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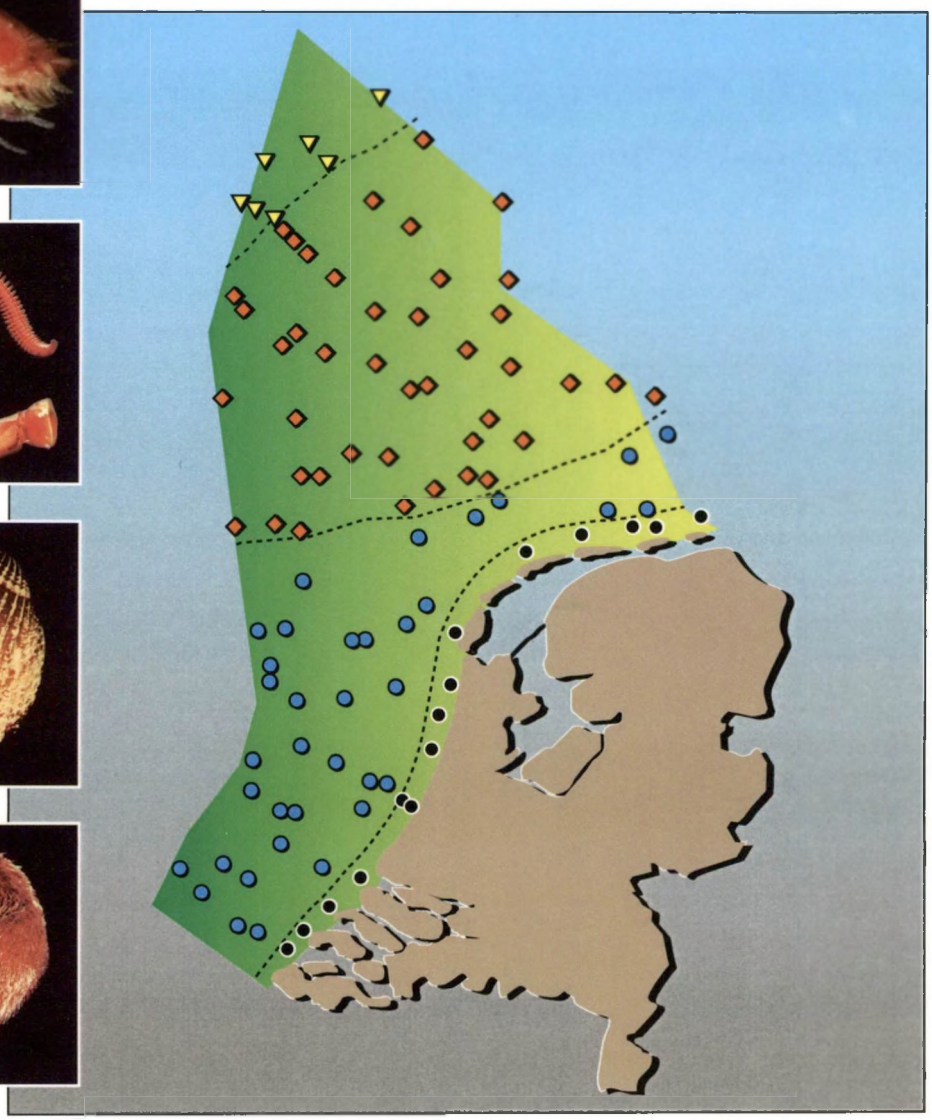

Nederlands Instituut voor Onderzoek der Zee

Monitoring Macrozoobenthos of the North Sea

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

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1. SUMMARY

In this report the results are presented of a macrobenthos survey on the Dutch Continental Shelf (DCS), carried out in spring 2001. The survey forms part of the 'Biological monitoring programme of marine waters' (MON*BIOLOGIE, generally referred to as 'BIOMON') which was initiated by the National Institute for Coastal and Marine Management (RIKZ). The purpose of the programme is to obtain insight into the year-to-year variations of the macrobenthic assemblages and to detect trend-like changes, that possibly indicate anthropogenic influences on the marine environment (*e.g.* eutrophication, pollution, beam-trawl fishery).

Within the framework of this project fieldwork is carried out every year in spring. In 2001 the 100 BIOMON stations were sampled in the period between February 27 and April 4. On the basis of the results collected in 2001 and previous years an analysis is made of the trends and fluctuations of some selected species and of basic community attributes over the period 1986-2001. The community attributes studied were the diversity, abundance and biomass of the total macrofauna and of the 4 major taxonomic groups. Temporal variation or trends were investigated separately for each of the four subareas in the DCS *i.e.* the Coastal, Offshore areas, Dogger Bank and Oyster Ground. The conclusions of this study can be summarized as follows:

1. The sediment composition in the four subareas was quite similar to that found in previous years. Also at most of the individual stations the median grain size and silt content of the sediment had hardly changed. There were only three stations with strong year to year differences in sediment composition. At the stations OFF 2 and OFF 6 the median grain size strongly fluctuated and at station OYS 8 the silt content. It is suggested that these stations are situated at a sharp local gradient.
2. At the community level, there were only a few slight changes compared to preceding years. In the offshore area and in the coastal area there seemed to be a tendency for increased diversity. This was not due to increased species richness but to a more even distribution in the abundance of the various species.
   With respect to the share of the different taxonomic groups to the total biomass, a decrease has been observed in previous years in molluscs, particularly at the Dogger Bank and in the Oyster Ground. This decrease has come to an end in 2001 and turned into an increase. Since molluscs also increased numerically, the increase in biomass is caused by higher densities rather than by a larger size of the animals.
3. At the Dogger Bank a few species showed a remarkable decrease. The polychaete *Nephtys cirrosa* shows a decrease from 2000 onwards, the sand star *Acrocnida brachiata* and the bivalve *Mysella bidentata* from 1999 and the polychaete *Aricidea*

minuta decreased in 1997 and has no longer been found since 1999. On the other hand the population density of the gastropod *Euspira nitida* (formerly called *Natica alderi*) had recovered from a dip in the period 1998 – 2000. The occurrence of *Ensis phaxoides* is new for the Dogger Bank. Further, living specimens of the bivalve *Gouldia minima* and the gastropod *Turbonilla pusilla* have not been found on the DCS before.

4. In the Oyster Ground the decreasing trend that has been observed in previous years in the brittle star *Amphiura filiformis* and the polychaete *Nephtys hombergii* had turned into an increase in 2001. However, densities of *A. filiformis* were still low at the Frisian Front. There was a number of species that have not been found before during the BIOMON programme. The occurrence of the polychaete *Nephtys assimilis* is new for the Oyster Ground. The records of the polychaete *Sabella penicillus*, the bivalves *Montacuta tenella* and *Gari costulata* and the gastropods *Turbonilla pusilla* and *Roxania utriculus* are probably new to the DCS.
5. In the offshore area, a slightly increasing trend that has been observed in the sea urchin *Echinocardium cordatum* in the preceding years has come to an end in 2001. In contrast, the gastropod *Euspira nitida* showed a recovery of populations from 2000 onwards. Station OFF 33 that in 2000 had shown a rich fauna that was clearly different from the other stations in the offshore area was still rich in 2001, but the fauna composition did not show 'exotic' elements.
6. In the Coastal area there seemed to be a recovery of the populations of the gastropod *Euspira nitida*. After an 8 year period of very low densities the species returned at 5 stations, albeit in low numbers. The bivalve *Tellina fabula* also showed a steady increase, after a dip in the second half of the nineties. At stations where banks of *Spisula subtruncata* or *Ensis americanus* occurred, biomass values were very high.

2. SAMENVATTING

In dit rapport worden de resultaten gepresenteerd van een macrobenthos bemonstering die in 2001 werd uitgevoerd op het Nederlands Continentale Plat (NCP). De bemonstering vond plaats in het kader van het 'Biologische Monitoring Programma Zoute Wateren' (MON*BIOLOGIE, gewoonlijk aangeduid als 'BIOMON'), dat geïnitieerd is door het Rijksinstituut voor Kust en Zee. Met het project wordt beoogd inzicht te krijgen in de jaarlijkse fluctuaties van de macrobenthos gemeenschappen en vast te stellen of er op de langere termijn trendmatige veranderingen optreden. Dergelijke veranderingen zouden onder meer kunnen plaats vinden als gevolg van anthropogene activiteiten (bijv. eutrofiëring, verontreiniging, boomkorvisserij).

In het kader van dit project wordt jaarlijks veldonderzoek uitgevoerd in het voorjaar. In 2001 zijn de 100 BIOMON stations tussen 27 februari en 4 april bemonsterd. Aan de hand van de gegevens die in 2001 en voorgaande jaren zijn verzameld is een overzicht verkregen van de trends en fluctuaties bij een aantal geselecteerde soorten en een aantal kenmerken van de benthische gemeenschap als geheel over de periode 1986 - 2001. Deze set kenmerken bestaat uit de diversiteit, de dichtheid en biomassa van de totale fauna en de 4 belangrijkste taxa. Temporele variatie en trends zijn voor vier subgebieden van het NCP, de Kustzone, het Offshore gebied, de Doggersbank en de Oestergronden, afzonderlijk onderzocht. De conclusies van deze studie kunnen als volgt worden samengevat:

1. De doorsnee sedimentsamenstelling in de vier subgebieden vertoonde grote gelijkenis met die welke in voorgaande jaren werd aangetroffen. Ook op de afzonderliojke stations werden meestal geen grote veranderingen in mediane korrelgrootte of slibgehalte gevonden. Er waren slechts drie stations waar sterke jaar-op-jaar fluctuaties werden gevonden in de sedimentsamenstelling. Op de stations OFF 2 en OFF 6 varieerde de mediane korrelgrootte sterk en op station OYS 8 het slibgehalte. Verondersteld wordt dat deze stations gesitueerd zijn in gebiedjes waar scherpe locale gradiënten voorkomen.
2. Op community niveau waren er slechts enkele kleine veranderingen ten opzichte van de voorgaande jaren. In het offshore gebied en in de kustzone leek er sprake van een toegenomen diversiteit, niet in de zin van een toegenomen aantal soorten, maar meer wat betreft een meer evenwichtige verdeling in de dichtheden van de verschillende soorten. Met betrekking tot het aandeel van de verschillende taxonomische groepen in de totale biomassa is in voorgaande jaren een afname waargenomen bij de mollusken, met name op de Doggersbank en in de Oestergronden. Deze afname is in 2001

omgebogen in een toename. Aangezien mollusken ook numeriek toenamen moet de biomassa toename eerder verklaard worden door hogere dichtheden dan door een gemiddeld grotere afmeting van de organismen.

3. Op de Doggersbank vertoonden enkele soorten een opmerkelijke afname. De polychaet *Nephtys cirrosa* neemt af sinds 2000, de slangster *Acrocnida brachiata* en de bivalve *Mysella bidentata* vanaf 1999 en bij de polychaet *Aricidea minuta* zette de afname in 1997 in. Deze laatste soort is sedert 1999 niet meer gevonden. Aan de andere kant bleek de gastropode *Euspira nitida* (vroeger *Natica alderi* genoemd) zich te hebben hersteld van een dal in de periode 1998 – 2000. Het voorkomen van de bivalve *Ensis phaxoides* is nieuw voor de Doggersbank. Verder werden levende exemplaren van de bivalve *Gouldia minima* en de gastropode *Turbonilla pusilla* aangetroffen. Beide werden nog niet eerder op het NCP gevonden.
4. In de Oestergronden is aan de afnemende trend die in de voorgaande jaren is waargenomen bij de slangster *Amphiura filiformis* en de polychaet *Nephtys hombergii* een eind gekomen. Bij beide soorten was in 2001 in het algemeen sprake van een toename. Niettemin waren de dichtheden van *A. filiformis* nog steeds laag op het Friese Front. Er waren meerdere soorten die nog niet eerder gevonden zijn in het kader van het BIOMON-programma. Zo werd de polychaet *Nephtys assimilis* nog niet eerder in de Oestergronden aangetroffen. Het voorkomen van de polychaet *Sabella penicillus*, de bivalven *Montacuta tenella* en *Gari costulata* en de gastropoden *Turbonilla pusilla* en *Roxania utriculus* is waarschijnlijk nieuw voor het NCP.
5. Aan de licht toenemende trend die in de voorgaande jaren in het offshore gebied is waargenomen bij de hartegel Echinocardium cordatum is in 2001 een eind gekomen. Populaties van de gastropode *Euspira nitida* vertoonden daarentegen een herstel vanaf 2000. Station OFF 33 dat in 2000 een rijke fauna had laten zien, die duidelijk afweek van de overige stations in het offshore gebied, bleek opnieuw rijk, maar de fauna bevatte geen 'vreemde' elementen.
6. In de kustzone leek er sprake van een herstel van de populaties van de gastropode *Euspira nitida*. Na 8 jaar van zeer lage dichtheden bleek de soort op 5 stations weer voor te komen, zij het in nog geringe aantallen. De bivalve *Tellina fabula* vertoonde ook een gestage toename, na een dieptepunt in de tweede helft van de jaren negentig. Op stations waar banken voorkwamen van *Spisula subtruncata* of *Ensis americanus* waren de biomassagetallen zeer hoog.

3. INTRODUCTION

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

This report presents the data collected during the macrobenthos survey carried out in spring 2001. Further the results of the 2001 survey are compared with the BIOMON data collected in previous years (1991-2000) and those obtained during the ICES North Sea Benthos Survey (ICES-NSBS, 1986) and the MILZON-BENTHOS programme (1988-1993). In 1990 a pilot study of the BIOMON project was carried out at 7 locations on the DCS and the results are also included in the data base.

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

The analysis of the results obtained in previous years (Daan & Mulder, 2001) has shown that there were generally no clear trends at the community level (faunal density, biomass, biodiversity parameters) in the 4 subareas. However, in most subareas there seemed to be a slight decrease in the contribution of molluscs to the total benthic biomass. At the species level there was a clear downward trend in the abundance of the brittle star *Amphiura filiformis* in the Oyster Ground from 1993 onwards. Particularly at

the Frisian Front a dramatic decrease was observed in the abundance of this species. Further there was a decrease in the abundance of the polychaete *Nephtys cirrosa* and the gastropod *Natica alderi* in the Offshore area and the Coastal area. The latter species also decreased at the Dogger Bank. The new data will show to what extent the apparent trends observed in previous years continued in 2001.

4. MATERIAL AND METHODS

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

4.1. SAMPLING

In 2001 the BIOMON stations were sampled in the period February 27 to April 4. Most stations have a water depth >5 m and were visited with the RV Mitra or the RV Arca (North Sea Directorate, RWS). However, two stations in the Coastal subarea with a water depth less than 10 m, *viz.* COA 13 & 14 were sampled with the RV. Delta (RWS).

Fig. 1 shows the positions of the stations . The exact geographical positions of the 100 stations, together with the delta codes and selected abiotic characteristics (depth/sediment) of the stations are summarized in Table 1a/b. More general information about the cruise carried out with the RV. Mitra and the weather conditions during this part of the survey in 2001 can be found in the cruise report of Rijkswaterstaat (Anonymous, 2002).

4.2. SAMPLE TREATMENTS

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

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

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

4.3. ASHFREE DRY WEIGHT

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

- *Molluscs and echinoids*:

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

- *Polychaetes, other worms, larger crustaceans and ophiuroids*:

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

- *Remaining taxa*:

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

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

4.4. STATISTICS

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

($Hill_0$) stands for the number of species per boxcore sample and is the simplest index. The other two indices, the Shannon-Wiener index (H') (Shannon & Weaver, 1949) and the Simpson index (D) for dominance (Simpson, 1949), are based on the proportional abundances of the individual species in the samples. The Simpson index is sensitive to the abundance only of the more plentiful species and can therefore be regarded as a measure of dominance (Hill, 1973). A high value for Simpsons index means low diversity, whereas a high value for the $Hill_0$ or Shannon-Wiener index indicates high diversity.

4.5. SEDIMENT ANALYSIS

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

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

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

< 175 μm	Very fine sand
175 - 250 μm	Fine sand
250 - 300 μm	Medium-fine sand
300 - 350 μm	Medium-coarse sand
> 350 μm	Coarse sand

5. RESULTS AND DISCUSSION

5.1. SEDIMENT COMPOSITION

The median grain size and silt content of the sediment at the stations sampled are listed in Table 1. Spatial and temporal patterns are illustrated in Fig. 2, 3 and 4.

The spatial pattern in the sediment composition in 2001 was quite similar to that in the preceding years. A look at the mean median grain size in the 4 subareas between 1995 and 2001 (Fig. 4) shows that the grain size is not only very stable, but that the variation around the mean is extremely small. Also at most of the individual stations the median grain size did not substantially change compared to preceding years. A comparison between the values measured in 2001 (Fig. 2) and those found in previous years shows that in more than 80% the size class did not change and that in most of the other cases the difference was not more than 1 size class. There are, however, two exceptions. At station OFF 2, north of Schiermonnikoog, the median grain size was about 340 µm in 1997 and 1999, but substantially lower, about 210 µm, in the other years. In our previous report we already suggested that OFF 2 is situated at a sharp local gradient where the sediment changes from fine sand into medium-coarse sand within a short distance. As a consequence, small year to year differences in sampling position could result in rather strong differences in sediment composition. At station OFF 6, west of Texel, a different situation was met. Here the median grain size was 375 µm in 1995 and dropped to values of about 310 µm in the period 1996 – 2000. In 2001 an even lower value of 200 µm was found. It is not clear how this should be explained. Maybe the situation is similar to that at OFF 2, i.e. a sharp local gradient. However, the possibility that there has been a change in sediment composition over time should also be considered. This would imply that there has been either a deposition of fine material at OFF 6 or a disappearance of the larger size fractions. If a deposition of fine material had occurred one might expect that silt concentrations had increased compared to previous years. However the silt fraction was at the same low level (0.5%) as in previous years. On the other hand a selective disappearance of the larger size fractions can only be explained when there has been a local physical disturbance, probably by human activities. It is not known whether such activities have taken place at OFF6.

The distribution of silt in the sediment also showed the same spatial pattern as in the preceding years (Fig. 3). There was only one station where a substantial difference was found in the silt content compared to 1999 and 2000. This was station OYS 8, at the southern edge of the Frisian Front. In the preceding years the silt concentrations at OYS 8 were between 22 and 28 % but in 2002 it was less than 9 %. In this case we know that the

station is located in an area with a sharp north-south gradient in silt concentrations which is linked up with a relatively steep depth gradient. This means that a small difference in positioning possibly could have a strong effect on the silt content measured. Another explanation could be that the local depth is critical with respect to sedimentation and resuspension of silt. This could be a cause of strong temporal variability of silt contents.

5.2. DISTRIBUTION OF THE MACROBENTHIC FAUNA IN 2001

5.2.1 Diversity, density and biomass

A total number of 208 species/taxa were identified in the 100 boxcore samples in 2001, including 16 that were identified to genus level only (most juveniles) and 12 higher taxa (identified to family level or higher). The total number of taxa is within the range of previous years (181 – 231). The distribution of the species over the stations (presence/absence) and the scientific names are given in Appendix-1. The basic data on macrobenthic abundance, biomass and diversity are listed in Appendix-2.

The mean number of species per sample (Hill 0) was, like in previous years, the highest on the Dogger Bank and the lowest in the coastal and offshore area (Table 2, Fig. 5,8). There is an overall patterm of high species richness in the North (below the 30 m depth contour) and low species richness in the south. In neither of the subareas a clear long term trend could be observed in species richness. In the offshore area there were four stations with a relatively rich fauna. The samples collected at OFF 1, 4, 5 and 33 all contained more than 30 species. OFF 33 had been identified already in 2000 as a remarkably rich station in an area, that is poor in fauna. The other three stations are situated just south of the 30 m isobath, so close to the rich Oyster Ground. Therefore, the relatively high number of species at these stations is not surprising.

The highest Shannon Wiener diversity was also observed at the Dogger Bank, whereas Simpson's dominance was the lowest in this area (Table 2, Fig. 9,10). Numbers of individuals are more or less equally distributed over the different species and there are no species which strongly dominate the fauna community by number. The lowest Shannon Wiener diversity was found in the offshore and coastal area. However, there seems to be a slight tendency for increasing diversity in these areas since the middle of the nineties. On the other hand Simpson's dominance seems to decline in this period. This might indicate that dominance by one or a few species is less pronounced than it has been and that the fauna is more equally distributed over the different species. Indeed, it seems that some polychaete species (*viz. Lanice conchilega, Magelona mirabilis* and

Spiophanes bombyx) which often have dominated the fauna in the two areas, were not so abundant in 2001.

The mean fauna density was as usual the lowest in the offshore area (Table 2, Fig. 6). The fauna in this area was dominated by crustaceans and polychaetes Of the other three areas the density was the highest in the Oyster Ground, but there were no large differences. The Oyster Ground had particularly high numbers of echinoderms and molluscs. At the Dogger Bank Crustaceans and polychaetes were the dominant groups, in the coastal area molluscs and polychaetes. There were no trendlike changes in fauna abundance (Fig. 11).

Biomass values were generally hardly different from those in 2000 (Fig. 12). There does not seem to be a trendlike change. The highest mean biomass, but also the strongest variation was found again in the coastal area (Fig. 7). As in previous years the peak values found at some stations in the coastal area were generally caused by dense populations of the mollusc *Spisula subtruncata* or by *Ensis americanus*.

With respect to the share of the different taxonomic groups to the total biomass a shift has been noticed in some areas in 1999. Particularly at the Dogger Bank and in the Oyster Ground the contribution of molluscs had decreased. Since this decrease was compensated for by other taxa, there was no overall change in biomass. Mollusc biomass in 2000 was still at the low level of 1999. However in 2001 we can see an increase of mollusc biomass, both in an absolute sense and as share in the total biomass. Since molluscs increased also numerically in three of the areas, the increase in biomass is caused mainly by higher densities, rather than by a larger size of the animals.

5.2.2. TEMPORAL VARIATION IN DENSITY AND BIOMASS OF INDIVIDUAL SPECIES

Figs. 13-16 illustrate the temporal variation in density or biomass of a number of individual species in the 4 subareas during the period 1986-2001.

Dogger Bank (Fig. 13a-c)

On the Dogger Bank there were a few species that showed a remarkable decrease in 2001. The sand star *Acrocnida brachiata*, the bivalve *Mysella bidentata* and the polychaetes *Nephtys cirrosa* and *Arcidea minuta* occurred in lower densities than ever in the nineties. *A. brachiata* and *M. bidentata* show a decrease since 1999, but of these species there were still several tens of individuals per m^2 on average in 2001. *N. cirrosa* occurred already in

low abundance in 2000, but that was supposed to be only a temporal dip. However, in 2001 there was a further decrease and the species was found at only two stations. In *A. minuta* the decrease had started already in 1997 and from 1999 onwards the species has no longer been found. The gastropod *Euspira nitida* (formerly called *Natica alderi*) showed an increase compared to previous years. The species was found in low numbers by the end of the nineties, but in 2001 population densities have recovered to a level similar to that before 1998. The densities of other species that in previous years have been found to be relatively abundant were more or less stable in 2001.

The brittle star *Amphiura chiajei* that colonised the Dogger Bank area in 1999 (Daan & Mulder, 2001) was abundant again in 2001. On average it was found in densities of 150 ind.m^{-2}.

The occurrence of *Ensis phaxoides* is new for the Dogger Bank. The species was found at two stations. We could find only a very few mentions of living *E. phaxoides* on the DCS. The species has been found in beam trawl hauls at two stations in the offshore area in the seventies by van Noort et al. (1979, 1984). Further the species was found in two van Veen grab samples in the south-western Oyster Ground (Creutzberg, unpubl. data).

Further we found two species that probably are new to the Dutch malacofauna. Living specimens of the bivalve *Gouldia minima* and the gastropod *Turbonilla pusill*a have, to our knowledge, not been found on the DCS before. We found living *T. pusilla* also at one station in the Oyster Ground and at one station in the offshore area. In previous years we sometimes found empty shells of the species.

The occurrence of some new species on the Dogger Bank did not lead to increased diversity in this area. Both, the number of species per sample and the Shannon-Wiener index were in the same order as found in previous years. Apparently, the number of samples in which the species were found was too low to have a substantial effect on the diversity. However, the total number of species (87) on the Dogger Bank in 2001 was higher than found in any of the previous years (66 to 80) and the new species have certainly contributed to this overall high species richness.

Oyster Ground (Fig. 14a-c)

In previous years a declining trend has been observed in the brittle star *Amphiura filiformis* and the polychaete *Nephtys hombergii*. In 2001 this decrease seems to have come to an end. Both species showed an overall increase in their abundance. Nevertheless, the densities of *A. filiformis* at the Frisian Front were still low compared to

the numbers that were found here in the early nineties. Further, relatively high numbers were found of the bivalves *Corbula gibba* and *Nucula nitidosa* (formerly *called N. turgida*). The other more or less abundant species showed stable densities.

There was a number of species that have not been found before during the BIOMON programme, or that are even completely new to the Dutch fauna. The polychaete *Nephtys assimilis* that was found at OYS 36 has previously been found only in the 'Loswal' area west of Scheveningen (Aquasense, 1996,1997; Kluijver & van Nieuwenhuizen, 1998). For another polychaete, *Sabella penicillus*, we could not find any reference for its occurrence on the DCS. The other new species are all molluscs. The bivalve *Montacuta tenella* was found at four stations in the Oyster Ground. This species is known to live as a commensal of the echinoid *Brissopsis lyrifera* (Ockelman, 1965). Indeed, *B. lyrifera* was found in two of the four samples too. We have inspected some older data and found that *B. lyrifera* was found in 1997 in combination with *Montacuta spec.* (Holtmann et al., 1998). A reidentification revealed that this was *M. tenella*. *B. lyrifera* was found at four stations in 2001. This indicates that the species occurs in increasing numbers in the Oyster Ground, which implies that *M. tenella* may also increase in abundance in this area.

The gastropod Turbonilla pusilla was found at station OYS 38. The species also occurred at the Dogger Bank and in the offshore area. In previous years only empty shells of this species have been found. Completely new are the bivalve *Gari costulata* (found at OYS 17) and the gastropod *Roxania utriculus* (found at OYS 3). Both have, to our knowledge never been found on the DCS before.

In spite of the relatively high number of new species in the Oyster Ground, there was no increased diversity in the area. The mean number of species per sample and the Shannon Wiener index were within the range of values found in previous years. Also the total number of species (158) in the Oyster Ground was not particularly high compared to previous years (135 to 178). This is explained by the fact that there was a number of species that have been found now and then in previous years, but were not found in 2001. The absence of the latter species apparently neutralized the presence of the new species, so that the diversity did not change.

Offshore area (Fig. 15a-c)

The plots of the population densities of 11 of the commonest species do not indicate that there were substantial changes in 2001. From 1995 onwards, there has been a slightly increasing trend in the sea urchin *Echinocardium cordatum*, but this increase has come to an end. The opposite holds for the gastropod *Euspira nitida* (formerly *called Natica*

alderi): a decrease during the second half of the nineties and a recovery of population densities from 2000 onwards.

The Offshore area had, as usual, the poorest benthic fauna. Total fauna densities, biomass and diversity were, like in previous years, the lowest in this area. In 2000, however, there was one station with a remarkably rich fauna, that was clearly different from all the other stations. This station (OFF 33), situated west of IJmuiden, showed high densities of the crustacean *Callianassa subterranea* and the brittle star *Amphiura chiajei* and there were four mollusc species that were not or only very sparsely found alive before. It was suggested that the sample could have been taken close to a ship's wreck. In 2001 the station appeared to be very rich again. However, in spite of the high species richness (the sample contained 35 species), the species composition was not particularly different from that at the other stations.

The gastropod *Turbonilla pusilla* was found at station OFF 11. It is remarkable that this species of which in 2001 for the first time living specimens were found, did occur at the Dogger Bank, the Oyster Ground and in the offshore area. Apparently, the species does not seem to have a specific preference for a particular sediment texture.

<u>*Coastal area*</u> (Fig. 16a-c)

In the coastal area there seemed to be a recovery of the population densities of the gastropod *Euspira nitida* (= *Natica alderi*). This species had strongly decreased in 1992 and 1993 and occurred in very low numbers up to 2000. However, in 2001 the species returned at 5 stations. There was also an increase in the bivalve *Tellina fabula*. After a dip in 1996 and 1997 the species shows a steady increase up to 2001. The apparent increase in the densities of the bivalve *Mysella bidentata* is caused by the extremely high density at one station. At this station, COA 14, about 2000 individuals occurred per m^2.

The other more or less abundant species did not show substantial differences with the preceding years. The densities of the polychaete Nephtys cirrosa were still at a low level. After a steep decline in 1996 this species has never reached its former densities. *N. cirrosa* is a species of sandy sediments and also occurs at the Dogger Bank and the offshore area. Since the species showed low densities also at the Dogger Bank and, to a lesser extent, in the offshore area, there seems to be a trend that covers the whole DCS.

Like in previous years, high biomass values were found at stations where banks of bivalves occurred. Particularly high values were found at the stations COA 4, 9 and 12. The banks at these stations were formed by *Spisula subtruncata* and/or *Ensis americanus*. At stations where such banks were absent, the biomass values were generally low. For example, an extremely low value of 0.2 g AFDW per m2 was found at station COA 13, in front of the coast of Zeeland.

6. Acknowledgements

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

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Tables and Figures

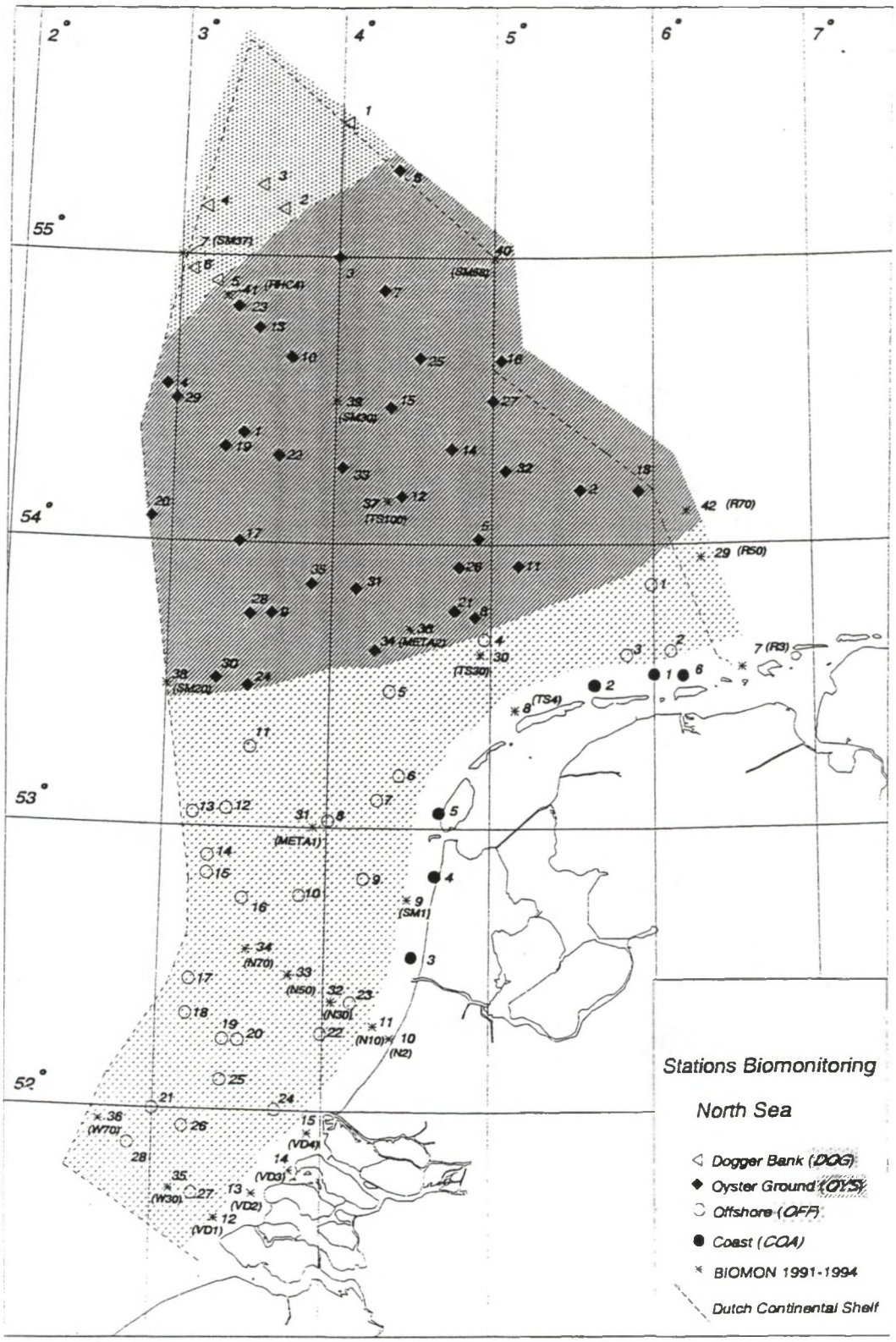

Fig. 1. Locations of the sampling stations

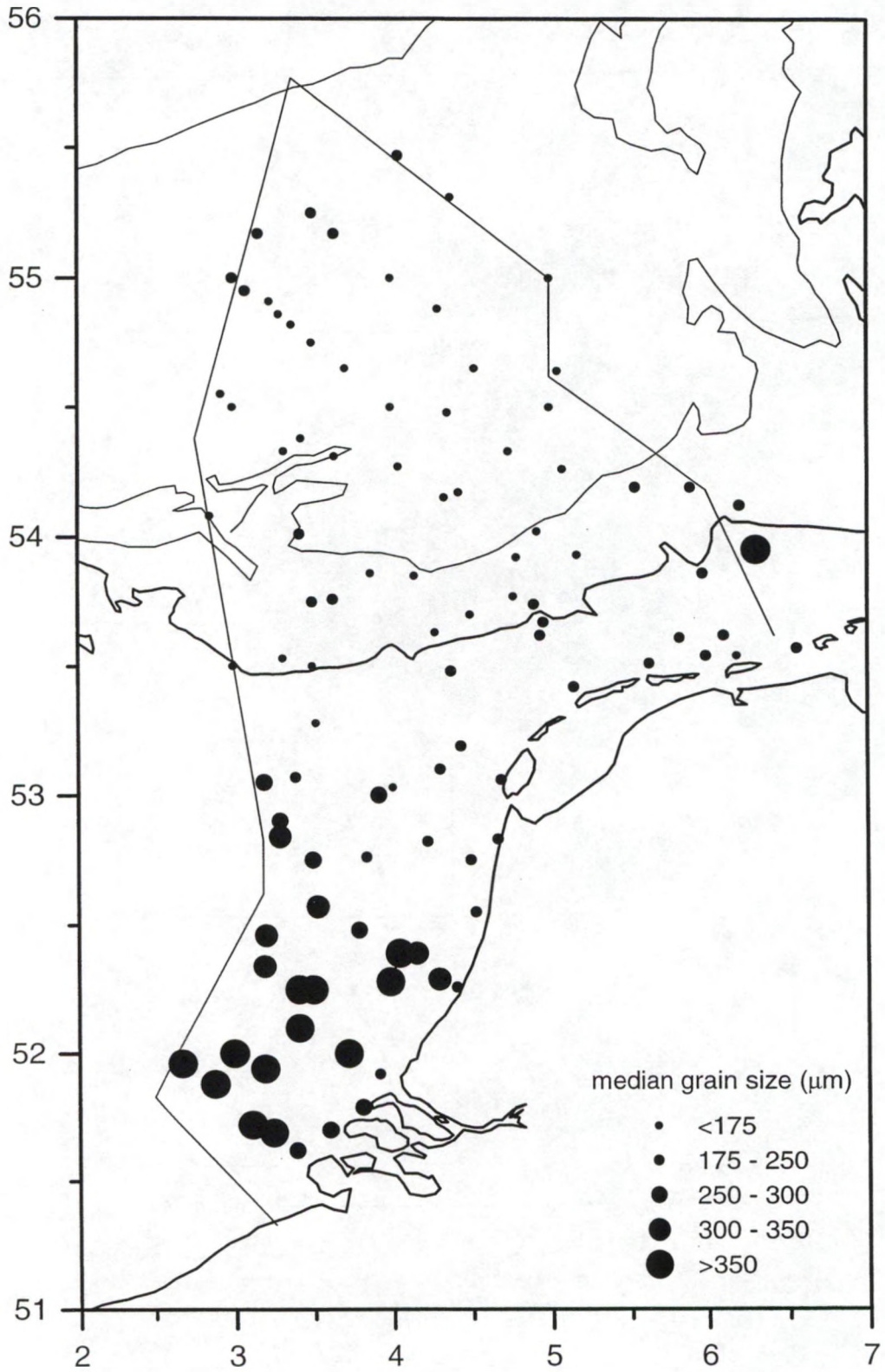

Fig. 2: Median grain size (μm) of the sediment in 2001

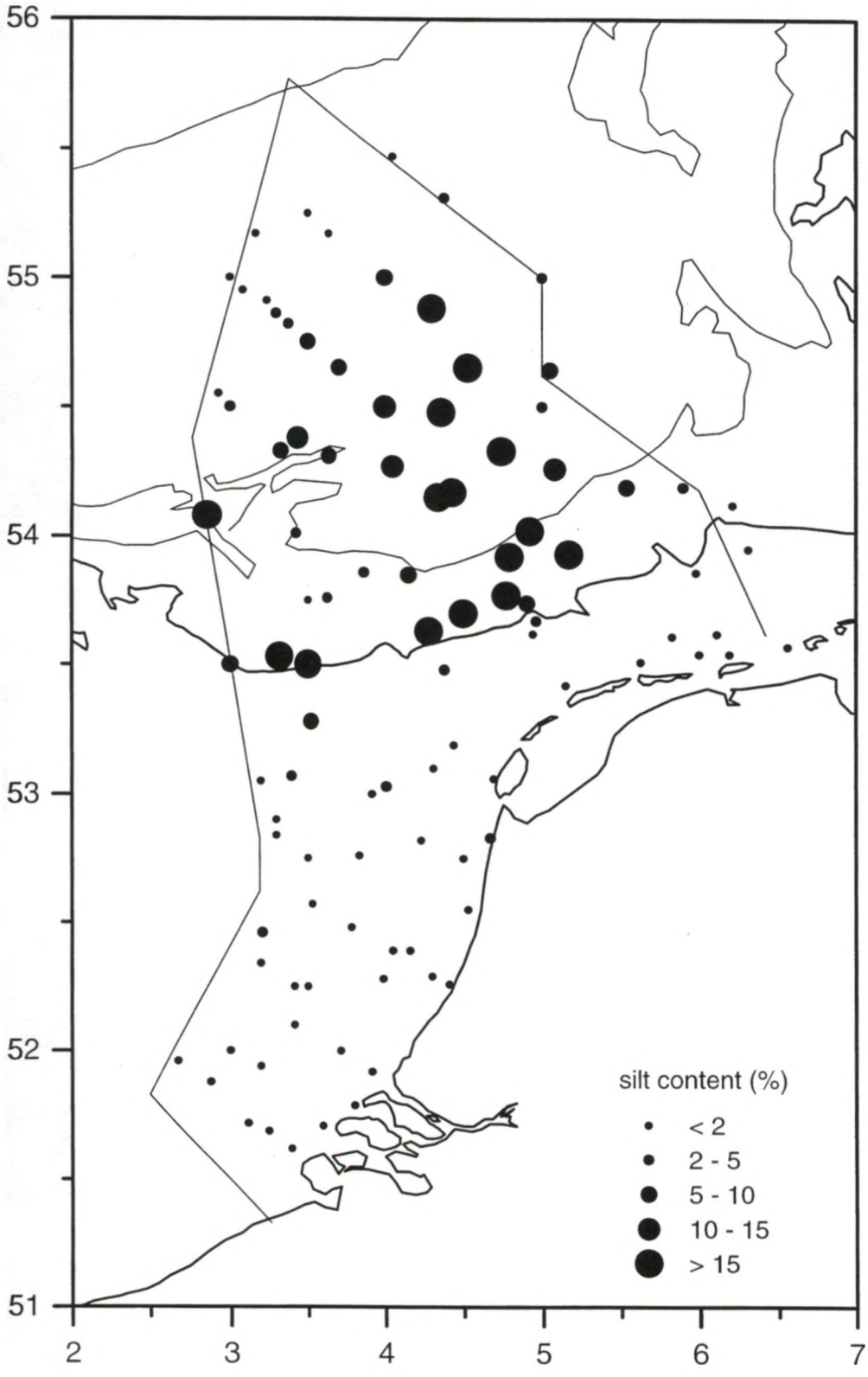

Fig. 3: Silt content (fraction <63 μm) of the sediment in 2001.

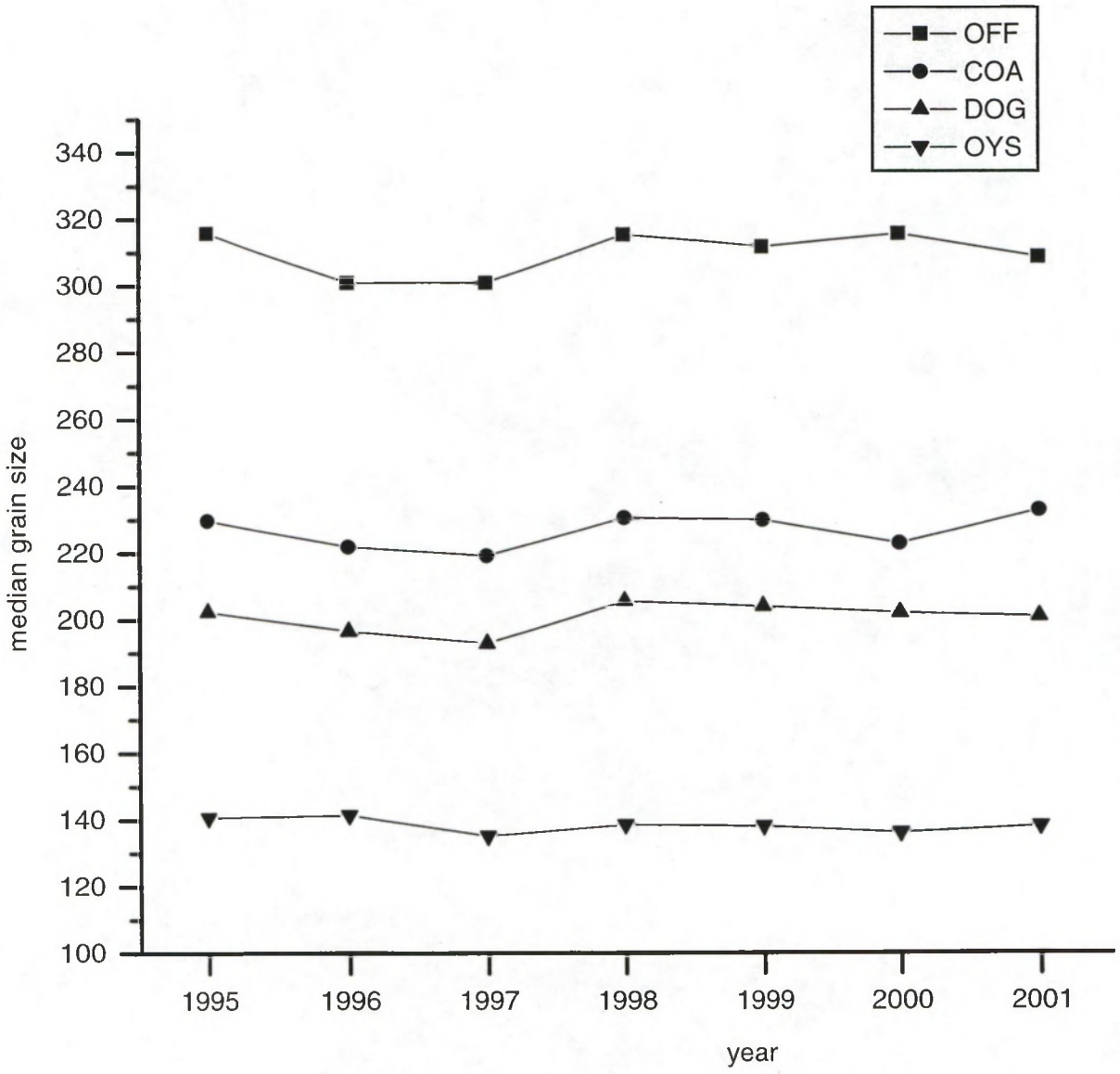

Fig. 4: Temporal trends in the mean median grain size in the four subareas.

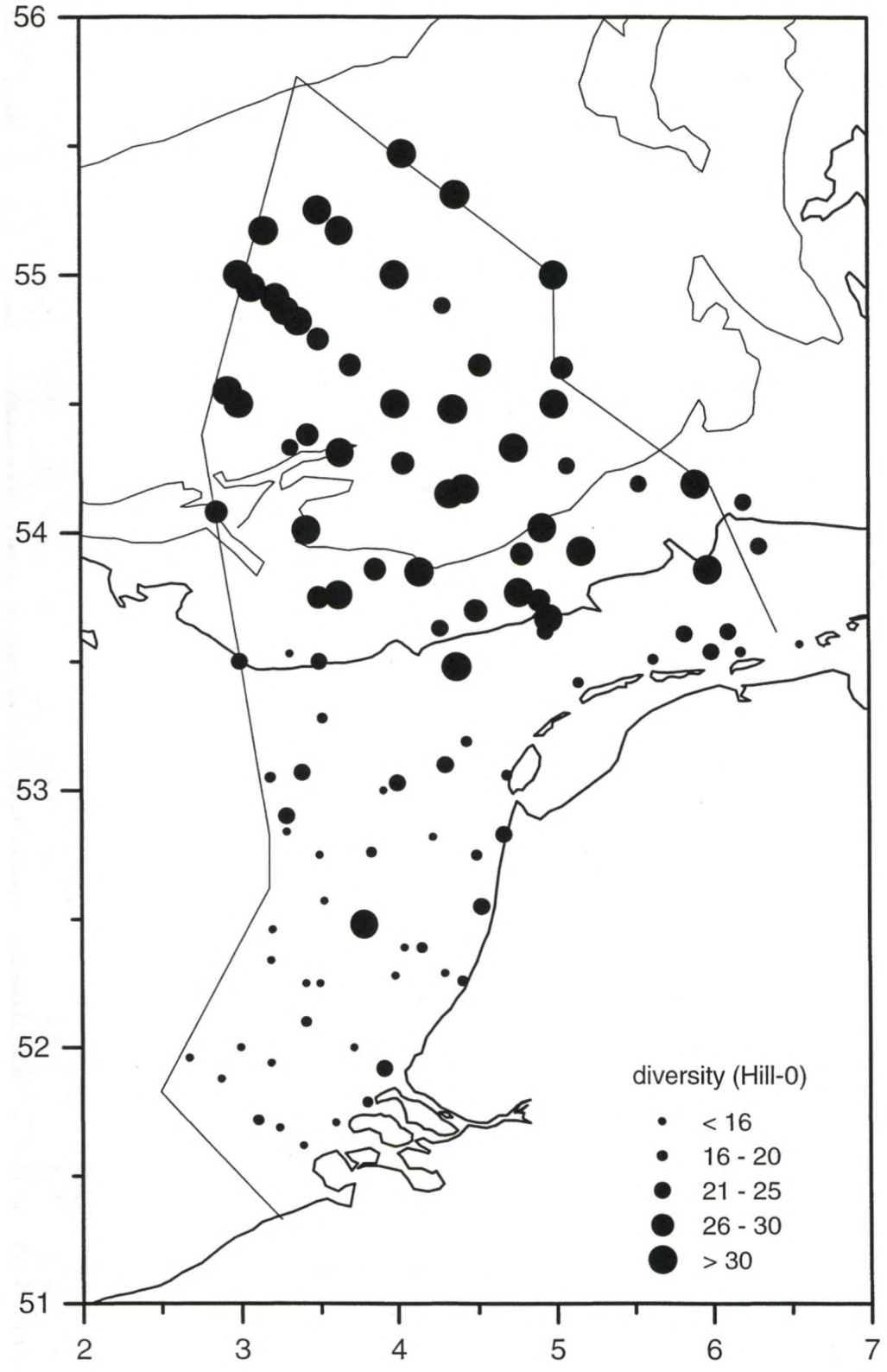

Fig. 5: The number of species per sample (Hill-0) in 2001.

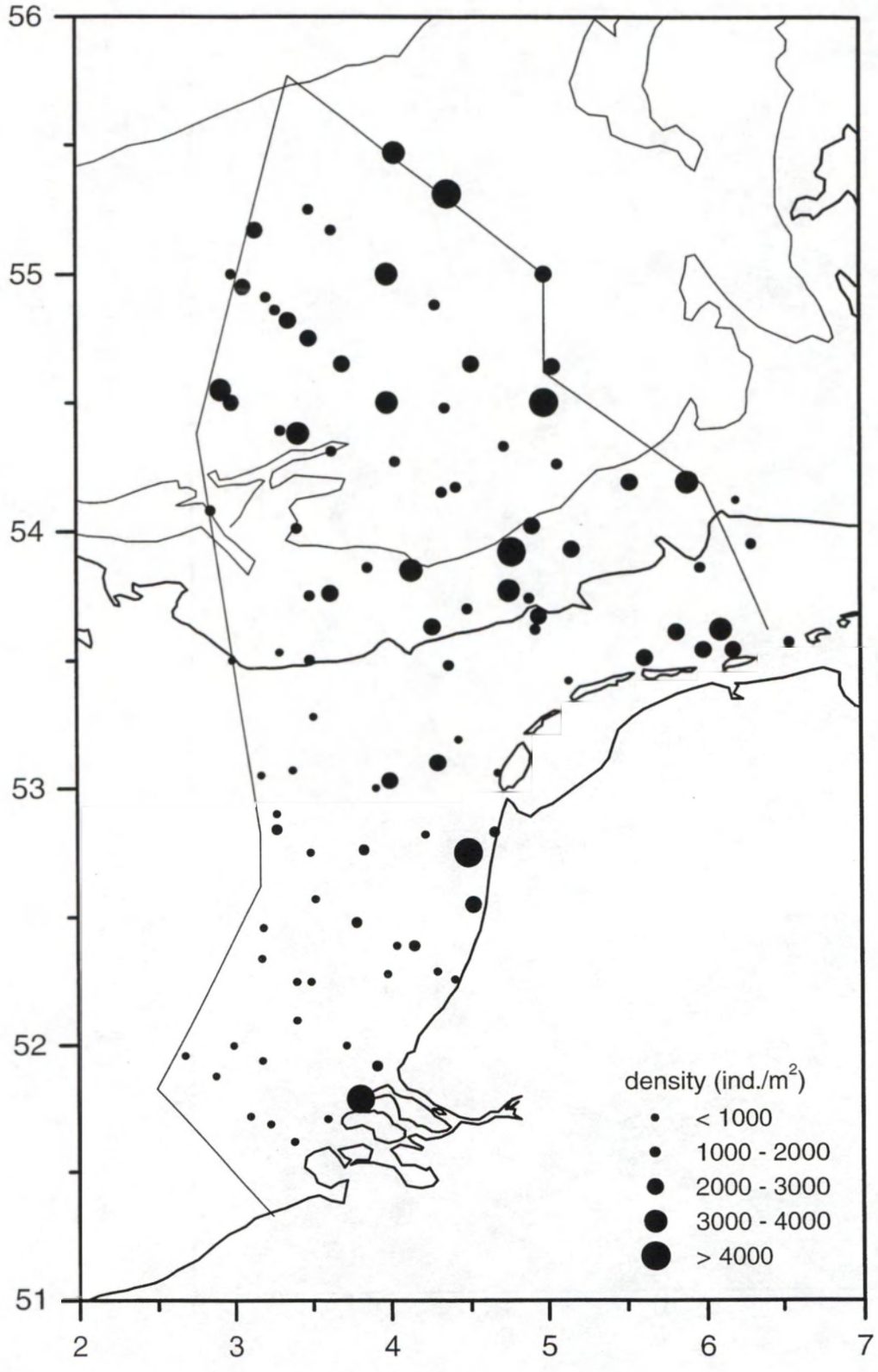

Fig. 6: The total fauna density in 2001.

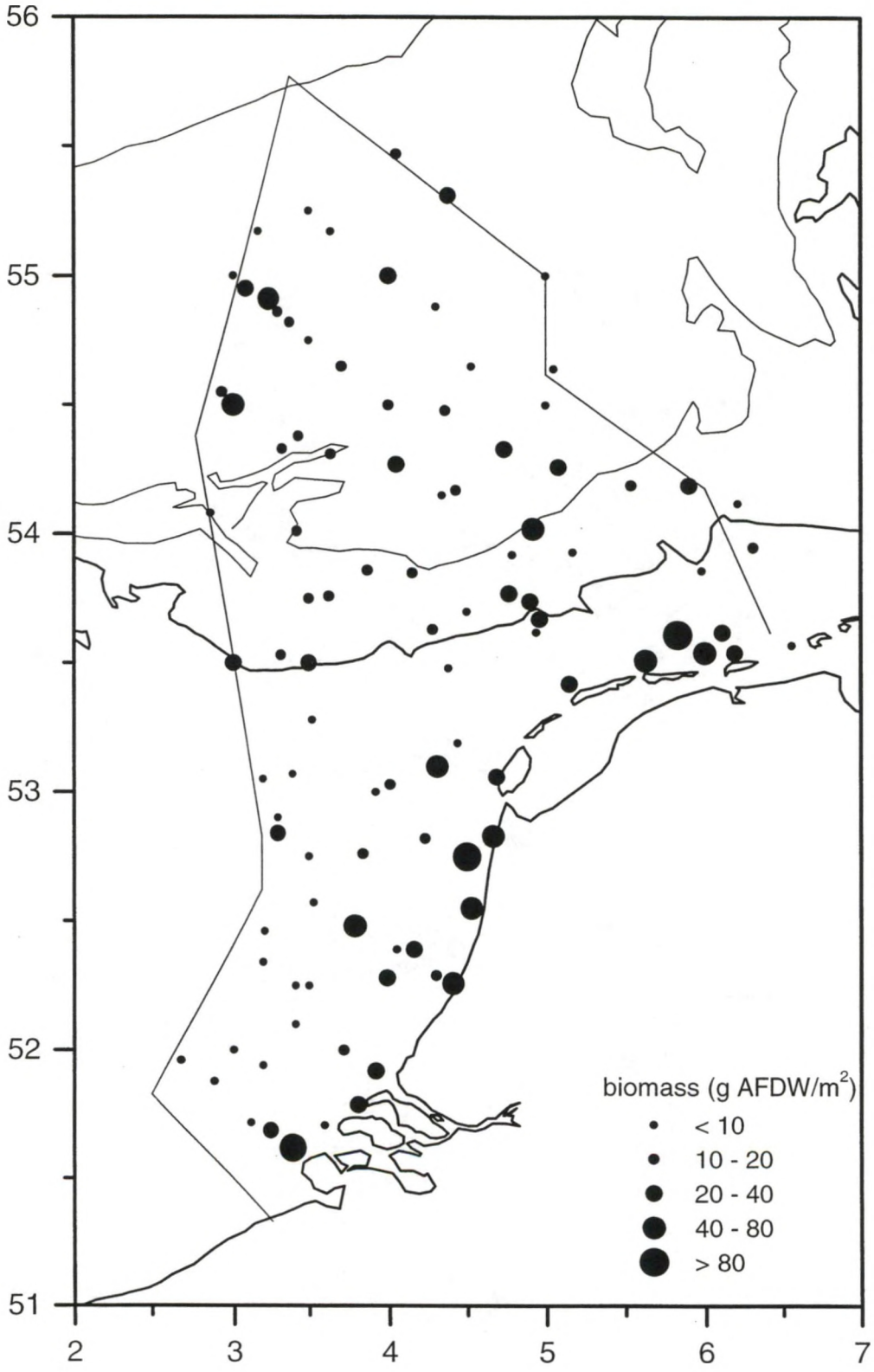

Fig. 7: The total biomass (g AFDW/m2) of the macrobenthos in 2001.

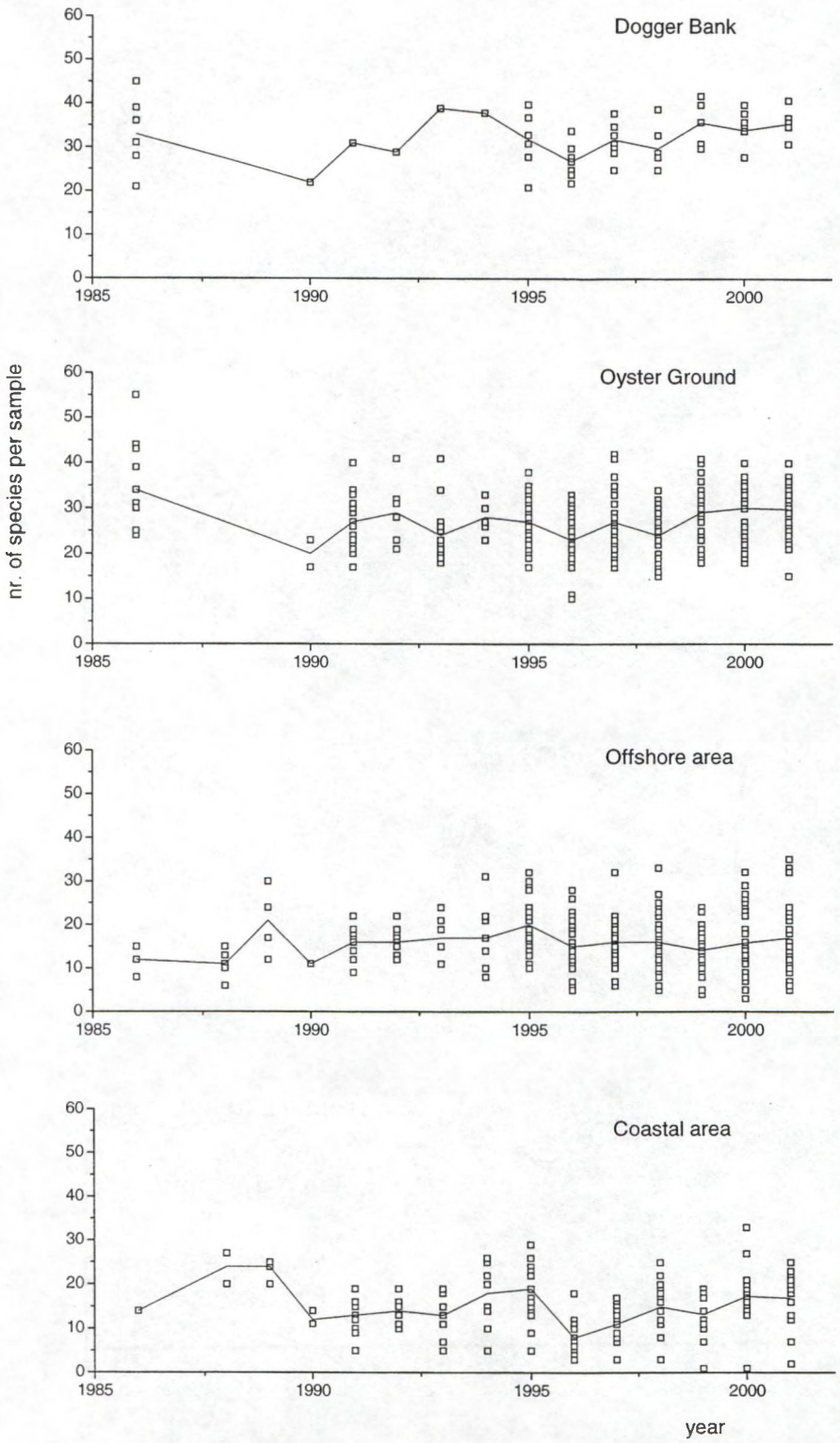

Fig. 8: Temporal patterns in species richness (Hill-0) between 1986 and 2001

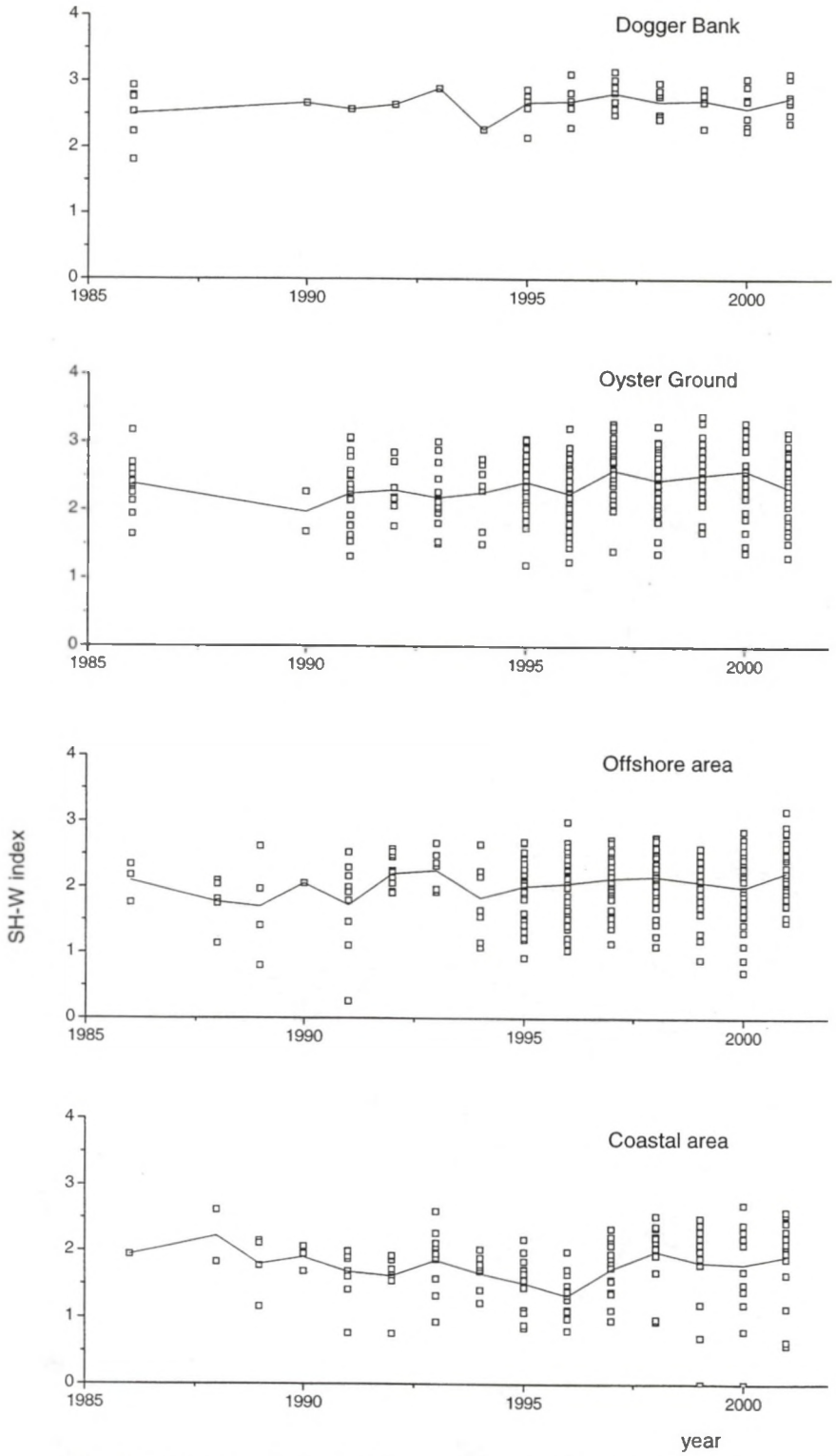

Fig. 9: Temporal patterns in Shannon-Wiener diversity between 1986 and 2001.

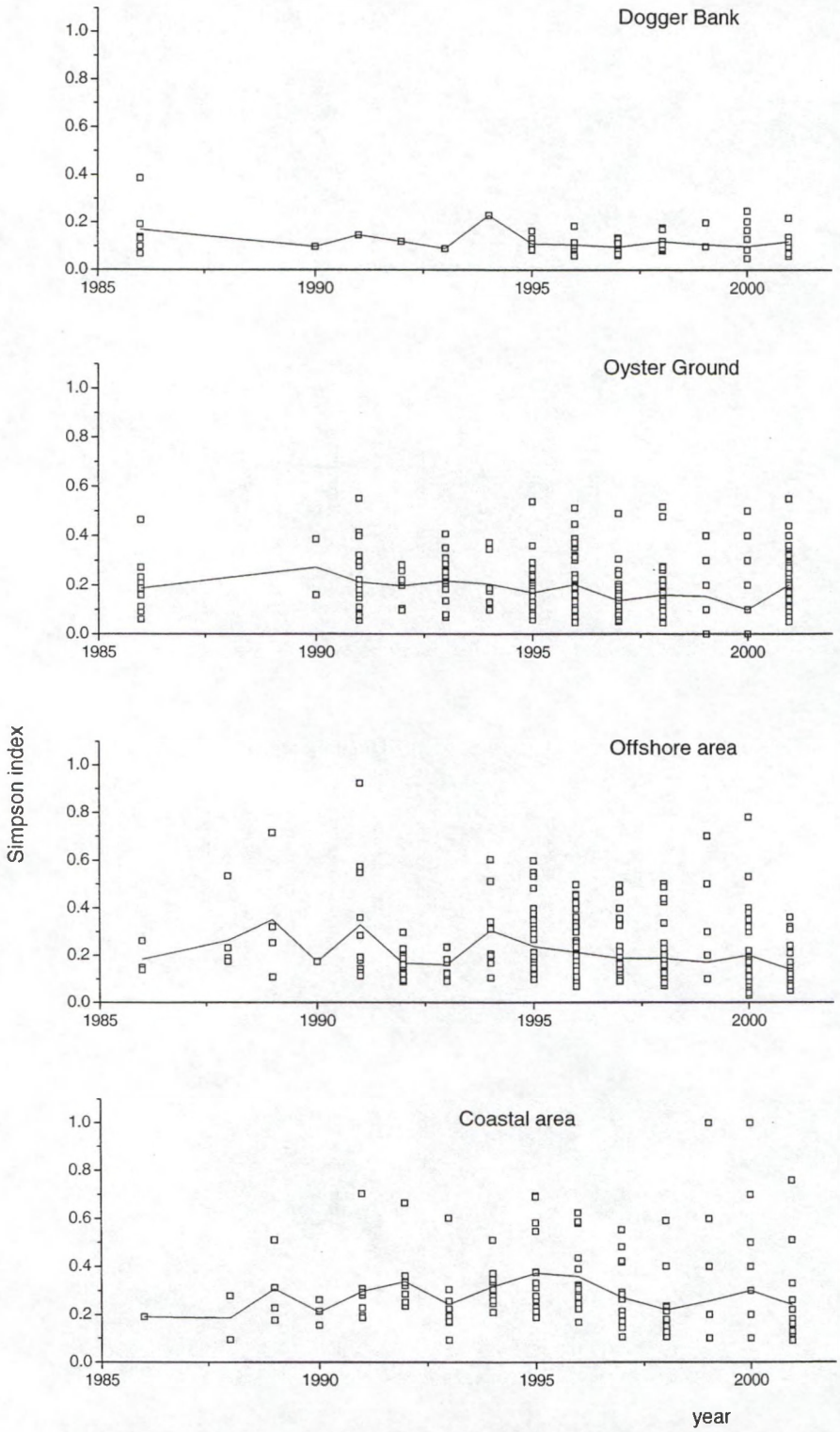

Fig. 10: Temporal patterns Simpson's dominance between 1986 and 2001.

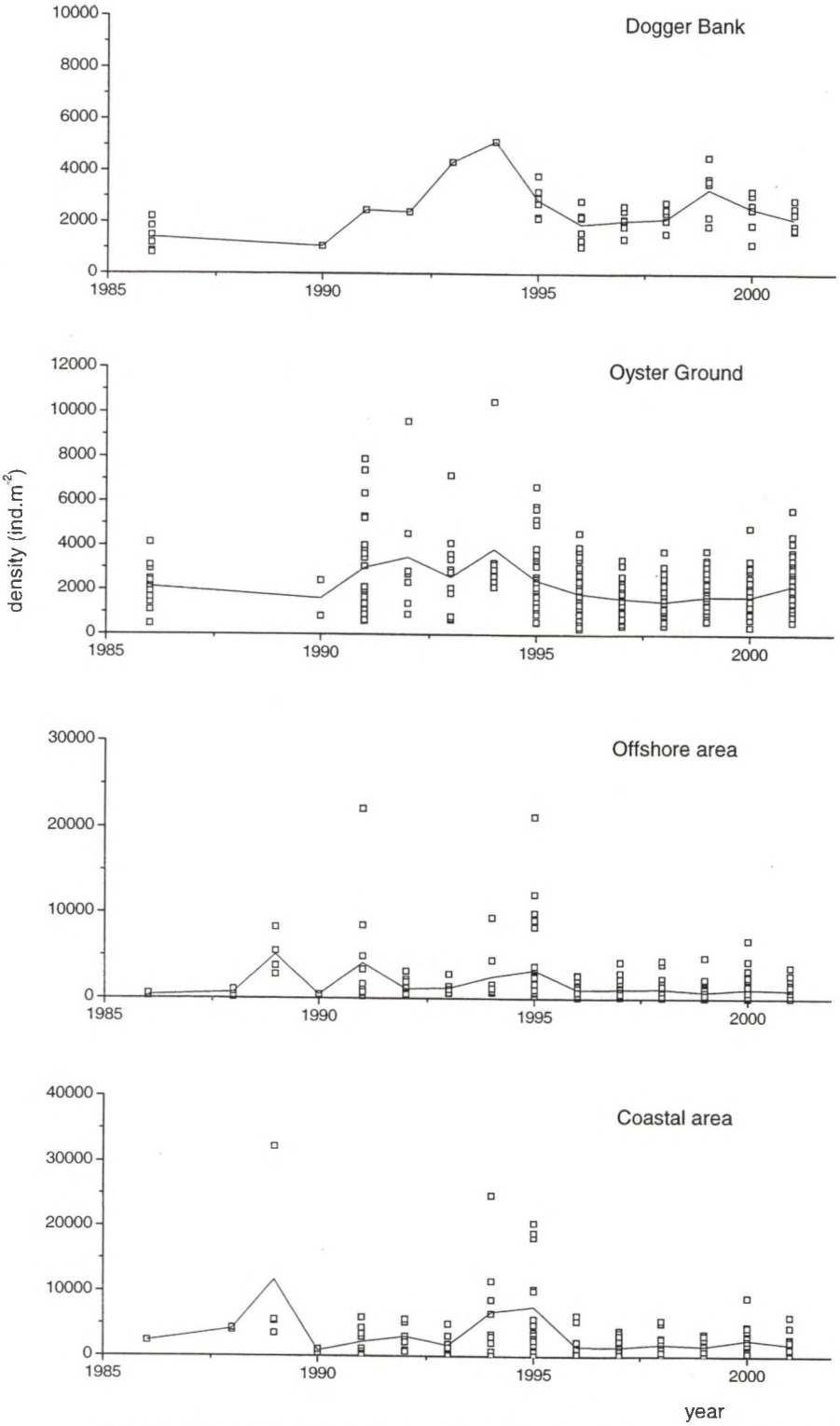

Fig. 11: Temporal patterns in macrobenthos density between 1986 and 2001.

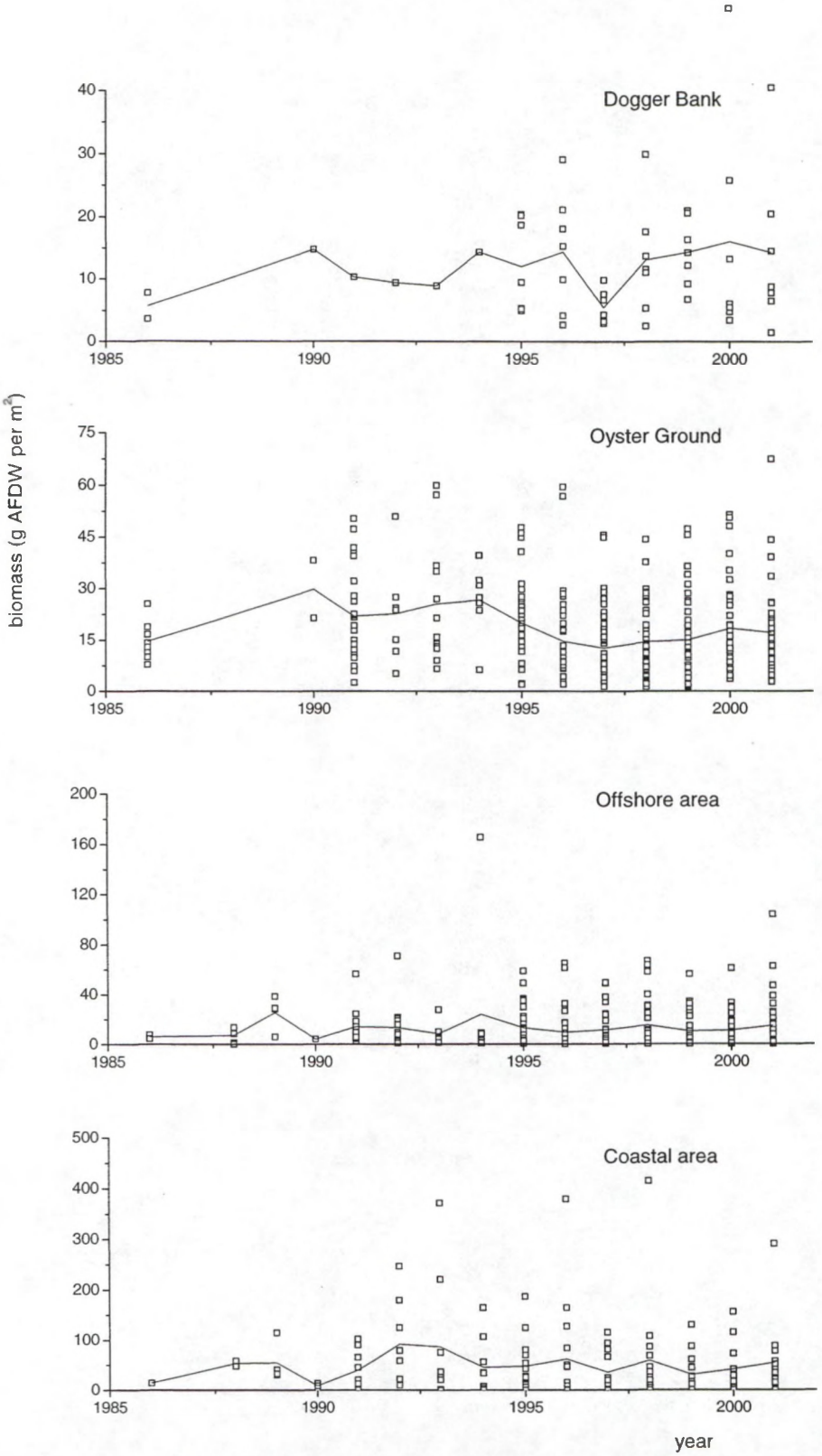

Fig. 12: Temporal patterns in biomass between 1986 and 2001.

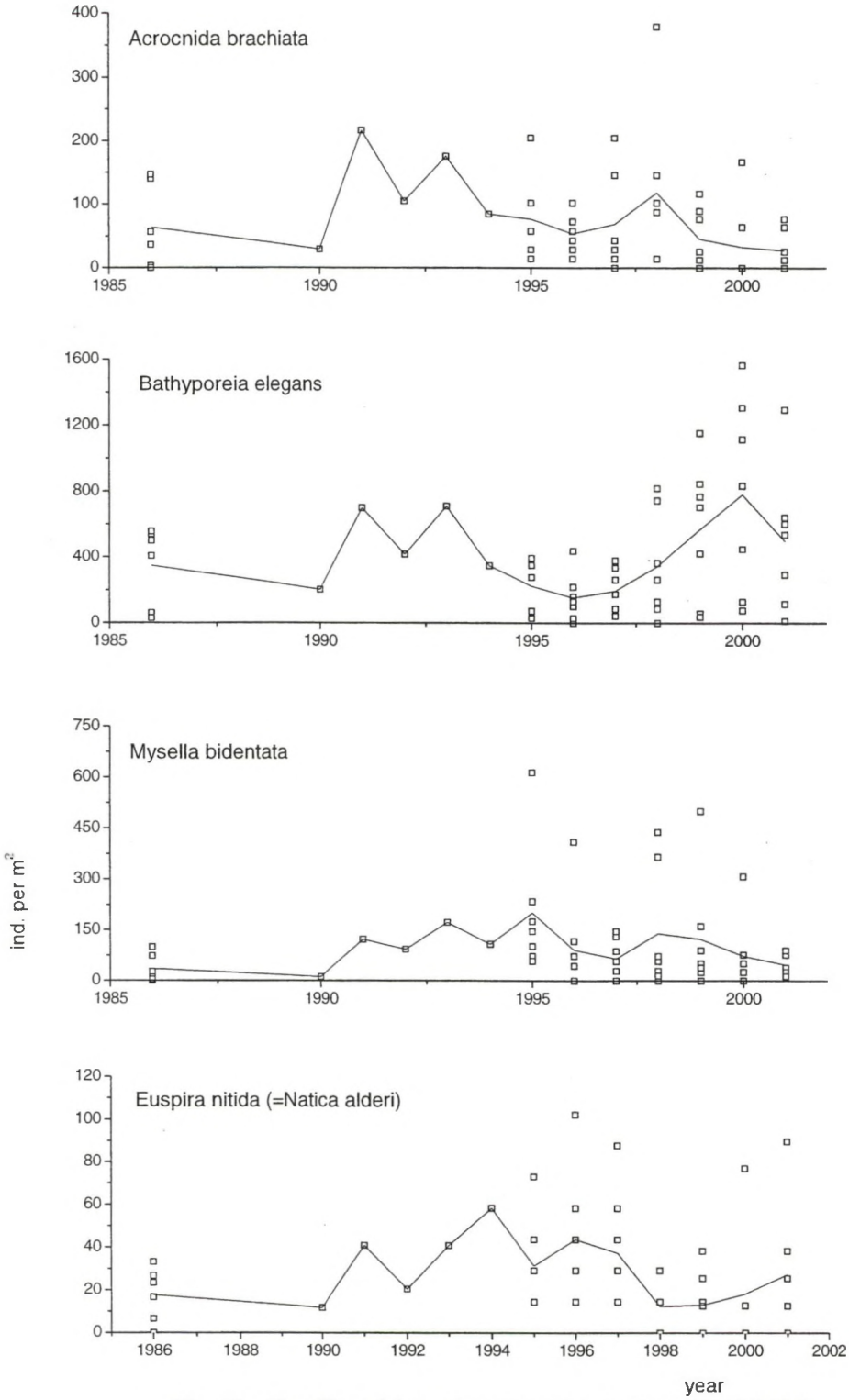

Fig. 13a: Densities of 4 species at the Dogger Bank (1986-2001)

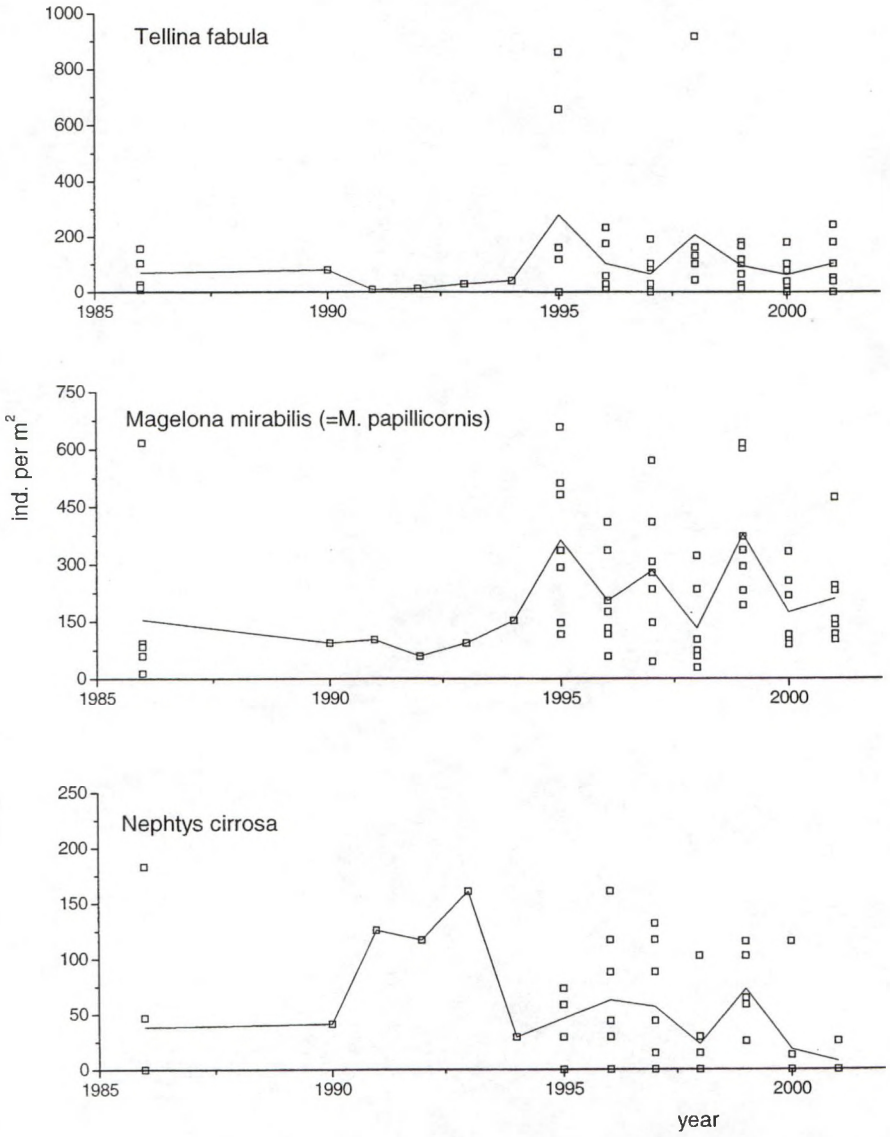

Fig. 13b: Densities of 3 species at the Dogger Bank (1986-2001)

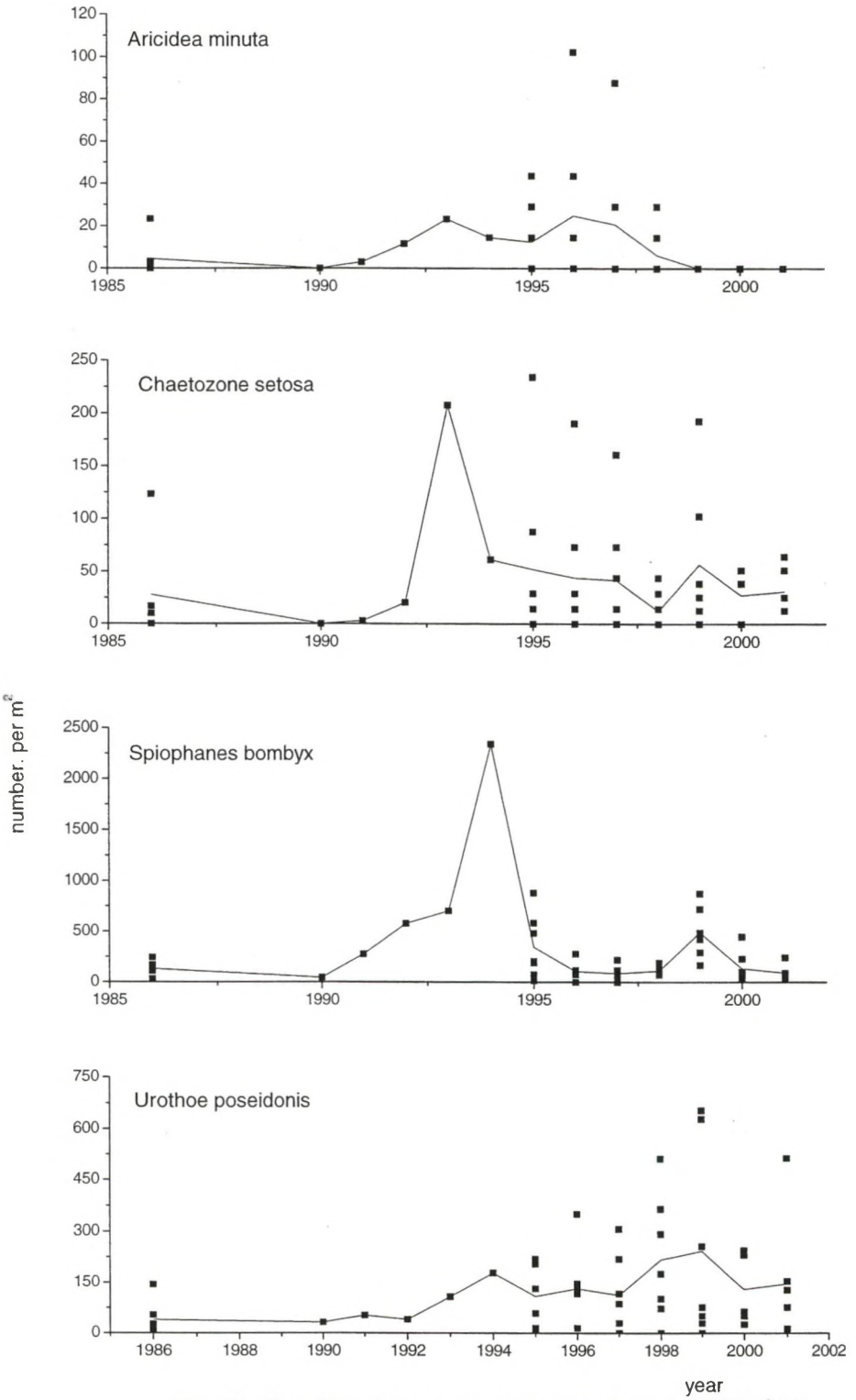

Fig. 13c: Densities of 4 species at the Dogger Bank (1986-2001)

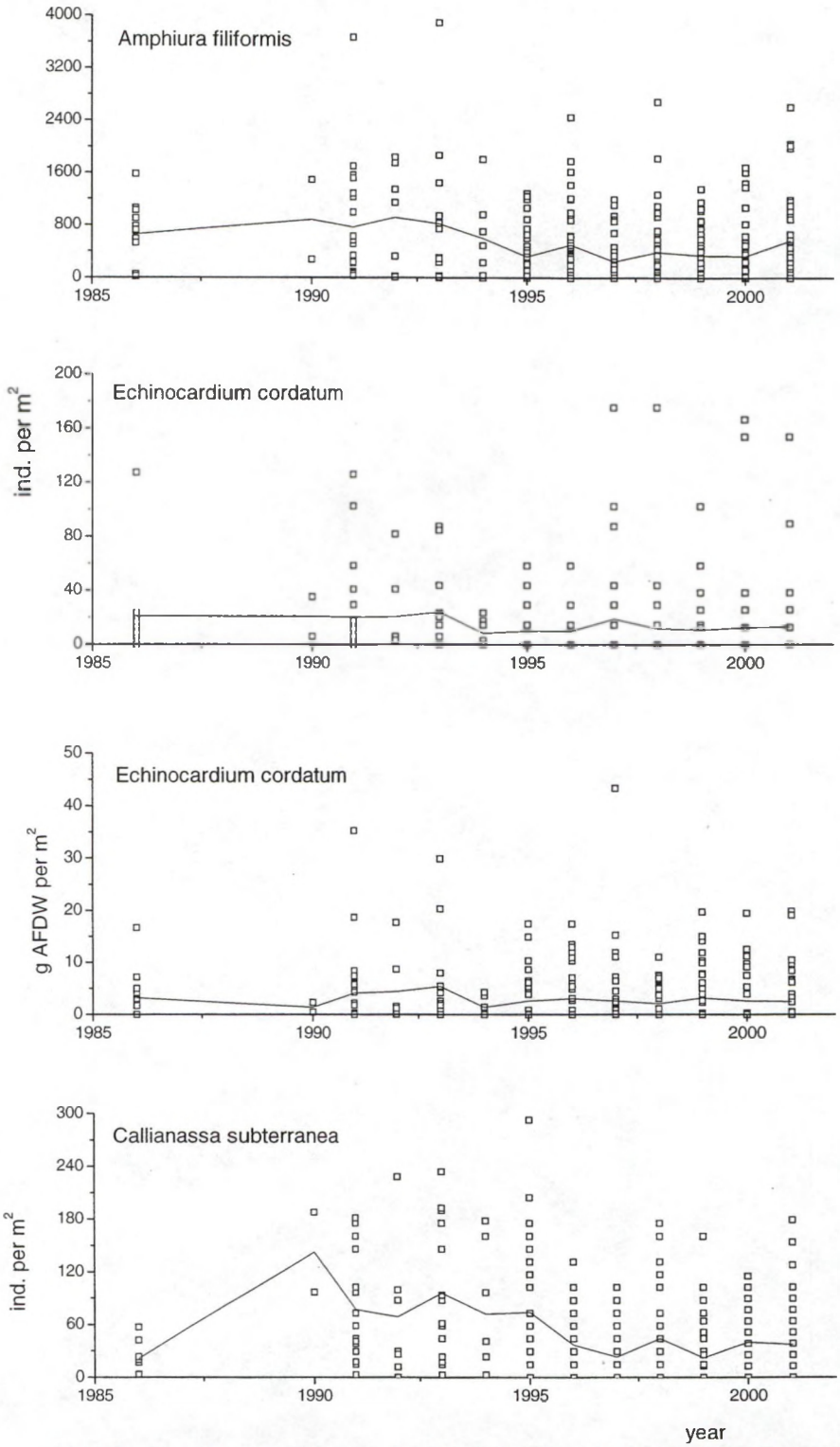

Fig. 14a: Densities (and biomass for E. cordatum) of 3 species in the Oyster Ground (1986-2001).

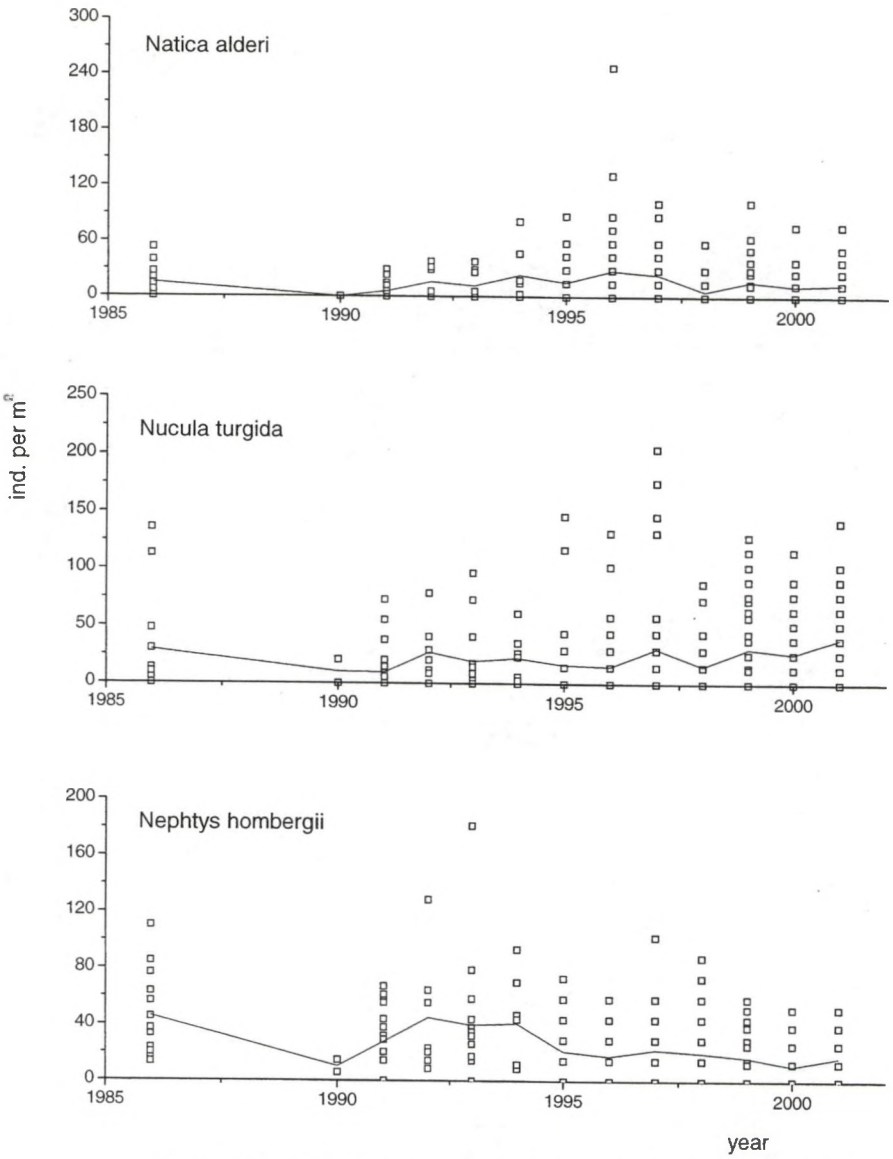

Fig. 14b: Densities of 3 species in the Oyster Ground (1986-2001)

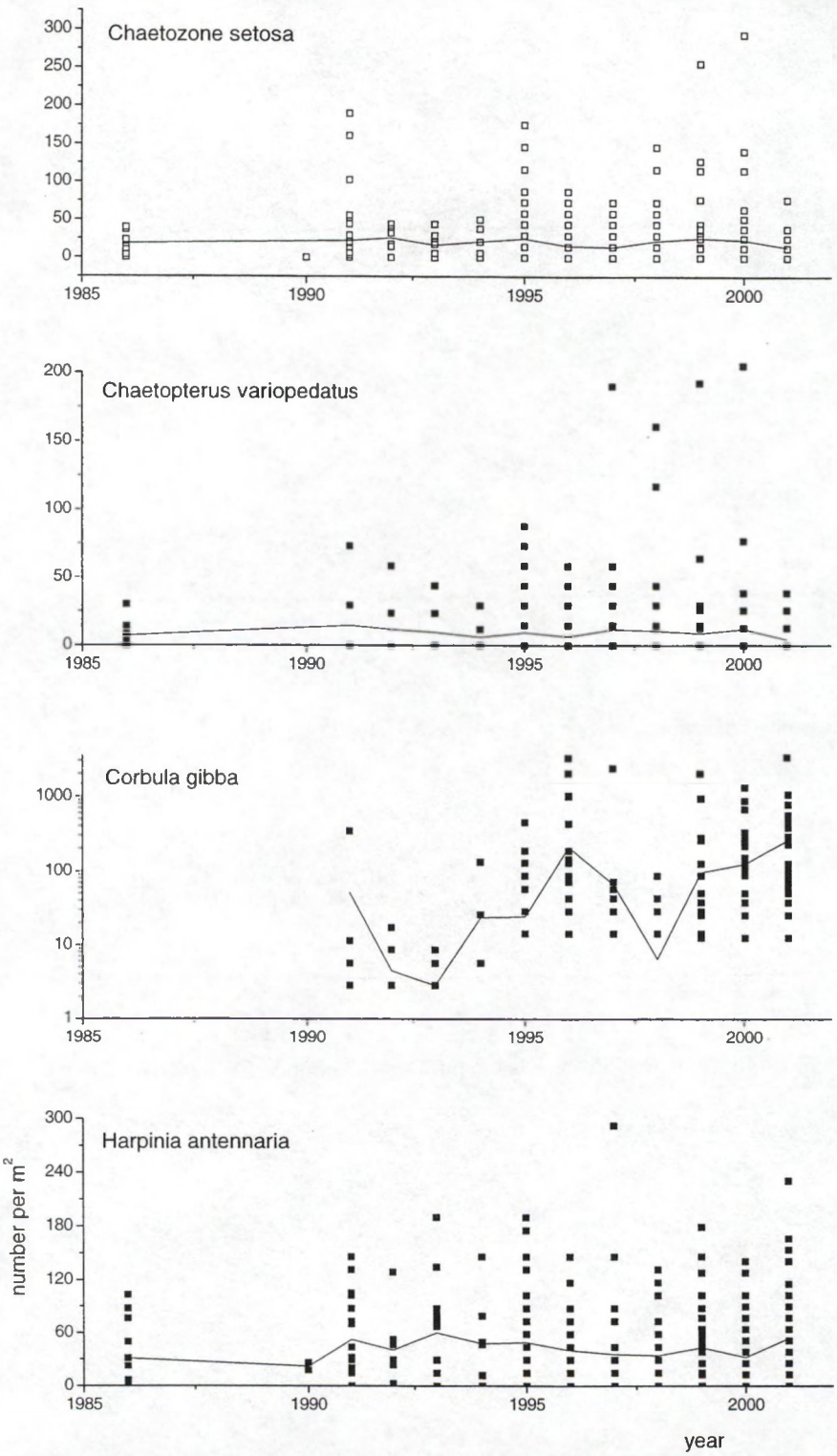

Fig. 14c: Densities of 4 species in the Oyster Ground (1986-2001).

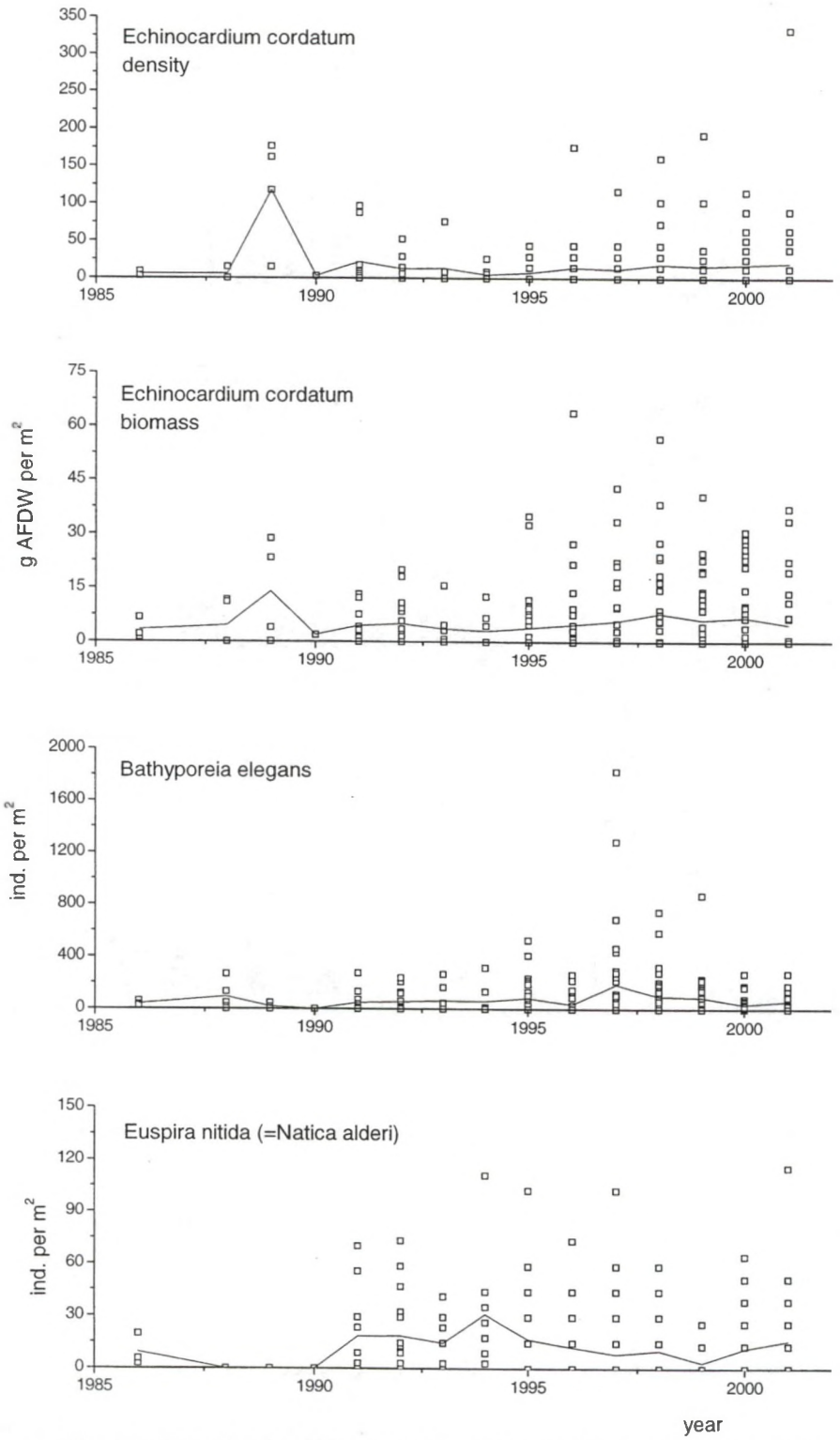

Fig. 15a: Densities (and biomass of E. cordatum) of 3 species in the offshore area (1986-2001).

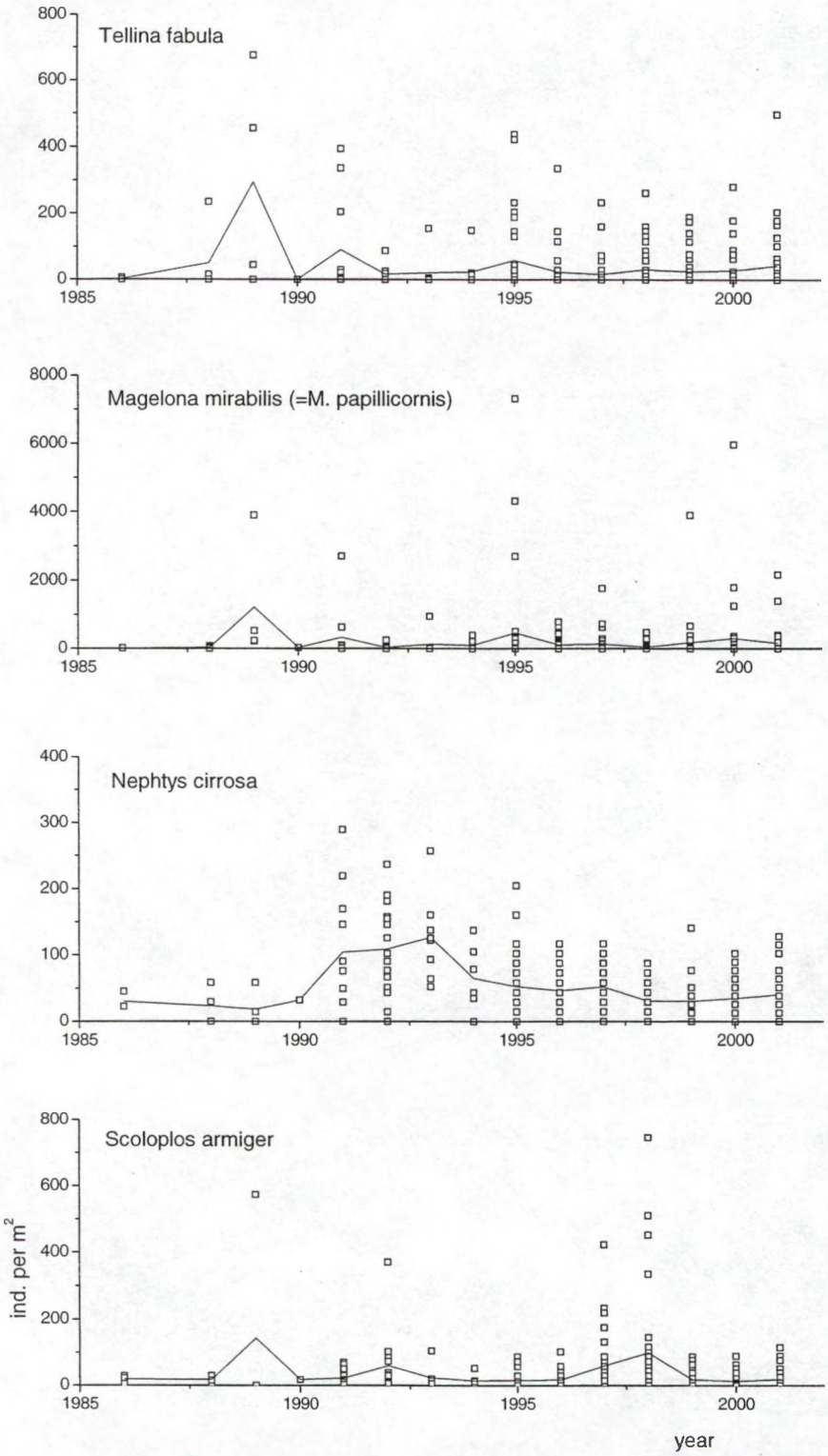

Fig. 15b: Densities of 4 species in the offshore area (1986-2001)

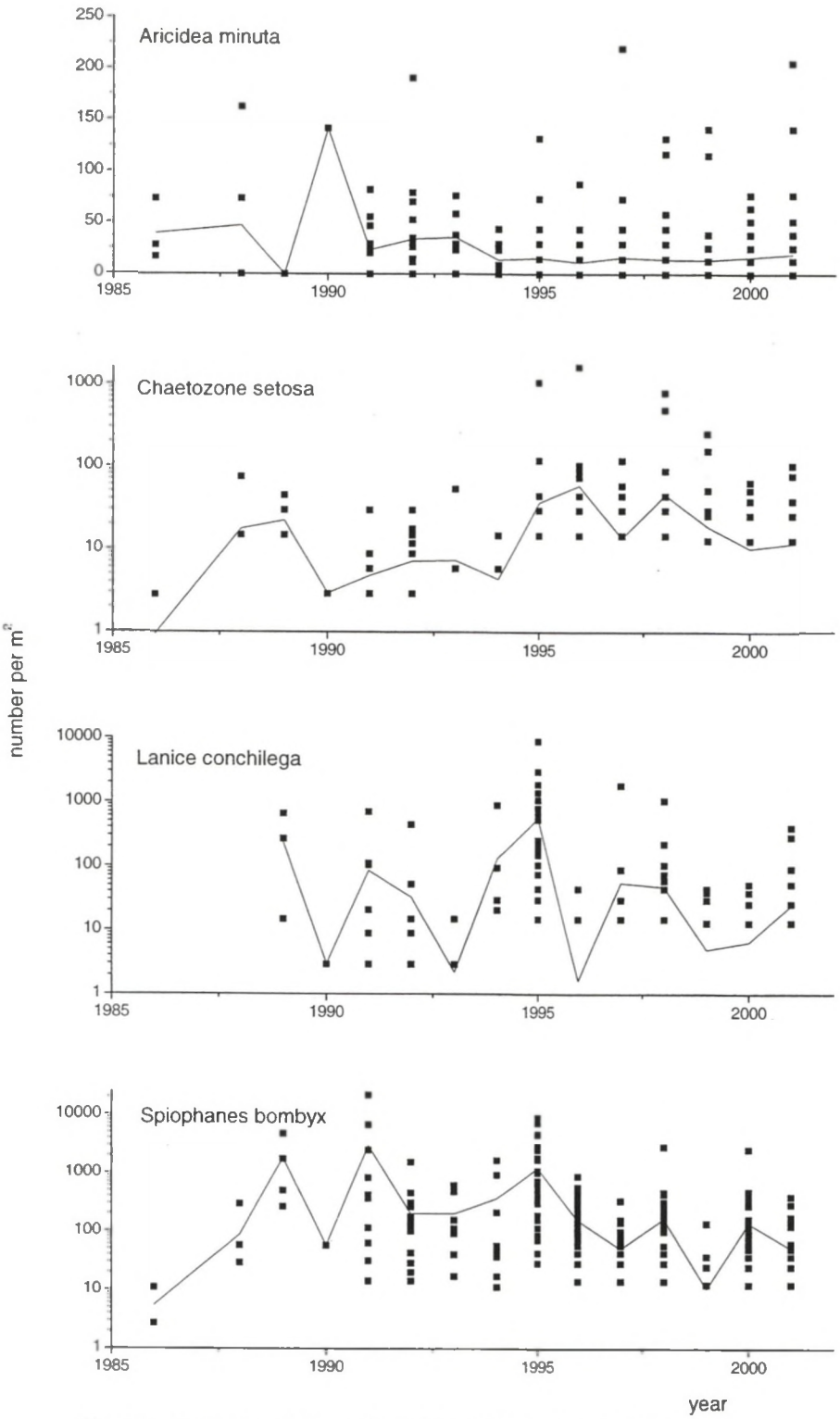

Fig. 15c: Densities of 4 species in the offshore area (1986-2001).

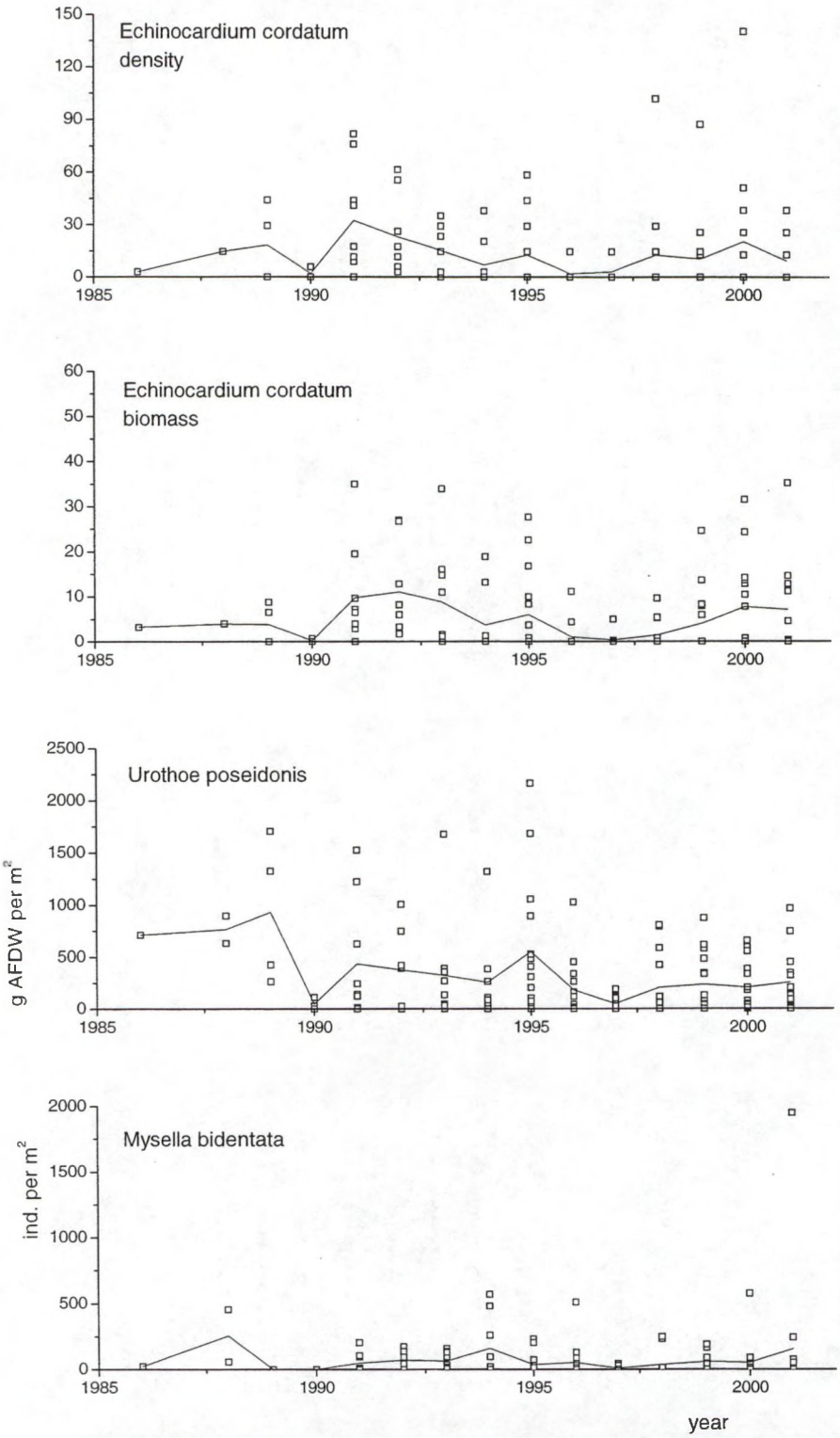

Fig. 16a: Densities (and biomass of E. cordatum) of 3 species in the coastal area (1986-2001).

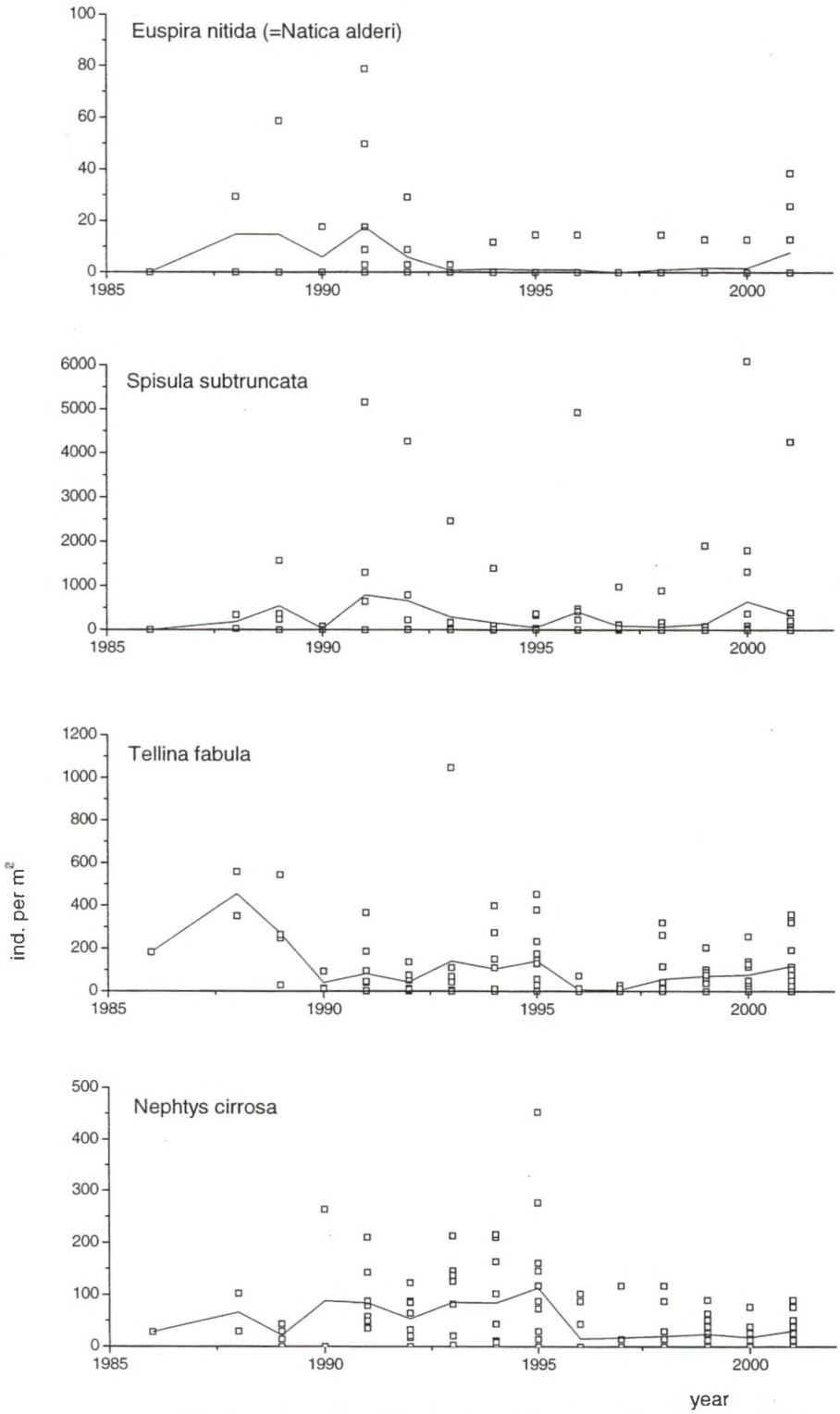

Fig. 16b: Densities of 4 species in the coastal area (1986-2001)

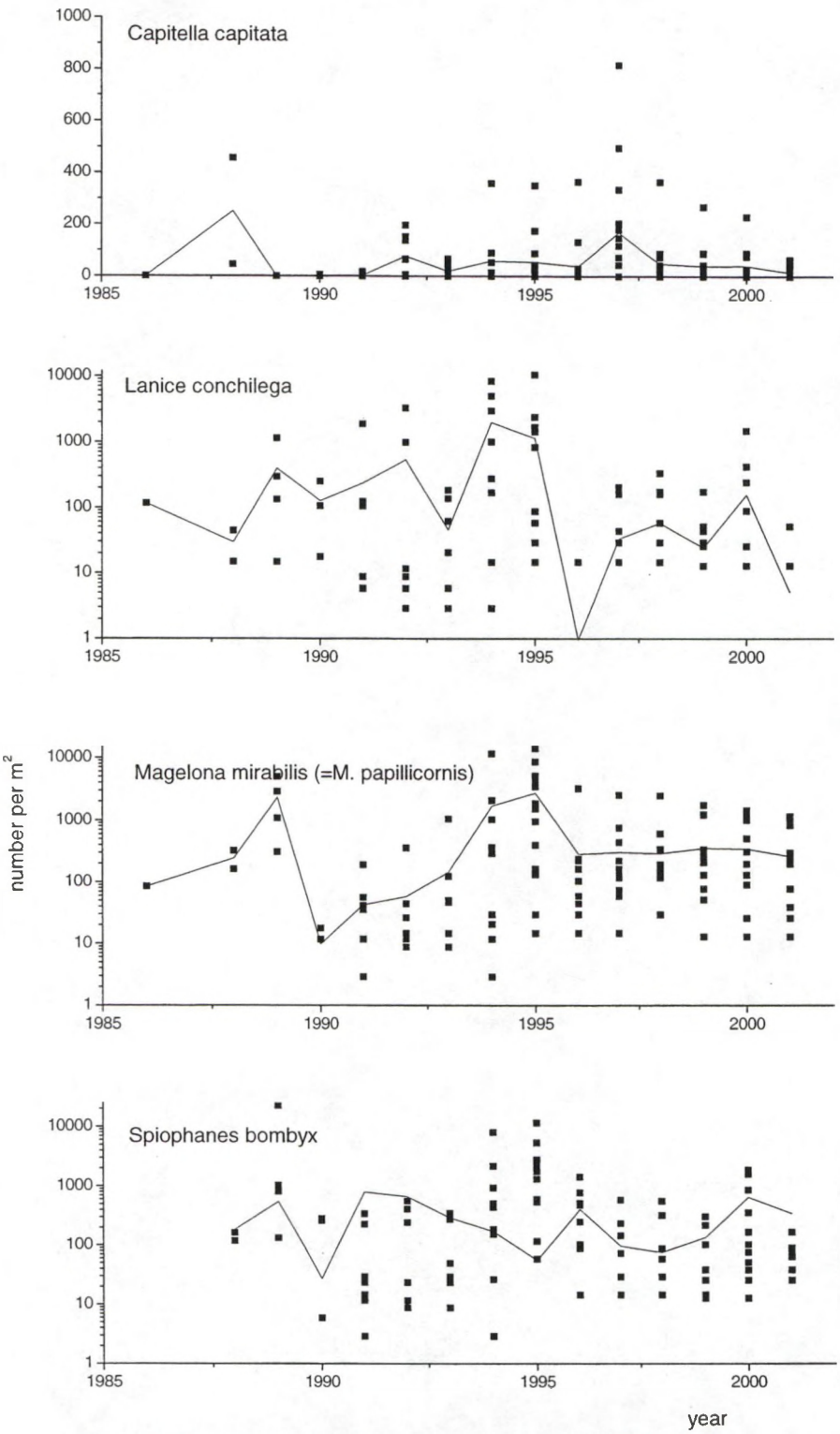

Fig. 16c: Densities of 3 species in the coastal area (1986-2001).

Table 1a. Station number, position, date, depth and sediment composition of the survey 2001.

Station (name)			Geographical position				Sediment composition		
NIOZ Code		DONAR Code	E	N	Date	Depth (m)	Med.Gr. Size (µm)	Mud (%) Fr.<63 µm	Mud (%) Fr.16-63 µm
DOG	1	DOGGBK07	04°03'00"	55°28'18"	14/03/2001	30.0	218	1.3	0.9
DOG	2	DOGGBK02	03°38'30"	55°10'00"	14/03/2001	36.2	186	1.6	0.0
DOG	3	DOGGBK03	03°30'00"	55°15'00"	14/03/2001	28.1	205	0.4	0.0
DOG	4	TERSLG235	03°09'26"	55°10'14"	13/03/2001	30.1	201	0.5	0.0
DOG	5	DOGGBK04	03°14'00"	54°54'42"	14/03/2001	35.7	173	1.3	0.0
DOG	6	DOGGBK05	03°05'00"	54°57'06"	14/03/2001	23.0	217	1.2	0.9
DOG	7	DOGGBK08	03°00'00"	55°00'00"	14/03/2001	25.0	209	1.1	0.8
OYS	1	OESTGDN43	03°25'30"	54°23'00"	15/03/2001	45.5	112	10.9	5.3
OYS	2	FRIESFT16	05°32'30"	54°11'30"	06/03/2001	39.3	210	9.4	3.6
OYS	3	OESTGDN02	04°00'00"	55°00'00"	15/03/2001	47.6	114	8.2	2.7
OYS	4	OESTGDN03	02°56'00"	54°33'00"	15/03/2001	34.0	138	1.9	0.0
OYS	5	FRIESFT02	04°55'00"	54°01'10"	08/03/2001	43.0	105	20.9	10.1
OYS	6	OESTGDN04	04°22'48"	55°18'24"	14/03/2001	46.0	151	4.1	0.0
OYS	7	OESTGDN05	04°18'00"	54°53'00"	15/03/2001	50.3	87	19.4	12.0
OYS	8	FRIESFT03	04°54'00"	53°44'40"	08/03/2001	36.7	202	8.7	2.5
OYS	9	FRIESFT04	03°37'50"	53°45'20"	03/04/2001	37.5	182	2.8	0.0
OYS	10	OESTGDN06	03°42'30"	54°39'00"	13/03/2001	44.3	114	6.7	1.8
OYS	11	FRIESFT05	05°10'00"	53°55'30"	08/03/2001	39.5	83	38.2	27.0
OYS	12	OESTGDN07	04°26'00"	54°10'00"	13/03/2001	47.0	92	19.7	10.6
OYS	13	OESTGDN08	03°30'00"	54°45'00"	13/03/2001	44.5	114	5.8	1.8
OYS	14	OESTGDN09	04°44'30"	54°20'00"	06/03/2001	46.8	128	16.4	7.6
OYS	15	OESTGDN10	04°21'20"	54°28'30"	13/03/2001	50.1	88	26.4	16.2
OYS	16	OESTGDN11	05°03'00"	54°38'30"	06/03/2001	46.7	156	7.3	0.9
OYS	17	OESTGDN12	03°25'08"	54°00'21"	04/04/2001	44.0	194	3.0	0.0
OYS	18	FRIESFT06	05°54'00"	54°11'20"	06/03/2001	37.1	220	2.1	0.0
OYS	19	OESTGDN13	03°19'00"	54°20'00"	15/03/2001	48.2	121	6.4	1.8
OYS	20	OESTGDN14	02°51'51"	54°05'00"	04/04/2001	51.5	166	18.0	9.2
OYS	21	TERSLG50	04°46'03"	53°46'04"	08/03/2001	38.3	113	23.8	11.0
OYS	22	OESTGDN15	03°38'30"	54°18'30"	15/03/2001	43.7	159	5.8	0.9
OYS	23	OESTGDN16	03°22'00"	54°49'24"	14/03/2001	41.5	133	4.7	0.9
OYS	24	BREEVTN34	03°29'46"	53°30'00"	03/04/2001	33.5	80	33.7	26.7
OYS	25	OESTGDN17	04°32'00"	54°39'00"	15/03/2001	49.6	107	16.7	10.7
OYS	26	FRIESFT07	04°47'30"	53°55'20"	08/03/2001	41.5	134	18.6	6.9
OYS	27	OESTGDN18	05°00'00"	54°30'00"	06/03/2001	43.7	172	3.7	0.0
OYS	28	FRIESFT08	03°30'00"	53°45'00"	03/04/2001	35.0	200	1.9	0.0
OYS	29	OESTGDN19	03°00'00"	54°30'00"	15/03/2001	36.1	125	3.3	0.9
OYS	30	BREEVTN02	03°18'21"	53°31'30"	03/04/2001	35.0	122	17.3	9.8
OYS	31	FRIESFT09	04°09'06"	53°50'42"	08/03/2001	43.8	143	8.6	2.6
OYS	32	FRIESFT10	05°05'00"	54°15'30"	06/03/2001	43.8	158	12.6	4.3
OYS	33	OESTGDN20	04°03'00"	54°16'00"	15/03/2001	47.8	105	13.9	6.9
OYS	34	FRIESFT11	04°16'37"	53°37'40"	08/03/2001	37.5	111	22.6	12.8
OYS	35	FRIESFT12	03°52'24"	53°51'31"	08/03/2001	40.2	160	3.7	0.0
OYS	36	FRIESFT17	04°30'00"	53°42'05"	08/03/2001	38.8	103	29.9	15.1
OYS	37	TERSLG100	04°20'27"	54°09'04"	13/03/2001	49.3	95	17.0	9.2
OYS	38	BREEVTN26	03°00'00"	53°30'00"	03/04/2001	33.5	139	6.6	1.7
OYS	39	OESTGDN22	04°00'00"	54°30'00"	13/03/2001	44.7	112	11.6	6.3
OYS	40	OESTGDN21	05°00'00"	55°00'00"	06/03/2001	41.4	153	3.8	0.0
OYS	41	OESTGDN23	03°17'36"	54°51'42"	14/03/2001	39.3	149	2.4	0.0
OYS	42	ROTTMPT70	06°12'51"	54°07'03"	06/03/2001	32.7	228	1.1	0.0

Table 1a. Station number, position, date, depth and sediment composition of the survey 2001.

Station (name)			Geographical position				Sediment composition		
NIOZ Code		DONAR Code	E	N	Date	Depth (m)	Med.Gr. Size (µm)	Mud (%) Fr.<63 µm	Mud (%) Fr.16-63 µm
OFF	1	FRIESFT13	05°59'00"	53°51'30"	06/03/2001	31.1	211	1.7	0.0
OFF	2	WADDKT07	06°06'25"	53°37'29"	27/02/2001	23.3	215	1.2	0.0
OFF	3	WADDKT02	05°49'37"	53°36'40"	27/02/2001	26.2	188	1.8	0.0
OFF	4	FRIESFT14	04°57'30"	53°40'00"	08/03/2001	31.4	200	2.7	0.0
OFF	5	FRIESFT15	04°22'30"	53°29'00"	08/03/2001	28.6	216	2.1	0.0
OFF	6	BREEVTN03	04°26'32"	53°11'16"	09/03/2001	30.8	200	0.5	0.0
OFF	7	BREEVTN04	04°18'22"	53°05'59"	09/03/2001	35.7	249	1.1	0.0
OFF	8	BREEVTN05	04°00'30"	53°01'30"	05/03/2001	29.2	143	4.4	3.6
OFF	9	BREEVTN06	04°13'50"	52°49'20"	05/03/2001	26.4	198	0.3	0.0
OFF	10	BREEVTN07	03°50'30"	52°45'40"	28/02/2001	30.0	291	0.8	0.0
OFF	11	BREEVTN08	03°31'18"	53°17'00"	03/04/2001	26.8	152	5.8	4.6
OFF	12	BREEVTN09	03°23'30"	53°03'55"	16/03/2001	28.0	242	2.6	1.9
OFF	13	BREEVTN10	03°11'36"	53°02'58"	16/03/2001	29.4	268	0.6	0.0
OFF	14	BREEVTN11	03°17'20"	52°53'53"	16/03/2001	32.8	272	1.0	0.0
OFF	15	BREEVTN12	03°17'18"	52°50'12"	16/03/2001	33.3	301	0.6	0.0
OFF	16	BREEVTN13	03°30'00"	52°45'00"	28/02/2001	26.5	268	0.4	0.0
OFF	17	BREEVTN14	03°12'12"	52°27'43"	16/03/2001	26.8	300	2.3	1.9
OFF	18	BREEVTN15	03°11'25"	52°20'25"	03/04/2001	29.1	337	0.3	0.0
OFF	19	BREEVTN16	03°24'42"	52°15'10"	02/04/2001	28.8	363	0.3	0.0
OFF	20	BREEVTN17	03°30'00"	52°15'00"	02/04/2001	31.4	388	0.4	0.0
OFF	21	BREEVTN18	03°00'00"	52°00'00"	02/04/2001	37.0	462	1.3	0.9
OFF	22	BREEVTN19	03°59'15"	52°16'30"	28/02/2001	23.3	376	0.8	0.0
OFF	23	BREEVTN20	04°09'50"	52°23'08"	28/02/2001	22.5	344	0.6	0.0
OFF	24	BREEVTN21	03°42'58"	52°00'00"	02/03/2001	24.0	429	0.6	0.0
OFF	25	BREEVTN22	03°24'26"	52°06'12"	02/04/2001	31.1	435	0.2	0.0
OFF	26	BREEVTN23	03°11'34"	51°56'07"	02/04/2001	29.0	516	0.2	0.0
OFF	27	BREEVTN24	03°14'28"	51°41'40"	01/03/2001	26.7	358	0.6	0.0
OFF	28	BREEVTN25	02°52'48"	51°52'40"	01/03/2001	34.0	549	0.3	0.0
OFF	29	ROTTMPT50	06°18'36"	53°57'14"	05/03/2001	29.7	381	0.3	0.0
OFF	30	TERSLG30	04°56'17"	53°36'56"	08/03/2001	25.0	214	0.5	0.0
OFF	31	BREEVTN27	03°55'01"	52°59'53"	05/03/2001	26.2	254	0.3	0.0
OFF	32	NOORDWK30	04°02'53"	52°23'15"	28/02/2001	23.3	354	0.5	0.0
OFF	33	NOORDWK50	03°47'07"	52°28'30"	28/02/2001	30.0	289	0.8	0.0
OFF	34	NOORDWK70	03°31'53"	52°34'10"	28/02/2001	31.0	308	0.5	0.0
OFF	35	WALCRN30	03°06'49"	51°43'06"	01/03/2001	28.4	357	0.6	0.0
OFF	36	WALCRN70	02°40'45"	51°57'25"	02/04/2001	44.0	493	0.3	0.0
COA	1	WADDKT03	05°59'53"	53°32'34"	27/02/2001	18.1	229	0.8	0.0
COA	2	WADDKT04	05°37'48"	53°30'19"	27/02/2001	9.1	182	0.9	0.0
COA	3	HOLLSKT03	04°31'50"	52°32'50"	28/02/2001	18.0	228	1.3	0.0
COA	4	HOLLSKT02	04°40'00"	52°50'00"	27/02/2001	11.3	188	4.4	0.0
COA	5	WADDKT05	04°41'20"	53°03'23"	27/02/2001	11.4	212	1.0	0.0
COA	6	WADDKT06	06°11'03"	53°32'09"	27/02/2001	9.4	169	2.8	0.0
COA	7	ROTTMPT3	06°32'46"	53°34'57"	27/02/2001	7.2	183	0.7	0.0
COA	8	TERSLG4	05°09'02"	53°24'54"	27/02/2001	12.0	234	0.6	0.0
COA	9	HOLLSKT04	04°30'00"	52°45'00"	26/02/2001	21.4	228	1.6	0.0
COA	10	NOORDWK2	04°24'20"	52°15'36"	28/02/2001	13.0	265	1.1	0.0
COA	11	NOORDWK10	04°18'01"	52°17'41"	28/02/2001	18.5	342	0.6	0.0
COA	12	VOORDTA2	03°23'15"	51°37'04"	01/03/2001	11.5	281	0.8	0.0
COA	13	VOORDTA3	03°36'02"	51°42'23"	22/03/2001	5.1	276	0.1	0.0
COA	14	VOORDTA4	03°48'48"	51°47'26"	22/03/2001	3.6	280	0.6	0.0
COA	15	VOORDTA5	03°55'09"	51°55'20"	01/03/2001	14.5	201	1.3	0.0

Table 2. Mean values of abiotic and biotic parameters in the 4 areas in 2001.

	AREA			
	Dogger Bank	Oyster Ground	Offshore area	Coastal area
No. of stations	7	42	36	15
Median Grain Size (µm)	201	138	309	233
Silt content (fr.< 63um,%)	1.1	11.9	1.1	1.2
silt (fr. 16- 63um, %)	0.4	5.7	0.4	0.0
Depth (m)	30	42	29	12
Diversity:				
Total number of species	87	158	103	51
Number of specier per core	35.7	29.8	17.0	16.9
Shannon- Wiener diversity	2.76	2.35	2.23	1.92
Simpson's dominance	0.12	0.20	0.14	0.24
No. individuals (ind./m²):				
Crustaceans	887	209	326	398
Echinoderms	251	607	45	21
Molluscs	288	797	130	769
Polychaetes	596	460	430	642
Miscellaneous	108	167	52	29
TOTAL DENSITY	2130	2240	983	1859
Biomass (g AFDW/m²):				
Crustaceans	0.6	3.4	0.3	1.5
Echinoderms	7.0	5.3	6.0	7.6
Molluscs	2.3	3.2	5.5	40.7
Polychaetes	3.7	3.7	2.7	5.0
Miscellaneous	0.8	1.6	0.4	0.2
TOTAL BIOMASS	14.4	17.2	14.9	55.0

Appendix-1 Biomonitoring 2001 (+=presence)

	Dogger Bank							Oyster Ground																
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Species name																										***Code***
ABRA ALBA								+		+	+	+		+	+	+		+		+	+	+				ABRAALBA
ABRA PRISMATICA																				+						ABRAPRIS
ACANTHOCARDIA ECHINATA																										ACANECHI
ACIDOSTOMA OBESUM																										ACIDOBES
ACROCNIDA BRACHIATA	+	+		+	+	+					+															ACROBRAC
ALTENAEUM DAWSONI																			+							ALTEDAWS
AMPELISCA BREVICORNIS						+	+		+	+			+		+					+		+		+		AMPEBREV
AMPELISCA TENUICORNIS											+	+		+			+	+			+	+	+			AMPETENU
AMPHARETE FINMARCHICA															+											AMPHFINM
AMPHILOCHUS SPEC.											+															AMPHILSP
AMPHIOXUS LANCEOLATUS		+																								AMPHLANC
AMPHIURA CHIAJEI		+	+		+	+	+																			AMPHCHIA
AMPHIURA FILIFORMIS								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	AMPHFILI
ANTHOZOA															+		+									ANTHOZOA
AONIDES PAUCIBRANCHIATA								+				+														AONIPAUC
APHELOCHAETA MARIONI										+												+				APHEMARI
APHERUSA BISPINOSA																										APHERBIS
APHERUSA OVALIPES																										APHEOVAL
APHERUSA SPEC.																			+							APHESPEC
APHRODITE ACULEATA												+	+													APHRACUL
APLACOPHORA										+				+												APLACOPH
ARCTICA ISLANDICA JUV.	+	+	+		+	+															+			+		ARCTISLA
ARICIDEA MINUTA																										ARICMINU
ASTERIAS RUBENS								+																		ASTERUBE
ASTROPECTEN IRREGULARIS													+													ASTRIRRE
ATYLUS FALCATUS	+		+			+	+																			ATYLFALC
ATYLUS SWAMMERDAMI							+																			ATYLSWAM
BATHYPOREIA ELEGANS	+	+	+	+	+	+	+		+	+	+		+		+	+		+							+	BATHELEG
BATHYPOREIA GUILLIAMSONIANA	+		+	+	+	+	+	+	+		+														+	BATHGUIL
BIVALVE INDET.																										BIVAINDE
BRISSOPSIS LYRIFERA								+		+																BRISLYRI
CALLIANASSA SPEC. JUV.									+	+		+			+	+	+	+	+		+	+	+	+	+	CALLJUVE
CALLIANASSA SUBTERRANEA								+	+			+			+	+	+	+	+			+	+			CALLSUBT
CALLIANASSA TYRRHENA																										CALLTYRR
CAPITELLA CAPITATA																										CAPICAPI
CAPRELLIDAE		+									+		+													CAPRELLI
CERIANTHUS LLOYDII					+																+					CERILLOY
CHAETOPTERUS VARIOPEDATUS								+				+					+		+			+	+			CHAEVARI
CHAETOZONE SETOSA	+	+	+	+	+	+	+	+	+		+			+		+	+	+		+	+	+		+	+	CHAESETO
CHAMELEA STRIATULA	+				+		+				+		+			+			+	+	+					CHAMSTRI
CHAMELEA SPEC. JUV.			+																							CHAMSPEC
CHONE DUNERI																										CHONDUNE
CORBULA GIBBA								+	+			+			+	+	+	+	+	+	+	+	+		+	CORBGIBB
COROPHIUM INSIDIOSUM	+	+	+	+		+	+																			COROINSI
CORYSTES CASSIVELAUNUS			+	+							+		+													CORYCASS
CRANGON CRANGON																										CRANCRAN
CUCUMARIA FRONDOSA																			+							CUCUFRON
CULTELLUS PELLUCIDUS		+				+	+				+			+	+					+			+	+	+	CULTPELL
CYLICHNA CYLINDRACEA		+						+		+			+	+			+	+		+					+	CYLICYLI
DIASTYLIS BRADYI	+				+		+	+		+			+					+					+			DIASBRAD

Appendix-1 Biomonitoring 2001 (+=presence)

	Dogger Bank							Oyster Ground																	
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Species name																										***Code***
DIPLOCIRRUS GLAUCUS						+		+		+	+		+		+					+				+	+	DIPLGLAU
DONAX VITTATUS																										DONAVITT
DOSINIA EXOLETA			+			+	+						+													DOSIEXOL
DOSINIA LUPINUS		+									+		+													DOSILUPI
EBALIA CRANCHII				+				+		+			+			+				+						EBALCRAN
ECHINOCARDIUM CORDATUM	+				+	+			+	+						+			+	+			+	+	ECHICORD
ECHINOCYAMUS PUSILLUS			+	+												+								+		ECHIPUSI
EDWARDSIA CLAPAREDII	+			+	+				+	+			+							+						EDWACLAP
ENSIS AMERICANUS																										ENSIAMER
ENSIS ARCUATUS																										ENSIARCU
ENSIS ENSIS			+		+	+																				ENSIENSI
ENSIS PHAXOIDES	+	+																								ENSIPHAX
ETEONE BARBATA																									+	ETEOBARB
ETEONE LONGA		+																								ETEOLONG
EUDORELLA TRUNCATULA												+		+		+	+			+		+	+	+	+	EUDOTRUN
EUDORELLOPSIS DEFORMIS										+														+		EUDODEFO
EUMIDA SANGUINEA													+								+	+				EUMISANG
EUSPIRA CATENA																										EUSPCATE
EUSPIRA NITIDA	+	+	+	+	+										+	+		+							+	EUSPNITI
EUZONUS FLABELLIGERUS																										EUZOFLAB
EXOGONE HEBES																						+				EXOGHEBE
GOULDIA MINIMA					+																					GOULMINI
GARI COSTULATA																								+		GARICOST
GARI FERVENSIS	+			+		+	+																	+		GARIFERV
GATTYANA CIRROSA								+									+					+	+			GATTCIRR
GLYCERA LAPIDUM																										GLYCLAPI
GLYCERA ROUXI																										GLYCROUX
GLYCERA SPEC. JUV.																										GLYCSPEC
GLYCINDE NORDMANNI																						+				GLYCNORD
GOLFINGIA ELONGATA																		+								GOLFELON
GOLFINGIA PROCERA												+														GOLFPROC
GOLFINGIA VULGARIS												+							+		+	+				GOLFVULG
GONIADA MACULATA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			+	+		+	+			+	GONIMACU
GONIADELLA BOBRETZKII																										GONIBOBR
GYPTIS CAPENSIS			+		+		+					+			+			+			+					GYPTCAPE
HARMOTHOE GLABRA																									+	HARMGLAB
HARMOTHOE IMBRICATA																										HARMIMBR
HARMOTHOE LJUNGMANI																										HARMLJUN
HARMOTHOE LUNULATA													+						+							HARMLUNU
HARMOTHOE SPEC. JUV.			+	+			+																		+	HARMSPEC
HARPINIA ANTENNARIA					+			+	+	+	+	+	+	+		+	+		+	+	+	+	+	+	+	HARPANTE
HETEROMASTUS FILIFORMIS																										HETEFILI
HIATELLA ARCTICA																						+				HIATARCT
HIPPOMEDON DENTICULATUS											+															HIPPDENT
HYALA VITREA						+						+					+	+			+	+	+			HYALVITR
HYPERIIDAE SPEC.					+							+														HYPERIID
IONE THORACICA												+			+			+	+			+				IONETHOR
IPHIMEDIA OBESA				+																						IPHIOBES
IPHINOE TRISPINOSA			+	+					+						+											IPHITRIS
KELLIA SUBORBICULARIS										+	+										+					KELLSUBO

Appendix-1 Biomonitoring 2001 (+=presence)

	Dogger Bank							Oyster Ground																	
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Species name																										***Code***
LANICE CONCHILEGA			+	+									+													LANICONC
LANICE SPEC. JUV.																										LANIJUVE
LEMBOS LONGIPES																										LEMBLONG
LEPTON SQUAMOSUM																							+			LEPTSQUA
LEUCOTHOE INCISA	+		+		+						+				+	+		+							+	LEUCINCI
LEVINSENIA GRACILIS														+												LEVIGRAC
LIOCARCINUS SPEC. JUV.	+																									LIOCSPEC
LUMBRINERIS FRAGILIS												+							+		+					LUMBFRAG
LUMBRINERIS LATREILLI												+						+				+				LUMBLATR
LYSILLA LOVENI								+																		LYSILOVE
MACOMA BALTHICA																										MACOBALT
MACTRA CORALLINA	+			+	+							+						+								MACTCORA
MAGELONA ALLENI	+	+		+							+	+				+										MAGEALLE
MAGELONA MIRABILIS	+	+	+	+	+	+	+		+	+	+					+	+			+				+	+	MAGEMIRA
MEDIOMASTUS FRAGILIS								+		+			+		+		+	+	+			+	+			MEDIFRAG
MEGALUROPUS AGILIS	+												+													MEGAAGIL
MELITA OBTUSATA																					+					MELITOBTU
MICROPROTOPUS MACULATUS																										MICRMACU
MODIOLUS SPEC. JUV.											+															MODISPEC
MONTACUTA TENELLA								+		+				+								+				MONTTENE
MYA TRUNCATA												+														MYATRUNC
MYRIOCHELE DANIELSSENI															+	+	+	+								MYRIHEER
MYSELLA BIDENTATA	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+		+	+		+		+	MYSEBIDE
MYSIA UNDATA	+													+												MYSIUNDA
NEMATODA																										NEMATODA
NEMERTINI	+	+	+	+	+	+	+	+	+	+	+				+	+		+		+				+	+	NEMERTIN
NEPHTYS ASSIMILIS																										NEPHASSI
NEPHTYS CAECA									+			+		+					+		+					NEPHCAEC
NEPHTYS CIRROSA						+	+							+											+	NEPHCIRR
NEPHTYS HOMBERGII				+	+						+	+	+				+		+	+	+	+		+		NEPHHOMB
NEPHTYS INCISA																										NEPHINCI
NEPHTYS SPEC. JUV.		+	+	+	+				+	+									+			+	+			NEPHSPEC
NEREIS LONGISSIMA			+																							NERELONG
NOTOMASTUS LATERICEUS				+	+					+	+	+					+	+			+	+	+			NOTOLATE
NUCULA NITIDOSA						+	+	+			+	+		+	+	+	+	+		+	+	+	+			NUCUNITI
NUCULA TENUIS										+																NUCUTENU
ODOSTOMIA SPEC.																					+					ODOSSPEC
OLIGOCHAETA																										OLIGOCHA
OPHELIA LIMACINA		+	+	+																				+		OPHELIMA
OPHELINA ACUMINATA												+			+							+				OPHEACUM
OPHIODROMUS FLEXUOSUS									+			+	+			+			+		+	+	+	+	+	OPHIFLEX
OPHIURA ALBIDA		+										+			+			+							+	OPHIALBI
OPHIURA TEXTURATA	+																									OPHITEXT
OPHIURA SPEC. JUV.	+	+							+															+		OPHISPEC
ORBINIA SERTULATA			+																							ORBISERT
ORCHOMENE HUMILIS				+																						ORCHHUMI
ORCHOMENE NANA					+	+						+		+												ORCHNANA
ORCHOMENE SPEC. JUV.							+																			ORCHSPEC
OWENIA FUSIFORMIS					+	+	+				+															OWENFUSI
PARAONIS FULGENS																			+		+	+				PARAFULG

Appendix-1 Biomonitoring 2001 (+=presence)

	Dogger Bank							Oyster Ground																
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Species name																										***Code***
PECTINARIA AURICOMA						+				+														+		PECTAURI
PECTINARIA KORENI			+							+			+			+	+		+		+					PECTKORE
PERIOCULODES LONGIMANUS	+	+	+	+		+	+				+							+					+	+		PERILONG
PHOLOE MINUTA		+	+	+	+		+	+	+	+		+	+	+			+			+			+	+		PHOLMINU
PHORONIDA		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	PHORONID
PHYLLODOCE GROENLANDICA																										PHYLGROE
PHYLLODOCE MACULATA															+	+										PHYLMACU
PHYLLODOCE ROSEA				+																						PHYLROSE
PHYLLODOCIDAE						+			+																	PHYLLODO
PODARKEOPSIS HELGOLANDICA																										PODAHELG
POECILOCHAETUS SERPENS						+			+		+	+							+		+	+		+	+	POECSERP
POLYDORA SPEC.							+								+			+	+							POLYDORA
POLYNOE KINBERGI								+		+																POLYKINB
PONTOCRATES ALTAMARINUS																										PONTALTA
PONTOPHILUS BISPINOSUS																										PONTBISP
PRIONOSPIO CIRRIFERA																										PRIOCIRR
PROCESSA EDULIS CRASSIPES																										PROCEDCR
PROCESSA NOUVELI HOLTHUISI																										PROCNOHO
PROCESSA PARVA					+																					PROCPARV
PSEUDOCUMA LONGICORNIS	+			+			+																	+		PSEULONG
ROXANIA UTRICULUS										+																ROXAUTRI
SABELLA PENICILLUS												+														SABEPENI
SCALIBREGMA INFLATUM																										SCALINFL
SCOLELEPIS BONNIERI	+			+		+	+																		+	SCOLBONN
SCOLOPLOS ARMIGER					+			+		+	+		+		+		+	+		+					+	SCOLARMI
SEMIERYCINA NITIDA																		+								SEMINITI
SIGALION MATHILDAE		+			+	+	+									+								+		SIGAMATH
SPIO FILICORNIS				+			+		+					+		+			+	+			+			SPIOFILI
SPIOPHANES BOMBYX	+	+	+	+	+	+	+		+		+		+	+	+	+		+	+		+			+	+	SPIOBOMB
SPIOPHANES KROEYERI																+			+		+					SPIOKROE
SPISULA ELLIPTICA																			+							SPISELLI
SPISULA SOLIDA																										SPISSOLI
SPISULA SUBTRUNCATA																										SPISSUBT
SPISULA SPEC. JUV.																										SPISSPEC
STHENELAIS LIMICOLA		+	+		+		+	+			+	+	+				+		+	+			+	+		STHELIMI
SYLLIDAE																										SYLLIDAE
SYNCHELIDIUM HAPLOCHELES																										SYNCHAPL
SYNCHELIDIUM MACULATUM	+			+							+														+	SYNCMACU
SYNELMIS KLATTI											+		+						+			+		+		SYNEKLAT
TELLIMYA FERUGINOSA	+				+	+		+	+	+										+			+			TELLFERU
TELLINA FABULA	+	+		+	+	+	+				+		+	+												TELLFABU
TELLINA PYGMAEA																										TELLPYGM
TELLINA TENUIS						+																				TELLTENU
THARYX KILLARIENSIS																					+					THARKILL
THIA SCUTELLATA																										THIASCUT
THRACIA CONVEXA																	+				+					THRACONV
THRACIA PHASEOLINA	+		+		+						+					+		+							+	THRAPHAS
THYASIRA FLEXUOSA					+			+		+	+						+			+						THYAFLEX
TRACHYTHYONE ELONGATA																										TRACELON
TRAVISIA FORBESII																										TRAVFORB

Appendix-1 Biomonitoring 2001 (+=presence)

	Dogger Bank							Oyster Ground																	
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Species name																										***Code***
TRIDONTA TRIANGULARIS								+																		TRIDTRIA
TURBELLARIA										+							+		+	+						TURBELLA
TURBONILLA PUSILLA					+																					TURBPUSI
UPOGEBIA DELTAURA								+										+	+			+				UPOGDELT
UPOGEBIA STELLATA																						+	+			UPOGSTEL
UROTHOE BREVICORNIS									+							+										UROTBREV
UROTHOE POSEIDONIS	+	+	+	+	+	+	+			+	+		+			+								+	+	UROTPOSE
VITREOLINA ANTIFLEXA			+										+													VITRANTI

Appendix-1 Biomonitoring 2001 (+=presence)

	Oyster Ground																							
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
Species name																									***Code***
ABRA ALBA	+	+	+	+	+	+	+	+		+	+	+	+	+		+		+			+		+	+	ABRAALBA
ABRA PRISMATICA																							+		ABRAPRIS
ACANTHOCARDIA ECHINATA											+														ACANECHI
ACIDOSTOMA OBESUM																									ACIDOBES
ACROCNIDA BRACHIATA																							+		ACROBRAC
ALTENAEUM DAWSONI																			+						ALTEDAWS
AMPELISCA BREVICORNIS				+					+																AMPEBREV
AMPELISCA TENUICORNIS	+				+			+			+		+				+				+				AMPETENU
AMPHARETE FINMARCHICA																									AMPHFINM
AMPHILOCHUS SPEC.																									AMPHILSP
AMPHIOXUS LANCEOLATUS																									AMPHLANC
AMPHIURA CHIAJEI																									AMPHCHIA
AMPHIURA FILIFORMIS	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+		AMPHFILI
ANTHOZOA				+			+			+				+											ANTHOZOA
AONIDES PAUCIBRANCHIATA																									AONIPAUC
APHELOCHAETA MARIONI															+						+				APHEMARI
APHERUSA BISPINOSA																		+							APHERBIS
APHERUSA OVALIPES																				+					APHEOVAL
APHERUSA SPEC.																				+					APHESPEC
APHRODITE ACULEATA																									APHRACUL
APLACOPHORA																					+				APLACOPH
ARCTICA ISLANDICA JUV.						+					+												+		ARCTISLA
ARICIDEA MINUTA																									ARICMINU
ASTERIAS RUBENS				+																					ASTERUBE
ASTROPECTEN IRREGULARIS	+						+		+																ASTRIRRE
ATYLUS FALCATUS																									ATYLFALC
ATYLUS SWAMMERDAMI																									ATYLSWAM
BATHYPOREIA ELEGANS						+			+	+	+	+	+	+			+			+		+		+	BATHELEG
BATHYPOREIA GUILLIAMSONIANA						+				+							+								BATHGUIL
BIVALVE INDET.																					+				BIVAINDE
BRISSOPSIS LYRIFERA	+																								BRISLYRI
CALLIANASSA SPEC. JUV.	+	+	+				+						+		+	+		+	+						CALLJUVE
CALLIANASSA SUBTERRANEA	+	+	+	+	+	+	+	+				+	+	+	+	+		+		+	+			+	CALLSUBT
CALLIANASSA TYRRHENA																									CALLTYRR
CAPITELLA CAPITATA																									CAPICAPI
CAPRELLIDAE																									CAPRELLI
CERIANTHUS LLOYDII																									CERILLOY
CHAETOPTERUS VARIOPEDATUS														+	+				+						CHAEVARI
CHAETOZONE SETOSA				+			+		+			+		+	+		+		+	+	+	+		+	CHAESETO
CHAMELEA STRIATULA		+		+	+				+	+	+				+				+			+	+		CHAMSTRI
CHAMELEA SPEC. JUV.																									CHAMSPEC
CHONE DUNERI							+																		CHONDUNE
CORBULA GIBBA	+	+	+	+		+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+		+	CORBGIBB
COROPHIUM INSIDIOSUM																								+	COROINSI
CORYSTES CASSIVELAUNUS											+						+					+			CORYCASS
CRANGON CRANGON																									CRANCRAN
CUCUMARIA FRONDOSA	+																								CUCUFRON
CULTELLUS PELLUCIDUS		+		+		+	+				+										+				CULTPELL
CYLICHNA CYLINDRACEA	+	+	+	+	+			+			+		+			+			+	+	+	+			CYLICYLI
DIASTYLIS BRADYI	+	+		+							+									+					DIASBRAD

	Oyster Ground																							
	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	♂♀	
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
Species name																									***Code***
DIPLOCIRRUS GLAUCUS		+			+						+		+				+	+			+				DIPLGLAU
DONAX VITTATUS																									DONAVITT
DOSINIA EXOLETA					+																				DOSIEXOL
DOSINIA LUPINUS		+			+				+								+					+			DOSILUPI
EBALIA CRANCHII							+														+				EBALCRAN
ECHINOCARDIUM CORDATUM			+			+	+		+		+	+		+					+	+			+	+	ECHICORD
ECHINOCYAMUS PUSILLUS																									ECHIPUSI
EDWARDSIA CLAPAREDII	+				+	+					+														EDWACLAP
ENSIS AMERICANUS																									ENSIAMER
ENSIS ARCUATUS																									ENSIARCU
ENSIS ENSIS																								+	ENSIENSI
ENSIS PHAXOIDES																									ENSIPHAX
ETEONE BARBATA																									ETEOBARB
ETEONE LONGA																									ETEOLONG
EUDORELLA TRUNCATULA		+														+	+	+	+		+				EUDOTRUN
EUDORELLOPSIS DEFORMIS				+					+	+												+			EUDODEFO
EUMIDA SANGUINEA						+																+			EUMISANG
EUSPIRA CATENA																									EUSPCATE
EUSPIRA NITIDA			+	+	+	+		+	+	+			+	+		+	+	+		+		+	+	+	EUSPNITI
EUZONUS FLABELLIGERUS																									EUZOFLAB
EXOGONE HEBES																	+								EXOGHEBE
GOULDIA MINIMA																									GOULMINI
GARI COSTULATA																									GARICOST
GARI FERVENSIS																									GARIFERV
GATTYANA CIRROSA														+	+				+						GATTCIRR
GLYCERA LAPIDUM																									GLYCLAPI
GLYCERA ROUXI																									GLYCROUX
GLYCERA SPEC. JUV.				+				+	+										+						GLYCSPEC
GLYCINDE NORDMANNI																									GLYCNORD
GOLFINGIA ELONGATA														+											GOLFELON
GOLFINGIA PROCERA								+																	GOLFPROC
GOLFINGIA VULGARIS			+					+						+	+			+	+						GOLFVULG
GONIADA MACULATA					+	+		+	+	+	+	+	+	+		+	+				+	+	+	+	GONIMACU
GONIADELLA BOBRETZKII																							+		GONIBOBR
GYPTIS CAPENSIS		+	+	+	+	+			+			+	+			+		+					+		GYPTCAPE
HARMOTHOE GLABRA																									HARMGLAB
HARMOTHOE IMBRICATA																									HARMIMBR
HARMOTHOE LJUNGMANI																									HARMLJUN
HARMOTHOE LUNULATA																									HARMLUNU
HARMOTHOE SPEC. JUV.																									HARMSPEC
HARPINIA ANTENNARIA	+	+	+	+	+		+	+	+	+			+		+	+	+	+	+	+	+	+			HARPANTE
HETEROMASTUS FILIFORMIS																									HETEFILI
HIATELLA ARCTICA																									HIATARCT
HIPPOMEDON DENTICULATUS																									HIPPDENT
HYALA VITREA	+		+			+	+		+										+						HYALVITR
HYPERIIDAE SPEC.																									HYPERIID
IONE THORACICA		+	+	+			+									+		+							IONETHOR
IPHIMEDIA OBESA																									IPHIOBES
IPHINOE TRISPINOSA										+										+				+	IPHITRIS
KELLIA SUBORBICULARIS		+			+						+												+		KELLSUBO

Appendix-1 Biomonitoring 2001 (+=presence)

	Oyster Ground																							
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Species name																								***Code***
LANICE CONCHILEGA															+							+		LANICONC
LANICE SPEC. JUV.																								LANIJUVE
LEMBOS LONGIPES															+									LEMBLONG
LEPTON SQUAMOSUM								+											+					LEPTSQUA
LEUCOTHOE INCISA			+					+								+	+		+					LEUCINCI
LEVINSENIA GRACILIS																								LEVIGRAC
LIOCARCINUS SPEC. JUV.																								LIOCSPEC
LUMBRINERIS FRAGILIS								+																LUMBFRAG
LUMBRINERIS LATREILLI			+			+	+	+				+	+			+		+						LUMBLATR
LYSILLA LOVENI																					+			LYSILOVE
MACOMA BALTHICA																								MACOBALT
MACTRA CORALLINA		+																						MACTCORA
MAGELONA ALLENI		+															+					+	+	MAGEALLE
MAGELONA MIRABILIS		+		+	+				+	+	+		+			+	+			+	+	+	+	MAGEMIRA
MEDIOMASTUS FRAGILIS			+													+		+	+					MEDIFRAG
MEGALUROPUS AGILIS																								MEGAAGIL
MELITA OBTUSATA																								MELITOBTU
MICROPROTOPUS MACULATUS																								MICRMACU
MODIOLUS SPEC. JUV.																								MODISPEC
MONTACUTA TENELLA																								MONTTENE
MYA TRUNCATA																								MYATRUNC
MYRIOCHELE DANIELSSENI			+					+										+	+					MYRIHEER
MYSELLA BIDENTATA	+	+	+	+	+		+	+			+		+		+	+	+	+	+		+	+	+	+	MYSEBIDE
MYSIA UNDATA																								MYSIUNDA
NEMATODA																								NEMATODA
NEMERTINI			+		+	+			+	+	+		+	+	+	+	+		+			+	+	+	NEMERTIN
NEPHTYS ASSIMILIS																		+						NEPHASSI
NEPHTYS CAECA									+		+		+										+	NEPHCAEC
NEPHTYS CIRROSA									+	+	+													NEPHCIRR
NEPHTYS HOMBERGII	+	+	+	+	+		+		+		+	+			+	+			+		+	+	+	NEPHHOMB
NEPHTYS INCISA								+																NEPHINCI
NEPHTYS SPEC. JUV.			+		+			+	+		+		+		+			+	+		+	+	+	NEPHSPEC
NEREIS LONGISSIMA			+			+		+					+					+						NERELONG
NOTOMASTUS LATERICEUS		+	+			+	+						+	+	+	+		+						NOTOLATE
NUCULA NITIDOSA			+	+	+		+	+	+	+	+	+	+		+	+	+	+		+	+	+	+	+	NUCUNITI
NUCULA TENUIS																								NUCUTENU
ODOSTOMIA SPEC.																								ODOSSPEC
OLIGOCHAETA																								OLIGOCHA
OPHELIA LIMACINA																								OPHELIMA
OPHELINA ACUMINATA															+						+			OPHEACUM
OPHIODROMUS FLEXUOSUS	+		+					+		+			+	+					+	+		+		OPHIFLEX
OPHIURA ALBIDA			+															+						OPHIALBI
OPHIURA TEXTURATA																								OPHITEXT
OPHIURA SPEC. JUV.	+				+		+		+	+					+								+	OPHISPEC
ORBINIA SERTULATA																			+					ORBISERT
ORCHOMENE HUMILIS																								ORCHHUMI
ORCHOMENE NANA			+		+		+						+											ORCHNANA
ORCHOMENE SPEC. JUV.																								ORCHSPEC
OWENIA FUSIFORMIS			+					+													+		+	+	OWENFUSI
PARAONIS FULGENS															+				+		+				PARAFULG

Appendix-1 Biomonitoring 2001 (+=presence)

	Oyster Ground																							
	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	S	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS	ÖS
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Species name																								***Code***
PECTINARIA AURICOMA							+						+		+				+		+			PECTAURI
PECTINARIA KORENI	+						+								+		+	+	+		+	+		PECTKORE
PERIOCULODES LONGIMANUS								+					+		+	+							+	PERILONG
PHOLOE MINUTA	+			+	+	+	+	+	+		+		+	+						+	+	+	+	PHOLMINU
PHORONIDA	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	PHORONID
PHYLLODOCE GROENLANDICA									+															PHYLGROE
PHYLLODOCE MACULATA																								PHYLMACU
PHYLLODOCE ROSEA												+												PHYLROSE
PHYLLODOCIDAE																								PHYLLODO
PODARKEOPSIS HELGOLANDICA																								PODAHELG
POECILOCHAETUS SERPENS				+	+		+		+		+	+	+		+	+	+		+					+ POECSERP
POLYDORA SPEC.			+															+	+					POLYDORA
POLYNOE KINBERGI																					+			POLYKINB
PONTOCRATES ALTAMARINUS																								PONTALTA
PONTOPHILUS BISPINOSUS			+																					PONTBISP
PRIONOSPIO CIRRIFERA													+			+								PRIOCIRR
PROCESSA EDULIS CRASSIPES																			+					PROCEDCR
PROCESSA NOUVELI HOLTHUISI																								PROCNOHO
PROCESSA PARVA				+																				PROCPARV
PSEUDOCUMA LONGICORNIS						+							+											PSEULONG
ROXANIA UTRICULUS																								ROXAUTRI
SABELLA PENICILLUS																								SABEPENI
SCALIBREGMA INFLATUM																						+		SCALINFL
SCOLELEPIS BONNIERI																								SCOLBONN
SCOLOPLOS ARMIGER				+	+						+											+	+	SCOLARMI
SEMIERYCINA NITIDA																								SEMINITI
SIGALION MATHILDAE				+	+						+													SIGAMATH
SPIO FILICORNIS											+		+								+		+	+ SPIOFILI
SPIOPHANES BOMBYX	+		+	+	+	+					+	+	+				+	+	+			+		+ SPIOBOMB
SPIOPHANES KROEYERI		+																						SPIOKROE
SPISULA ELLIPTICA																			+					SPISELLI
SPISULA SOLIDA																								SPISSOLI
SPISULA SUBTRUNCATA			+					+																SPISSUBT
SPISULA SPEC. JUV.										+														SPISSPEC
STHENELAIS LIMICOLA		+		+	+		+							+	+		+		+	+	+	+	+	STHELIMI
SYLLIDAE																								SYLLIDAE
SYNCHELIDIUM HAPLOCHELES																								SYNCHAPL
SYNCHELIDIUM MACULATUM					+																	+	+	SYNCMACU
SYNELMIS KLATTI		+		+					+	+											+		+	SYNEKLAT
TELLIMYA FERUGINOSA									+		+	+		+			+			+				TELLFERU
TELLINA FABULA					+	+					+												+	+ TELLFABU
TELLINA PYGMAEA																								TELLPYGM
TELLINA TENUIS																								TELLTENU
THARYX KILLARIENSIS																								THARKILL
THIA SCUTELLATA																								THIASCUT
THRACIA CONVEXA																								THRACONV
THRACIA PHASEOLINA									+	+	+						+						+	+ THRAPHAS
THYASIRA FLEXUOSA	+			+	+					+	+				+						+	+	+	THYAFLEX
TRACHYTHYONE ELONGATA			+															+						TRACELON
TRAVISIA FORBESII																								TRAVFORB

Appendix-1 Biomonitoring 2001 (+=presence)

	Oyster Ground																							
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
Species name																									***Code***
TRIDONTA TRIANGULARIS																									TRIDTRIA
TURBELLARIA														+											TURBELLA
TURBONILLA PUSILLA																				+					TURBPUSI
UPOGEBIA DELTAURA			+				+											+	+						UPOGDELT
UPOGEBIA STELLATA															+										UPOGSTEL
UROTHOE BREVICORNIS																								+	UROTBREV
UROTHOE POSEIDONIS									+															+	UROTPOSE
VITREOLINA ANTIFLEXA																						+			VITRANTI

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area																										
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Species name																											***Code***
ABRA ALBA	+			+	+							+	+														ABRAALBA
ABRA PRISMATICA																											ABRAPRIS
ACANTHOCARDIA ECHINATA																											ACANECHI
ACIDOSTOMA OBESUM				+																							ACIDOBES
ACROCNIDA BRACHIATA																											ACROBRAC
ALTENAEUM DAWSONI																											ALTEDAWS
AMPELISCA BREVICORNIS																											AMPEBREV
AMPELISCA TENUICORNIS																											AMPETENU
AMPHARETE FINMARCHICA																											AMPHFINM
AMPHILOCHUS SPEC.																											AMPHILSP
AMPHIOXUS LANCEOLATUS				+		+		+				+									+						AMPHLANC
AMPHIURA CHIAJEI					+							+	+		+												AMPHCHIA
AMPHIURA FILIFORMIS																											AMPHFILI
ANTHOZOA				+	+																						ANTHOZOA
AONIDES PAUCIBRANCHIATA																											AONIPAUC
APHELOCHAETA MARIONI																											APHEMARI
APHERUSA BISPINOSA																											APHERBIS
APHERUSA OVALIPES												+															APHEOVAL
APHERUSA SPEC.																											APHESPEC
APHRODITE ACULEATA																											APHRACUL
APLACOPHORA																											APLACOPH
ARCTICA ISLANDICA JUV.																											ARCTISLA
ARICIDEA MINUTA										+		+	+			+		+	+	+					+		ARICMINU
ASTERIAS RUBENS							+																				ASTERUBE
ASTROPECTEN IRREGULARIS																											ASTRIRRE
ATYLUS FALCATUS							+																				ATYLFALC
ATYLUS SWAMMERDAMI	+																					+					ATYLSWAM
BATHYPOREIA ELEGANS	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+				+		+	+		+		BATHELEG
BATHYPOREIA GUILLIAMSONIANA	+	+			+			+	+	+		+				+		+		+	+	+	+		+		BATHGUIL
BIVALVE INDET.																											BIVAINDE
BRISSOPSIS LYRIFERA																											BRISLYRI
CALLIANASSA SPEC. JUV.	+		+																								CALLJUVE
CALLIANASSA SUBTERRANEA	+																										CALLSUBT
CALLIANASSA TYRRHENA																											CALLTYRR
CAPITELLA CAPITATA																											CAPICAPI
CAPRELLIDAE			+				+																				CAPRELLI
CERIANTHUS LLOYDII																											CERILLOY
CHAETOPTERUS VARIOPEDATUS																											CHAEVARI
CHAETOZONE SETOSA	+	+	+	+	+		+	+			+			+						+							CHAESETO
CHAMELEA STRIATULA												+															CHAMSTRI
CHAMELEA SPEC. JUV.																											CHAMSPEC
CHONE DUNERI																											CHONDUNE
CORBULA GIBBA	+			+		+																					CORBGIBB
COROPHIUM INSIDIOSUM	+				+																						COROINSI
CORYSTES CASSIVELAUNUS																											CORYCASS
CRANGON CRANGON																											CRANCRAN
CUCUMARIA FRONDOSA																											CUCUFRON
CULTELLUS PELLUCIDUS																											CULTPELL
CYLICHNA CYLINDRACEA			+																								CYLICYLI
DIASTYLIS BRADYI	+	+	+		+																						DIASBRAD

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area																									
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Species name																											***Code***
DIPLOCIRRUS GLAUCUS																											DIPLGLAU
DONAX VITTATUS									+	+		+	+	+	+			+			+					+	DONAVITT
DOSINIA EXOLETA																											DOSIEXOL
DOSINIA LUPINUS					+																						DOSILUPI
EBALIA CRANCHII																											EBALCRAN
ECHINOCARDIUM CORDATUM		+		+			+	+				+			+							+		+		ECHICORD
ECHINOCYAMUS PUSILLUS	+			+	+						+										+						ECHIPUSI
EDWARDSIA CLAPAREDII																											EDWACLAP
ENSIS AMERICANUS			+																				+				ENSIAMER
ENSIS ARCUATUS						+																					ENSIARCU
ENSIS ENSIS																											ENSIENSI
ENSIS PHAXOIDES																											ENSIPHAX
ETEONE BARBATA																											ETEOBARB
ETEONE LONGA		+																					+		+		ETEOLONG
EUDORELLA TRUNCATULA																											EUDOTRUN
EUDORELLOPSIS DEFORMIS																											EUDODEFO
EUMIDA SANGUINEA	+	+	+		+																		+				EUMISANG
EUSPIRA CATENA																											EUSPCATE
EUSPIRA NITIDA	+			+	+	+	+			+		+		+					+				+		+		EUSPNITI
EUZONUS FLABELLIGERUS																									+		EUZOFLAB
EXOGONE HEBES																											EXOGHEBE
GOULDIA MINIMA																											GOULMINI
GARI COSTULATA																											GARICOST
GARI FERVENSIS																											GARIFERV
GATTYANA CIRROSA																											GATTCIRR
GLYCERA LAPIDUM																				+							GLYCLAPI
GLYCERA ROUXI										+																	GLYCROUX
GLYCERA SPEC. JUV.																			+		+						GLYCSPEC
GLYCINDE NORDMANNI																											GLYCNORD
GOLFINGIA ELONGATA																											GOLFELON
GOLFINGIA PROCERA																											GOLFPROC
GOLFINGIA VULGARIS																											GOLFVULG
GONIADA MACULATA	+	+	+								+	+	+	+													GONIMACU
GONIADELLA BOBRETZKII																											GONIBOBR
GYPTIS CAPENSIS								+																			GYPTCAPE
HARMOTHOE GLABRA																											HARMGLAB
HARMOTHOE IMBRICATA																											HARMIMBR
HARMOTHOE LJUNGMANI																							+				HARMLJUN
HARMOTHOE LUNULATA												+															HARMLUNU
HARMOTHOE SPEC. JUV.	+																										HARMSPEC
HARPINIA ANTENNARIA													+														HARPANTE
HETEROMASTUS FILIFORMIS																											HETEFILI
HIATELLA ARCTICA																											HIATARCT
HIPPOMEDON DENTICULATUS																											HIPPDENT
HYALA VITREA																											HYALVITR
HYPERIIDAE SPEC.																											HYPERIID
IONE THORACICA																											IONETHOR
IPHIMEDIA OBESA																											IPHIOBES
IPHINOE TRISPINOSA	+			+																							IPHITRIS
KELLIA SUBORBICULARIS																											KELLSUBO

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area																									
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Species name																											***Code***
LANICE CONCHILEGA	+																			+			+				LANICONC
LANICE SPEC. JUV.																				+							LANIJUVE
LEMBOS LONGIPES																											LEMBLONG
LEPTON SQUAMOSUM																											LEPTSQUA
LEUCOTHOE INCISA	+		+	+	+			+															+	+			LEUCINCI
LEVINSENIA GRACILIS																											LEVIGRAC
LIOCARCINUS SPEC. JUV.																											LIOCSPEC
LUMBRINERIS FRAGILIS																											LUMBFRAG
LUMBRINERIS LATREILLI																											LUMBLATR
LYSILLA LOVENI																											LYSILOVE
MACOMA BALTHICA																											MACOBALT
MACTRA CORALLINA																											MACTCORA
MAGELONA ALLENI																											MAGEALLE
MAGELONA MIRABILIS	+	+	+	+	+		+	+	+	+	+	+	+	+	+		+		+	+							MAGEMIRA
MEDIOMASTUS FRAGILIS																											MEDIFRAG
MEGALUROPUS AGILIS					+				+	+				+	+			+	+	+	+		+		+	+	MEGAAGIL
MELITA OBTUSATA							+																				MELITOBTU
MICROPROTOPUS MACULATUS	+																										MICRMACU
MODIOLUS SPEC. JUV.																											MODISPEC
MONTACUTA TENELLA																											MONTTENE
MYA TRUNCATA																											MYATRUNC
MYRIOCHELE DANIELSSENI																											MYRIHEER
MYSELLA BIDENTATA		+		+		+							+														MYSEBIDE
MYSIA UNDATA																											MYSIUNDA
NEMATODA						+	+														+						NEMATODA
NEMERTINI	+	+	+	+	+		+	+	+	+				+							+	+			+		NEMERTIN
NEPHTYS ASSIMILIS													+														NEPHASSI
NEPHTYS CAECA			+										+						+						+	+	NEPHCAEC
NEPHTYS CIRROSA		+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	NEPHCIRR
NEPHTYS HOMBERGII			+	+																				+			NEPHHOMB
NEPHTYS INCISA																											NEPHINCI
NEPHTYS SPEC. JUV.			+	+							+	+	+	+											+		NEPHSPEC
NEREIS LONGISSIMA																											NERELONG
NOTOMASTUS LATERICEUS	+			+							+			+													NOTOLATE
NUCULA NITIDOSA											+																NUCUNITI
NUCULA TENUIS																											NUCUTENU
ODOSTOMIA SPEC.																											ODOSSPEC
OLIGOCHAETA																											OLIGOCHA
OPHELIA LIMACINA		+																							+		OPHELIMA
OPHELINA ACUMINATA																											OPHEACUM
OPHIODROMUS FLEXUOSUS																											OPHIFLEX
OPHIURA ALBIDA	+														+												OPHIALBI
OPHIURA TEXTURATA			+																								OPHITEXT
OPHIURA SPEC. JUV.				+	+		+				+					+											OPHISPEC
ORBINIA SERTULATA																											ORBISERT
ORCHOMENE HUMILIS																											ORCHHUMI
ORCHOMENE NANA			+	+			+															+					ORCHNANA
ORCHOMENE SPEC. JUV.																											ORCHSPEC
OWENIA FUSIFORMIS					+																						OWENFUSI
PARAONIS FULGENS										+							+									+	PARAFULG

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area																									
	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	OR	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Species name																										***Code***
PECTINARIA AURICOMA																										PECTAURI
PECTINARIA KORENI																										PECTKORE
PERIOCULODES LONGIMANUS	+			+	+			+						+												PERILONG
PHOLOE MINUTA				+										+	+											PHOLMINU
PHORONIDA	+			+	+					+												+	+			PHORONID
PHYLLODOCE GROENLANDICA																										PHYLGROE
PHYLLODOCE MACULATA					+																					PHYLMACU
PHYLLODOCE ROSEA																										PHYLROSE
PHYLLODOCIDAE																										PHYLLODO
PODARKEOPSIS HELGOLANDICA				+																						PODAHELG
POECILOCHAETUS SERPENS	+	+	+		+			+																		POECSERP
POLYDORA SPEC.																										POLYDORA
POLYNOE KINBERGI																										POLYKINB
PONTOCRATES ALTAMARINUS	+																									PONTALTA
PONTOPHILUS BISPINOSUS																										PONTBISP
PRIONOSPIO CIRRIFERA																										PRIOCIRR
PROCESSA EDULIS CRASSIPES																										PROCEDCR
PROCESSA NOUVELI HOLTHUISI																										PROCNOHO
PROCESSA PARVA																										PROCPARV
PSEUDOCUMA LONGICORNIS	+			+	+	+		+	+	+							+	+	+		+				+	PSEULONG
ROXANIA UTRICULUS																										ROXAUTRI
SABELLA PENICILLUS																										SABEPENI
SCALIBREGMA INFLATUM																										SCALINFL
SCOLELEPIS BONNIERI			+					+	+		+	+				+				+	+		+		+	SCOLBONN
SCOLOPLOS ARMIGER		+	+	+	+		+	+	+	+	+	+	+	+					+				+			SCOLARMI
SEMIERYCINA NITIDA																										SEMINITI
SIGALION MATHILDAE				+	+			+																		SIGAMATH
SPIO FILICORNIS			+	+			+	+		+				+		+	+	+	+	+		+			+	SPIOFILI
SPIOPHANES BOMBYX	+	+	+	+	+	+	+	+		+	+	+		+	+			+		+	+		+	+	+	SPIOBOMB
SPIOPHANES KROEYERI																										SPIOKROE
SPISULA ELLIPTICA										+																SPISELLI
SPISULA SOLIDA																								+		SPISSOLI
SPISULA SUBTRUNCATA		+					+																			SPISSUBT
SPISULA SPEC. JUV.																										SPISSPEC
STHENELAIS LIMICOLA														+												STHELIMI
SYLLIDAE																					+					SYLLIDAE
SYNCHELIDIUM HAPLOCHELES					+																					SYNCHAPL
SYNCHELIDIUM MACULATUM		+		+			+			+				+												SYNCMACU
SYNELMIS KLATTI																										SYNEKLAT
TELLIMYA FERUGINOSA	+	+		+	+	+	+							+	+											TELLFERU
TELLINA FABULA	+	+	+	+	+		+	+	+		+	+	+	+												TELLFABU
TELLINA PYGMAEA																										TELLPYGM
TELLINA TENUIS						+																				TELLTENU
THARYX KILLARIENSIS																										THARKILL
THIA SCUTELLATA						+									+						+		+			THIASCUT
THRACIA CONVEXA																										THRACONV
THRACIA PHASEOLINA	+	+			+																					THRAPHAS
THYASIRA FLEXUOSA												+														THYAFLEX
TRACHYTHYONE ELONGATA																										TRACELON
TRAVISIA FORBESII																									+	TRAVFORB

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area																									
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Species name																											***Code***
TRIDONTA TRIANGULARIS						+																					TRIDTRIA
TURBELLARIA																											TURBELLA
TURBONILLA PUSILLA											+																TURBPUSI
UPOGEBIA DELTAURA																											UPOGDELT
UPOGEBIA STELLATA																											UPOGSTEL
UROTHOE BREVICORNIS						+	+	+	+		+	+		+	+	+		+							+		UROTBREV
UROTHOE POSEIDONIS	+	+			+	+	+	+	+	+		+	+	+	+	+	+		+			+		+	+		UROTPOSE
VITREOLINA ANTIFLEXA																											VITRANTI

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area										Coastal area															
	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	
	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Species name																										***Code***
ABRA ALBA																								+		ABRAALBA
ABRA PRISMATICA																										ABRAPRIS
ACANTHOCARDIA ECHINATA																										ACANECHI
ACIDOSTOMA OBESUM																										ACIDOBES
ACROCNIDA BRACHIATA																										ACROBRAC
ALTENAEUM DAWSONI																										ALTEDAWS
AMPELISCA BREVICORNIS																										AMPEBREV
AMPELISCA TENUICORNIS																										AMPETENU
AMPHARETE FINMARCHICA																										AMPHFINM
AMPHILOCHUS SPEC.																										AMPHILSP
AMPHIOXUS LANCEOLATUS			+																							AMPHLANC
AMPHIURA CHIAJEI																										AMPHCHIA
AMPHIURA FILIFORMIS																										AMPHFILI
ANTHOZOA																										ANTHOZOA
AONIDES PAUCIBRANCHIATA																										AONIPAUC
APHELOCHAETA MARIONI																										APHEMARI
APHERUSA BISPINOSA																										APHERBIS
APHERUSA OVALIPES																										APHEOVAL
APHERUSA SPEC.																										APHESPEC
APHRODITE ACULEATA																										APHRACUL
APLACOPHORA																										APLACOPH
ARCTICA ISLANDICA JUV.																										ARCTISLA
ARICIDEA MINUTA					+	+		+		+																ARICMINU
ASTERIAS RUBENS																										ASTERUBE
ASTROPECTEN IRREGULARIS																										ASTRIRRE
ATYLUS FALCATUS													+													ATYLFALC
ATYLUS SWAMMERDAMI							+											+								ATYLSWAM
BATHYPOREIA ELEGANS			+	+	+	+	+	+	+		+	+			+	+		+		+		+			+	BATHELEG
BATHYPOREIA GUILLIAMSONIANA	+		+	+	+		+	+			+	+			+	+		+				+	+		+	BATHGUIL
BIVALVE INDET.																										BIVAINDE
BRISSOPSIS LYRIFERA																										BRISLYRI
CALLIANASSA SPEC. JUV.			+				+																			CALLJUVE
CALLIANASSA SUBTERRANEA																										CALLSUBT
CALLIANASSA TYRRHENA							+																			CALLTYRR
CAPITELLA CAPITATA											+		+	+		+	+	+						+		CAPICAPI
CAPRELLIDAE														+					+							CAPRELLI
CERIANTHUS LLOYDII																										CERILLOY
CHAETOPTERUS VARIOPEDATUS																										CHAEVARI
CHAETOZONE SETOSA					+		+				+		+			+								+	+	CHAESETO
CHAMELEA STRIATULA				+																						CHAMSTRI
CHAMELEA SPEC. JUV.																										CHAMSPEC
CHONE DUNERI																										CHONDUNE
CORBULA GIBBA																										CORBGIBB
COROPHIUM INSIDIOSUM																										COROINSI
CORYSTES CASSIVELAUNUS																						+				CORYCASS
CRANGON CRANGON														+												CRANCRAN
CUCUMARIA FRONDOSA																										CUCUFRON
CULTELLUS PELLUCIDUS																										CULTPELL
CYLICHNA CYLINDRACEA																										CYLICYLI
DIASTYLIS BRADYI											+			+												DIASBRAD

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	
	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Species name																										***Code***
DIPLOCIRRUS GLAUCUS																										DIPLGLAU
DONAX VITTATUS					+			+				+			+			+	+							DONAVITT
DOSINIA EXOLETA																										DOSIEXOL
DOSINIA LUPINUS																										DOSILUPI
EBALIA CRANCHII																										EBALCRAN
ECHINOCARDIUM CORDATUM		+				+	+					+	+	+		+		+	+	+	+					ECHICORD
ECHINOCYAMUS PUSILLUS	+		+																							ECHIPUSI
EDWARDSIA CLAPAREDII																										EDWACLAP
ENSIS AMERICANUS	+										+		+	+	+	+				+		+		+	+	ENSIAMER
ENSIS ARCUATUS																										ENSIARCU
ENSIS ENSIS																										ENSIENSI
ENSIS PHAXOIDES																										ENSIPHAX
ETEONE BARBATA																										ETEOBARB
ETEONE LONGA				+		+	+		+		+										+					ETEOLONG
EUDORELLA TRUNCATULA																										EUDOTRUN
EUDORELLOPSIS DEFORMIS																										EUDODEFO
EUMIDA SANGUINEA	+		+				+							+												EUMISANG
EUSPIRA CATENA																		+								EUSPCATE
EUSPIRA NITIDA	+		+	+	+	+		+	+	+			+						+	+	+				+	EUSPNITI
EUZONUS FLABELLIGERUS																										EUZOFLAB
EXOGONE HEBES							+																			EXOGHEBE
GOULDIA MINIMA																										GOULMINI
GARI COSTULATA																										GARICOST
GARI FERVENSIS																										GARIFERV
GATTYANA CIRROSA																										GATTCIRR
GLYCERA LAPIDUM																										GLYCLAPI
GLYCERA ROUXI																										GLYCROUX
GLYCERA SPEC. JUV.									+	+																GLYCSPEC
GLYCINDE NORDMANNI																										GLYCNORD
GOLFINGIA ELONGATA																										GOLFELON
GOLFINGIA PROCERA																										GOLFPROC
GOLFINGIA VULGARIS																										GOLFVULG
GONIADA MACULATA				+																						GONIMACU
GONIADELLA BOBRETZKII																										GONIBOBR
GYPTIS CAPENSIS				+																						GYPTCAPE
HARMOTHOE GLABRA																										HARMGLAB
HARMOTHOE IMBRICATA	+																									HARMIMBR
HARMOTHOE LJUNGMANI																										HARMLJUN
HARMOTHOE LUNULATA														+	+					+						HARMLUNU
HARMOTHOE SPEC. JUV.			+										+	+												HARMSPEC
HARPINIA ANTENNARIA																										HARPANTE
HETEROMASTUS FILIFORMIS	+																									HETEFILI
HIATELLA ARCTICA																										HIATARCT
HIPPOMEDON DENTICULATUS																										HIPPDENT
HYALA VITREA				+																						HYALVITR
HYPERIIDAE SPEC.																										HYPERIID
IONE THORACICA																										IONETHOR
IPHIMEDIA OBESA																										IPHIOBES
IPHINOE TRISPINOSA							+																			IPHITRIS
KELLIA SUBORBICULARIS																										KELLSUBO

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	
	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Species name																										***Code***
LANICE CONCHILEGA			+	+			+		+					+					+	+						LANICONC
LANICE SPEC. JUV.																										LANIJUVE
LEMBOS LONGIPES			+																							LEMBLONG
LEPTON SQUAMOSUM																										LEPTSQUA
LEUCOTHOE INCISA							+		+																	LEUCINCI
LEVINSENIA GRACILIS																										LEVIGRAC
LIOCARCINUS SPEC. JUV.																										LIOCSPEC
LUMBRINERIS FRAGILIS																										LUMBFRAG
LUMBRINERIS LATREILLI																										LUMBLATR
LYSILLA LOVENI																										LYSILOVE
MACOMA BALTHICA												+		+		+	+									MACOBALT
MACTRA CORALLINA		+																								MACTCORA
MAGELONA ALLENI																										MAGEALLE
MAGELONA MIRABILIS	+	+		+							+	+		+	+	+	+		+	+		+			+	MAGEMIRA
MEDIOMASTUS FRAGILIS																										MEDIFRAG
MEGALUROPUS AGILIS		+				+	+	+	+																	MEGAAGIL
MELITA OBTUSATA							+																			MELITOBTU
MICROPROTOPUS MACULATUS																										MICRMACU
MODIOLUS SPEC. JUV.																										MODISPEC
MONTACUTA TENELLA																										MONTTENE
MYA TRUNCATA							+																			MYATRUNC
MYRIOCHELE DANIELSSENI																										MYRIHEER
MYSELLA BIDENTATA														+		+			+		+	+		+	+	MYSEBIDE
MYSIA UNDATA																										MYSIUNDA
NEMATODA																										NEMATODA
NEMERTINI		+	+	+			+		+		+		+	+	+				+	+	+				+	NEMERTIN
NEPHTYS ASSIMILIS				+					+																	NEPHASSI
NEPHTYS CAECA	+								+		+		+									+				NEPHCAEC
NEPHTYS CIRROSA	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	NEPHCIRR
NEPHTYS HOMBERGII		+										+	+	+	+	+			+	+		+		+	+	NEPHHOMB
NEPHTYS INCISA																										NEPHINCI
NEPHTYS SPEC. JUV.		+					+					+	+					+	+	+		+		+	+	NEPHSPEC
NEREIS LONGISSIMA													+						+					+		NERELONG
NOTOMASTUS LATERICEUS							+																	+	+	NOTOLATE
NUCULA NITIDOSA																										NUCUNITI
NUCULA TENUIS																										NUCUTENU
ODOSTOMIA SPEC.																										ODOSSPEC
OLIGOCHAETA																								+	+	OLIGOCHA
OPHELIA LIMACINA											+															OPHELIMA
OPHELINA ACUMINATA			+																							OPHEACUM
OPHIODROMUS FLEXUOSUS																										OPHIFLEX
OPHIURA ALBIDA			+		+		+														+			+	+	OPHIALBI
OPHIURA TEXTURATA																			+		+					OPHITEXT
OPHIURA SPEC. JUV.	+							+																		OPHISPEC
ORBINIA SERTULATA																										ORBISERT
ORCHOMENE HUMILIS																										ORCHHUMI
ORCHOMENE NANA			+										+		+			+	+	+						ORCHNANA
ORCHOMENE SPEC. JUV.																										ORCHSPEC
OWENIA FUSIFORMIS																									+	OWENFUSI
PARAONIS FULGENS			+																							PARAFULG

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area									Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	
	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Species name																										***Code***
PECTINARIA AURICOMA																										PECTAURI
PECTINARIA KORENI													+													PECTKORE
PERIOCULODES LONGIMANUS				+			+																			PERILONG
PHOLOE MINUTA				+																						PHOLMINU
PHORONIDA	+		+				+																			PHORONID
PHYLLODOCE GROENLANDICA													+		+									+		PHYLGROE
PHYLLODOCE MACULATA																										PHYLMACU
PHYLLODOCE ROSEA							+																			PHYLROSE
PHYLLODOCIDAE																+										PHYLLODO
PODARKEOPSIS HELGOLANDICA																										PODAHELG
POECILOCHAETUS SERPENS	+						+				+															POECSERP
POLYDORA SPEC.																										POLYDORA
POLYNOE KINBERGI																										POLYKINB
PONTOCRATES ALTAMARINUS										+	+	+	+													PONTALTA
PONTOPHILUS BISPINOSUS																										PONTBISP
PRIONOSPIO CIRRIFERA																										PRIOCIRR
PROCESSA EDULIS CRASSIPES																										PROCEDCR
PROCESSA NOUVELI HOLTHUISI			+																							PROCNOHO
PROCESSA PARVA							+																			PROCPARV
PSEUDOCUMA LONGICORNIS		+		+		+	+	+	+																	PSEULONG
ROXANIA UTRICULUS																										ROXAUTRI
SABELLA PENICILLUS																										SABEPENI
SCALIBREGMA INFLATUM																										SCALINFL
SCOLELEPIS BONNIERI		+		+				+	+		+				+							+			+	SCOLBONN
SCOLOPLOS ARMIGER			+	+		+	+	+			+				+	+				+	+	+		+		SCOLARMI
SEMIERYCINA NITIDA																										SEMINITI
SIGALION MATHILDAE																										SIGAMATH
SPIO FILICORNIS				+	+			+	+		+	+	+	+	+	+				+				+	+	SPIOFILI
SPIOPHANES BOMBYX	+			+			+	+	+				+	+		+		+						+	+	SPIOBOMB
SPIOPHANES KROEYERI																										SPIOKROE
SPISULA ELLIPTICA																										SPISELLI
SPISULA SOLIDA										+		+														SPISSOLI
SPISULA SUBTRUNCATA										+		+	+		+				+	+						SPISSUBT
SPISULA SPEC. JUV.							+																			SPISSPEC
STHENELAIS LIMICOLA			+																+					+		STHELIMI
SYLLIDAE										+																SYLLIDAE
SYNCHELIDIUM HAPLOCHELES																										SYNCHAPL
SYNCHELIDIUM MACULATUM				+			+	+	+			+		+	+	+	+	+								SYNCMACU
SYNELMIS KLATTI																										SYNEKLAT
TELLIMYA FERUGINOSA												+	+		+	+		+	+	+	+					TELLFERU
TELLINA FABULA				+						+	+	+	+	+	+	+		+	+	+				+	+	TELLFABU
TELLINA PYGMAEA		+					+																			TELLPYGM
TELLINA TENUIS																										TELLTENU
THARYX KILLARIENSIS																										THARKILL
THIA SCUTELLATA							+		+																	THIASCUT
THRACIA CONVEXA																										THRACONV
THRACIA PHASEOLINA			+																							THRAPHAS
THYASIRA FLEXUOSA																										THYAFLEX
TRACHYTHYONE ELONGATA																										TRACELON
TRAVISIA FORBESII			+			+																				TRAVFORB

Appendix-1 Biomonitoring 2001 (+=presence)

	Offshore area										Coastal area															
	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	CoA	
	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Species name																										***Code***
TRIDONTA TRIANGULARIS			+																							TRIDTRIA
TURBELLARIA																										TURBELLA
TURBONILLA PUSILLA																										TURBPUSI
UPOGEBIA DELTAURA																										UPOGDELT
UPOGEBIA STELLATA																										UPOGSTEL
UROTHOE BREVICORNIS				+		+	+		+		+	+	+	+		+	+	+	+	+	+			+	+	UROTBREV
UROTHOE POSEIDONIS	+			+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+		+	+	UROTPOSE
VITREOLINA ANTIFLEXA																										VITRANTI

station	DOG 1		DOG 2		DOG 3		DOG 4		DOG 5	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc	12.8	0.004			25.7	0.008				
batheleg	641.5	0.192	115.5	0.035	295.1	0.089	1295.8	0.389	12.8	0.004
bathguil	12.8	0.004			25.7	0.008	128.3	0.038	12.8	0.004
caprelli			12.8	0.004						
coroinsi	38.5	0.012	25.7	0.008	102.6	0.031	38.5	0.012		
corycass					12.8	0.387	12.8	1.311		
diasbrad	12.8	0.004							12.8	0.004
ebalcran							12.8	0.647		
harpante									25.7	0.008
hyperiid									25.7	0.008
iphiobes							12.8	0.004		
iphitris					12.8	0.004	12.8	0.004		
leucinci	12.8	0.004			25.7	0.008			51.3	0.015
liocspec	12.8	0.004								
megaagil	12.8	0.004								
orchhumi							25.7	0.008		
orchnana									12.8	0.004
perilong	12.8	0.004	115.5	0.035	38.5	0.012	51.3	0.015		
procparv									12.8	0.106
pseulong	12.8	0.004					25.7	0.008		
syncmacu	25.7	0.008					12.8	0.004		
urotpose	513.2	0.154	128.3	0.038	154.0	0.046	128.3	0.038	12.8	0.004
Echinodermata										
acrobrac	12.8	0.506	64.2	5.732			12.8	1.103	77.0	6.222
amphchia			25.7	0.003	230.9	1.115			346.4	0.251
echicord	12.8	9.057							25.7	16.855
echipusi					38.5	0.015	12.8	0.000		
ophialbi			12.8	0.465						
ophispec	295.1	0.010	64.2	0.001						
ophitext	12.8	2.539								
Mollusca										
arctisla	12.8	0.001	25.7	0.001	12.8	0.000			12.8	0.001
chamspec					12.8	0.000				
chamstri	25.7	0.005							12.8	0.038
cultpell			25.7	0.317						
cylicyli			12.8	0.030						
dosiexol					12.8	0.019				
dosilupi			12.8	0.078						
ensiensi					12.8	0.607			12.8	0.657
ensiphax	25.7	0.489	12.8	0.354						
euspniti	89.8	0.295	12.8	0.034	38.5	0.079	25.7	0.107	25.7	0.004
gariferv	12.8	0.001					12.8	0.001		
goulmini									25.7	0.000
mactcora	12.8	0.006					12.8	0.002	12.8	0.003
mysebide	12.8	0.001	38.5	0.006	77.0	0.008	25.7	0.002	77.0	0.010
mysiunda	12.8	0.004								
tellfabu	102.6	0.546	243.8	0.053			102.6	0.033	179.6	0.236
tellferr	25.7	0.030							25.7	0.021
thraphas	51.3	0.005			25.7	0.001			12.8	0.001
thyaflex									51.3	0.010
turbpusi									12.8	0.018
vitranti					12.8	0.038				
Polychaeta										
chaeseto	25.7	0.012	25.7	0.020	25.7	0.012	12.8	0.012	51.3	0.042
eteolong			12.8	0.010						
gonimacu	51.3	0.115	25.7	0.151	25.7	0.134	51.3	0.046	12.8	0.010
gyptcape					25.7	0.012			25.7	0.022
harmspec					12.8	0.005	25.7	0.024		
laniconc					51.3	1.028	38.5	2.075		
magealle	12.8	0.208	12.8	0.010			12.8	0.039		
magemira	115.5	0.051	474.7	0.083	102.6	0.046	141.1	0.097	243.8	0.203
nephhomb							38.5	0.036	12.8	0.154
nephspec			12.8	0.010	77.0	0.091	12.8	0.012	38.5	0.032

nerelong					12.8	1.458				
notolate							51.3	0.987	51.3	2.827
ophelima			12.8	0.125	51.3	0.022	25.7	0.024		
orbisert					12.8	0.239				
owenfusi									25.7	0.234
pectkore					12.8	0.503				
pholminu			12.8	0.010	25.7	0.012	12.8	0.012	51.3	0.042
phylrose							12.8	0.012		
scolarmi									25.7	0.022
scolbonn	25.7	0.207					12.8	0.012		
sigamath			12.8	0.544					12.8	0.434
spiobomb	25.7	0.012	51.3	0.042	77.0	0.029	243.8	0.220	89.8	0.075
spiofili							12.8	0.012		
sthelimi			12.8	0.173	12.8	0.323			38.5	0.239
Miscellaneous taxa										
nemertin	25.7	0.008	38.5	0.006	64.2	0.051	64.2	0.164	25.7	0.040
edwaclap	12.8	0.014					12.8	0.062	12.8	0.042
cerilloy									12.8	4.787
amphlanc			12.8	0.034						
phoronid			25.7	0.003	38.5	0.019	128.3	0.152	64.2	0.010
sum	2335.1	14.6	1693.6	8.9	1796.2	6.6	2873.9	7.9	1886.0	40.7
diversity										
nspc	35		31		35		37		41	
SH-W	2.51		2.69		3.06		2.39		3.13	
Simp	0.14		0.11		0.06		0.22		0.07	

station	**DOG 6**		**DOG 7**		**OYS 1**		**OYS 2**		**OYS 3**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev	12.8	0.004	12.8	0.004			12.8	0.004	25.7	0.008
atylfalc	12.8	0.004	12.8	0.004						
atylswam			38.5	0.012						
batheleg	603.0	0.181	538.9	0.162			25.7	0.008	25.7	0.008
bathguil	141.1	0.042	102.6	0.031	25.7	0.008	12.8	0.004		
calljuve							38.5	0.720	12.8	0.004
callsubt					12.8	0.450	12.8	1.120		
coroinsi	64.2	0.019	77.0	0.023						
diasbrad			25.7	0.008	25.7	0.008			25.7	0.008
ebalcran					12.8	0.010			12.8	0.004
eudodefo									12.8	0.004
harpante					64.2	0.019	25.7	0.008	25.7	0.008
iphitris							12.8	0.004		
orchnana	12.8	0.004								
orchspec			12.8	0.004						
perilong	64.2	0.019	12.8	0.004						
pseulong			25.7	0.008						
upogspju					12.8	0.035				
urotbrev							12.8	0.004		
urotpose	77.0	0.023	12.8	0.004					25.7	0.008
Echinodermata										
acrobrac	25.7	0.349								
amphchia	269.4	0.011	192.5	0.011						
amphfili					1988.7	8.214	590.2	0.217	2052.8	8.891
asterube					12.8	0.003				
brislyri					12.8	7.502			12.8	10.451
echicord	25.7	5.071					12.8	8.411	12.8	3.949
ophispec							12.8	0.000		

Mollusca										
abraalba					12.8	0.002			25.7	0.008
aplacoph									25.7	0.063
arctisla	12.8	0.003								
chamstri			25.7	0.002						
corbgibb					423.4	0.148	230.9	0.054		
cultpell	12.8	0.001	12.8	0.040						
cylicyli					38.5	0.007			38.5	0.019
dosiexol	12.8	0.014	12.8	0.014						
ensiensi	12.8	11.872								
gariferv	12.8	0.000	12.8	0.001						
hyalvitr	12.8	0.001								
kellsubo									38.5	0.002
monttene					25.7	0.020			38.5	0.007
mysebide	89.8	0.006	12.8	0.001					795.5	0.098
nucuniti	12.8	0.002	12.8	0.007	38.5	0.014				
nucutenu									12.8	0.038
roxautri									12.8	0.006
tellfabu	51.3	0.001	38.5	0.046						
tellferr	12.8	0.006					38.5	0.021		
telltenu	25.7	0.004								
thyaflex					38.5	0.005			12.8	0.037
tridtria					12.8	0.000				
Polychaeta										
aonipauc					38.5	0.010				
aphemari									12.8	0.007
chaeseto	12.8	0.007	64.2	0.051	12.8	0.003	12.8	0.025		
chaevari					12.8	1.160				
diplglau	12.8	0.005			51.3	0.102			25.7	0.014
gattcirr					12.8	0.725				
gonimacu	25.7	0.186	12.8	0.112	12.8	0.003	12.8	0.025	25.7	0.014
gyptcape			12.8	0.010						
harmspec			12.8	0.010						
lysilove					12.8	0.698				
magemira	230.9	0.108	154.0	0.203			282.3	0.559	12.8	0.007
medifrag					25.7	0.007			25.7	0.014
nephcaec							12.8	0.911		
nephcirr	25.7	0.058	25.7	0.020						
nephspec							12.8	0.025	25.7	0.014
notolate									38.5	1.394
ophiflex							38.5	0.708		
owenfusi	320.8	0.986	38.5	0.073						
pectauri	12.8	0.007							38.5	0.217
pectkore									12.8	0.203
pholminu			25.7	0.020	128.3	0.034	51.3	0.102	115.5	0.061
phylspec	12.8	0.007					12.8	0.025		
poecserp	12.8	0.005					25.7	0.051		
polydora			12.8	0.010						
polykinb					12.8	0.103			12.8	0.098
scolarmi					12.8	0.003			25.7	0.014
scolbonn	25.7	0.146	12.8	0.010						
sigamath	64.2	1.194	12.8	0.113						
spiobomb	77.0	0.036	77.0	0.061			89.8	0.178		
spiofili			25.7	0.020			12.8	0.025		
sthelimi			12.8	0.044	12.8	0.069				
Miscellaneous taxa										
turbella									12.8	0.005
nemertin	12.8	0.008	12.8	0.011	12.8	0.014	12.8	0.062	25.7	0.102

edwaclap							12.8	0.017	12.8	0.082
phoronid	154.0	0.034	38.5	0.007	115.5	0.030	795.5	3.397	38.5	0.010
sum	2578.8	20.6	1744.9	1.5	3233.2	19.5	2424.9	17.3	3707.9	26.1
diversity										
nspc	36		35		30		27		36	
SH-W	2.78		2.74		1.67		2.15		1.77	
Simp	0.10		0.12		0.40		0.19		0.35	

station	**OYS 4**		**OYS 5**		**OYS 6**		**OYS 7**		**OYS 8**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev					25.7	0.008			12.8	0.004
ampetenu	12.8	0.004	12.8	0.004			38.5	0.012		
amphilsp	12.8	0.004								
batheleg	89.8	0.027			12.8	0.004			51.3	0.015
bathguil	38.5	0.012								
calljuve			64.2	0.797					12.8	0.012
callsubt			89.8	3.474					179.6	8.475
caprelli	12.8	0.004			25.7	0.008				
corycass	12.8	2.367			12.8	6.285				
diasbrad					12.8	0.004				
ebalcran					12.8	0.037				
eudotrun			25.7	0.008			25.7	0.008		
harpante	12.8	0.004	77.0	0.023	102.6	0.031	12.8	0.004		
hippdent	12.8	0.004								
hyperiid			12.8	0.004						
ionethor			25.7	0.008					25.7	0.006
iphitris									25.7	0.008
leucinci	25.7	0.008							51.3	0.015
megaagil					12.8	0.004				
orchnana			12.8	0.004			64.2	0.019		
perilong	12.8	0.004								
syncmacu	12.8	0.004								
urotpose	12.8	0.004			12.8	0.004				
Echinodermata										
acrobrac	12.8	0.264								
amphfili	307.9	0.045	1180.4	3.251	2617.3	15.252	538.9	0.835	102.6	0.043
astrirre					12.8	0.011				
ophialbi			12.8	0.037					166.8	0.128
Mollusca										
abraalba	102.6	0.025	307.9	0.083			12.8	0.005	141.1	0.015
aplacoph							25.7	0.032		
chamstri	25.7	0.634			77.0	0.059				
corbgibb			295.1	0.081					102.6	0.023
cultpell	12.8	0.025					12.8	0.014	12.8	0.014
cylicyli					12.8	0.049	12.8	0.001		
dosiexol					25.7	0.647				
dosilupi	12.8	0.031			12.8	0.003				
euspniti									51.3	0.042
hyalvitr			12.8	0.013						
kellsubo	25.7	0.001								
mactcora			25.7	0.009						
modispec	12.8	0.001								
monttene							12.8	0.002		
myatrunc			12.8	51.320						
mysebide	89.8	0.012	166.8	0.016	1706.4	0.182	51.3	0.006	38.5	0.002
mysiunda							12.8	0.025		
nucuniti	64.2	0.244	25.7	0.011			12.8	0.004	64.2	0.255
tellfabu	397.7	0.048			12.8	0.001	12.8	0.001		
thraphas	64.2	0.026								
thyaflex	179.6	0.246								
vitranti					25.7	0.049				

Polychaeta										
amphfinm									12.8	0.000
aonipauc			12.8	0.017						
aphracul			12.8	0.017	12.8	0.007				
chaeseto	12.8	0.008					12.8	0.003		
chaevari			25.7	6.964						
diplglau	12.8	0.008			12.8	0.007			51.3	0.034
eumisang					25.7	0.100				
gonimacu	102.6	0.068	12.8	0.017	12.8	0.007	12.8	0.003	38.5	0.030
gyptcape			38.5	0.051					38.5	0.025
harmlunu					25.7	0.014				
laniconc					77.0	1.089				
lumbfrag			12.8	0.017						
lumblatr			25.7	0.034						
magealle	38.5	0.191	12.8	0.108						
magemira	718.5	0.474								
medifrag					51.3	0.027			269.4	0.178
myriheer									25.7	0.017
nephcaec			12.8	0.298			25.7	6.322		
nephcirr							12.8	0.019		
nephhomb	25.7	1.324	12.8	0.017	51.3	0.550				
notolate	89.8	7.894	12.8	0.112						
opheacum			12.8	0.017					12.8	0.034
ophiflex			25.7	0.088	12.8	0.042				
owenfusi	38.5	0.025								
paragrac							12.8	0.003		
pectkore					12.8	0.317				
pholminu			51.3	0.068	359.2	0.190	12.8	0.003		
phylmacu									12.8	0.008
poecserp	12.8	0.008	25.7	0.034						
polydora									25.7	0.017
sabepeni			12.8	0.061						
scolarmi	154.0	0.102			89.8	0.362			12.8	0.008
spiobomb	218.1	0.178			102.6	0.054	12.8	0.003	38.5	0.025
spiofili							12.8	0.003		
sthelimi	25.7	0.361	12.8	0.017	12.8	0.066				
syneklat	12.8	0.008			12.8	0.007				
Miscellaneous taxa										
nemertin	38.5	0.325							25.7	0.110
anthozoa									12.8	10.051
edwaclap					12.8	0.310				
phoronid	89.8	0.041	25.7	0.014	38.5	0.044	128.3	0.044	295.1	0.144
golfproc			12.8	0.517						
golfvulg			12.8	0.014						
sum	3169.0	15.8	2745.6	67.6	5658.0	25.8	1090.6	7.4	1911.7	20.2
diversity										
nspc	40		37		35		23		29	
SH-W	2.89		2.32		1.74		2.08		2.88	
Simp	0.09		0.21		0.31		0.26		0.07	

station	**OYS 9**		**OYS 10**		**OYS 11**		**OYS 12**		**OYS 13**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev									12.8	0.004
ampetenu			12.8	0.004	12.8	0.004				
aphespec							12.8	0.004		
batheleg	51.3	0.015			12.8	0.004				
calljuve	25.7	0.017	25.7	0.090	38.5	0.090	12.8	0.015		
callsubt	64.2	1.357	12.8	1.468	77.0	3.237	51.3	2.496		
diasbrad					38.5	0.012				
ebalcran	12.8	0.010							12.8	0.008
eudotrun	12.8	0.004	12.8	0.004					38.5	0.012

harpante	77.0	0.023	51.3	0.015			38.5	0.012	77.0	0.023
ionethor					25.7	0.008	38.5	0.012		
leucinci	12.8	0.004			38.5	0.012				
perilong					25.7	0.008				
upogdelt					12.8	2.148	12.8	2.234		
urotbrev	12.8	0.004								
urotpose	25.7	0.008								
Echinodermata										
amphfili	179.6	0.296	1193.2	4.173	102.6	0.359	141.1	0.331	975.1	5.123
cucufron							12.8	0.351		
echicord	12.8	9.737					12.8	0.283	12.8	2.783
echipusi	38.5	0.003								
ophialbi					77.0	0.853				
Mollusca										
abraalba	77.0	0.002			744.1	0.170			25.7	0.159
abrapris									12.8	0.032
altedaws							38.5	0.002		
chamstri	115.5	0.009					25.7	0.001	12.8	0.001
corbgibb	410.6	0.173	12.8	0.001	500.4	0.369	487.5	0.188	12.8	0.002
cultpell									25.7	0.147
cylicyli			38.5	0.010	12.8	0.002			12.8	0.017
euspniti	38.5	0.416			77.0	0.131				
hyalvitr					12.8	0.013	320.8	0.321		
mactcora					12.8	0.031				
mysebide	25.7	0.004	692.8	0.081	25.7	0.002			397.7	0.047
nucuniti	359.2	0.774	141.1	0.089	25.7	0.006			64.2	0.068
semíniti					12.8	0.001				
spiselli							12.8	0.001		
tellferr									12.8	0.011
thraconv			12.8	0.004						
thraphas	12.8	0.003			12.8	0.009				
thyaflex			12.8	0.001					89.8	0.009
Polychaeta										
chaeseto	38.5	0.020	38.5	0.054	12.8	0.007			38.5	0.015
chaevari			12.8	1.782			12.8	10.475		
gattcirr			12.8	1.172					51.3	0.061
gonimacu					12.8	0.012	12.8	0.014		
gyptcape					38.5	0.020				
harmlunu							25.7	0.193		
lumbfrag							12.8	0.014		
lumblatr					51.3	0.097				
magealle	12.8	0.056								
magemira	179.6	0.088	12.8	0.005					38.5	0.015
medifrag			12.8	0.005	38.5	0.020	38.5	0.041		
myriheer	12.8	0.007	12.8	0.005	51.3	0.027				
nephcaec							12.8	0.737		
nephhomb			25.7	0.124			12.8	0.102	12.8	0.244
nephspec							12.8	0.014		
notolate			12.8	0.740	12.8	0.007				
ophiflex	38.5	0.198					12.8	0.014		
parafulg							25.7	0.027		
pectkore	25.7	0.014	12.8	0.005			12.8	0.014		
poecserp							12.8	0.014		
pholminu			77.0	0.030					128.3	0.051
phylmacu	12.8	0.007								
polydora					12.8	0.007	12.8	0.014		
scolarmi			12.8	0.029	25.7	0.014			12.8	0.005
sigamath	38.5	0.142								
spiobomb	51.3	0.027			25.7	0.014	12.8	0.014		
spiofili	12.8	0.007					12.8	0.014	12.8	0.005
spiokroe	12.8	0.071					25.7	0.027		

sthelimi			12.8	0.042			12.8	0.014	12.8	0.025
syneklat							25.7	0.027		
Miscellaneous taxa										
turbella			12.8	0.007			38.5	0.022	12.8	0.003
nemertin	38.5	0.158			25.7	0.056			12.8	0.006
anthozoa			12.8	5.253						
edwaclap									25.7	0.037
phoronid	25.7	0.019	51.3	0.015	564.5	0.166			64.2	0.022
golfelon					12.8	0.039	77.0	0.952		
sum	2065.6	13.8	2553.2	15.5	2784.1	8.0	1642.2	19.5	2219.6	8.9
diversity										
nspc	32		27		34		34		28	
SH-W	2.81		1.80		2.47		2.63		2.16	
Simp	0.09		0.29		0.15		0.14		0.23	

station	**OYS 14**		**OYS 15**		**OYS 16**		**OYS 17**		**OYS 18**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev			12.8	0.004			12.8	0.004		
ampetenu	38.5	0.012	12.8	0.004	25.7	0.008				
batheleg									77.0	0.023
bathguil									25.7	0.008
calljuve	12.8	0.010	38.5	0.123	12.8	0.004	12.8	0.004	89.8	0.058
callsubt			51.3	1.821	51.3	3.578				
diasbrad					12.8	0.004				
eudodefo							77.0	0.023		
eudotrun			12.8	0.004	77.0	0.023	12.8	0.004	12.8	0.004
harpante	38.5	0.012	77.0	0.023	51.3	0.015	25.7	0.008	12.8	0.004
ionethor			25.7	0.008						
leucinci									12.8	0.004
melitobtu	64.2	0.019								
perilong					12.8	0.004	38.5	0.012		
pseulong							12.8	0.004		
syncmacu									12.8	0.004
upogdelt			12.8	1.341						
upogstel			25.7	1.593	12.8	0.117				
urotpose							141.1	0.042	12.8	0.004
Echinodermata										
amphfili	12.8	0.004	243.8	0.417	564.5	0.911	89.8	0.034	641.5	0.792
echicord					25.7	0.340	12.8	10.451		
echipusi							12.8	0.001		
ophialbi									64.2	0.001
ophispec							64.2	0.001		
Mollusca										
abraalba	25.7	0.004	25.7	0.014						
arctisla	12.8	0.000					12.8	0.000		
chamstri	12.8	0.001								
corbgibb	256.6	0.175	25.7	0.011	1064.9	0.253			564.5	0.138
cultpell					12.8	0.016	12.8	0.000	12.8	0.204
cylicyli									25.7	0.003
euspniti									51.3	35.608
garicost							12.8	0.001		
gariferv							12.8	1.566		
hiatarct			12.8	0.204						
hyalvitr	474.7	0.475	12.8	0.013	64.2	0.064				
kellsubo	12.8	0.001								
leptsqua					12.8	0.003				
monttene			12.8	0.011						
mysebide	12.8	0.001			38.5	0.006			64.2	0.011
nucuniti	51.3	0.040	12.8	0.004	25.7	0.006				
odosspec	12.8	0.006								
tellferr					25.7	0.019				

thraconv	12.8	5.697								
thraphas									38.5	0.028
Polychaeta										
aphemari			12.8	0.012						
chaeseto	25.7	0.020	77.0	0.071			38.5	0.025	25.7	0.020
chaevari			38.5	8.259	12.8	1.208				
diplglau							51.3	0.034	12.8	0.010
eteobarb									25.7	0.020
eumisang	12.8	0.010	12.8	0.012						
exoghebe			12.8	0.012						
gattcirr			25.7	0.400	12.8	0.249				
glycnord			12.8	0.047						
gonimacu	12.8	0.010	25.7	0.024					38.5	0.030
gyptcape	12.8	0.010								
harmglab									12.8	0.024
harmspec									12.8	0.010
lumbfrag	25.7	0.054								
lumblatr			12.8	0.012						
magemira							128.3	0.108	436.2	0.594
medifrag			12.8	0.012	12.8	0.003				
nephcaec	25.7	0.513								
nephcirr									38.5	0.030
nephhomb	12.8	0.032	25.7	0.100			38.5	0.115		
nephspec			12.8	0.012	12.8	0.003				
notolate	51.3	2.520	77.0	0.984	12.8	0.019				
opheacum			25.7	0.134						
opheliju							12.8	0.008		
ophiflex	38.5	0.193	12.8	0.098	38.5	0.335	12.8	0.071	12.8	0.032
parafulg	51.3	0.041	38.5	0.036						
pectauri							38.5	0.025		
pectkore	12.8	0.010								
pholminu					12.8	0.003	12.8	0.008		
poecserp	25.7	0.020	12.8	0.012			64.2	0.095	384.9	0.450
scolarmi									12.8	0.010
scolbonn									12.8	0.276
sigamath							12.8	0.120		
spiobomb	25.7	0.020					64.2	0.042	205.3	0.659
spiokroe	25.7	0.020								
spiofili					51.3	0.014				
sthelimi					12.8	0.044	12.8	0.044		
syneklat			12.8	0.012			12.8	0.008		
tharkill	12.8	0.010								
Miscellaneous taxa										
nemertin							77.0	0.071	102.6	0.206
cerilloy	12.8	11.214								
phoronid	77.0	0.036	51.3	0.014	12.8	0.020	51.3	0.020	269.4	0.112
golfvulg	25.7	0.200	25.7	2.295						
sum	1539.6	21.6	1154.7	18.5	2283.7	7.3	1193.2	13.0	3323.0	39.4
diversity										
nspc	33		36		27		31		31	
SH-W	2.70		3.15		1.92		3.09		2.58	
Simp	0.13		0.06		0.28		0.05		0.11	

station	**OYS 19**		**OYS 20**		**OYS 21**		**OYS 22**		**OYS 23**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev							12.8	0.004		
ampetenu	12.8	0.004							12.8	0.004
calljuve	12.8	0.006	77.0	0.210	12.8	0.015				
callsubt	12.8	0.289	38.5	3.747	154.0	6.693	25.7	0.718	12.8	0.206
diasbrad	12.8	0.004	25.7	0.008			12.8	0.004		
eudodefo							12.8	0.004		

eudotrun			25.7	0.008						
harpante	12.8	0.004	89.8	0.027	12.8	0.004	154.0	0.046	141.1	0.042
ionethor			25.7	0.008	25.7	0.008	51.3	0.015		
leucinci					12.8	0.004				
orchnana					12.8	0.004			77.0	0.023
pontbisp					12.8	0.046				
procparv							12.8	0.214		
syncmacu									12.8	0.004
upogdelt					77.0	22.503				
Echinodermata										
amphfili	513.2	1.669	474.7	2.689	590.2	2.107	372.1	0.968	898.1	10.242
asterube							12.8	0.003		
astrirre	12.8	0.013								
brislyri	12.8	7.215								
cucuelon					12.8	0.739				
cucufron	12.8	0.618								
echicord					12.8	3.249				
ophialbi					38.5	0.297				
ophispec	25.7	0.000							25.7	0.003
Mollusca										
abraalba	25.7	0.002	25.7	0.006	436.2	0.079	12.8	0.000	25.7	0.017
chamstri			12.8	0.000			12.8	0.000	12.8	0.000
corbgibb	38.5	0.007	12.8	0.014	89.8	0.031	51.3	0.009		
cultpell			12.8	0.004			12.8	0.004		
cylicyli	38.5	0.007	38.5	0.042	25.7	0.036	25.7	0.034	12.8	0.000
dosiexol									12.8	0.370
dosilupi			51.3	0.019					12.8	0.007
euspniti					77.0	0.039	12.8	0.002	25.7	0.049
hyalvitr	12.8	0.013			25.7	0.026				
kellsubo			12.8	0.001					25.7	0.006
mactcora			64.2	0.002						
mysebide	115.5	0.015	128.3	0.013	51.3	0.006	64.2	0.006	641.5	0.089
nucuniti					25.7	0.070	89.8	0.096	38.5	0.016
spissubt					38.5	0.070				
tellfabu									51.3	0.001
thyaflex	12.8	0.001					38.5	0.043	179.6	0.087
Polychaeta										
chaeseto							12.8	0.019		
diplglau			12.8	0.034					154.0	0.061
glycspec							12.8	0.019		
gonimacu									38.5	0.015
gyptcape			25.7	0.068	25.7	0.020	12.8	0.019	12.8	0.005
lumblatr					38.5	0.110				
magealle			12.8	0.034						
magemira			12.8	0.034			25.7	0.037	38.5	0.015
medifrag					51.3	0.008				
myriheer					975.1	0.014				
nephhomb	38.5	0.349	51.3	0.337	38.5	0.191	38.5	0.274	25.7	0.552
nephspec					38.5	0.007			12.8	0.005
nerelong					12.8	0.081				
notolate			38.5	0.877	51.3	1.800				
ophiflex	12.8	0.100			12.8	0.029				
owenfusi					12.8	0.036				
pectkore	25.7	0.073								
pholminu	25.7	0.027					12.8	0.019	115.5	0.046
poecserp							64.2	0.093	12.8	0.005
polydora					102.6	0.042				
scolarmi							38.5	0.056	64.2	0.102
sigamath							12.8	0.244	12.8	0.393
spiobomb	12.8	0.014			12.8	0.003	12.8	0.019	64.2	0.025
spiokroe			12.8	0.034						

sthelimi			12.8	0.034			25.7	0.037	12.8	0.054
syneklat			38.5	0.102			12.8	0.019		
Miscellaneous taxa										
nemertin					12.8	0.107			12.8	0.017
anthozoa							12.8	10.249		
edwaclap	12.8	0.056							12.8	0.011
phoronid	38.5	0.015	38.5	0.019	603.0	0.637	38.5	0.030	64.2	0.061
golfvulg					12.8	0.156				
sum	1052.1	10.6	1372.8	8.4	3746.4	39.3	1321.5	13.3	2873.9	12.5
diversity										
nspc	23		26		35		32		33	
SH-W	2.14		2.58		2.50		2.82		2.45	
Simp	0.25		0.14		0.13		0.10		0.16	

station	**OYS 24**		**OYS 25**		**OYS 26**		**OYS 27**		**OYS 28**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampebrev							12.8	0.004		
ampetenu					51.3	0.015				
batheleg	51.3	0.015					38.5	0.012	12.8	0.004
bathguil	12.8	0.004							38.5	0.012
calljuve			38.5	0.060						
callsubt	128.3	2.023	38.5	1.007	38.5	1.007				
ebalcran			25.7	0.008						
eudodefo							12.8	0.004	12.8	0.004
harpante			230.9	0.069	12.8	0.004	77.0	0.023	25.7	0.008
ionethor			25.7	0.008						
iphitris									12.8	0.004
leucinci					12.8	0.004				
orchnana			12.8	0.004						
perilong					12.8	0.004				
pseulong	12.8	0.004								
upogspju			12.8	0.013						
urotpose							12.8	0.004		
Echinodermata										
amphfili	12.8	0.032	1167.5	0.663	1026.4	2.082	243.8	0.122	12.8	0.004
astrirre			25.7	0.022			25.7	0.674		
echicord	25.7	6.733	38.5	0.130			38.5	0.503		
ophispec			12.8	0.000			64.2	0.001	12.8	0.000
Mollusca										
abraalba	372.1	2.284	12.8	0.005	1809.0	0.311			51.3	0.002
arctisla	12.8	0.003								
chamstri							64.2	0.002	51.3	0.004
corbgibb	12.8	0.096	89.8	0.020	564.5	0.160	3297.3	0.880	64.2	0.019
cultpell	12.8	0.320	12.8	0.169						
cylicyli					12.8	0.030				
dosilupi							12.8	0.010		
euspniti	12.8	0.004			12.8	0.064	12.8	0.002	12.8	0.004
hyalvitr	12.8	0.013	38.5	0.038			12.8	0.013		
leptsqua					12.8	0.020				
mysebide			25.7	0.002	51.3	0.005				
nucuniti			12.8	0.002	25.7	0.035	77.0	0.020	64.2	0.106
spissubt					38.5	0.012				
spisspec									12.8	0.001
tellfabu	38.5	0.002								
tellferr							12.8	0.002		
thraphas							12.8	0.012	12.8	0.003
thyaflex									12.8	0.045
Polychaeta										
chaeseto			25.7	0.024			12.8	0.007		
chondune			12.8	0.012						
eumisang	12.8	0.029								

glycspec					12.8	0.005	12.8	0.007		
gonimacu	38.5	0.030			12.8	0.014	25.7	0.076	25.7	0.098
gyptcape	12.8	0.020					12.8	0.007		
lumbfrag					12.8	0.015				
lumblatr	89.8	0.254	12.8	0.037	51.3	0.024				
magemira							205.3	0.125	744.1	0.547
myriheer					38.5	0.015				
nephcaec							12.8	1.755		
nephcirr							12.8	0.007	12.8	0.012
nephhomb			38.5	0.025			12.8	0.034		
nephinci					64.2	0.708				
nephspec					12.8	0.005	25.7	0.014		
nerelong	12.8	0.085			12.8	0.105				
notolate	449.1	21.542	12.8	0.217						
ophiflex					12.8	0.034			12.8	0.037
owenfusi					12.8	0.049				
pectauri			38.5	0.037						
pectkore			12.8	0.012						
pholminu	12.8	0.014	12.8	0.012	12.8	0.005	12.8	0.007		
phylgroe							12.8	0.378		
poecserp			12.8	0.012			12.8	0.047		
spiobomb	51.3	0.041								
sthelimi			12.8	0.012						
syneklat							12.8	0.007	12.8	0.012
Miscellaneous taxa										
nemertin	25.7	0.130					12.8	0.025	25.7	0.040
anthozoa			12.8	0.144					12.8	9.109
edwaclap	12.8	0.054								
phoronid			38.5	0.019	166.8	0.132	51.3	0.054	12.8	0.007
golfproc					38.5	0.307				
golfvulg					25.7	0.098				
sum	1437.0	33.7	2065.6	2.8	4169.8	5.9	4477.7	4.8	1270.2	10.5
diversity										
nspc	23		29		28		32		23	
SH-W	2.23		1.94		1.82		1.33		1.87	
Simp	0.17		0.33		0.27		0.55		0.35	

station	**OYS 29**		**OYS 30**		**OYS 31**		**OYS 32**		**OYS 33**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu	12.8	0.004			12.8	0.004				
batheleg	12.8	0.004	12.8	0.004	12.8	0.004	12.8	0.004		
calljuve					77.0	0.160			25.7	0.033
callsubt			102.6	6.788	64.2	1.080	25.7	2.229	38.5	1.214
corycass	12.8	10.034								
diasbrad	12.8	0.004								

harpante					154.0	0.046			89.8	0.027
lemblong									12.8	0.004
orchnana					12.8	0.004				
perilong					25.7	0.008			12.8	0.004
pseulong					38.5	0.012				
upogstel									12.8	0.597
Echinodermata										
amphfili	141.1	0.031			2027.1	6.326	25.7	0.008	667.2	1.854
echicord	25.7	19.878	89.8	6.544			12.8	2.366		
ophispec									25.7	0.000
Mollusca										
abraalba	372.1	0.174	38.5	0.056	12.8	0.000	12.8	0.000		
acanechi	12.8	11.417								
arctisla	12.8	0.001								
chamstri	38.5	0.001							12.8	0.759
corbgibb	12.8	0.002			128.3	0.069	782.6	4.608	51.3	0.009
cultpell	12.8	0.111								
cylicyli	12.8	0.089			38.5	0.019				
euspniti					25.7	0.112	12.8	0.354		
kellsubo	12.8	0.001								
mysebide	25.7	0.003			154.0	0.019			12.8	0.003
nucuniti	102.6	0.216	38.5	0.042	64.2	0.467			12.8	0.024
tellfabu	128.3	0.009								
tellferr	25.7	0.034	64.2	0.039			12.8	0.001		
thraphas	38.5	0.006								
thyaflex	230.9	0.226							38.5	0.002
Polychaeta										
aphemari									25.7	0.007
chaeseto							12.8	0.007	38.5	0.030
chaevari							38.5	7.467	12.8	12.412
diplglau	12.8	0.012	12.8	0.008	25.7	0.041				
gattcirr							38.5	0.174	12.8	0.642
gonimacu	25.7	0.024	12.8	0.008	38.5	0.022	12.8	0.007		
gyptcape			12.8	0.008	25.7	0.007				
laniconc									12.8	0.557
lumblatr			12.8	0.090	12.8	0.027				
magemira	320.8	0.212			38.5	0.008				
nephcaec	25.7	0.793			12.8	0.835				
nephcirr	25.7	0.046								
nephhomb	12.8	0.032	51.3	0.562					12.8	0.703
nephspec	12.8	0.012			25.7	0.007			12.8	0.003
nerelong					12.8	0.301				
notolate					12.8	0.234	25.7	0.825	12.8	0.301
opheacum									12.8	0.085
ophiflex					12.8	0.044	25.7	0.095		
parafulg									51.3	0.014
pectauri					12.8	0.420			25.7	0.029
pectkore									25.7	0.347
pholminu	25.7	0.024			102.6	0.027	12.8	0.007		
phylrose			12.8	0.008						
poecserp	12.8	0.032	12.8	0.008	12.8	0.003			12.8	0.003
priocirr					77.0	0.020				
scolarmi	128.3	0.269								
sigamath	12.8	0.286								
spiobomb	38.5	0.036	102.6	0.130	64.2	0.017				
spiofili	12.8	0.012			25.7	0.007				
sthelimi							12.8	0.046	12.8	0.058
Miscellaneous taxa										
turbella							12.8	0.014		
nemertin	25.7	0.200			12.8	0.023	25.7	1.561	12.8	0.014
anthozoa							12.8	1.866		

edwaclap	12.8	0.023								
phoronid	64.2	0.064	102.6	0.076	38.5	0.010	243.8	0.246	102.6	0.068
golfvulg							51.3	0.307	77.0	0.178
golfelon							12.8	0.083		
sum	2027.1	44.3	680.0	14.4	3412.8	10.4	1437.0	22.3	1488.3	20.0
diversity										
nspc	36		15		33		22		30	
SH-W	2.86		2.39		1.94		1.81		2.39	
Simp	0.09		0.09		0.36		0.32		0.21	

station	**OYS 34**		**OYS 35**		**OYS 36**		**OYS 37**		**OYS 38**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu			12.8	0.004						
apheoval									25.7	0.008
apherbis					25.7	0.008				
aphespec									12.8	0.004
batheleg			12.8	0.004					12.8	0.004
bathguil			25.7	0.008						
calljuve	64.2	0.275			38.5	0.179	25.7	0.010		
callsubt	154.0	11.141			51.3	2.340			38.5	2.866
corycass			12.8	12.217						
diasbrad									12.8	0.004
eudotrun	25.7	0.008	12.8	0.004	12.8	0.004	25.7	0.008		
harpante	25.7	0.008	166.8	0.050	38.5	0.012	51.3	0.015	12.8	0.004
ionethor	25.7	0.008			12.8	0.004				
iphitris									12.8	0.004
leucinci	12.8	0.004	12.8	0.004			12.8	0.004		
perilong	12.8	0.004								
procedcr							38.5	0.435		
upogdelt					12.8	1.721	12.8	2.817		
Echinodermata										
amphfili	38.5	0.088	154.0	0.144	89.8	1.180	320.8	0.555	12.8	0.001
cucuelon					12.8	2.845				
echicord							25.7	0.262	154.0	19.078
ophialbi					25.7	0.516				
Mollusca										
abraalba	1950.2	0.168			372.1	0.064				
altedaws							25.7	0.001		
chamstri							12.8	0.000		
corbgibb	25.7	0.009	384.9	0.183	77.0	0.017	423.4	0.132	12.8	0.001
cylicyli	12.8	0.004					12.8	0.017	25.7	0.343
dosilupi			25.7	0.069						
euspniti	25.7	0.038	12.8	0.064	25.7	0.017			12.8	0.047
hyalvitr							12.8	0.013		
leptsqua							38.5	0.046		
mysebide	25.7	0.005	25.7	0.003	38.5	0.005	38.5	0.005		
nucuniti	25.7	0.016	25.7	0.025	12.8	0.019			89.8	0.313
spiselli							12.8	0.000		
tellferr			51.3	0.041					51.3	0.015
thraphas			12.8	0.009						
turbpusi									12.8	0.018
Polychaeta										
chaeseto			25.7	0.014			25.7	0.014	12.8	0.010
chaevari							12.8	0.760		
diplglau			25.7	0.014	25.7	0.010				
exoghebe			12.8	0.007						
gattcirr							12.8	0.203		
glycspec							12.8	0.007		
gonimacu	12.8	0.014	25.7	0.063						

gyptcape	25.7	0.049			12.8	0.005				
lumblatr	38.5	0.032			12.8	0.005				
magealle			12.8	0.025						
magemira	12.8	0.005	154.0	0.090					25.7	0.020
medifrag	12.8	0.005			25.7	0.010	25.7	0.014		
myriheer					89.8	0.036	12.8	0.007		
nephassi					12.8	0.020				
nephhomb	25.7	0.030					38.5	0.388		
nephspec					38.5	0.015	12.8	0.007		
nerelong					25.7	0.064				
notolate	89.8	3.253			12.8	0.063				
ophiflex							25.7	0.174	12.8	0.010
orbisert							12.8	2.042		
parafulg							38.5	0.020		
pectauri							25.7	0.112		
pectkore			25.7	0.014	12.8	0.259	12.8	0.044		
pholminu									25.7	0.020
poecserp	12.8	0.005	12.8	0.014			12.8	0.007		
polydora					51.3	0.020	64.2	0.034		
priocirr	12.8	0.005								
spiobomb			141.1	0.075	12.8	0.005	25.7	0.014		
sthelimi			12.8	0.037			12.8	0.036	12.8	0.010
Miscellaneous taxa										
nemertin	12.8	0.056	25.7	0.102			12.8	0.079		
phoronid	307.9	0.168	141.1	0.149	282.3	0.149	115.5	0.081	12.8	0.005
golfvulg					25.7	0.097	89.8	1.016		
sum	2989.4	15.6	1565.3	13.5	1488.3	9.7	1693.6	9.6	603.0	22.8
diversity										
nspc	25		27		29		36		21	
SH-W	1.54		2.63		2.71		2.82		2.62	
Simp	0.44		0.10		0.11		0.11		0.09	

station	**OYS 39**		**OYS 40**		**OYS 41**		**OYS 42**		**OFF 1**	
Crustacea	N	B	N	B	N	B	N	B	N	B
ampetenu	38.5	0.012								
atylswam									12.8	0.004
batheleg			12.8	0.004			77.0	0.023	102.6	0.031
bathguil									51.3	0.015
calljuve									115.5	0.114
callsubt	12.8	0.362					12.8	0.229	25.7	0.905
coroinsi							25.7	0.008	25.7	0.008
corycass			25.7	1.674						
diasbrad									12.8	0.004
ebalcran	12.8	0.012								
eudodefo			51.3	0.015						
eudotrun	25.7	0.008								
harpante	115.5	0.035	89.8	0.027						
iphitris							12.8	0.004	51.3	0.015
leucinci									89.8	0.027
micrmacu									12.8	0.004
perilong					25.7	0.008			25.7	0.008
pontalta									12.8	0.004
pseulong									12.8	0.004
syncmacu			12.8	0.004	12.8	0.004				
urotbrev							38.5	0.012		
urotpose							77.0	0.023	12.8	0.004
Echinodermata										
acrobrac					64.2	2.123				
amphfili	1103.4	3.217	461.9	4.487	51.3	0.010				

echicord					12.8	6.142	12.8	0.424		
echipusi									12.8	0.001
ophialbi									89.8	0.003
ophispec					64.2	0.002				
Mollusca										
abraalba	25.7	0.008			38.5	0.003	12.8	0.000	25.7	0.112
abrapris					25.7	0.017				
aplacoph	12.8	0.003								
arctisla					25.7	0.001				
bivainde	12.8	0.007								
chamstri			25.7	1.237	12.8	0.000				
corbgibb	64.2	0.014	564.5	0.130			25.7	0.091	25.7	0.052
cultpell	25.7	0.112								
cylicyli	12.8	0.004	25.7	0.007						
dosilupi			12.8	0.010						
ensiensi							12.8	0.766		
euspniti			12.8	0.047	25.7	0.011	25.7	0.013	38.5	0.027
kellsubo					12.8	0.001				
mysebide	1141.9	0.131	102.6	0.011	166.8	0.022	25.7	0.002		
nucuniti	12.8	0.099	25.7	0.115	154.0	0.828	12.8	0.002		
tellfabu					154.0	0.003	25.7	0.162	25.7	0.003
tellferr									12.8	0.004
thraphas					25.7	0.587	38.5	0.027	12.8	0.009
thyaflex	12.8	0.001	12.8	0.001	192.5	0.197				
vitranti			38.5	0.033						
Polychaeta										
aphemari	12.8	0.014								
chaeseto	25.7	0.010	25.7	0.010			25.7	0.024	12.8	0.014
diplglau	12.8	0.005								
eumisang			12.8	0.025					51.3	0.056
gonibobr					12.8	0.008				
gonimacu	25.7	0.019	25.7	0.010	38.5	0.071	25.7	0.212	25.7	0.029
gyptcape					25.7	0.027				
harmspec									12.8	0.014
laniconc			25.7	0.684					51.3	5.181
lysilove	12.8	1.763								
magealle			12.8	0.005	25.7	0.229				
magemira	12.8	0.005	25.7	0.010	282.3	0.102	102.6	0.129	397.7	0.567
nephcaec					12.8	0.039				
nephhomb	38.5	0.784	38.5	0.352	25.7	0.154				
nephspec	12.8	0.005	38.5	0.015	12.8	0.014				
notolate									12.8	1.736
opheacum	12.8	0.093								
ophiflex			25.7	0.010						
owenfusi	12.8	0.005			12.8	0.014	12.8	0.012		
parafulg	12.8	0.005								
pectauri	25.7	0.010								
pectkore	282.3	2.506	12.8	0.005						
pholminu	269.4	0.107	38.5	0.015	12.8	0.014				
poecserp							38.5	0.024	12.8	0.014
polykinb	12.8	0.545								
scalinfl			12.8	0.046						
scolarmi			38.5	0.015	25.7	0.027				
spiobomb			38.5	0.129			64.2	0.059	128.3	0.141
spiofili	12.8	0.005			12.8	0.014	51.3	0.047		
sthelimi	12.8	0.049	51.3	0.210	25.7	0.163				
syneklat	38.5	0.015			12.8	0.014				

Miscellaneous taxa										
nemertin			12.8	0.008	25.7	0.017	25.7	0.285	64.2	0.282
phoronid	166.8	0.176	128.3	0.161	64.2	0.063	64.2	0.076	179.6	0.042
sum	3643.7	10.1	2040.0	9.5	1693.6	11.5	846.8	2.9	1757.7	9.6
diversity										
nspc	34		32		33		24		33	
SH-W	2.15		2.60		2.97		2.97		2.93	
Simp	0.20		0.14		0.07		0.05		0.08	
station	**OFF 2**		**OFF 3**		**OFF 4**		**OFF 5**		**OFF 6**	
Crustacea	N	B	N	B	N	B	N	B	N	B
acidobes					38.5	0.012				
batheleg	89.8	0.027	51.3	0.015	12.8	0.004	179.6	0.054	12.8	0.004
bathguil	12.8	0.004					51.3	0.015		
calljuve			38.5	0.835						
caprelli			12.8	0.004						
coroinsi							12.8	0.004		
diasbrad	12.8	0.004	25.7	0.008			12.8	0.004		
iphitris					25.7	0.008				
leucinci			77.0	0.023	12.8	0.004	12.8	0.004		
megaagil							12.8	0.004		
orchnana			12.8	0.004	25.7	0.008				
perilong					12.8	0.004	12.8	0.004		
pseulong					12.8	0.004	12.8	0.004	12.8	0.004
synchapl							12.8	0.004		
syncmacu	12.8	0.004			38.5	0.012				
thiascut									25.7	0.044
urotbrev									25.7	0.008
urotpose	141.1	0.042					38.5	0.012	102.6	0.031
Echinodermata										
amphchia							25.7	0.128		
echicord	12.8	11.200			333.6	22.536				
echipusi					12.8	0.002	12.8	0.002		
ophitext			12.8	0.032						
ophispec					12.8	0.002	25.7	0.005		
Mollusca										
abraalba					25.7	0.198	12.8	0.000		
corbgibb					102.6	0.214			25.7	0.012
cylicyli			12.8	0.060						
dosilupi							12.8	0.001		
ensiamer			25.7	85.830						
ensiarcu									12.8	4.918
euspniti					25.7	0.048	38.5	0.040	25.7	0.025
mysebide	25.7	0.005			25.7	0.004			12.8	0.001
spissubt	25.7	0.628								
tellfabu	205.3	4.550	500.4	8.526	166.8	0.183	64.2	0.339		
tellferr	179.6	0.106			577.4	0.183	25.7	0.005	25.7	0.005
telltenu									12.8	0.000
thraphas	12.8	0.009					12.8	0.009		
tridtria									115.5	0.013
Polychaeta										
chaeseto	77.0	0.142	38.5	0.085	25.7	0.022	38.5	0.029		
eteolong	102.6	0.190								
eumisang	166.8	0.031	141.1	0.313			12.8	0.010		
gonimacu	12.8	0.740	12.8	0.029						
magemira	2168.3	4.056	1398.5	2.806	205.3	0.176	230.9	0.361		
nephcaec			25.7	0.842						
nephcirr	12.8	0.024					12.8	0.171	25.7	0.301
nephhomb			12.8	1.636	12.8	4.210				

nephspec			12.8	0.029	25.7	0.022				
notolate					25.7	0.022				
ophelima	38.5	0.071								
owenfusi							12.8	0.010		
pholminu					25.7	0.022				
podahelg					25.7	0.022	25.7	0.019		
poecserp	192.5	0.745	12.8	0.029			25.7	0.019		
scolarmi	115.5	1.165	51.3	0.113	51.3	0.044	51.3	0.037		
scolbonn			12.8	0.743						
sigamath					12.8	0.549	12.8	0.600		
spiobomb	12.8	0.024	12.8	0.029	128.3	0.110	295.1	0.217	12.8	0.025
spiofili			102.6	0.227	12.8	0.012				
Miscellaneous taxa										
nematoda									64.2	0.007
nemertin	38.5	1.279	51.3	1.392	154.0	1.104	77.0	0.618		
anthozoa					12.8	2.470	12.8	4.053		
phoronid					102.6	0.017	38.5	0.007		
amphlanc					12.8	0.040			12.8	0.124
sum	3669.4	25.7	2655.8	104.2	2296.6	32.5	1437.0	7.0	526.0	5.6
diversity										
nspc	22		23		32		32		16	
SH-W	1.74		1.78		2.70		2.83		2.43	
Simp	0.36		0.32		0.11		0.09		0.10	

station	**OFF 7**		**OFF 8**		**OFF 9**		**OFF 10**		**OFF 11**	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc	12.8	0.004								
batheleg			115.5	0.035	89.8	0.027	115.5	0.035	269.4	0.081
bathguil			38.5	0.012	25.7	0.008	51.3	0.015		
caprelli	89.8	0.027								
leucinci			12.8	0.004						
megaagil					25.7	0.008	12.8	0.004		
melitobtu	590.2	0.177								
orchnana	923.8	0.277								
perilong			12.8	0.004						
pseulong			12.8	0.004	12.8	0.004	38.5	0.012		
syncmacu	12.8	0.004					12.8	0.004		
urotbrev	25.7	0.008	51.3	0.015	38.5	0.012			12.8	0.004
urotpose	192.5	0.058	641.5	0.192	64.2	0.019	718.5	0.216		
Echinodermata										
asterube	12.8	37.741								
echicord	89.8	22.389	38.5	0.156						
echipusi									25.7	0.002
ophispec	51.3	0.001							12.8	0.001
Mollusca										
donavitt					128.3	18.750	115.5	15.040		
euspniti	12.8	0.002					25.7	0.081		
nucuniti									38.5	0.339
spiselli							12.8	0.817		
spissubt	12.8	0.143								
tellfabu	102.6	0.637	179.6	7.305	12.8	0.011			51.3	0.008
tellferr	38.5	0.056								
turbpusi									51.3	0.045
Polychaeta										
aricminu							205.3	0.100		
chaeseto	102.6	0.169	25.7	0.030					12.8	0.010
glycroux							12.8	0.076		
gonimacu									12.8	0.066
gyptcape			12.8	0.015						

magemira	128.3	0.213	359.2	0.425	51.3	0.213	12.8	0.007	192.5	0.273
nephcirr	12.8	0.022	12.8	0.046	51.3	0.208	51.3	0.110	64.2	0.176
nephspec									12.8	0.010
notolate									12.8	0.200
parafulg							12.8	0.007		
poecserp			25.7	0.030						
scolarmi	89.8	0.264	12.8	0.015	12.8	0.053	12.8	0.007	12.8	0.010
scolbonn			25.7	0.655	12.8	0.186			12.8	0.010
sigamath			25.7	1.236						
spiobomb	25.7	0.042	397.7	0.755			166.8	0.339	64.2	0.047
spiofili	102.6	0.169	12.8	0.015			12.8	0.007		
Miscellaneous taxa										
nematoda	38.5	0.003								
nemertin	64.2	0.040	25.7	0.229	38.5	0.040	38.5	0.316		
phoronid							12.8	0.010		
amphlanc			12.8	0.040						
sum	2732.8	62.5	2052.8	11.3	564.5	19.5	1642.2	17.2	859.6	1.5
diversity										
nspc	22		21		13		19		16	
SH-W	2.26		2.13		2.30		2.03		2.17	
Simp	0.17		0.17		0.10		0.23		0.16	

station	**OFF 12**		**OFF 13**		**OFF 14**		**OFF 15**		**OFF 16**	
Crustacea	N	B	N	B	N	B	N	B	N	B
apheoval	12.8	0.004								
batheleg	154.0	0.046	38.5	0.012	102.6	0.031	12.8	0.004	89.8	0.027
bathguil	12.8	0.004							25.7	0.008
harpante			12.8	0.004						
megaagil					25.7	0.008	25.7	0.008		
perilong					12.8	0.004				
syncmacu					25.7	0.008				
thiascut							12.8	0.647		
urotbrev	51.3	0.015			38.5	0.012	128.3	0.038	12.8	0.004
urotpose	89.8	0.027	12.8	0.004	205.3	0.062	564.5	0.169	64.2	0.019
Echinodermata										
amphchia	25.7	0.001	51.3	0.005			12.8	0.002		
echicord	51.3	0.698					38.5	37.186		
ophialbi							25.7	0.038		
ophispec									12.8	0.000
Mollusca										
abraalba	12.8	0.000	12.8	0.000						
chamstri	25.7	0.011								
donavitt	51.3	0.071	12.8	3.123	12.8	0.013	12.8	0.006		
euspniti	25.7	0.098			51.3	0.052				
mysebide			12.8	0.001						
tellfabu	25.7	0.000	12.8	0.000	38.5	0.023				
tellferr					12.8	0.001	64.2	0.041		
thyaflex	38.5	0.004								
Polychaeta										
aricminu	38.5	0.047	25.7	0.008					25.7	0.015
chaeseto					12.8	0.007				
gonimacu	12.8	0.015	12.8	0.030	25.7	0.080				
harmlunu	12.8	0.015								
magemira	51.3	0.063	12.8	0.039	12.8	0.098	89.8	0.488		
nephassi			12.8	0.005						
nephcaec			12.8	0.305						
nephcirr	102.6	0.176	38.5	0.093	64.2	0.137	38.5	0.054	38.5	0.227
nephspec	25.7	0.030	64.2	0.022	51.3	0.115				
notolate					12.8	0.029				

pholminu					12.8	0.007	12.8	0.041		
scolarmi	77.0	0.339	38.5	0.135	12.8	0.029				
scolbonn	12.8	0.015							77.0	0.771
spiobomb	25.7	0.030			51.3	0.115	12.8	0.041		
spiofili					25.7	0.058			12.8	0.008
sthelimi					12.8	0.152				
Miscellaneous taxa										
nemertin					25.7	0.319				
amphlanc	12.8	0.011								
sum	949.4	1.8	384.9	3.8	846.8	1.4	1052.1	38.8	359.2	1.1
diversity										
nspc	23		16		22		14		9	
SH-W	2.85		2.57		2.69		1.72		1.96	
Simp	0.06		0.06		0.09		0.31		0.13	

station	**OFF 17**		**OFF 18**		**OFF 19**		**OFF 20**		**OFF 21**	
Crustacea	N	B	N	B	N	B	N	B	N	B
batheleg							12.8	0.004		
bathguil			12.8	0.004			25.7	0.008	12.8	0.004
megaagil			12.8	0.004	77.0	0.023	51.3	0.015	51.3	0.015
pseulong	12.8	0.004	38.5	0.012	38.5	0.012			38.5	0.012
thiascut									12.8	0.344
urotbrev			38.5	0.012						
urotpose	12.8	0.004			12.8	0.004				
Echinodermata										
echipusi									25.7	0.003
Mollusca										
donavitt			12.8	2.067					166.8	0.134
euspniti					12.8	0.009				
Polychaeta										
aricminu			38.5	0.063	38.5	0.042	141.1	0.139		
chaeseto							25.7	0.025		
glyclapi							12.8	0.315		
glycspec					12.8	0.015			12.8	0.015
laniconc							25.7	0.693		
magemira	12.8	0.008			25.7	0.127	12.8	0.076		
nephcaec					12.8	0.317				
nephcirr	12.8	0.224	12.8	0.117	12.8	0.024	38.5	0.273	77.0	0.357
parafulg	77.0	0.047								
scolarmi					12.8	0.100				
scolbonn							38.5	0.608	25.7	0.271
spiobomb			25.7	0.042			179.6	0.176	25.7	0.030
spiofili	51.3	0.032	38.5	0.063	25.7	0.030	89.8	0.088		
syllidae									25.7	0.029
Miscellaneous taxa										
nematoda									25.7	0.005
nemertin									25.7	0.034
amphlanc									12.8	0.008
sum	179.6	0.3	230.9	2.4	282.3	0.7	654.3	2.7	538.9	1.3
diversity										
nspc	6		9		11		12		14	
SH-W	1.48		2.08		2.18		2.10		2.28	
Simp	0.23		0.08		0.10		0.14		0.13	

station	**OFF 22**		**OFF 23**		**OFF 24**		**OFF 25**		**OFF 26**	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylswam	12.8	0.004								
batheleg	25.7	0.008	25.7	0.008			25.7	0.008		
bathguil	25.7	0.008	25.7	0.008			12.8	0.004		

leucinci			25.7	0.008	12.8	0.004				
megaagil			12.8	0.004			115.5	0.035	25.7	0.008
orchnana	12.8	0.004								
pseulong							51.3	0.015		
thiascut			12.8	0.117						
urotbrev							25.7	0.008		
urotpose	205.3	0.062			12.8	0.004	12.8	0.004		
Echinodermata										
echicord	64.2	19.630			12.8	13.669				
Mollusca										
donavitt									12.8	0.000
ensiamer			25.7	12.195						
euspniti			25.7	0.025			12.8	0.009		
spissoli					12.8	2.766				
Polychaeta										
aricminu							12.8	0.022		
eteolong			38.5	0.051			12.8	0.022		
eumisang			25.7	0.034						
harmljun			166.8	0.217			12.8	0.022		
laniconc			282.3	12.053						
nephcaec							25.7	0.423	12.8	0.633
nephcirr	51.3	0.196	102.6	0.874	51.3	0.200			25.7	0.051
nephhomb					12.8	0.247				
nephspec							12.8	0.022		
ophelima							12.8	0.078		
parafulg									12.8	0.010
scolarmi			12.8	0.017						
scolbonn			12.8	0.066			12.8	0.107		
spiobomb			12.8	0.017	25.7	0.073	25.7	0.044		
spiofili	12.8	0.010					89.8	0.156		
travforb							12.8	0.022		
Miscellaneous taxa										
nemertin	12.8	0.954					12.8	0.155		
phoronid	77.0	0.034	205.3	0.188						
sum	500.4	21.1	1013.6	25.9	141.1	17.0	500.4	1.3	89.8	0.7
diversity										
nspc	10		16		7		18		5	
SH-W	1.83		2.17		1.77		2.52		1.55	
Simp	0.21		0.15		0.13		0.09		0.10	

station	**OFF 27**		**OFF 28**		**OFF 29**		**OFF 30**		**OFF 31**	
Crustacea	N	B	N	B	N	B	N	B	N	B
batheleg					12.8	0.004	166.8	0.050	141.1	0.042
bathguil	51.3	0.015			38.5	0.012	89.8	0.027	38.5	0.012
calljuve					12.8	0.015				
lemblong					38.5	0.012				
megaagil			64.2	0.019						
orchnana					12.8	0.004				
perilong							25.7	0.008		
procnoho					12.8	0.300				
pseulong			25.7	0.008			12.8	0.004		
syncmacu							51.3	0.015		
urotbrev							25.7	0.008		
urotpose	89.8	0.027					384.9	0.115	51.3	0.015
Echinodermata										
echicord			12.8	6.664						
echipusi	12.8	0.001			218.1	0.142				
ophialbi					115.5	0.022			12.8	1.852
ophispec	25.7	0.000								

Mollusca										
chamstri							12.8	0.001		
donavitt									12.8	1.589
ensiamer	12.8	23.998								
euspniti	38.5	0.038			115.5	0.074	25.7	0.027	12.8	0.002
hyalvitr							12.8	0.002		
mactcora			12.8	0.031						
tellfabu							128.3	0.757		
tellpygm			12.8	0.023						
thraphas					64.2	0.042				
tridtria					141.1	0.012				
Polychaeta										
aricminu									25.7	0.012
chaeseto									12.8	0.005
eteolong							25.7	0.012		
eumisang	12.8	0.024			51.3	0.076				
gonimacu							25.7	0.120		
gyptcape							12.8	0.005		
harmimbr	12.8	0.383								
harmspec					38.5	0.056				
hetefili	12.8	0.024								
laniconc					397.7	13.425	12.8	0.491		
magemira	12.8	0.024	12.8	0.303			179.6	0.449		
nephassi							12.8	2.173		
nephcaec	12.8	0.342								
nephcirr	25.7	0.047	38.5	0.291	38.5	0.461	25.7	0.080	115.5	0.339
nephhomb			12.8	0.368						
nephspec			25.7	0.030						
opheacum					12.8	0.019				
parafulg					25.7	0.037				
pholminu							12.8	0.005		
poecserp	64.2	0.147								
scolarmi					12.8	0.019	25.7	0.124		
scolbonn			25.7	0.240			12.8	0.628		
spiobomb	25.7	0.047					25.7	0.012		
spiofili							12.8	0.005	25.7	0.010
sthelimi					12.8	0.019				
travforb					64.2	0.376				
Miscellaneous taxa										
nemertin			12.8	0.023	89.8	0.361	38.5	0.056		
phoronid	25.7	0.027			77.0	0.041				
amphlanc					12.8	0.322				
sum	436.2	25.1	256.6	8.0	1616.6	15.8	1360.0	5.3	449.1	3.9
diversity										
nspc	15.0		11		23		24		10	
SH-W	2.47		2.22		2.61		2.50		1.90	
Simp	0.08		0.08		0.10		0.12		0.17	

station	**OFF 32**		**OFF 33**		**OFF 34**		**OFF 35**		**OFF 36**	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylswam			12.8	0.004						
batheleg	25.7	0.008	25.7	0.008	179.6	0.054	25.7	0.008		
bathguil			12.8	0.004	12.8	0.004				
calljuve			12.8	0.012						
calltyrr			25.7	3.999						
iphitris			25.7	0.008						
leucinci			102.6	0.031			12.8	0.004		
megaagil	12.8	0.004	12.8	0.004	51.3	0.015	12.8	0.004		
melitobtu			12.8	0.004						

perilong			12.8	0.004						
procparv			12.8	0.252						
pseulong	12.8	0.004	12.8	0.004	12.8	0.004	25.7	0.008		
syncmacu			12.8	0.004	12.8	0.004	12.8	0.004		
thiascut			38.5	0.924			12.8	0.019		
urotbrev	38.5	0.012	38.5	0.012			12.8	0.004		
urotpose	307.9	0.092	166.8	0.050	141.1	0.042	51.3	0.015		
Echinodermata										
echicord	12.8	6.936	51.3	33.725						
ophialbi			25.7	0.026						
ophispec					25.7	0.001				
Mollusca										
donavitt					12.8	0.001				
euspniti	12.8	0.009			25.7	0.027	25.7	0.079	12.8	0.015
myatrunc			12.8	0.000						
spisspec			12.8	0.002						
tellpygm			12.8	0.002					25.7	0.004
Polychaeta										
aricminu	77.0	0.020			51.3	0.117			12.8	0.003
chaeseto			38.5	0.034						
eteolong	51.3	0.014	38.5	0.034			25.7	0.030		
eumisang			25.7	0.073						
exoghebe			25.7	0.022						
glycspec							12.8	0.015	12.8	0.003
hetefili			38.5	0.034						
laniconc			89.8	5.419			12.8	0.263		
nephassi							12.8	0.073		
nephcaec							12.8	0.625		
nephcirr	64.2	0.418	12.8	0.120	64.2	0.158	128.3	0.960	25.7	0.007
nephspec			25.7	0.022						
phylrose			25.7	0.022						
poecserp			128.3	0.293						
scolarmi	25.7	0.146	12.8	0.012	25.7	0.058				
scolbonn					25.7	0.337	38.5	0.478		
spiobomb			141.1	0.125	51.3	0.117	38.5	0.046		
spiofili					12.8	0.029	12.8	0.015		
syllidae									12.8	0.003
travforb	12.8	0.450								
Miscellaneous taxa										
nemertin			38.5	0.875			12.8	0.031		
phoronid			102.6	0.041						
sum	654.3	8.1	1398.5	46.9	705.7	1.1	500.4	2.8	102.6	1.8
diversity										
nspc	12		35		15		19		6	
SH-W	1.84		3.17		2.31		2.62		1.73	
Simp	0.24		0.05		0.12		0.08		0.07	

station	**COA 1**		**COA 2**		**COA 3**		**COA 4**		**COA 5**	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylfalc					12.8	0.004				
batheleg	115.5	0.035	89.8	0.027					51.3	0.015
bathguil	25.7	0.008	12.8	0.004					12.8	0.004
caprelli							12.8	0.004		
crancran							12.8	0.681		
diasbrad	25.7	0.008					12.8	0.004		
orchnana					307.9	0.092			12.8	0.004
pontalta	12.8	0.004	25.7	0.008	12.8	0.004				
syncmacu			12.8	0.004			12.8	0.004	25.7	0.008
urotbrev	12.8	0.004	218.1	0.065	102.6	0.031	51.3	0.015		
urotpose	102.6	0.031	744.1	0.223	346.4	0.104	449.1	0.135	128.3	0.038

Echinodermata										
echicord			38.5	35.245	12.8	12.808	12.8	14.569		
Mollusca										
donavitt			25.7	2.635					25.7	0.034
ensiamer	12.8	35.228			12.8	0.513	51.3	40.617	12.8	19.361
euspniti					12.8	0.169				
macobalt			154.0	3.758			25.7	0.706		
mysebide							77.0	0.010		
spissoli	12.8	0.060			12.8	3.332				
spissubt	77.0	0.011			397.7	28.866	218.1	7.454		
tellfabu	346.4	7.881	64.2	1.479	320.8	5.613	359.2	5.849	51.3	0.781
tellferr			577.4	0.239	51.3	0.011			25.7	0.037
Polychaeta										
capicapi	12.8	0.022			12.8	0.015	38.5	0.027		
chaeseto	25.7	0.042			12.8	0.015				
eteolong	12.8	0.022								
eumisang							12.8	0.008		
harmlunu							12.8	0.008	25.7	0.080
harmspec					12.8	0.015	12.8	0.008		
laniconc							51.3	3.338		
magemira	1039.2	2.473	243.8	0.169			38.5	0.027	295.1	0.511
nephcaec	12.8	0.113			12.8	0.073				
nephcirr	25.7	0.117	12.8	0.073	25.7	0.046	38.5	0.190	12.8	0.058
nephhomb			12.8	0.610	102.6	1.316	115.5	2.318	12.8	0.483
nephspec			38.5	0.007	25.7	0.032				
nerelong					12.8	2.530				
ophelima	64.2	0.107								
pectkore					25.7	0.699				
phylgroe					64.2	0.178			12.8	0.017
poecserp	38.5	0.064								
scolarmi	641.5	2.117							25.7	0.034
scolbonn	12.8	0.022							12.8	0.097
spiobomb					77.0	0.095	38.5	0.027		
spiofili	12.8	0.022	282.3	0.051	25.7	0.032	166.8	0.120	12.8	0.017
Miscellaneous taxa										
nemertin	77.0	0.469			38.5	0.700	12.8	0.886	12.8	0.065
sum	2720.0	49.4	2553.2	44.6	2052.8	58.0	1834.7	77.9	769.8	21.8
diversity										
nspc	22		16		25		23		18	
SH-W	1.98		2.08		2.46		2.44		2.21	
Simp	0.22		0.17		0.12		0.12		0.18	

station	**COA 6**		**COA 7**		**COA 8**		**COA 9**		**COA 10**	
Crustacea	N	B	N	B	N	B	N	B	N	B
atylswam					12.8	0.004				
batheleg	25.7	0.008			128.3	0.038			12.8	0.004
bathguil	12.8	0.004			51.3	0.015				
caprelli							12.8	0.004		
orchnana					12.8	0.004	12.8	0.004	25.7	0.008
syncmacu	38.5	0.012	64.2	0.019	12.8	0.004				
urotbrev	25.7	0.008	12.8	0.004	12.8	0.004	243.8	0.073	51.3	0.015
urotpose	38.5	0.012	25.7	0.008	205.3	0.062	962.3	0.289	192.5	0.058
Echinodermata										
echicord	12.8	4.538			12.8	0.349	25.7	14.615	12.8	11.200
ophitext							25.7	2.822		
Mollusca										
donavitt					102.6	13.708	12.8	0.003		
ensiamer	12.8	11.872							38.5	34.681
euspcate					25.7	7.293				
euspniti							25.7	0.046	12.8	0.047

macobalt	192.5	1.471	25.7	0.026						
mysebide	12.8	0.010					243.8	0.080		
spissubt	218.1	10.005					4259.6	261.485	25.7	1.324
tellfabu	192.5	4.972			25.7	0.213	115.5	2.452	115.5	1.961
tellferr	12.8	0.023			25.7	0.016	77.0	0.040	38.5	0.056
Polychaeta										
capicapi	51.3	0.042	12.8	0.007	25.7	0.005				
chaeseto	12.8	0.010								
harmlunu									12.8	0.014
laniconc							12.8	0.080	12.8	0.378
magemira	808.3	0.437	1129.0	2.142			12.8	0.010	77.0	0.208
nephcirr			25.7	0.135	25.7	0.596	12.8	0.010	89.8	0.334
nephhomb	12.8	0.769					12.8	0.476	51.3	0.738
nephspec					12.8	0.005	12.8	0.010	12.8	0.014
nerelong							12.8	8.624		
phylspec	12.8	0.010								
scolarmi	64.2	0.053							38.5	0.039
spiobomb	89.8	0.073			64.2	0.330				
spiofili	410.6	0.332							12.8	0.014
sthelimi							12.8	0.046		
Miscellaneous taxa										
nemertin							12.8	0.023	25.7	0.065
sum	2258.1	34.8	1295.8	2.3	757.0	22.7	6119.9	291.2	859.6	51.2
diversity										
nspc	20		7		16		20		19	
SH-W	2.11		0.59		2.31		1.14		2.56	
Simp	0.18		0.76		0.13		0.51		0.09	

station	**COA 11**		**COA 12**		**COA 13**		**COA 14**		**COA 15**	
Crustacea	N	B	N	B	N	B	N	B	N	B
batheleg			25.7	0.008					25.7	0.008
bathguil			12.8	0.004	25.7	0.008			12.8	0.004
corycass			12.8	19.684						
urotbrev	25.7	0.008					12.8	0.004	25.7	0.008
urotpose	320.8	0.096	12.8	0.004			89.8	0.027	205.3	0.062
Echinodermata										
echicord	12.8	12.808								
ophialbi	12.8	0.002					115.5	2.725	12.8	0.037
ophitext	12.8	1.558								
Mollusca										
abraalba							269.4	2.868		
ensiamer			64.2	63.931			128.3	0.160	25.7	23.744
euspniti	38.5	0.032							25.7	0.545
mysebide	12.8	0.003	12.8	0.003			1950.2	0.318	51.3	0.011
tellfabu							102.6	0.311	77.0	2.119
tellferr	38.5	0.033								
Polychaeta										
capicapi							64.2	0.073		
chaeseto							38.5	0.044	12.8	0.017
eteolong	12.8	0.003								
magemira			25.7	0.088					192.5	0.249
nephcaec			12.8	1.790						
nephcirr	51.3	0.183	38.5	1.880	12.8	0.176	12.8	0.015	77.0	0.130
nephhomb			12.8	0.044			102.6	2.415	128.3	5.436
nephspec			12.8	0.044			25.7	0.029	12.8	0.017
nerelong							12.8	1.243		
notolate							1077.7	21.376	25.7	0.256
owenfusi									12.8	0.196
phylgroe							12.8	0.015		

scolarmi	12.8	0.229	25.7	0.088			12.8	0.015		
scolbonn			154.0	0.723					12.8	0.017
spiobomb							166.8	0.188	25.7	0.034
spiofili							102.6	0.115	115.5	0.149
sthelimi							12.8	0.232		
Miscellaneous taxa										
nemertin	12.8	0.090							64.2	1.056
oligocha							166.8	0.188	12.8	0.017
sum	564.5	15.1	423.4	88.3	38.5	0.2	4477.7	32.5	1154.7	34.5
diversity										
nspc	12		13		2		20		21	
SH-W	1.65		2.12		0.64		1.89		2.60	
Simp	0.33		0.16		0.33		0.26		0.09	

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