7.00	70.00	4.00	3.16
Eupolymnia nebulosa	1.00	10.00	.50	---
Lysilla loveni	2.00	20.00	1.00	2.11
Terebellides stroemi	2.00	20.00	1.00	2.11
MOLLUSCA				
Nucula turgida	3.00	30.00	2.50	4.25
Lepton squamosum	1.00	10.00	.50	---
Montacuta ferruginosa	8.00	80.00	7.00	4.83
Mysella bidentata	7.00	70.00	11.50	10.55
Arctica islandica	2.00	20.00	1.00	2.11
Dosinia exoleta	1.00	10.00	.50	---
Venus striatula	4.00	40.00	3.50	5.30
Mysia undata	1.00	10.00	.50	---
Abra alba	5.00	50.00	3.50	4.12
Mya arenaria	1.00	10.00	.50	---
Corbula gibba	9.00	90.00	16.50	10.81

Table 35. continued	A	B	C	D
Cingula nitida	1.00	10.00	1.50	---
Turritella communis	7.00	70.00	8.00	6.75
Natica alderi	2.00	20.00	1.00	2.11
Cylichna cilindracea	6.00	60.00	6.50	7.09
CRUSTACEA				
Upogebia stellata	2.00	20.00	1.00	2.11
Callianassa subterranea	6.00	60.00	5.00	6.24
Decapoda larven	4.00	40.00	2.50	3.54
Nebalia bipes	1.00	10.00	.50	---
Eudorella truncatula	4.00	40.00	2.00	2.58
Diastylis bradyi	3.00	30.00	3.00	5.37
Ione thoracica	1.00	10.00	.50	---
Orchomenella nana	1.00	10.00	.50	---
Ampelisca brevicornis	2.00	20.00	1.00	2.11
Ampelisca tenuicornis	2.00	20.00	2.00	4.22
Ampelisca spec. juv.	1.00	10.00	.50	---
Cheirocratus sundevalli	1.00	10.00	.50	---
Bathyporeia elegans	1.00	10.00	.50	---
Harpinia antennaria	10.00	100.00	23.00	7.15
Aora typica	3.00	30.00	2.00	3.50
Lembos longipes	1.00	10.00	.50	---
Photis longicaudata	2.00	20.00	1.50	3.37
Caprella septentrionalis	1.00	10.00	.50	---
ECHINODERMATA				
Amphiura filiformis	10.00	100.00	188.50	65.19
Ophiura texturata	5.00	50.00	5.50	7.98
Ophiura albida	10.00	100.00	20.00	7.45
Echinocardium cordatum	9.00	90.00	13.00	7.15
OTHER TAXA				
Nemertinea	10.00	100.00	---	---
Viseieren	2.00	20.00	1.50	3.37
Turbellaria	5.00	50.00	3.00	3.50
Phoroniden	6.00	60.00	---	---
Oligochaeta	3.00	30.00	---	---
Sagitta spec.	1.00	10.00	.50	---
Sipinculida	10.00	100.00	161.50	98.24
Anthozoa	1.00	10.00	1.00	---

Table 36. Data location F18/8, survey May/June 1986
Station 8, 250 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	6.00	100.00	15.00	10.00
Pholoe minuta	6.00	100.00	21.67	9.31
Sthenelais limicola	2.00	33.33	1.67	2.58
Anaitides groenlandica	1.00	16.67	.83	---
Eumida sanguinea	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	1.67	2.58
Gyptis capensis	1.00	16.67	.83	---
Synelmis klatti	2.00	33.33	1.67	2.58
Nereis spec. juv.	1.00	16.67	1.67	---
Nephtys hombergii	5.00	83.33	11.67	6.83
Nephtys incisa	3.00	50.00	2.50	2.74
Glycera rouxii	6.00	100.00	20.83	13.20
Glycera spec. juv.	2.00	33.33	3.33	6.06
Glycinde nordmanni	1.00	16.67	.83	---
Goniada maculata	3.00	50.00	3.33	4.08
Lumbrineris latreilli	6.00	100.00	81.67	41.67
Lumbrineris fragilis	6.00	100.00	12.50	6.89
Paraonis gracilis	3.00	50.00	3.33	4.08
Polydora pulchra	1.00	16.67	.83	---
Polydora guillei	1.00	16.67	.83	---
Spiophanes kroyeri	2.00	33.33	1.67	2.58
Spiophanes bombyx	2.00	33.33	1.67	2.58
Magelona papillicornis	1.00	16.67	.83	---
Chaetopterus variopedatus	5.00	83.33	10.83	6.65
Tharyx marioni	2.00	33.33	1.67	2.58
Chaetozone setosa	5.00	83.33	10.83	6.65
Ophelina acuminata	2.00	33.33	1.67	2.58
Notomastus latericeus	5.00	83.33	10.00	8.94
Owenia fusiformis	5.00	83.33	4.17	2.04
Lanice conchilega	1.00	16.67	.83	---
Lagis koreni	6.00	100.00	10.83	14.29
Ampharete finmarchica	1.00	16.67	.83	---
Amphicteis gunneri	1.00	16.67	.83	---
Sosane gracilis	2.00	33.33	1.67	2.58
Lysilla loveni	1.00	16.67	.83	---
Terebellides stroemi	2.00	33.33	1.67	2.58
MOLLUSCA				
Nucula turgida	1.00	16.67	.83	---
Thyasira flexuosa	1.00	16.67	.83	---
Montacuta ferruginosa	2.00	33.33	1.67	2.58
Mysella bidentata	4.00	66.67	5.00	4.47
Arctica islandica	1.00	16.67	.83	---
Venus striatula	4.00	66.67	3.33	2.58
Mysia undata	2.00	33.33	1.67	2.58
Spisula spec. juv.	1.00	16.67	.83	---
Abra alba	2.00	33.33	1.67	2.58
Mya spec. juv.	1.00	16.67	.83	---
Corbula gibba	5.00	83.33	10.83	9.17
Cingula nitida	1.00	16.67	.83	---
Turritella communis	1.00	16.67	.83	---
Cylichna cilindracea	2.00	33.33	2.50	4.18

Table 36 continued.	A	B	C	D
CRUSTACEA				
Pagurus bernhardus	1.00	16.67	.83	---
Ebalia cranchii	1.00	16.67	.83	---
Upogebia stellata	2.00	33.33	1.67	2.58
Callianassa subterranea	6.00	100.00	12.50	8.80
Neballa bipes	1.00	16.67	.83	---
Eudorella truncatula	1.00	16.67	.83	---
Iphinoe trispinosa	1.00	16.67	.83	---
Diastylis bradyi	3.00	50.00	3.33	4.08
Ione thoracica	1.00	16.67	.83	---
Ampelisca brevicornis	2.00	33.33	1.67	2.58
Ampelisca tenuicornis	3.00	50.00	2.50	2.74
Cheirocratus sundevalli	2.00	33.33	3.33	6.06
Bathyporeia tenuipes	1.00	16.67	.83	---
Harpinia antennaria	5.00	83.33	13.33	11.69
Aora typica	2.00	33.33	2.50	4.18
Lembos longipes	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	159.17	52.48
Ophiura texturata	1.00	16.67	1.67	---
Ophiura albida	4.00	66.67	12.50	12.94
Echinocardium cordatum	6.00	100.00	12.50	8.22
OTHER TAXA				
Nemertinea	5.00	83.33	---	---
Viseieren	1.00	16.67	1.67	---
Turbellaria	1.00	16.67	.83	---
Phoroniden	2.00	33.33	---	---
Holothuroidea	1.00	16.67	1.67	---
Sipinculida	6.00	100.00	134.17	61.52

Table 37. Data location F18/8, survey May/June 1986
Station 7, 500 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	6.00	100.00	15.00	8.94
Polynoe kinbergi	2.00	33.33	1.67	2.58
Pholoe minuta	6.00	100.00	34.17	12.42
Ophiodromus flexuosus	4.00	66.67	3.33	2.58
Gyptis capensis	2.00	33.33	1.67	2.58
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	1.00	16.67	.83	---
Nephtys hombergii	5.00	83.33	12.50	8.80
Nephtys incisa	4.00	66.67	4.17	3.76
Glycera rouxii	6.00	100.00	28.33	13.29
Glycera spec. juv.	4.00	66.67	6.67	6.06
Glycinde nordmanni	2.00	33.33	1.67	2.58
Goniada maculata	5.00	83.33	9.17	7.36
Lumbrineris latreilli	6.00	100.00	162.50	32.98
Lumbrineris fragilis	6.00	100.00	35.83	9.17
Driloneris filum	1.00	16.67	.83	---
Paraonis gracilis	2.00	33.33	4.17	8.01
Poecilochaetus serpens	1.00	16.67	.83	---
Polydora guillei	2.00	33.33	6.67	10.33
Spiophanes bombyx	3.00	50.00	4.17	4.92
Scolelepis foliosa	1.00	16.67	.83	---
Chaetopterus variopedatus	6.00	100.00	10.83	5.85
Tharyx marioni	2.00	33.33	1.67	2.58
Chaetozone setosa	6.00	100.00	25.83	15.63
Ophelina acuminata	1.00	16.67	.83	---
Notomastus latericeus	6.00	100.00	13.33	4.08
Heteromastus filiformis	3.00	50.00	3.33	4.08
Owenia fusiformis	5.00	83.33	9.17	6.65
Lanice conchilega	2.00	33.33	1.67	2.58
Lagis koreni	6.00	100.00	16.67	11.69
Ampharete finmarchica	2.00	33.33	5.00	8.37
Amphicteis gunneri	1.00	16.67	.83	---
Sosane gracilis	3.00	50.00	4.17	5.85
Eupolymnia nebulosa	1.00	16.67	.83	---
Lysilla loveni	1.00	16.67	.83	---
Terebellides stroemi	3.00	50.00	3.33	4.08
MOLLUSCA				
Nucula turgida	1.00	16.67	.83	---
Thyasira flexuosa	1.00	16.67	.83	---
Montacuta ferruginosa	3.00	50.00	6.67	8.76
Mysella bidentata	3.00	50.00	8.33	13.66
Venus striatula	4.00	66.67	5.00	4.47
Mysia undata	1.00	16.67	.83	---
Abra alba	3.00	50.00	2.50	2.74
Cultellus pellucidus	1.00	16.67	.83	---
Corbula gibba	5.00	83.33	6.67	5.16
Cingula nitida	2.00	33.33	2.50	4.18
Turritella communis	1.00	16.67	3.33	---

Table 37 continued.	A	B	C	D
Natica alderi	1.00	16.67	.83	---
Cylichna cilindracea	1.00	16.67	1.67	---
CRUSTACEA				
Ebalia cranchii	1.00	16.67	.83	---
Corystes cassivelaunus	1.00	16.67	.83	---
Upogebia stellata	4.00	66.67	6.67	6.06
Callianassa subterranea	5.00	83.33	11.67	12.52
Diastylis bradyi	4.00	66.67	4.17	3.76
Ione thoracica	1.00	16.67	1.67	---
Ampelisca brevicornis	1.00	16.67	.83	---
Ampelisca tenuicornis	4.00	66.67	5.83	5.85
Ampelisca spec. juv.	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	16.67	9.83
Aora typica	3.00	50.00	3.33	4.08
Lembos longipes	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	579.17	148.17
Ophiura texturata	2.00	33.33	5.00	7.75
Ophiura albida	5.00	83.33	17.50	9.35
Echinocardium cordatum	6.00	100.00	20.83	12.81
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	5.00	83.33	5.00	3.16
Phoroniden	3.00	50.00	---	---
Holothuroidea	1.00	16.67	2.50	---
Sagitta spec.	1.00	16.67	.83	---
Echiurida	2.00	33.33	1.67	2.58
Sipinculida	6.00	100.00	152.50	52.99
Ascidia	1.00	16.67	.83	---

Table 38. Data location F18/8, survey May/June 1986
Station 6, 750 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	16.67	.83	---
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	1.00	16.67	.83	---
Gattyana cirrosa	4.00	66.67	6.67	6.06
Polynoe kinbergi	1.00	16.67	.83	---
Pholoe minuta	5.00	83.33	23.33	17.22
Ophiodromus flexuosus	1.00	16.67	.83	---
Synelmis klatti	1.00	16.67	.83	---
Nereis longissima	1.00	16.67	.83	---
Nephtys hombergii	5.00	83.33	6.67	5.16
Nephtys cirrosa	1.00	16.67	.83	---
Nephtys spec. juv.	2.00	33.33	3.33	6.06
Glycera rouxii	6.00	100.00	25.00	12.25
Glycera alba	1.00	16.67	1.67	---
Glycera spec. juv.	3.00	50.00	2.50	2.74
Glycinde nordmanni	3.00	50.00	4.17	4.92
Goniada maculata	4.00	66.67	6.67	7.53
Lumbrineris latreilli	6.00	100.00	115.00	24.08
Lumbrineris fragilis	6.00	100.00	16.67	13.29
Paraonis gracilis	6.00	100.00	14.17	9.70
Poecilochaetus serpens	1.00	16.67	.83	---
Spio filicornis	1.00	16.67	.83	---
Spiophanes kroyeri	2.00	33.33	1.67	2.58
Spiophanes bombyx	2.00	33.33	3.33	6.06
Scolelepis foliosa	2.00	33.33	1.67	2.58
Chaetopterus variopedatus	4.00	66.67	3.33	2.58
Tharyx marioni	3.00	50.00	2.50	2.74
Chaetozone setosa	6.00	100.00	16.67	7.53
Scalibregma inflatum	1.00	16.67	.83	---
Ophelina acuminata	1.00	16.67	.83	---
Capitella capitata	1.00	16.67	.83	---
Notomastus latericeus	6.00	100.00	15.83	3.76
Heteromastus filiformis	2.00	33.33	1.67	2.58
Owenia fusiformis	2.00	33.33	1.67	2.58
Lagis koreni	5.00	83.33	30.00	22.58
Sosane gracilis	3.00	50.00	3.33	4.08
Lysilla loveni	1.00	16.67	.83	---
Terebellides stroemi	4.00	66.67	3.33	2.58
MOLLUSCA				
Montacuta ferruginosa	4.00	66.67	6.67	6.83
Mysella bidentata	6.00	100.00	23.33	11.69
Arctica islandica	1.00	16.67	.83	---
Venus striatula	6.00	100.00	10.00	3.16
Mysia undata	1.00	16.67	.83	---
Abra alba	3.00	50.00	3.33	4.08
Cultellus pellucidus	1.00	16.67	1.67	---
Corbula gibba	6.00	100.00	13.33	8.16
Turritella communis	4.00	66.67	3.33	2.58
Natica alderi	3.00	50.00	2.50	2.74
Cylichna cilindracea	3.00	50.00	5.00	5.48

Table 38 continued.	A	B	C	D
CRUSTACEA				
Ebalia cranchii	1.00	16.67	.83	---
Upogebia stellata	1.00	16.67	.83	---
Callianassa subterranea	5.00	83.33	10.00	7.07
Nebalia bipes	1.00	16.67	.83	---
Eudorella truncatula	1.00	16.67	.83	---
Diastylis rathkei	1.00	16.67	.83	---
Diastylis bradyi	3.00	50.00	3.33	4.08
Leucothoe incisa	1.00	16.67	.83	---
Ampelisca brevicornis	2.00	33.33	3.33	6.06
Ampelisca tenuicornis	2.00	33.33	1.67	2.58
Cheirocratus sundevalli	4.00	66.67	4.17	3.76
Bathyporeia elegans	1.00	16.67	.83	---
Harpinia antennaria	6.00	100.00	21.67	8.76
Perioculodes longimanus	1.00	16.67	1.67	---
Aora typica	4.00	66.67	5.00	5.48
Lembos longipes	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	172.50	46.56
Amphiura chiajei	1.00	16.67	.83	---
Ophiura texturata	2.00	33.33	3.33	5.16
Ophiura albida	6.00	100.00	19.17	10.68
Echinocardium cordatum	4.00	66.67	13.33	14.02
OTHER TAXA				
Nemertinea	4.00	66.67	---	---
Viseieren	3.00	50.00	3.33	4.08
Vislarven	1.00	16.67	.83	---
Turbellaria	3.00	50.00	2.50	2.74
Phoroniden	1.00	16.67	---	---
Holothuroidea	2.00	33.33	1.67	2.58
Sagitta spec.	2.00	33.33	1.67	2.58
Sipinculida	6.00	100.00	181.67	77.57

Table 39. Data location F18/8, survey May/June 1986
Station 5, 1000 m residual current transect.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (6) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Harmothoe lunulata	1.00	16.67	.83	---
Harmothoe longisetis	2.00	33.33	1.67	2.58
Gattyana cirrosa	4.00	66.67	7.50	6.12
Pholoe minuta	6.00	100.00	15.83	8.61
Eteone lactea	1.00	16.67	.83	---
Ophiodromus flexuosus	2.00	33.33	1.67	2.58
Gyptis capensis	2.00	33.33	1.67	2.58
Nephtys hombergii	4.00	66.67	9.17	9.17
Nephtys incisa	3.00	50.00	2.50	2.74
Nephtys caeca	1.00	16.67	.83	---
Nephtys spec. juv.	1.00	16.67	4.17	---
Glycera rouxii	6.00	100.00	25.00	8.94
Glycera spec. juv.	2.00	33.33	3.33	5.16
Glycinde nordmanni	3.00	50.00	3.33	4.08
Goniada maculata	5.00	83.33	10.00	7.07
Lumbrineris latreilli	6.00	100.00	88.33	28.05
Lumbrineris fragilis	6.00	100.00	25.00	10.95
Orbinia sertulata	1.00	16.67	.83	---
Paraonis gracilis	2.00	33.33	2.50	4.18
Spiophanes bombyx	2.00	33.33	1.67	2.58
Chaetopterus variopedatus	3.00	50.00	5.00	6.32
Tharyx marioni	2.00	33.33	1.67	2.58
Chaetozone setosa	6.00	100.00	19.17	11.58
Notomastus latericeus	4.00	66.67	10.83	15.30
Heteromastus filiformis	1.00	16.67	.83	---
Owenia fusiformis	5.00	83.33	5.83	4.92
Lagis koreni	5.00	83.33	13.33	12.11
Amphicteis gunneri	1.00	16.67	.83	---
Sosane gracilis	3.00	50.00	2.50	2.74
MOLLUSCA				
Nucula turgida	3.00	50.00	3.33	4.08
Montacuta ferruginosa	4.00	66.67	6.67	6.83
Mysella bidentata	5.00	83.33	8.33	5.16
Dosinia exoleta	1.00	16.67	.83	---
Venus striatula	4.00	66.67	5.00	4.47
Abra alba	2.00	33.33	3.33	6.06
Cultellus pellucidus	2.00	33.33	1.67	2.58
Corbula gibba	4.00	66.67	10.83	10.21
Thracia convexa	1.00	16.67	.83	---
Cingula nitida	1.00	16.67	.83	---
Turritella communis	2.00	33.33	3.33	5.16
Natica alderi	1.00	16.67	.83	---
Cylichna cilindracea	2.00	33.33	2.50	4.18
CRUSTACEA				
Upogebia stellata	1.00	16.67	.83	---
Callianassa subterranea	3.00	50.00	6.67	9.83
Gastrosaccus spinifer	1.00	16.67	.83	---
Eudorella truncatula	1.00	16.67	.83	---
Diastylis bradyi	3.00	50.00	2.50	2.74

Table 39 continued.	A	B	C	D
Ampelisca brevicornis	2.00	33.33	1.67	2.58
Ampelisca tenuicornis	1.00	16.67	1.67	---
Cheirocratus sundevalli	2.00	33.33	1.67	2.58
Harpinia antennaria	6.00	100.00	15.00	8.37
Perioculodes longimanus	2.00	33.33	1.67	2.58
Aora typica	2.00	33.33	2.50	4.18
Lembos longipes	1.00	16.67	.83	---
ECHINODERMATA				
Amphiura filiformis	6.00	100.00	167.50	100.93
Ophiura texturata	5.00	83.33	8.33	6.83
Ophiura albida	4.00	66.67	10.00	11.40
Echinocardium cordatum	5.00	83.33	15.83	13.20
OTHER TAXA				
Nemertinea	6.00	100.00	---	---
Viseieren	4.00	66.67	5.83	5.85
Turbellaria	3.00	50.00	4.17	5.85
Phoroniden	1.00	16.67	---	---
Holothuroidea	2.00	33.33	1.67	2.58
Echiurida	1.00	16.67	.83	---
Sipinculida	6.00	100.00	137.50	65.02
Anthozoa	1.00	16.67	.83	---

Table 40. Data location F18/8, survey May/June 1986
Station 1V, 5000 m residual current transect; van Veen grab.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Aphrodita aculeata	1.00	10.00	.50	---
Gattyana cirrosa	10.00	100.00	16.00	14.10
Polynoe kinbergi	3.00	30.00	2.00	3.50
Pholoe minuta	10.00	100.00	25.50	12.12
Sthenelais limicola	4.00	40.00	2.50	3.54
Eteone flava	1.00	10.00	.50	---
Ophiodromus flexuosus	3.00	30.00	1.50	2.42
Synelmis klatti	1.00	10.00	.50	---
Nephtys hombergii	10.00	100.00	15.00	8.16
Nephtys incisa	1.00	10.00	.50	---
Glycera rouxii	9.00	90.00	14.00	8.76
Glycera spec. juv.	3.00	30.00	1.50	2.42
Glycinde nordmanni	2.00	20.00	1.00	2.11
Goniada maculata	8.00	80.00	6.50	4.74
Lumbrineris latreilli	10.00	100.00	75.50	35.00
Lumbrineris fragilis	9.00	90.00	12.00	7.53
Orbinia sertulata	1.00	10.00	.50	---
Paraonis gracilis	5.00	50.00	3.00	3.50
Poecilochaetus serpens	1.00	10.00	.50	---
Spiophanes kroyeri	4.00	40.00	2.50	3.54
Spiophanes bombyx	4.00	40.00	2.00	2.58
Magelona papillicornis	2.00	20.00	1.00	2.11
Chaetopterus variopedatus	4.00	40.00	6.50	11.32
Chaetozone setosa	8.00	80.00	12.00	11.11
Capitella capitata	1.00	10.00	1.00	---
Notomastus latericeus	9.00	90.00	9.50	6.85
Heteromastus filiformis	6.00	60.00	4.00	4.59
Owenia fusiformis	3.00	30.00	2.00	3.50
Lagis koreni	8.00	80.00	8.00	6.32
Amphicteis gunneri	2.00	20.00	1.00	2.11
Sosane gracilis	3.00	30.00	2.00	3.50
Lysilla loveni	2.00	20.00	1.50	3.37
Terebellides stroemi	3.00	30.00	1.50	2.42
MOLLUSCA				
Nucula turgida	1.00	10.00	1.50	---
Montacuta ferruginosa	5.00	50.00	3.50	4.74
Mysella bidentata	8.00	80.00	16.00	13.70
Arctica islandica	4.00	40.00	2.50	3.54
Dosinia exoleta	1.00	10.00	.50	---
Venus striatula	8.00	80.00	9.50	7.25
Abra alba	3.00	30.00	2.00	3.50
Cultellus pellucidus	1.00	10.00	.50	---
Corbula gibba	7.00	70.00	8.50	6.69
Cingula nitida	3.00	30.00	1.50	2.42
Turritella communis	3.00	30.00	2.00	3.50
Natica alderi	3.00	30.00	2.00	3.50
Cylichna cilindracea	8.00	80.00	7.50	5.89
Philine catena	1.00	10.00	1.00	---

Table 40 continued.	A	B	C	D
CRUSTACEA				
Corystes cassivelaunus	2.00	20.00	1.00	2.11
Callianassa subterranea	5.00	50.00	3.50	4.12
Decapoda larven	2.00	20.00	1.00	2.11
Eudorella truncatula	1.00	10.00	.50	---
Diastylis bradyi	2.00	20.00	1.50	3.37
Ampelisca brevicornis	3.00	30.00	1.50	2.42
Ampelisca tenuicornis	1.00	10.00	.50	---
Ampelisca spec. juv.	2.00	20.00	1.00	2.11
Cheirocratus sundevalli	1.00	10.00	1.00	---
Bathyporeia elegans	2.00	20.00	1.50	3.37
Harpinia antennaria	7.00	70.00	7.00	7.15
Perioculodes longimanus	2.00	20.00	1.00	2.11
ECHINODERMATA				
Amphiura filiformis	10.00	100.00	38.50	24.73
Ophiura texturata	6.00	60.00	5.50	5.50
Ophiura albida	10.00	100.00	17.50	12.75
Echinocardium cordatum	6.00	60.00	4.50	4.38
OTHER TAXA				
Nemertinea	7.00	70.00	---	---
Viseieren	9.00	90.00	9.50	9.85
Turbellaria	6.00	60.00	3.50	3.37
Phoroniden	1.00	10.00	---	---
Holothuroidea	1.00	10.00	.50	---
Sagitta spec.	1.00	10.00	.50	---
Echiurida	2.00	20.00	1.50	3.37
Sipinculida	9.00	90.00	137.00	78.43
Anthozoa	1.00	10.00	.50	---

Table 41. Data location F18/8, survey May/June 1986
Station 1B, 5000 m residual current transect; boxcorer.
Frequency of occurrence and abundancy.

A= number of samples in which a species occurs
B= percentage of the total number of samples (10) in which the species occurs
C= mean number of individuals per m2
D= standard deviation

	A	B	C	D
POLYCHAETA				
Gattyana cirrosa	10.00	100.00	42.25	38.71
Pholoe minuta	9.00	90.00	23.94	19.97
Anaitides groenlandica	1.00	10.00	1.41	---
Ophiodromus flexuosus	2.00	20.00	2.82	5.94
Gyptis capensis	2.00	20.00	2.82	5.94
Synelmis klatti	3.00	30.00	5.63	9.85
Nephtys hombergii	7.00	70.00	12.68	10.39
Nephtys incisa	2.00	20.00	2.82	5.94
Nephtys spec. juv.	2.00	20.00	2.82	5.94
Glycera rouxii	6.00	60.00	22.54	24.12
Glycera spec. juv.	4.00	40.00	5.63	7.27
Glycinde nordmanni	1.00	10.00	2.82	---
Goniada maculata	4.00	40.00	7.04	9.96
Lumbrineris latreilli	10.00	100.00	87.32	46.38
Lumbrineris fragilis	2.00	20.00	5.63	11.88
Paraonis gracilis	5.00	50.00	9.86	13.36
Magelona papillicornis	1.00	10.00	1.41	---
Chaetopterus variopedatus	10.00	100.00	40.85	19.30
Tharyx marioni	2.00	20.00	2.82	5.94
Chaetozone setosa	4.00	40.00	11.27	15.99
Ophelina acuminata	2.00	20.00	2.82	5.94
Notomastus latericeus	7.00	70.00	21.13	19.07
Heteromastus filiformis	2.00	20.00	2.82	5.94
Owenia fusiformis	3.00	30.00	5.63	9.85
Lagis koreni	5.00	50.00	9.86	13.36
Sosane gracilis	5.00	50.00	7.04	7.42
Terebellides stroemi	1.00	10.00	1.41	---
MOLLUSCA				
Nucula turgida	2.00	20.00	4.23	9.51
Montacuta ferruginosa	5.00	50.00	9.86	13.36
Mysella bidentata	2.00	20.00	2.82	5.94
Dosinia exoleta	1.00	10.00	1.41	---
Venus striatula	3.00	30.00	4.23	6.80
Corbula gibba	6.00	60.00	9.86	9.51
Cingula nitida	2.00	20.00	2.82	5.94
Turritella communis	1.00	10.00	1.41	---
Natica alderi	1.00	10.00	1.41	---
Cylichna cilindracea	2.00	20.00	4.23	9.51
CRUSTACEA				
Upogebia stellata	2.00	20.00	4.23	9.51
Callianassa subterranea	9.00	90.00	28.17	18.78
Decapoda larven	1.00	10.00	1.41	---
Eudorella truncatula	3.00	30.00	4.23	6.80
Diastylis bradyi	2.00	20.00	2.82	5.94
Diastylis spec. juv.	1.00	10.00	1.41	---
Ione thoracica	1.00	10.00	1.41	---
Ampelisca brevicornis	1.00	10.00	1.41	---
Ampelisca spec. juv.	1.00	10.00	2.82	---
Cheirocratus sundevalli	1.00	10.00	1.41	---

Table 41 continued.	A	B	C	D
Harpinia antennaria	4.00	40.00	8.45	11.88
Lembos longipes	1.00	10.00	1.41	---
Photis longicaudata	1.00	10.00	1.41	---
ECHINODERMATA				
Amphiura filiformis	10.00	100.00	64.79	38.26
Ophiura texturata	2.00	20.00	2.82	5.94
Ophiura albida	8.00	80.00	36.62	24.12
Echinocardium cordatum	5.00	50.00	14.08	18.78
OTHER TAXA				
Nemertinea	5.00	50.00	---	---
Hydrozoa	2.00	20.00	---	---
Viseieren	5.00	50.00	14.08	17.57
Turbellaria	2.00	20.00	2.82	5.94
Phoroniden	7.00	70.00	---	---
Sipinculida	10.00	100.00	125.35	83.31
Anthozoa	1.00	10.00	1.41	---

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