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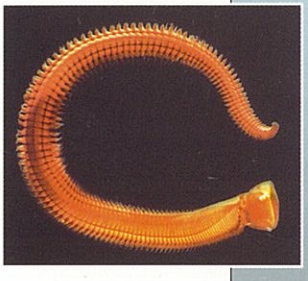
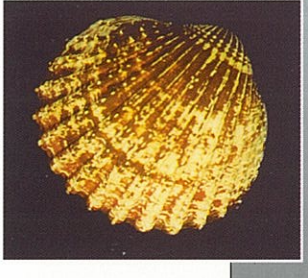
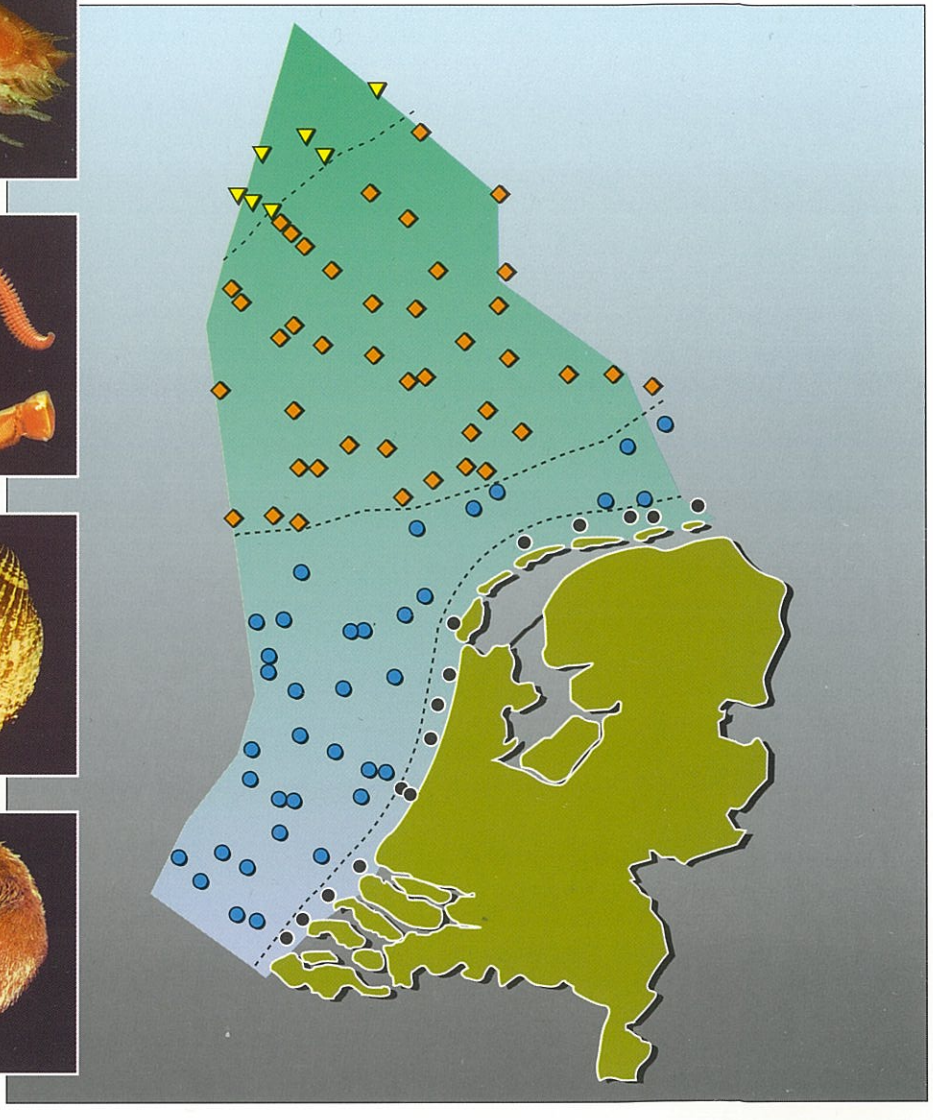
THE MACROBENTHIC FAUNA IN THE DUTCH SECTOR OF THE NORTH SEA IN 1997 AND A COMPARISON WITH PREVIOUS DATA

S.E. Holtmann, G.C.A. Duineveld, M. Mulder, P.A.W.J. de Wilde







Nederlands Instituut voor Onderzoek der Zee

Monitoring Macrozoobenthos of the North Sea

THE MACROBENTHIC FAUNA IN THE DUTCH SECTOR OF THE NORTH SEA IN 1997 AND A COMPARISON WITH PREVIOUS DATA

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S.E. HOLTMANN, G.C.A. DUINEVELD, M. MULDER, P.A.W.J. DE WILDE

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

NETHERLANDS INSTITUTE FOR SEA RESEARCH
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1. SUMMARY

In continuation of the benthic monitoring project carried out in the period 1991-1996, a survey of the macrobenthos in the Dutch Continental Shelf (DCS) was made in spring 1997. The survey forms a part of the 'Biological monitoring programme of marine waters' (BIOMON, EXP*BMN) commissioned by the National Institute for Coastal and Marine Management (RIKZ). The purpose of the project 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).

The present report describes the results of the survey in 1997 and compares these results with data obtained during previous BIOMON surveys in 1991-1996, the ICES North Sea Benthos Survey (ICES-NSBS) in 1986 and the MILZON-BENTHOS programme (1988-1993). Using the existing knowledge about the spatial distribution of the macrobenthic fauna of the North Sea (Holtmann *et al.*, 1996b), the DCS was divided into four subareas, *i.e.* the southern part of the Dogger Bank (*DOG*), the Oyster Ground (*OYS*), the Coastal area (*COA*) and the more Offshore area (*OFF*).

In the period between 3 March and 18 April 1997 boxcore samples were taken at 100 selected stations spread over the DCS for study of the benthic fauna and various abiotic parameters. The abiotic parameters are considered to characterize the relevant environmental conditions at the time of sampling and in combination with earlier data give an idea about the temporal variation of the environment. The median grain size of the sediment showed an increase in the first part of the monitoring project, in the period between 1986 and 1995. This trend was not continued until 1997, but changed into a decrease from 1995 to 1997. The content of mud (particles 16-63 μm) seems to decrease between 1990/1992 and 1997 in the whole study area.

The benthos samples collected in spring 1997 yielded a total number of 231 species/taxa. As in previous years, polychaetes are the most dominant taxon in the DCS, representing 45 % of the total number of species. The highest values for species richness ($Hill_0$) and Shannon-Wiener index were found in 1997 in the northern part of the DCS (Dogger Bank and Oyster Ground), which also had the lowest values for Simpson dominance index. In comparison to the previous year, biodiversity of the macrobenthos was higher in 1997. Total density and biomass in 1997, however, were in the same range as in 1996, though in the Oyster Ground the total biomass seems to decrease between 1994 and 1997. In the whole study area the observed trends among individual species were in most of the cases changes in downward direction. The results of a DECORANA ordination with the combined data show that the species composition of the 1986 and 1990 samples deviates from later years in all subareas. In the Coastal and Offshore area a difference was found between the species composition in 1997 and previous years.

2. SAMENVATTING

Als vervolg op het benthos monitoring project in de periode van 1991 tot 1996 is er in het voorjaar van 1997 de volgende bemonstering van het macrobenthos op het Nederlands Continentale Plat (NCP) uitgevoerd. Het onderzoek maakt deel uit van het 'Biologisch Monitoring programma zoute wateren' (BIOMON, EXP*BMN) in opdracht van het Rijksinstituut voor Kust en Zee (RIKZ). Met het project wordt beoogd inzicht te krijgen in de jaarlijkse fluctuaties van de macrobenthos gemeenschappen en vast te stellen of er op de langere termijn trendmatige veranderingen optreden. Dergelijke veranderingen zouden onder meer kunnen plaats vinden als gevolg van effecten van anthropogene activiteiten (bijv. eutrofiëring, verontreiniging, boomkorvisserij).

In het voorliggende rapport zijn de resultaten van de bemonstering in 1997 samen gevat en vergeleken met aanvullende informatie uitgewerkt in het kader van het BIOMON project 1991-1996, het ICES Noordzee Benthos onderzoek (ICES-NSBS) in 1986 en het MILZON-BENTHOS programma (1988-1993). Op basis van de aanwezige kennis over de ruimtelijke verspreiding van het macrobenthos op de Noordzee (Holtmann *et al.*, 1996b) is het NCP ingedeeld in vier deelgebieden, te weten het zuidelijke deel van de Doggersbank (*DOG*), de Oestergronden (*OYS*), de kustzone (*COA*) en het Offshore gebied (*OFF*).

In de periode van 3 maart tot 18 april 1997 zijn er in het hele onderzoeksgebied op 100 geselecteerde stations boxcore monsters genomen om een aantal abiotische en biotische factoren van het NCP te bestuderen. De abiotische factoren illusteren de milieu omstandigheden tijdens de bemonstering en geven een beeld over de tijdelijke fluctuatie van de omgevingsfactoren. De mediane korrelgrootte van het sediment laat een toename zien in het eerste gedeelte van het monitoring tussen 1986 en 1995. Deze trend heeft zich niet doorgezet tot 1997 maar is veranderd in een afname van 1995 tot 1997. In het hele onderzoeksgebied lijkt het slib gehalte (partikels 16-63 µm) af te nemen in de periode van 1990/1992 tot 1997.

Het sorteren van de benthos monsters in 1997 resulteert in een totale aantal van 231 soorten/taxa. Evenals in voorafgaande jaren zijn de polychaeten in 1997 het meest dominante taxon van het NCP en representeren 45 % van de totale aantal soorten. De hoogste waardes van het soorten rijkdom ($Hill_0$) and van de Shannon-Wiener index werd in 1997 in het noorden gevonden (Doggersbank en Oestergronden), terwijl in dit gebied ook de laagste Simpson dominantie index is gemeten. De biodiversiteit van het macrobenthos in 1997 was hoger dan in het onderzoeksjaar van 1996. De totale dichtheid en biomassa waren in 1997 in de zelfde orde van grote dan in 1996. In de Oestergronden is in de periode van 1994 tot 1997 een afname van de totale biomassa geconstateerd. In het hele onderzoeksgebied laten de trends op soort-niveau in de meeste gevallen een afname zien. Op basis van de DECORANA ordinatie techniek zijn er verschillen

gevonden in soorten samenstelling voor de jaren 1986 en 1990 in het hele onderzoeksgebied en voor 1997 in de kustzone en in het Offshore gebied.

3. INTRODUCTION

In 1989 the **BIO**logical **MON**itoring programme of marine waters (BIOMON, EXP* BMN) was started with the goal to study the temporal variation of the marine ecosystems in 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 of Rijkswaterstaat (RIKZ) in association with several Dutch institutes (Yland, 1995). The subject of this long-term monitoring programme comprises besides the macrobenthos also plankton, fish, seagrass, hard substrate populations, seabirds and mammals.

The present report gives an overview of the results of the macrozoobenthos survey carried out in spring 1997. The objective of this series of surveys is to study year-to-year variations and to detect possible trend-like changes in the macrozoobenthos communities living in the Dutch DCS of the North Sea. The results of previous surveys from the period 1991-1996 have been published by Duineveld (1992), Duineveld & Belgers (1993; 1994) and Holtmann *et al.* (1995; 1996a; 1997).

The spring 1997 survey is the third study since 1995 to which the new sampling strategy for the monitoring programme of macrozoobenthos (see Essink, 1995) is applied. In this new strategy, based on a stratified random sampling design, only one sample per station is taken at a large number of stations. It represents a break with the earlier strategy in which more replicate samples were taken at a smaller number of stations. The reason for the switch is that with the new method a statistically more accurate insight can be acquired in the benthic communities in the whole of the DCS (van der Meer, 1997). Moreover, the aim of the BIOMON programme is to detect trend-like changes in the macrobenthic communities in the major parts (habitats) of the whole DCS rather than at single stations.

The combined results from the surveys in the period between 1991 and 1996 include numerous fluctuations in species densities as well as in values for community variables (*e.g.* biodiversity). Nevertheless, no consistent trends could be detected in the total macrobenthos density or biomass nor in the abundances of most of the selected macrobenthic species (Holtmann *et al.*, 1997). The data on the general sediment characteristics suggest a slight decrease of fine material between 1986 and 1996 on the Dutch Continental Shelf. However, changes in analytical methods may partly explain these differences in sediment composition (Zonneveld, 1994).

4. MATERIAL AND METHODS

4.1. SAMPLING METHODS

The sampling grid (Fig. 1) forms the basis for an annual survey of a monitoring project which take place in spring to early summer. In order to optimize the information output with the lowest possible effort, a new sampling strategy was adopted in 1995. During earlier BIOMON surveys (1991-1994), 5 replicate boxcore samples were collected from 25 locations. These stations were located on 4 transects perpendicular and 1 transect parallel to the Dutch coastline (Duineveld, 1992). With the new strategy a total of 100 stations are sampled and only one sample is taken per station. Prior to the sample site selection for the new strategy, the study area was divided into 4 subareas, *viz.* the southern part of the Dogger Bank (*DOG*= 7 stations), the Oyster Ground (*OYS*= 42 stations), the Coastal zone (*COA*= 15 stations) and the Offshore (*OFF*= 36 stations) area. The number of stations per subarea depends on its extent. The 100 stations that were selected include the 25 old BIOMON stations and 75 additional stations which are more or less randomly distributed over the DCS (Essink, 1995). To ensure that any changes that are observed are not due to methodological differences, the procedures for sampling and processing the samples are standardized (Essink, 1991) and have remained unaltered since the beginning of the project in 1991.

The 100 selected stations were sampled in the period 3 March to 18 April 1997. The northern and eastern part of the DCS (40 stations) was visited with the RV. Pelagia (NIOZ). The more southern and Coastal stations were sampled with the RV. Holland (North Sea Directorate RWS). Two Coastal stations with a water depth less than 10 m, *viz. COA 13 & 14*, were visited on 18 April 1997 with the RV. Argus (RWS). In Fig. 1 an overview of the sampling stations in spring 1997 is given. Table 1(a/b) summarizes the geographical positions of the 100 stations, together with the former station codes and selected abiotic characteristics (depth/sediment) of the stations. More general information about the cruise carried out with the RV. Holland and the weather conditions during this part of the survey in 1997 can be found in the cruise report of Rijkswaterstaat (Anonymous, 1997).

4.2. SAMPLE TREATMENTS

At each station shown in Fig. 1 two boxcore samples (0.068 m², minimal depth 15 cm) were taken while the ship was anchored. 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, hydrozoans, phoronids, priapulids and nemerteans, and subsequently counted. 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 figure 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.).

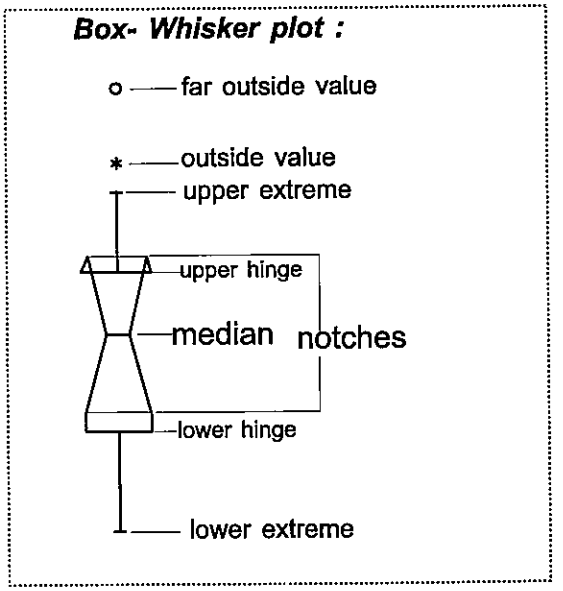
4.4. STATISTICS

In addition to the density (ind./m²) and biomass (g AFDW/m²) the diversity of each macrobenthos sample was calculated. In recent literature a suit of biodiversity indices have been used to identify possible changes of the benthic fauna (Hill, 1973; Peterson, 1977; Pearson & Rosenberg, 1978; Harper & Hawksworth, 1994). In this report, we used three indices each representing a different aspect of the distribution of the sample diversity. The species richness ($Hill_0$) stands for the number of species per boxcore

imple 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), e based on the proportional abundances of the individual species in the samples. The impson index is sensitive to the abundance only of the more plentiful species and can ierefore be regarded as a measure of dominance (Hill, 1973). A high Simpson index ieans low diversity, whereas a high value for the $Hill_0$ or Shannon-Wiener index idicates high diversity.

In order to highlight the trends in certain variables over time, scatter plots were noothed with the LOWESS method (Cleveland, 1979; 1981). This produces a smooth urve by running along the X values and finding predicted values from weighted averages f nearby Y values (see for details Wilkinson, 1990). The total density and the densities f the macrobenthos taxa were scaled by a log (x+1) transformation to reduce the ifluence of outliers (clumped distribution).

To illustrate the differences between the 4 subareas of the DCS and the significance f differences, notched Box-Whisker plots were drawn. The notches surrounding the iedians provide a measure of the rough significance of differences between the median alues. If the notches around two medians do not overlap, the medians are roughly ignificantly different at the 95 % confidence level (McGill *et al.*, 1978). All the scatter- nd Box-Whisker plots were made with the program SYSTAT (version 5.0) (SYSTAT ic. IL, USA).



Possible changes in the species assemblages in the 4 subareas during the period 1986-1997 were resolved with the ordination technique DECORANA (**DE**trended **COR**respondence **ANA**lysis). For that reason the FORTRAN program CANOCO (version 2.2) was used (Hill, 1979; Hill & Gauch, 1980; Ter Braak, 1986). The input data, *i.e.* average species abundances per subarea of each research year, were scaled by a linear transformation.

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 **M**alvern **P**article **S**izer (MPS) by the laboratory of the National Institute for Coastal and Marine Management (RIKZ, Middelburg). Two parameters were derived from the grain size data: the percentage (by weight) of mud (particles 16-63 µm) and the median grain size (µm). The latter value was calculated using the entire size range (thus including the mud fraction).

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	Fine-medium sand
300 - 350 µm	Medium-coarse sand
> 350 µm	Coarse sand

5. RESULTS

5.1. CHANGES IN SEDIMENT COMPOSITION

Except for one Oyster Ground station (*OYS 37*) sediment data are available for the whole DCS in 1997. The median grain size, as well as the mud content of the samples are given in Table 1(a/b). This table summarizes also the water depth and the sampling date. The spatial distribution of median grain size, mud content and depth recordings (not corrected for differences due to the tidal cycle) in spring 1997 are depicted in Figs. 2-4.

Table 2 shows the mean values of sediment parameters for the 4 distinguished subareas in 1997. Comparing the values with the data of 1996 (Holtmann *et al.*, 1997), it appears that they have similar ranges but the averages in 1997 were somewhat lower. The southern Dogger Bank and the shallow Coastal stations have sediments consisting of fine sand with a low mud content (in 1997 mean: 0.1-0.5 %). The deeper Oyster Ground area are characterized by very fine sand with high mud content (in 1997 mean: 5.8 %, max. 25 % at *OYS 11*). The Offshore area had the highest average value for median grain size but with a relatively large variation compared to the other subareas (min. 184 µm at *OFF 3*, max. 499 µm at *OFF 29*; Table 2).

Figs. 5 & 6 illustrate the year-to-year variation in the sediment composition in the period between 1986 and 1997. These two figures based on the same number of observations, whereas in Fig. 6 in areas where the mud content was found to be zero in several samples only one symbol is given. The increasing trend of the median grain size as found in 1995 was not continued till 1997 (Fig. 5). On the contrary, a slight decrease of the median grain size can be observed on the southern Dogger Bank and the Coastal stations between 1995 and 1997. It should be stressed that the sieving method used for sediment analysis in the 1980's was replaced by the Malvern Particle Sizer (MPS) which complicates the comparison between these early data and those from the 90's (see Zonneveld, 1994).

The temporal variation of the mud content is given in Fig. 6. The mud content seems to decrease between 1990/1992 and 1997 in the whole DCS. The high percentages of the mud found during the 1992 survey were not found again in the period 1993-1997. In the Offshore and Coastal area, the percentage of mud (particles 16-63 µm) was zero in 1997, except for the 8 % mud content at the Coastal station *COA 5* (Table 1). Also at the Dogger Bank very low percentages of mud were found between 1994 and 1997. The mud content in the Oyster Ground showed a higher deviation in 1997 than in 1996, but with a lower mean value in the last year of monitoring (Fig. 6; Table 2).

5.2. DISTRIBUTION OF THE MACROBENTHIC FAUNA IN 1997

5.2.1. DIVERSITY

In 1997 a total number of 231 species/taxa were identified in the 100 bottom samples. Of these, 23 species are juvenile and identified to genus level only. The distribution of the species over the stations (presence/absence) and the scientific names are given in Appendix-1. The basic data of macrobenthic abundance, biomass and diversity are summarized in Appendix-2. In Table 2 the mean values of the major parameters found in the 4 subareas in spring 1997 are given.

The most species-rich group in 1997 were the Polychaeta, to which 45 % of the species found in the DCS belong. Approximately 23 and 20 % of the identified species belong to the Crustacea and Mollusca respectively and only 6 % to the Echinodermata of which 14 species were found. The remaining 6 % of the species are recorded as miscellaneous at higher taxonomic level. The most common species, *i.e.* ones that were found at more than 15 % of the sampling stations, are listed in Table 3. As expected, the main part of these species are polychaetes. The species with the highest mean densities in the whole DCS are the polychaete *Magelona papillicornis* and the echinoderm *Amphiura filiformis* (*viz.* 153.3 and 104.5 ind./m^2). In the whole DCS the highest mean biomass was measured for *Echinocardium cordatum* and *Spisula subtruncata* (*viz.* 3.23 and 1.17 g AFDW/m^2) (Table 3).

The spatial variation in species richness or $Hill_0$ is mapped in Fig. 7. Values for $Hill_0$ varied between 3 and 46 species per boxcore sample (*viz. COA 3 & OYS 20*). In general the diversity was somewhat higher in 1997 than was measured in 1996 (Table 2). The species richness shows a clear gradient in north/south direction (Fig. 7). The stations in the southern part of the Dogger Bank (mean: 35.4 species) and the Oyster Ground (mean: 29.1 species) yielded on average the highest species number per sample, whereas on the southern locations a lower species richness was found (Table 2). Another measure of biodiversity, the Shannon-Wiener index, was also highest in the northern subareas. The high values of the Simpson dominance index along the Dutch coastline indicate a low diversity. In this area, the values for the $Hill_0$ and Shannon-Wiener indices were in 1997 much lower than in the rest of the DCS.

5.2.2. DENSITY AND BIOMASS

The mean density (ind./m^2) and biomass (g AFDW/m^2) in the 4 subareas are summarized in Table 2. The spatial variation of total density and biomass are shown in Figs. 8 & 9. In all subareas the total density of 1997 was in the same range as in previous years. The Dogger Bank had the highest average density of all subareas and the Offshore stations the lowest. The highest density (4681 ind./m^2) was found at the Oyster Ground station *OYS*

ınd the lowest (102 ind./m^2) at the Coastal station (*COA 13*). The distribution of the ıbers over the taxa follows the same pattern as the total number of species, *viz.* in all areas polychaetes are the numerically dominants taxon, followed by the crustaceans molluscs (Table 2). In the Oyster Ground, echinoderms constitute an important share he macrofauna depending on the abundances of the ophiuroid *Amphiura filiformis.*

Mean total biomass and biomass of 4 major groups in the four subareas is shown in ıle 2. Except for the Offshore area, in 1997 the total biomass was found to be generally ıewhat lower compared with 1996. The range of biomass figures varied from 0.04 g *)A 13*) to 115.29 g AFDW/m^2 (*COA 9*) (Table 2). Of the four subareas, the Dogger ık had on average the lowest total biomass. Along the Dutch coast the group of lluscs reached the highest biomass due to locally high abundances of bivalves (*Ensis ɛctus* and *Spisula subtruncata*). Crustacean biomass was highest in the Oyster Ground ause of the presence of the burrowing shrimp *Callianassa subterranea.* In the 'shore area, the heart urchin *Echinocardium cordatum* is responsible for the high mass of echinoderms. The highest average biomass of the polychaetes was found in Oyster Ground due to the dominance of tube worm *Chaetopterus variopedatus.*

. TEMPORAL VARIATION OF THE MACROBENTHIC FAUNA

.1. VARIATION IN THE ABUNDANCE OF INDIVIDUAL SPECIES

;s. 10-13 depict the temporal variation in density of selected species in the 4 subareas ·ing the period 1986 and 1997. The selected species are ones that are widely distributed 1 occur on more than 15 % of the locations (Table 3). The selection is the same as in previous report on the 1996 survey (Holtmann *et al.*, 1997).

gger Bank (Fig. 10a/b)
r the southern part of the Dogger Bank only a few data are available from the period 90-1994 as only one station was visited in those years. Most species in Fig. 10 show an ·rease in abundance in the beginning of the survey period but this changed into a wnward trend in 1993/1994 (Holtmann *et al.*, 1997). In most species this decrease was t continued in 1997 though abundances were still quite low in the species *Bathyporeia gans* and *Lanice conchilega* (Fig. 10a). As in the two previous years, the polychaete *ıgelona papillicornis* was found to be a dominant species on the Dogger Bank in 1997 ean: 284 ind./m^2).

ıster Ground (Fig. 11a/b)
·cause of the relatively large number of observations in the Oyster Ground between 86 and 1997, the density fluctuations of the species are better covered than on the

Dogger Bank. A remarkable finding is the downward trend of the burrowing crustacean *Callianassa subterranea* (mean density in 1997: 23.3 ind./m^2). Together with the species *Amphiura filiformis* and *Mysella bidentata*, *Callianassa* can be regarded as a characteristic species of the Oyster Ground. Also densities of the two other characteristic species *A. filiformis* and *M. bidentata* continued to decrease in 1997.

Offshore (Fig. 12a/b)
In the Offshore area most of the selected species showed no consistent trend between 1986 and 1997. The mean density of for example the polychaete *Nephtys cirrosa* is quite stable during the last 3 years of monitoring (mean density in 1997: 52 ind./m^2). The exceptional high values of the density of *Echinocardium cordatum* as observed in 1989 was not found again in the period 1990 to 1997. Among the densities of the amphipod *Bathyporeia elegans* a maximum of 1829 ind./m^2 was found in 1997, a value which was not found earlier (mean density in 1997: 188 ind./m^2).

Coast (Fig. 13a-c)
In most of the species a downward trend was noticed along the Dutch coast in the period 1986-1997. Low densities of the molluscs *Natica alderi* and *Tellina fabula* were already observed in spring 1996. In 1997 the mean density of *T. fabula* was found to be 6 ind./m^2 while *N. alderi* was not found anymore in the Coastal zone in the last year of monitoring. The decrease of *Echinocardium cordatum* as observed in 1996 was continued in 1997. The density of the polychaete *Nephtys hombergii* showed in the Coastal area also a clear downward trend between 1986 and 1997.

5.3.2. VARIATION IN DIVERSITY, DENSITY AND BIOMASS

The temporal variation of biodiversity, total density and biomass of the whole macrobenthic fauna as well as of the 4 major taxa (*viz.* polychaetes, crustaceans, molluscs and echinoderms) are illustrated in Figs. 14-20.

Diversity (Figs. 14-16):
The spatial pattern of diversity in the DCS as found in previous years had not changed in 1997. During the whole monitoring period the highest diversity was found on the Dogger Bank and the Oyster Ground. The 1997 values for $Hill_0$, *i.e.* the number of species per sample or species richness, in the four subareas were in general higher than measured in 1996 (Table 2). Hence, the decrease in diversity as found in 1996 was not continued in 1997. This was clearly noticeable on the Dogger Bank where in 1997 on average 35.4 species per sample were found (1996: 28.7). In the Coastal area the extremely low $Hill_0$ diversity of 8.0 species per samples in 1996 changed to 12.4 in 1997 (Fig. 14). The Shannon-Wiener diversity showed a similar development as $Hill_0$, *i.e.* the increased

lues in 1997 may mark the end of a downward trend of this index over the period 1986-96 (Fig. 15). Simpson index, expressing the degree of dominance by the few most undant species, was quite low in 1997. On the southern part of the Dogger Bank, npson index showed the lowest fluctuation. In this area a slight decrease was found in : last 3 years of monitoring. In the Oyster Ground, the high values of Simpson index in 93 were followed by a decrease until the survey of 1997 (Fig. 16).

ensity (Figs. 17/18a-d):
1 overview of the total macrobenthic density in 1997 is given in Table 2. In 1997 the al density in the subareas was in the same range or somewhat higher than in 1996. The ghest total density in the 4 subareas was measured in the period 1994/1995. On the uthern part of the Dogger Bank, the initial increase of the total density changed into crease in 1994 (Fig. 17). This trend coincided with the trends in crustacean and mollusc nsity, both of which slightly decreased during the period 1994-1997 (Fig. 18a).

The total abundance in the Oyster Ground showed little variation during the years monitoring. The highest mean values were found in the period between 1992/1994. ıe 4 major taxa showed in general the same pattern. However, the density of the hinoderms was quite low in 1995 due to low densities of the otherwise common ohiuroid *Amphiura filiformis* (Fig. 18b).

In the Coastal and the Offshore areas more variation and extreme values were und. The density of all major groups in the Offshore area showed a downward trend ıring the last 3 years, except for the crustaceans which were quite stable over the years ig. 18c). The total density along the Dutch coast was much lower in 1996 and 1997 an found in the period between 1986 and 1995. The most distinct decrease was)served among the crustaceans and molluscs (Fig. 18d), which can be partly explained / relatively low densities of the bivalves *Tellina fabula* and *Spisula subtruncata* (Fig. 3c).

iomass (Figs. 19/20a-d):
he temporal variation of the total biomass in the 4 subareas is shown in Fig. 19. Total omass on the Dogger Bank tended to increase in the period between 1986 and 1996 but ıe rather low mean of 5.5 g AFDW/m^2 in 1997 represents a break in this trend (Table 2). ı 1996 a mean biomass of 14.5 g AFDW/m^2 was found in the southern part of the ogger Bank due to the high biomass of molluscs (Holtmann *et al.*, 1997). Though on the ogger Bank in 3 of the macrobenthos groups an upward trend was found in the first ears of monitoring, no trend was observed in this area in the last investigation years ig. 20a).

In the Oyster Ground, a decrease of the total biomass was noticed in the last 3 years 1994 to 1997; Fig. 19). The mean total biomass in 1997 was found to be 12.8 g .FDW/m^2 while in 1994 this figure was nearly 20 g AFDW/m^2 (Fig. 19). This decline

corresponded with the trend in biomass of echinoderms and to some extent also of crustaceans. The biomass of polychaetes and molluscs in the Oyster Ground showed only little variation during the monitoring period (Fig. 20b).

The total biomass in the Offshore and Coastal areas were quite stable between 1986 and 1997 (Fig. 19). The same is true for the biomass of the 4 major groups (Fig. 20c/d). Only the crustacean biomass in the Coastal area showed a continuous downward trend since 1988, but it forms only a minor part of the total biomass. The biomass of molluscs which forms the major part of the total biomass along the coast does not show any clear trends between 1986 and 1997 (Fig. 20d).

5.3.3. Comparison of species assemblages

The DECORANA ordination technique was used to reveal possible changes in species assemblages of the Dutch part of the North Sea. One ordination (Fig. 21) was made of all subareas together using the yearly average abundances of 400 species/taxa in the areas from the period 1986-1997. Furthermore, an ordination was made for each of the 4 subareas separately (Fig. 22). In these figures the points that are close together correspond to years that are more similar in species composition, than points that are more separated.

Fig. 21 shows the two major ordination axes and the corresponding yearly positions of the subareas. The 4 subareas of the Dutch part of the North Sea remain clearly separated throughout the whole period of monitoring which indicates that there exists a fundamental difference in species composition. Because of the wide separation between the muddy Oyster Ground and the sandy Offshore area, sediment characteristics seem to be one of the most plausible explanations for the differences in Fig. 21 (see Table 2). The relatively compact clusters of points belonging to different subareas (Fig. 21) suggest that there were no drastic changes of the species composition in any of the subareas during the period of monitoring. Only the first years of monitoring (1986, 1990) in the Offshore area appear to have yielded a somewhat different assemblage than found in later years as shown by the distance of the points referring to these two periods.

The ordination plots of the 4 subareas are given in Fig. 22. Quite obvious in all 4 plots is a separation between the years 1986-1990 and later years (cf. Holtmann *et al.*, 1997). In the plots of the Coastal and Offshore area, the point belonging to the last year of monitoring (1997) is clearly separated from the previous years. This separation which can indicate changes in species composition was not found in the northern areas, the southern part of the Dogger Bank and in the Oyster Ground.

ISCUSSION AND CONCLUSIONS

ıe past decade the macrobenthic fauna has been widely used in ecological monitoring ,rammes which studied effects of anthropogenic influences on the marine ronment (Pearson & Rosenberg, 1978; Govaere *et al.*, 1980; Rees & Eleftheriou,); Gray *et al.*, 1990; Daan & Mulder, 1996; Bergman *et al.*, 1990). One reason for this uent use is that soft-sediment infaunal assemblages are comparatively easy to sample quantitative manner because of their relative immobility. Plankton or fish populations mobile and may show migratory behaviour. This would enable them to avoid or pe contaminated areas. By contrast, infaunal macrobenthos is for the major part of : life intimately associated with the sea-bed and hence integrates effects of human vities (*e.g.* offshore mining, pollutants, fishery etc.) over a long time. Despite their tive immobility as adults, the pelagic larval stage that most macrobenthic species ;ess allows them to (re)colonise empty habitats.

The extensive investigations of the BIOMON programme have resulted in a large y of data on the distribution of macrobenthos in the DCS between 1991 and 1997. The ous presentations of these data in the present report show clear year-to-year variation lensities of species as well as in attributes of whole assemblages (diversity, total sity and biomass). Trends are highlighted on the species-level but also among :mblage attributes to get an impression about the condition of the benthic ecosystem. ed on the results of the survey of the BIOMON project in 1997 together with ırmation from earlier surveys (ICES 1986, MILZON-BENTHOS 1988-1993, P*BMN 1991-1996) the following major observations were made:

The increase of the median grain size observed in the beginning of the monitoring period (1986-1995) changed into a (slight) decrease between 1995 and 1997.

A decreasing trend was found of the mud content (16-63 µm) between 1990/1992 and 1997 in the whole study area.

The diversity (species richness) of the 1997 samples was in general higher than of those taken in 1996. Diversity showed a clear north/south gradient: samples from the northern subareas were more diverse than those from the Coastal and the Offshore subareas.

In 1997 the total macrobenthic density was in the same range as found in previous years. Overlooking the whole monitoring period, the highest values for total density were measured in the period 1994/1995 in all four subareas.

Total biomass was in 1997 somewhat lower than in 1996. Between 1994 and 1997 a decrease of the total biomass is noticeable in the north of the DCS (Oyster Ground subarea).

On the species-level, a continuous downward trend was found of *Bathyporeia elegans* (Dogger Bank), *Amphiura filiformis* and *Callianassa subterranea* (both Oyster Ground) between 1991 and 1997.

- The period 1991-1997 also showed a clear decrease of *Echinocardium cordatum, Nephtys hombergii* and *Tellina fabula* in the Coastal subarea. The gastropod *Natica alderi* was quite abundant along the coast in the first period of monitoring but absent from this subarea in 1997. *N. alderi* seems to become more common in the northern part of the DCS between 1991 and 1997.
- In the DECORANA ordination plot of the combined data (1986-1997), the points marking the 1986 and 1990 observations in the 4 subareas are separated from the points belonging to later years. This may indicate changes in species composition. For the Coastal and Offshore subareas also the last year of monitoring (1997) showed a clear separation.

In spite of all the temporal fluctuation the macrobenthic distribution in the Dutch part of the North Sea shows quite consistent spatial patterns over the years. This is due to the relatively stable external circumstances, such as the sediment conditions and the nutrient supply. The distribution of the various benthic assemblages in the DCS appears to be strongly correlated with the sediment composition (Table 2). One of the causes for this relation is that the particle size (and porosity) enables or disables species to live, ingest or to make permanent burrows. Furthermore, the grainsize of recent sediments reflects a set of conditions (*e.g.* current speed, depth, distance from coast) which can be decisive for the distribution of a species and the maintenance of its population. Muddy sediments are typically located in deeper quiescent areas where fine particles are not eroded. Such conditions are also favourable for deposition of nutritious particles. At the muddy Frisian Front, for example, high amounts of chlorophyll-*a* are found in the sediment indicating high concentrations of fresh algal carbon. The sediment composition influences not only the food availability but also the settlement of the benthic species. Moreover, the interactions between the benthic organisms (*e.g.* predation, food competition, commensalism) can influence the stability of the species distribution in the North Sea. Species that live in burrows deeper in the sediment are least affected by predation but also less influenced by man's uses of the sea (*e.g.* bottom fishery).

The biodiversity of benthic assemblages has been widely used to indicate the assemblage stability and to detect changes of the ecosystem (Heip *et al.*, 1992; Mackie *et al.*, 1995). Consistently low diversity of macrobenthos is found in the Coastal and in the Offshore subareas. In these dynamic habitats only a part of the species present in the southern North Sea is able to settle and survive. Because of the relatively low species density in these subareas, 12 to 16 per sample, changes in a few common species has a greater effect on the assemblage than in the Oyster Ground where normally 35 species are found in a sample (Table 2). The distinct changes in the Coastal and Offshore assemblages as illustrated by the DECORANA ordination (Fig. 22) is due to decreases of some characteristic species *viz. Echinocardium cordatum, Nephtys hombergii, Tellina fabula* and *Natica alderi.* The results of following monitoring surveys will show if there

ontinuation of these changes in species composition in the Coastal and Offshore eas.

Next to diversity, individual 'key' species[1] and their life history provide clues the conditions within a benthic ecosystem. Highly dynamic or disturbed systems, ı can be found along the Dutch coast and in the Offshore area, are inhabited by so- opportunistic species having high grow rates and a large reproductive output son & Rosenberg, 1978; Arntz & Rumohr, 1986). These characteristics enable them idly adapt to environmental perturbation and quickly re-colonise empty habitats sle & Grassle, 1974; Kirkegaard, 1978; Gray, 1982). This stage of colonisation is cterised by high abundance's of only a few species. Hence such immature blages are indicative for a recent disturbance. In parts with more stable nmental conditions, like the central North Sea and the Oyster Ground, slow ng but relatively long-living species become more abundant. Examples are the e *Arctica islandica,* the polychaete *Chaetopterus variopedatus* and the echinoderm *iura filiformis* (Duineveld *et al.*, 1987; Holtmann, *et al.* 1996b; Witbaard, 1995). clear changes occur in the abundance of 'key' species, it is likely that some mental condition in the benthic ecosystem has altered. Such a situation calls for a detailed study using a denser sampling grid than the one of the BIOMON amme. An example is the noticed decline of the brittle star *Amphiura filiformis.* This s is quite common in the Dutch sector of the North Sea where it was found on 32 % stations in 1997 (Table 3). All these stations are located north of the 30 m depth ar, in the Oyster Ground subarea. The abundance of *Amphiua* shows a slight ward trend in the Oyster Ground subarea over the period 1986-1997 (Fig. 11a). The est decrease in *Amphiura* density was observed at the Frisian Front where it was rly quite abundant (> 1000 m^{-2}). The causes for this decline are the subject of a d study which focuses on two possible causes namely a reduction of the food or a failing recruitment. So far it seems as if the food supply was not the reason for w *Amphiura* abundance and a natural cause (e.g. population senescence) can ore not be excluded (Brocken, 1998).

This case underlines the difficulties encountered when interpreting results of ng monitoring programmes like BIOMON. The natural temporal an spatial ations in populations and assemblages of species are superimposed on trend-like es. This requires long time series in order to confirm the tentative conclusions and stallise the changes of the macrobenthic assemblages that are a response to pogenic influences.

[1] s that are characteristic of a specific area, often found with high density or/and biomass

7. ACKN

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Tables and Figures

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Table 1a.

Stati	
new	
DOG	1
DOG	2
DOG	3
DOG	4
DOG	5
DOG	6
DOG	7
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OYS	39
OYS	40
OYS	41
OYS	42

Table1a. Station number, position, date, depth and sediment composition of the BIOMON survey in spring 1997.

Station (name)			Geographical position				Sediment	
new		previously	E	N	Date	Depth (m)	Med. Gr. Size (μm)	Mud (%)
DOG	1	Dog E5	04°03'00"	55°28'18"	04/03/97	30.0	213	0
DOG	2	Dog D3	03°38'30"	55°10'00"	04/03/97	37.0	175	0
DOG	3	ICES 97/SM38	03°30'00"	55°15'00"	04/03/97	28.0	207	0
DOG	4	TS 235	03°09'26"	55°10'14"	04/03/97	30.0	191	1
DOG	5	Dog C5	03°14'00"	54°54'42"	05/03/97	36.0	172	0
DOG	6	Dog C6	03°05'00"	54°57'06"	05/03/97	22.0	197	0
DOG	7	ICES 87/SM 37	03°00'00"	55°00'00"	05/03/97	24.5	195	0
OYS	1	MZ 1-3 '91	03°25'30"	54°23'00"	02/04/97	44.7	110	6
OYS	2	MZ 9-1 '91	05°32'30"	54°11'30"	06/03/97	40.0	189	0
OYS	3	ICES 88/SM 39	04°00'00"	55°00'00"	04/03/97	49.0	112	3
OYS	4	Dog B5	02°56'00"	54°33'00"	02/04/97	32.6	135	1
OYS	5	MZ 8-3 '91	04°55'00"	54°01'10"	06/03/97	43.5	127	7
OYS	6	Dog E2	04°22'48"	55°18'24"	04/03/97	47.0	141	1
OYS	7	MZ 2-1 '91	04°18'00"	54°53'00"	04/03/97	51.0	87	15
OYS	8	MZ 12-4 '91	04°54'00"	53°44'40"	06/03/97	36.5	167	10
OYS	9	MZ 15-1 '93	03°37'50"	53°45'20"	08/04/97	35.8	178	0
OYS	10	MZ 1-1 '91	03°42'30"	54°39'00"	05/03/97	45.0	112	4
OYS	11	MZ 12-1 '91	05°10'00"	53°55'30"	06/03/97	40.0	102	25
OYS	12	MZ 5-4 '91	04°26'00"	54°10'00"	02/04/97	46.8	96	10
OYS	13	ICES 78/SM 31	03°30'00"	54°45'00"	05/03/97	45.0	111	3
OYS	14	MZ 5-3 '91	04°44'30"	54°20'00"	05/03/97	47.0	132	4
OYS	15	MZ 5-1 '91	04°21'20"	54°28'30"	05/03/97	51.5	95	9
OYS	16	MZ 3-4 '91	05°03'00"	54°38'30"	05/03/97	47.0	133	9
OYS	17	MZ 17-2 '93	03°25'08"	54°00'21"	08/04/97	40.6	178	0
OYS	18	MZ 10-2 '91	05°54'00"	54°11'20"	06/03/97	38.1	199	0
OYS	19	Dog B2	03°19'00"	54°20'00"	02/04/97	47.2	116	4
OYS	20	Dog A1	02°51'51"	54°05'00"	08/04/97	50.1	180	7
OYS	21	TS 50	04°46'03"	53°46'04"	06/03/97	38.6	107	17
OYS	22	MZ 1-4 '91	03°38'30"	54°18'30"	02/04/97	43.3	137	3
OYS	23	Dog C3	03°22'00"	54°49'24"	05/03/97	42.0	113	4
OYS	24	MZ 11-3 '93	03°29'46"	53°30'00"	09/04/97	31.7	130	2
OYS	25	MZ 2-3 '91	04°32'00"	54°39'00"	05/03/97	50.0	101	14
OYS	26	MZ 8-5 '91	04°47'30"	53°55'20"	06/03/97	42.1	131	7
OYS	27	ICES 70/SM 60	05°00'00"	54°30'00"	05/03/97	44.0	165	7
OYS	28	ICES 42/SM 19	03°30'00"	53°45'00"	08/04/97	33.9	192	0
OYS	29	ICES 68/SM 32	03°00'00"	54°30'00"	02/04/97	35.0	122	1
OYS	30	MZ 11-1 '93	03°18'21"	53°31'30"	09/04/97	33.1	124	6
OYS	31	MZ 19-2 '93	04°09'06"	53°50'42"	02/04/97	41.2	132	2
OYS	32	MZ 6-5 '91	05°05'00"	54°15'30"	06/03/97	45.3	150	6
OYS	33	MZ 4-1 '91	04°03'00"	54°16'00"	02/04/97	47.0	102	6
OYS	34	MZ 16-3 '93	04°16'37"	53°37'40"	02/04/97	35.1	113	12
OYS	35	MZ 18-3 '93	03°52'24"	53°51'31"	08/04/97	37.9	153	1
OYS	36	META 2	04°30'00"	53°42'05"	08/04/97	37.2	99	23
OYS	37	TS 100	04°20'27"	54°09'04"	02/04/97	47.9	-	-
OYS	38	ICES 34/SM 20	03°00'00"	53°30'00"	08/04/97	31.8	142	3
OYS	39	ICES 69/SM 30	04°00'00"	54°30'00"	05/03/97	46.0	113	4
OYS	40	ICES 89/SM 58	05°00'00"	55°00'00"	04/03/97	41.0	144	2
OYS	41	RHC 4/Dog C4	03°17'36"	54°51'42"	05/03/97	39.0	145	1
OYS	42	R 70	06°12'51"	54°07'03"	06/03/97	33.3	226	0

e1b. Station number, position, date, depth and sediment composition of the BIOMON survey in spring 199

Station (name)			Geographical position				Sediment	
ew		previously	E	N	Date	Depth (m)	Med. Gr. Size (μm)	Mud (%)
=	1	MZ 18-2 '91	05°59'00"	53°51'30"	06/03/97	31.1	192	0
=	2	MZ VIA-12-25-2 '89	06°06'25"	53°37'29"	03/03/97	21.5	341	0
=	3	MZ VA-12-25-3 '89	05°49'37"	53°36'40"	03/03/97	25.5	184	0
=	4	MZ 16-3 '91	04°57'30"	53°40'00"	08/04/97	30.6	196	0
=	5	MZ 14-1 '91	04°22'30"	53°29'00"	02/04/97	26.7	212	0
=	6	MZ IIA-12-25-2 '89	04°26'32"	53°11'16"	09/04/97	29.2	284	0
F	7	MZ IA-25-40-4 '89	04°18'22"	53°05'59"	09/04/97	34.3	221	0
F	8	MZ C-40-65-4 '88	04°00'30"	53°01'30"	09/04/97	29.2	238	0
F	9	MZ B-25-40-2 '88	04°13'50"	52°49'20"	07/04/97	26.3	258	0
F	10	MZ W-40-65-3 '88	03°50'30"	52°45'40"	09/04/97	28.9	257	0
F	11	MZ 10-4 '92	03°31'18"	53°17'00"	09/04/97	26.5	196	0
F	12	MZ 9-2 '92	03°23'30"	53°03'55"	09/04/97	27.6	255	0
F	13	MZ 9-1 '92	03°11'36"	53°02'58"	09/04/97	29.3	259	0
F	14	MZ 8-2 '92	03°17'20"	52°53'53"	09/04/97	31.6	263	0
F	15	MZ 8-5 '92	03°17'18"	52°50'12"	09/04/97	33.2	286	0
F	16	ICES 20/SM 3	03°30'00"	52°45'00"	01/04/97	26.3	260	0
F	17	MZ 6-2 '92	03°12'12"	52°27'43"	03/04/97	31.7	305	0
F	18	MZ 6-1 '92	03°11'25"	52°20'25"	03/04/97	27.7	312	0
F	19	MZ 1-1 '92	03°24'42"	52°15'10"	03/04/97	31.4	329	0
F	20	ICES 15/SM 5	03°30'00"	52°15'00"	03/04/97	30.4	338	0
F	21	ICES 12/SM 10	03°00'00"	52°00'00"	10/04/97	33.9	429	0
F	22	MZ T-25-40-3 '88	03°59'15"	52°16'30"	01/04/97	23.0	336	0
F	23	MZ N-12-25-1 '88	04°09'50"	52°23'08"	01/04/97	20.0	308	0
F	24	/	03°42'58"	52°00'00"	02/04/97	24.5	430	0
F	25	/	03°24'26"	52°06'12"	02/04/97	31.3	383	0
F	26	/	03°11'34"	51°56'07"	10/04/97	29.5	413	0
F	27	/	03°14'28"	51°41'40"	10/04/97	24.9	372	0
F	28	/	02°52'48"	51°52'40"	10/04/97	32.0	392	0
F	29	R 50	06°18'36"	53°57'14"	06/03/97	29.8	499	0
F	30	TS 30	04°56'17"	53°36'56"	08/04/97	25.2	214	0
F	31	META 1	03°55'01"	52°59'53"	09/04/97	25.2	261	0
F	32	N 30	04°02'53"	52°23'15"	01/04/97	22.1	311	0
F	33	N 50	03°47'07"	52°28'30"	01/04/97	28.5	278	0
F	34	N 70	03°31'53"	52°34'10"	01/04/97	29.7	286	0
F	35	W 30	03°06'49"	51°43'06"	10/04/97	28.5	344	0
F	36	W 70	02°40'45"	51°57'25"	10/04/97	41.0	398	0
DA	1	MZ VIA-05-12-1 '89	05°59'53"	53°32'34"	03/03/97	18.0	202	0
DA	2	MZ VA -00-05-5 '89	05°37'48"	53°30'19"	03/03/97	12.3	179	0
DA	3	MZ W-00-05-5 '88	04°31'50"	52°32'50"	07/04/97	17.8	209	0
DA	4	MZ C-00-05-5 '88	04°40'00"	52°50'00"	07/04/97	10.6	159	0
DA	5	MZ IB-00-05-5 '89	04°41'20"	53°03'23"	03/03/97	12.6	202	8
DA	6	MZ VIB-00-05-3 '89	06°11'10"	53°32'18"	03/03/97	9.2	159	0
DA	7	R 3	06°33'51"	53°33'58"	03/03/97	8.0	178	0
DA	8	TS 4	05°09'02"	53°24'54"	03/03/97	10.9	201	0
DA	9	ICES 21/SM 1	04°30'00"	52°45'00"	07/04/97	20.8	225	0
DA	10	N 2	04°24'20"	52°15'36"	01/04/97	12.6	237	0
DA	11	N 10	04°18'01"	52°17'41"	01/04/97	18.0	308	0
DA	12	VD 1	03°23'15"	51°37'04"	10/04/97	11.2	261	0
DA	13	VD 2	03°36'02"	51°42'23"	18/04/97	3.9	298	0
DA	14	VD 3	03°48'48"	51°47'26"	18/04/97	4.0	274	0
DA	15	VD 4	03°55'09"	51°55'20"	10/04/97	13.2	197	0

Table 2. Mean values of abiotic and biotic parameters of the 4 distinguished

Table 2. Mean values of abiotic and biotic parameters of the 4 distinguished areas in 1997 (C.V.: coefficient of variation = s.d./mean).

	AREA							
	south.Dogger Bank		Oyster Ground		Offshore area		Coastal area	
No. of stations	7	C.V.	42	C.V.	36	C.V.	15	C.V.
Median Grain Size (µm)	192.9	0.08	135.1	0.24	301.1	0.26	219.3	0.22
Mud content (%)	0.1	3.80	5.8	1.04	0.0	0.00	0.5	4.14
Depth (m)	29.6	0.19	41.8	0.14	28.6	0.14	12.2	0.44
Diversity:								
No. of total species	79		178		121		47	
No. species per core	35.4	0.13	29.1	0.24	16.4	0.30	12.4	0.33
Shannon- Wiener diversity	2.96	0.07	2.62	0.15	2.18	0.17	1.82	0.23
Simpson's dominance	0.08	0.26	0.13	0.56	0.18	0.52	0.25	0.53
No. individuals (ind./m²):								
Crustaceans	549.6	0.52	150.8	0.73	416.1	1.29	134.6	1.44
Echinoderms	142.1	0.56	636.1	1.06	48.0	1.30	4.9	2.45
Molluscs	234.1	0.65	412.8	1.11	75.2	1.68	205.8	1.23
Polychaetes	1218.5	0.28	640.5	0.75	555.1	1.01	1160.7	1.14
Miscellaneous	232.0	0.90	197.9	0.82	55.3	1.58	8.8	1.76
TOTAL DENSITY	2376.4	0.17	2038.0	0.51	1149.6	0.78	1514.7	0.90
Biomass (g AFDW/m²):								
Crustaceans	0.18	0.51	2.50	1.98	0.22	2.55	0.04	1.36
Echinoderms	1.97	1.04	5.48	1.62	6.15	1.79	0.38	3.31
Molluscs	1.52	0.98	0.44	1.55	2.31	2.87	31.87	1.19
Polychaetes	1.67	0.47	3.57	1.15	1.97	1.47	3.33	1.18
Miscellaneous	0.18	1.34	0.83	2.19	0.98	3.74	0.38	3.58
TOTAL BIOMASS	5.52	0.48	12.83	0.98	11.63	1.21	36.00	1.11

Table 3. Average density and biomass with standard deviation (st.dev.) of the macrobenthos species found in more than 15 % of the stations in 1997.

Species name	*%*	*Density*	*st.dev.*	*Biomass*	*st.dev.*
SPIOPHANES BOMBYX	67	77.1	131.0	0.0560	0.1191
SCOLOPLOS ARMIGER	64	56.5	110.8	0.1234	0.2494
MAGELONA PAPILLICORNIS	63	153.3	347.2	0.1837	0.5948
SPIO FILICORNIS	51	59.6	163.7	0.0189	0.0464
BATHYPOREIA ELEGANS	49	92.3	246.3	0.0277	0.0739
NEPHTYS HOMBERGII	46	14.6	21.3	0.3292	0.6590
NEPHTYS CIRROSA	43	26.3	39.2	0.1487	0.2777
GONIADA MACULATA	42	12.9	20.4	0.0217	0.0568
NATICA ALDERI	41	15.7	26.3	0.0382	0.1621
CHAETOZONE SETOSA	40	14.0	25.9	0.0055	0.0106
ECHINOCARDIUM CORDATUM	40	12.9	26.3	3.2346	8.2019
MYSELLA BIDENTATA	39	53.4	128.2	0.0109	0.0257
PHOLOE MINUTA	34	32.9	80.3	0.0055	0.0139
AMPHIURA FILIFORMIS	32	104.5	241.2	0.7900	2.3000
UROTHOE POSEIDONIS	31	43.8	107.9	0.0131	0.0324
MONTACUTA FERRUGINOSA	28	16.7	53.7	0.0124	0.0342
POECILOCHAETUS SERPENS	27	9.4	30.6	0.0074	0.0313
BATHYPOREIA GUILLIAMSONIANA	26	27.2	70.9	0.0095	0.0268
ABRA ALBA	25	9.7	23.5	0.0100	0.0600
SCOLELEPIS BONNIERI	24	6.9	32.6	0.0561	0.1360
TELLINA FABULA	24	13.6	37.7	0.1028	0.6536
HARPINIA ANTENNARIA	23	14.9	41.5	0.0045	0.0125
NUCULA TURGIDA	23	12.9	36.6	0.0386	0.1225
ETEONE LONGA	22	4.5	9.9	0.0033	0.0139
CALLIANASSA SUBTERRANEA	21	9.8	22.8	0.3619	1.0642
LANICE CONCHILEGA	20	26.5	180.0	0.3324	1.5786
NOTOMASTUS LATERICEUS	20	13.5	46.8	0.2794	1.3547
OPHIURA ALBIDA	20	10.2	27.1	0.1074	0.3455
VENUS STRIATULA	20	6.9	19.2	0.0592	0.3901
CYLICHNA CYLINDRACEA	19	8.8	27.8	0.0125	0.0469
SPISULA SUBTRUNCATA	19	18.1	100.3	1.1744	10.9534
UROTHOE BREVICORNIS	19	18.7	55.0	0.0066	0.0201
CORBULA GIBBA	18	29.0	235.4	0.0105	0.0422
PERIOCULODES LONGIMANUS	18	5.6	13.9	0.0017	0.0042
ARICIDEA MINUTA	17	7.5	26.0	0.0008	0.0025
CINGULA VITREA	16	13.2	59.2	0.0026	0.0090
CULTELLUS PELLUCIDUS	16	3.7	10.5	0.0134	0.0593
DIASTYLIS BRADYI	16	3.5	10.6	0.0021	0.0057
EUDORELLA TRUNCATULA	16	6.3	18.8	0.0013	0.0038
OPHELIA LIMACINA	16	6.0	22.5	0.0376	0.1675
PSEUDOCUMA LONGICORNIS	16	4.4	12.6	0.0009	0.0025

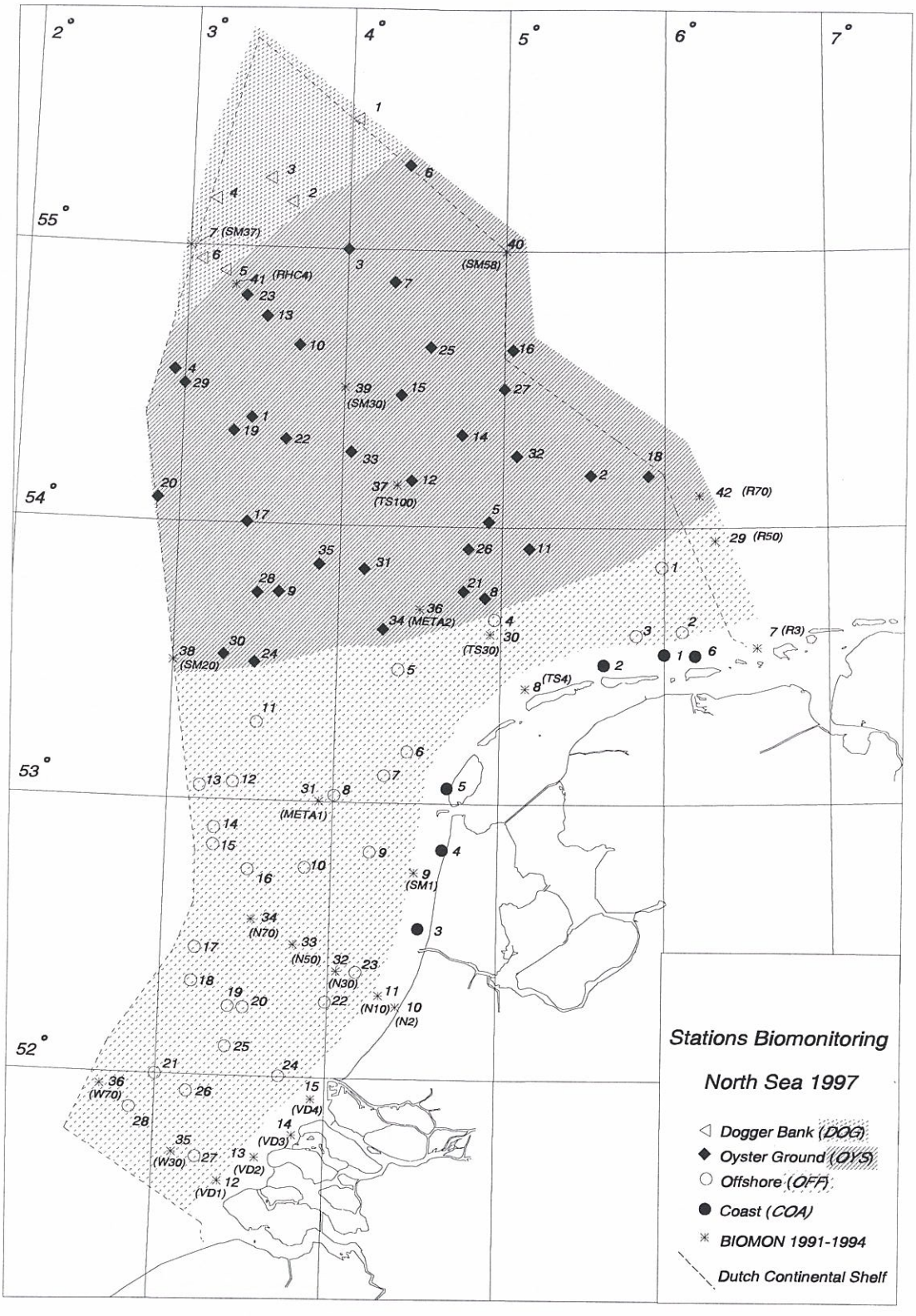


Fig. 1. Locations of the sampling stations which have been visited during the survey in 1997.

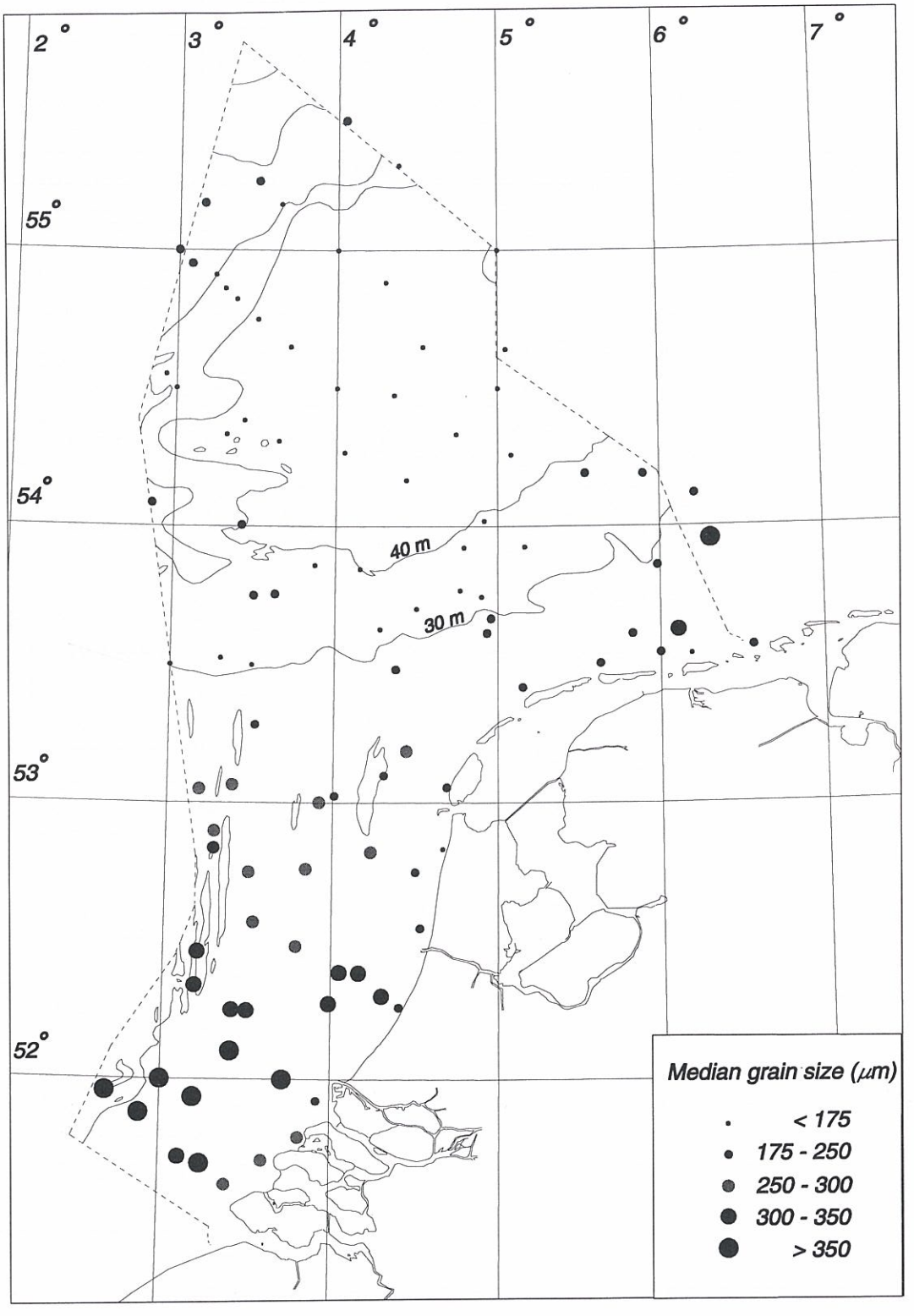


Fig. 2. The median grain size (μm) of the sediment in 1997.

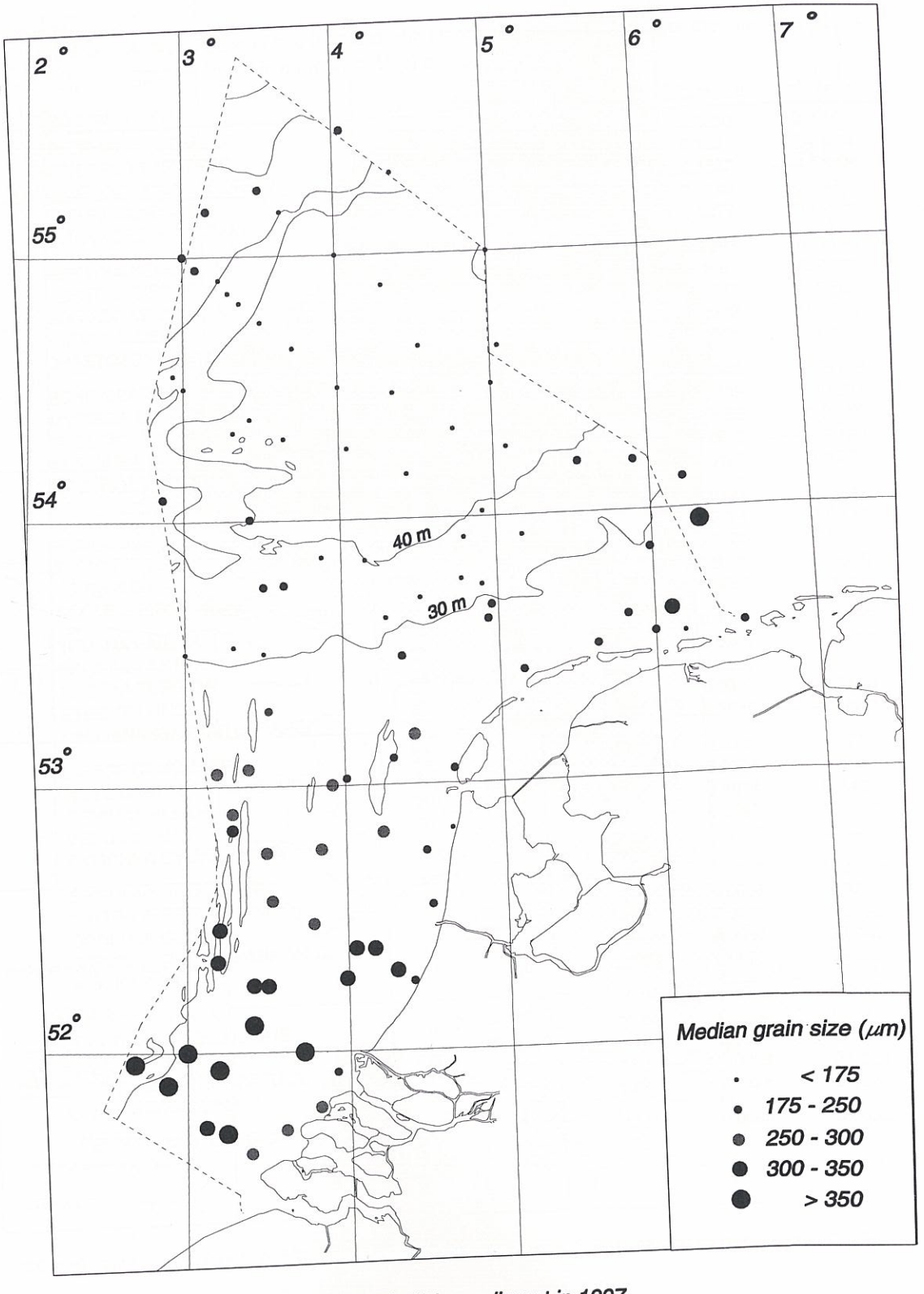


Fig. 2. The median grain size (μm) of the sediment in 1997.

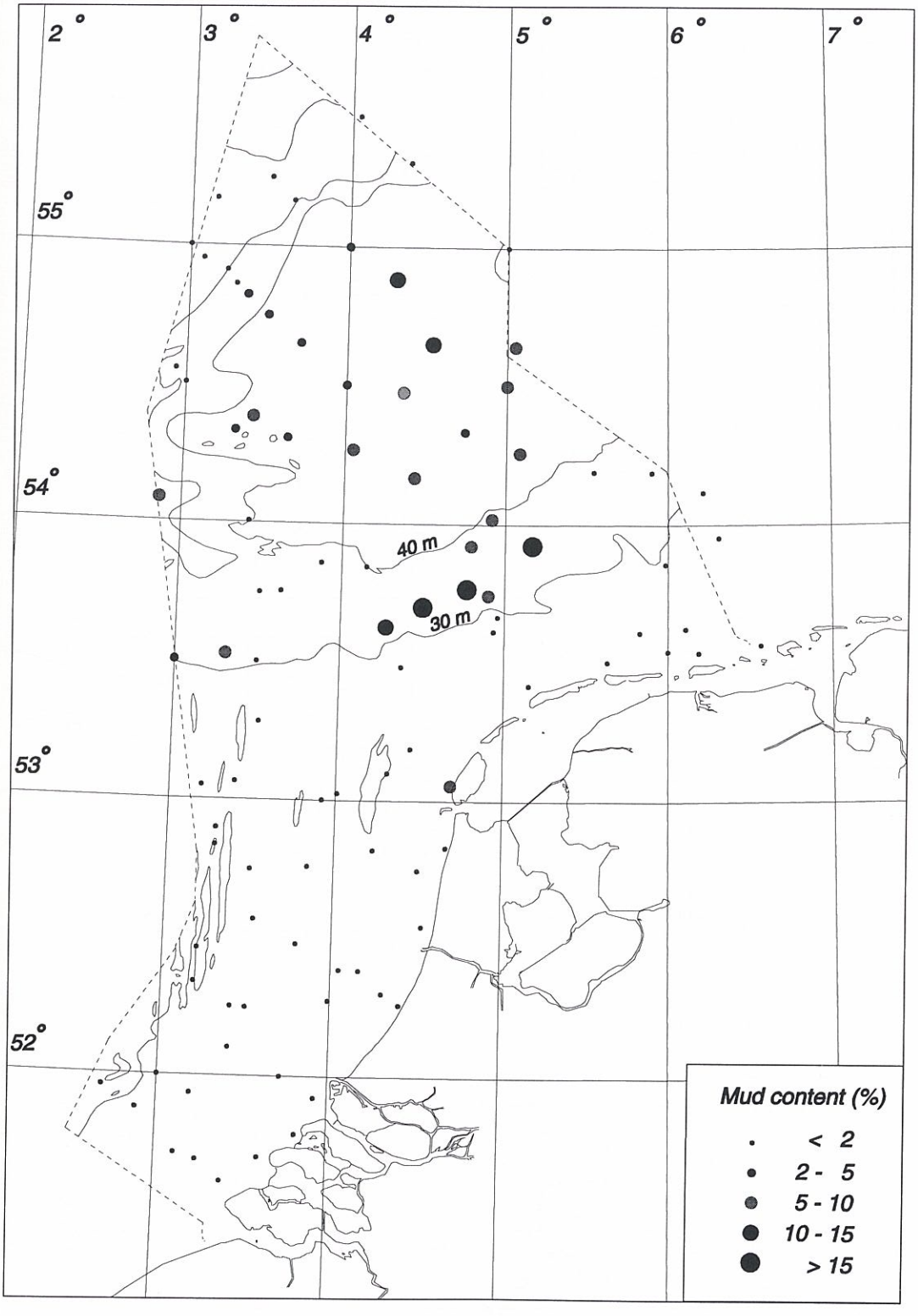


Fig. 3. The mud content (%) of the sediment in 1997.

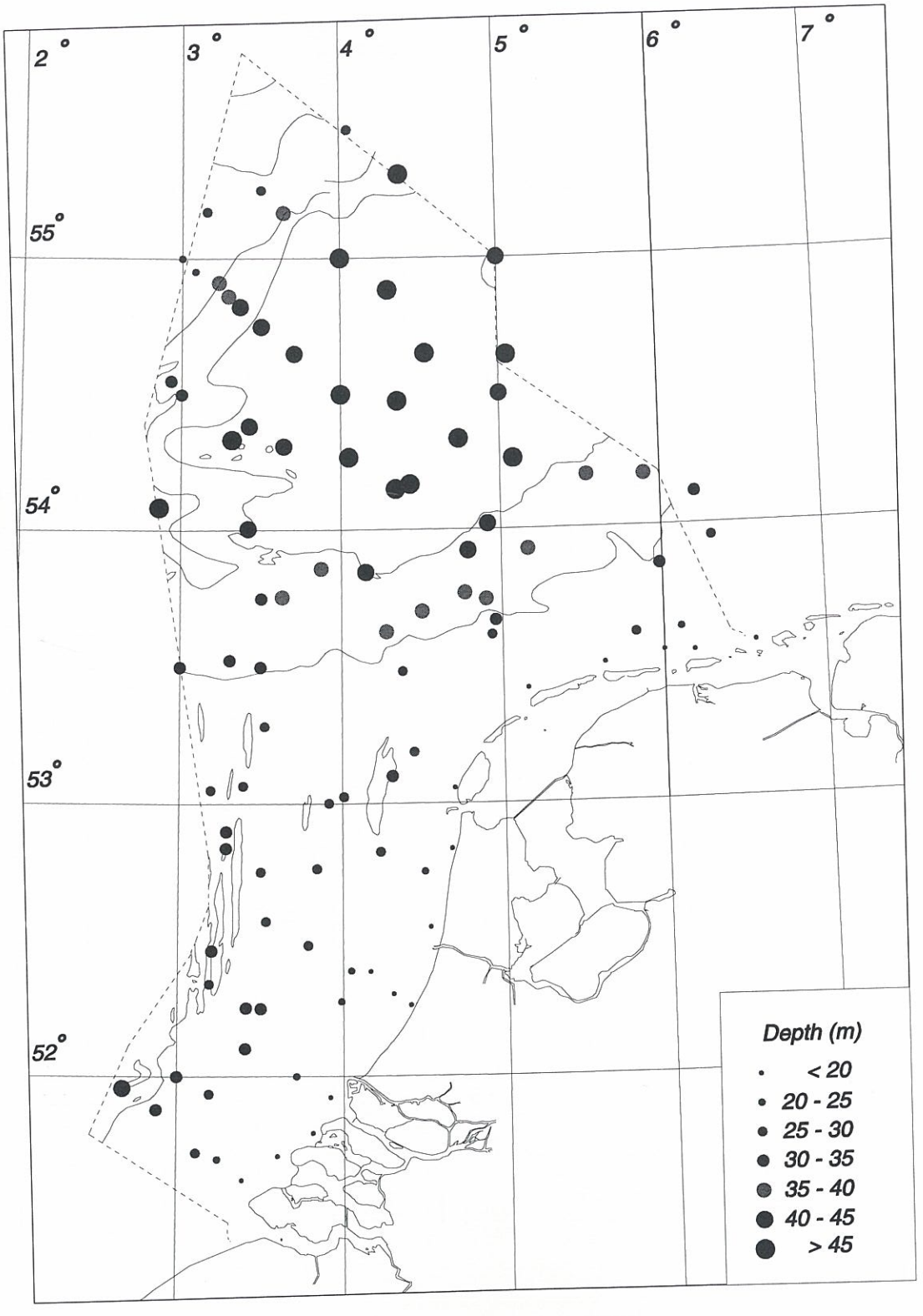


Fig. 4. The water depth (m) of the sampling stations in 1997.

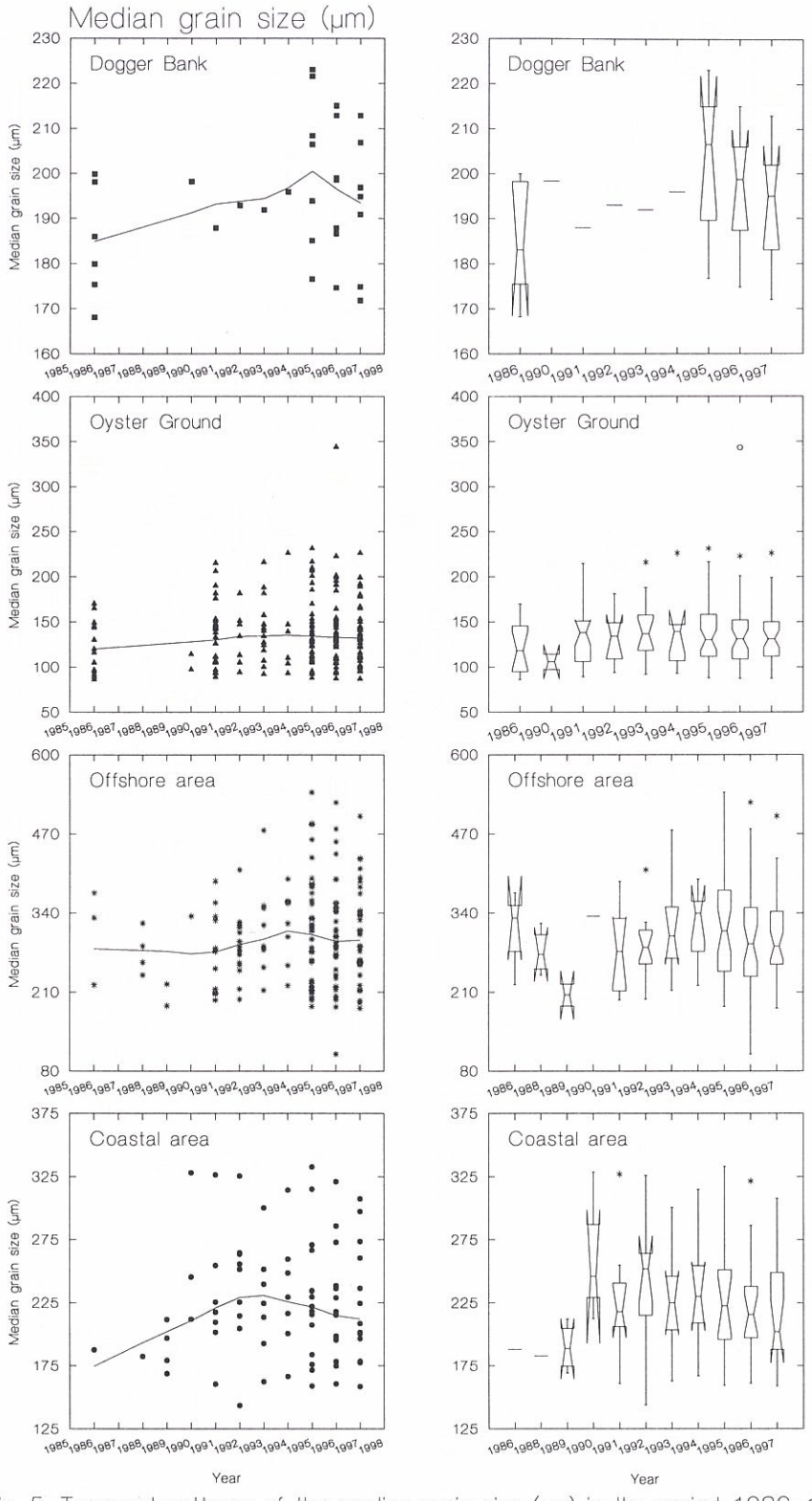


Fig. 5. Temporal patterns of the median grain size (μm) in the period 1986-1997.

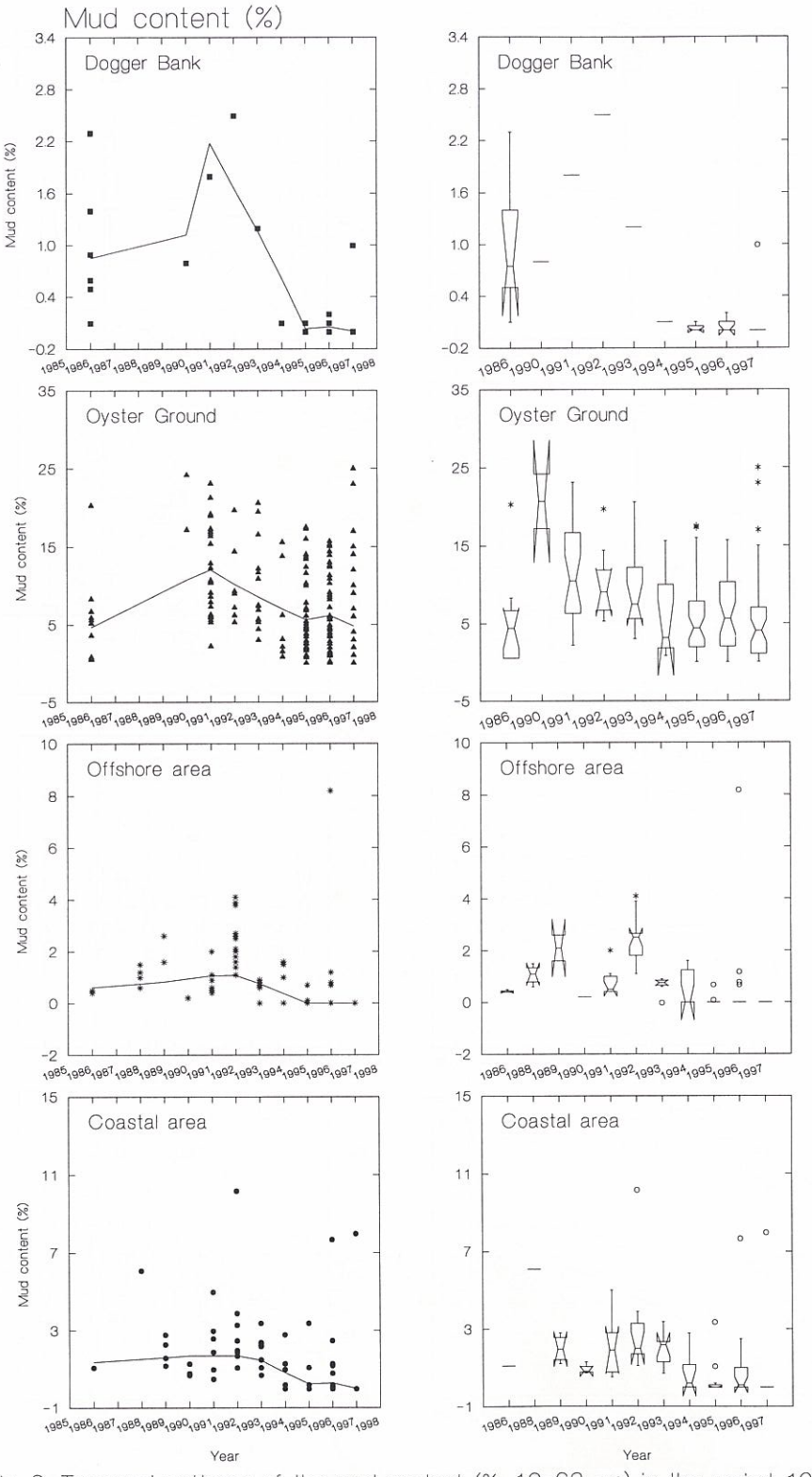


Fig. 6. Temporal patterns of the mud content (%, 16-63 μm) in the period 1986-1997.

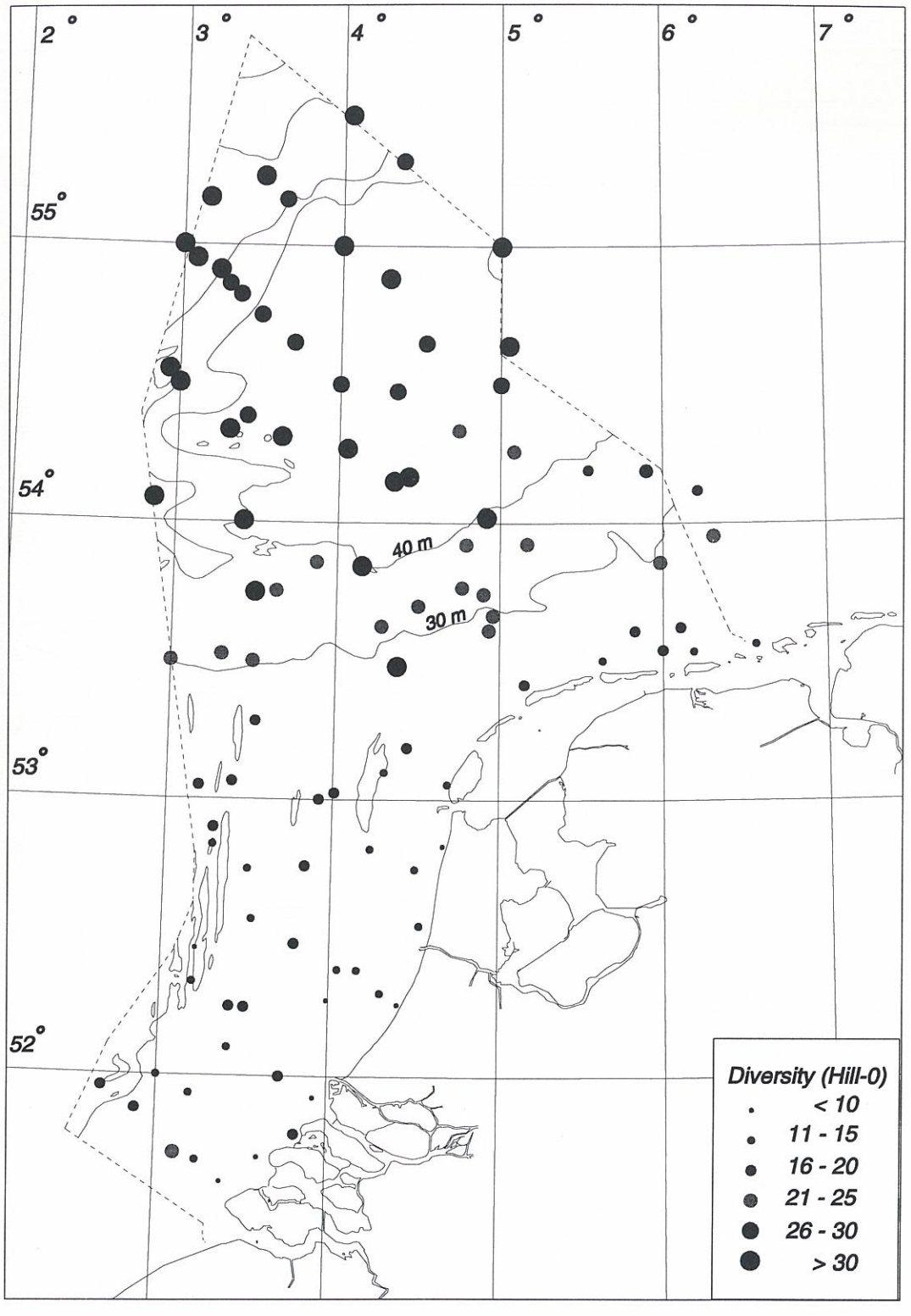


Fig. 7. The number of species per sample (Hill-0) of the macrobenthos in 1997.

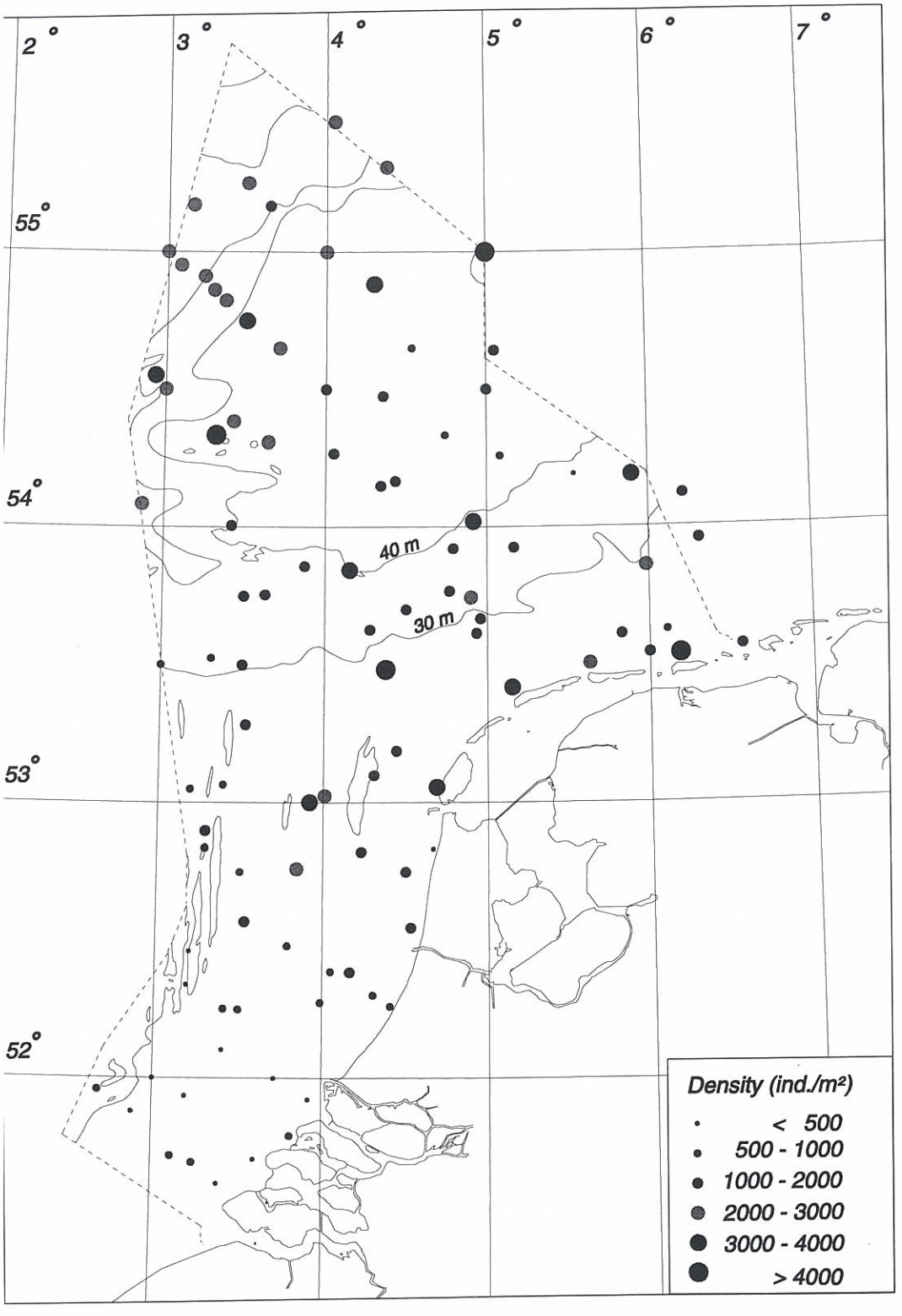


Fig. 8. The total density (ind./m²) of the macrozoobenthos in 1997.

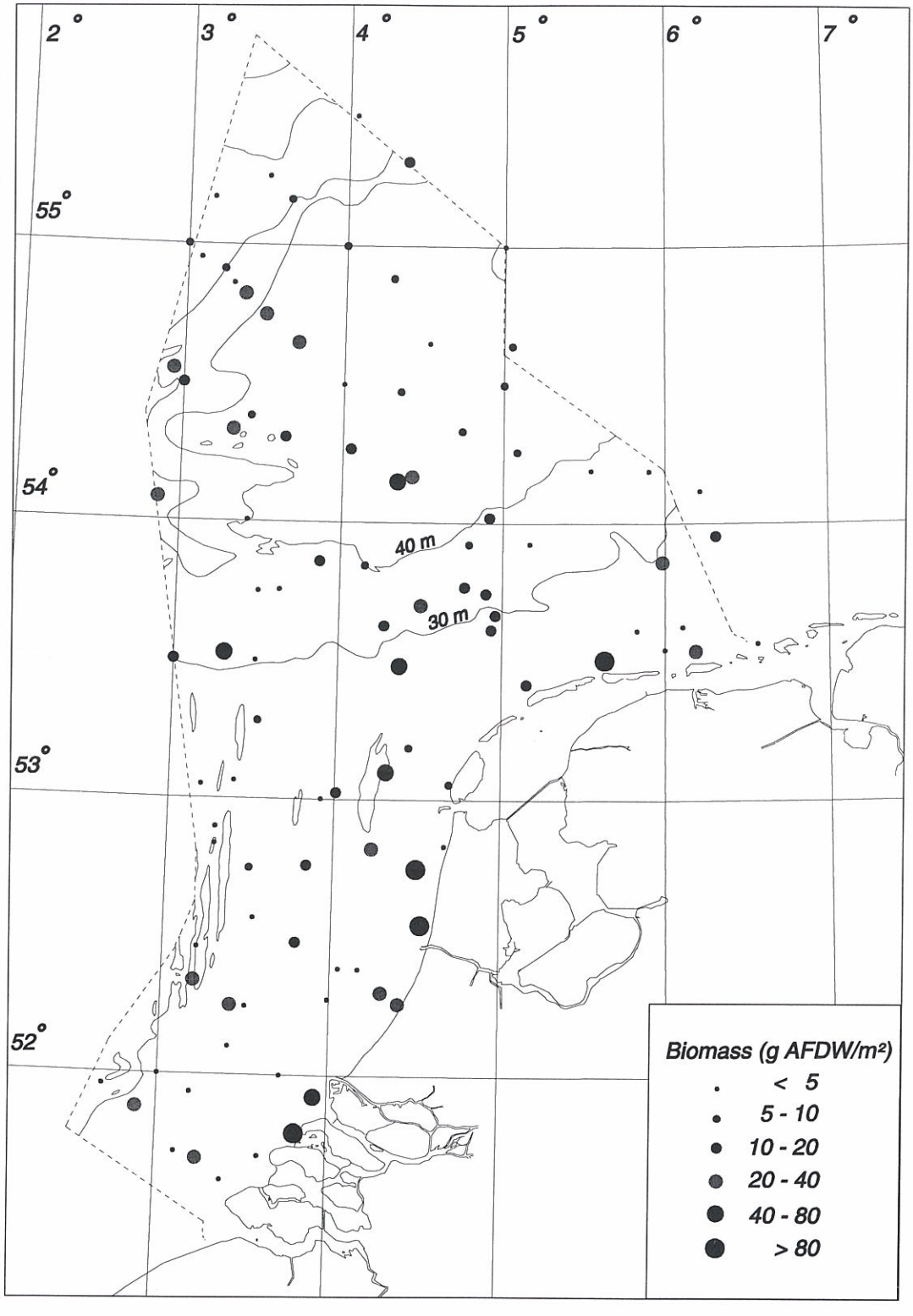


Fig. 9. The total biomass (g AFDW/m²) of the macrobenthos in 1997.

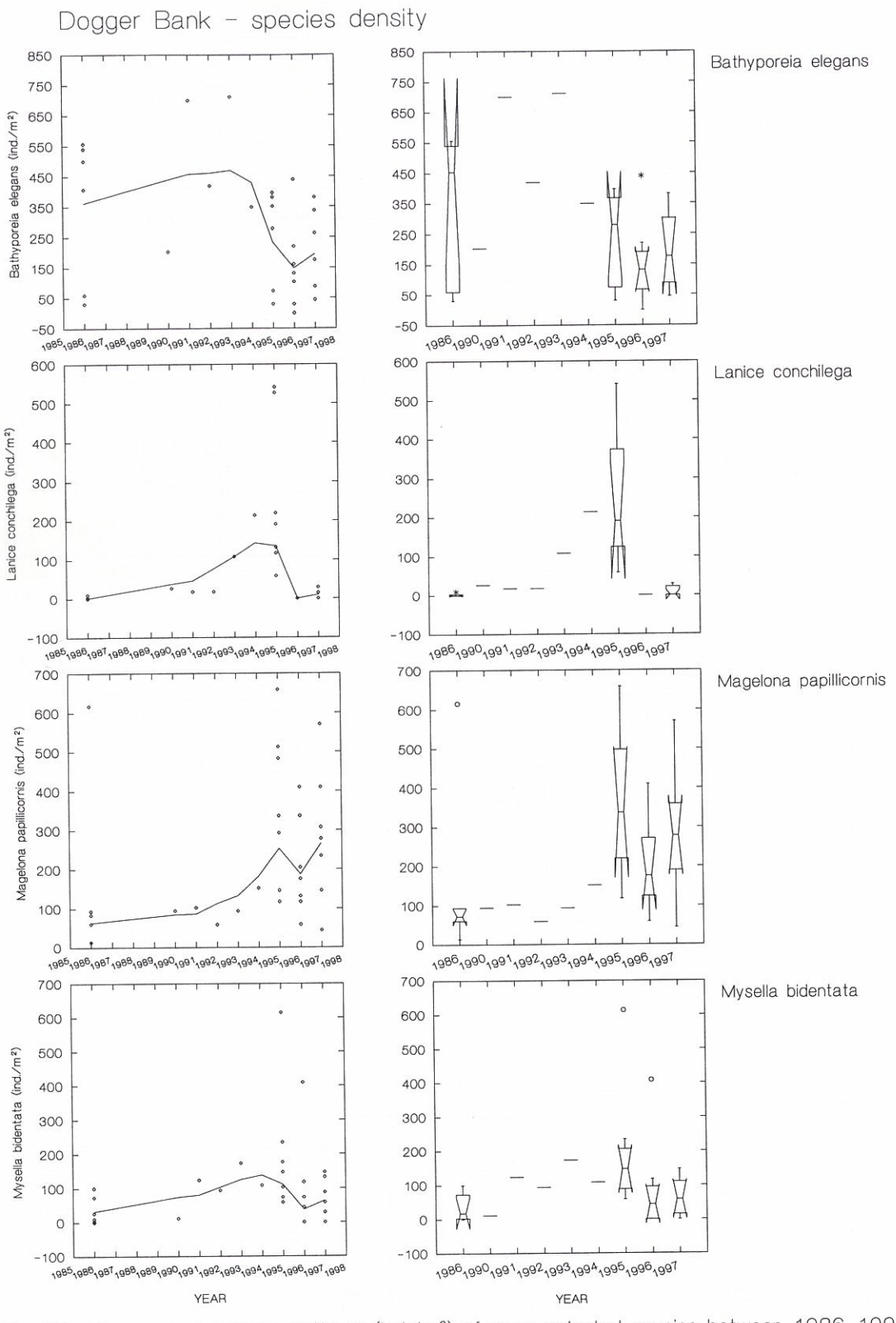


Fig. 10a. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

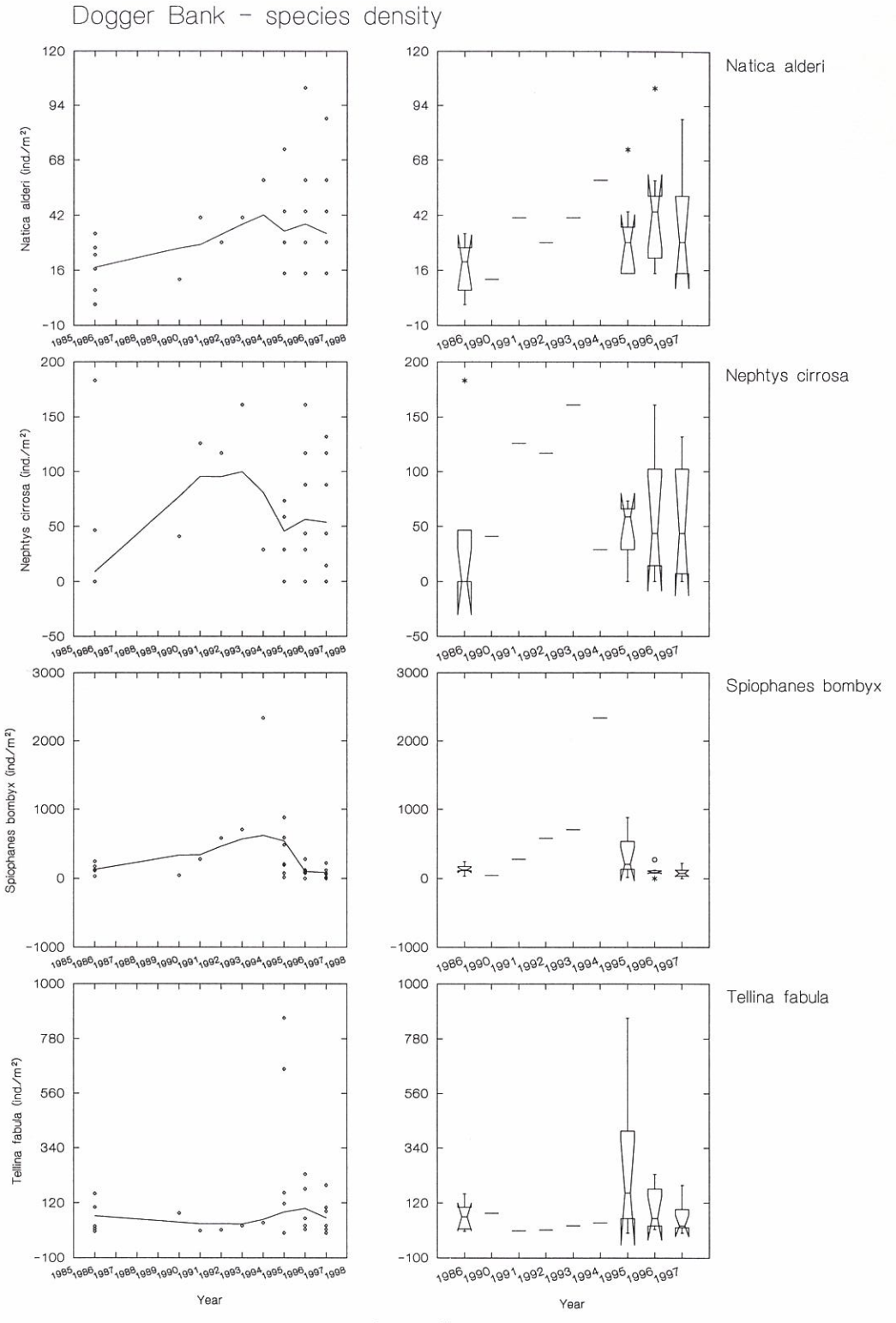


Fig. 10b. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

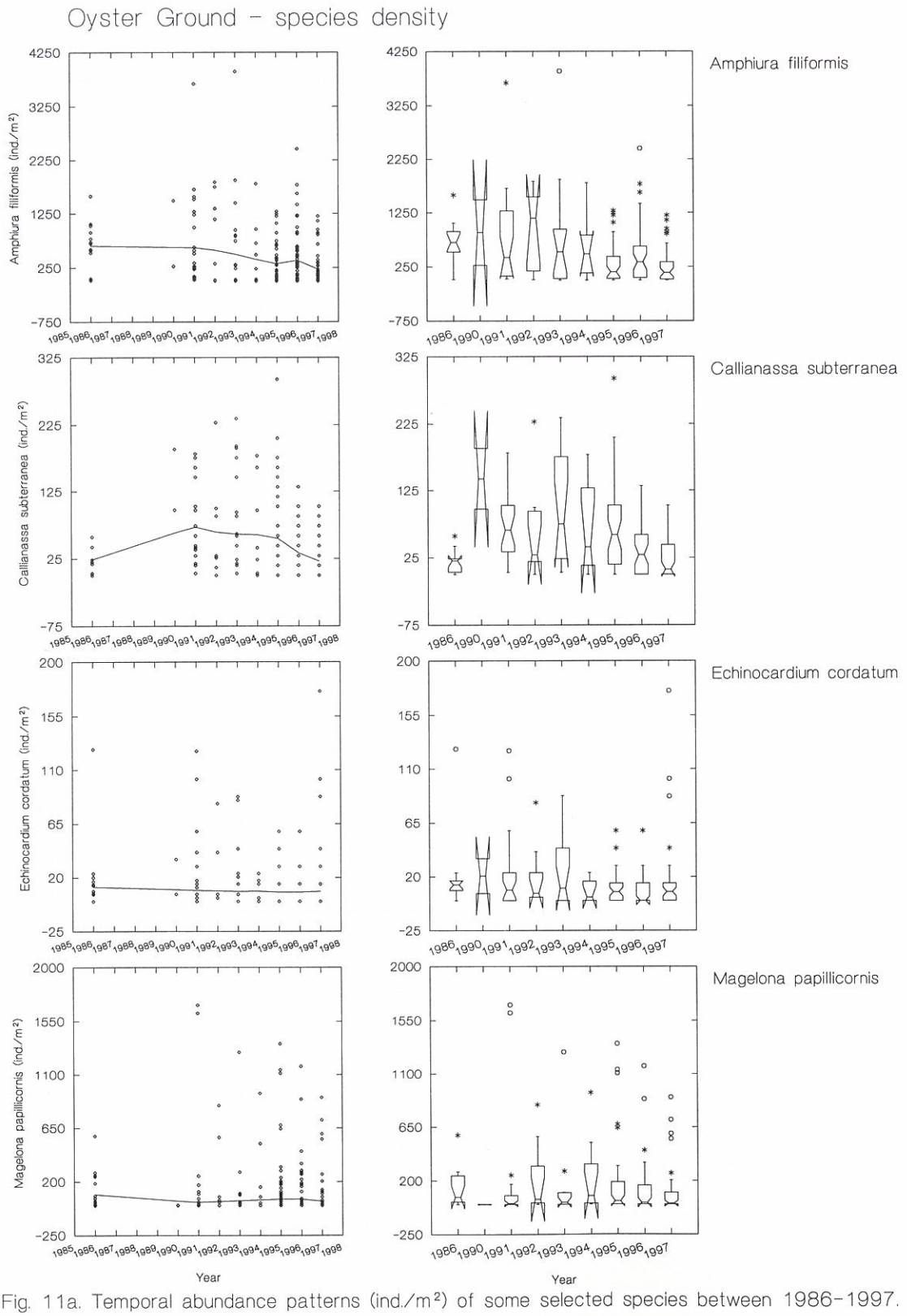


Fig. 11a. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

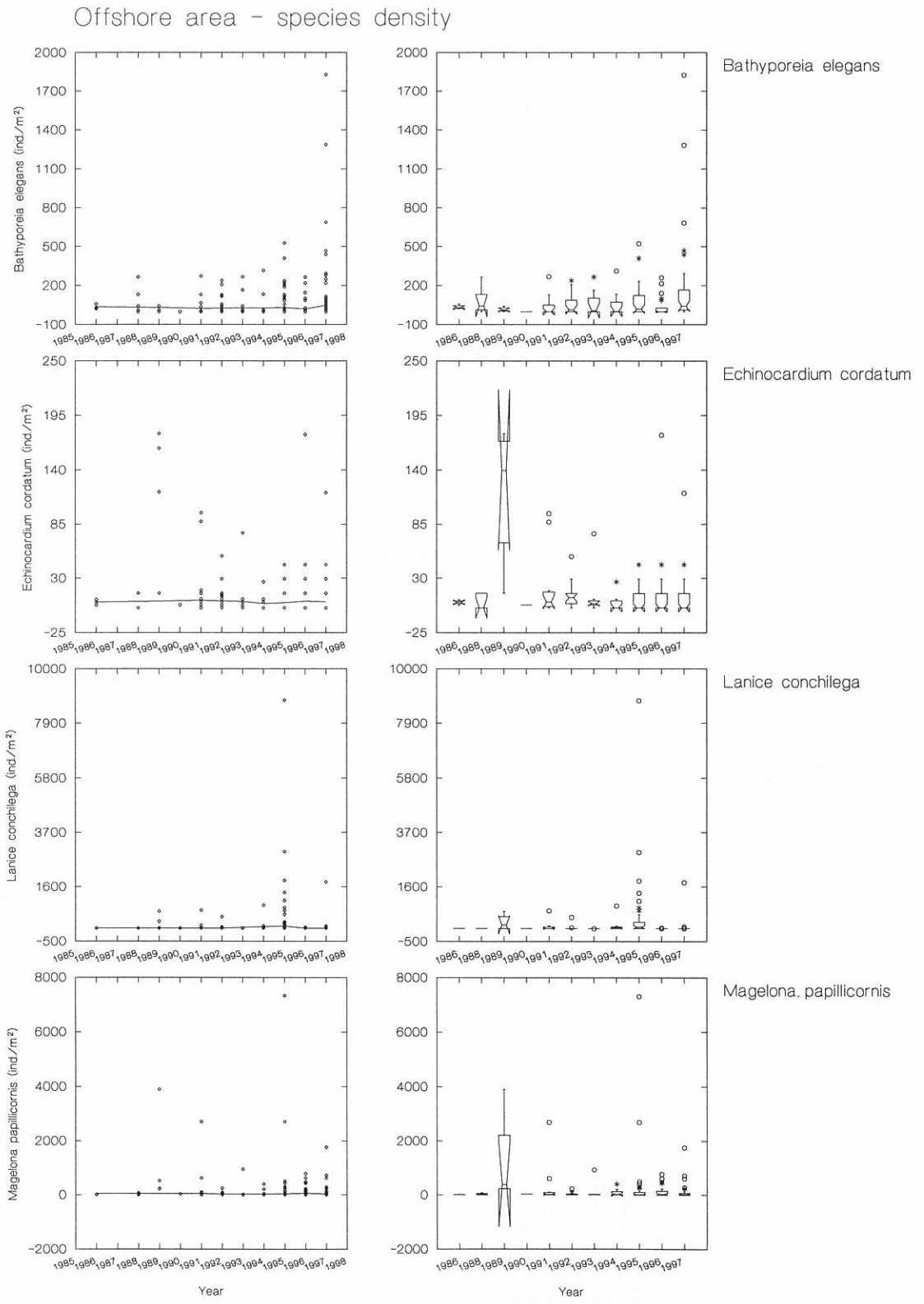


Fig. 12a. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

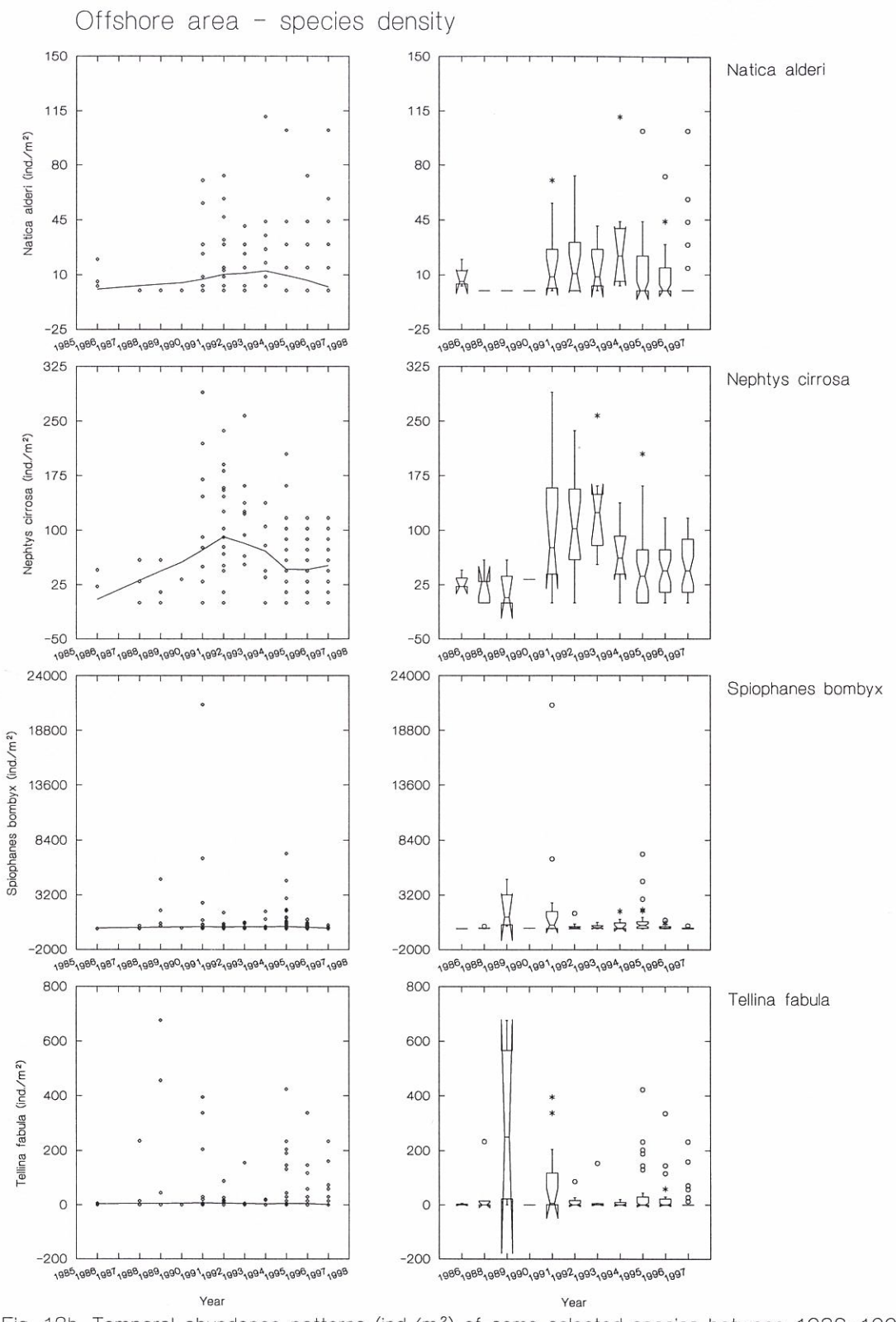


Fig. 12b. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

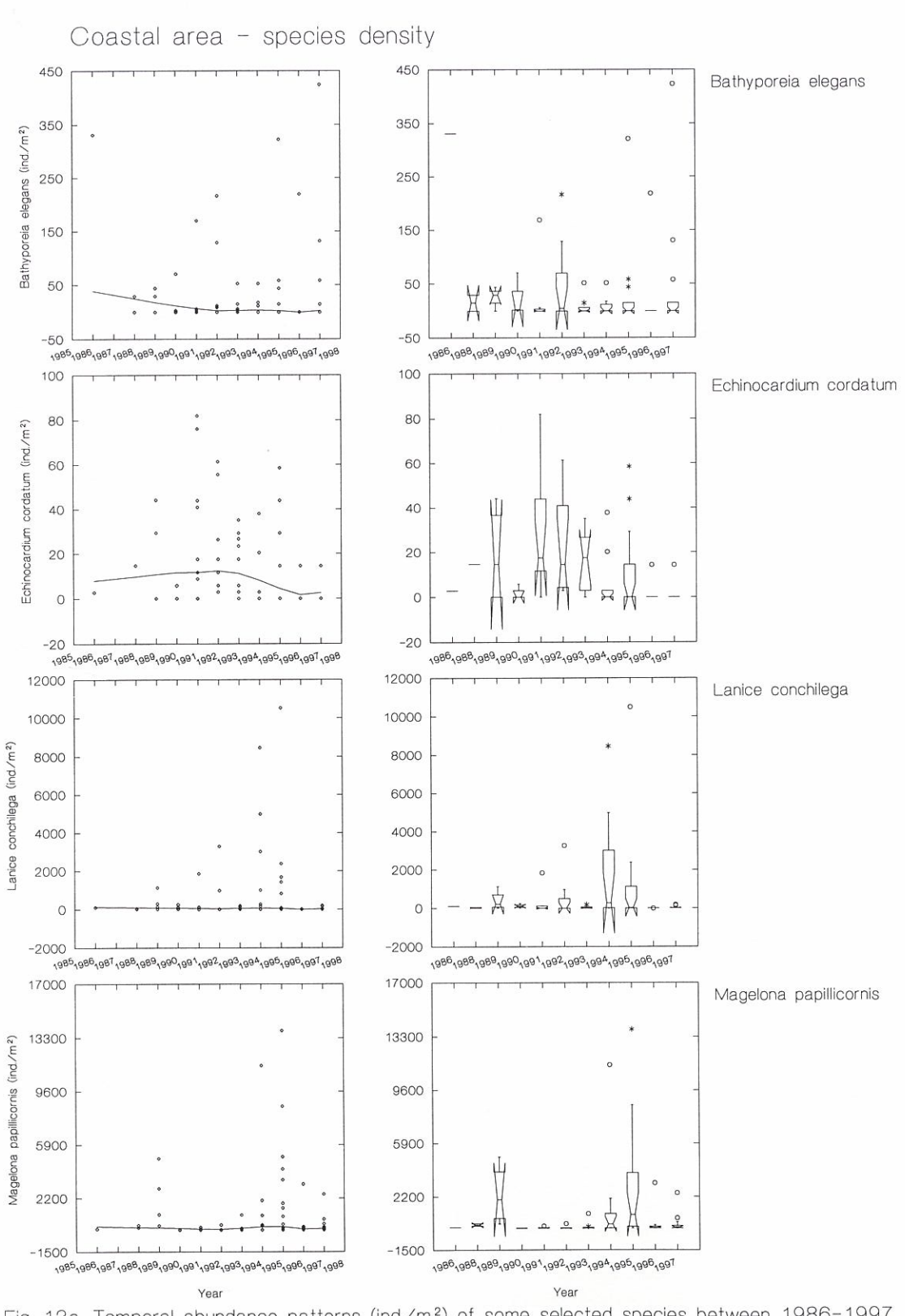


Fig. 13a. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

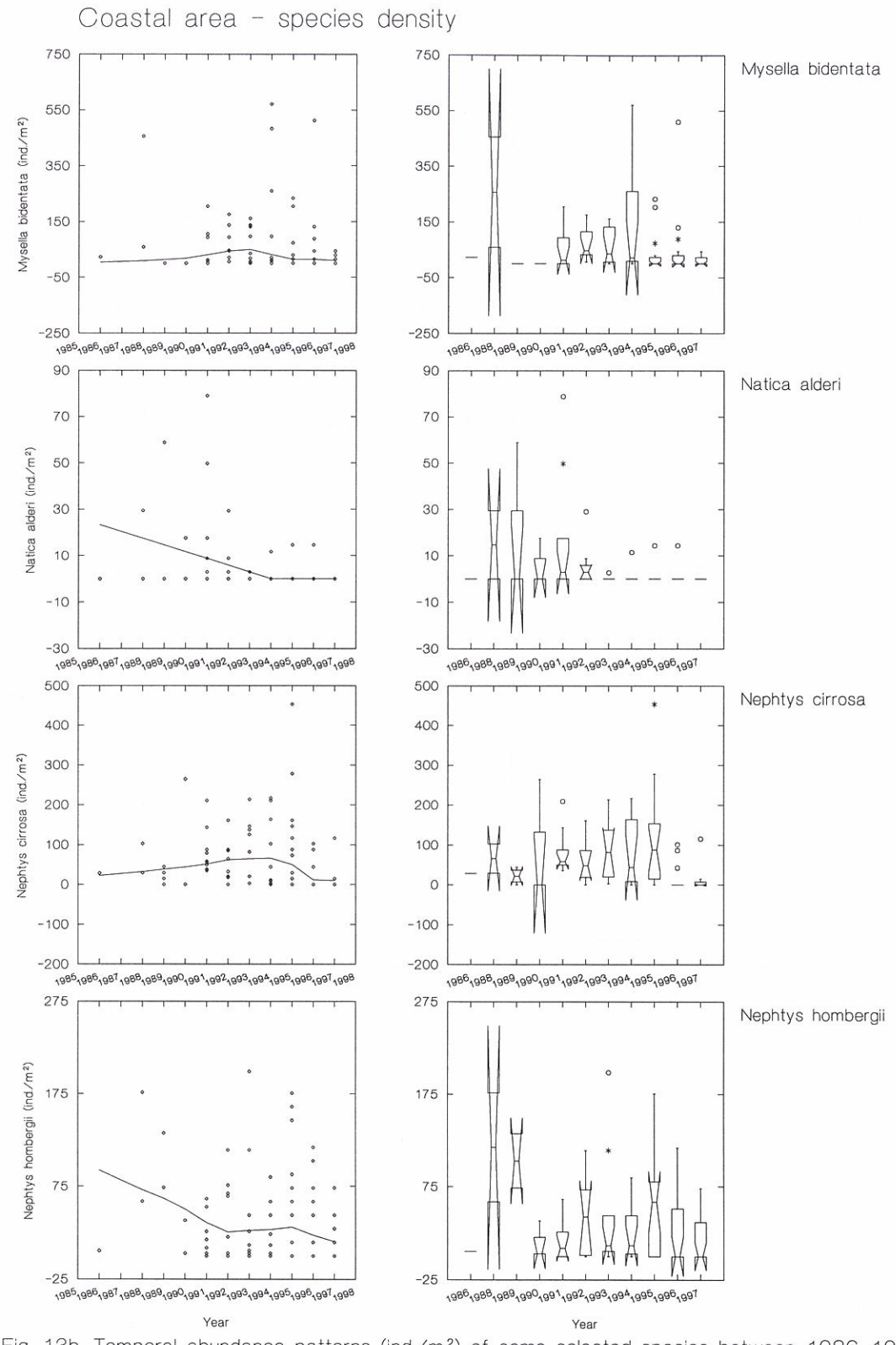


Fig. 13b. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

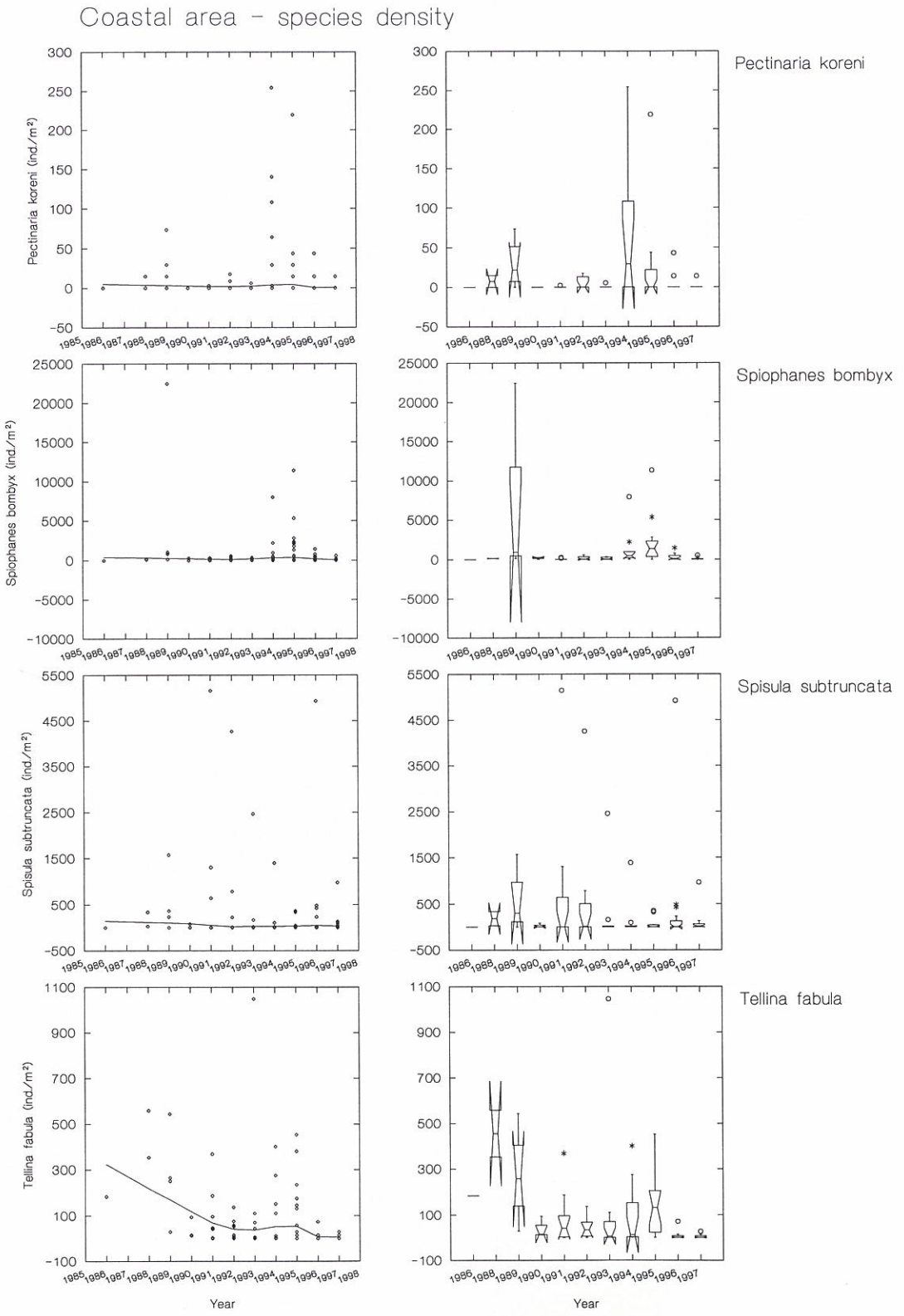


Fig. 13c. Temporal abundance patterns (ind./m²) of some selected species between 1986-1997.

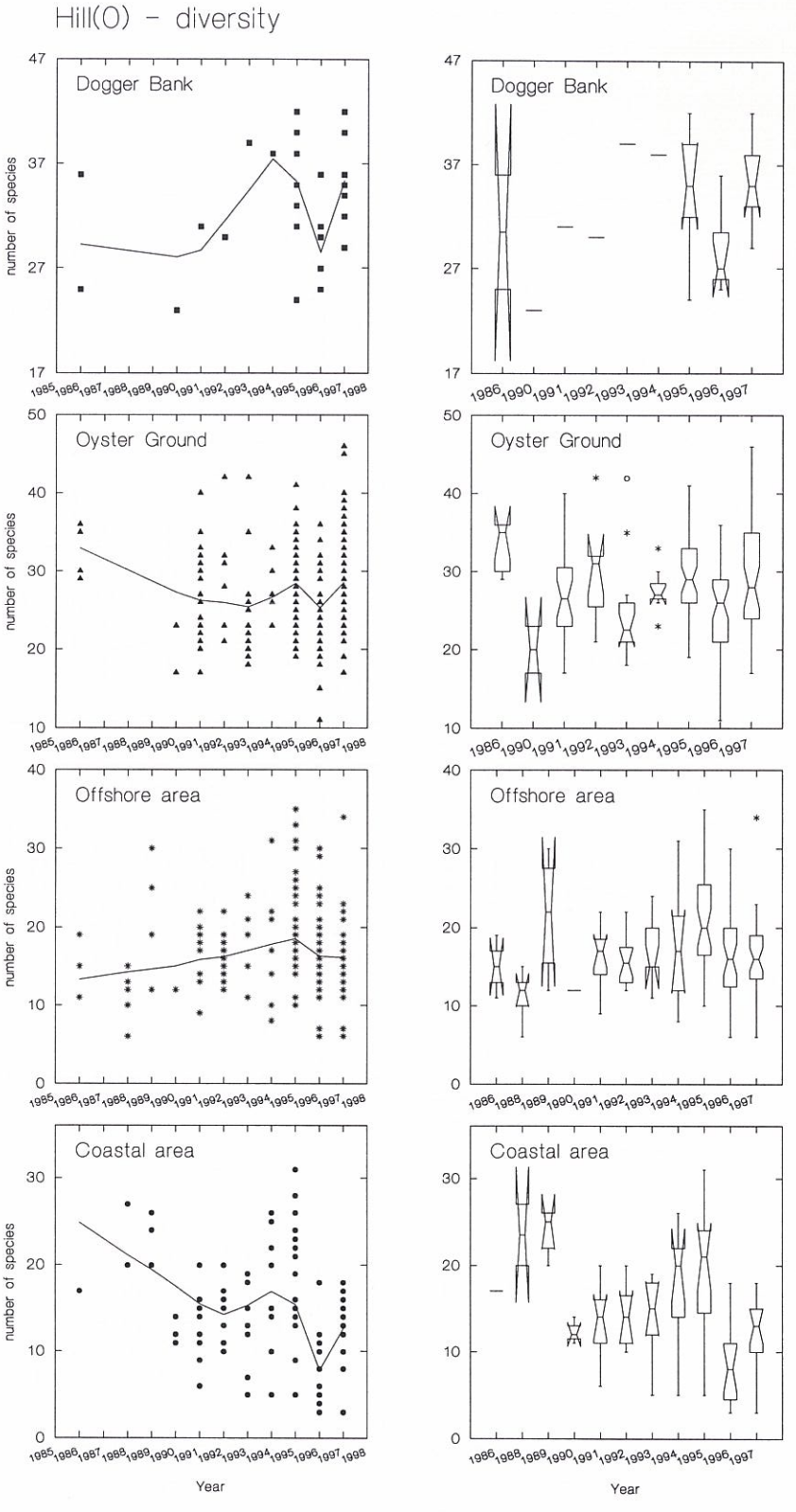


Fig. 14. Temporal patterns of the species richness (Hill-0) between 1986-1997.

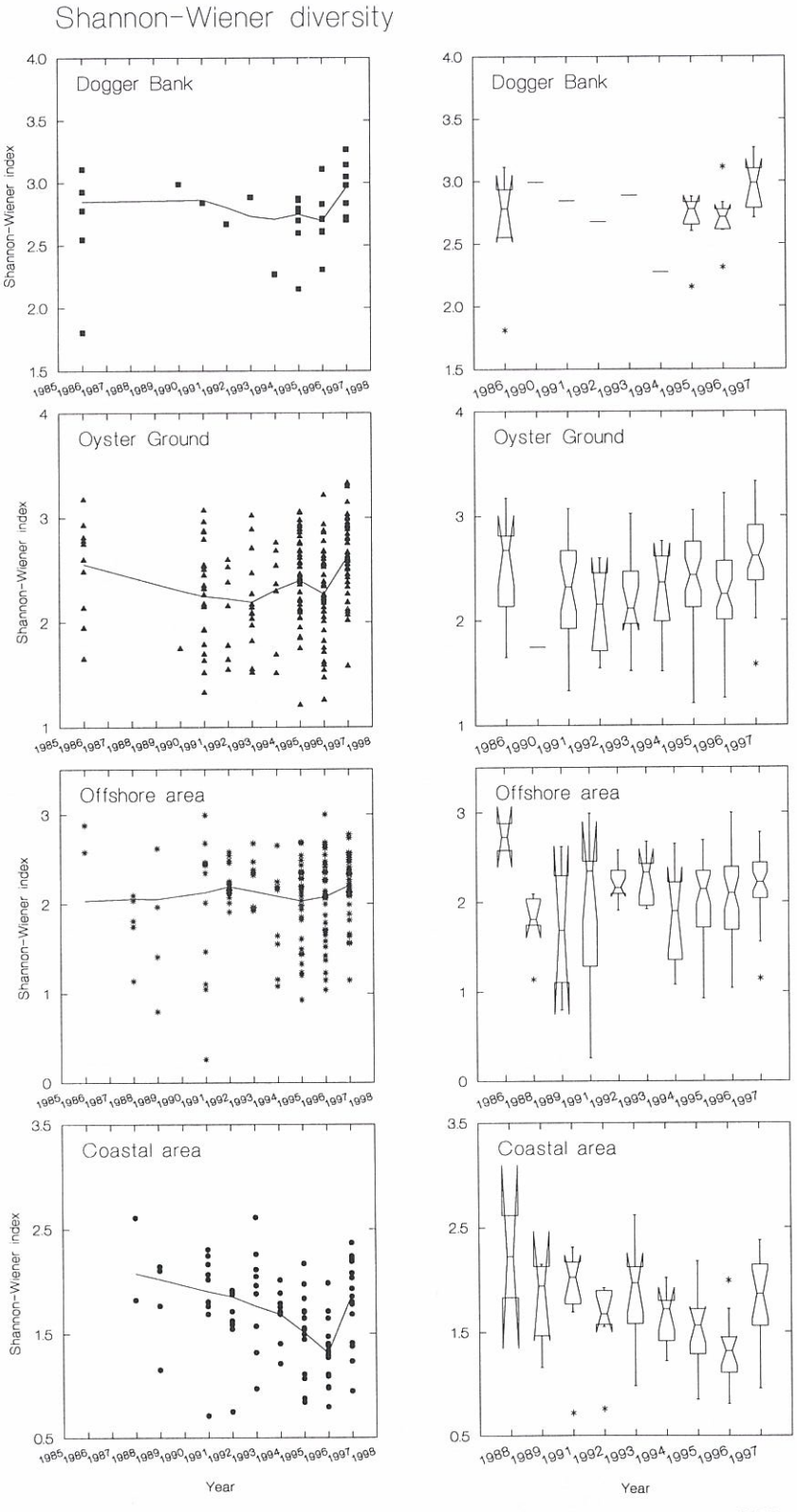


Fig. 15. Temporal patterns of the Shannon-Wiener diversity between 1986-1997.

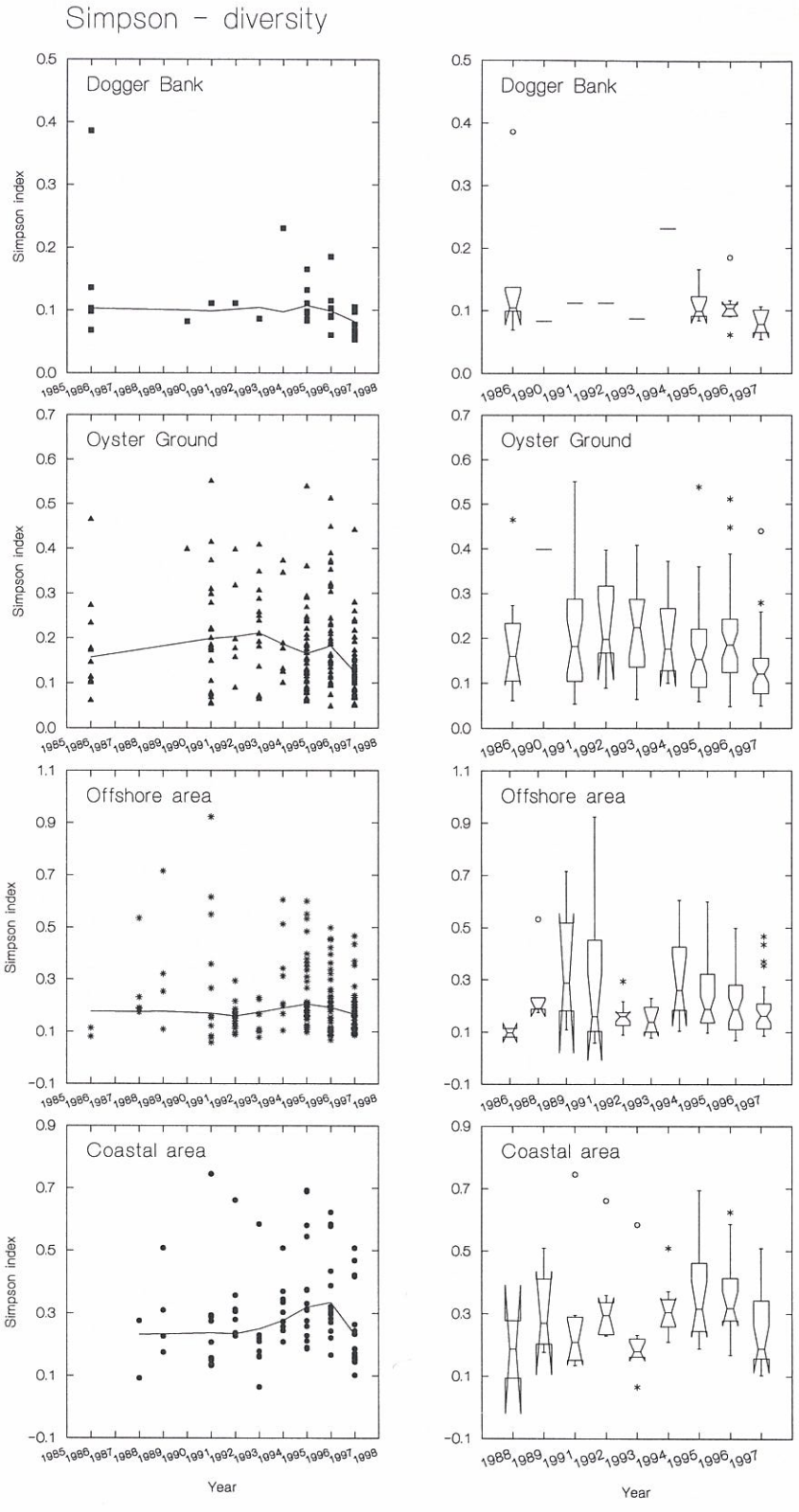


Fig. 16. Temporal patterns of the Simpson index of dominance between 1986-1997.

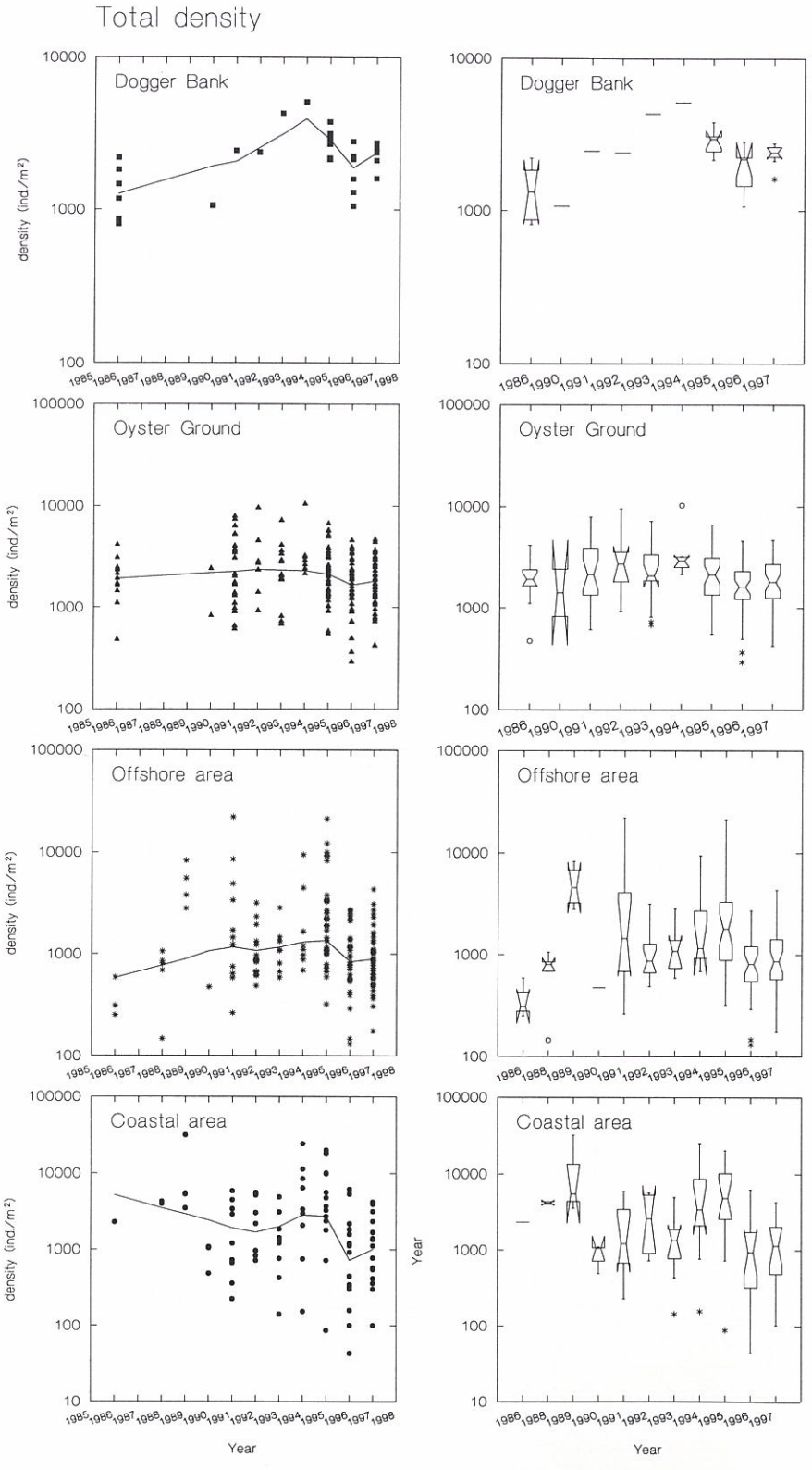


Fig. 17. Temporal patterns of the total macrobenthos density (ind./m²) between 1986-1997.

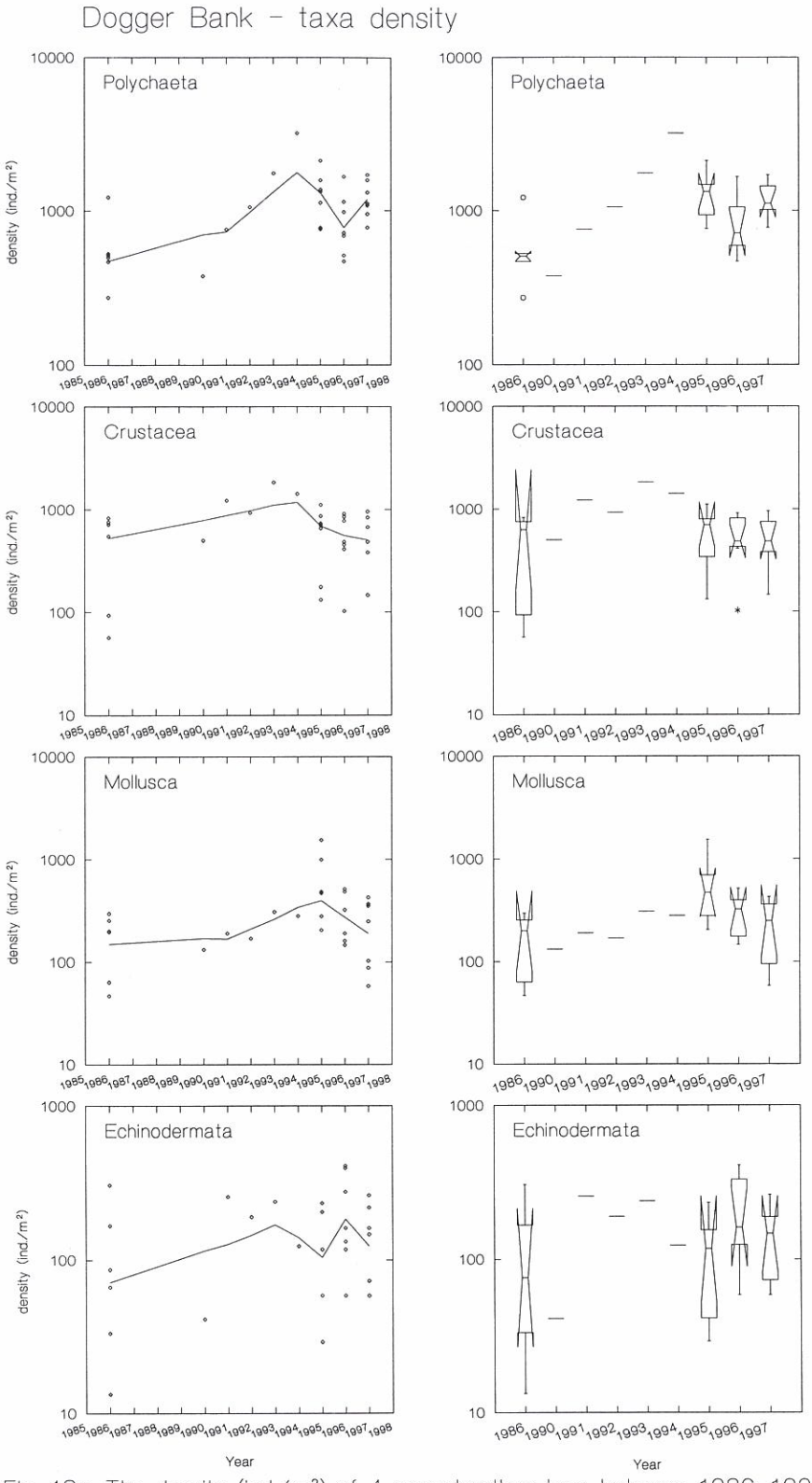


Fig. 18a. The density (ind./m²) of 4 macrobenthos taxa between 1986-1997.

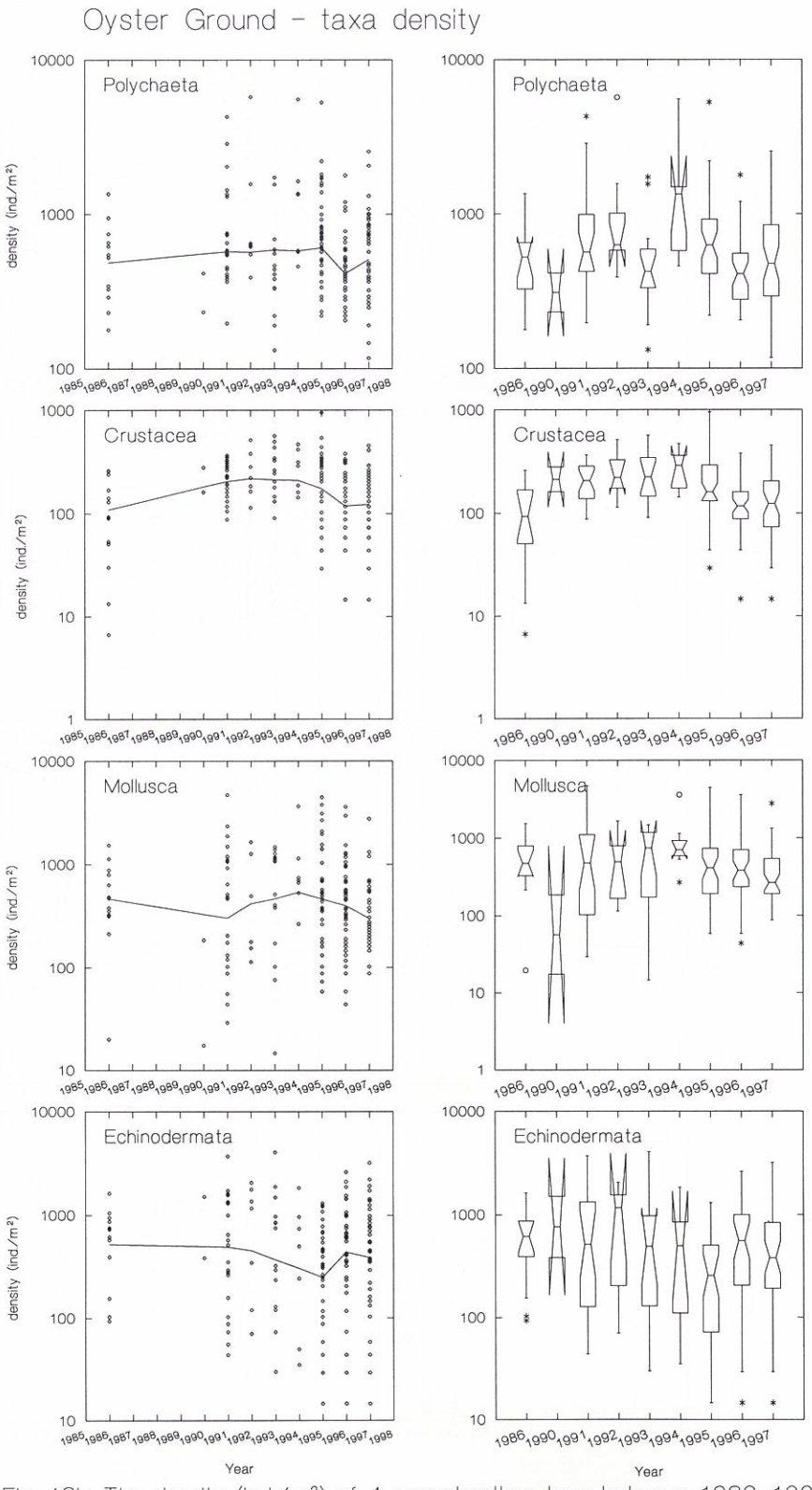


Fig. 18b. The density (ind./m²) of 4 macrobenthos taxa between 1986-1997.

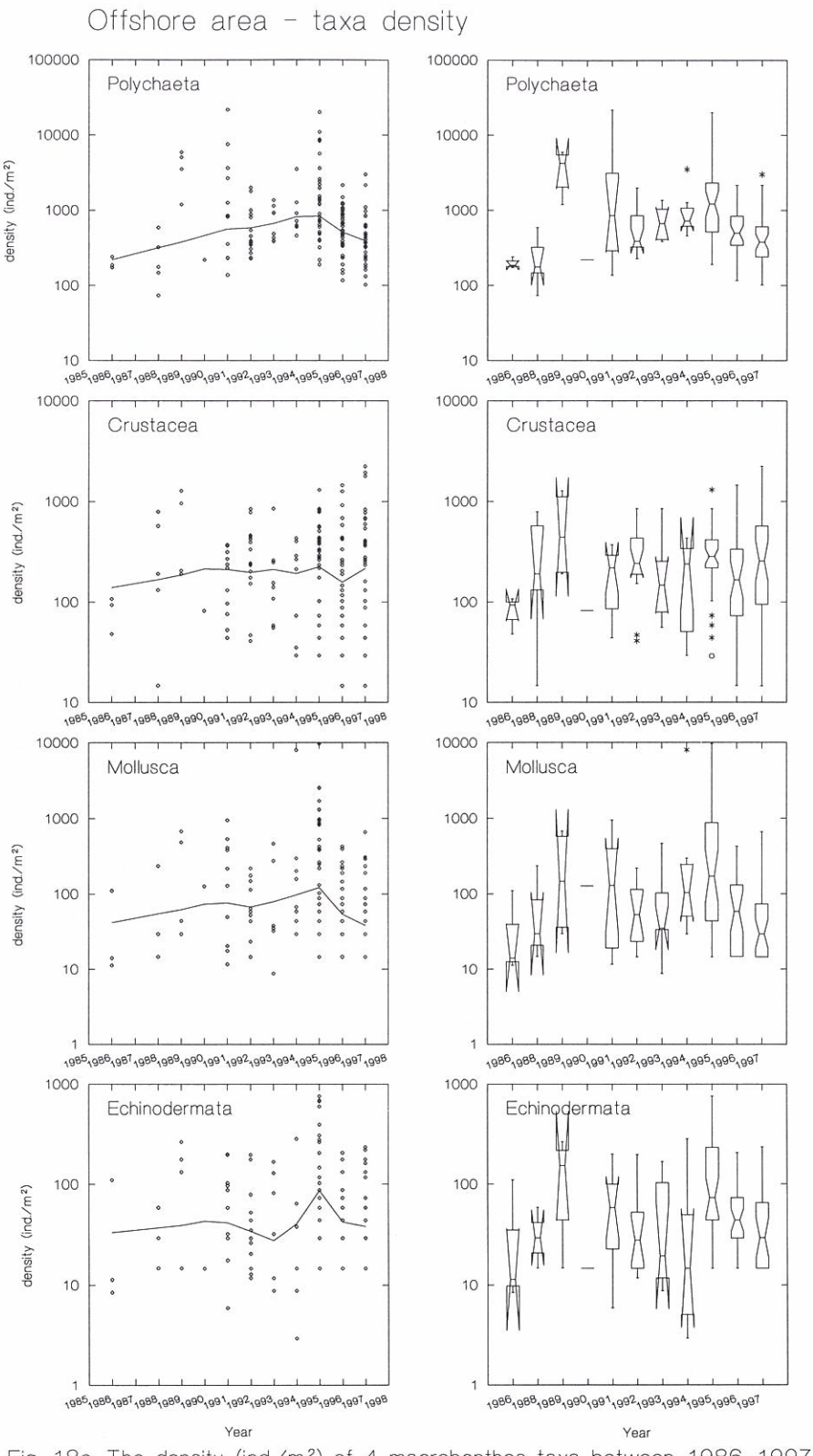


Fig. 18c. The density (ind./m²) of 4 macrobenthos taxa between 1986-1997.

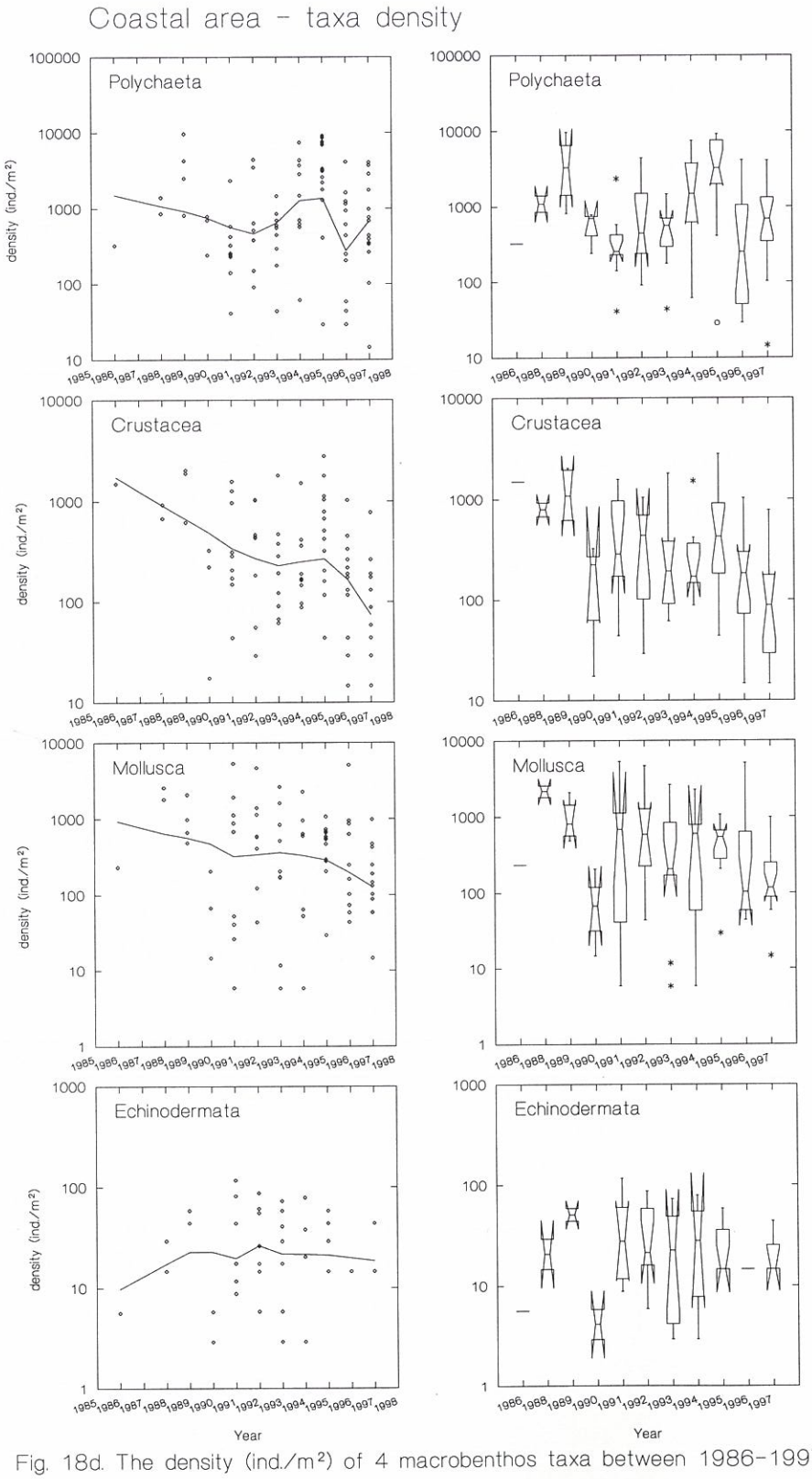


Fig. 18d. The density (ind./m²) of 4 macrobenthos taxa between 1986-1997.

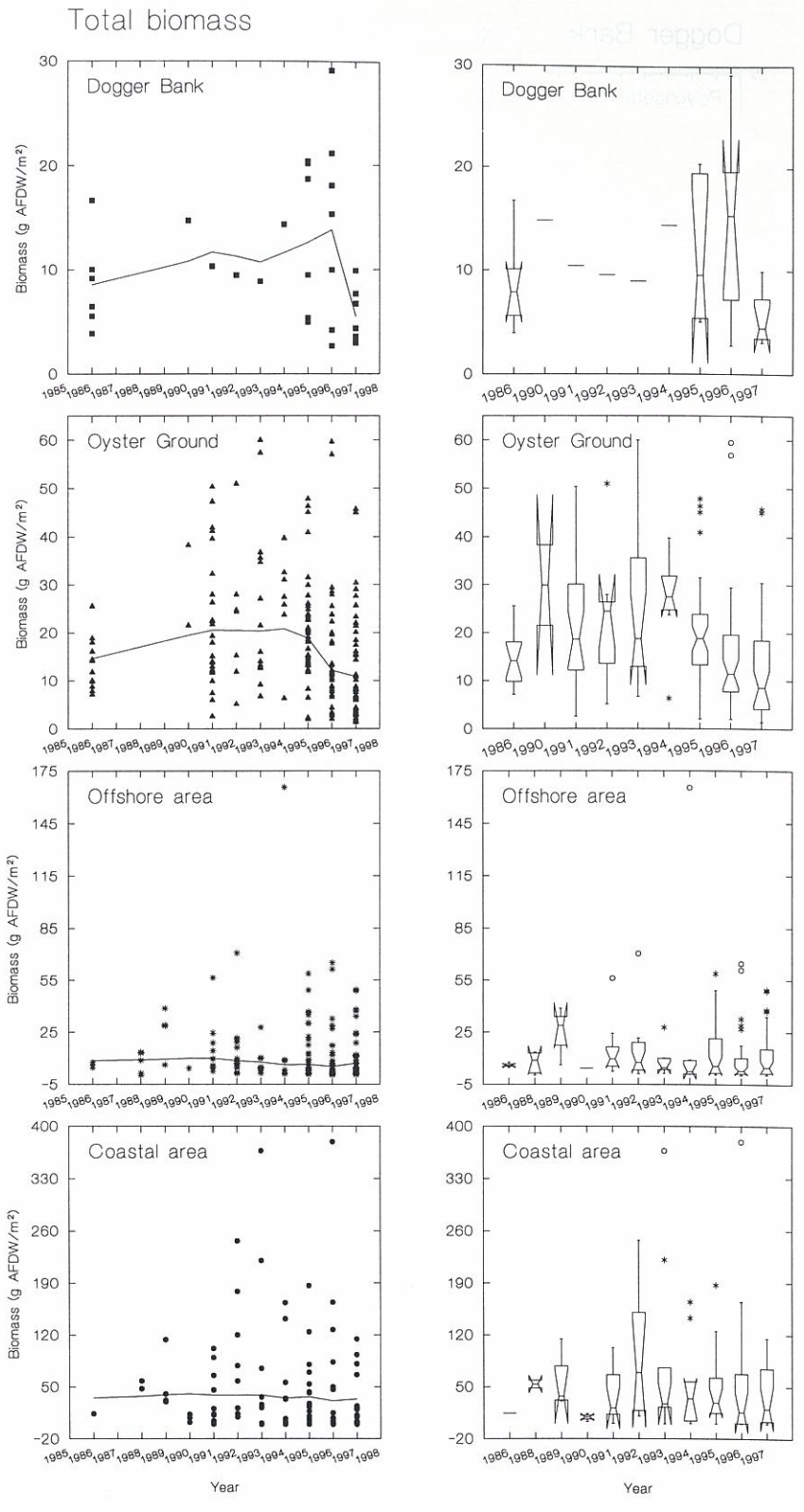


Fig. 19. Temporal patterns of the total biomass (g AFDW/m²) between 1986-1997.

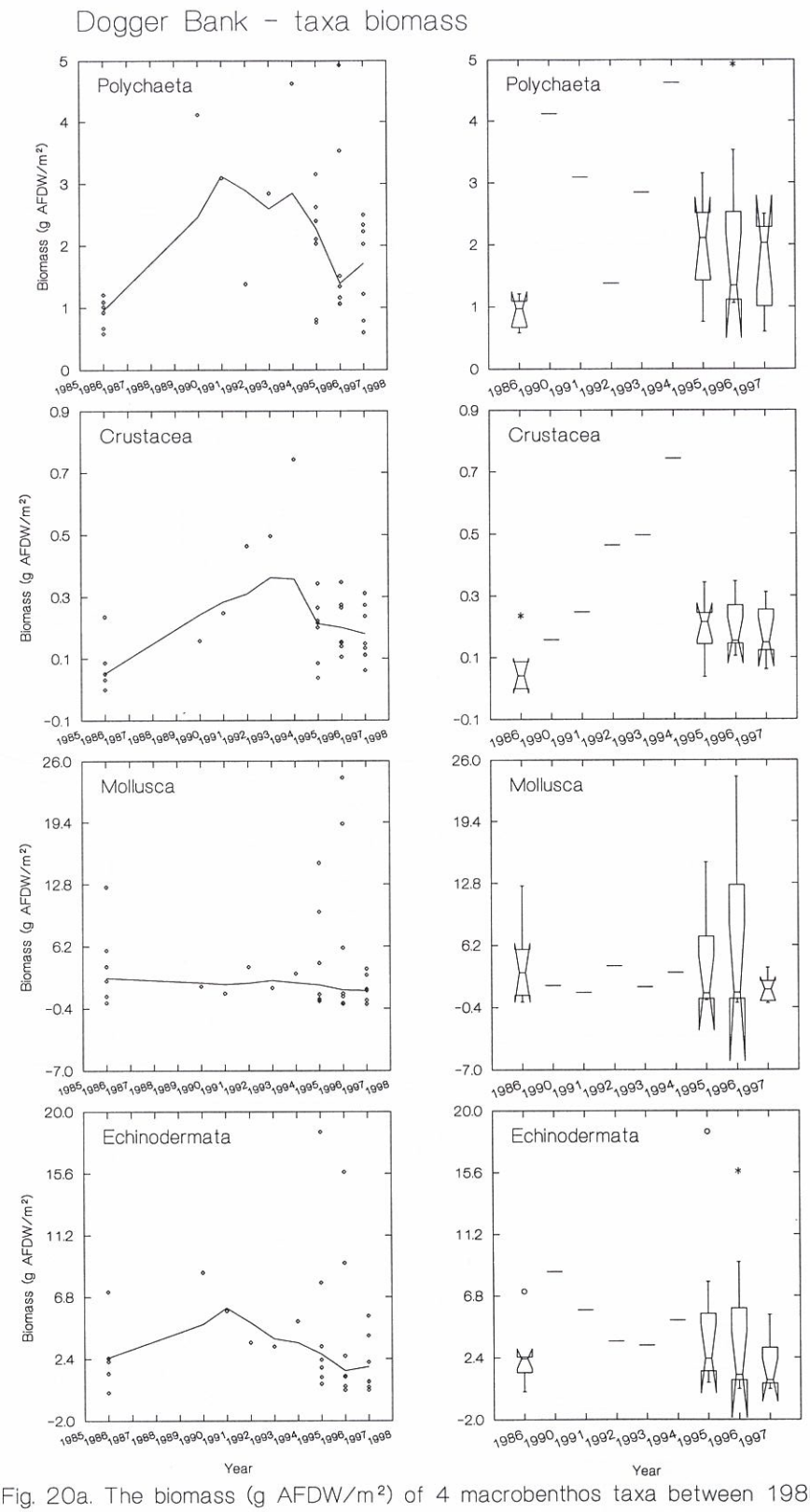


Fig. 20a. The biomass (g AFDW/m²) of 4 macrobenthos taxa between 1986-1997.

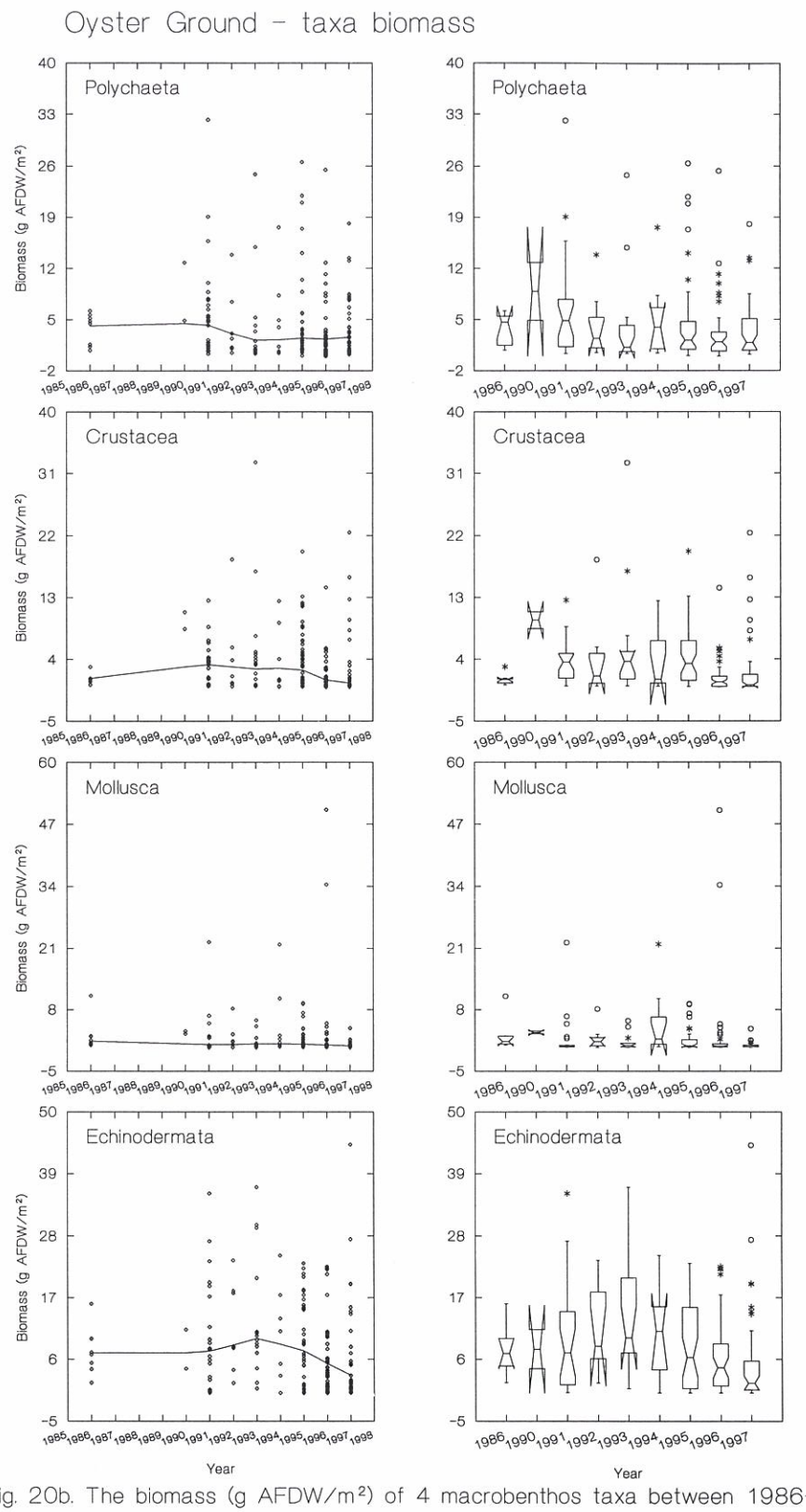


Fig. 20b. The biomass (g AFDW/m²) of 4 macrobenthos taxa between 1986-1997.

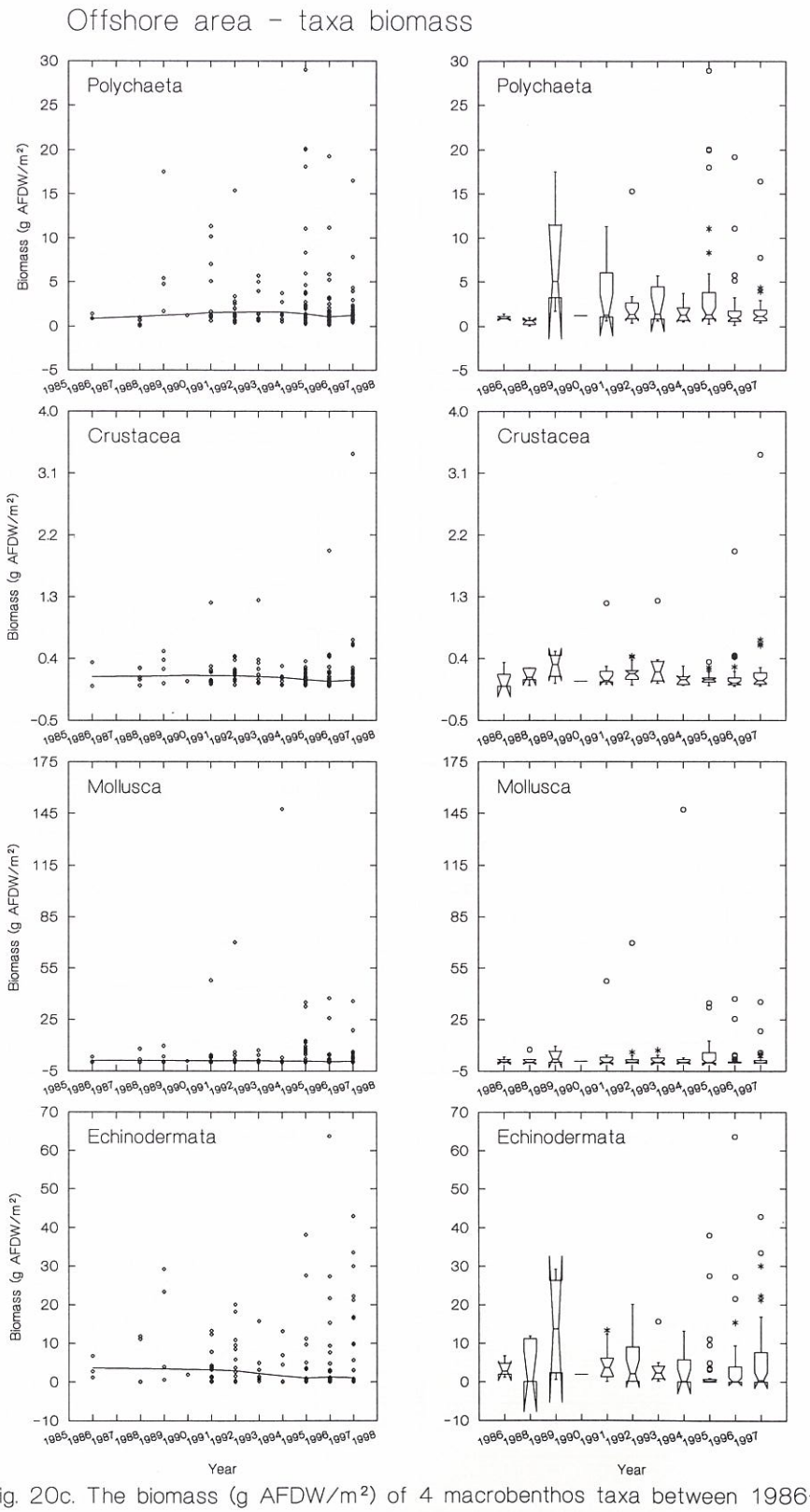


Fig. 20c. The biomass (g AFDW/m²) of 4 macrobenthos taxa between 1986-1997.

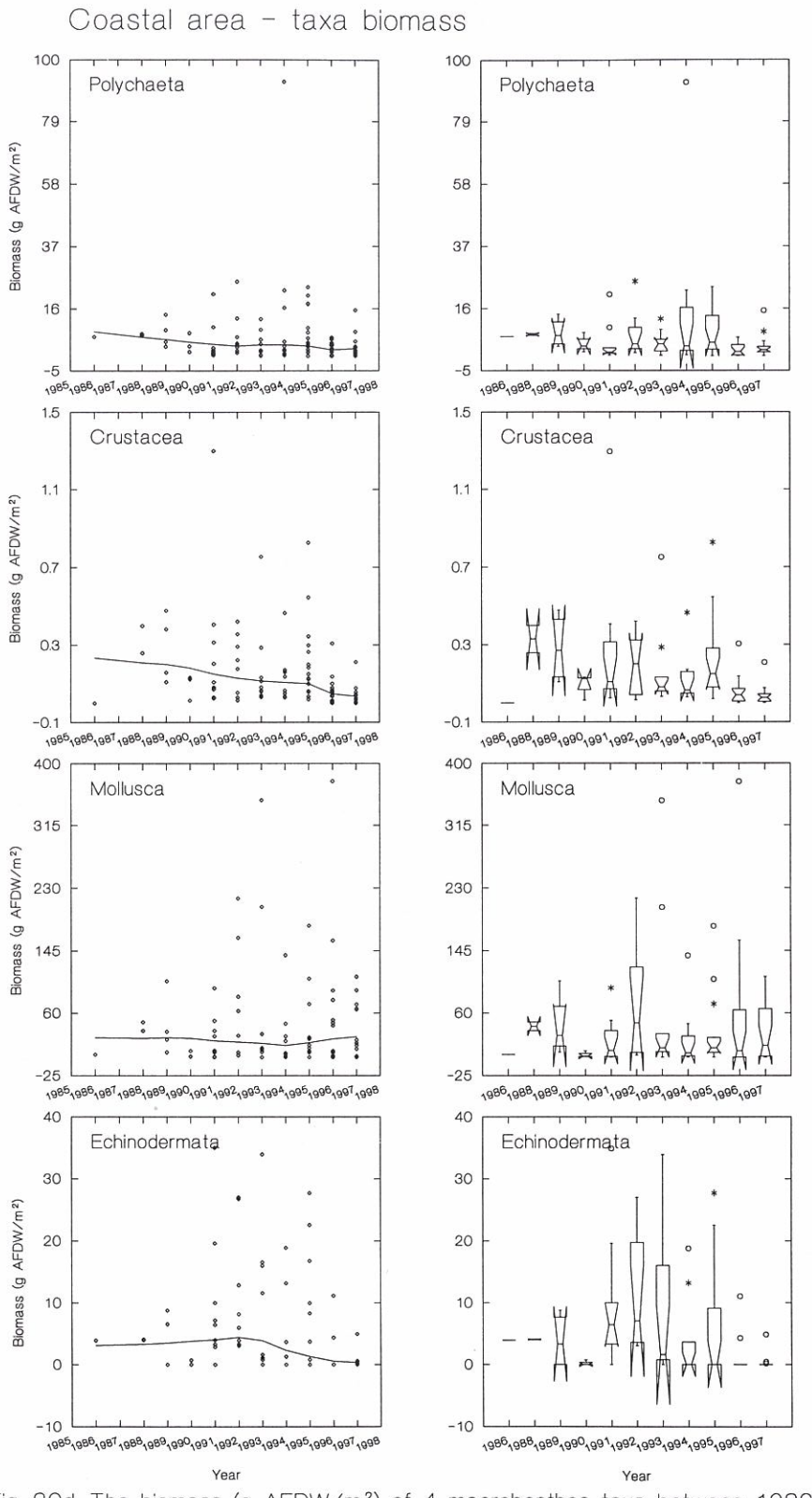


Fig. 20d. The biomass (g AFDW/m²) of 4 macrobenthos taxa between 1986-1997.

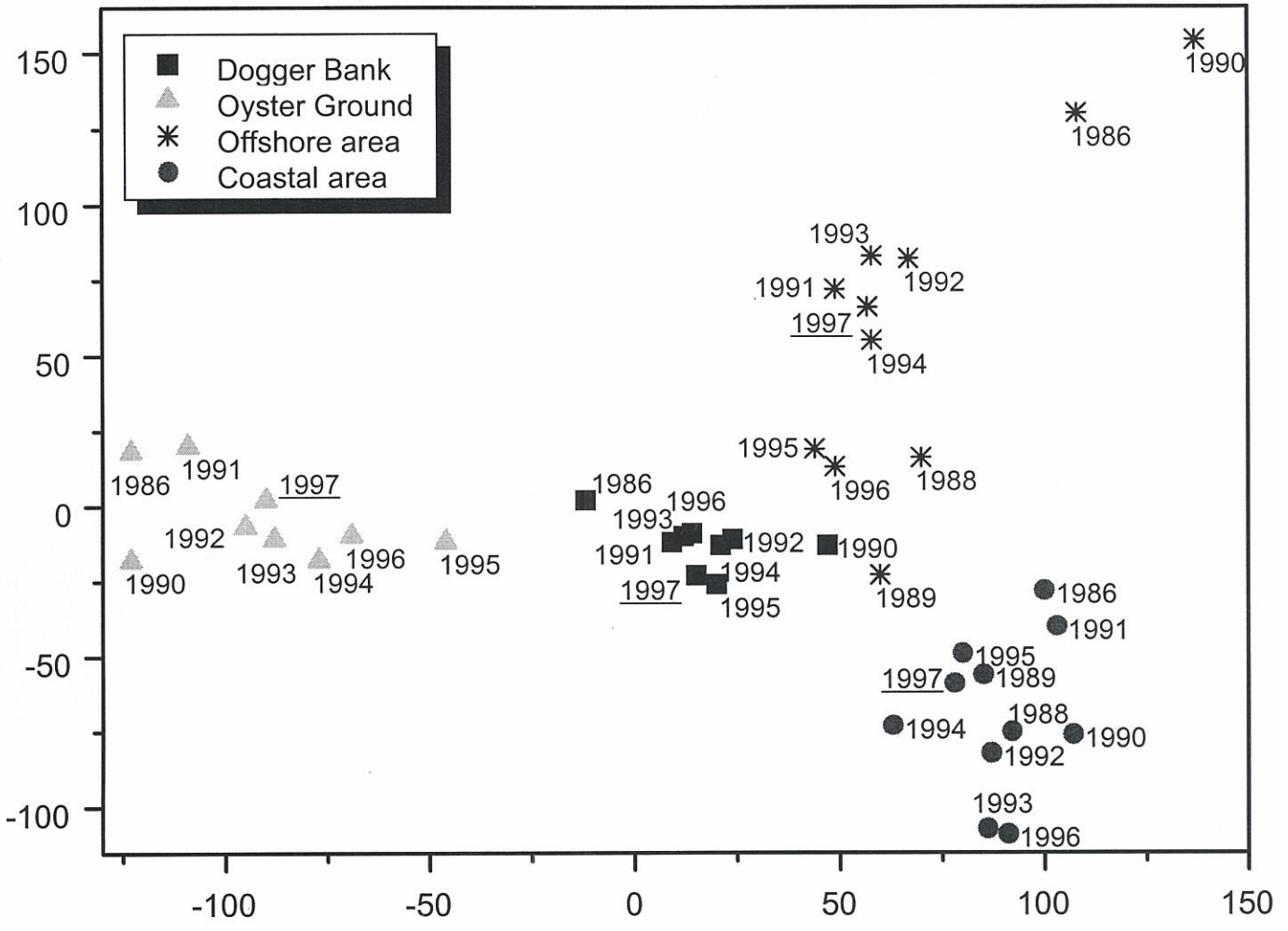
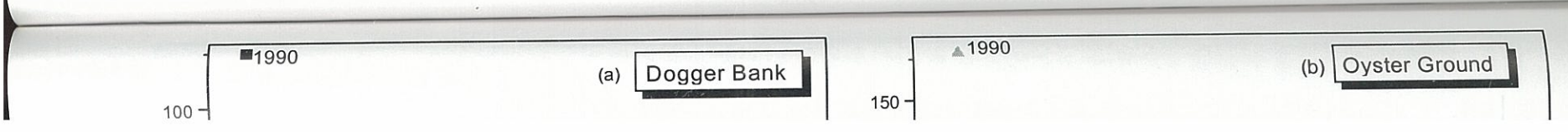


Fig. 21. The DECORANA ordinaten of the combined datasets from 1986 (ICES-NSBS), 1988-1993 (MILZON- project) and 1990-1997 (Biomonitoring North Sea, this report).



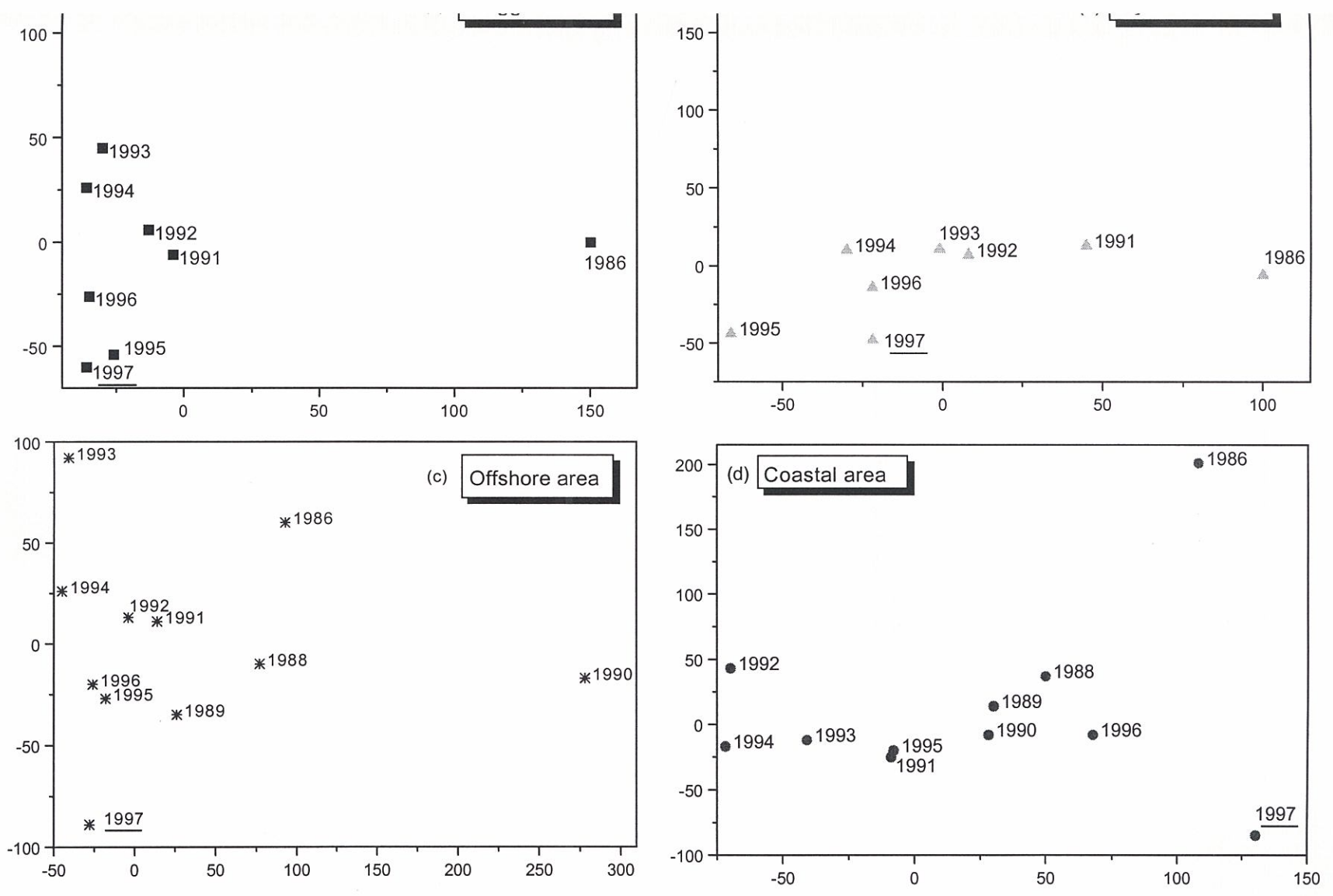


Fig. 22. The DECORANA ordinaten of the 4 distinguished areas; the southern part of the Dogger Bank (a), the Oyster Ground (b), the Offshore area (c) and the Coastal area (d) using the data of the period 1986 - 1997.

Appendices

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Dogger Bank							Oyster Ground																			
	DgG	DgG	DgG	DgG	DgG	DgG	DgG	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	OyS	
cies name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	*Code*
ETOPTERUS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	CHAE JUVE
ETOPTERUS VARIOPEDATUS	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	+	-	+	+	-	-	-	CHAE VARI
NE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	CHON SPEC
ULA VITREA	-	-	-	-	-	-	-	+	-	-	-	+	-	+	-	-	-	+	+	-	+	-	+	-	-	CING VITR
LANA CRANCHII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	CIRO CRAN
ATULIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CIRR ATUL
BULA GIBBA	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	+	-	+	+	+	+	+	CORB GIBB
OPHIUM AFFINE	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	CORO AFFI
OPHIUM SPEC.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO PHIU
YSTES CASSIVELAUNUS	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORY CASS
ELLUS PELLUCIDUS	-	+	+	-	+	-	-	-	-	+	+	-	-	-	-	-	+	-	-	-	-	+	-	+	-	CULT PELL
CHNA CYLINDRACEA	+	-	-	-	-	-	-	+	-	-	-	-	+	-	+	-	+	+	+	+	-	+	-	-	-	CYLI CYLI
TYLIS BRADYI	-	-	+	+	+	-	+	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	DIAS BRAD
TYLIS LAEVIS	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIAS LAEV
OCIRRUS GLAUCUS	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	+	-	-	+	+	-	DIPL GLAU
AX VITTATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DONA VITT
NIA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI JUVE
NIA LUPINUS	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	DOSI LUPI
NIA SPEC.	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI SPEC
NOCARDIUM CORDATUM	-	-	-	-	+	+	-	+	+	-	-	+	-	-	+	-	+	+	-	+	-	-	-	-	-	ECHI CORD
NOCARDIUM FLAVESCENS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	ECHI FLAV
NOCARDIUM JUVENILE	-	-	+	-	-	-	+	-	-	+	-	-	+	+	-	-	-	-	-	-	-	+	-	-	-	ECHI JUVE
NOCYAMUS PUSILLUS	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	ECHI PUSI
URUS SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI URUS
ARDSIA CLAPAREDII	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	EDWA CLAP
S ARCUATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ARCU
S DIRECTUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI DIRE
S ENSIS	-	+	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ENSI
S SPEC.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI SPEC
ROPNEUSTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENTE ROPN
NE JUVENILE	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ETEO JUVE
NE LACTEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ETEO LACT
NE LONGA	-	-	+	+	-	+	+	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	ETEO LONG
ORELLOPSIS DEFORMIS	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	+	+	-	-	-	-	-	-	+	-	EUDO DEFO
ORELLA EMARGINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	EUDO EMAR
ORELLA TRUNCATULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	+	+	-	+	+	-	-	EUDO TRUN
MA ALBA	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	+	+	+	EULI ALBA
IDA SANGUINEA	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	EUMI SANG
YDICE SPINIGERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EURY SPIN
YLLINAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUSY LLIN
ONUS FLABELLIGERUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUZO FLAB
GONE HEBES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	EXOG HEBE
GONE NAIDINA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EXOG NAID
I FERVENSIS	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GARI FERV
TROPODA SPEC.	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	+	-	-	-	GAST ROPO
TYANA CIRROSA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	+	-	+	+	+	-	-	GATT CIRR
CERA ALBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC ALBA
CERA LAPIDUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC LAPI

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Dogger Bank							Oyster Ground																		
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
cies name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	*Code*
:INDE NORDMANNI	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC NORD
:ERA ROUXI	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	+	-	-	GLYC ROUX
INGIA ELONGATA	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	+	-	+	+	-	-	-	GOLF ELON
INGIA PROCERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOLF PROC
INGIA VULGARIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	GOLF VULG
ADELLA BOBRETZKII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI BOBR
ADA MACULATA	+	+	+	+	+	+	+	-	+	+	-	+	+	-	+	-	+	-	+	-	-	-	+	+	-	GONI MACU
ADIDAE SPEC.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI SPEC
IS CAPENSIS	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	+	-	-	-	GYPT CAPE
MOTHOE JUVENILE	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARM JUVE
MOTHOE LONGISETIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	HARM LONG
MOTHOE LUNUATA	-	+	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	HARM LUNU
INIA ANTENNARIA	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	+	+	-	+	-	-	+	+	+	+	HARP ANTE
INIA CRENULATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	HARP CREN
INIA PECTINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	HARP PECT
ONURA AUGENERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HESI AUGE
OMEDON DENTICULATUS	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	+	-	HIPP DENT
ROZOA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	HYDR OZOA
THORACIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	IONE THOR
IOE TRISPINOSA	+	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	IPHI TRIS
PROPS FASCIATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LAMP FASC
CE CONCHILEGA	+	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LANI CONC
CE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LANI JUVE
ON SQUAMOSUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	LEPT SQUA
OTHOE INCISA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	LEUC INCI
OTHOE LILLJEBORGI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	LEUC LILL
BRINERIS LATREILLI	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	LUMB LATR
LA LOVENI	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	LYSI LOVE
OMA BALTHICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MACO BALT
TRA CORALLINA	-	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MACT CORA
ELONA ALLENI	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	MAGE ALLE
ELONA JUVENILE	+	+	+	+	+	+	+	-	-	+	-	-	-	-	-	+	+	-	-	-	+	-	-	-	-	MAGE JUVE
ELONA PAPILLICORNIS	+	+	+	+	+	+	+	-	+	-	+	-	+	-	-	+	-	-	-	+	-	-	-	+	+	MAGE PAPI
DANIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MALD ANID
OMASTUS FRAGILIS	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	MEDI FRAG
ALUROPUS AGILIS	+	-	+	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MEGA AGIL
OPHTHALMUS SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MICR OPHT
IOLUS MODIOLUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MODI MODI
TACUTA FERRUGINOSA	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	MONT FERR
TACUTA SPEC.	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MONT SPEC
OCHELE HEERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MYRI HEER
ELLA BIDENTATA	-	+	+	-	+	+	+	+	-	+	+	-	+	+	-	-	+	+	-	+	-	-	+	+	-	MYSE BIDE
A UNDATA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	MYSI UNDA
CA ALDERI	+	+	+	+	+	+	+	-	+	-	+	+	-	-	+	+	-	+	-	+	-	+	+	+	+	NATI ALDE
CA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NATI JUVE
ERTINI	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	+	-	+	-	+	-	+	+	NEME RTIN
ITYS CAECA	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEPH CAEC
ITYS CIRROSA	+	-	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEPH CIRR

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Dogger Bank							Oyster Ground																		
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
ecies name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	*Code*
PHTYS HOMBERGII	+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+	+	-	-	NEPH HOMB
PHTYS INCISA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	+	+	-	-	-	NEPH INCI
PHTYS JUVENILE	-	+	-	-	-	+	+	-	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	NEPH JUVE
PHTYS LONGOSETOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEPH LONG
REIS LONGISSIMA	-	-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	-	-	-	-	+	-	-	-	+	NERE LONG
TOMASTUS LATERICEUS	-	-	-	+	-	-	+	+	-	-	-	+	-	+	-	-	+	-	+	+	+	+	-	-	-	NOTO LATE
TOMASTUS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NUCU JUVE
CULA TENIUS	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	+	-	+	+	-	-	-	-	-	NUCU TENU
CULA TURGIDA	-	-	-	-	-	-	-	-	+	-	+	-	-	-	+	+	-	-	-	-	-	-	+	+	-	NUCU TURG
GOCHAETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OLIG OCHA
HELINA ACUMINATA	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	OPHE ACUM
HELIIDAE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHE JUVE
HELIA LIMACINA	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHE LIMA
HIURA ALBIDA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	+	-	+	-	-	-	-	-	OPHI ALBI
HIODROMUS FLEXUOSUS	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	+	+	-	-	-	-	+	-	OPHI FLEX
HIURIDAE JUVENILE	+	+	+	+	+	-	+	-	-	+	+	+	-	+	+	+	+	+	-	+	-	+	+	+	+	OPHI JUVE
HIURA TEXTURATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHI TEXT
BINIA SERTULATA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	ORBI SERT
CHOMENE HUMILIS	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ORCH HUMI
CHOMENE NANA	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	+	-	-	+	-	-	-	-	+	-	ORCH NANA
/ENIA FUSIFORMIS	+	-	+	+	-	+	+	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	OWEN FUSI
/ENIA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	OWEN JUVE
RAONIS GRACILIS	-	-	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	-	+	+	-	-	-	PARA GRAC
CTINARIA AURICOMA	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	+	-	PECT AURI
CTINARIA KORENI	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+	+	-	-	-	-	-	-	PECT KORE
RIOCULODES LONGIMANUS	+	+	+	+	+	-	+	+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	+	PERI LONG
ILINE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PHIL SPEC
OLOE MINUTA	+	-	+	+	+	-	-	+	-	+	+	+	+	+	-	-	+	-	+	+	-	+	+	+	+	PHOL MINU
ORONIDA	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	PHOR ONID
YLLODOCIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PHYL LODO
IONE REMOTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PISI REMO
ATHYHELMITHES	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-	-	+	-	-	-	PLAT HYHE
ECILOCHAETUS SERPENS	+	+	+	+	-	-	-	-	+	-	-	+	+	-	+	+	-	-	+	-	+	-	+	+	+	POEC SERP
LYDORA SPEC.	-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	POLY DORA
LYCHAETA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY JUVE
LYNOE KINBERGI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	POLY KINB
LYNOIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY NOID
NTOCRATES ALTAMARINUS	-	+	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PONT ALTA
NTOCRATES ARENARIUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PONT AREN
APULIDAE SPEC.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PRIA PULI
IONOSPIO CIRRIFERA	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	PRIO CIRR
OTODORVILLEA KEFERSTEINI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PROT KEFE
AMMODRILUS SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSAM MODR
EUDOCUMA LONGICORNIS	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSEU LONG
EUDOPOLYDORA PULCHRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSEU PULC
EUDOCUMA SIMILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSEU SIMI
ODINE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	RHOD JUVE
ODINE LOVENI	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	RHOD LOVE

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Dogger Bank							Oyster Ground																		
	Dog	Dog	Dog	Dog	Dog	Dog	Dog	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
ies name	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Code
BREGMA INFLATUM	+	-	-	+	-	-	-	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	SCAL INFL
PLOS ARMIGER	+	+	+	+	-	-	-	-	+	+	+	-	+	-	+	+	+	-	-	+	-	-	+	+	+	SCOL ARMI
LEPIS BONNIERI	-	-	+	-	-	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	SCOL BONN
PLOS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCOL JUVE
LEPIS SQUAMATA	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCOL SQUA
ON MATHILDAE	-	+	-	-	+	+	+	-	-	-	+	-	-	-	-	+	-	-	-	+	-	-	-	-	-	SIGA MATH
NOECETES KROYERANUS	-	-	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPH KROY
CULIDA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPU NCUL
IE GRACILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SOSA GRAC
ROSYLLIS HYSTRIX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPHA HYTR
IANES BOMBYX	+	-	+	+	+	+	+	-	+	+	+	+	+	-	+	+	-	+	+	+	-	-	+	+	-	SPIO BOMB
LICORNIS	+	+	+	+	+	+	-	-	+	-	+	-	+	-	-	-	+	-	-	-	-	+	-	-	-	SPIO FILI
IANES JUVENILE	-	+	-	+	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	SPIO JUVE
IANES KROEYERI	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	SPIO KROE
DAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO NIDA
A ELLIPTICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIS ELLI
A SUBTRUNCATA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIS SUBT
LA RUBROVITTATA	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STEN RUBR
ELAIS BOA	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STHE BOA
ELAIS LIMICOLA	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	STHE LIMI
TOSYLLIS WEBSTERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STRE WEBS
ELIDIUM MACULATUM	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SYNC MACU
MIS KLATTI	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-	+	-	+	-	+	-	-	SYNE KLAT
A FABULA	+	+	+	+	+	-	+	-	-	-	+	-	+	-	-	+	-	-	-	-	-	-	-	-	+	TELL FABU
A PYGMEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TELL PYGM
ELLIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE BELL
ELLIDES STROEMI	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE STRO
IA CONVEXA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA CONV
IA PHASEOLINA	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	THRA PHAS
IA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA SPEC
IRA FLEXUOSA	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	THYA FLEX
IA FORBESII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TRAV FORB
NILLA LACTEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TURB LACT
BIA DELTAURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	UPOG DELT
OE BREVICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UROT BREV
OE ELEGANS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	UROT ELEG
OE POSEIDONIS	+	-	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UROT POSE
STRIATULA	-	+	-	+	-	-	-	-	+	-	+	+	-	-	-	-	-	-	-	-	+	+	-	-	+	VENU STRI
VOODILLA CAECULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	WEST CAEC
No. Species	36	29	42	34	35	32	40	27	17	33	35	36	27	32	25	25	30	21	40	29	21	28	32	34	24	

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Oyster Ground																									
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
ERUS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHAE JUVE
ERUS VARIOPEDATUS	+	-	-	-	-	-	+	-	+	-	-	-	-	+	+	-	-	-	+	-	-	-	-	-	CHAE VARI
:C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHON SPEC
ITREA	+	-	+	-	-	-	-	+	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	CING VITR
CRANCHII	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CIRO CRAN
DAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	CIRR ATUL
GIBBA	+	-	-	+	-	-	-	-	+	+	-	-	+	+	+	-	-	-	-	-	+	-	-	+	CORB GIBB
M AFFINE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO AFFI
M SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO PHIU
CASSIVELAUNUS	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORY CASS
PELLUCIDUS	-	+	-	+	-	-	-	-	+	+	+	-	-	-	+	-	-	-	-	-	+	-	+	-	CULT PELL
CYLINDRACEA	+	+	+	+	-	-	-	-	-	+	-	-	-	-	+	-	+	-	-	-	+	+	+	-	CYLI CYLI
BRADYI	-	+	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	+	+	-	-	-	-	DIAS BRAD
LAEVIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIAS LAEV
JS GLAUCUS	+	+	+	+	-	-	-	-	-	+	-	+	+	-	+	-	-	-	-	-	-	-	-	-	DIPL GLAU
TTATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DONA VITT
JVENILE	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI JUVE
JPINUS	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	DOSI LUPI
PEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI SPEC
RDIUM CORDATUM	+	+	+	-	+	+	-	+	-	-	-	+	+	+	-	+	+	-	-	+	-	+	-	+	ECHI CORD
RDIUM FLAVESCENS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI FLAV
RDIUM JUVENILE	-	-	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	+	-	-	-	+	+	-	ECHI JUVE
AMUS PUSILLUS	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI PUSI
SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI URUS
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UATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ARCU
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CTEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ETEO LACT
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A EMARGINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUDO EMAR
A TRUNCATULA	-	+	-	-	+	+	-	-	-	+	-	+	+	-	-	-	-	-	+	-	+	-	-	-	EUDO TRUN
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ANGUINEA	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUMI SANG
SPINIGERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EURY SPIN
E SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUSY LLIN
FLABELLIGERUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUZO FLAB
HEBES	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	EXOG HEBE
NAIDINA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EXOG NAID
ENSIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GARI FERV
DA SPEC.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	GAST ROPO
A CIRROSA	+	-	-	-	-	-	+	-	+	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	GATT CIRR
ALBA	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC ALBA
APIDUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC LAPI

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Oyster Ground																									
	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	Oys	
ecies name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
YCINDE NORDMANNI	-	-	-	+	+	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	GLYC NORD
YCERA ROUXI	+	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	GLYC ROUX
LFINGIA ELONGATA	-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	GOLF ELON
LFINGIA PROCERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	GOLF PROC
LFINGIA VULGARIS	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	GOLF VULG
NIADELLA BOBRETZKII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI BOBR
NIADA MACULATA	+	+	-	+	+	+	+	-	+	+	+	+	+	-	-	-	-	-	+	+	-	+	+	+	GONI MACU
NIADIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI SPEC
PTIS CAPENSIS	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	GYPT CAPE
RMOTHOE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	HARM JUVE
RMOTHOE LONGISETIS	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	HARM LONG
RMOTHOE LUNUATA	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	HARM LUNU
RPINIA ANTENNARIA	-	+	-	+	+	-	-	-	+	+	+	-	+	+	+	+	+	+	+	-	-	+	-	-	HARP ANTE
RPINIA CRENULATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	HARP CREN
RPINIA PECTINATA	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARP PECT
SIONURA AUGENERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HESI AUGE
POMEDON DENTICULATUS	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HIPP DENT
DROZOA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HYDR OZOA
IE THORACIA	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	IONE THOR
INOE TRISPINOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	IPHI TRIS
MPROPS FASCIATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LAMP FASC
NICE CONCHILEGA	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	LANI CONC
NICE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LANI JUVE
TON SQUAMOSUM	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LEPT SQUA
ICOTHOE INCISA	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LEUC INCI
ICOTHOE LILLJEBORGI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LEUC LILL
MBRINERIS LATREILLI	-	+	-	-	-	+	-	+	-	-	-	+	+	-	-	+	-	+	+	-	-	-	-	-	LUMB LATR
SILLA LOVENI	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	LYSI LOVE
COMA BALTHICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MACO BALT
CTRA CORALLINA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MACT CORA
GELONA ALLENI	-	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	MAGE ALLE
GELONA JUVENILE	-	+	-	-	-	-	-	-	-	+	+	-	-	-	-	-	+	-	-	-	+	+	-	-	MAGE JUVE
GELONA PAPILLICORNIS	-	-	-	+	+	+	-	+	+	+	-	+	+	+	-	-	+	-	-	+	-	+	+	+	MAGE PAPI
LDANIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MALD ANID
DIOMASTUS FRAGILIS	+	-	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-	+	+	-	-	-	-	-	MEDI FRAG
GALUROPUS AGILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MEGA AGIL
CROPHTHALMUS SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MICR OPHT
DIOLUS MODIOLUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MODI MODI
NTACUTA FERRUGINOSA	+	+	-	-	+	+	-	-	-	+	-	+	-	+	-	-	+	-	-	+	-	-	+	+	MONT FERR
NTACUTA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	MONT SPEC
RIOCHELE HEERI	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	MYRI HEER
SELLA BIDENTATA	+	+	+	+	+	+	-	+	-	-	+	+	+	-	-	+	+	-	+	+	-	-	+	+	MYSE BIDE
SIA UNDATA	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	MYSI UNDA
TICA ALDERI	+	-	+	+	+	+	-	+	+	-	+	-	+	-	-	+	+	-	-	+	+	+	+	-	NATI ALDE
TICA JUVENILE	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NATI JUVE
MERTINI	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	NEME RTIN
PHTYS CAECA	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	NEPH CAEC
PHTYS CIRROSA	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	NEPH CIRR

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	Code
HOMBERGII	+	+	+	+	+	+	-	+	-	+	+	+	+	+	+	+	+	-	-	-	-	-	+	-	NEPH HOMB
INCISA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEPH INCI
JUVENILE	-	+	-	-	-	-	-	-	-	-	-	-	+	+	-	+	+	+	-	+	+	-	-	-	NEPH JUVE
LONGOSETOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	NEPH LONG
)NGISSIMA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-	-	-	-	-	NERE LONG
STUS LATERICEUS	+	+	-	+	-	-	+	-	-	-	+	-	-	-	+	+	-	+	-	-	-	-	-	-	NOTO LATE
STUS JUVENILE	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NUCU JUVE
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TURGIDA	-	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	-	+	+	+	-	+	-	NUCU TURG
AETA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OLIG OCHA
ACUMINATA	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	OPHE ACUM
AE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHE JUVE
LIMACINA	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	OPHE LIMA
ALBIDA	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	OPHI ALBI
OMUS FLEXUOSUS	-	+	+	+	-	-	-	+	-	-	-	-	+	-	-	+	-	-	+	+	-	-	-	-	OPHI FLEX
AE JUVENILE	+	+	-	+	-	-	+	+	+	+	+	-	+	-	-	-	+	-	+	-	+	+	+	-	OPHI JUVE
TEXTURATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHI TEXT
SERTULATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ORBI SERT
ENE HUMILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ORCH HUMI
ENE NANA	-	-	-	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	ORCH NANA
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S GRACILIS	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	PARA GRAC
IIA AURICOMA	+	+	-	+	-	-	-	-	+	-	-	-	+	+	-	-	-	-	-	+	-	-	-	-	PECT AURI
IIA KORENI	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	PECT KORE
ODES LONGIMANUS	-	+	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	PERI LONG
PEC.	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	+	-	-	PHIL SPEC
MINUTA	+	+	+	+	+	+	-	-	+	-	+	-	+	+	+	-	-	+	+	+	+	+	+	-	PHOL MINU
DA	+	+	+	+	+	+	+	+	-	+	+	-	+	-	+	+	+	+	+	-	-	+	+	-	PHOR ONID
OCIDAE SPEC.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PHYL LODO
EMOTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PISI REMO
ELMITHES	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	PLAT HYHE
CHAETUS SERPENS	-	-	-	-	-	+	+	-	-	+	-	-	+	-	-	+	+	+	+	+	-	-	+	-	POEC SERP
A SPEC.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	POLY DORA
ETA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY JUVE
KINBERGI	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	POLY KINB
DAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY NOID
ATES ALTAMARINUS	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	PONT ALTA
ATES ARENARIUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PONT AREN
DAE SPEC.	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PRIA PULI
PIO CIRRIFERA	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	PRIO CIRR
RVILLEA KEFERSTEINI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PROT KEFE
DRILUS SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSAM MODR
UMA LONGICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	PSEU LONG
OLYDORA PULCHRA	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	PSEU PULC
UMA SIMILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	PSEU SIMI
JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	RHOD JUVE
LOVENI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	RHOD LOVE

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
s name	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	*Code*
EGMA INFLATUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCAL INFL
LOS ARMIGER	-	+	-	+	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-	+	+	+	-	SCOL ARMI
EPIS BONNIERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	SCOL BONN
LOS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	SCOL JUVE
EPIS SQUAMATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCOL SQUA
N MATHILDAE	-	-	-	+	+	-	-	-	-	+	-	-	-	-	-	-	+	-	-	+	-	-	-	-	SIGA MATH
DECETES KROYERANUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPH KROY
JLIDA	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPU NCUL
GRACILIS	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SOSA GRAC
OSYLLIS HYSTRIX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPHA HYTR
NES BOMBYX	-	+	-	+	+	+	+	-	+	+	+	+	-	+	-	+	+	+	-	+	-	+	+	+	SPIO BOMB
ICORNIS	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	+	-	SPIO FILI
NES JUVENILE	-	-	+	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	+	+	-	-	SPIO JUVE
NES KROEYERI	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	SPIO KROE
AE SPEC.	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	SPIO NIDA
ELLIPTICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	SPIS ELLI
SUBTRUNCATA	-	-	-	-	-	-	-	+	-	+	-	-	+	-	-	-	-	-	+	-	-	-	-	-	SPIS SUBT
A RUBROVITTATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STEN RUBR
AIS BOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STHE BOA
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OSYLLIS WEBSTERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STRE WEBS
LIDIUM MACULATUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	SYNC MACU
IS KLATTI	+	+	-	+	-	-	+	-	+	-	-	-	+	+	-	+	-	+	-	+	+	+	-	-	SYNE KLAT
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PYGMEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TELL PYGM
LIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE BELL
LIDES STROEMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE STRO
A CONVEXA	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA CONV
A PHASEOLINA	-	-	-	+	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	+	+	-	-	-	THRA PHAS
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A FORBESII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TRAV FORB
ILLA LACTEA	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	TURB LACT
IA DELTAURA	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	UPOG DELT
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E POSEIDONIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	UROT POSE
TRIATULA	+	-	-	-	-	-	+	-	-	-	+	-	+	+	+	-	-	-	-	+	-	+	+	+	VENU STRI
ODILLA CAECULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	WEST CAEC
No. Species	35	46	21	45	28	22	26	21	27	31	36	23	35	22	39	25	23	25	37	24	30	38	30	19	

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	Off	
cies name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Code
A ALBA	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ABRA ALBA
A JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ABRA JUVE
A PRISMATICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	ABRA PRIS
NTHOCARDIA ECHINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ACAN ECHI
OCNIDA BRACHIATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ACRO BRAC
ELISCA BREVICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE BREV
ELISCA MACROCEPHALA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE MACR
ELISCA TENUICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE TENU
HARETE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH ARET
HIURA FILIFORMIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH FILI
HIPODA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH IPOD
ITIDES GROENLANDICA	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANAI GROE
ITIDES JUVENILE	+	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	ANAI JUVE
ITIDES LINEATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	ANAI LINE
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ITIDES MUCOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANAI MUCO
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IDES PAUCIBRANCHIATA	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	AONI PAUC
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RODITA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	APHR JUVE
ACOPHORA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	APLA COPH
TICA ISLANDICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARCT ISLA
ISSA HAMATIPES	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARGI HAMA
IDEA MINUTA	-	+	+	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	+	+	-	-	-	-	+	-	ARIC MINU
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EROIDEA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTE JUVE
ERIAS RUBENS	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTE RUBE
ROPECTEN IRREGULARIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTR IRRE
LUS FALCATUS	+	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ATYL FALC
LUS SWAMMERDAMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	ATYL SWAM
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HYPOREIA ELEGANS	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	+	+	BATH ELEG
HYPOREIA GUILLIAMSONIANA	+	-	+	-	-	-	-	+	+	+	-	-	+	+	-	-	+	+	-	-	-	-	+	-	-	-	BATH GUIL
HYPOREIA JUVENILE	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BATH JUVE
HYPOREIA PELAGICA	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BATH PELA
HYPOREIA TENUIPES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BATH TENU
LVAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BIVA LVAE
NCHIOSTOMA LANCEOLATUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BRAN LANC
SOPSIS LYRIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BRIS LYRI
LIANASSA JUVENILE	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL JUVE
LIANASSA SUBTERRANEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL SUBT
LIANASSA TYRRHENA	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL TYRR
IPYLASPIS GLABRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAMP GLAB
ITELLA CAPITATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPI CAPI
ITELLIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPI TELL
RELLIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPR ELLI
LLERIELLA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAUL LERI
ETOZONE SETOSA	+	+	+	-	+	-	+	+	+	+	+	+	+	+	-	+	-	-	+	-	-	-	-	+	-	-	CHAE SETO

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	Off	
cies name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	*Code*
TOPTERUS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHAE JUVE
TOPTERUS VARIOPEDATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHAE VARI
E SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHON SPEC
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TULIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CIRR ATUL
JLA GIBBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	CORB GIBB
PHIUM AFFINE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO AFFI
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ELLUS PELLUCIDUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CULT PELL
HNA CYLINDRACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CYLI CYLI
YLIS BRADYI	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIAS BRAD
YLIS LAEVIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIAS LAEV
CIRRUS GLAUCUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIPL GLAU
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IIA LUPINUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI LUPI
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OCARDIUM FLAVESCENS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI FLAV
OCARDIUM JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI JUVE
OCYAMUS PUSILLUS	-	-	-	-	-	+	-	+	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	ECHI PUSI
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ARCUATUS	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ARCU
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Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Offshore area																										
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Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Offshore area																											
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Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
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ɜYLLIS HYSTRIX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPHA HYTR
ES BOMBYX	+	+	-	+	+	+	-	+	-	+	-	+	+	+	+	+	+	+	+	-	+	-	-	-	-	+	SPIO BOMB
ORNIS	-	+	+	+	+	+	-	-	+	+	+	+	-	-	-	+	+	+	+	+	+	-	-	+	+	+	SPIO FILI
ES JUVENILE	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO JUVE
ES KROEYERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO KROE
ɜ SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO NIDA
LLIPTICA	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	SPIS ELLI
UBTRUNCATA	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	SPIS SUBT
RUBROVITTATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STEN RUBR
IS BOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STHE BOA
IS LIMICOLA	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	STHE LIMI
ɜYLLIS WEBSTERI	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STRE WEBS
ɔIUM MACULATUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SYNC MACU
KLATTI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SYNE KLAT
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YGMEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	TELL PYGM
DAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	TERE BELL
DES STROEMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE STRO
CONVEXA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA CONV
PHASEOLINA	+	-	-	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA PHAS
SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA SPEC
. FLEXUOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THYA FLEX
FORBESII	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	TRAV FORB
LA LACTEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TURB LACT
. DELTAURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UPOG DELT
BREVICORNIS	-	-	-	-	-	-	-	-	+	+	-	+	+	+	+	+	-	+	+	+	-	-	+	-	+	-	UROT BREV
ELEGANS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UROT ELEG
POSEIDONIS	-	-	-	-	+	-	+	+	+	-	-	-	+	+	+	+	-	-	+	-	-	-	+	-	-	+	UROT POSE
RIATULA	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	VENU STRI
ɔDILLA CAECULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	WEST CAEC
No. Species	22	16	18	21	34	19	14	18	13	17	19	16	17	16	13	15	6	11	17	16	13	7	15	16	13	14	

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Offshore area										Coastal area															
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
Species name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	*Code*
ABRA ALBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ABRA ALBA
ABRA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ABRA JUVE
ABRA PRISMATICA	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ABRA PRIS
ACANTHOCARDIA ECHINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ACAN ECHI
ACROCNIDA BRACHIATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ACRO BRAC
AMPELISCA BREVICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE BREV
AMPELISCA MACROCEPHALA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE MACR
AMPELISCA TENUICORNIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPE TENU
AMPHARETE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH ARET
AMPHIURA FILIFORMIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH FILI
AMPHIPODA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AMPH IPOD
ANAITIDES GROENLANDICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANAI GROE
ANAITIDES JUVENILE	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANAI JUVE
ANAITIDES LINEATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ANAI LINE
ANAITIDES MACULATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	ANAI MACU
ANAITIDES MUCOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	ANAI MUCO
ANTHOZOA SPEC.	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	ANTH OZOA
AONIDES PAUCIBRANCHIATA	-	+	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AONI PAUC
APHRODITA ACULEATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	APHR ACUL
APHRODITA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	APHR JUVE
APLACOPHORA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	APLA COPH
ARCTICA ISLANDICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARCT ISLA
ARGISSA HAMATIPES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARGI HAMA
ARICIDEA MINUTA	-	-	-	-	+	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ARIC MINU
ASTARTE TRIANGULARIS	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTA TRIA
ASTEROIDEA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTE JUVE
ASTERIAS RUBENS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTE RUBE
ASTROPECTEN IRREGULARIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ASTR IRRE
ATYLUS FALCATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ATYL FALC
ATYLUS SWAMMERDAMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	ATYL SWAM
AUTOLYTUS SPEC.	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AUTO SPEC
BATHYPOREIA ELEGANS	-	-	-	+	+	+	+	+	+	-	-	+	-	-	-	+	+	+	-	-	-	+	-	-	-	BATH ELEG
BATHYPOREIA GUILLIAMSONIANA	-	-	+	-	+	+	+	-	+	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	BATH GUIL
BATHYPOREIA JUVENILE	-	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	BATH JUVE
BATHYPOREIA PELAGICA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BATH PELA
BATHYPOREIA TENUIPES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BATH TENU
BIVALVAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BIVA LVAE
BRANCHIOSTOMA LANCEOLATUM	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BRAN LANC
BRISSOPSIS LYRIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	BRIS LYRI
CALLIANASSA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL JUVE
CALLIANASSA SUBTERRANEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL SUBT
CALLIANASSA TYRRHENA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CALL TYRR
CAMPYLASPIS GLABRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAMP GLAB
CAPITELLA CAPITATA	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	-	-	-	+	-	-	CAPI CAPI
CAPITELLIDAE SPEC.	-	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPI TELL
CAPRELLIDAE SPEC.	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAPR ELLI
CAULLERIELLA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CAUL LERI
CHAETOZONE SETOSA	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	CHAE SETO

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
es name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code
PTERUS JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHAE JUVE
PTERUS VARIOPEDATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHAE VARI
SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CHON SPEC
A VITREA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	+	-	-	-	-	-	-	-	CING VITR
NA CRANCHII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CIRO CRAN
JLIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CIRR ATUL
A GIBBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORB GIBB
IUM AFFINE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO AFFI
IUM SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORO PHIU
ES CASSIVELAUNUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CORY CASS
LUS PELLUCIDUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CULT PELL
NA CYLINDRACEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	CYLI CYLI
LIS BRADYI	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	+	DIAS BRAD
LIS LAEVIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIAS LAEV
RRUS GLAUCUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DIPL GLAU
VITTATUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DONA VITT
A JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI JUVE
A LUPINUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI LUPI
A SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DOSI SPEC
CARDIUM CORDATUM	+	+	+	-	-	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	+	-	-	-	-	ECHI CORD
CARDIUM FLAVESCENS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI FLAV
CARDIUM JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI JUVE
CYAMUS PUSILLUS	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI PUSI
US SPEC.	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ECHI URUS
DSIA CLAPAREDII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EDWA CLAP
RCUATUS	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ARCU
IRECTUS	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	+	-	+	-	+	+	-	-	+	+	ENSI DIRE
NSIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENSI ENSI
PEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	ENSI SPEC
PNEUSTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ENTE ROPN
JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ETEO JUVE
LACTEA	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ETEO LACT
LONGA	-	-	-	+	+	-	+	-	+	-	-	+	-	-	+	-	+	+	-	-	-	-	-	-	-	ETEO LONG
LLOPSIS DEFORMIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUDO DEFO
LLA EMARGINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUDO EMAR
LLA TRUNCATULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUDO TRUN
ALBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EULI ALBA
A SANGUINEA	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-	EUMI SANG
CE SPINIGERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EURY SPIN
INAE SPEC.	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUSY LLIN
JS FLABELLIGERUS	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EUZO FLAB
NE HEBES	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EXOG HEBE
NE NAIDINA	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	EXOG NAID
ERVENSIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GARI FERV
OPODA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GAST ROPO
ANA CIRROSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GATT CIRR
RA ALBA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC ALBA
RA LAPIDUM	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC LAPI

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	Offshore area										Coastal area																
	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	Coa	
pecies name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	*Code*
.YCINDE NORDMANNI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC NORD
.YCERA ROUXI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GLYC ROUX
)LFINGIA ELONGATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOLF ELON
)LFINGIA PROCERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOLF PROC
)LFINGIA VULGARIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GOLF VULG
)NIADELLA BOBRETZKII	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI BOBR
)NIADA MACULATA	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI MACU
)NIADIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GONI SPEC
'PTIS CAPENSIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	GYPT CAPE
\RMOTHOE JUVENILE	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	HARM JUVE
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\RMOTHOE LUNUATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARM LUNU
\RPINIA ANTENNARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARP ANTE
\RPINIA CRENULATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARP CREN
\RPINIA PECTINATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HARP PECT
'SIONURA AUGENERI	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HESI AUGE
'PPOMEDON DENTICULATUS	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	HIPP DENT
'DROZOA SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	HYDR OZOA
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MPROPS FASCIATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	LAMP FASC
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NICE JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	LANI JUVE
'PTON SQUAMOSUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LEPT SQUA
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MBRINERIS LATREILLI	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LUMB LATR
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\GELONA JUVENILE	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MAGE JUVE
\GELONA PAPILLICORNIS	-	+	-	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	-	-	+	MAGE PAPI
\LDANIDAE SPEC.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MALD ANID
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:GALUROPUS AGILIS	-	+	-	-	-	+	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MEGA AGIL
CROPHTHALMUS SPEC.	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MICR OPHT
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'RIOCHELE HEERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MYRI HEER
'SELLA BIDENTATA	-	-	-	+	-	-	-	-	-	-	+	+	-	-	+	-	-	+	-	-	-	-	-	+	-	MYSE BIDE
'SIA UNDATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MYSI UNDA
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TICA JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NATI JUVE
MERTINI	+	+	+	+	+	+	+	+	+	+	+	-	-	-	+	-	-	+	+	-	-	-	-	-	-	NEME RTIN
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PHTYS CIRROSA	+	+	+	-	+	+	+	+	+	+	-	+	-	-	+	-	-	-	-	-	+	+	-	-	-	NEPH CIRR

Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
ame	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code
MBERGII	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	-	-	+	-	-	-	-	-	NEPH HOMB
ISA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NEPH INCI
/ENILE	-	-	-	+	-	+	-	-	+	-	-	-	-	-	-	+	-	+	+	+	-	+	-	-	+	NEPH JUVE
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ISSIMA	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	NERE LONG
S LATERICEUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NOTO LATE
S JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NUCU JUVE
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ACINA	-	+	+	-	+	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHE LIMA
IIDA	+	+	-	-	-	+	-	+	+	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	OPHI ALBI
JS FLEXUOSUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHI FLEX
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:TURATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	OPHI TEXT
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HUMILIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ORCH HUMI
NANA	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ORCH NANA
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AURICOMA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PECT AURI
KORENI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	PECT KORE
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ETUS SERPENS	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POEC SERP
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JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY JUVE
BERGI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY KINB
SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	POLY NOID
S ALTAMARINUS	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PONT ALTA
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CIRRIFERA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PRIO CIRR
LLEA KEFERSTEINI	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PROT KEFE
.US SPEC.	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	PSAM MODR
A LONGICORNIS	-	-	+	+	-	+	+	-	-	+	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	PSEU LONG
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Appendix-1 Biomonitoring 1997 (+=presence, - =absence)

	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	
es name	27	28	29	30	31	32	33	34	35	36	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Code
REGMA INFLATUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCAL INFL
PLOS ARMIGER	+	-	+	-	-	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	-	SCOL ARMI
EPIS BONNIERI	+	+	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-	+	+	+	-	-	SCOL BONN
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EPIS SQUAMATA	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SCOL SQUA
ON MATHILDAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIGA MATH
OECETES KROYERANUS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPH KROY
ULIDA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SIPU NCUL
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ROSYLLIS HYSTRIX	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPHA HYTR
ANES BOMBYX	+	+	+	+	+	-	-	+	+	-	+	-	+	-	+	+	-	+	-	-	+	+	-	-	+	SPIO BOMB
LICORNIS	-	-	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+	-	+	+	-	+	-	SPIO FILI
ANES JUVENILE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	SPIO JUVE
ANES KROEYERI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO KROE
DAE SPEC.	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIO NIDA
A ELLIPTICA	-	-	+	-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SPIS ELLI
A SUBTRUNCATA	-	-	-	-	-	-	-	-	-	-	+	+	+	+	-	+	-	-	+	-	+	+	-	+	+	SPIS SUBT
A RUBROVITTATA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STEN RUBR
LAIS BOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STHE BOA
LAIS LIMICOLA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STHE LIMI
OSYLLIS WEBSTERI	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	STRE WEBS
ELIDIUM MACULATUM	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SYNC MACU
MIS KLATTI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SYNE KLAT
A FABULA	-	-	-	+	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+	-	-	-	+	TELL FABU
A PYGMEA	-	+	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TELL PYGM
LLIDAE SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE BELL
LLIDES STROEMI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TERE STRO
A CONVEXA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA CONV
A PHASEOLINA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	THRA PHAS
A SPEC.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THRA SPEC
RA FLEXUOSA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	THYA FLEX
IA FORBESII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TRAV FORB
NILLA LACTEA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TURB LACT
BIA DELTAURA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UPOG DELT
OE BREVICORNIS	+	-	-	-	+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	UROT BREV
OE ELEGANS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	UROT ELEG
OE POSEIDONIS	-	-	-	+	-	-	+	-	-	-	-	+	+	+	+	+	+	+	+	+	+	-	-	-	+	UROT POSE
STRIATULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	VENU STRI
/OODILLA CAECULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	WEST CAEC
No. Species	12	16	23	21	19	15	19	12	22	17	17	15	13	8	15	15	12	18	12	8	14	10	3	16	10	

NOTE

Explanation of abbreviations in the tables:

N	= Number of individuals per m^2
B	= Biomass in g AFDW/m^2
SUMS	= Sum of densities per boxcore
NSPC	= Number of species per boxcore
SH-W	= Shannon-Wiener index of diversity
SIMP	= Simpson index of dominance

All species names have been abbreviated by the first four characters of the generic name and the first four characters of the specific name. For full scientific names, see Appendix-1.

Station index:

Appendix - 2 Biomonitoring 1997

STATION:	DOG 1		DOG 2		DOG 3		DOG 4		DOG 5	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	14.6	0.022	14.6	0.022	14.6	0.022	14.6	0.007
ATYLFALC	0.0	0.000	0.0	0.000	14.6	0.004	14.6	0.004	0.0	0.000
BATHELEG	175.6	0.053	87.8	0.026	336.5	0.101	380.4	0.114	43.9	0.013
BATHGUIL	0.0	0.000	14.6	0.004	73.2	0.022	43.9	0.013	29.3	0.009
BATHJUVE	58.5	0.012	0.0	0.000	73.2	0.015	0.0	0.000	29.3	0.006
BATHTENU	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009	0.0	0.000
CAPRELLI	14.6	0.003	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
DIASBRAD	0.0	0.000	0.0	0.000	14.6	0.012	14.6	0.022	14.6	0.007
IPHITRIS	14.6	0.015	0.0	0.000	14.6	0.015	0.0	0.000	29.3	0.029
LEUCINCI	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MEGAAGIL	14.6	0.004	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
ORCHHUMI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009
PERILONG	43.9	0.013	14.6	0.004	43.9	0.013	14.6	0.004	73.2	0.022
PONTALTA	0.0	0.000	14.6	0.004	14.6	0.004	0.0	0.000	0.0	0.000
PSEULONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.009
SIPHKROY	0.0	0.000	0.0	0.000	102.4	0.031	73.2	0.022	0.0	0.000
STENRUBR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.013
SYNCMACU	29.3	0.009	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
UROTPOSE	117.0	0.035	0.0	0.000	219.5	0.066	87.8	0.026	29.3	0.009
ECHINODERMATA										
ACROBRAC	204.8	0.737	43.9	5.452	146.3	2.134	0.0	0.000	43.9	2.562
ECHICORD	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.467
ECHIJUVE	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	14.6	0.016	29.3	0.363	0.0	0.000
OPHIJUVE	58.5	0.012	29.3	0.006	43.9	0.009	131.7	0.026	87.8	0.018
MOLLUSCA										
ABRAALBA	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006	0.0	0.000
ABRAPRIS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.007
CULTPELL	0.0	0.000	29.3	0.005	14.6	0.069	0.0	0.000	14.6	0.002
CYLICYLI	14.6	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
DOSISPEC	0.0	0.000	0.0	0.000	43.9	0.084	0.0	0.000	0.0	0.000
ENSIENSI	0.0	0.000	14.6	3.640	0.0	0.000	0.0	0.000	14.6	1.097
GARIFERV	0.0	0.000	0.0	0.000	14.6	0.037	0.0	0.000	0.0	0.000
MACTCORA	0.0	0.000	14.6	0.001	0.0	0.000	14.6	0.001	29.3	0.003
MONTFERR	0.0	0.000	14.6	0.005	0.0	0.000	0.0	0.000	29.3	0.022
MYSEBIDE	0.0	0.000	131.7	0.042	146.3	0.030	0.0	0.000	87.8	0.026
MYSIUNDA	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
NATIALDE	14.6	0.038	14.6	0.003	43.9	0.094	14.6	0.020	58.5	0.085
TELLFABU	14.6	0.002	190.2	0.108	87.8	0.152	29.3	0.026	102.4	0.246
VENUSTRI	0.0	0.000	14.6	0.001	0.0	0.000	14.6	0.002	0.0	0.000
POLYCHAETA										
ARICMINU	29.3	0.006	0.0	0.000	87.8	0.004	0.0	0.000	0.0	0.000
CAPITELL	58.5	0.008	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
CHAESETO	160.9	0.029	43.9	0.014	73.2	0.006	0.0	0.000	14.6	0.002
ETEOJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
ETEOLONG	0.0	0.000	0.0	0.000	14.6	0.002	14.6	0.004	0.0	0.000
GONIMACU	73.2	0.203	43.9	0.025	43.9	0.014	29.3	0.110	29.3	0.019
HARMLUNU	0.0	0.000	29.3	0.010	0.0	0.000	14.6	0.023	0.0	0.000
LANICONC	29.3	0.263	0.0	0.000	14.6	0.046	0.0	0.000	0.0	0.000
MAGEALLE	14.6	0.083	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEJUVE	175.6	0.023	117.0	0.006	190.2	0.006	87.8	0.014	278.0	0.017
MAGEPAPI	234.1	0.328	409.6	0.110	43.9	0.019	146.3	0.137	570.6	0.220
NEPHCAEC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.545
NEPHCIRR	43.9	0.322	0.0	0.000	14.6	0.014	131.7	0.187	0.0	0.000
NEPHHOMB	14.6	0.585	14.6	0.035	14.6	0.274	73.2	0.620	0.0	0.000
NEPHJUVE	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
NOTOLATE	0.0	0.000	0.0	0.000	0.0	0.000	175.6	0.850	0.0	0.000
OPHELIMA	14.6	0.066	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OWENFUSI	14.6	0.004	0.0	0.000	43.9	0.008	29.3	0.114	0.0	0.000
PHOLMINU	43.9	0.006	0.0	0.000	73.2	0.004	131.7	0.008	29.3	0.004
POECSERP	14.6	0.014	14.6	0.004	14.6	0.002	14.6	0.021	0.0	0.000
SCALINFL	14.6	0.315	0.0	0.000	0.0	0.000	14.6	0.043	0.0	0.000
SCOLARMI	29.3	0.014	14.6	0.015	14.6	0.004	14.6	0.008	0.0	0.000
SCOLBONN	0.0	0.000	0.0	0.000	29.3	0.348	0.0	0.000	0.0	0.000
SCOLSQUA	29.3	0.050	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SIGAMATH	0.0	0.000	14.6	0.355	0.0	0.000	0.0	0.000	29.3	0.043
SPIOBOMB	14.6	0.008	0.0	0.000	73.2	0.027	117.0	0.054	58.5	0.093
SPIOFILI	73.2	0.006	131.7	0.017	29.3	0.014	87.8	0.031	263.3	0.058
SPIOJUVE	0.0	0.000	87.8	0.006	0.0	0.000	29.3	0.003	409.6	0.019
MISCELLANEOUS										
EDWACLAP	0.0	0.000	0.0	0.000	14.6	0.106	0.0	0.000	0.0	0.000
NEMERTIN	58.5	0.064	29.3	0.006	73.2	0.541	29.3	0.042	43.9	0.023
PHORONID	468.2	0.251	0.0	0.000	29.3	0.015	58.5	0.056	14.6	0.001
SUMS	2413.8	3.587	1623.7	9.932	2414.0	4.390	2136.2	3.005	2662.9	7.714
DIVERSITY										
NSPC	36		29		42		34		35	
SH-W	2.985		2.729		3.271		3.053		2.841	
SIMP	0.078		0.106		0.054		0.068		0.098	

Appendix - 2 Biomonitoring 1997

STATION:	DOG 6		DOG 7		OYS 1		OYS 2		OYS 3	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	14.6	0.015	14.6	0.053	0.0	0.000	0.0	0.000
AMPETENU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.013
ATYLFALC	14.6	0.004	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
BATHELEG	263.3	0.079	87.8	0.026	0.0	0.000	0.0	0.000	14.6	0.004
BATHGUIL	0.0	0.000	146.3	0.044	0.0	0.000	0.0	0.000	0.0	0.000
BATHJUVE	29.3	0.006	43.9	0.009	0.0	0.000	0.0	0.000	0.0	0.000
CALLSUBT	0.0	0.000	0.0	0.000	29.3	0.116	14.6	0.821	0.0	0.000
COROPHIU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
DIASBRAD	0.0	0.000	14.6	0.015	73.2	0.035	0.0	0.000	0.0	0.000
DIASLAEV	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007
EUDODEFO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
HARPANTE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
IPHITRIS	0.0	0.000	58.5	0.024	0.0	0.000	0.0	0.000	0.0	0.000
MEGAAGIL	14.6	0.004	43.9	0.013	0.0	0.000	0.0	0.000	0.0	0.000
ORCHNANA	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
PERILONG	0.0	0.000	29.3	0.009	43.9	0.013	0.0	0.000	0.0	0.000
PONTALTA	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SIPHKROY	14.6	0.004	58.5	0.018	0.0	0.000	0.0	0.000	0.0	0.000
UROTPOSE	29.3	0.009	307.2	0.092	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
ACROBRAC	14.6	0.092	29.3	0.782	0.0	0.000	0.0	0.000	0.0	0.000
AMPHFILI	0.0	0.000	0.0	0.000	951.0	2.644	0.0	0.000	219.5	1.913
ASTEJUVE	0.0	0.000	0.0	0.000	14.6	0.021	0.0	0.000	0.0	0.000
ASTRIRRE	14.6	0.056	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHICORD	14.6	0.009	0.0	0.000	14.6	3.010	14.6	1.109	0.0	0.000
ECHIJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	29.3	0.003
ECHIPUSI	29.3	0.023	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHIJUVE	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	512.1	0.154
MOLLUSCA										
ABRAALBA	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
ABRAPRIS	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
ACANECHI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009
APLACOPH	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.022
ARCTISLA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.005
CINGVITR	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
CORBGIBB	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.005	0.0	0.000
CULTPELL	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
CYLICYLI	0.0	0.000	0.0	0.000	219.5	0.160	0.0	0.000	0.0	0.000
DOSILUPI	0.0	0.000	43.9	0.004	0.0	0.000	0.0	0.000	0.0	0.000
ENSIENSI	14.6	1.554	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ENSISPEC	0.0	0.000	14.6	2.872	0.0	0.000	0.0	0.000	0.0	0.000
GASTROPO	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.026	0.0	0.000
MONTSPEC	0.0	0.000	0.0	0.000	43.9	0.009	0.0	0.000	0.0	0.000
MYSEBIDE	29.3	0.009	58.5	0.018	234.1	0.047	0.0	0.000	117.0	0.023
NATIALDE	29.3	0.071	87.8	0.196	0.0	0.000	102.4	0.036	0.0	0.000
NUCUTENU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.052
NUCUTURG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.128	0.0	0.000
TELLFABU	0.0	0.000	29.3	0.050	0.0	0.000	0.0	0.000	0.0	0.000
THYAFLEX	0.0	0.000	0.0	0.000	43.9	0.004	0.0	0.000	0.0	0.000
VENUSTRI	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.000	0.0	0.000
POLYCHAETA										
ARICMINU	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CAPITELL	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.015
CHAESETO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.010
DIPLGLAU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.008
ETEOLONG	43.9	0.012	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000
EUMISANG	29.3	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GLYCNORD	0.0	0.000	0.0	0.000	14.6	0.037	0.0	0.000	0.0	0.000
GLYCROUX	0.0	0.000	14.6	0.019	0.0	0.000	0.0	0.000	0.0	0.000
GONIMACU	43.9	0.062	14.6	0.006	0.0	0.000	14.6	0.021	29.3	0.008
GONISPEC	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000
LANICONC	29.3	0.087	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEJUVE	29.3	0.002	43.9	0.002	0.0	0.000	0.0	0.000	73.2	0.004
MAGEPAPI	307.2	0.185	278.0	0.098	0.0	0.000	43.9	0.037	0.0	0.000
MEDIFRAG	0.0	0.000	0.0	0.000	29.3	0.002	0.0	0.000	0.0	0.000
NEPHCAEC	0.0	0.000	14.6	0.823	0.0	0.000	0.0	0.000	0.0	0.000
NEPHCIRR	117.0	0.352	87.8	0.075	0.0	0.000	0.0	0.000	0.0	0.000
NEPHHOMB	0.0	0.000	73.2	0.089	14.6	0.363	29.3	0.531	14.6	0.149
NEPHJUVE	73.2	0.008	14.6	0.004	0.0	0.000	0.0	0.000	29.3	0.006
NERELONG	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.087	0.0	0.000
NOTOLATE	0.0	0.000	73.2	0.925	14.6	0.745	0.0	0.000	0.0	0.000
OPHEACUM	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.533
OPHELIMA	29.3	0.023	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHIFLEX	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
OWENFUSI	512.1	0.197	336.5	0.174	0.0	0.000	0.0	0.000	0.0	0.000
PARAGRAC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
PECTAURI	0.0	0.000	0.0	0.000	29.3	0.197	0.0	0.000	0.0	0.000
PECTKORE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.174

PHOLMINU	0.0	0.000	0.0	0.000	117.0	0.021	0.0	0.000	131.7	0.023
POECSERP	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
PRIOCIRR	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
SCALINFL	0.0	0.000	0.0	0.000	14.6	0.093	0.0	0.000	14.6	0.039
SCOLARMI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.021	497.4	0.825
SCOLBONN	0.0	0.000	14.6	0.102	0.0	0.000	14.6	0.021	0.0	0.000
SCOLSQUA	14.6	0.039	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SIGAMATH	43.9	0.006	146.3	0.097	0.0	0.000	0.0	0.000	0.0	0.000
SPIOBOMB	219.5	0.178	117.0	0.062	0.0	0.000	14.6	0.002	14.6	0.004
SPIOFILI	58.5	0.060	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
STHEBOA	0.0	0.000	43.9	0.014	0.0	0.000	0.0	0.000	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	14.6	0.003	29.3	0.019	0.0	0.000	29.3	2.298
GOLFELON	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
NEMERTIN	43.9	0.048	29.3	0.016	73.2	0.708	0.0	0.000	14.6	0.013
PHORONID	438.9	0.048	278.0	0.019	219.5	0.029	14.6	0.002	29.3	0.019
PLATHYHE	0.0	0.000	0.0	0.000	14.6	0.019	0.0	0.000	0.0	0.000
PRIAPULI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.029
SUMS	2604.3	3.242	2779.6	6.737	2326.2	8.362	424.1	2.852	2136.1	6.376
DIVERSITY										
NSPC	32		40		27		17		33	
SH-W	2.708		3.147		2.269		2.592		2.600	
SIMP	0.104		0.062		0.201		0.099		0.133	

STATION:	OYS 4		OYS 5		OYS 6		OYS 7		OYS 8	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEMACR	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.029	0.0	0.000
ATYLSWAM	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
BATHGUIL	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BATHTENU	58.5	0.018	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CALLSUBT	0.0	0.000	43.9	0.430	0.0	0.000	0.0	0.000	29.3	2.278
CAMPGLAB	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
COROAFFI	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
CORYCASS	14.6	9.722	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
DIASBRAD	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.015
EUDODEFO	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
EUDOEMAR	0.0	0.000	0.0	0.000	0.0	0.000	131.7	0.026	0.0	0.000
EUDOTRUN	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006
HARPANTE	0.0	0.000	73.2	0.022	0.0	0.000	0.0	0.000	0.0	0.000
HIPPDENT	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
ORCHNANA	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
PERILONG	58.5	0.018	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
PSEULONG	29.3	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
ACROBRAC	73.2	4.881	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
AMPHFILI	14.6	0.053	351.1	0.928	687.6	8.262	468.2	1.294	0.0	0.000
ASTATRIA	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHICORD	0.0	0.000	43.9	0.059	0.0	0.000	0.0	0.000	14.6	0.028
ECHIJUVE	0.0	0.000	0.0	0.000	14.6	0.002	14.6	0.002	0.0	0.000
OPHIALBI	0.0	0.000	29.3	0.014	0.0	0.000	0.0	0.000	117.0	2.140
OPHIJUVE	190.2	0.038	951.0	0.190	0.0	0.000	1243.6	0.249	424.3	0.085
MOLLUSCA										
ABRAALBA	29.3	0.002	0.0	0.000	43.9	0.003	0.0	0.000	14.6	0.575
APLACOPH	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.073	0.0	0.000
ARCTISLA	29.3	0.002	0.0	0.000	14.6	0.014	102.4	0.045	0.0	0.000
CINGVITR	0.0	0.000	365.8	0.044	0.0	0.000	29.3	0.006	0.0	0.000
CORBGIBB	0.0	0.000	58.5	0.307	0.0	0.000	0.0	0.000	0.0	0.000
CULTPELL	73.2	0.476	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CYLICYLI	0.0	0.000	0.0	0.000	58.5	0.039	0.0	0.000	14.6	0.101
ENSIENSI	14.6	1.170	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
EULIALBA	0.0	0.000	0.0	0.000	43.9	0.004	0.0	0.000	0.0	0.000
GASTROPO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007
LEPTSQUA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.029
MYSEBIDE	175.6	0.035	0.0	0.000	102.4	0.021	73.2	0.015	0.0	0.000
NATIALDE	43.9	0.004	14.6	0.011	0.0	0.000	0.0	0.000	87.8	0.085
NUCUTENU	0.0	0.000	0.0	0.000	73.2	0.051	0.0	0.000	0.0	0.000
NUCUTURG	43.9	0.342	0.0	0.000	0.0	0.000	0.0	0.000	146.3	0.794
SPISSUBT	0.0	0.000	73.2	0.023	0.0	0.000	0.0	0.000	0.0	0.000
TELLFABU	73.2	0.082	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
THRAPHAS	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THYAFLEX	117.0	0.283	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
VENUSTRI	73.2	1.636	43.9	0.002	0.0	0.000	0.0	0.000	0.0	0.000
POLYCHAETA										
ANAIJUVE	0.0	0.000	29.3	0.012	0.0	0.000	0.0	0.000	0.0	0.000
APHRACUL	0.0	0.000	0.0	0.000	73.2	0.019	0.0	0.000	0.0	0.000
APHRJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
CHAESETO	73.2	0.015	0.0	0.000	0.0	0.000	58.5	0.014	0.0	0.000
CHAEVARI	0.0	0.000	14.6	4.200	0.0	0.000	0.0	0.000	0.0	0.000
DIPLGLAU	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.102	0.0	0.000
ETEOLONG	0.0	0.000	0.0	0.000	14.6	0.006	14.6	0.004	0.0	0.000

EUMISANG	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GATTCIRR	0.0	0.000	14.6	0.743	0.0	0.000	0.0	0.000	0.0	0.000
GLYCNORD	43.9	0.039	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GLYCROUX	0.0	0.000	43.9	1.099	0.0	0.000	0.0	0.000	0.0	0.000
GONIMACU	0.0	0.000	29.3	0.023	43.9	0.010	0.0	0.000	14.6	0.077
GYPTCAPE	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
HARMJUVE	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HARMLUNU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010
LUMBLATR	0.0	0.000	87.8	0.187	0.0	0.000	0.0	0.000	14.6	0.043
LYSILOVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010	0.0	0.000
MAGEALLE	43.9	0.460	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	907.1	0.404	0.0	0.000	73.2	0.019	0.0	0.000	0.0	0.000
MALDANID	14.6	0.149	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MEDIFRAG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	234.1	0.068
NEPHHOMB	43.9	1.027	29.3	0.058	102.4	1.759	43.9	0.703	58.5	1.168
NEPHINCI	0.0	0.000	14.6	0.340	0.0	0.000	0.0	0.000	0.0	0.000
NEPHJUVE	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
NERELONG	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	14.6	0.023
NOTOLATE	0.0	0.000	29.3	0.435	0.0	0.000	43.9	0.572	0.0	0.000
OPHEACUM	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.460	0.0	0.000
OPHIFLEX	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.054	0.0	0.000
ORBISERT	0.0	0.000	14.6	0.043	0.0	0.000	0.0	0.000	0.0	0.000
OWENFUSI	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
OWENJUVE	0.0	0.000	0.0	0.000	43.9	0.010	0.0	0.000	0.0	0.000
PARAGRAC	0.0	0.000	14.6	0.001	0.0	0.000	43.9	0.004	0.0	0.000
PECTAURI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.266	0.0	0.000
PECTKORE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.398	0.0	0.000
PHOLMINU	58.5	0.010	131.7	0.039	585.2	0.106	204.8	0.043	0.0	0.000
POECSERP	0.0	0.000	43.9	0.025	43.9	0.085	0.0	0.000	73.2	0.019
POLYDORA	0.0	0.000	29.3	0.027	0.0	0.000	0.0	0.000	29.3	0.010
RHODJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
RHODLOVE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.566	0.0	0.000
SCALINFL	0.0	0.000	0.0	0.000	0.0	0.000	87.8	0.688	0.0	0.000
SCOLARMI	14.6	0.010	0.0	0.000	160.9	0.635	0.0	0.000	14.6	0.006
SIGAMATH	14.6	0.185	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SPIOBOMB	790.0	0.193	131.7	0.017	29.3	0.029	0.0	0.000	204.8	0.039
SPIOFILI	29.3	0.012	0.0	0.000	43.9	0.010	0.0	0.000	0.0	0.000
SPIOJUVE	0.0	0.000	0.0	0.000	102.4	0.023	0.0	0.000	0.0	0.000
SPIOKROE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.019	0.0	0.000
STHELIMI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010	0.0	0.000
SYNEKLAT	0.0	0.000	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000
TERESTRO	0.0	0.000	14.6	1.172	0.0	0.000	0.0	0.000	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	0.0	0.000	14.6	0.061	0.0	0.000	0.0	0.000
EDWACLAP	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.341	0.0	0.000
GOLFELON	0.0	0.000	14.6	0.008	0.0	0.000	0.0	0.000	0.0	0.000
NEMERTIN	117.0	0.068	73.2	0.354	29.3	0.003	14.6	0.032	43.9	10.663
PHORONID	131.7	0.017	131.7	0.012	73.2	0.010	190.2	0.048	833.9	0.116
PLATHYHE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.006
SUMS	3482.1	21.379	3028.6	10.859	2531.0	11.192	3160.1	6.082	2516.3	18.390
DIVERSITY										
NSPC	35		36		27		32		25	
SH-W	2.666		2.663		2.517		2.380		2.335	
SIMP	0.133		0.137		0.142		0.191		0.163	

STATION:	OYS 9		OYS 10		OYS 11		OYS 12		OYS 13	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
AMPHIPOD	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
BATHELEG	131.7	0.040	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CALLJUVE	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.130	0.0	0.000
CALLSUBT	43.9	0.088	14.6	1.747	43.9	1.119	73.2	1.727	0.0	0.000
CAPRELLI	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
CIROCRAN	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.224	0.0	0.000
EUDODEFO	29.3	0.006	29.3	0.006	0.0	0.000	0.0	0.000	0.0	0.000
EUDOTRUN	0.0	0.000	14.6	0.003	58.5	0.012	29.3	0.006	29.3	0.006
HARPANTE	14.6	0.004	14.6	0.004	0.0	0.000	146.3	0.044	0.0	0.000
HARPCREN	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
HIPPDENT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
LEUCINCI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
LEUCLILL	29.3	0.009	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ORCHNANA	14.6	0.004	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
PERILONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.013
UPOGDELT	0.0	0.000	0.0	0.000	0.0	0.000	43.9	12.772	0.0	0.000
ECHINODERMATA										
AMPHFILI	117.0	0.113	892.4	7.212	58.5	0.041	190.2	0.215	1199.7	11.325
BRISLYRI	0.0	0.000	14.6	7.599	0.0	0.000	0.0	0.000	0.0	0.000
ECHICORD	0.0	0.000	14.6	4.503	43.9	0.075	0.0	0.000	29.3	7.218
ECHIPUSI	160.9	0.030	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHIALBI	0.0	0.000	0.0	0.000	117.0	1.851	0.0	0.000	14.6	0.656

OPHIJUVE	14.6	0.003	994.8	0.199	424.3	0.085	0.0	0.000	965.6	0.193
MOLLUSCA										
ABRAALBA	14.6	0.001	0.0	0.000	14.6	0.005	0.0	0.000	29.3	0.006
ABRAPRIS	0.0	0.000	14.6	0.128	0.0	0.000	0.0	0.000	0.0	0.000
ACANECHI	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
APLACOPH	0.0	0.000	14.6	0.015	0.0	0.000	0.0	0.000	0.0	0.000
ARCTISLA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.005
CINGVITR	0.0	0.000	0.0	0.000	14.6	0.004	43.9	0.009	0.0	0.000
CORBGIBB	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.012	0.0	0.000
CULTPELL	0.0	0.000	14.6	0.099	0.0	0.000	0.0	0.000	0.0	0.000
CYLICYLI	0.0	0.000	29.3	0.042	14.6	0.044	43.9	0.020	73.2	0.041
EULIALBA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
GASTROPO	0.0	0.000	0.0	0.000	29.3	0.006	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.056
MYSEBIDE	0.0	0.000	117.0	0.023	43.9	0.009	0.0	0.000	204.8	0.041
MYSIUNDA	0.0	0.000	14.6	0.007	0.0	0.000	0.0	0.000	0.0	0.000
NATIALDE	14.6	0.002	0.0	0.000	58.5	0.017	0.0	0.000	14.6	0.014
NUCUTENU	0.0	0.000	43.9	0.043	0.0	0.000	29.3	0.009	58.5	0.069
NUCUTURG	43.9	0.463	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
TELLFABU	14.6	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THYAFLEX	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.065
POLYCHAETA										
ANAIMACU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.006
APHRACUL	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
APHRJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
CHAESETO	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.050	14.6	0.002
CHAEVARI	0.0	0.000	14.6	5.929	0.0	0.000	14.6	2.012	0.0	0.000
DIPLGLAU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.008
GATTCIRR	0.0	0.000	14.6	0.274	0.0	0.000	43.9	0.576	0.0	0.000
GONIMACU	0.0	0.000	14.6	0.006	0.0	0.000	29.3	0.008	0.0	0.000
GYPTCAPE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.027	0.0	0.000
HARMLONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010
LUMBLATR	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.041	0.0	0.000
MAGEALLE	29.3	0.098	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEJUVE	87.8	0.012	29.3	0.008	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	204.8	0.261	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.008
MEDIFRAG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
NEPHHOMB	14.6	1.966	14.6	0.044	0.0	0.000	14.6	0.266	43.9	0.037
NEPHINCI	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.050	0.0	0.000
NEPHJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
NOTOLATE	0.0	0.000	14.6	2.024	0.0	0.000	43.9	1.728	14.6	0.072
OPHIFLEX	14.6	0.035	0.0	0.000	14.6	0.015	14.6	0.046	0.0	0.000
ORBISERT	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.023
OWENFUSI	0.0	0.000	0.0	0.000	29.3	0.118	0.0	0.000	0.0	0.000
OWENJUVE	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
PECTAURI	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.012	0.0	0.000
PECTKORE	0.0	0.000	0.0	0.000	14.6	0.581	14.6	0.255	0.0	0.000
PHOLMINU	0.0	0.000	219.5	0.039	0.0	0.000	14.6	0.004	175.6	0.023
POECSERP	29.3	0.015	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
POLYKINB	0.0	0.000	14.6	0.012	0.0	0.000	0.0	0.000	0.0	0.000
PRIOCIRR	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
SCOLARMI	14.6	0.010	58.5	0.031	0.0	0.000	0.0	0.000	58.5	0.066
SCOLBONN	14.6	0.243	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SIGAMATH	14.6	0.550	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.021
SPIOBOMB	497.4	0.197	0.0	0.000	43.9	0.008	29.3	0.004	29.3	0.002
SPIOFILI	0.0	0.000	29.3	0.010	0.0	0.000	0.0	0.000	0.0	0.000
SYNEKLAT	0.0	0.000	29.3	0.008	0.0	0.000	14.6	0.004	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	29.3	0.290	0.0	0.000	14.6	0.061	0.0	0.000
GOLFELON	0.0	0.000	0.0	0.000	0.0	0.000	87.8	1.949	0.0	0.000
GOLFVULG	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
NEMERTIN	73.2	0.216	0.0	0.000	29.3	0.039	0.0	0.000	14.6	0.097
PHORONID	73.2	0.008	219.5	0.048	263.3	0.068	146.3	0.019	0.0	0.000
PLATHYHE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.013	0.0	0.000
SUMS	1711.6	4.373	2969.6	30.357	1360.4	4.106	1492.1	23.326	3203.9	20.085
DIVERSITY										
NSPC	25		30		21		40		29	
SH-W	2.552		2.097		2.379		3.294		2.016	
SIMP	0.127		0.216		0.154		0.053		0.240	

STATION:	OYS 14		OYS 15		OYS 16		OYS 17		OYS 18	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	0.0	0.000	14.6	0.004	29.3	0.110	0.0	0.000
AMPETENU	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
BATHELEG	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	14.6	0.004
BATHJUVE	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BATHTENU	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
CALLJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.026
CALLSUBT	14.6	0.393	14.6	0.154	73.2	3.081	43.9	0.779	0.0	0.000
EUDODEFO	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.012	0.0	0.000

EUDOEMAR	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
EUDOTRUN	0.0	0.000	87.8	0.018	43.9	0.009	0.0	0.000	0.0	0.000
HARPANTE	0.0	0.000	29.3	0.009	43.9	0.013	29.3	0.009	14.6	0.004
HARPPECT	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HIPPDENT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
ORCHNANA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
PERILONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
UROTELEG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
ECHINODERMATA										
AMPHFILI	29.3	0.133	87.8	0.246	87.8	1.606	175.6	1.229	0.0	0.000
ECHIFLAV	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000	0.0	0.000
ECHIJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	146.3	0.020
OPHIJUVE	0.0	0.000	117.0	0.023	43.9	0.009	263.3	0.047	146.3	0.029
MOLLUSCA										
ABRAALBA	0.0	0.000	58.5	0.020	14.6	0.000	0.0	0.000	0.0	0.000
ARCTISLA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.002
CINGVITR	102.4	0.021	0.0	0.000	29.3	0.006	0.0	0.000	0.0	0.000
CORBGIBB	43.9	0.102	29.3	0.058	14.6	0.018	29.3	0.010	2355.4	0.146
CULTPELL	0.0	0.000	14.6	0.069	0.0	0.000	43.9	0.021	0.0	0.000
CYLICYLI	0.0	0.000	14.6	0.007	0.0	0.000	0.0	0.000	0.0	0.000
DOSILUPI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
EULIALBA	0.0	0.000	0.0	0.000	14.6	0.002	14.6	0.002	14.6	0.003
GASTROPO	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.019	0.0	0.000
MYSEBIDE	0.0	0.000	0.0	0.000	131.7	0.026	73.2	0.015	0.0	0.000
NATIALDE	0.0	0.000	14.6	0.010	29.3	0.003	29.3	0.010	102.4	0.904
NUCUTURG	0.0	0.000	0.0	0.000	146.3	0.071	29.3	0.037	0.0	0.000
TELLFABU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.001
THRAPHAS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	131.7	0.022
VENUSTRI	14.6	0.002	58.5	0.002	0.0	0.000	0.0	0.000	102.4	0.002
POLYCHAETA										
ANAIJUVE	0.0	0.000	0.0	0.000	29.3	0.010	0.0	0.000	0.0	0.000
CHAEJUVE	0.0	0.000	0.0	0.000	14.6	0.033	0.0	0.000	0.0	0.000
CHAESETO	0.0	0.000	14.6	0.014	0.0	0.000	43.9	0.008	14.6	0.004
CHAEVARI	43.9	5.871	29.3	2.617	0.0	0.000	0.0	0.000	0.0	0.000
CHONSPEC	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
DIPLGLAU	0.0	0.000	0.0	0.000	14.6	0.029	14.6	0.002	0.0	0.000
ETEOLONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.008
EUMISANG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
EXOGHEBE	14.6	0.001	0.0	0.000	0.0	0.000	29.3	0.002	0.0	0.000
GATTCIRR	43.9	0.979	29.3	0.840	14.6	0.046	0.0	0.000	0.0	0.000
GLYCROUX	29.3	0.483	0.0	0.000	14.6	1.578	0.0	0.000	0.0	0.000
GONIMACU	0.0	0.000	0.0	0.000	14.6	0.025	14.6	0.002	0.0	0.000
GYPTCAPE	0.0	0.000	29.3	0.023	0.0	0.000	0.0	0.000	0.0	0.000
HARMLONG	0.0	0.000	0.0	0.000	14.6	0.100	0.0	0.000	0.0	0.000
LYSILOVE	0.0	0.000	0.0	0.000	14.6	0.039	0.0	0.000	0.0	0.000
MAGEJUVE	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	0.0	0.000	0.0	0.000	117.0	0.137	117.0	0.072
NEPHHOMB	0.0	0.000	29.3	2.211	14.6	0.091	0.0	0.000	0.0	0.000
NEPHINCI	14.6	0.017	14.6	0.062	0.0	0.000	0.0	0.000	0.0	0.000
NERELONG	14.6	0.039	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.014
NOTOLATE	43.9	0.429	29.3	0.012	0.0	0.000	0.0	0.000	0.0	0.000
OPHIFLEX	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.114	0.0	0.000
PARAGRAC	73.2	0.006	58.5	0.017	0.0	0.000	0.0	0.000	0.0	0.000
PECTAURI	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.222	0.0	0.000
PHOLMINU	0.0	0.000	14.6	0.008	43.9	0.010	14.6	0.002	29.3	0.008
POECSERP	14.6	0.004	0.0	0.000	14.6	0.014	14.6	0.006	14.6	0.015
SCALINFL	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.039	0.0	0.000
SCOLARMI	0.0	0.000	0.0	0.000	73.2	0.019	14.6	0.010	14.6	0.006
SCOLBONN	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.021	0.0	0.000
SPIOBOMB	0.0	0.000	0.0	0.000	43.9	0.010	58.5	0.010	0.0	0.000
SPIOFILI	0.0	0.000	43.9	0.008	0.0	0.000	0.0	0.000	0.0	0.000
STHELIMI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.695
SYNEKLAT	73.2	0.014	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.016	0.0	0.000
GOLFELON	73.2	0.182	14.6	0.008	0.0	0.000	0.0	0.000	0.0	0.000
HYDROZOA	14.6	0.013	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
NEMERTIN	0.0	0.000	43.9	1.088	0.0	0.000	29.3	0.055	58.5	0.200
PHORONID	73.2	0.029	190.2	0.039	219.5	0.019	336.5	0.039	131.7	0.027
PLATHYHE	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
SUMS	775.4	8.724	1141.1	7.576	1316.6	6.898	1740.9	3.002	3584.1	2.219
DIVERSITY										
NSPC	21		28		32		34		24	
SH-W	2.804		3.000		3.029		2.950		1.580	
SIMP	0.071		0.067		0.070		0.085		0.441	

Appendix - 2 Biomonitoring 1997

STATION:	OYS 19		OYS 20		OYS 21		OYS 22		OYS 23	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	14.6	0.022	0.0	0.000	0.0	0.000	0.0	0.000
AMPETENU	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
ARGIHAMA	0.0	0.000	58.5	0.018	0.0	0.000	0.0	0.000	0.0	0.000
BATHTENU	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
CALLSUBT	0.0	0.000	87.8	6.698	58.5	4.560	29.3	0.356	0.0	0.000
CIROCRAN	14.6	1.328	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CORYCASS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	9.316	0.0	0.000
DIASBRAD	0.0	0.000	58.5	0.023	0.0	0.000	0.0	0.000	0.0	0.000
EUDOTRUN	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	29.3	0.006
HARPANTE	0.0	0.000	146.3	0.044	0.0	0.000	87.8	0.026	14.6	0.004
HIPPDENT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
IONETHOR	0.0	0.000	14.6	0.015	0.0	0.000	14.6	0.046	0.0	0.000
ORCHNANA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
PERILONG	0.0	0.000	29.3	0.009	0.0	0.000	0.0	0.000	29.3	0.009
UPOGDELT	0.0	0.000	0.0	0.000	14.6	3.687	0.0	0.000	0.0	0.000
UROTELEG	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
AMPHFILI	863.2	2.800	219.5	0.625	219.5	0.567	336.5	2.919	1111.9	15.499
ASTRIRRE	14.6	0.015	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BRISLYRI	14.6	8.891	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHICORD	14.6	2.410	14.6	6.442	87.8	0.207	0.0	0.000	29.3	11.932
ECHIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.004	0.0	0.000
OPHIALBI	0.0	0.000	0.0	0.000	73.2	1.408	0.0	0.000	0.0	0.000
OPHIJUVE	2282.3	0.456	307.2	0.061	0.0	0.000	877.8	0.176	0.0	0.000
MOLLUSCA										
ABRAALBA	131.7	0.049	0.0	0.000	0.0	0.000	43.9	0.006	43.9	0.005
ACANECHI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
APLACOPH	0.0	0.000	14.6	0.029	0.0	0.000	0.0	0.000	0.0	0.000
ARCTISLA	14.6	0.002	131.7	0.027	0.0	0.000	14.6	0.002	0.0	0.000
BIVALVAE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.003
CINGVITR	14.6	0.003	0.0	0.000	29.3	0.006	0.0	0.000	0.0	0.000
CORBGIBB	14.6	0.008	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
CULTPELL	0.0	0.000	14.6	0.004	0.0	0.000	14.6	0.206	0.0	0.000
CYLICYLI	102.4	0.125	73.2	0.023	29.3	0.056	29.3	0.090	0.0	0.000
DOSIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.003	0.0	0.000
DOSILUPI	0.0	0.000	14.6	1.494	0.0	0.000	0.0	0.000	14.6	0.495
EULIALBA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.004
LEPTSQUA	0.0	0.000	0.0	0.000	29.3	0.015	0.0	0.000	0.0	0.000
MONTFERR	58.5	0.025	29.3	0.016	0.0	0.000	0.0	0.000	14.6	0.032
MYSEBIDE	87.8	0.018	160.9	0.032	43.9	0.009	160.9	0.032	292.6	0.058
NATIALDE	14.6	0.003	0.0	0.000	43.9	0.020	43.9	0.002	14.6	0.002
NATIJUVE	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
NUCUTENU	29.3	0.007	0.0	0.000	0.0	0.000	43.9	0.007	29.3	0.007
NUCUTURG	0.0	0.000	0.0	0.000	43.9	0.064	131.7	0.144	29.3	0.090
PHILSPEC	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THRACONV	43.9	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THRAPHAS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
THYAFLEX	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	29.3	0.031
VENUSTRI	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
POLYCHAETA										
APHRACUL	58.5	0.012	43.9	0.014	0.0	0.000	0.0	0.000	0.0	0.000
APHRJUVE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006	0.0	0.000
CAULLERI	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
CHAESETO	29.3	0.012	0.0	0.000	0.0	0.000	29.3	0.010	0.0	0.000
CHAEVARI	14.6	5.056	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
DIPLGLAU	58.5	0.124	29.3	0.127	14.6	0.019	14.6	0.079	0.0	0.000
EXOGHEBE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
GATTCIRR	14.6	1.939	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GLYCNORD	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.014	14.6	0.017
GLYCROUX	14.6	0.010	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
GONIMACU	29.3	0.008	73.2	0.048	0.0	0.000	29.3	0.010	43.9	0.006
GYPTCAPE	0.0	0.000	14.6	0.031	0.0	0.000	0.0	0.000	0.0	0.000
HARMLUNU	0.0	0.000	14.6	0.095	0.0	0.000	0.0	0.000	0.0	0.000
LUMBLATR	0.0	0.000	29.3	0.023	0.0	0.000	0.0	0.000	0.0	0.000
MAGEALLE	0.0	0.000	14.6	0.012	0.0	0.000	29.3	0.234	0.0	0.000
MAGEJUVE	0.0	0.000	58.5	0.008	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	0.0	0.000	0.0	0.000	117.0	0.031	73.2	0.010
MEDIFRAG	14.6	0.001	0.0	0.000	43.9	0.006	0.0	0.000	0.0	0.000
NEPHHOMB	43.9	0.270	43.9	1.338	14.6	0.056	14.6	0.127	43.9	0.465
NEPHJUVE	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000
NOTOLATE	14.6	0.017	219.5	1.396	0.0	0.000	14.6	0.004	0.0	0.000
OPHEACUM	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.004
OPHELIMA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.031	0.0	0.000
OPHIFLEX	0.0	0.000	14.6	0.039	14.6	0.077	58.5	0.218	0.0	0.000
PECTAURI	160.9	0.620	14.6	0.006	0.0	0.000	58.5	0.019	0.0	0.000
PECTKORE	0.0	0.000	0.0	0.000	29.3	0.251	0.0	0.000	0.0	0.000
PHOLMINU	278.0	0.031	43.9	0.008	43.9	0.006	190.2	0.025	234.1	0.035
PHYLLODO	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
PRIOCIRR	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.014	0.0	0.000

LARMI	0.0	0.000	29.3	0.010	0.0	0.000	58.5	0.019	14.6	0.041
AMATH	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.043	14.6	0.073
AGRAC	29.3	0.006	43.9	0.006	0.0	0.000	0.0	0.000	0.0	0.000
OBOMB	0.0	0.000	131.7	0.014	0.0	0.000	14.6	0.004	14.6	0.002
OFILI	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
OJUVE	0.0	0.000	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000
EKLAT	14.6	0.004	58.5	0.008	0.0	0.000	14.6	0.004	0.0	0.000
ELLANEOUS										
ACLAP	0.0	0.000	14.6	2.472	0.0	0.000	0.0	0.000	0.0	0.000
EROPN	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.154
FVULG	0.0	0.000	0.0	0.000	14.6	0.012	0.0	0.000	0.0	0.000
ERTIN	73.2	3.299	87.8	0.702	14.6	0.026	43.9	0.019	14.6	0.013
RONID	73.2	0.006	204.8	0.019	219.5	0.068	102.4	0.014	43.9	0.006
THYHE	14.6	0.032	0.0	0.000	0.0	0.000	14.6	0.025	0.0	0.000
UNCUL	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
	4681.4	27.591	2721.0	21.990	1112.1	11.124	2984.2	14.305	2326.3	29.006
ERSITY										
C	35		46		21		45		28	
W	2.019		3.331		2.633		2.927		2.119	
P	0.279		0.050		0.103		0.115		0.259	

TION:	OYS 24		OYS 25		OYS 26		OYS 27		OYS 28	
	N	B	N	B	N	B	N	B	N	B
TACEA										
HELEG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	117.0	0.035
HGUIL	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.013
LJUVE	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.011	14.6	0.022
LSUBT	29.3	0.305	0.0	0.000	29.3	1.192	0.0	0.000	0.0	0.000
SBRAD	0.0	0.000	14.6	0.007	0.0	0.000	0.0	0.000	0.0	0.000
ODEFO	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006	0.0	0.000
OTRUN	117.0	0.023	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
PANTE	0.0	0.000	0.0	0.000	0.0	0.000	146.3	0.044	43.9	0.013
PPECT	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
CINCI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
HNANA	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
TALTA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009
TBREV	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
NODERMATA										
HFILI	0.0	0.000	0.0	0.000	292.6	1.628	0.0	0.000	0.0	0.000
RIRRE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.015	0.0	0.000
ICORD	14.6	0.088	0.0	0.000	29.3	0.085	0.0	0.000	0.0	0.000
IJUVE	0.0	0.000	190.2	0.019	0.0	0.000	0.0	0.000	0.0	0.000
IPUSI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	292.6	0.041
IALBI	0.0	0.000	0.0	0.000	43.9	0.019	0.0	0.000	0.0	0.000
IJUVE	0.0	0.000	263.3	0.053	541.3	0.108	87.8	0.018	73.2	0.015
USCA										
AALBA	146.3	0.012	29.3	0.002	0.0	0.000	29.3	0.025	0.0	0.000
TISLA	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.007	0.0	0.000
ALVAE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
GVITR	0.0	0.000	0.0	0.000	453.5	0.045	0.0	0.000	0.0	0.000
BGIBB	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	14.6	0.047
TPELL	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.251	14.6	0.000
ICYLI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
TROPO	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.004	0.0	0.000
TFERR	43.9	0.008	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
EBIDE	14.6	0.003	0.0	0.000	146.3	0.029	0.0	0.000	0.0	0.000
IALDE	29.3	0.043	0.0	0.000	43.9	0.030	29.3	0.018	0.0	0.000
UJUVE	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
UTENU	0.0	0.000	14.6	0.009	0.0	0.000	0.0	0.000	0.0	0.000
UTURG	0.0	0.000	14.6	0.052	14.6	0.162	204.8	0.125	14.6	0.145
SSUBT	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000	14.6	0.006
LFABU	29.3	0.064	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
APHAS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000
USTRI	0.0	0.000	29.3	0.002	0.0	0.000	0.0	0.000	0.0	0.000
CHAETA										
IJUVE	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
RACUL	14.6	0.309	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CMINU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
ESETO	0.0	0.000	43.9	0.039	0.0	0.000	29.3	0.006	14.6	0.012
EVARI	0.0	0.000	14.6	2.296	0.0	0.000	190.2	6.373	0.0	0.000
LGLAU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.008
ISANG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
TCIRR	0.0	0.000	14.6	0.836	0.0	0.000	29.3	0.301	0.0	0.000
CALBA	0.0	0.000	14.6	0.037	0.0	0.000	0.0	0.000	0.0	0.000
IMACU	73.2	0.010	14.6	0.002	0.0	0.000	29.3	0.012	29.3	0.075
MLONG	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.247	0.0	0.000
MLUNU	0.0	0.000	0.0	0.000	14.6	0.079	0.0	0.000	0.0	0.000
ICONC	43.9	1.222	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BLATR	58.5	0.106	0.0	0.000	58.5	0.133	0.0	0.000	0.0	0.000
EJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	248.7	0.037
EPAPI	14.6	0.004	0.0	0.000	14.6	0.004	131.7	0.112	263.3	0.209

NEPHCIRR	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.029	0.0	0.000
NEPHHOMB	58.5	0.670	0.0	0.000	14.6	0.355	0.0	0.000	14.6	0.232
NOTOLATE	0.0	0.000	29.3	0.174	0.0	0.000	0.0	0.000	0.0	0.000
OPHELIMA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010
OPHIFLEX	0.0	0.000	0.0	0.000	29.3	0.122	0.0	0.000	0.0	0.000
OWENJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.004
PARAGRAC	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000
PECTAURI	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.033	0.0	0.000
PHOLMINU	29.3	0.010	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
POECSERP	14.6	0.027	14.6	0.010	0.0	0.000	0.0	0.000	14.6	0.010
POLYDORA	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
SCOLARMI	0.0	0.000	0.0	0.000	0.0	0.000	365.8	0.477	0.0	0.000
SIGAMATH	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.164
SPIOBOMB	307.2	0.160	14.6	0.002	0.0	0.000	73.2	0.027	248.7	0.116
SPIOJUVE	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
STHELIMI	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SYNEKLAT	0.0	0.000	73.2	0.021	0.0	0.000	87.8	0.015	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
EDWACLAP	0.0	0.000	0.0	0.000	14.6	0.789	0.0	0.000	0.0	0.000
GOLFELON	0.0	0.000	0.0	0.000	43.9	1.130	0.0	0.000	0.0	0.000
GOLFVULG	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000	0.0	0.000
NEMERTIN	14.6	0.006	14.6	0.003	14.6	0.006	29.3	0.015	87.8	0.225
PHORONID	43.9	0.029	43.9	0.006	58.5	0.039	0.0	0.000	117.0	0.019
PRIAPULI	0.0	0.000	14.6	0.027	0.0	0.000	0.0	0.000	0.0	0.000
SIPUNCUL	0.0	0.000	14.6	0.069	0.0	0.000	0.0	0.000	0.0	0.000
SUMS	1141.0	3.113	965.2	3.682	1901.7	5.985	1873.2	8.187	1945.4	1.485
DIVERSITY										
NSPC	22		26		21		27		31	
SH-W	2.585		2.611		2.189		2.839		2.791	
SIMP	0.117		0.129		0.172		0.083		0.088	

STATION:	OYS 29		OYS 30		OYS 31		OYS 32		OYS 33	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPEBREV	0.0	0.000	0.0	0.000	14.6	0.022	0.0	0.000	0.0	0.000
AMPETENU	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	43.9	0.013
AMPHIPOD	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BATHTENU	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CALLJUVE	0.0	0.000	29.3	0.020	0.0	0.000	0.0	0.000	58.5	0.206
CALLSUBT	0.0	0.000	0.0	0.000	43.9	0.263	0.0	0.000	0.0	0.000
DIASBRAD	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007
EUDOTRUN	0.0	0.000	73.2	0.015	43.9	0.009	0.0	0.000	0.0	0.000
HARPANTE	14.6	0.004	0.0	0.000	292.6	0.088	73.2	0.022	73.2	0.022
HARPCREN	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
ORCHNANA	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
PERILONG	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
AMPHFILI	175.6	4.283	29.3	0.780	395.0	4.969	278.0	0.096	146.3	0.807
ASTRIRRE	14.6	0.695	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.018
ECHICORD	0.0	0.000	102.4	43.387	43.9	0.083	14.6	0.816	0.0	0.000
ECHIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.009
OPHIJUVE	160.9	0.032	0.0	0.000	994.8	0.199	0.0	0.000	0.0	0.000
MOLLUSCA										
ABRAALBA	43.9	0.003	43.9	0.116	14.6	0.001	0.0	0.000	29.3	0.003
ABRAJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
ABRAPRIS	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ACANECHI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
ARCTISLA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.003
CINGVITR	0.0	0.000	0.0	0.000	43.9	0.009	43.9	0.004	0.0	0.000
CORBGIBB	0.0	0.000	0.0	0.000	73.2	0.066	58.5	0.223	14.6	0.004
CULTPELL	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.117
CYLICYLI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
EULIALBA	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
MONTFERR	0.0	0.000	73.2	0.051	0.0	0.000	43.9	0.041	0.0	0.000
MYSEBIDE	658.4	0.132	14.6	0.003	907.1	0.181	0.0	0.000	0.0	0.000
MYSIUNDA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
NATIALDE	29.3	0.004	0.0	0.000	58.5	0.034	0.0	0.000	0.0	0.000
NUCUTURG	175.6	0.691	14.6	0.016	43.9	0.009	14.6	0.192	29.3	0.007
PHILSPEC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.003
SPISSUBT	0.0	0.000	0.0	0.000	43.9	0.022	0.0	0.000	0.0	0.000
TELLFABU	29.3	0.073	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THRAPHAS	58.5	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
THRASPEC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
THYAFLEX	146.3	0.216	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
TURBLACT	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
VENUSTRI	117.0	0.007	0.0	0.000	14.6	0.011	14.6	0.000	14.6	0.007
POLYCHAETA										
ANAIGROE	14.6	0.056	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ANAIJUVE	14.6	0.002	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
CHAESETO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002

CHAEVARI	0.0	0.000	0.0	0.000	0.0	0.000	58.5	5.575	29.3	9.965
CIRRATUL	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.019
DIPLGLAU	0.0	0.000	29.3	0.054	14.6	0.004	0.0	0.000	14.6	0.014
EXOGHEBE	0.0	0.000	0.0	0.000	29.3	0.002	0.0	0.000	0.0	0.000
GATTCIRR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	1.668
GLYCNORD	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
GLYCROUX	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GONIMACU	43.9	0.012	14.6	0.002	14.6	0.008	0.0	0.000	0.0	0.000
LANICONC	14.6	0.994	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
LUMBLATR	0.0	0.000	29.3	0.085	14.6	0.046	0.0	0.000	0.0	0.000
LYSILOVE	0.0	0.000	14.6	0.701	14.6	0.097	0.0	0.000	0.0	0.000
MAGEALLE	14.6	0.106	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEJUVE	248.7	0.031	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	43.9	0.029	29.3	0.008	43.9	0.039	0.0	0.000
MEDIFRAG	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
MYRIHEER	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
NEPHCAEC	14.6	0.116	0.0	0.000	0.0	0.000	14.6	0.755	0.0	0.000
NEPHHOMB	58.5	2.524	29.3	0.044	29.3	0.137	14.6	0.205	29.3	0.994
NEPHJUVE	0.0	0.000	0.0	0.000	29.3	0.004	29.3	0.008	0.0	0.000
NEPHLONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.019
NERELONG	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
NOTOLATE	14.6	0.054	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.589
OPHEACUM	0.0	0.000	14.6	0.072	0.0	0.000	0.0	0.000	0.0	0.000
OPHIFLEX	0.0	0.000	0.0	0.000	29.3	0.054	0.0	0.000	0.0	0.000
PARAGRAC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
PECTAURI	0.0	0.000	0.0	0.000	14.6	0.004	14.6	0.010	0.0	0.000
PECTKORE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.143
PHOLMINU	29.3	0.004	0.0	0.000	14.6	0.004	43.9	0.006	58.5	0.019
POECSERP	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
POLYKINB	0.0	0.000	14.6	0.100	0.0	0.000	0.0	0.000	0.0	0.000
PRIOCIRR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
PSEUPULC	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
SCOLARMI	14.6	0.006	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
SPIOBOMB	336.5	0.046	58.5	0.048	0.0	0.000	14.6	0.004	0.0	0.000
SPIOFILI	0.0	0.000	0.0	0.000	234.1	0.039	0.0	0.000	0.0	0.000
SPIOJUVE	0.0	0.000	0.0	0.000	29.3	0.002	0.0	0.000	0.0	0.000
SPIOKROE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.048	0.0	0.000
SPIONIDA	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
STHELIMI	0.0	0.000	0.0	0.000	29.3	0.125	0.0	0.000	0.0	0.000
SYNEKLAT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	14.6	0.004
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	29.3	0.135	0.0	0.000	0.0	0.000	0.0	0.000
GOLFELON	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.010	14.6	0.002
GOLFVULG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.492
NEMERTIN	43.9	0.004	14.6	0.006	58.5	0.154	14.6	0.010	43.9	0.014
PHORONID	14.6	0.001	0.0	0.000	29.3	0.008	0.0	0.000	175.6	0.023
PLATHYHE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.008
SUMS	2647.6	10.149	731.5	45.673	3701.4	6.678	862.9	8.072	1272.6	15.223
DIVERSITY										
NSPC	36		23		35		22		39	
SH-W	2.754		2.908		2.426		2.557		3.317	
SIMP	0.107		0.066		0.156		0.134		0.052	

STATION:	OYS 34		OYS 35		OYS 36		OYS 37		OYS 38	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPETENU	0.0	0.000	14.6	0.004	14.6	0.004	0.0	0.000	0.0	0.000
BATHELEG	0.0	0.000	29.3	0.009	0.0	0.000	0.0	0.000	0.0	0.000
CALLJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.022
CALLSUBT	102.4	3.619	0.0	0.000	58.5	3.546	102.4	2.923	0.0	0.000
DIASBRAD	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007	14.6	0.004
EUDOTRUN	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
HARPANTE	14.6	0.004	43.9	0.013	43.9	0.013	29.3	0.009	0.0	0.000
HARPCREN	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
IONETHOR	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.015	0.0	0.000
PSEULONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
UPOGDELT	0.0	0.000	0.0	0.000	29.3	18.906	29.3	9.798	0.0	0.000
UROTELEG	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
AMPHFILI	29.3	0.045	336.5	2.962	102.4	0.295	0.0	0.000	0.0	0.000
ASTRIRRE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
BRISLYRI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	11.103	0.0	0.000
ECHICORD	14.6	0.180	14.6	11.103	0.0	0.000	0.0	0.000	43.9	15.300
ECHIJUVE	0.0	0.000	0.0	0.000	541.3	0.108	0.0	0.000	0.0	0.000
OPHIALBI	117.0	0.379	0.0	0.000	131.7	0.130	0.0	0.000	0.0	0.000
OPHIJUVE	0.0	0.000	190.2	0.038	0.0	0.000	29.3	0.006	0.0	0.000
MOLLUSCA										
ABRAALBA	29.3	0.032	0.0	0.000	0.0	0.000	58.5	0.101	0.0	0.000
ABRAJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.000
CYLICYLI	0.0	0.000	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	14.6	0.005	0.0	0.000	0.0	0.000	102.4	0.094

MONTSPEC	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006	0.0	0.000
MYSEBIDE	29.3	0.006	321.9	0.064	0.0	0.000	14.6	0.003	14.6	0.003
NATIALDE	14.6	0.033	14.6	0.054	0.0	0.000	0.0	0.000	29.3	0.005
NUCUTURG	14.6	0.003	0.0	0.000	0.0	0.000	29.3	0.039	58.5	0.031
SPISELLI	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SPISSUBT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000
THRAPHAS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
THYAFLEX	0.0	0.000	14.6	0.072	0.0	0.000	0.0	0.000	0.0	0.000
VENUSTRI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
POLYCHAETA										
AONIPAUC	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
APHRACUL	0.0	0.000	0.0	0.000	14.6	0.222	0.0	0.000	0.0	0.000
APHRJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
CAPITELL	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
CHAESETO	0.0	0.000	14.6	0.006	0.0	0.000	14.6	0.004	29.3	0.006
CHAEVARI	0.0	0.000	0.0	0.000	0.0	0.000	58.5	15.749	0.0	0.000
EXOGHEBE	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GATTCIRR	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.587	0.0	0.000
GLYCNORD	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
GLYCROUX	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.093	0.0	0.000
GONIMACU	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.012	102.4	0.019
GYPTCAPE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000
HARMJUVE	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HARMLONG	14.6	0.039	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HARMLUNU	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.100	0.0	0.000
LANICONC	0.0	0.000	0.0	0.000	73.2	0.276	0.0	0.000	0.0	0.000
LUMBLATR	14.6	0.004	0.0	0.000	58.5	0.087	14.6	0.012	0.0	0.000
LYSILOVE	0.0	0.000	0.0	0.000	14.6	0.116	0.0	0.000	0.0	0.000
MAGEJUVE	0.0	0.000	87.8	0.006	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	102.4	0.021	0.0	0.000	0.0	0.000	102.4	0.048
MEDIFRAG	87.8	0.023	0.0	0.000	14.6	0.002	58.5	0.209	0.0	0.000
NEPHHOMB	14.6	0.539	14.6	0.662	0.0	0.000	0.0	0.000	0.0	0.000
NEPHJUVE	14.6	0.004	14.6	0.006	29.3	0.001	0.0	0.000	14.6	0.004
NERELONG	0.0	0.000	0.0	0.000	14.6	0.006	14.6	0.124	0.0	0.000
NOTOLATE	234.1	12.039	0.0	0.000	14.6	0.143	0.0	0.000	0.0	0.000
OPHIFLEX	29.3	0.093	0.0	0.000	0.0	0.000	29.3	0.091	14.6	0.004
OWENFUSI	0.0	0.000	0.0	0.000	14.6	0.004	29.3	0.087	0.0	0.000
PARAGRAC	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
PECTAURI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
PECTKORE	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.019	0.0	0.000
PHOLMINU	0.0	0.000	0.0	0.000	43.9	0.006	14.6	0.004	14.6	0.002
POECSERP	278.0	0.290	14.6	0.010	43.9	0.017	29.3	0.012	29.3	0.014
POLYDORA	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
SIGAMATH	0.0	0.000	14.6	0.338	0.0	0.000	0.0	0.000	43.9	0.438
SPIOBOMB	14.6	0.002	146.3	0.043	14.6	0.004	0.0	0.000	43.9	0.023
SPIOFILI	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.014	0.0	0.000
SPIONIDA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
STHELIMI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.027
SYNEKLAT	0.0	0.000	14.6	0.006	0.0	0.000	29.3	0.002	0.0	0.000
MISCELLANEOUS										
EDWACLAP	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.097	0.0	0.000
GOLFPROC	14.6	0.019	0.0	0.000	14.6	0.265	0.0	0.000	0.0	0.000
GOLFVULG	0.0	0.000	0.0	0.000	0.0	0.000	263.3	1.684	0.0	0.000
NEMERTIN	58.5	0.023	29.3	0.021	102.4	1.495	0.0	0.000	14.6	0.004
PHORONID	58.5	0.008	131.7	0.029	146.3	0.019	160.9	0.035	0.0	0.000
SUMS	1257.9	17.394	1609.1	15.485	1579.8	25.667	1404.2	44.977	804.4	16.063
DIVERSITY										
NSPC	25		23		25		37		24	
SH-W	2.617		2.457		2.502		3.146		2.883	
SIMP	0.111		0.122		0.150		0.069		0.071	

STATION:	OYS 39		OYS 40		OYS 41		OYS 42		OFF 1	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
AMPETENU	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ATYLFALC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
BATHELEG	0.0	0.000	43.9	0.013	0.0	0.000	73.2	0.022	219.5	0.066
BATHGUIL	0.0	0.000	43.9	0.013	0.0	0.000	117.0	0.035	58.5	0.023
BATHJUVE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006	43.9	0.009
BATHTENU	0.0	0.000	29.3	0.009	29.3	0.009	0.0	0.000	0.0	0.000
CALLJUVE	14.6	0.007	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CAPRELLI	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
EUDODEFO	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
EUDOTRUN	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HARPANTE	0.0	0.000	87.8	0.026	0.0	0.000	0.0	0.000	0.0	0.000
PERILONG	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
PONTALTA	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	14.6	0.004
PSEULONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.006
PSEUSIMI	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
SYNCMACU	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
UROTPOSE	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.022	0.0	0.000

WESTCAEC	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
AMPHFILI	190.2	1.043	58.5	0.502	131.7	2.294	0.0	0.000	0.0	0.000
ASTEJUVE	0.0	0.000	43.9	0.015	0.0	0.000	0.0	0.000	0.0	0.000
ASTRIRRE	43.9	0.015	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ECHICORD	0.0	0.000	175.6	0.077	0.0	0.000	14.6	0.102	0.0	0.000
ECHIJUVE	0.0	0.000	117.0	0.012	29.3	0.003	0.0	0.000	0.0	0.000
OPHIALBI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.198
OPHIJUVE	146.3	0.029	438.9	0.088	190.2	0.038	0.0	0.000	0.0	0.000
MOLLUSCA										
ABRAALBA	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
ABRAPRIS	0.0	0.000	0.0	0.000	14.6	0.013	0.0	0.000	0.0	0.000
APLACOPH	43.9	0.044	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ARCTISLA	14.6	0.002	87.8	0.015	0.0	0.000	0.0	0.000	0.0	0.000
CORBGIBB	14.6	0.020	0.0	0.000	0.0	0.000	58.5	0.012	0.0	0.000
CULTPELL	14.6	0.002	0.0	0.000	29.3	0.011	0.0	0.000	0.0	0.000
CYLICYLI	58.5	0.097	29.3	0.392	29.3	0.002	0.0	0.000	0.0	0.000
DOSILUPI	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
EULIALBA	0.0	0.000	14.6	0.003	58.5	0.006	29.3	0.006	0.0	0.000
GASTROPO	0.0	0.000	14.6	0.003	0.0	0.000	14.6	0.002	0.0	0.000
MONTFERR	0.0	0.000	0.0	0.000	43.9	0.047	14.6	0.017	0.0	0.000
MYSEBIDE	0.0	0.000	0.0	0.000	292.6	0.058	29.3	0.006	0.0	0.000
NATIALDE	14.6	0.107	102.4	0.050	14.6	0.002	0.0	0.000	14.6	0.005
NUCUTURG	14.6	0.081	0.0	0.000	14.6	0.169	0.0	0.000	0.0	0.000
PHILSPEC	14.6	0.003	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
SPISSUBT	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.012
TELLFABU	0.0	0.000	0.0	0.000	29.3	0.004	29.3	0.043	0.0	0.000
THRAPHAS	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.102
THYAFLEX	29.3	0.037	0.0	0.000	58.5	0.137	0.0	0.000	0.0	0.000
VENUSTRI	0.0	0.000	29.3	0.053	29.3	0.021	29.3	0.002	0.0	0.000
POLYCHAETA										
AMPHARET	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
ANAIGROE	0.0	0.000	0.0	0.000	29.3	0.050	0.0	0.000	0.0	0.000
ANAIJUVE	14.6	0.002	14.6	0.002	0.0	0.000	0.0	0.000	131.7	0.019
ANAIMACU	0.0	0.000	29.3	0.012	0.0	0.000	0.0	0.000	0.0	0.000
APHRJUVE	73.2	0.010	73.2	0.008	0.0	0.000	0.0	0.000	0.0	0.000
CHAESETO	29.3	0.014	73.2	0.008	0.0	0.000	0.0	0.000	14.6	0.006
ETEOLONG	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
GONIMACU	0.0	0.000	14.6	0.243	14.6	0.006	14.6	0.048	0.0	0.000
LANICONC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	87.8	0.871
MAGEJUVE	58.5	0.008	365.8	0.033	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	599.8	0.131	555.9	0.089	716.9	0.801	1770.2	2.875
NEPHCIRR	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.077	58.5	0.120
NEPHHOMB	0.0	0.000	0.0	0.000	29.3	0.535	0.0	0.000	0.0	0.000
NEPHJUVE	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHELIMA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.006	14.6	0.006
ORBISERT	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.043
OWENJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
PHOLMINU	43.9	0.010	131.7	0.019	43.9	0.006	0.0	0.000	0.0	0.000
POECSERP	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
SCOLARMI	14.6	0.004	497.4	0.911	14.6	0.004	0.0	0.000	0.0	0.000
SCOLBONN	0.0	0.000	0.0	0.000	14.6	0.062	14.6	0.068	0.0	0.000
SCOLJUVE	0.0	0.000	175.6	0.019	0.0	0.000	0.0	0.000	0.0	0.000
SPIOBOMB	0.0	0.000	468.2	0.460	204.8	0.033	73.2	0.050	43.9	0.027
SPIOFILI	0.0	0.000	0.0	0.000	87.8	0.014	0.0	0.000	0.0	0.000
SPIOJUVE	14.6	0.001	43.9	0.004	0.0	0.000	0.0	0.000	0.0	0.000
STHELIMI	29.3	0.199	14.6	0.058	0.0	0.000	0.0	0.000	0.0	0.000
SYNEKLAT	14.6	0.001	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	19.324
EDWACLAP	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.174
ENTEROPN	14.6	0.033	0.0	0.000	29.3	0.483	0.0	0.000	0.0	0.000
NEMERTIN	58.5	0.046	29.3	0.021	0.0	0.000	219.5	0.058	58.5	0.451
PHORONID	0.0	0.000	453.5	0.116	14.6	0.002	0.0	0.000	0.0	0.000
SUMS	1067.6	1.831	4418.3	3.335	2092.1	4.113	1594.9	1.382	2721.0	24.350
DIVERSITY										
NSPC	30		38		30		19		22	
SH-W	2.987		2.913		2.661		2.068		1.566	
SIMP	0.074		0.077		0.118		0.236		0.436	

Appendix - 2 Biomonitoring 1997

STATION:	OFF 2		OFF 3		OFF 4		OFF 5		OFF 6	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
ATYLFALC	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BATHELEG	14.6	0.004	58.5	0.018	14.6	0.004	102.4	0.031	248.7	0.075
BATHGUIL	0.0	0.000	43.9	0.018	0.0	0.000	0.0	0.000	0.0	0.000
BATHPELA	29.3	0.009	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
CALLTYRR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	3.303
DIASBRAD	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007	0.0	0.000
IPHITRIS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.015	0.0	0.000
LEUCINCI	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009	0.0	0.000
PERILONG	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
UROTPOSE	0.0	0.000	0.0	0.000	0.0	0.000	234.1	0.070	0.0	0.000
ECHINODERMATA										
ASTATRIA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.007
ASTERUBE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	7.777	0.0	0.000
ECHICORD	0.0	0.000	0.0	0.000	29.3	5.101	43.9	21.903	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	87.8	0.101
OPHIALBI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.562
OPHIJUVE	0.0	0.000	102.4	0.021	29.3	0.015	73.2	0.015	0.0	0.000
OPHITEXT	0.0	0.000	131.7	0.293	14.6	0.460	87.8	0.288	0.0	0.000
MOLLUSCA										
ABRAALBA	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.089	0.0	0.000
CINGVITR	14.6	0.015	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	131.7	0.029	0.0	0.000	453.5	0.275	0.0	0.000
MYSEBIDE	0.0	0.000	58.5	0.012	0.0	0.000	0.0	0.000	0.0	0.000
NATIALDE	0.0	0.000	0.0	0.000	102.4	1.324	14.6	0.038	29.3	0.007
SPISSUBT	58.5	0.030	117.0	0.052	0.0	0.000	0.0	0.000	0.0	0.000
TELLFABU	0.0	0.000	0.0	0.000	58.5	0.500	160.9	1.678	0.0	0.000
THRAPHAS	0.0	0.000	0.0	0.000	14.6	0.058	0.0	0.000	0.0	0.000
VENUSTRI	0.0	0.000	0.0	0.000	14.6	0.657	0.0	0.000	0.0	0.000
POLYCHAETA										
ANAIGROE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.112	0.0	0.000
ANAIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	14.6	0.004
AONIPAUC	14.6	0.004	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
ARICMINU	14.6	0.006	14.6	0.008	0.0	0.000	0.0	0.000	0.0	0.000
CHAESETO	14.6	0.008	58.5	0.012	0.0	0.000	117.0	0.031	0.0	0.000
ETEOLONG	0.0	0.000	14.6	0.004	0.0	0.000	14.6	0.004	14.6	0.006
EUMISANG	0.0	0.000	58.5	0.010	58.5	0.004	29.3	0.031	0.0	0.000
GONIMACU	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.014	0.0	0.000
GYPTCAPE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.008	0.0	0.000
HARMLUNU	0.0	0.000	0.0	0.000	0.0	0.000	117.0	0.043	0.0	0.000
LANICONC	14.6	0.081	29.3	0.265	0.0	0.000	1784.9	6.039	14.6	1.207
MAGEJUVE	0.0	0.000	0.0	0.000	43.9	0.006	0.0	0.000	0.0	0.000
MAGEPAPI	0.0	0.000	292.6	0.382	629.1	0.763	234.1	0.309	0.0	0.000
NEPHCIRR	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.452
NEPHHOMB	0.0	0.000	14.6	0.129	0.0	0.000	29.3	2.008	14.6	0.180
NERELONG	0.0	0.000	0.0	0.000	14.6	0.048	29.3	1.006	0.0	0.000
NOTOLATE	0.0	0.000	0.0	0.000	14.6	0.050	292.6	5.681	0.0	0.000
OPHELIMA	175.6	0.139	0.0	0.000	0.0	0.000	0.0	0.000	87.8	0.541
PECTKORE	0.0	0.000	29.3	0.836	0.0	0.000	0.0	0.000	0.0	0.000
POECSERP	0.0	0.000	0.0	0.000	73.2	0.081	29.3	0.023	0.0	0.000
SCOLARMI	29.3	0.066	73.2	0.467	0.0	0.000	87.8	0.023	43.9	0.056
SCOLBONN	0.0	0.000	0.0	0.000	14.6	0.089	0.0	0.000	14.6	0.438
SIGAMATH	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.147	0.0	0.000
SPIOBOMB	73.2	0.135	0.0	0.000	58.5	0.068	58.5	0.012	43.9	0.052
SPIOFILI	278.0	0.089	14.6	0.004	29.3	0.015	43.9	0.014	43.9	0.015
SPIOJUVE	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
STHELIMI	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.981	0.0	0.000
STREWEBS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
TRAVFORB	14.6	0.112	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MISCELLANEOUS										
NEMERTIN	43.9	0.013	117.0	0.190	336.5	1.410	73.2	0.113	14.6	0.171
PHORONID	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	160.9	0.019
SUMS	819.2	0.720	1360.5	2.748	1594.5	10.666	4345.2	48.800	1009.4	7.199
DIVERSITY										
NSPC	16		18		21		34		19	
SH-W	2.142		2.568		2.126		2.410		2.494	
SIMP	0.181		0.098		0.213		0.195		0.117	

Appendix - 2 Biomonitoring 1997

TATION:	OFF 7		OFF 8		OFF 9		OFF 10		OFF 11	
	N	B	N	B	N	B	N	B	N	B
RUSTACEA										
ATYLFALC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
BATHELEG	14.6	0.004	687.6	0.206	438.9	0.132	1287.4	0.386	292.6	0.088
BATHGUIL	0.0	0.000	438.9	0.176	131.7	0.053	380.4	0.152	0.0	0.000
CALLJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
CALLTYRR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.009
DIASBRAD	0.0	0.000	0.0	0.000	14.6	0.011	0.0	0.000	0.0	0.000
EUDOTRUN	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
EPHITRIS	0.0	0.000	14.6	0.015	0.0	0.000	0.0	0.000	0.0	0.000
MEGAAGIL	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
ORCHHUMI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
PONTALTA	0.0	0.000	43.9	0.013	0.0	0.000	43.9	0.013	58.5	0.018
PSEULONG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
URBREV	0.0	0.000	0.0	0.000	58.5	0.018	190.2	0.057	0.0	0.000
URBPOSE	658.4	0.198	585.2	0.176	190.2	0.057	0.0	0.000	0.0	0.000
HINODERMATA										
ECHICORD	117.0	42.989	0.0	0.000	0.0	0.000	14.6	9.591	0.0	0.000
ECHIPUSI	0.0	0.000	29.3	0.025	0.0	0.000	0.0	0.000	58.5	0.053
OPHIALBI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.476
OPHIJUVE	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000
OPHITEXT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.058	0.0	0.000
OLLUSCA										
ABRAALBA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.053	0.0	0.000
ENSIARCU	0.0	0.000	0.0	0.000	14.6	35.611	0.0	0.000	0.0	0.000
ENSIENSI	14.6	1.766	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
NATIALDE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.222
TELLFABU	0.0	0.000	234.1	6.303	0.0	0.000	0.0	0.000	29.3	0.010
VENUSTRI	14.6	3.507	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OLYCHAETA										
CHAESETO	29.3	0.027	58.5	0.025	14.6	0.012	14.6	0.041	43.9	0.002
CTEOLONG	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
CUMISANG	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
GONIMACU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.363
GYPTCAPE	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	14.6	0.001
MAGEJUVE	204.8	0.012	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	731.5	0.765	87.8	0.100	43.9	0.185	29.3	0.137	146.3	0.174
NEPHCAEC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	6.730
NEPHCIRR	14.6	0.044	43.9	0.162	43.9	0.139	14.6	0.056	14.6	0.131
NEPHHOMB	0.0	0.000	14.6	3.495	0.0	0.000	0.0	0.000	14.6	0.151
OPHELIMA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.402	0.0	0.000
SCOLARMI	87.8	0.073	58.5	0.228	14.6	0.006	175.6	0.521	58.5	0.027
SCOLBONN	14.6	0.079	0.0	0.000	14.6	0.127	14.6	0.405	0.0	0.000
SPIOBOMB	0.0	0.000	87.8	0.313	0.0	0.000	29.3	0.008	0.0	0.000
SPIOFILI	0.0	0.000	0.0	0.000	43.9	0.008	29.3	0.019	468.2	0.274
SCELLANEOUS										
ANTHOZOA	14.6	0.000	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
NEMERTIN	14.6	0.006	43.9	0.026	29.3	0.698	0.0	0.000	0.0	0.000
MS	1945.6	49.474	2487.0	11.278	1053.3	37.056	2296.8	11.908	1477.5	8.741
IVERSITY										
SPC	14		18		13		17		19	
H-W	1.637		2.084		1.888		1.557		2.270	
IMP	0.273		0.176		0.231		0.355		0.162	

Appendix - 2 Biomonitoring 1997

STATION:	OFF 12		OFF 13		OFF 14		OFF 15		OFF 16	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
ARGIHAMA	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
BATHELEG	102.4	0.031	73.2	0.022	43.9	0.013	102.4	0.031	117.0	0.035
BATHGUIL	0.0	0.000	14.6	0.006	219.5	0.088	0.0	0.000	0.0	0.000
UROTBREV	14.6	0.004	29.3	0.009	14.6	0.004	117.0	0.035	146.3	0.044
UROTPOSE	0.0	0.000	146.3	0.044	263.3	0.079	29.3	0.009	14.6	0.004
ECHINODERMATA										
ECHICORD	0.0	0.000	14.6	3.010	14.6	3.010	0.0	0.000	14.6	3.010
OPHIALBI	0.0	0.000	0.0	0.000	29.3	0.031	0.0	0.000	0.0	0.000
OPHIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.001	0.0	0.000
MOLLUSCA										
ABRAPRIS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.145	0.0	0.000
DONAVITT	14.6	0.009	14.6	0.015	29.3	0.014	0.0	0.000	29.3	2.604
ENSIENSI	14.6	3.674	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	29.3	0.078	43.9	0.035	0.0	0.000	0.0	0.000
NATIALDE	0.0	0.000	43.9	0.181	0.0	0.000	0.0	0.000	14.6	0.018
SPISELLI	14.6	0.163	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
TELLFABU	0.0	0.000	14.6	0.234	0.0	0.000	0.0	0.000	0.0	0.000
THRAPHAS	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
POLYCHAETA										
ANAILINE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.019	0.0	0.000
ARICMINU	29.3	0.002	14.6	0.002	14.6	0.002	29.3	0.002	0.0	0.000
CHAESETO	29.3	0.006	14.6	0.002	29.3	0.006	0.0	0.000	14.6	0.010
ETEOLACT	14.6	0.017	0.0	0.000	0.0	0.000	14.6	0.027	29.3	0.037
GONIMACU	14.6	0.043	14.6	0.046	29.3	0.058	29.3	0.075	14.6	0.019
MAGEPAPI	14.6	0.006	73.2	0.220	58.5	0.137	43.9	0.145	0.0	0.000
NEPHCIRR	43.9	0.263	102.4	0.149	58.5	0.041	102.4	0.158	73.2	0.185
SCOLARMI	131.7	0.294	131.7	0.168	424.3	0.780	43.9	0.149	29.3	0.058
SCOLSQUA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.176
SPIOBOMB	146.3	0.039	29.3	0.019	336.5	0.224	58.5	0.031	146.3	0.199
SPIOFILI	73.2	0.019	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.041
STHELIMI	0.0	0.000	0.0	0.000	14.6	0.035	0.0	0.000	0.0	0.000
MISCELLANEOUS										
NEMERTIN	14.6	0.039	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.167
SUMS	687.5	4.612	775.4	4.205	1624.0	4.556	629.1	0.827	731.5	6.606
DIVERSITY										
NSPC	16		17		16		13		15	
SH-W	2.349		2.461		2.136		2.330		2.320	
SIMP	0.126		0.109		0.161		0.115		0.127	

Appendix - 2 Biomonitoring 1997

TATION:	OFF 17		OFF 18		OFF 19		OFF 20		OFF 21	
	N	B	N	B	N	B	N	B	N	B
RUSTACEA										
BATHELEG	14.6	0.004	29.3	0.009	87.8	0.026	14.6	0.004	0.0	0.000
BATHGUIL	14.6	0.006	14.6	0.012	0.0	0.000	0.0	0.000	0.0	0.000
MEGAAGIL	0.0	0.000	29.3	0.009	43.9	0.013	43.9	0.013	0.0	0.000
PONTALTA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
PSEULONG	14.6	0.003	43.9	0.009	0.0	0.000	14.6	0.003	0.0	0.000
PSEUSIMI	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
UROTBREV	0.0	0.000	117.0	0.088	321.9	0.129	29.3	0.009	0.0	0.000
UROTPOSE	0.0	0.000	0.0	0.000	131.7	0.040	0.0	0.000	0.0	0.000
CHINODERMATA										
ECHICORD	0.0	0.000	14.6	33.580	29.3	22.245	0.0	0.000	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.075
OLLUSCA										
CORBGIBB	0.0	0.000	29.3	0.005	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	0.0	0.000	0.0	0.000	14.6	0.032	0.0	0.000	0.0	0.000
MYSEBIDE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
TELLPYGM	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.007
OLYCHAETA										
ANAIJUVE	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000
APHRACUL	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
ARICMINU	0.0	0.000	0.0	0.000	14.6	0.006	43.9	0.008	0.0	0.000
CHAESETO	0.0	0.000	0.0	0.000	14.6	0.048	0.0	0.000	0.0	0.000
ETEOLONG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.008	0.0	0.000
EXOGHEBE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.002
GLYCLAPI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.021	0.0	0.000
HESIAUGE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.002
MAGEPAPI	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.332	0.0	0.000
NEPHCIRR	43.9	0.367	102.4	0.409	29.3	0.288	102.4	1.234	87.8	0.510
OPHEJUVE	0.0	0.000	0.0	0.000	0.0	0.000	160.9	0.019	0.0	0.000
OPHELIMA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.275	0.0	0.000
PISIREMO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
POLYJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
SCOLARMI	0.0	0.000	14.6	0.008	0.0	0.000	14.6	0.048	14.6	0.004
SCOLBONN	0.0	0.000	0.0	0.000	29.3	0.415	14.6	0.460	0.0	0.000
SPIOBOMB	43.9	0.037	29.3	0.023	29.3	0.052	0.0	0.000	14.6	0.006
SPIOFILI	43.9	0.037	14.6	0.006	29.3	0.012	29.3	0.014	14.6	0.025
TRAVFORB	0.0	0.000	0.0	0.000	14.6	1.058	14.6	0.504	0.0	0.000
ISCELLANEOUS										
HYDROZOA	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000
NEMERTIN	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
OLIGOCHA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
UMS	175.5	0.454	438.9	34.156	848.6	24.380	585.0	3.954	307.1	0.643
DIVERSITY										
NSPC	6		11		17		16		13	
SH-W	1.660		2.098		2.185		2.372		2.334	
SIMP	0.204		0.156		0.189		0.132		0.127	

Appendix - 2 Biomonitoring 1997

STATION:	OFF 27		OFF 28		OFF 29		OFF 30		OFF 31	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
BATHELEG	0.0	0.000	0.0	0.000	0.0	0.000	278.0	0.083	1828.8	0.549
BATHGUIL	0.0	0.000	0.0	0.000	87.8	0.026	0.0	0.000	175.6	0.053
BATHJUVE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	117.0	0.023
DIASBRAD	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.015
IPHITRIS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
MEGAAGIL	0.0	0.000	87.8	0.026	0.0	0.000	0.0	0.000	0.0	0.000
ORCHNANA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
PONTALTA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004
PSEULONG	0.0	0.000	0.0	0.000	14.6	0.003	29.3	0.006	0.0	0.000
PSEUSIMI	0.0	0.000	43.9	0.009	0.0	0.000	0.0	0.000	0.0	0.000
UROTBREV	87.8	0.035	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.022
UROTPOSE	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.013	0.0	0.000
ECHINODERMATA										
ASTATRIA	0.0	0.000	0.0	0.000	58.5	0.006	0.0	0.000	0.0	0.000
ECHICORD	14.6	15.587	14.6	21.185	29.3	16.770	0.0	0.000	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	58.5	0.006	0.0	0.000	0.0	0.000
OPHIALBI	14.6	0.877	14.6	0.034	0.0	0.000	0.0	0.000	0.0	0.000
OPHIJUVE	14.6	0.003	0.0	0.000	29.3	0.006	0.0	0.000	0.0	0.000
MOLLUSCA										
ABRAPRIS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.024	0.0	0.000
ENSIARCU	14.6	18.722	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MONTFERR	43.9	0.078	0.0	0.000	58.5	0.059	0.0	0.000	14.6	0.013
MYSEBIDE	0.0	0.000	0.0	0.000	0.0	0.000	204.8	0.022	0.0	0.000
SPISELLI	0.0	0.000	0.0	0.000	29.3	0.077	0.0	0.000	0.0	0.000
TELLFABU	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.068	0.0	0.000
TELLPYGM	0.0	0.000	14.6	0.052	0.0	0.000	0.0	0.000	0.0	0.000
POLYCHAETA										
ANAIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.008	0.0	0.000
AONIPAUC	0.0	0.000	14.6	0.002	58.5	0.015	0.0	0.000	0.0	0.000
ARICMINU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	219.5	0.019
AUTOSPEC	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	0.0	0.000
CAPITELL	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
CHAESETO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002
ETEOLONG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.125	29.3	0.017
EUMISANG	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.006	0.0	0.000
EUSYLLIN	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
GLYCLAPI	0.0	0.000	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000
GONIBOBR	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
GONIMACU	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.255	14.6	0.019
HARMJUVE	14.6	0.002	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
HESIAUGE	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
LANICONC	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.039	0.0	0.000
MAGEPAPI	0.0	0.000	29.3	0.023	0.0	0.000	131.7	0.100	58.5	0.029
NEPHCIRR	58.5	0.266	43.9	0.716	14.6	0.083	0.0	0.000	43.9	0.110
NEPHJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
NERELONG	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.064	0.0	0.000
OPHELIMA	0.0	0.000	14.6	0.004	102.4	0.846	0.0	0.000	14.6	0.097
ORBISERT	0.0	0.000	0.0	0.000	14.6	0.079	0.0	0.000	0.0	0.000
POECSERP	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.010	0.0	0.000
PROTKEFE	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
SCOLARMI	234.1	1.578	0.0	0.000	219.5	0.630	0.0	0.000	0.0	0.000
SCOLBONN	14.6	0.483	14.6	0.715	0.0	0.000	0.0	0.000	321.9	0.390
SPIOBOMB	43.9	0.017	73.2	0.012	73.2	0.116	73.2	0.006	43.9	0.069
SPIOFILI	0.0	0.000	0.0	0.000	43.9	0.017	58.5	0.014	73.2	0.033
SPIONIDA	0.0	0.000	0.0	0.000	29.3	0.001	0.0	0.000	0.0	0.000
MISCELLANEOUS										
ANTHOZOA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	9.485	0.0	0.000
BRANLANC	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000	0.0	0.000
ECHIURUS	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000
NEMERTIN	43.9	0.254	43.9	0.895	29.3	0.039	175.6	0.454	14.6	0.084
OLIGOCHA	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000
SUMS	599.7	37.902	482.7	23.688	1038.7	18.790	1287.5	10.792	3101.6	1.554
DIVERSITY										
NSPC	12		16		23		21		19	
SH-W	1.992		2.543		2.777		2.512		1.638	
SIMP	0.202		0.095		0.086		0.113		0.370	

Appendix - 2 Biomonitoring 1997

STATION:	OFF 32		OFF 33		OFF 34		OFF 35		OFF 36	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
BATHELEG	14.6	0.004	102.4	0.031	468.2	0.140	43.9	0.013	0.0	0.000
BATHGUIL	73.2	0.022	117.0	0.035	0.0	0.000	73.2	0.022	0.0	0.000
CAPRELLI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003	0.0	0.000
HIPPDENT	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
LEUCINCI	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
MEGAAGIL	14.6	0.004	29.3	0.009	0.0	0.000	29.3	0.009	0.0	0.000
PERILONG	0.0	0.000	29.3	0.009	0.0	0.000	0.0	0.000	0.0	0.000
PSEULONG	29.3	0.006	87.8	0.018	0.0	0.000	0.0	0.000	14.6	0.003
SYNCMACU	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
UROTBREV	29.3	0.009	0.0	0.000	204.8	0.061	117.0	0.035	0.0	0.000
UROTPOSE	0.0	0.000	204.8	0.061	0.0	0.000	0.0	0.000	0.0	0.000
ECHINODERMATA										
ECHICORD	0.0	0.000	29.3	9.887	0.0	0.000	0.0	0.000	0.0	0.000
ECHIPUSI	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.047	0.0	0.000
OPHIALBI	14.6	0.019	0.0	0.000	29.3	0.216	43.9	0.695	58.5	0.561
MOLLUSCA										
MONTFERR	0.0	0.000	14.6	0.008	0.0	0.000	0.0	0.000	0.0	0.000
SPISELLI	14.6	0.029	0.0	0.000	0.0	0.000	14.6	0.518	0.0	0.000
TELLPYGM	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.032	14.6	0.002
POLYCHAETA										
AONIPAUC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
ARICMINU	0.0	0.000	43.9	0.004	73.2	0.004	29.3	0.002	0.0	0.000
CAPITELL	0.0	0.000	14.6	0.001	0.0	0.000	0.0	0.000	0.0	0.000
ETEOLACT	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.048	0.0	0.000
ETEOLONG	0.0	0.000	14.6	0.019	0.0	0.000	14.6	0.001	0.0	0.000
EUZOFLAB	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
EXOGHEBE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
EXOGNAID	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	248.7	0.015
GONIMACU	0.0	0.000	14.6	0.137	0.0	0.000	0.0	0.000	0.0	0.000
HESIAUGE	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
LUMBLATR	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.019	0.0	0.000
MAGEPAPI	14.6	0.004	29.3	0.041	14.6	0.131	14.6	0.108	0.0	0.000
MALDANID	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
MICROPHT	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.001
NEPHCIRR	43.9	0.236	43.9	0.711	117.0	0.149	102.4	0.666	14.6	0.892
NEPHJUVE	14.6	0.004	0.0	0.000	0.0	0.000	29.3	0.001	0.0	0.000
OPHEJUVE	234.1	0.037	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHELIMA	0.0	0.000	14.6	0.301	0.0	0.000	0.0	0.000	0.0	0.000
PSAMMODR	43.9	0.001	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
SCOLARMI	43.9	0.129	58.5	0.154	14.6	0.023	29.3	0.396	14.6	0.039
SCOLSQUA	0.0	0.000	0.0	0.000	14.6	0.168	14.6	0.029	0.0	0.000
SPHAHYTR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.002
SPIOBOMB	0.0	0.000	0.0	0.000	102.4	0.164	160.9	0.048	0.0	0.000
SPIOFILI	43.9	0.014	0.0	0.000	43.9	0.069	43.9	0.004	0.0	0.000
SPIONIDA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
STREWEBS	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001
MISCELLANEOUS										
NEMERTIN	14.6	0.010	29.3	0.045	14.6	0.016	29.3	0.673	14.6	0.002
PHORONID	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
SUMS	643.7	0.527	907.0	11.480	1111.8	1.147	877.7	3.371	570.2	1.524
DIVERSITY										
NSPC	15		19		12		22		17	
SH-W	2.230		2.562		1.819		2.736		2.165	
SIMP	0.170		0.105		0.238		0.087		0.216	

Appendix - 2 Biomonitoring 1997

STATION:	COA 1		COA 2		COA 3		COA 4		COA 5	
	N	B	N	B	N	B	N	B	N	B
RUSTACEA										
BATHELEG	0.0	0.000	58.5	0.018	0.0	0.000	0.0	0.000	0.0	0.000
BATHJUVE	0.0	0.000	87.8	0.018	0.0	0.000	0.0	0.000	0.0	0.000
UROTPOSE	0.0	0.000	29.3	0.009	190.2	0.057	14.6	0.004	131.7	0.040
CHINODERMATA										
ECHICORD	14.6	0.259	0.0	0.000	14.6	4.944	0.0	0.000	0.0	0.000
OLLUSCA										
CINGVITR	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	58.5	0.058
ENSIDIRE	0.0	0.000	58.5	89.261	73.2	69.725	0.0	0.000	0.0	0.000
ENSISPEC	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	1.315
MACOBALT	29.3	0.197	292.6	1.609	0.0	0.000	58.5	1.569	0.0	0.000
MONTFERR	219.5	0.115	0.0	0.000	58.5	0.034	14.6	0.014	0.0	0.000
MYSEBIDE	14.6	0.003	29.3	0.006	0.0	0.000	0.0	0.000	29.3	0.006
SPISSUBT	131.7	0.107	87.8	0.188	117.0	2.183	14.6	0.014	0.0	0.000
TELLFABU	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OLYCHAETA										
ANAIMUCO	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	73.2	1.452
CAPICAPI	73.2	0.015	497.4	0.154	117.0	0.029	73.2	0.008	336.5	0.120
ETEOLONG	0.0	0.000	43.9	0.025	0.0	0.000	0.0	0.000	29.3	0.048
EUMISANG	14.6	0.006	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
HARMJUVE	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000
LANICONC	14.6	0.025	0.0	0.000	160.9	4.548	0.0	0.000	14.6	0.112
MAGEJUVE	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MAGEPAPI	219.5	0.599	58.5	0.044	73.2	0.029	14.6	0.006	2487.1	5.087
NEPHCAEC	14.6	0.120	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
NEPHCIRR	0.0	0.000	14.6	0.021	0.0	0.000	0.0	0.000	14.6	0.043
NEPHHOMB	0.0	0.000	0.0	0.000	43.9	0.164	73.2	2.771	14.6	0.742
NERELONG	0.0	0.000	14.6	2.408	0.0	0.000	0.0	0.000	0.0	0.000
OPHELIMA	0.0	0.000	29.3	0.004	0.0	0.000	0.0	0.000	0.0	0.000
SCOLARMI	87.8	0.199	73.2	0.166	146.3	0.139	0.0	0.000	585.2	0.595
SCOLBONN	14.6	0.035	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
SPIOBOMB	73.2	0.205	0.0	0.000	73.2	0.029	0.0	0.000	29.3	0.033
SPIOFILI	438.9	0.081	1024.1	0.237	58.5	0.031	102.4	0.019	131.7	0.019
ISCELLANEOUS										
NEMERTIN	14.6	0.200	0.0	0.000	0.0	0.000	0.0	0.000	43.9	0.187
SUMS	1433.9	2.173	2399.4	94.168	1141.1	81.915	365.7	4.405	3994.1	9.856
DIVERSITY										
NSPC	17		15		13		8		15	
SH-W	2.196		1.863		2.375		1.808		1.385	
SIMP	0.159		0.246		0.104		0.188		0.419	

STATION:	COA 6		COA 7		COA 8		COA 9		COA 10	
	N	B	N	B	N	B	N	B	N	B
RUSTACEA										
BATHELEG	14.6	0.004	424.3	0.127	131.7	0.040	0.0	0.000	0.0	0.000
BATHGUIL	43.9	0.013	117.0	0.035	0.0	0.000	0.0	0.000	0.0	0.000
BATHJUVE	0.0	0.000	219.5	0.044	0.0	0.000	0.0	0.000	0.0	0.000
PSEULONG	0.0	0.000	0.0	0.000	14.6	0.003	14.6	0.003	0.0	0.000
UROTPOSE	29.3	0.009	14.6	0.004	117.0	0.035	14.6	0.004	58.5	0.018
OLLUSCA										
CINGVITR	0.0	0.000	29.3	0.015	29.3	0.015	0.0	0.000	0.0	0.000
ENSIDIRE	14.6	17.856	0.0	0.000	14.6	11.357	0.0	0.000	29.3	22.707
MACOBALT	102.4	1.467	160.9	0.874	0.0	0.000	0.0	0.000	0.0	0.000
MYSEBIDE	0.0	0.000	0.0	0.000	43.9	0.009	0.0	0.000	0.0	0.000
SPISSUBT	14.6	0.002	0.0	0.000	0.0	0.000	980.2	109.525	0.0	0.000
TELLFABU	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.617
OLYCHAETA										
ANAIMACU	0.0	0.000	0.0	0.000	43.9	0.031	29.3	0.052	0.0	0.000
CAPICAPI	819.3	0.131	146.3	0.044	2179.9	0.286	43.9	0.037	43.9	0.008
ETEOLONG	0.0	0.000	43.9	0.019	14.6	0.006	0.0	0.000	0.0	0.000
LANICONC	14.6	0.222	0.0	0.000	0.0	0.000	14.6	0.122	0.0	0.000
MAGEPAPI	746.1	0.427	438.9	0.469	131.7	0.106	117.0	0.149	58.5	0.156
NEPHCAEC	0.0	0.000	0.0	0.000	87.8	0.184	0.0	0.000	0.0	0.000
NEPHHOMB	29.3	0.266	43.9	0.660	0.0	0.000	0.0	0.000	43.9	1.215
NEPHJUVE	29.3	0.008	0.0	0.000	43.9	0.010	58.5	0.004	29.3	0.004
NERELONG	0.0	0.000	0.0	0.000	14.6	0.021	0.0	0.000	0.0	0.000
SCOLARMI	117.0	0.572	14.6	0.033	29.3	0.027	43.9	0.166	263.3	0.184
SCOLBONN	0.0	0.000	0.0	0.000	14.6	0.158	0.0	0.000	0.0	0.000
SPIOBOMB	585.2	0.913	0.0	0.000	234.1	0.180	0.0	0.000	0.0	0.000
SPIOFILI	1097.3	0.230	73.2	0.015	58.5	0.010	29.3	0.006	0.0	0.000
SPIOJUVE	629.1	0.050	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
ISCELLANEOUS										
ANTHOZOA	0.0	0.000	0.0	0.000	0.0	0.000	14.6	5.172	0.0	0.000
NEMERTIN	0.0	0.000	0.0	0.000	14.6	0.019	29.3	0.055	0.0	0.000
SUMS	4286.6	22.170	1726.4	2.341	3218.6	12.495	1389.8	115.294	556.0	24.908
DIVERSITY										
NSPC	15		12		18		12		8	
SH-W	1.937		2.039		1.416		1.242		1.694	
SIMP	0.174		0.165		0.470		0.510		0.266	

Appendix - 2 Biomonitoring 1997

STATION:	COA 11		COA 12		COA 13		COA 14		COA 15	
	N	B	N	B	N	B	N	B	N	B
CRUSTACEA										
ATYLSWAM	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.004	0.0	0.000
BATHELEG	0.0	0.000	14.6	0.004	0.0	0.000	0.0	0.000	0.0	0.000
DIASBRAD	14.6	0.010	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.009
LAMPFASC	14.6	0.003	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
PONTAREN	0.0	0.000	0.0	0.000	58.5	0.018	0.0	0.000	0.0	0.000
UROTBREV	0.0	0.000	0.0	0.000	29.3	0.009	0.0	0.000	0.0	0.000
UROTPOSE	102.4	0.031	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009
ECHINODERMATA										
ECHICORD	14.6	0.119	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
OPHIALBI	29.3	0.439	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000
MOLLUSCA										
ENSIDIRE	14.6	15.688	0.0	0.000	0.0	0.000	29.3	65.920	87.8	61.164
MYSEBIDE	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.009	0.0	0.000
SPISSUBT	29.3	0.549	14.6	0.096	0.0	0.000	14.6	0.045	43.9	3.765
TELLFABU	14.6	0.009	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
THRAPHAS	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.007	0.0	0.000
POLYCHAETA										
CAPICAPI	0.0	0.000	0.0	0.000	0.0	0.000	204.8	0.108	0.0	0.000
CHAESETO	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.004	0.0	0.000
EUMISANG	0.0	0.000	0.0	0.000	0.0	0.000	73.2	0.062	0.0	0.000
HARMJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.002	0.0	0.000
LANICONC	29.3	1.054	0.0	0.000	0.0	0.000	204.8	13.808	43.9	1.954
LANIJUVE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.001	0.0	0.000
MAGEPAPI	0.0	0.000	160.9	0.684	0.0	0.000	0.0	0.000	14.6	0.023
NEPHCAEC	0.0	0.000	0.0	0.000	0.0	0.000	29.3	0.535	0.0	0.000
NEPHCIRR	117.0	1.338	117.0	0.344	0.0	0.000	0.0	0.000	0.0	0.000
NEPHJUVE	0.0	0.000	14.6	0.002	0.0	0.000	0.0	0.000	29.3	0.004
PECTKORE	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.657	0.0	0.000
SCOLARMI	29.3	0.355	14.6	0.265	0.0	0.000	43.9	0.288	0.0	0.000
SCOLBONN	14.6	0.143	14.6	0.270	14.6	0.015	0.0	0.000	0.0	0.000
SPIOBOMB	146.3	0.348	14.6	0.054	0.0	0.000	0.0	0.000	14.6	0.035
SPIOFILI	14.6	0.004	29.3	0.008	0.0	0.000	43.9	0.012	0.0	0.000
SPIOJUVE	0.0	0.000	29.3	0.002	0.0	0.000	14.6	0.001	0.0	0.000
MISCELLANEOUS										
HYDROZOA	0.0	0.000	0.0	0.000	0.0	0.000	0.0	0.000	14.6	0.003
SUMS	585.1	20.090	424.1	1.728	102.4	0.042	790.0	81.462	307.2	66.968
DIVERSITY										
NSPC	14		10		3		16		10	
SH-W	2.218		1.788		0.956		2.247		2.086	
SIMP	0.146		0.235		0.423		0.156		0.149	

CONTENTS