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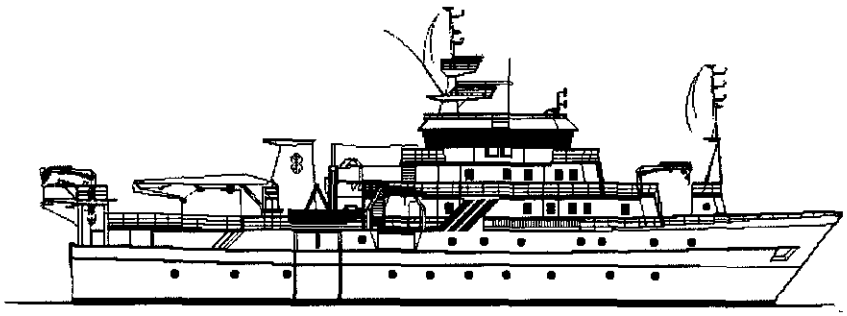

SURVEYS OF THE FISH RESOURCES OF THE EASTERN GULF OF GUINEA

Nigeria, Cameroon, São Tomé & Principe, Gabon and Congo

Survey of the pelagic and demersal resources 9 June-20 July 2006

Scientific Report

Nigerian Institute for Oceanography and Marine Research
Nigeria

Direccaò das Pescas
São Tomé and Principe

Institute of Marine Research (IMR)
Norway

Ministry of Livestock, Fisheries and Animal industry
Cameroon

Direction Générale de la Pêche et de l'Aquaculture
Gabon

IRAD-Fisheries and Oceanography Research
Cameroon

Direction Générale de la Pêche et de l'Aquaculture,
Congo

Instituto Investigação Marinha
Angola

Pêcheries Industrielles du Congo
Democratic Republie of Congo

Marine Fisheries Research Division
Ghana

CRUISE REPORTS "DR. FRIDTJOF NANSEN"

SURVEYS OF THE FISH RESOURCES OF THE EASTERN GULF OF GUINEA
Nigeria, Cameroon, São Tomé and Principe, Gabon and Congo

Survey of the pelagic and demersal resources 9 June-20 July 2006

by

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Institute of Marine Research
Bergen, 2007

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CHAPTER 1 INTRODUCTION

The present survey of the Eastern Gulf of Guinea was a follow up from the successful surveys conducted in the region by the Institute of Marine Research (IMR) and the Food and Agriculture Organization of the United Nations (FAO) in 2004, and by the Guinea Current Large Marine Ecosystem (GCLME), FAO and IMR in 2005.

The survey covered the waters off Nigeria, Cameroon, SãoTomé and Principe, Gabon and Congo from the 9th of June to the 20th of July 2006 and formed part of a larger survey coverage of the whole Gulf of Guinea region. The first part from Guinea Bissau to Liberia was covered from 29th April to 16th May, and the second part covered the cost of Côte d'Ivoire to Benin from 19th May to 7th June this year.

The survey was organised by GCLME, IMR and FAO under the agreement between GCLME and IMR and the FAO project GCP/INT/730/NOR: "International cooperation with the Nansen Programme: Fisheries Management and Marine Environment".

Technical aspects of the implementation of the survey was discussed and agreed upon during a pre-survey meeting held in Tema, Ghana, prior to the survey on 9th June 2006 where representatives from GCLME and all countries surveyed were present together with representatives from IMR.

1.1 Objectives

Following the requests from the countries and the guidelines from the GCLME the main objectives of the survey were:

- to map the distribution and estimate the acoustic abundance of the main pelagic fish species / groups in the region
- to describe the distribution, composition and estimate the abundance of the main demersal fish species on the shelf by a swept-area trawl programme
- to collect bottom sediment samples to map the benthic biodiversity in the region.
- to collect phytoplankton and zooplankton samples for distribution and species identification
- to map the general hydrographic regime by using a CTD to monitor the temperature, salinity and oxygen at bottom trawl stations and on hydrographical transects
- on-the-job training covering main survey routines

1.2 Participation

Participants for the survey arrived in, Tema, Ghana on the 9th June or in Douala, Cameroon on the 23th June. The participants represented the countries in the region covered by the survey, and other invited participants.

From Nigerian Institute for Oceanography and Marine Research, Nigeria:

Catherine Ekaete Ukut-Isebor (9 June-20 July, GCLME representative, local cruise leader), Michael Olaniyi Oyebanji (9-23 June), Akanbi Bamikole Williams (9-23 June)

From Nigerian Navy Hydrographic Office, Nigeria

O.S. Omitokum (9-23 June), K. Bokumo (9-23 June)

From Ministry of Livestock, Fisheries and Animal industry, Service Provincial des Peches du Littoral Douala, SPPLD, Cameroon:

Pierre Nolasque Meke Soung (9 June-20 July)

From Station des Recherches Halieutique et Oceanographique, Limbe, SRHOL, Cameroon:

Chiambeng George Yongbi (9 June-20 July)

From Service des Evaluations de Ress. et Amén., Cameroon:

Henri Serge Kemgang (9 June-20 July)

From The University of Ghana, Department of Oceanography and Fisheries, Legon, Ghana:

Emmanuel Lamptey (9 June-20 July)

From Direccaò das Pescas, São Tomé and Principe:

Do Espirito Costa G. (23 June-20 July) and André Barros Bandeira (23 June-20 July)

From Direction Générale de la Pêche et de l'Aquaculture, Gabon:

Parfait Madoungou Massala (23 June-20 July) and Marien Abou Létocka Bello (23 June-20 July)

From Direction Générale de la Pêche et de l'Aquaculture, Congo:

Claude Benoít Atsango (23 June-20 July) and Pierre Mpandou (23 June-20 July)

From Institute of Marine Research, Norway:

Tor Egil Johansson (9 June-20 July), Ole Sverre Fossheim (9 June-20 July), Oddgeir Alvheim (9-23 June, cruise leader from Tema to Douala), Jens-Otto Krakstad (23 June-20 July, cruise leader from Douala to Pointe Noir), Diana Zaera (9-23 June), and Åsmund Skålevik (9-23 June).

From University of Bergen, Norway

Rakel Olsen (9-23 June).

1.1 Narrative

The vessel left Tema (Ghana) at 14:00 on the 9th of June. The survey started at 07:30 the next day when the vessel arrived at the border between Benin and Nigeria at 02°42' E. The inner shelf was surveyed during daytime (0600 to 1800) by swept area trawl stations on parallel course tracks (acoustic transects) about 10 NM (nautical miles) apart, while the slope deeper than 100 m was surveyed during the night. Less trawl stations were conducted at night because of IMR safety regulations applying in Nigerian waters. The vessel arrived in Douala on the 23rd June at 13:00 and departed on the 24th of June at 21:00. The Cameroonian Minister of Livestock, Fisheries and Animal Industry, Dr. Aboubakar Sarky, paid a visit to the vessel during the stay in Douala. After departing Douala the vessel steamed towards Limbe where we were bunkering at sea. This was completed on the 25th June at 11:30 and we started steaming north to the Cameroonian border with Nigeria and Equatorial Guinea to our first trawl station in Cameroon. This was reached at 15:00 and the coverage of Cameroon was started immediately. During the survey of Cameroon the shelf was covered with swept area trawl stations on parallel transects 10 NM apart during the day, while acoustic transects with pelagic trawling, plankton and grab samples were performed between these transects at night. The border between Cameroon and Equatorial Guinea at the Campo River estuary (2°20'N) was reached on the 1st July around midday, and the vessel continued across to the islands of São Tomé and Principe. Principe was surveyed from the morning of the 2nd July to the early morning of the 3rd July before the vessel crossed over to São Tomé. São Tomé was surveyed from the 3rd July until the 4th July in the evening. Swept area trawl stations at predetermined positions were conducted during the day while CTD lines, benthos sledge and plankton samples were carried out at night. The vessel thereafter steamed to the border between Equatorial Guinea and Gabon, where the survey was commenced in Gabon the next day. The inner shelf was surveyed during daytime (0600 to 1800) with swept area trawl stations on parallel course tracks (acoustic transects) about 15 NM (nautical miles) apart during the day, while the slope deeper than 100 m was surveyed during the night. The first transect in Congo was started midday on the 16th July. The same survey strategy used in Gabon was also used in Congo. The vessel arrived in Pointe Noire on the 20th July at 08:00.

During the survey semi-random swept-area hauls were carried out on the shelf within the depth zones 20-30 m, 31-50 m, 51-100 m and when possible >100 m depth during daytime. Continuous acoustic recordings were made throughout the survey. Pelagic trawling on registrations and random blind hauls was carried out during dark hours when time permitted.

CTD-stations were taken at the bottom trawl stations. In addition, hydrographical profiles were made with CTD from surface down to the bottom or 500 m depths for approximately each 60 nm coastline sailed. Zooplankton samples were taken irregularly with Hydrobios multinet plankton sampler. Grab samples were taken irregularly but with the aim of covering representative areas of the shelf between 20 and 100 m depth.

The Nigerian shelf was covered from 10th of June-22nd of June, Cameroon from 25th of June-1st of July, and São Tomé and Principe from 2nd of July-4th of July, Gabon from the 5th of July-16th of July and Congo from 16th of July-20th of July.

1.2 Survey effort

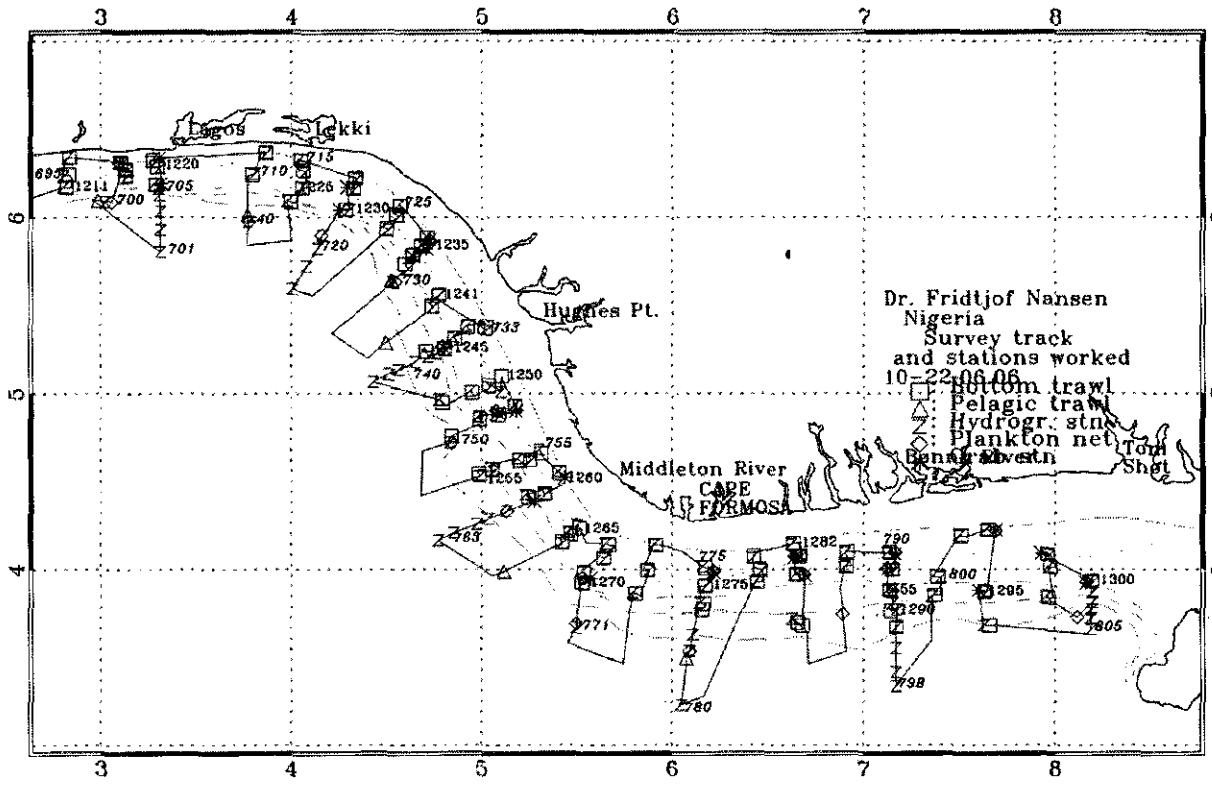
Figure 1. shows the cruise tracks with trawl, hydrographic, benthos and plankton stations. Table 1.1 summarises the survey effort in each sector. The area calculated for São Tomé and Principe is the total area for both islands for the depth region surveyed.

Table 1.1 Surveyed area and valid trawl stations by depth stratum (in brackets pelagic trawls), total trawl stations separated by bottom (BT) and pelagic (PT), number of grab stations , plankton stations, hydrographic stations (CTD) and distance surveyed in NM by region.

	Depth strata (m)					Total					
Region	0-30	31-50	51-100	101-200	201-500	BT	PT	Grab	Plankton	CTD	Distance
Nigeria											
Area (NM^2)	5220	2292	3090	1848	2837						
#hauls	20(4)	25	27(1)	13	7(1)	84*	6	24	21	120	3868.7
%area	34.1	15.0	20.2	12.1	18.6						
%hauls	22.2	27.0	30.0	14.4	7.7						
Cameroon											
Area (NM^2)	1548	500	618	214	115						
#hauls	12	11	12	4	4	43	3	23	23	53	746
%area	51.7	16.7	20.6	7.1	3.8						
%hauls	27.9	25.6	27.9	9.3	9.3						
São Tomé											
Area (NM^2)		68	58								
#hauls	-	2	6 (1)	-	-	9	1	6	4	28	255
%area		54.0	46.0								
%hauls		25.0	75.0								
Principe											
Area (NM^2)		71	228								
#hauls	-	1	5	-	-	6	0	4	4	23	280
%area		23.7	76.3								
%hauls		16.7	83.3								
Gabon											
Area (NM^2)	2441	2240	3715	2226	1396						
#hauls	15	15	22(1)	15	15	84	1	22	21	109	1395
%area	20.3	18.6	30.9	18.5	11.6						
%hauls	18.3	18.3	26.8	18.3	18.3						
Congo											
Area (NM^2)	480	344	830	816	293						
#hauls	4	5	6	6	5	27*	0	10	6	35	400
%area	17.4	12.4	30.1	29.5	10.6						
%hauls	14.8	18.5	22.2	22.2	22.2						

*one trawl deeper than 500 m

a) Nigeria


Lagos
Lekki
Hughes Pt.
Middleton River
CAPE
FORMOSA
Dr. Fridtjof Nansen
Nigeria
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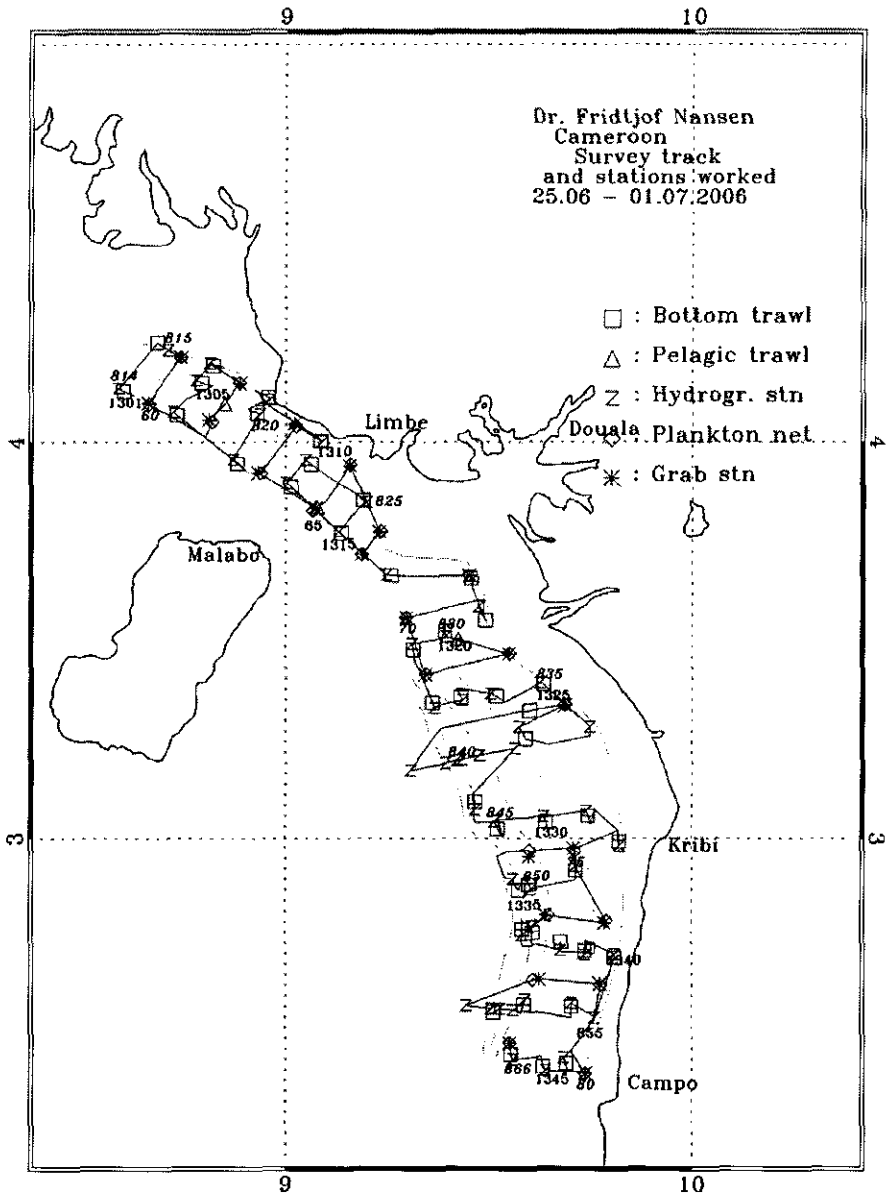
Bottom trawl
Pelagic trawl
Hydrogr. stns
Plankton net
Tom Shot

b) Cameroon


9
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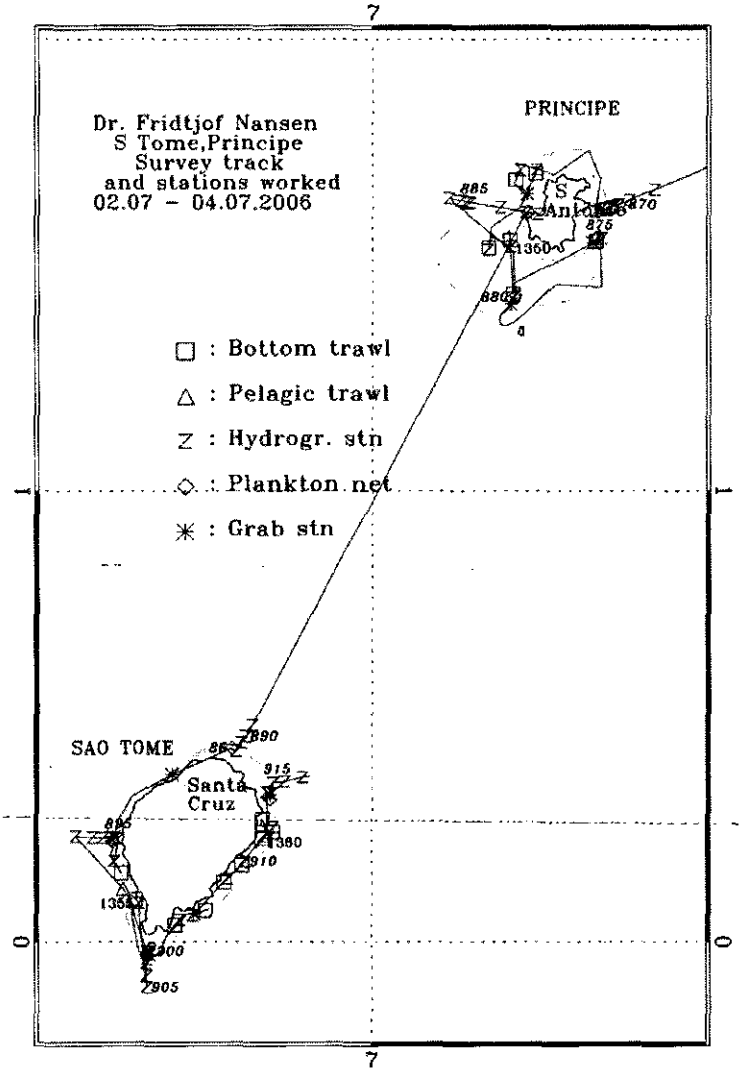
Dr. Fridtjof Nansen
Cameroon
Survey track
and stations worked
25.06 - 01.07.2006
□ : Bottom trawl
△ : Pelagic trawl
Z : Hydrogr. stn
◇ : Plankton net
✳ : Grab stn
Limbe
Douala
Malabo
Kribi
Campo
4
3

c) São Tomé and Principe



d) Gabon and Congo

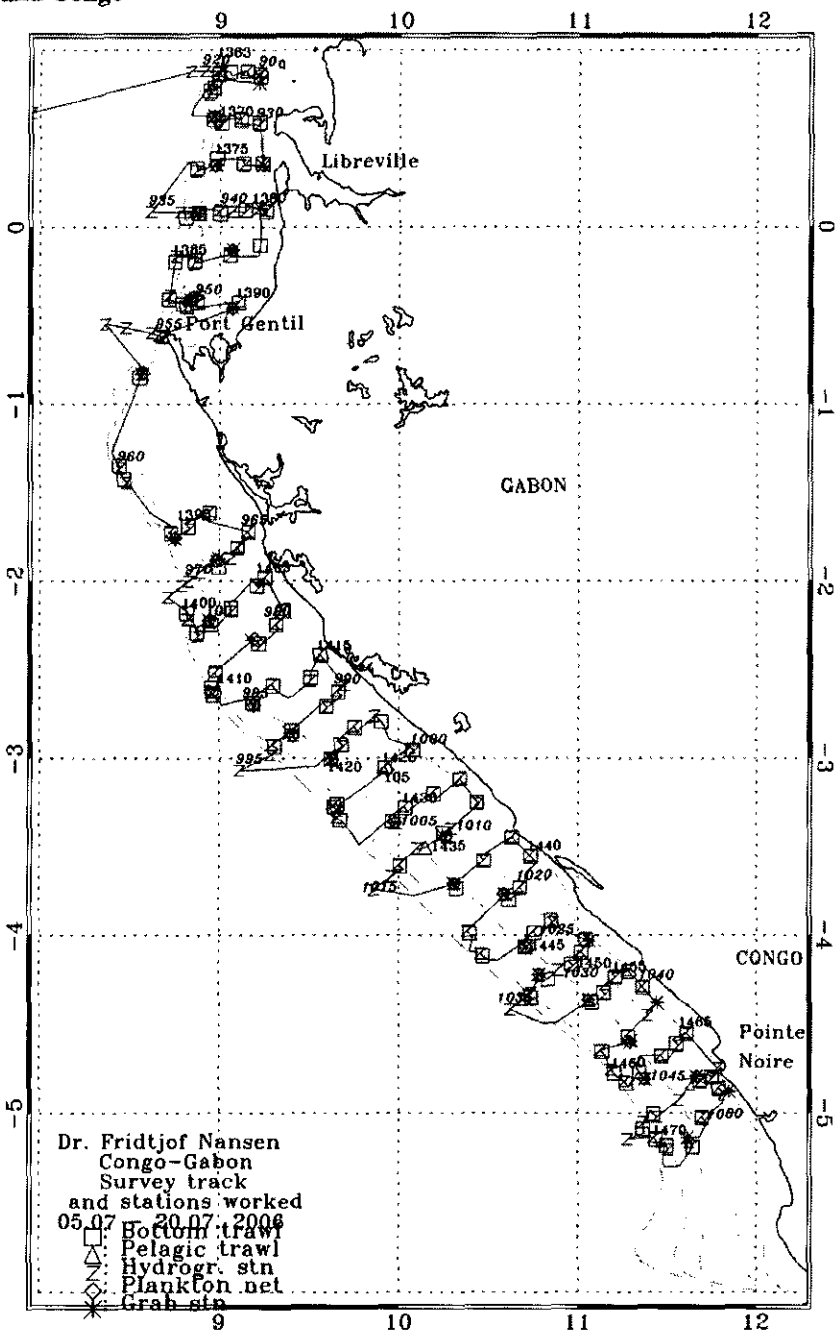


Figure 1.1 Course track with fishing, benthos, plankton and hydrographic stations for a) Nigeria, b) Cameroon and c) São Tomé and Principe d) Gabon and Congo. Depth contours are indicated.

CHAPTER 2 METHODS

2.1 Meteorological and hydrographical sampling

Temperature, salinity and oxygen

CTD stations were taken in connection with most bottom trawl stations and at five hydrographic transects. Figure 1 presents positions for the CTD stations taken on the five transects. A Seabird 911 CTD plus was used to obtain vertical profiles of temperature, salinity and oxygen. Real time plotting and logging was done using the Seabird Seasave software installed on a PC. The profiles were usually taken down to a few metres above the bottom, but not deeper than 500 m. The new oxygen sensor has shown to be very stable, and no calibration was conducted during the survey. The calibration constant calculated during the survey off the western Gulf of Guinea was applied for the whole survey.

Termosalinograph

The SBE 21 Seacat thermosalinograph was running routinely during the survey. Obtaining samples of sea surface salinity and relative temperature (5 m depth) every 10 sec during the survey.

Current speed and direction measurements (ADCP)

The ship-born Acoustic Doppler Current Profiler (ADCP) from RD Instruments was running throughout the survey. The ADCP was set to external trigger, triggered by the EK 500 system. The depth cell interval set to 8 m and the number of cells was set to 50.

Meteorological observations

Wind direction and speed, air temperature, global radiation and sea surface temperature (5 m depth) were logged automatically every nautical mile on an Aanderaa meteorological station.

2.2 Biological fish sampling

The trawl catches were sampled for species composition by weight and numbers. The deck sampling procedure is described in more detail by Strømme (1992). Length measurements (total length) were taken for target species. The length of each fish was recorded to the nearest 1 cm below. The carapace length was measured to the nearest 0.1 cm below for shrimp. The mantle length was measured to the nearest 1 cm below for *Sepia* spp. In addition biological samples of target species included; total length (mm), body weight (g), sex and reproductive stages, and analyses of stomach content. Reproductive stage were determined by means of macroscopic examination, scoring each fish according to the five-point classification scale first proposed by Holden and Raitt (1974). The stomach content of the fish species were extracted to determine the diet, and for analysis of the various trophic relationships between predators and prey in the food web. Stomach fullness was classified according to the following scale: Full (100%), three-quarters full (75%), half-full (50%), a quarter-full (25%) and empty, Pillay, (1953). The stomach content samples were stored in 10% formaldehyde

solution and the bottle labelled with the station number and fish species code. Other necessary information (e.g. station number, species code, date, sex and gonad stage) was written on a piece of acetate paper and inserted into each sample bottle. The stomach content samples were taken to Instituto Investigacão Marinha, Luanda, Angola for further analyses. Basic information recorded at each fishing stations, i.e. trawl hauls, is presented in Annex I. Pooled length frequency distributions, raised to catch per hour, of selected species by area are shown in Annex II. Annex III gives basic information of all biological samples collected during the survey, while the swept-area estimates are presented in Annex V.

A description of the fishing gears used, acoustic instruments and their standard settings is given in Annex VII.

2.3 Plankton sampling

Zooplankton was collected with the Hydrobios multinet zooplankton sampler that takes up to five discrete samples at predefined depths while measuring the water flow through the net. Samples were taken irregularly at opportunity throughout the survey trying to cover both inshore and offshore areas frequently. Samples were fixed in buffered formaldehyde solution and stored for further analyses onshore.

Phytoplankton was collected regularly with the same interval as the zooplankton stations. Samples were taken from the surface (5 m depth) with the ship's seawater pump, fixed in buffered formaldehyde solution and stored for further analyses onshore.

All plankton samples were sent to the GCLME productivity centre at the University of Ghana

2.4 Benthos grab sampling

The soft-bottom benthic macrofauna sampling was carried out using Peterson grab with a surface area of 0.20 m^2. At each of the stations (Figure 1.1), the Peterson grab was deployed from an operated winch onto the seafloor. Five replicate samples were taken to obtain representative samples at each station, and to assess the patchiness in the distribution of the organisms. Two sediment replicates each were screened through sieves of mesh sizes 0.5 mm and 1.0 mm respectively to obtain adequate samples for both taxonomy and molecular analyses. The residue of the sieved sediment samples were fixed and put into plastic containers. One of the sediment replicates were fixed in 90% ethanol while the others were preserved in 10% borax pre-buffered formaldehyde. The ethanol in the samples were decanted and refilled with fresh ethanol solution after two days to avoid sample deterioration. Annex IV gives an overview of all benthos sample stations.

The containers were labelled according to the station numbers, replicate type, date, mesh size used, and the type of preservation used (e.g. N07A, 12/06/05, 0.5 mm, Formaldehyde; C03D, 22/06/05, 1.0 mm, Ethanol). The samples were packed into boxes, for sorting and taxonomic identification on land. Two replicate samples from all the stations were kept in the region at

the University of Ghana, Department of Oceanography & Fisheries. The exception been in Nigerian waters were one of these two replicates were kept at the Nigerian Institute for Oceanography and Marine Research. The three other replicats were sent to Bergen Museum in Norway.

Additional sediment samples were taken at all the stations. These samples were put into zip lock bags, stored in a freezer and sent to Nigerian Institute for Oceanography and Marine Research, Lagos for both granulometric and chemical analyses.

Epifauna samples were also collected from demersal trawls. Some of the samples were fixed in 10% borax pre-buffered formaldehyde and others preserved in 90% ethanol. The samples were labelled following the trawl station numbering. They were packed and sent to both University of Ghana and Bergen Museum.

2.5 Biomass estimates

Acoustic abundance estimation

A SIMRAD EK500 Echo sounder connected to a SIMRAD ES38B 38 kHz keel mounted transducer was used for the acoustic abundance estimations and the echograms were stored on both paper and computer files. Annex VII gives details about the acoustic settings used during the survey. The acoustic biomass estimates were based on the integration technique. The Bergen Integrator (BEI, see Knudsen 1990) was used for analysis and allocation of the integrated s_A-values (average area back scattering coefficient in m^2/NM^2). The splitting and allocation of the integrator outputs (s_A-values) was based on a combination of a visual scrutiny of the behaviour pattern as deduced from echo diagrams, the BEI analysis and the catch composition. The mean integrator value in each sampling unit (s_A-values) was divided between the standard categories/groups of fish, as noted below, on the basis of trawl catches and characteristics of echo traces:

-sardinella (*Sardinella aurita* and *S. maderensis*)
-PEL 1 (other clupeids than sardinella)
-PEL 2 (Carangidae, Scombridae, Sphyraenidae and Trichiuridae)
-mesopelagic fish
-demersal fish
-plankton

The following target strength (TS) function was applied to convert s_A-values (mean integrator value for a given area) to number of fish (sardinella, PEL 2):

$$TS = 20 \log L - 72 \; dB \qquad (1)$$

or in the form

$$C_F = 1.26 \cdot 10^6 \cdot L^{-2} \qquad (2)$$

where L is total length and C_F is the reciprocal back scattering strength, or the so-called fish conversion factor. In order to split and convert the allocated s_A-values (m^2/NM^2) to fish densities (number per length group per NM^2) the following formula was used

$$N_i = A \cdot s_A \cdot \frac{p_i}{\sum_{i=1}^{n} \frac{p_i}{C_{Fi}}} \qquad (3)$$

where:
N_i = number of fish in length group i
A = area (NM^2) of fish concentration
s_A = mean integrator value (echo density) in area A (m^2/NM^2)
p_i = proportion of fish in length group i in samples from the area
C_{Fi} = fish conversion factor for length group i

The number per length group (N_i) was then summed and the total number of fish obtained:

$$N = \sum_{i=1}^{n} N_i \qquad (4)$$

The length distribution of a given species within an area was computed by simple adding of the length frequencies obtained in the pelagic trawl samples within the area. In the case of co-occurrence of target species, the s_A value was split in accordance with length distribution and catch rate in numbers in the trawl catches. Biomass per length group (B_i) was estimated by applying measured weights by length (W_i) when available or theoretical weights (calculated by using condition factors), multiplied with number of fish in the same length group (N_i). The total biomass in each area was obtained by summing the biomass of each length group:

$$B = \sum_{i=1}^{n} N_i \overline{W}_i \qquad (5)$$

The number and biomass per length group in each concentration were then added up to obtain totals for each region.

Biomass estimates based on swept-area method

In the bottom trawl survey, stock biomasses was estimated by the swept-area method with catch per haul as the index of abundance (see Strømme 1992). The general formula to estimate biomass B, using this method is:

$$B = \frac{A}{a} \cdot \frac{\overline{X}}{q} \qquad (6)$$

A is the total area surveyed, a is the swept area of the net per haul, $\overline{X}$ is the average catch per haul (the index of abundance) and q is the proportion of fish in the path of the net that are actually caught. The density of the resource is estimated as biomass per unit area. In a stratified survey of k non-overlapping strata, if the mean catch per haul in stratum *i* and its variance are denoted by $\overline{X}_i$ and s_i^2 respectively, then an unbiased estimate of the population mean $\overline{X}$ is the stratified mean $\overline{X}_{st}$, which is given by:

$$\overline{X}_{st} = \frac{1}{N}\sum_{i=1}^{k} N_i \overline{X_i} = \sum_{i=1}^{k} W_i \overline{X_i} \qquad (7)$$

where $Wi = \frac{Ni}{N} = \frac{A_i}{A}$ is the relative size of the ith stratum (A_i is the area of the ith stratum and A is the total area surveyed). The variance of the stratified mean is given by

$$\text{var}(\overline{X}_{st}) = \sum_{i=1}^{k} W_i^2 \,\text{var}\,\overline{X}_i = \sum_{i=1}^{k} W_i^2 \frac{s_i^2}{n_i} \qquad (8)$$

where n_i is number of hauls in the ith stratum and n is the total number of hauls in the survey.

Table 1.1 shows the areas used in the swept-area method to estimate biomass for the different regions. A stratified semi-random design was used with depth and country as stratification factors. Estimated total biomass by species/group was obtained by summing estimates for each depth stratum.

For conversion of catch rates (kg/hour) to fish densities (t/NM²), the effective fishing area was considered as the product of the wing spread and the haul length, or distance over the bottom, as measured by means of the SCANMAR® equipment based on GPS readings. The area swept for each haul was thus 18.5 times the distance trawled, raised to NM²/hour. The catchability coefficient (q), i.e. the fraction of the fish encountered by the trawl that was actually caught, was conservatively (and for comparison with previous surveys) assumed equal to 1. Mean fish densities by species and strata, were calculated by the swept-area module in NAN-SIS.

Total biomass estimates by species and their confidence intervals were obtained from a stratified mean density estimator (using equations 1, 2, and 4 in ANNEX VI on a spread-sheet, ANNEX VII) and raised to total area. Since NAN-SIS does not produce variance estimates of the mean densities (ANNEX IV), the 95% confidence limits for the biomass estimates were calculated with the underlying assumption that the coefficient of variation (CV = SD/mean) is constant when catch rates in kg/hour are converted to densities (t/NM²). In other words the area swept (normalised per hour) was approximately constant for each haul. Coefficients of variation of the catch rates, by depth strata for each species or group, were

obtained using the WinGrafer module of NAN-SIS. Variance of the densities were estimated from the mean and the CV, and equations 2, 3, 6 and 7 in ANNEX V were used to calculate standard error (SE) on the arithmetic mean and confidence intervals (see the spreadsheet BIOMASS.xls, and example in ANNEX VII). WinGrafer was also used to produce the figures and tables with grouped catch-rates and time-series presented in this report. SE and confidence intervals in the figures are based on the arithmetic mean, but the lognormal based Pennington's estimator can also be calculated (equations 8 to 12 in ANNEX VI).

CHAPTER 3 OCEANOGRAPHIC CONDITIONS

3.1 Surface distribution

The surface layer temperature (5 m depth) were continuously recorded during the cruise. Figure 3.1 a, b, c and d shows the horizontal distribution of sea surface temperature (SST) for Nigeria, Cameroon, São Tomé and Principe, Gabon and Congo respectively.

Nigeria and Cameroon

The sea surface temperature in Nigeria was slightly warmer (between 0.5 and 1°C) than during last year's survey, with the highest temperature, 29°C, recorded west of Lagos extending off the shelf. The area immediately east of Lagos showed warmer water masses, to 28.8°C, and slightly cooler water masses further offshore. Gradually cooler water masses were found further east in the delta area, also here cooler offshore. The surface temperature generally never dropped below 28°C.

In Cameroon the highest temperatures were recorded close to the Cameroonian coast in the shallow strait between Cameroon and Equatorial Guinea, with temperatures of 29.2°C at the Wouri River entrance to 28.8°C outside Limbe and the southern part of the entrance to Douala. The warmer water masses generally correspond with low salinity water and comes from areas with river discharge, while the slightly lower temperature waters outside Limbe has slightly increased salinity indicating an onshore transport of water masses in this area. Cooler water masses are observed further south and off the coast with a minimum of 28°C off Campo.

São Tomé and Principe

The sea surface temperature around Principe was stable with a minor variation from 27.6°C on the north-western side to 27.4°C on the south-eastern side. The temperature is proximately 1°higher than last year but with a much smaller temperature gradient across the island. The temperature at São Tomé was 26.8°C on the north-west side with decreasing temperatures on both sides of the island southwards to a minimum of 25.8°C. The temperature map show some similar features to last year although the temperature around the island is much higher (1-2°C) this year and show a smaller gradient. Similar to last year is however, the temperature minimum on the far south-eastern side of the island, and the anti clockwise surface current around the island.

Gabon and Congo

Gabon

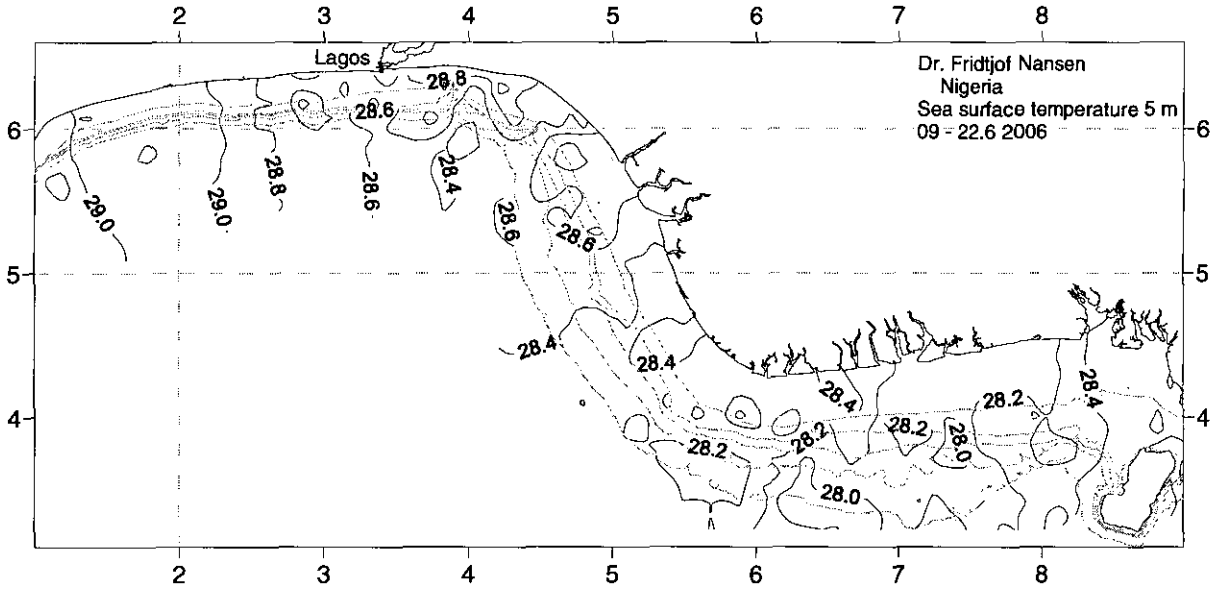
The sea surface temperature in the northern part of Gabon ranged from 27°C at the border with Equatorial Guinea to 26.5°C at Cape Lopez, reaching a minimum of 21°C off Point Noire and inshore along the central southern shelf of Gabon. Temperatures in this region was generally warm compared to 2005 (~3°C) and 2004. The frontal zone was found south of

Cape Lopez and was slightly less pronounced than during the two previous years. A small upwelling cell with temperatures down to 21°C was present on the central part of the southern shelf of Gabon with increasing temperatures to 22°C offshore and north and south of the cell. In 2005 more pronounced upwelling was observed in this area.

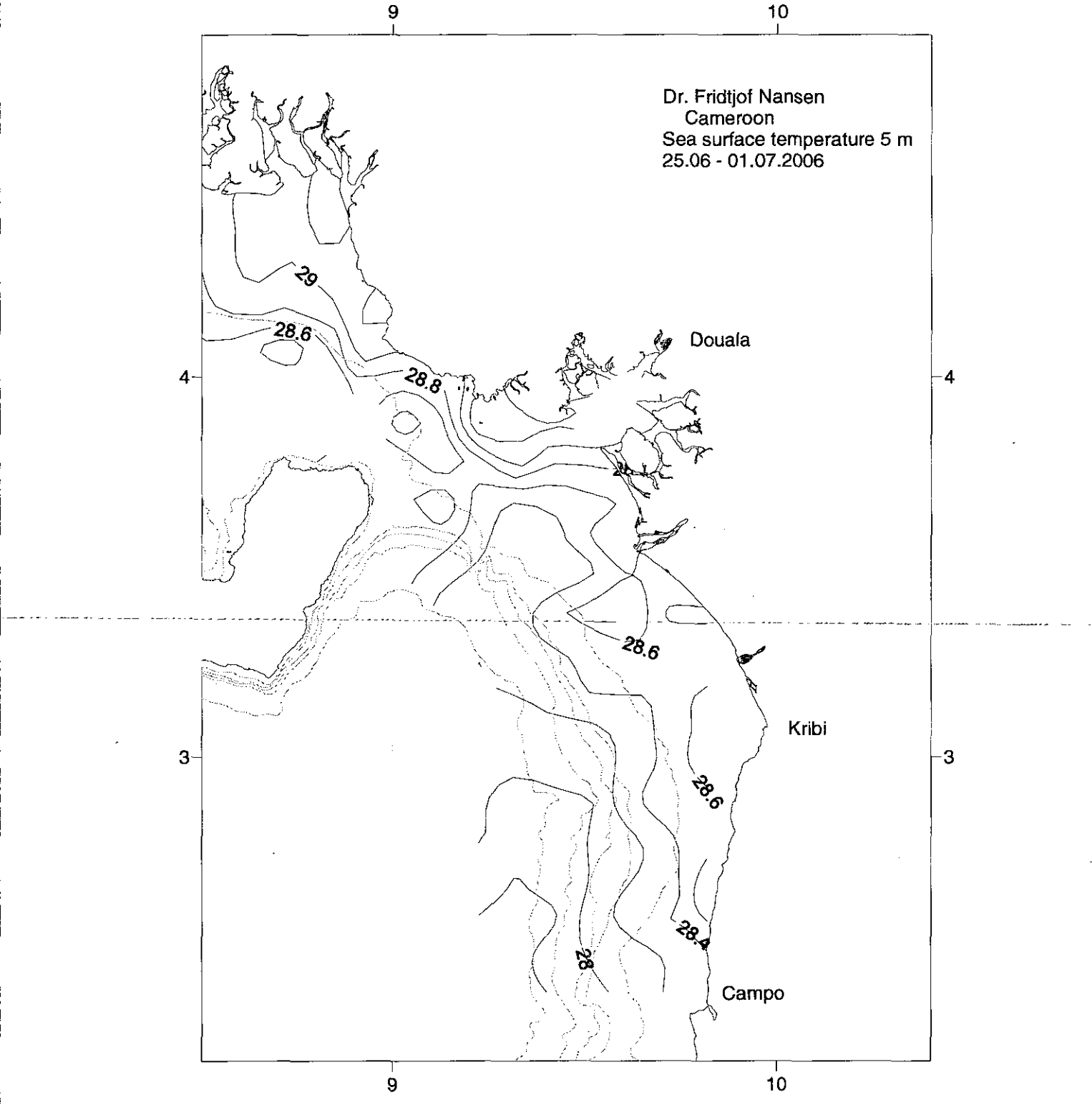
Congo

The sea surface temperature in Congo was slightly warmer (between 2.5°C and 3°C) than during last year's survey, with the highest temperature, 22°C, recorded north of Pointe Noire extending off the shelf. The area immediately around Pointe Noire showed cooler water masses, to 21°C. The temperature values obtained for this area in 2005 was between 18°C and 20°C. This year reduced rainfall was experienced in the region and the usual plume of the Congo River was not clearly visible on the temperature map.

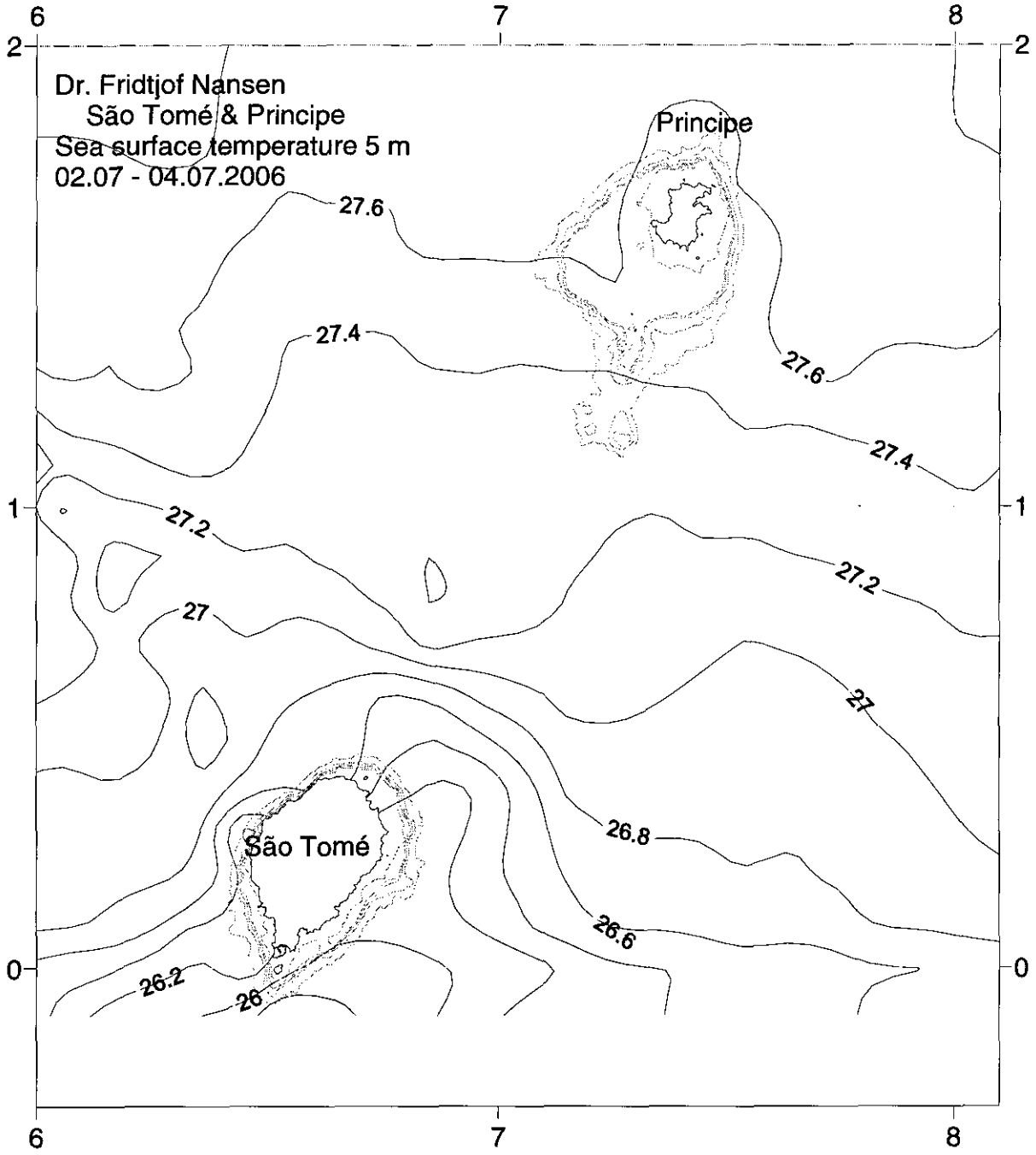
a) Nigeria



b) Cameroon


9
10
Dr. Fridtjof Nansen
Cameroon
Sea surface temperature 5 m
25.06 - 01.07.2006
29
28.6
28.8
Douala
4
4
28.6
Kribi
3
3
28.6
28.4
28
Campo
9
10

c) São Tomé and Principe



d) Gabon and Congo

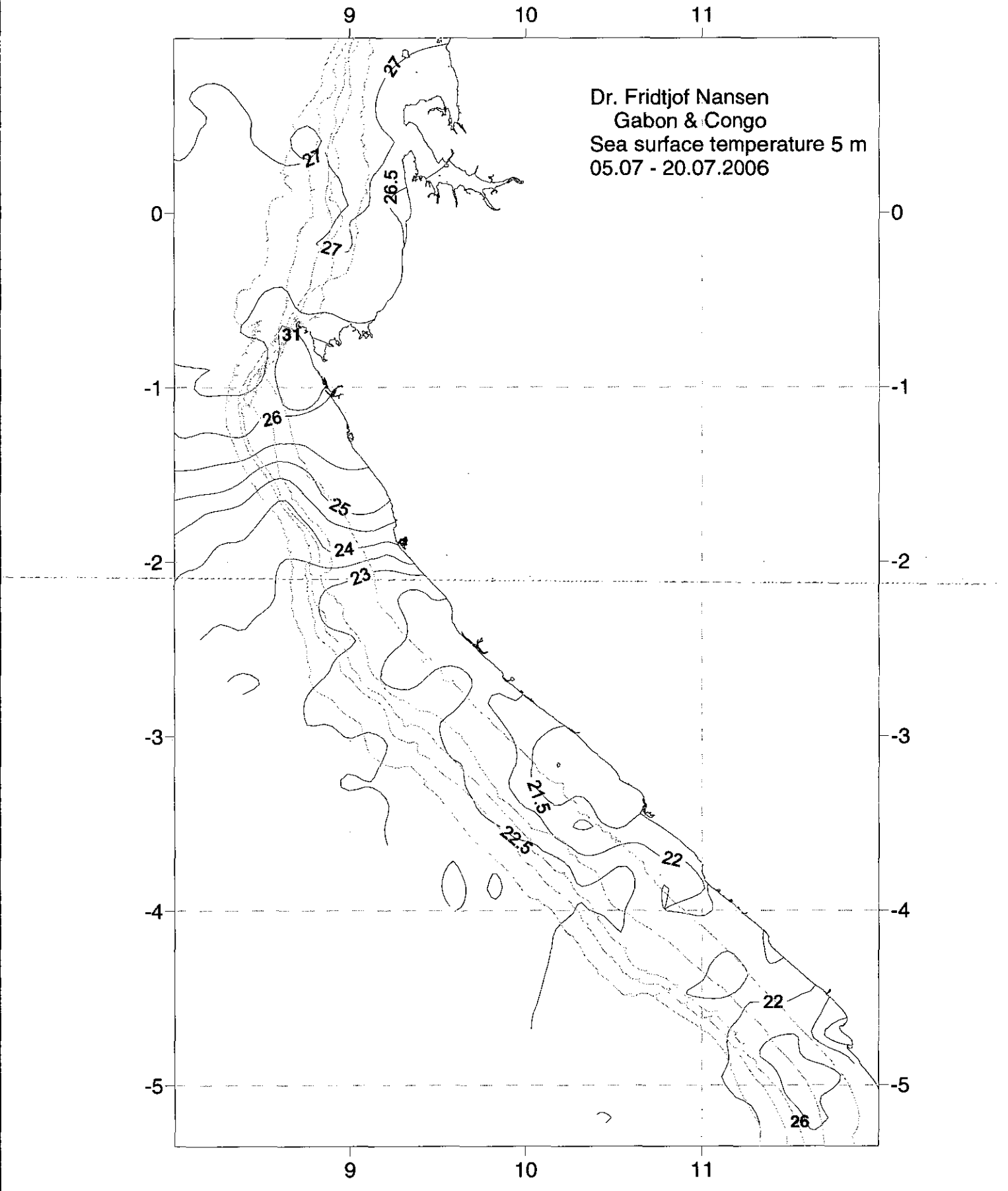


Figure 3.1 Horizontal distribution of surface temperature (5 m depth) at a) Nigeria-Cameroon b) Cameroon-Port Gentil, Gabon, c) São Tomé and Principe and d) Gabon and Congo.

The surface salinity (Figure 3.2 a, b, c and d) was recorded from the Thermosalinograph at 5 m depth. The salinity varied dramatically in the survey area due to fresh water influx from the numerous rivers discharging in the region (Especially the Niger delta and Congo River systems), and effects from oceanic surface water masses (São Tomé and Principe) and local upwelling and surface currents (Gabon and Congo).

Nigeria and Cameroon

The salinity in Nigeria were ranging between 34.5 PSU and 31 PSU. The water masses were typically more saline offshore and on the western part of the Nigerian shelf. The south eastern part of Nigeria experienced the least saline water masses with salinity around 31 PSU. There has so far this year been less rain in the region, and the salinity levels were, particularly in the eastern part of Nigeria, was much higher this year than last.

The lowest salinity recordings in Cameroon was made outside the Wouri river delta at the entrance to Douala with surface salinity of 23 PSU. Another body of low salinity waters, 26-27 PSU, probably originating from the Rio del Rey / Cross River estuary in Nigeria can be seen along the Cameroonian coast outside Limbe with increasing salinity to 28 PSU closer to Bioco Island. The sea surface salinity increased further offshore and southwards to 32 PSU in the southern Cameroon around Campo

São Tomé and Principe

The sea surface salinity was as expected higher in São Tomé and Principe than on the main land. Sea surface salinity at Principe was stable around 34.4 PSU, and this body of water stretched over, almost to the northern end of São Tomé. There was an increasing salinity gradient southwards on both sides of the island, from 34.5 PSU in the north western side to a salinity maximum of 34.8 PSU corresponding with the temperature minimum on the southeastern side. The salinity levels on both islands were slightly lower than what was observed during the survey last year.

Gabon

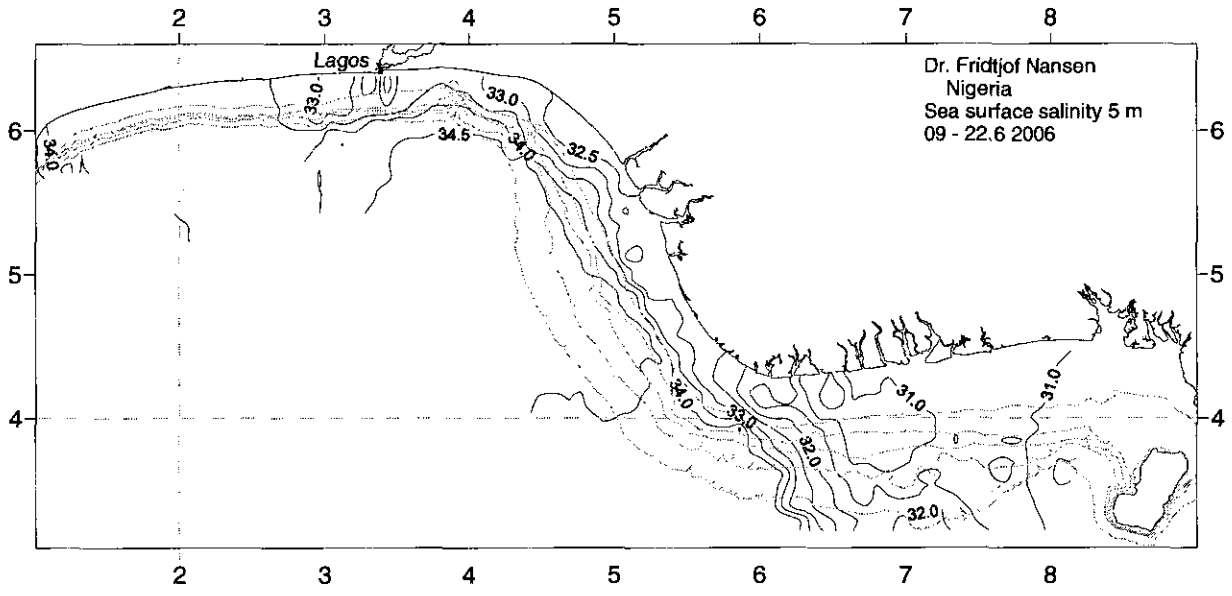
The sea surface salinity (SSS) in the northern shelf of Gabon varied between 34 PSU offshore to 31 PSU inshore. Like in 2005 a body of less saline water was observed at Cape Lopez, extending northwards. The origin of this water is the nearby river "Ogooué". The region south of Cape Lopez was characterised with more saline water masses, typically 35.5 PSU over most of the shelf, while the SSS was higher along the coast in the upwelling region.

Congo

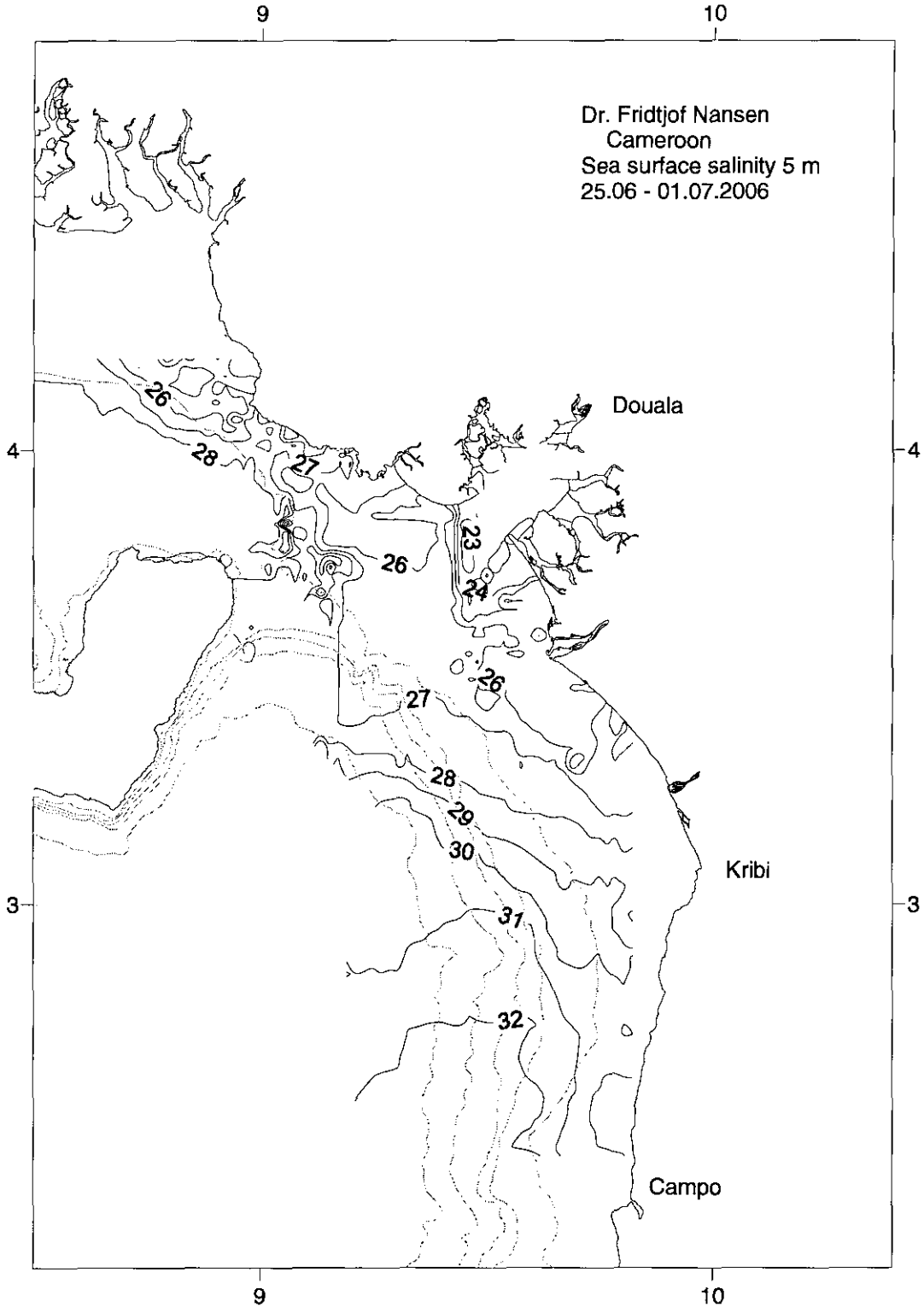
The sea surface salinity on the northern shelf of Congo varied between 36 PSU offshore to 35.5 PSU inshore. The most pronounced feature however, is the body of less saline water with

PSU between 26 and 34 observed off Pointe Noire, extending northwards. The origin of this water is the nearby Congo River.

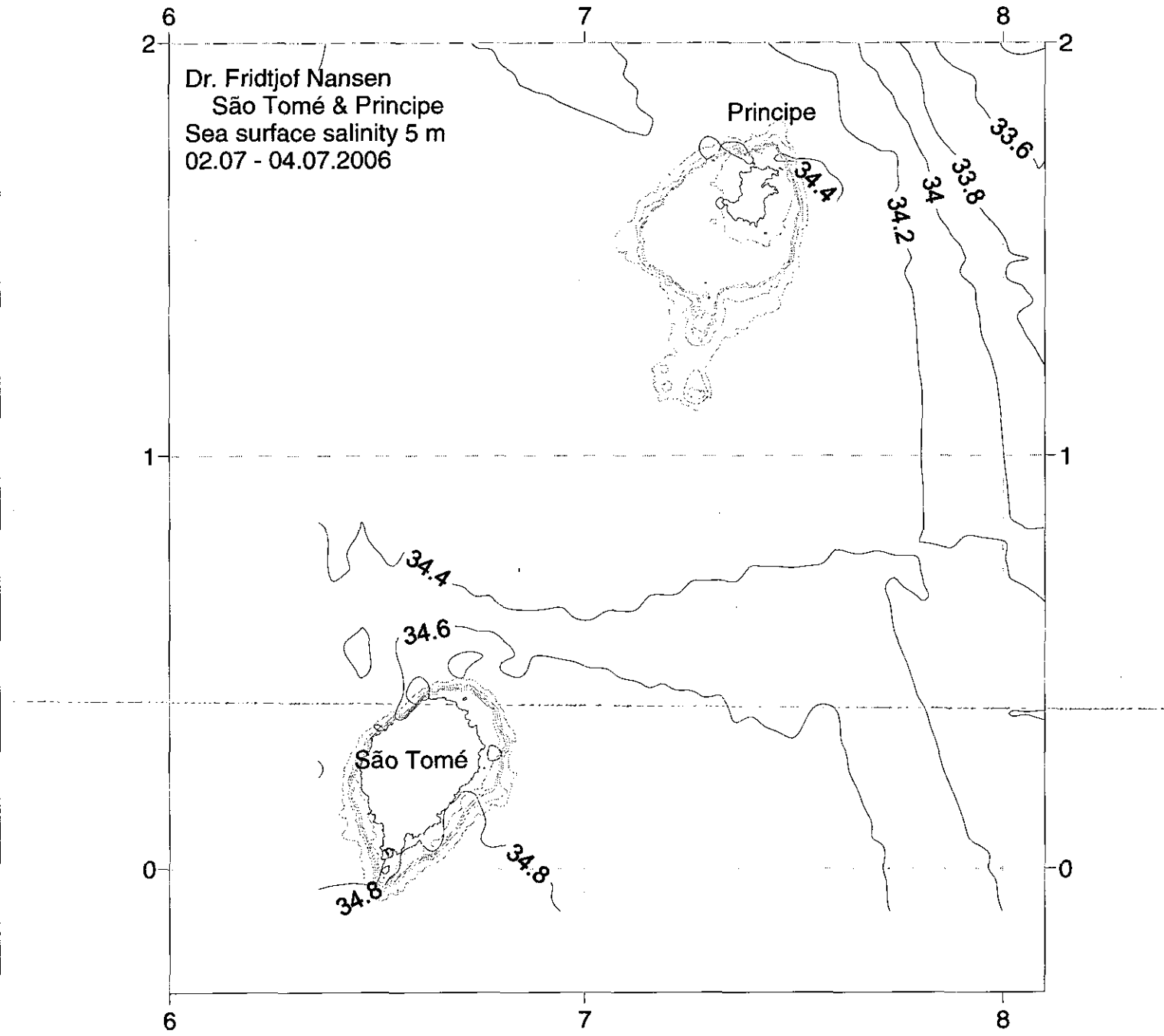
a) Nigeria



b) Cameroon



c) São Tomé and Principe


Dr. Fridtjof Nansen
São Tomé & Principe
Sea surface salinity 5 m
02.07 - 04.07.2006
Principe
São Tomé
34.4
34.2
34
33.8
33.6
34.4
34.6
34.8
34.8
6
7
8
2
1
0

d) Gabon and Congo

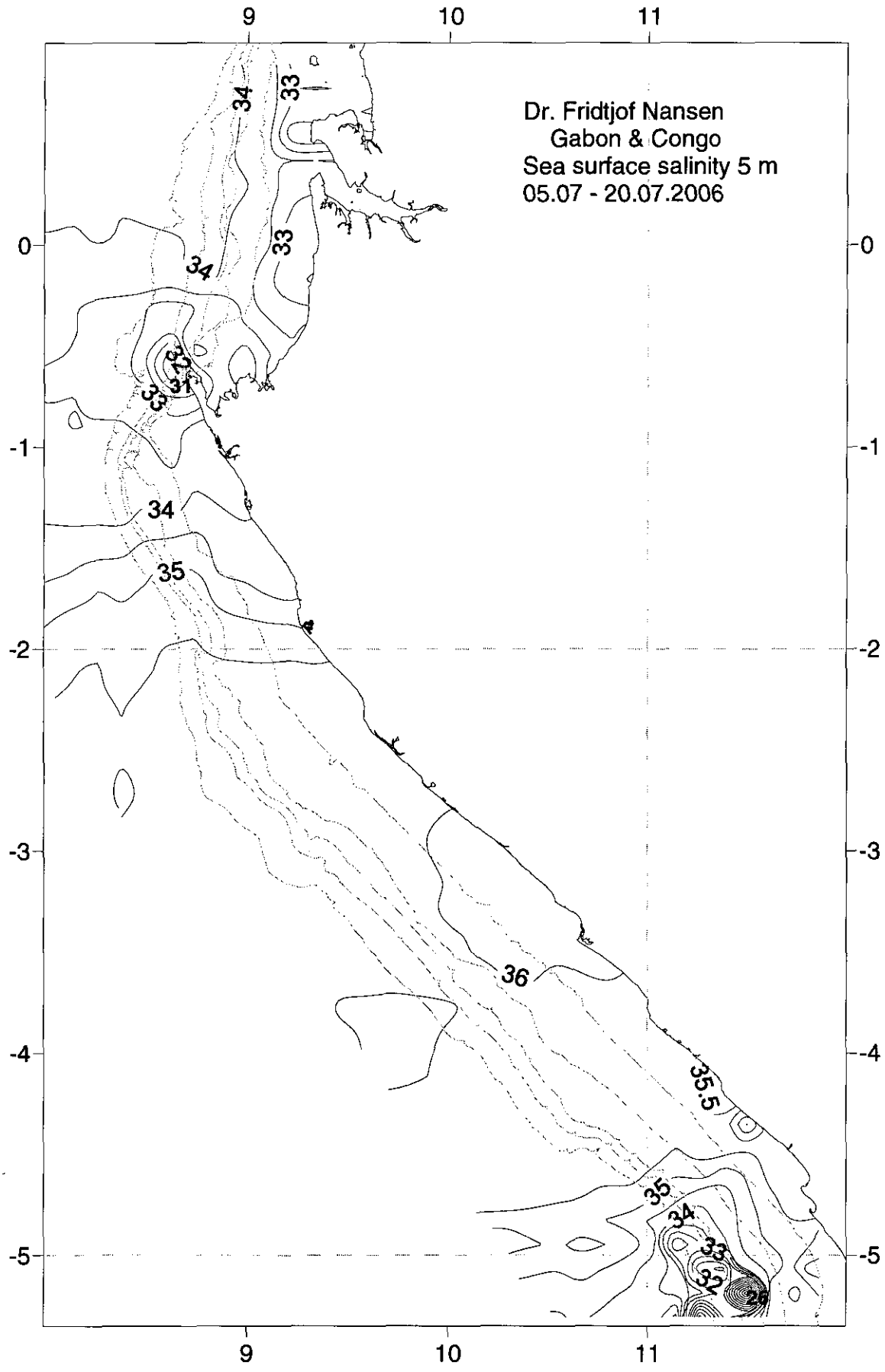


Figure 3.2 Horizontal distribution of surface salinity (5 m depth) at a) Nigeria-Cameroon b) Cameroon-Port Gentil, Gabon, c) São Tomé and Principe and d) Gabon and Congo.

3.2 Vertical sections

Figures 3.3a-v shows the vertical distribution of temperature, salinity and dissolved oxygen as recorded on the hydrographic transects worked during the survey.

Nigeria and Cameroon

Surface temperature was 29 C in the western part of Nigeria and uniformly 28 C in the southeastern part with a pronounced thermocline around 25-50 m depth. The temperature gradient was more gradual in the upper 50 m at Escravos and Middleton. The temperature was approximately 20 C below the thermocline, and decreased to 8 C in bottom layers at 500 m depth, showing similar trends to 2005. The profiles showed similar trends in Cameroon with a thermocline around 50 m depth, but with a lifting of slightly cooler water masses on the shelf. The minimum temperature at 500 m was 8 °C.

The surface salinity was around 33-34.5 PSU in the southwestern part of Nigeria with higher salinities recorded offshore. The southeastern part showed more variable (31-34 PSU) salinity in part due to the large water discharge from the many rivers in the Niger delta and from the Wouri river estuary. The salinity maximum between 35.8 PSU and 36.0 PSU was typically around 50-100 m depth with a strong salinocline above this. The sections at Escravos and Middleton showed a more gradual decrease in salinity above the salinity maximum. Bottom salinity was typically 34.8 PSU at 500 m. The sections in Cameroon at Campo and outside Kribi were similar to what was observed in Nigeria. Surface salinity was <31 PSU, and the strongest salinity gradient was around 50 m depth, with the salinity maximum (36.0-35.6 PSU) below this. Bottom salinity varied slightly from 34 PSU in Kribi to 34.8 PSU at 500 m.

Dissolved oxygen values decreased gradually from more than 4 ml/l at the surface to around than 2 ml/l below 200 m depth both in Nigeria and Cameroon with typically 3.5 ml/l O_2.at the thermocline

São Tomé and Principe

Two CTD lines were sampled on Principe, Figure 3.3. Temperature profiles showed stable surface temperature around 27 C in the upper 50 m with a thermocline on the shelf to 80 m depth with temperatures <18 °C below, decreasing to 8 C on 500 m depth. Salinity profiles showed a salinocline on the shelf with salinity increasing from 34.4 PSU at the surface shelf waters to a salinity maximum of 36.0 PSU at 80 m depth. The salinity then declined to 34.8 at 500 m depth. The oxygen profiles showed well oxygenated water with surface values above 4.5 ml/l gradually declining to <2 ml/l at 500 m depth. Four CTD transects were taken off São Tomé, three of them are depicted in Figure 3.3. All four lines showed the same main characteristics. The temperature profiles showed surface temperatures at 26°C, and the thermocline around 50 m depth with a decrease in temperature to 19 C. Bottom temperatures were 8°C at 500 m. The salinity profiles showed a surface salinity of 34.6-34.8 PSU, a salinocline between 25-50 m depth with a maximum salinity of 36.0 PSU at 100 m depth and

gradually decreasing salinity to 34.8 PSU at 500 m. The oxygen profiles typically showed surface oxygen >4.5 ml/l, a small gradient around 50 mm depth to 4. 0 ml/l, and another oxycline below 200 m depth were the oxygen declined to a oxygen minimum <2 ml/l.

Gabon

The shelf environment in the northern part of Gabon differs in appearance to that south of Cape Lopez, and the profiles were therefore treated separately.

North of Cape Lopez

Surface temperature ranged between 26.5°C and >27 C north of Cape Lopez. A pronounced thermocline was observed around 25 m depth. The temperature was <20°C below the thermocline and decreased to 8°C in the bottom layer at 500 m depth. Generally the whole water column is slightly cooler this year compared to 2005.

The surface salinity ranged between 32.9 inshore and 34.2 PSU offshore for the profiles off Corisco and Equator. Cape Lopez showed greater variability in salinity with 31.4 PSU as a inshore minimum due to greater river discharge influence in that area. The salinity maximum of 36 PSU was observed around 50-75 m depth immediately below the salinocline. All three sections Corisco, Equator and Cape Lopez showed gradual decrease in salinity below the salinity maximum, and salinity at 500 m depth was typically <34.8 PSU. Salinity levels north of Cape Lopez are similar to observed values in Nigeria, Cameroon, São Tomé and Principe at the same depth.

Dissolved oxygen values decreased gradually from between 4.5 and 5ml/l at the surface to 2ml/l below 200 m depth, with about 4ml/l oxygen at the thermocline

South of Cape Lopez

South of Cape Lopez at Sette Cama and Pointe Panga the sea surface temperature ranged between <21°C inshore and >22°C offshore, while the profile off Iguela, showed surface temperatures around 24°C. A decrease in temperature was observed particularly in the upper 25 m, but with a less pronounced termocline than in the northern region of Gabon. The temperature decreased to 8 C in the bottom layer at 500 m depth, compared to 9 C in 2005.

The salinity profile showed surface values around 35 PSU for Iguela, and 36 PSU for Cette Cama and Pointe Panga, and decreasing salinity offshore particularly off P. Panga. The salinity maximum of 36 PSU was around 50 m depth below the salinocline. All sections showed gradual decrease in salinity below the salinity maximum with salinity at 500 m depth between 34.8 PSU and 34.9 PSU.

Dissolved oxygen values decreased from between 5.6 and 5ml/l at the surface to 2 ml/l at 200 m depth, for Iguela, Sette Cama and Pointe Panga A clear oxycline was observed in the upper 25 m at Cette Cama and Pointe Panga, and a more gradual decrease in O_2 levels off Iguela.

Between 200 m and 400 m oxygen values dropped to minimum values of 1.5 and 1.8ml/l in Cette Cama and Pointe Panga and 2 ml /l in Iguela, then increased to 2 and 2.2 ml/l at 500 m.

Congo

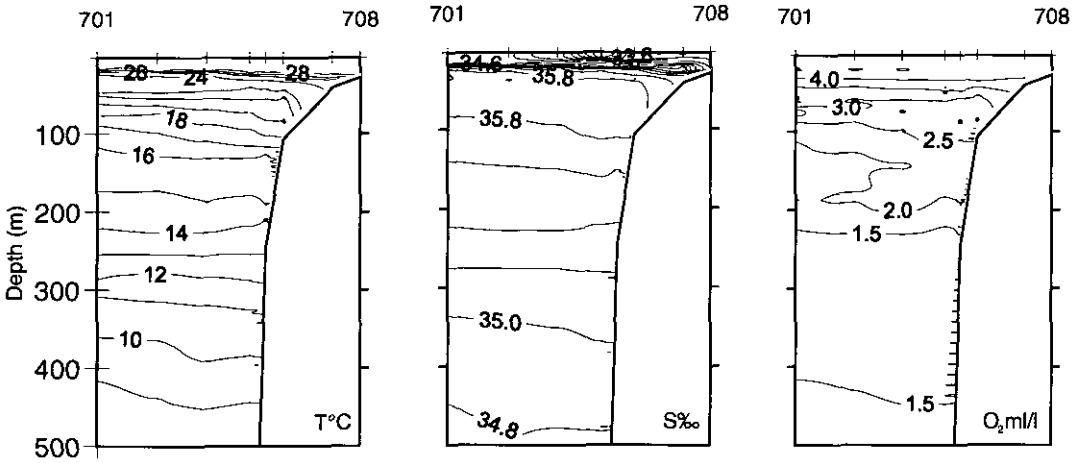
The surface temperature observed in the temperature profile off Madingo was around 21°C inshore and 22 C offshore, while surface temperatures off Pointe Noire typically 1°C cooler than this. The termocline was less pronounced in both sections compared to sections further north. The temperature further decreased to 8 C in the bottom layer at 500 m depth.

The surface salinity observed in the profile was around 36.0 PSU off Madingo, and 34.4 PSU offshore and 36.0 PSU inshore off Pointe Noire. The salinity maximum was at 36.0 PSU. The salinity decreased to 34.8 PSU at 500 m depth.

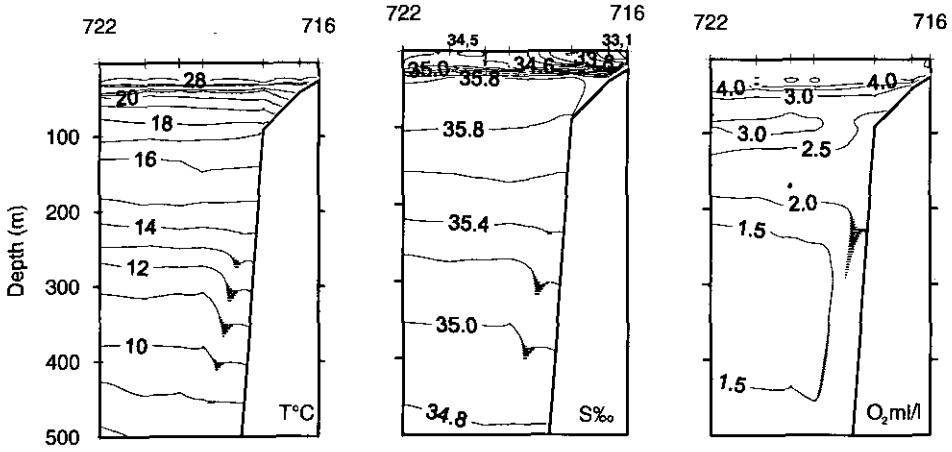
At Madingo the dissolved oxygen was 5.0 ml/l at the surface and dropped to 3 ml/l at 50 m depth. The dissolved oxygen value continued to drop to around 400 m and increased again at 500 m. At Pointe Noire the dissolved oxygen at the surface was 3.5 ml/l slightly lower than 2005. The DO dropped gradually from between 3.5 ml/l at the surface to 1.5 ml/l at 400 m depth, then increased to 2 ml/l at 500 m.

NIGERIA

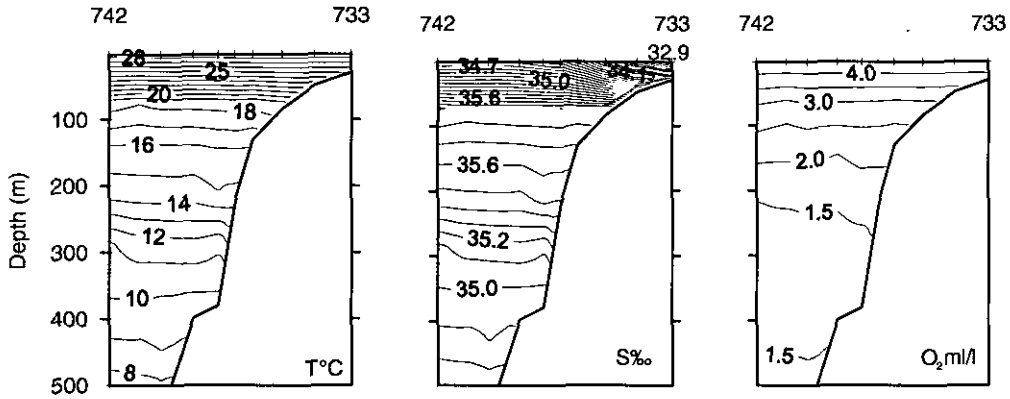
a) Lagos



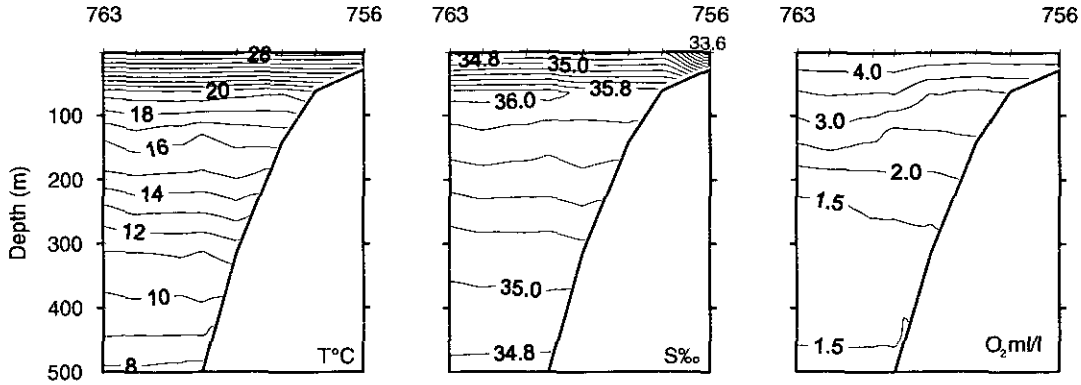
b) Lekki



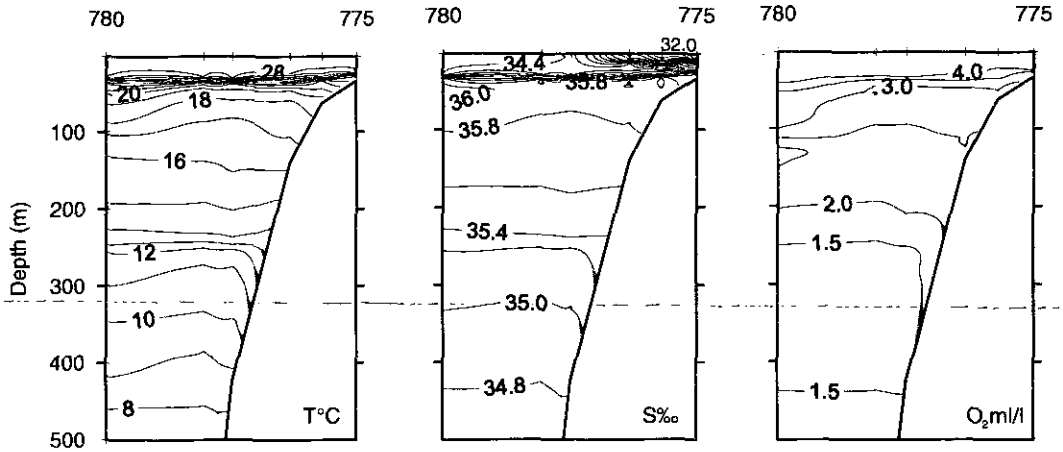
c) Escravos River



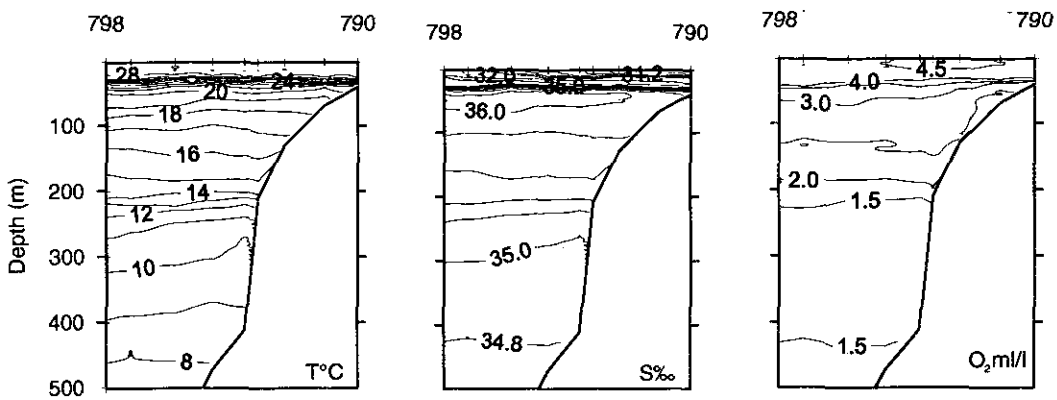
d) Middleton River



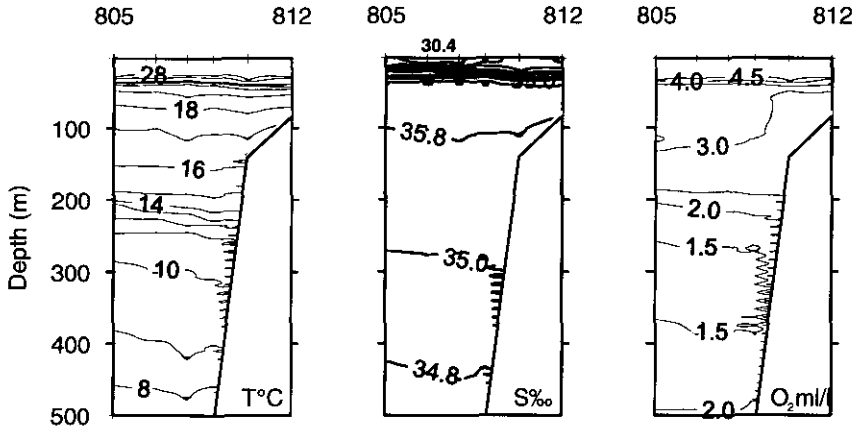
e) Brass River



f) Bonny River

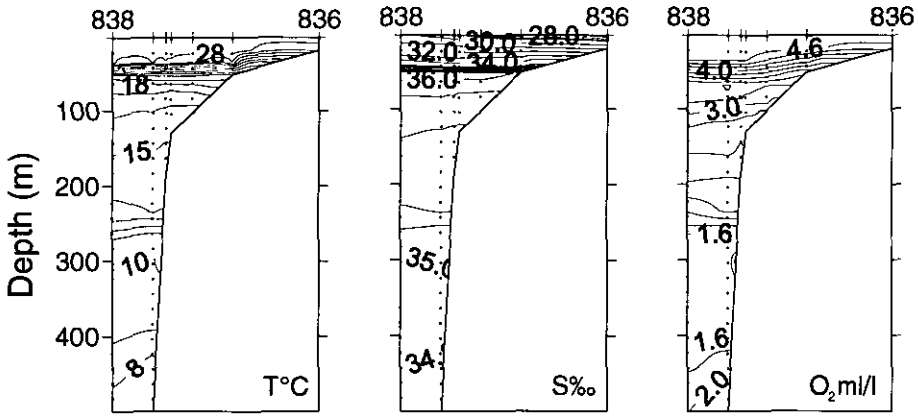


g) Calabar River

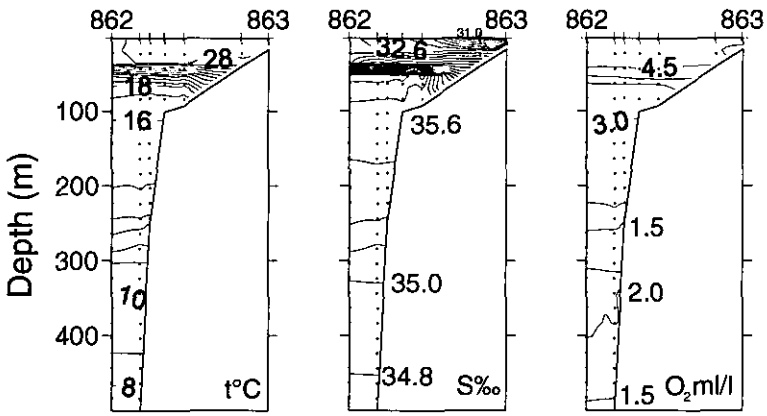


CAMEROON

h) Kribi

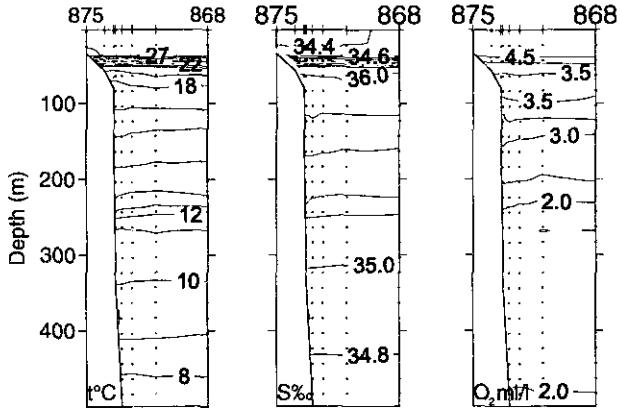


i) Campo River

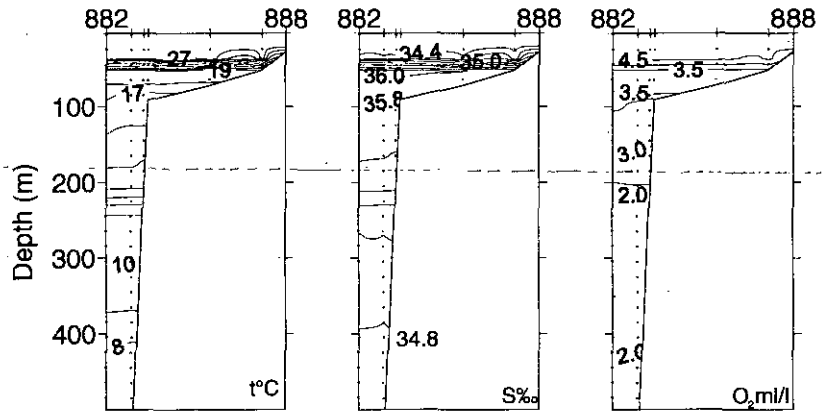


SÃO TOMÉ AND PRINCIPE

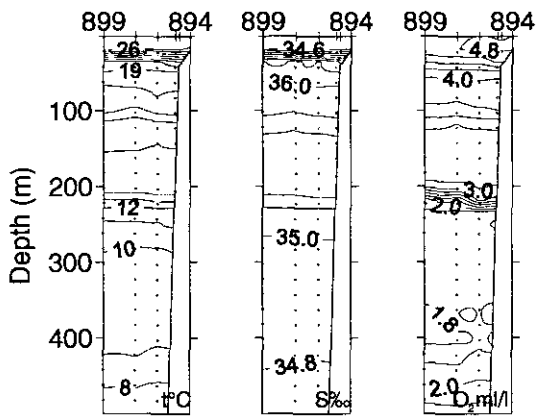
j) Principe, Northeast



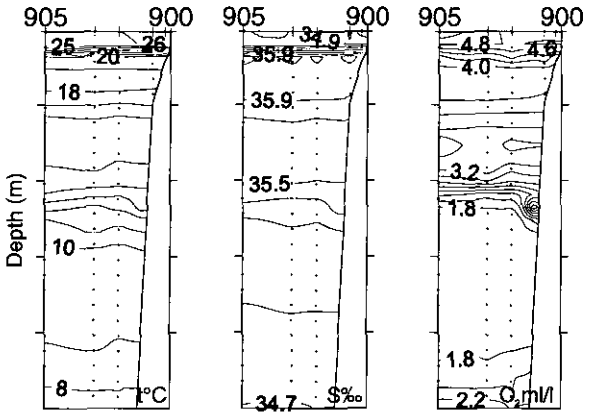
k) Principe West



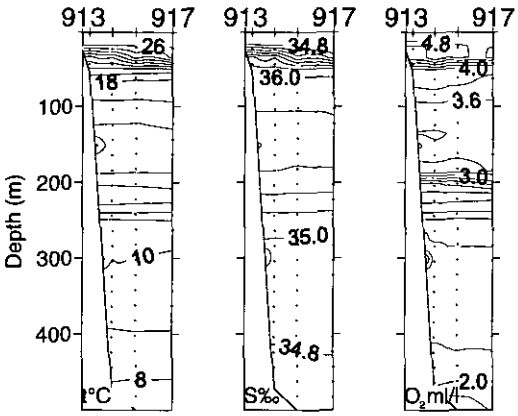
l) São Tomé West



m) São Tomé South

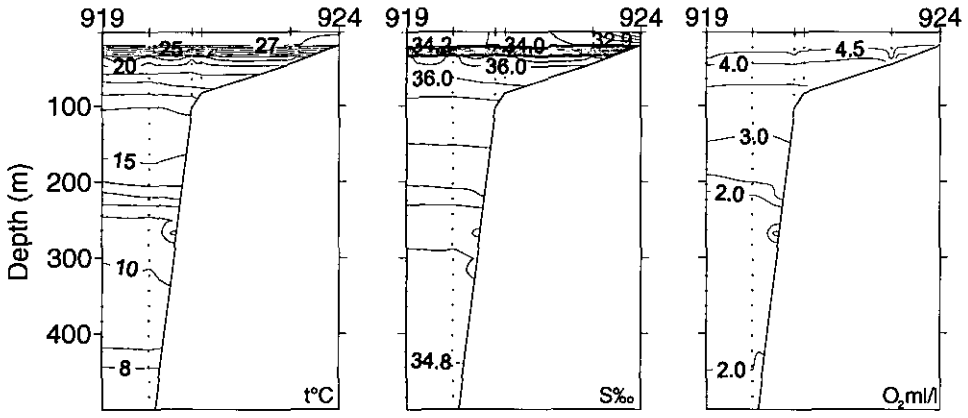


n) São Tomé Northeast

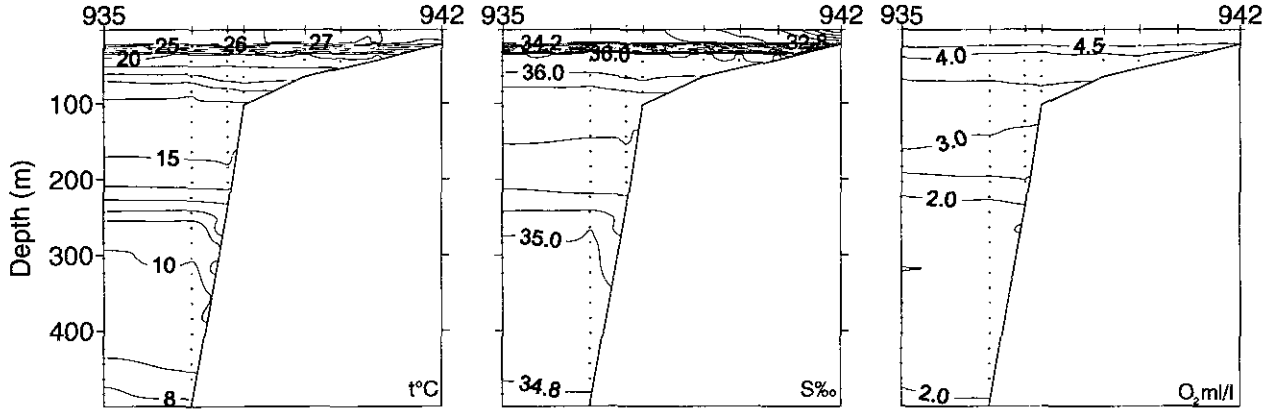


GABON

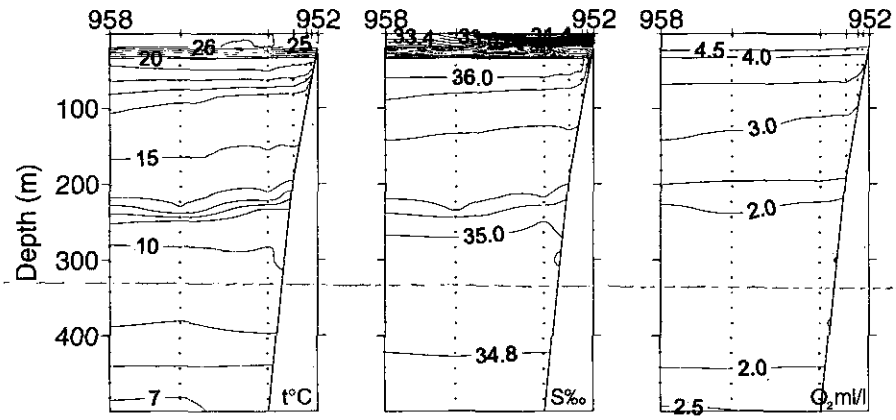
o) Corisco



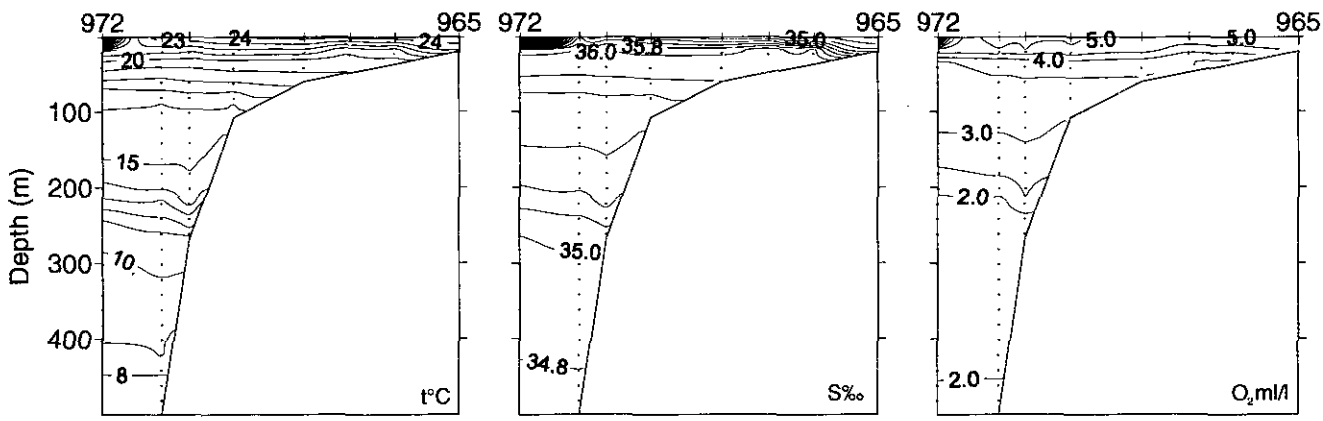
p) Equator



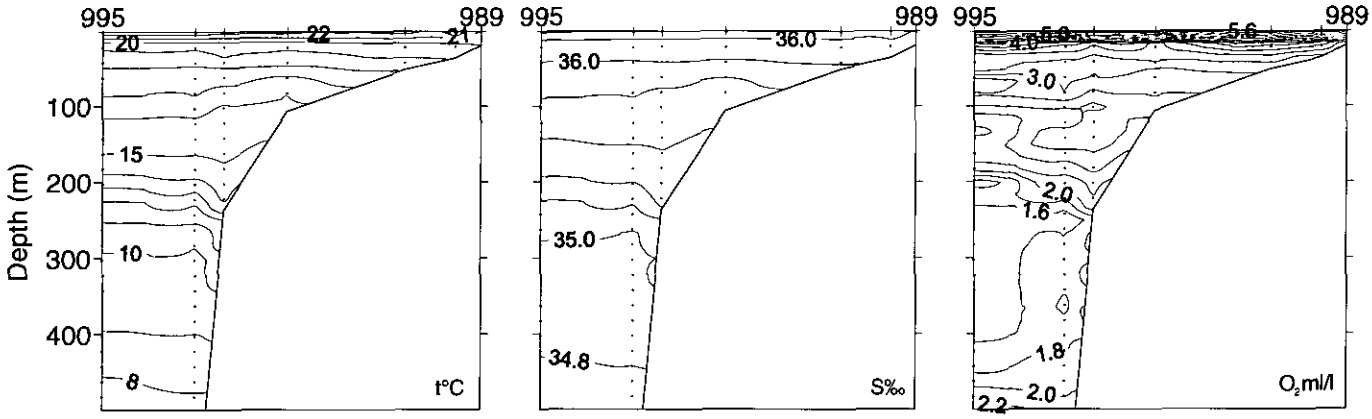
q) Cape Lopez



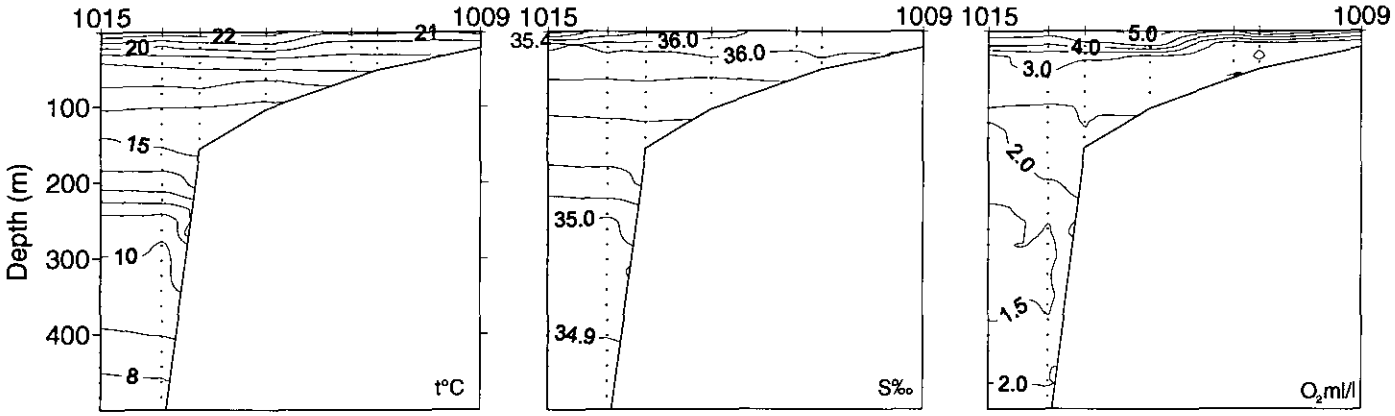
r) Iguela



s) Sette Cama

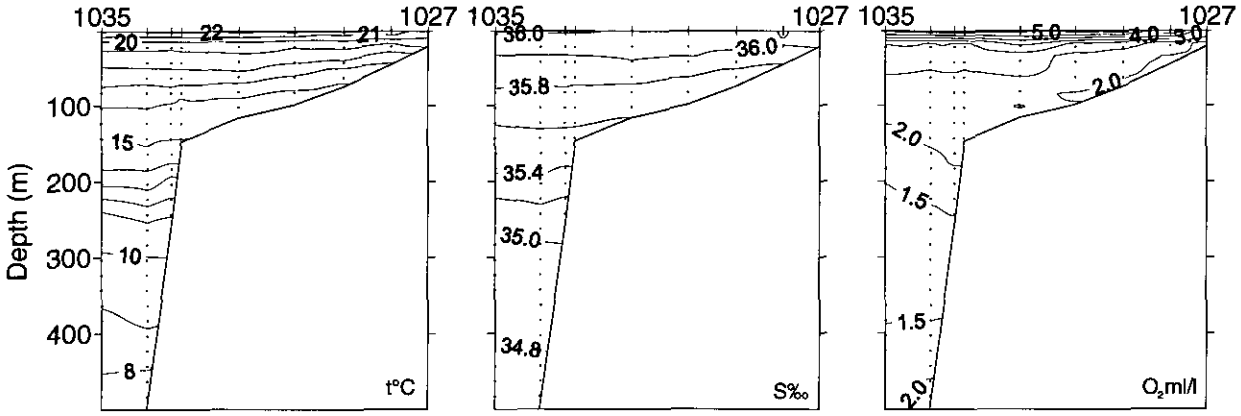


t) Pte. Panga



CONGO

u) Madingo



v) Pointe Noire

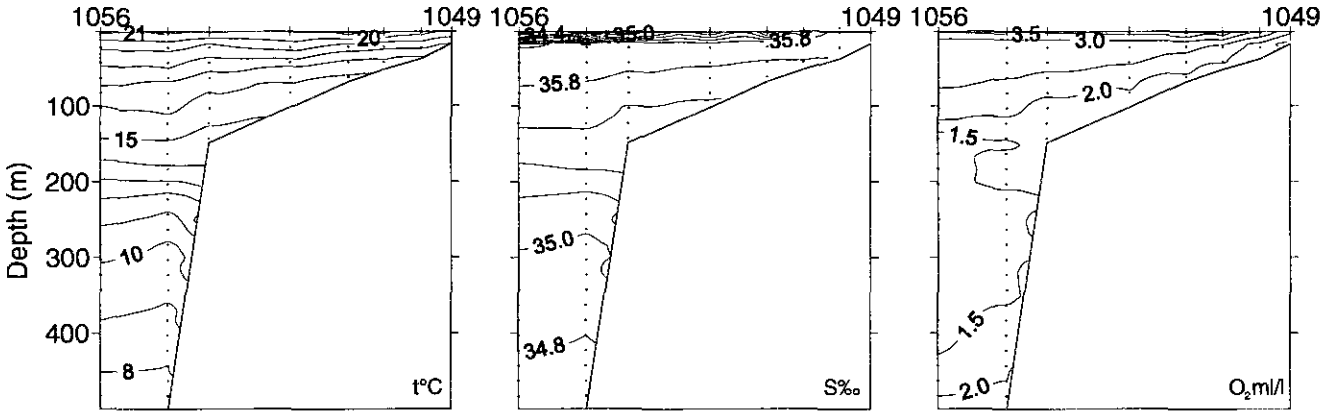


Figure 3.3 Vertical sections of temperature, salinity and oxygen in **Nigeria**, at a) Lagos, b) Lekki, c) Escravos River, d) Middleton River, e) Brass River, f) Bonny River and g) Calabar River, **Cameroon** at, h) kribi and i) Campo River, **São Tomé and Principe** at j) Principe Northeast, k) Principe west, l) São Tomé West, m) São Tomé South, and n) São Tomé Northeast.**Gabon** at o) Corisco, p) Equator, q), Cape Lopez, r) Iguèla, s) Sette Cama, and t) Pte. Panga, **Congo** at u) Madingo, and v) Pointe Noire.

CHAPTER 4 RESULTS FROM THE ACOUSTIC SURVEY

The distribution area of main groups of pelagic fish in the region, i.e. sardinellas, PEL 1 (Clupeoids), PEL 2 (mainly carangids) and horse mackerel, are depicted in the following figures using the integrator values from the BEI echo-integration system recorded with the ES38B, 38 kHz transducer connected to the EK500. The acoustic densities (in m^2/NM^2) are illustrated by a scale normally used on acoustic surveys with "Dr. Fridtjof Nansen".

4.1 Nigeria

The hydro acoustic survey of Nigeria covered the shelf and slope systematically to 100 m bottom depth during the day, and continued offshore at night, mainly bottom trawl were used for species identification. Generally low to medium acoustic densities were found over most of the shelf and only plankton was found in the water column from the shelf break and further offshore. The bottom channel was scrutinized continuously to 500 m bottom depth, but with only few fish targets seen offshore from the shelf break.

Clupeoids
Sardinella aurita, S. maderensis, Ehtmalosa fimbriata, Ilisha africana and *Engraulis encrasicolus* were found scattered throughout the survey area in small concentrations. *S. aurita* and *E. encrasicolus* occurred mostly west of Lagos and south west of the Niger delta. While salinity tolerant *S. maderensis, E. fimbriata* and *E. encrasicolus* were found distributed around the delta and the south eastern part of Nigeria, see Annex two for length frequencies of the species caught in the trawl catches.

Acoustic recordings of a few sardinellas were made in four separate areas along the coast, between 20 and 140 m depth, but the fish were scattered and no acoustic distribution map or abundance estimate has been produced.

All clupeid scatters not allocated to sardinella were allocated to the P1 group of pelagic species. The most dominant species in this group *Ilisha africana,* was the most dominant in this group. The P1 species were found in low concentration around the 20 m isobath along most of the Nigerian shelf. Figure 4.1. The biomass estimate was approximately 10 thousand tonnes. The abundance was very low during the 2004 and 2005 surveys and no estimate was produced.

a)

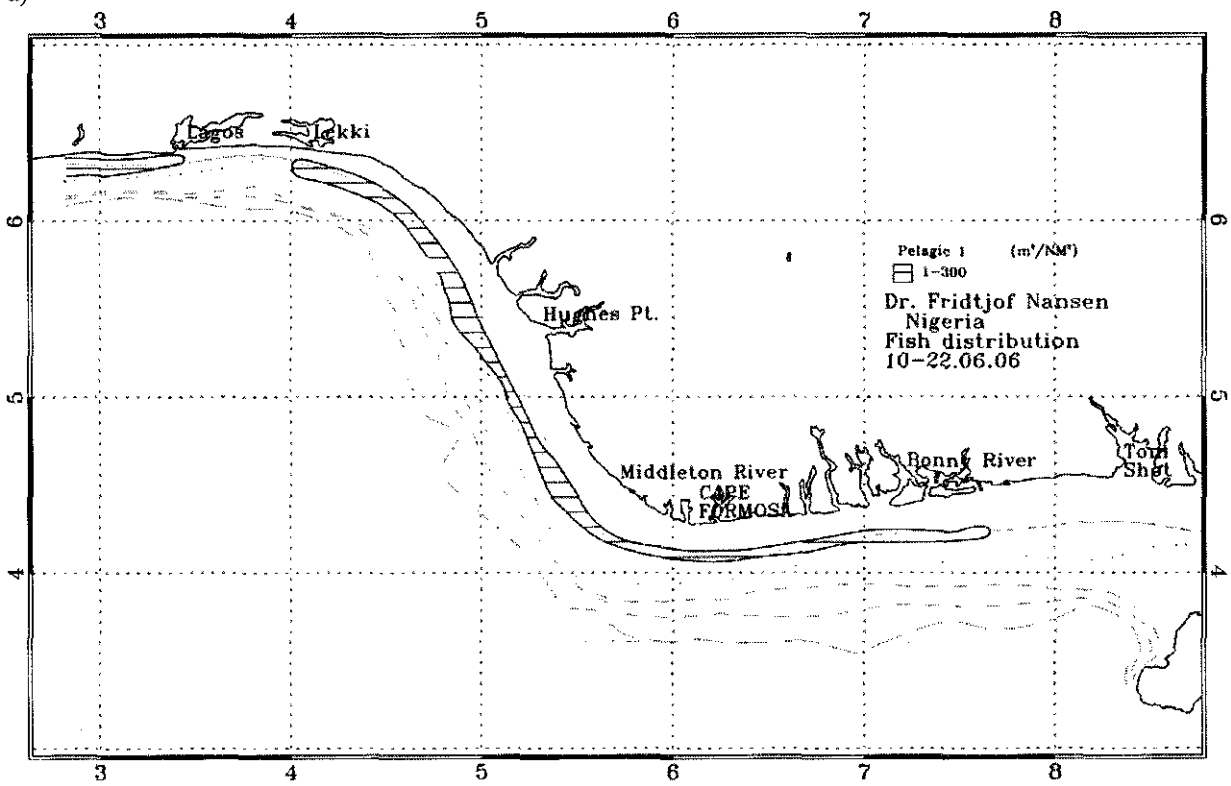


Figure 4.1. Distribution of P1 (Clupeoids) in Nigeria

PEL 2 (Carangidae, Scombridae, Sphyraenidae and Trichiuridae)

The species category PEL 2 consisted of Carangidae, Scombridae, Sphyraenidae and Trichiuridae. Most pelagic fish were found inshore of 50 m depth, although the distribution of *Trichiurus lepturus, Sphyraena guachancho, Selar crumenopthalmus* and *Decapturus punctatus* continued to depths deeper than 100 m. The most abundant P2 species in the trawl catches were *Chloroscombrus chrysurus, Selene dorsalis, Trichiurus lepturus, Sphyraena guachancho, Decapterus punctatus, Scomberomorus tritor* and *Selar crumenopthalmus.* Length frequencies of the species can be found in Annex II.

Schools of PEL 2 species, mainly of low density, were found along the whole coastline, Figure 4.2. The distribution was similar to last year. Assuming an average total length of 23 cm for all the species and a measured condition factor of 0.88 the biomass of PEL 2 was estimated to about 47 thousand tonnes. Last year the biomass was estimated to be 95 thousand tonnes and in 2004 considerably higher, 193 thousand tonnes. The large difference between these estimates may be due to several reasons including declining fish stocks, shift in distribution area including the possibility loss of fish inshore (<20 m depth) during some of the surveys, and dense plankton layers in the area, which made species separation difficult both in 2004, 2005 and this year.

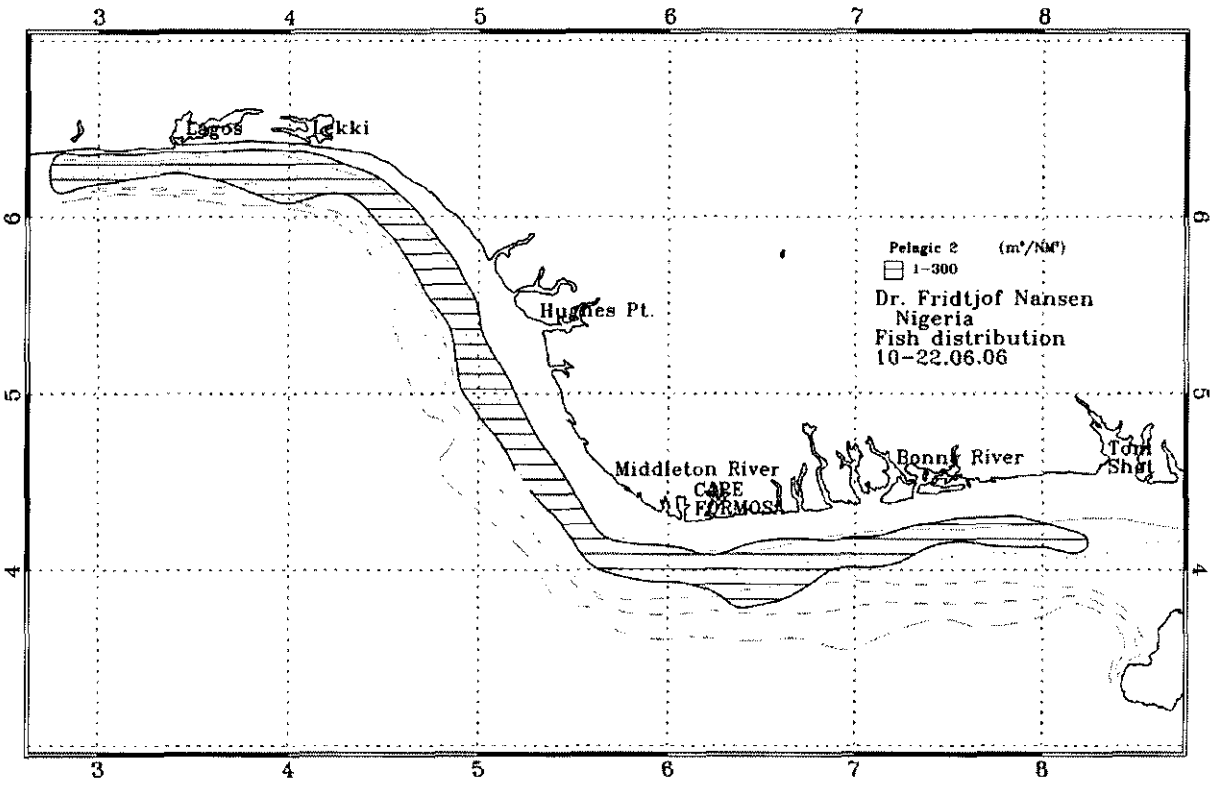


Figure 4.2 *Distribution of PEL 2 (Carangidae, Scombridae, Sphyraenidae and Trichiuridae) off Nigeria.*

4.2 Cameroon

The hydroacoustic survey of Cameroon covered the shelf from the border to Nigeria to the border with Equatorial Guinea and inshore to 20 m bottom depth on the Cameroonian coast. Both day and night transects were used in the estimates. Transects were spaced with 5 NM distance.

Clupeoids

Only very scattered low concentrations of *Sardinella maderensis* and no *S. aurita* was observed along the coast of Cameroon. The main concentrations were observed between 20 and 50 m bottom depth in the northern part of the survey area to the Wouri River estuary, and in the south between Kribi and Campo. The distribution probably continued inshore of the survey area in shallow waters. The biomass of *S. maderensis* consisted mainly of juvenile fish with an average length from trawl catches was 12.1 cm, Annex II, and the abundance was low and no estimate was calculated. Last year the estimated total biomass of sardinella in Cameroon was 5 thousand tonnes, while 11 thousand tonnes were found in the area in 2004. Both estimates were dominated by *S. maderensis*.

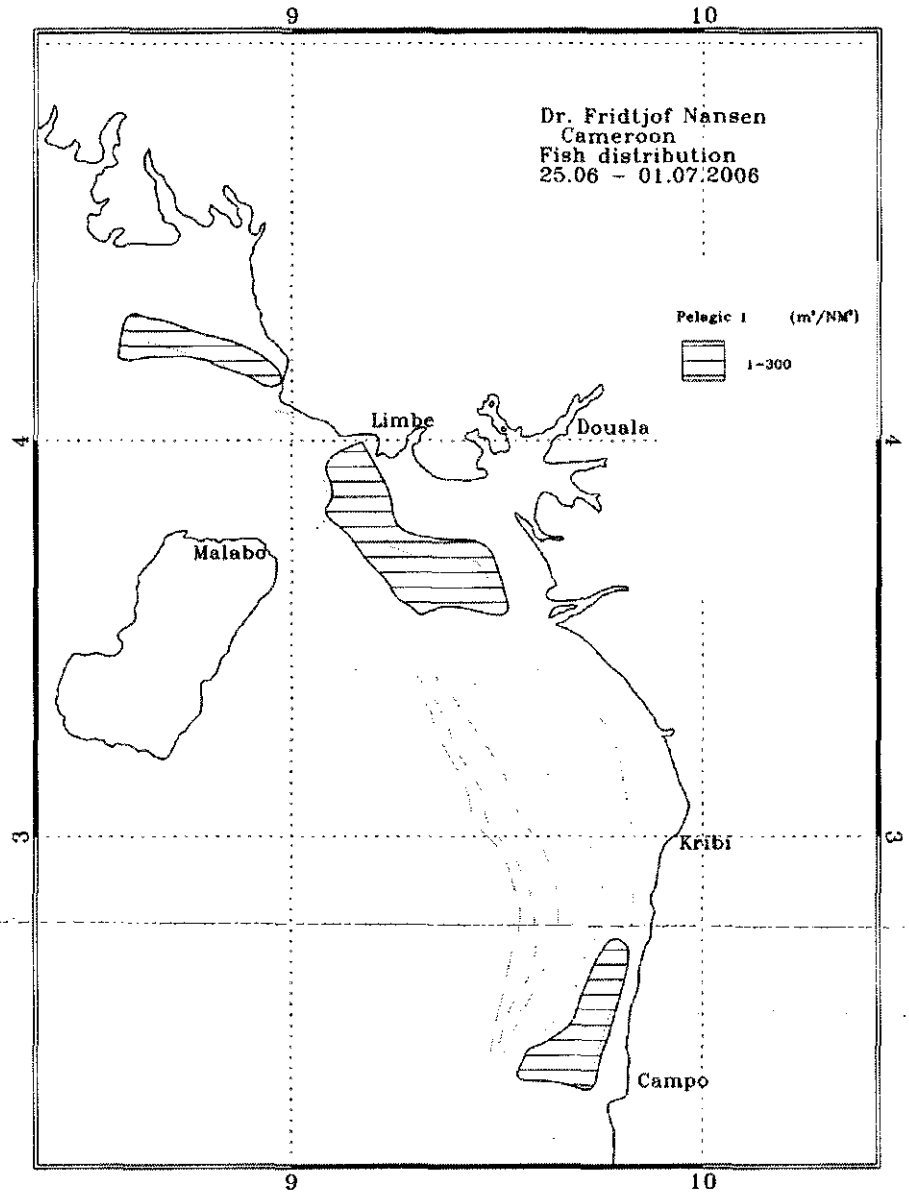


Figure 4.3 Distribution of sardinellas and pelagic 1 (*Ilisha africana*) off Cameroon.

The pelagic group, PEL 1 consisted only of *Ilisha africana,* Figure 4.3. This species were generally found in the same areas as the sardinella, between 20 and 50 m depth, with a distribution continuing inshore of the survey area. The size range was 7-27.5 cm with an average length of 17.3 cm. The total biomass of *Ilisha africana* was estimated to be 6 thousand tonnes, last year 7 thousand tonnes were found, while 2 thousand tonnes were found in 2004. Noticeably, *Ehtmalosa fimbriata* and *Sardinella aurita,* two important species in the local fishery in Cameroon, were not found during the survey.

PEL 2 (Carangidae, Scombridae, Sphyraenidae and Trichiuridae)

The Pelagic group PEL 2, consisting of Carangidae, Scombridae, Sphyraenidae and Trichiuridae. The distribution of these species continues in Cameroon extending across the border to Nigeria and in to Equatorial Guinea Figure 4.4. The main distribution was found in three areas, on the border with Nigeria, between Limbe and towards Kribi and outside Campo

from inside of the survey area to approximately 50 m depth. The main species in order of abundance in the catches were *Trichiurus lepturus, Selene dorsalis, Chloroscombrus chrysurus,* and *Sphyraena guachancho.* Other species were less abundant. The length distributions of the species are found in Annex II. Assuming an average total length of 23 cm for all the species and a measured condition factor of 0.88 the biomass of PEL 2 was estimated to about 13 000 tonnes, last year proximately 30 thousand tonnes were found, while 14 thousand tonnes was estimated in 2004.

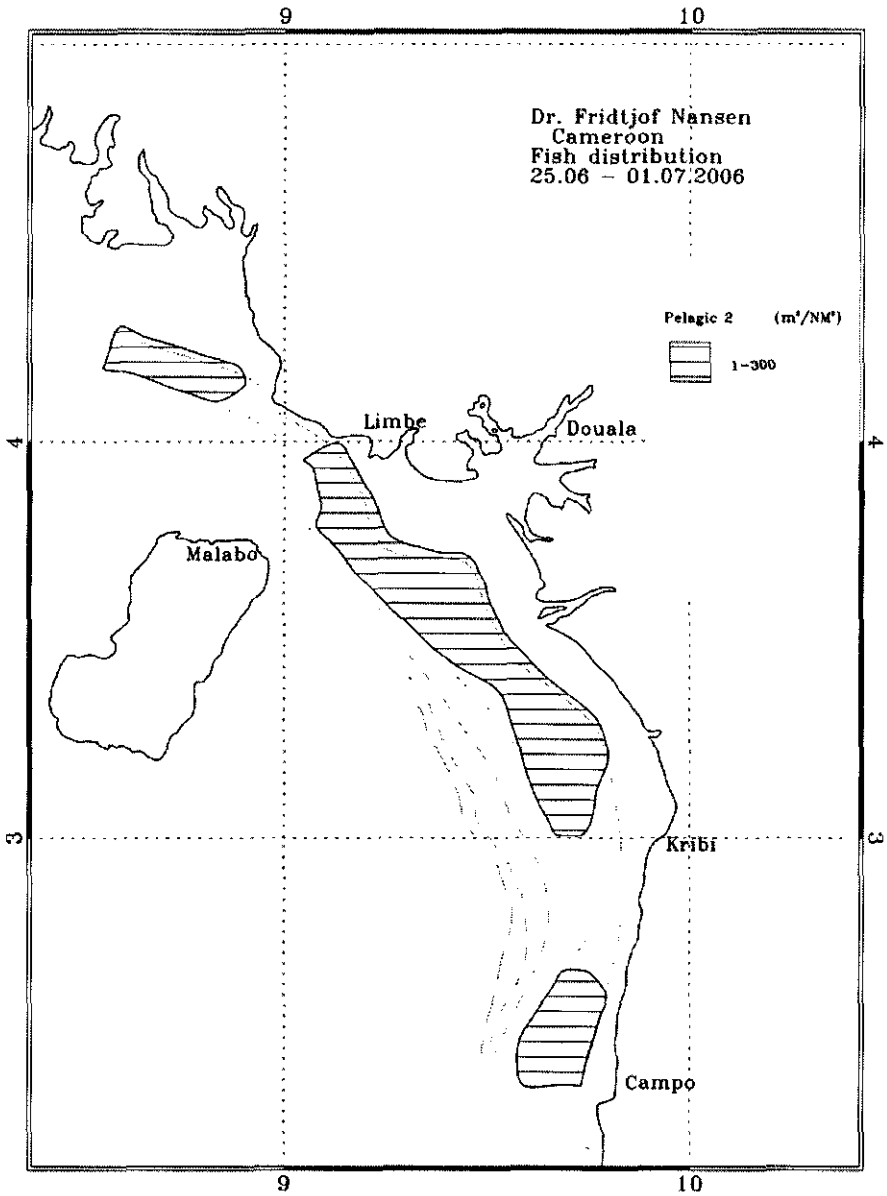


Figure 4.4 Distribution of PEL 2 (Carangidae, Scombridae, Sphyraenidae and Trichiuridae) off Cameroon.

Demersal species

Like last year consistent acoustic recordings of relatively dense concentrations of demersal fish were made at the shelf break in the southern part of Cameroon at approximately 100 m depth. These were mainly *Ariomma bondi, Dentex congoensis* and *Dentex angolensis.* These

sometimes lifted of the shelf and the swept area survey may consequently have underestimated this resource slightly.

4.3 São Tomé and Principe

The hydroacoustic survey of São Tomé and Principe revealed little pelagic fish but a few juvenile *Sardinella maderensis* with total length range between 8.5 cm and 11.5 cm was caught in one trawl in São Tomé. This year *Sardinella aurita* occurred alongside *S. maderensis* in the trawl. However, no estimate of abundance was made for these areas. Pelagic fish, mainly flying fish *Parexocetus brachytpterus*, were observed on the surface both during the night and day, but these were not recorded on the echo sounder. There were consistent acoustic recordings of demersal fish over the whole shelf area on both islands, and particularly on the shelf edge and other untrawlable grounds. This indicates that the trawl survey underestimates the abundance of demersal fish on the islands. The most common pelagic species found in the trawl catches was *Decapterus punctatus*.

4.4 Gabon and Congo

The abundance of pelagic species in Gabon, and extending into Congo required a more throughout analyses than in Nigeria and Cameroon. The region is treated as one because the two countries shear a common shelf. However, biomass estimates are given for each country separately. Several areas in Congo and Gabon are restricted because of oil exploration activities, and particularly the area outside Olinde in Gabon is large and can possibly contain high abundance of pelagic fish. The area is omitted from the abundance calculations.

Sardinellas

The distribution of sardinellas was similar to what was observed in 2005 and 2004. The two species were mainly distributed inshore of 50 m depth, across the entire region of Gabon and Congo, with low density concentrations north of Cape Lopez. The region was dominated with *S. aurita*, with the main concentrations associated with the cooler, more saline water masses on the southern shelf of Gabon and Congo. *S. maderensis* were found scattered throughout the region, but catches was far between, with consequently low concentrations (Figure 4.5).

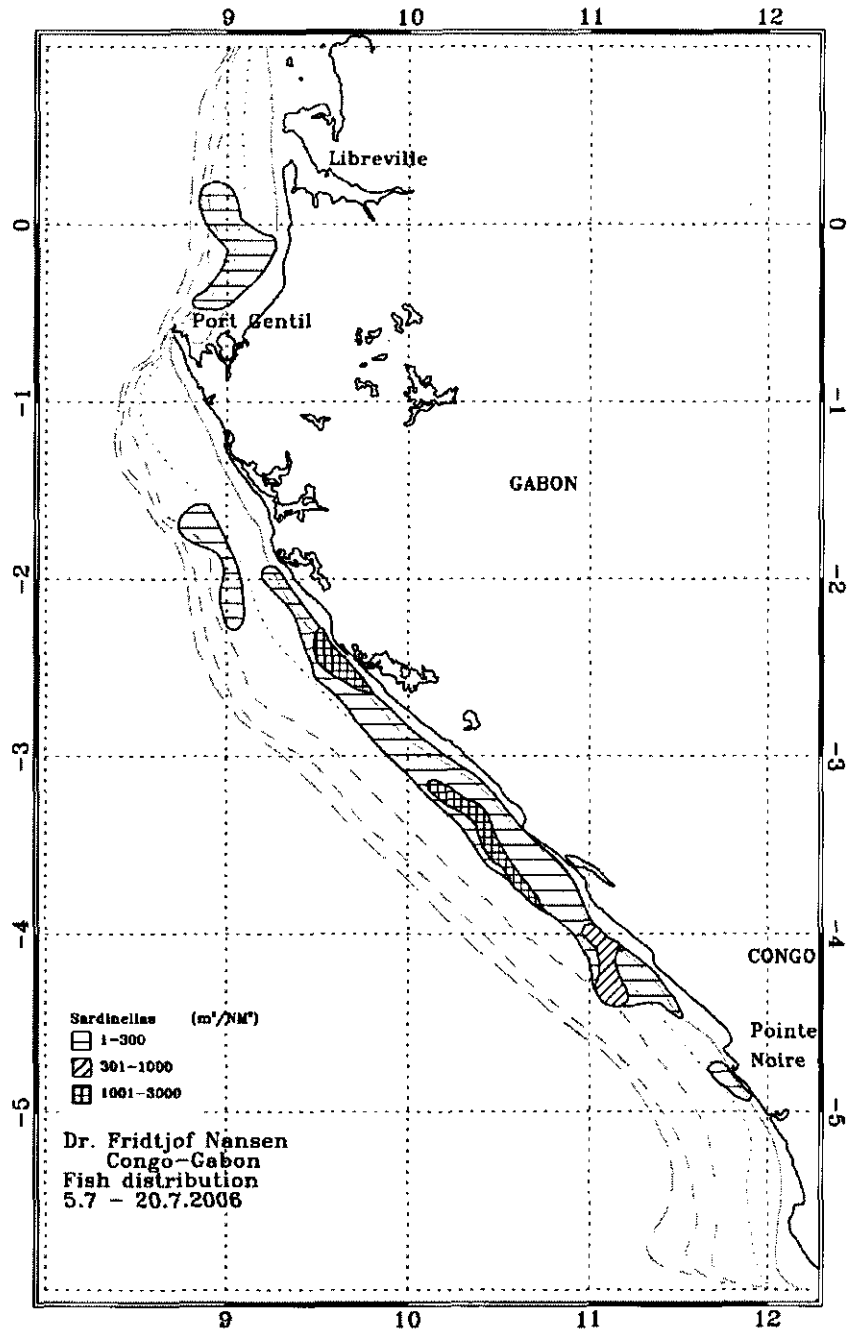


Figure 4.5 Distribution of sardinellas off Gabon and Congo.

Figure 4.6 a and b shows the length frequency distribution of sardinella. The size distribution of *Sardinella aurita* in the survey area was dominated by juvenile fish. The juvenile cohorts are overlapping and several cohorts probably contribute to the main modal peak visible at 10 cm, Three other modal peaks can be seen at 19 cm, 22 cm, and 28 cm length. Juvenile fish

were also dominant during the survey last year, with modal peak at 11 and 15 cm representing the two most dominant cohorts. The length distribution of *S. maderensis* show that juvenile fish was the dominant also for this species, and two modal peaks at 8 and 11 cm can be seen in Figure 4.6b. Last year two cohorts at 22 and 24 cm was observed in the area, and the most striking with the distribution was the absence of *S. maderensis* <20 cm. The relative cumulative biomass of sardinella can be found in Figure 4.7. The graphs shows that approximately 50% of the biomass of *S. aurita* was <18 cm, the rest of the biomass in the survey area was <30 cm. The situation was similar for *S. maderensis* with 100% of the biomass <21 cm and 50% <12 cm.

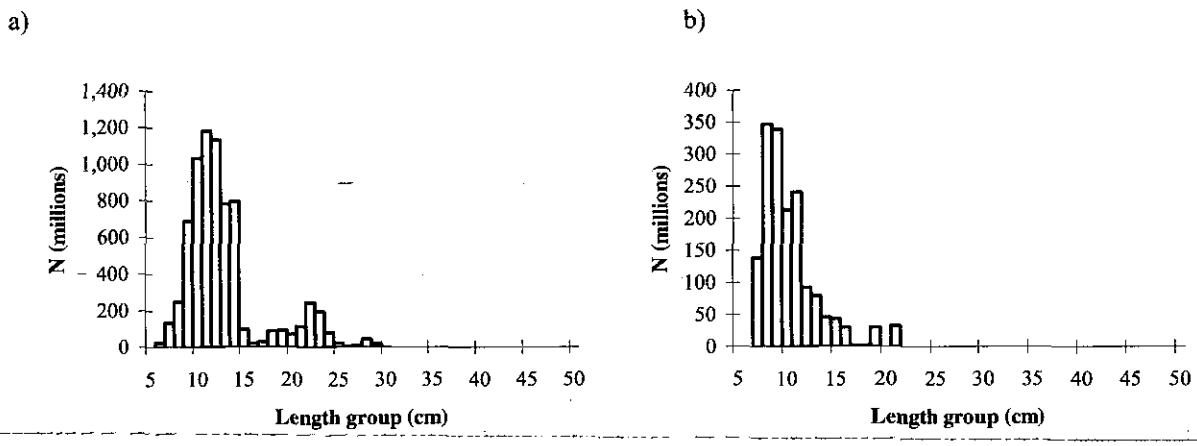


Figure 4.6 Total length distribution of a) *Sardinella aurita* and b) *S. maderensis* off Gabon and Congo

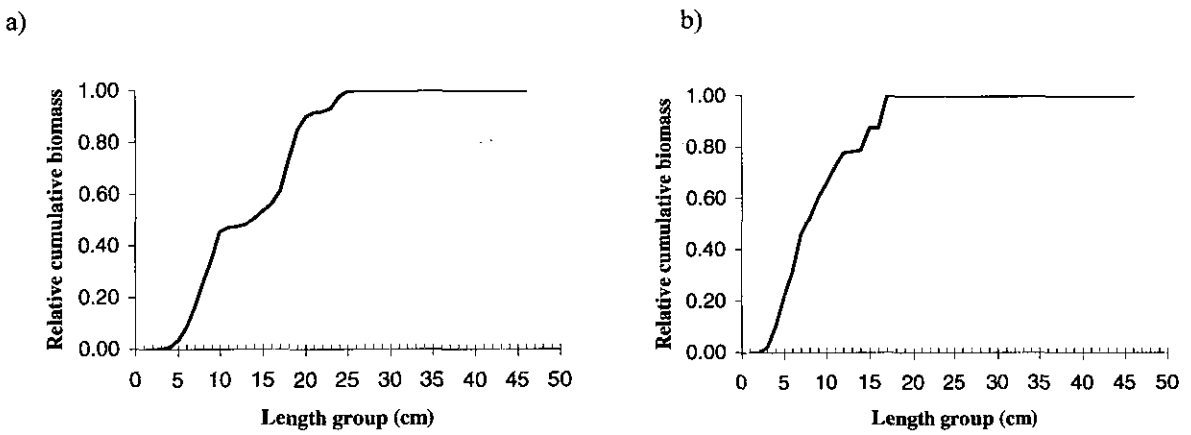


Figure 4.7 Relative cumulative biomass of a) *Sardinella aurita* and b) *S. maderensis* off Gabon and Congo

The biomass of sardinella in Gabon and Congo was estimated at 245 thousand tonnes, This consisted of 220 thousand tonnes of *S. aurita* and 25 thousand tonnes of *S. maderensis*. Last year 416 thousand tonnes of Sardinella was found all together, of which 382 thousand tonnes

was *S. aurita* and 34 thousand tonnes was *S. maderensis*. The abundance of Sardinella has decreased considerably since the estimate last year who was the highest ever recorded. The temperature in the region was considerable warmer this year, and it is possible that a larger proportion of the biomass was distributed in cooler watermasses further south. The proportionate species composition between the two sardinella species was the same as last year with 90% of the biomass been *S. aurita* (91 % in 2005). The surveys this year and the two previous years have all reported good recruitment for *S. aurita* on the coast of Gabon and Congo and it is clear that this region is of vital importance for the recruitment of *S. aurita*.

Other Clupeoids

Two catches of Anchovy, *Engraulis encrasicolus* was made in the area outside Sette Cama, however, the distribution area was small and no acoustic abundance estimate was made for this species. Last year 2 thousand tonnes was estimated in the same area.

Some *Ilisha africana* was found inshore along the coast associated with brackish water areas extending from the southern part of Gabon and into Congo, Figure 4.8. The abundance estimate was relatively high, with 37 thousand tonnes. In 2005 and 2004 considerably lower catch rates were experienced and consequently no estimates was made of *Ilisha africana*.

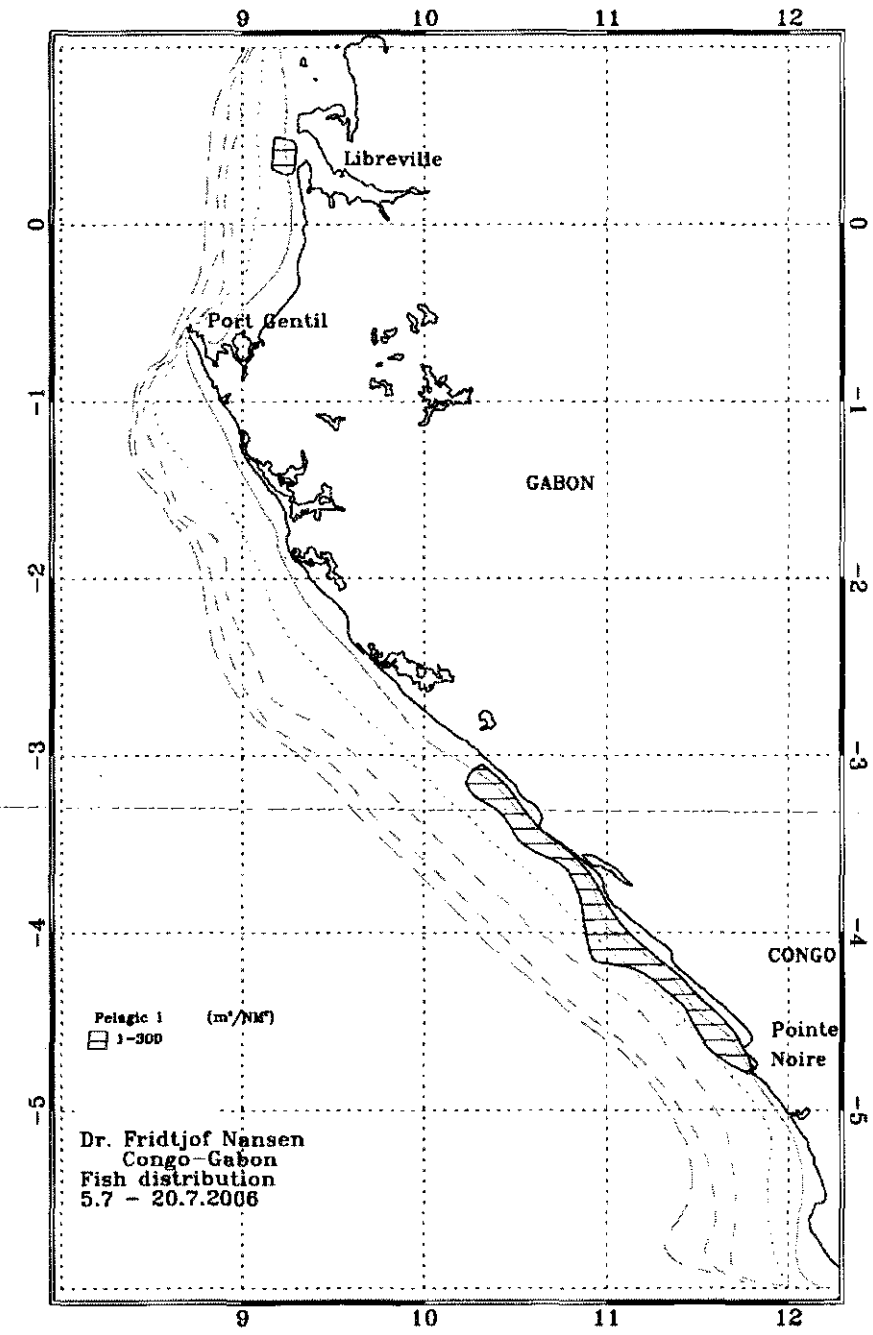


Figure 4.8 Distribution of other Clupeoid fish species off Gabon and Congo

Trachurus trecae

The horse mackerel *Trachurus trecae* was distributed on the mid shelf mainly between 50 m and 100 m depth off the southern coast of Gabon and in Congo in two low density areas,

Figure 4.9. The main distribution roughly overlaid the observed upwelling area and was similar to the distribution during the last two surveys in 2004 and 2005. The species were mixed with other carangid species in its distribution area.

The length distribution, Figure 4.10a, shows modal peaks at 16, 20 and 23 cm. Only few individuals <15 cm was caught during the survey. Last year a juvenile cohort with <10 cm fish dominated the size distribution in the area representing fish spawned earlier that year. This year this cohort was not found in the surveyed area. The cumulative biomass show that mature fish dominates in the biomass, only 4% of the biomass was <15 cm and 95% was <30 cm.

The total biomass of *Trachurus trecae* in the distribution area was 8 thousand tonnes. In 2005 and 2004 15 and 11 thousand tonnes respectively were estimated. It is expected that horse mackerel in similar ways to sardinella migrates across the border between Angola and Congo to Gabon. However, the proportion of the biomass reported historically for this species in Congo and Gabon is typically 5% of the regional estimate.

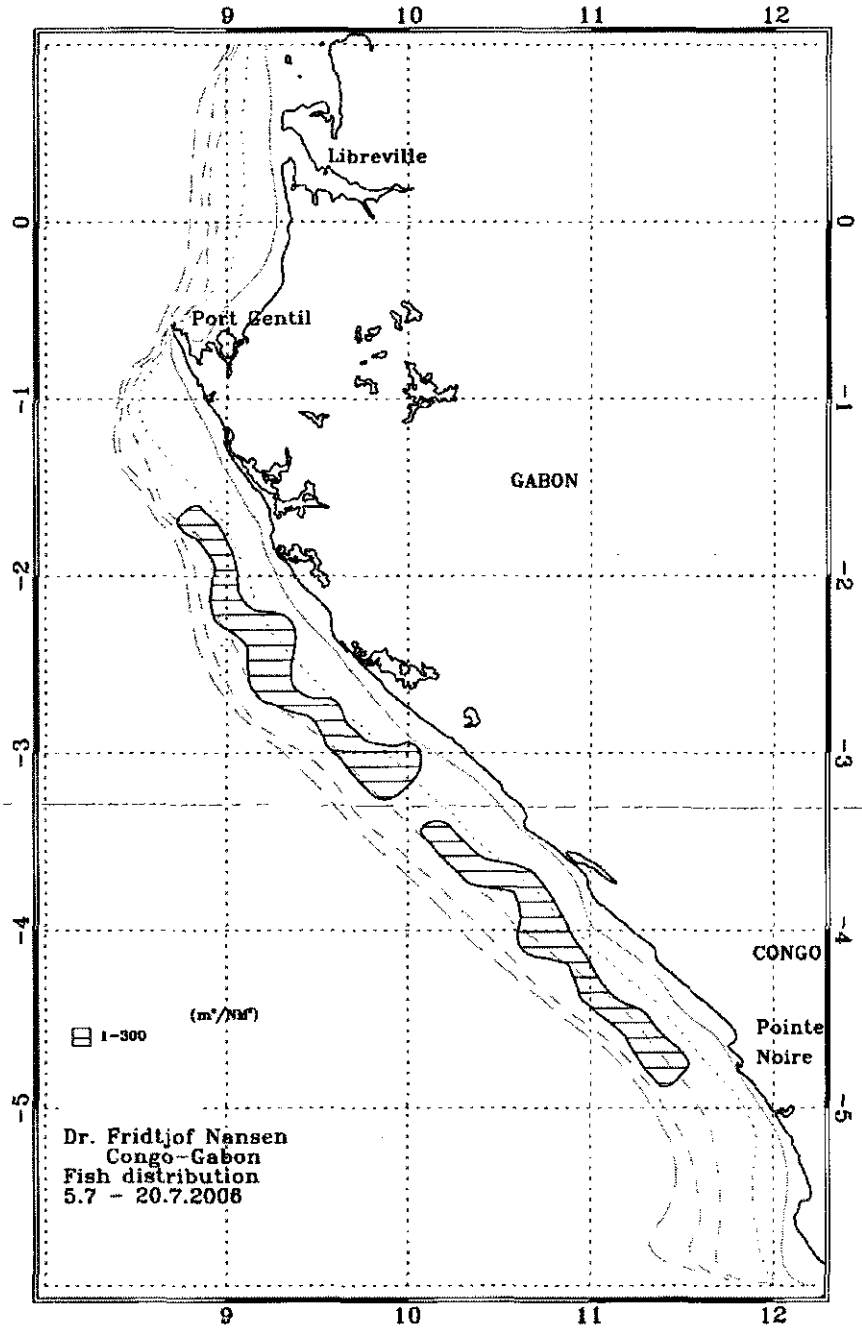


Figure 4.9 Distribution of *Trachurus trecae* off Gabon and Congo.

a)

b)

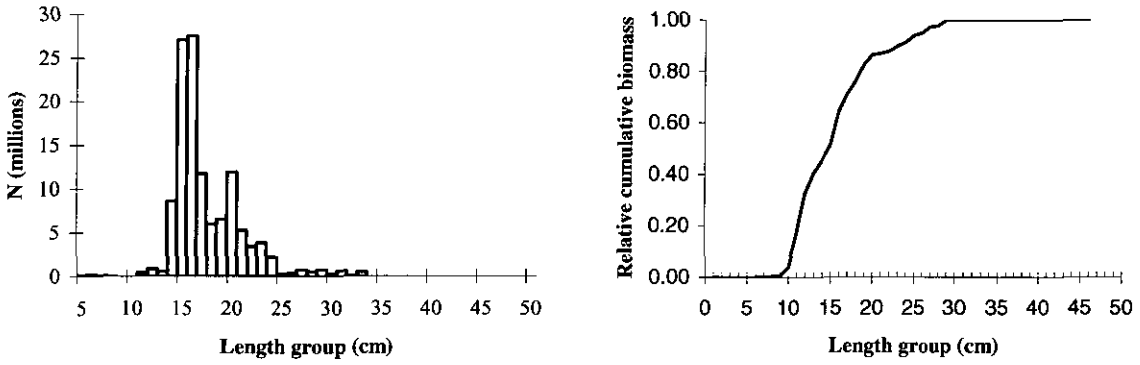


Figure 4.10 a) Total length distribution and b) Relative cumulative biomass of *Trachurus trecae* off Gabon and Congo

PEL 2 (Carangids, Scombrids, Sphyraenidae and Trichiuridae)

The Pelagic group PEL 2, consisting of Carangidae, Scombridae, Sphyraenidae and Trichiuridae, were more or less continues in Gabon and Congo, Figure 4.11, but with a gap in the distribution were the upwelling was most intense and surface temperatures lowest. The main distribution extended from the coast to approximately 100 m depth. Catch rates were analysed for the regions Gabon, north and south of Cape Lopez, and Congo. The main species in order of abundance in the catches north of Cape Lopez were *Decapterus rhonchus*, *Selar crumenophthalmus* and *Caranx senegallus,* although the last of these three species were only caught in two trawls within the region. Similar to previous years catch rates were substantially lower north of Cape Lopez compared to further south in the region. The catch composition changed south of Cape Lopez, the main PEL 2 species in this region were, *Trichiurus lepturus, Sphyraena guachancho* and *Decapterus rhonchus*. The most abundant species in the catches in Congo was *Trichiurus lepturus* and *Chloroscombrus chrysurus*. The length distributions of the species are found in Annex II. Assuming an average total length of 23 cm for all the species and a measured condition factor of 0.88 the biomass of PEL 2 was estimated to 44 thousand tonnes, of this 36 thousand tonnes was found ion Gabon and 8 thousand tonnes in Congo. Last year a total of 37 thousand tonnes was found in the survey area while in 2004 69 thousand tonnes was estimated. It is reason to believe that the lower temperature in the survey area last year may have influenced the distribution and consequently lowered the abundance of these species in the survey area.

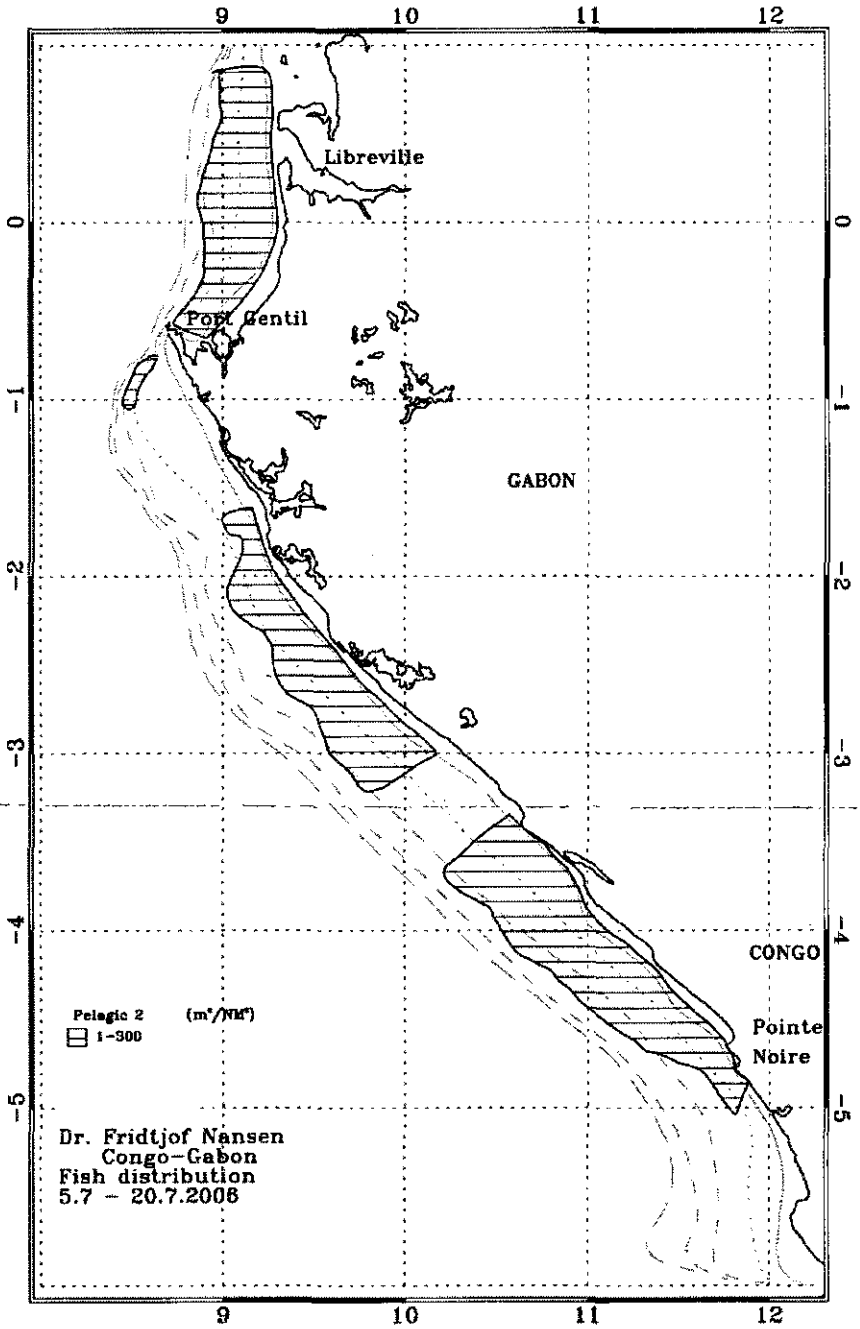


Figure 4.11 Distribution of PEL 2 species off Gabon and Congo.

4.5 Review of results

The survey in 2006 was the third survey covering the pelagic resources in the region of Nigeria, Cameroon and São Tomé and Principe, and the third since 1995 covering Congo and Gabon. The biomass estimates can be found in Table 4.1. The region covered is highly differentiated regarding the abundance of pelagic species. The shelf of Nigeria and Cameroon is a typical low-density tropical costal region. A variety of costal pelagic species exist but during the surveys no single pelagic species have been singled out with particularly high density. Dense plankton layers mixed with pelagic and demersal fish species made acoustic species separation and therefore abundance estimation difficult, this has been a general problem during all the three surveys conducted since 2004 and applies particularly to the coast of Nigeria and Cameroon. It is likely that the distribution of pelagic fish continued inshore of the surveyed area (<20 m depth) and that some fish have been missed, inshore of the surveyed area in the large estuaries, and in closed oil exploration areas, particularly between Nigeria and Cameroon and outside Olinde in Gabon. Consequently the results must be considered as being minimum estimates. However, the results indicate the level of these resources, and in particular emphasises the low abundance in Nigeria and Cameroon, compared to the abundance in Gabon and Congo were the stocks of pelagic fish, particularly sardinellas, are high.

São Tomé and Principe are typical oceanic islands but to some extent influenced by fresh water from the Gulf of Guinea. No major concentrations of pelagic species were found on the shelf, although, as during previous surveys, both species of flying fish and some sardinella were observed. The northern coast of Gabon has many of the same characteristics as the shelf off Cameroon and Nigeria, although the abundance of pelagic fish is several times higher. The southern shelf of Gabon and the shelf of Congo is a more typical upwelling region, with relatively high abundance of pelagic fish, and in particular Sardinella.

Table 4.1. Summary table of biomass estimates for the main species groups and countries for the surveys conducted in 2004 and 2005.

Species group	Year	Nigeria	Cameroon	São Tomé & Principe	Gabon*	Congo*
Sardinella	2006	-	-	-	225 000	19 000
	2005	5 000	5 000	-	288 000	128 000
	2004	-	11 000	-	360 000	
P1	2006	10 000	6 000	-	18 000	19 000
	2005	-	7 000	-	-	-
	2004	-	2 000	-	-	-
P2	2006	47 000	13 000	-	36 000	8 000
	2005	95 000	30 000	-	30 000	7 000
	2004	193 000	14 000	-	69 000	
Horse mackerel	2006	-	-	-	7 000	1 000
	2005	-	-	-	11 000	4 000
	2004	-	-	-	11 000	

-No biomass calculated because of low / no abundance

*Surveys of Congo and Gabon in 2004 covered a slightly different geographical areas than later surveys

CHAPTER 5 RESULTS FROM THE SWEPT AREA TRAWL SURVEY

The composition of the fish fauna on the continental shelf and slope of the Gulf of Guinea changes with depth (Williams 1968, Dr. Fridtjof Nansen, Cruise reports 2004, 2005). The catch-distribution analyses were therefore performed for up to five depth strata according to country and shelf characteristics, these were typically; inner shelf (0-50 m), mid shelf (51-100 m), outer shelf and slope (101-250 m), lower slope (251-500 m) and deep waters (>500 m) respectively For the different analysis the "other" group includes all species not accounted for in the previous groups. Therefore, the content of "other" will change from table to table.

The locations of the trawl stations are shown in Figure 1.1. Records of fishing stations and catches are presented in Annex I and pooled length distributions (weighted by catch) of main species by area are shown in Annex II.

In the swept-area biomass estimates, only the shelf area down to depths of 200 m was included. The surveyed area was divided into four strata between 0-30 m, 31-50 m, 51-100 m and 101-200 m respectively. Mean densities of the main demersal species by depth strata, occurrence and catch distributions are shown in Annex IV.

5.1 Nigeria

A total of 84 swept-area trawl hauls were made on the Nigerian shelf. No hauls were aborted, all hauls of more than 20 minutes on the bottom were included in the analyses, Table 5.1 a, b and c show catch rates by main groups for the inner shelf, mid shelf, outer shelf and slope, and lower slope respectively. The average catch rates recorded were around 213 kg/h on the inner shelf, 292 kg/h on the mid shelf, 472 kg/h on the outer shelf and 150 kg/h on the lower slope. The figures are slightly higher compared to the catch rates recorded in 2005, 167 kg/h on the inner shelf, 211 kg/h on the mid shelf, 428 kg/h on the outer shelf and 176 kg/h on the lower slope. This is to a large part due to a increased catches in the pelagic group of species. The pelagic group contributed 57 % of the total catch with average catches of 123 kg/h on the inner shelf, to 50 m depth. The demersal group accounted for 17 % of the catch. The catch composition changed at the mid shelf between 51-100 m depths. Demersal and pelagic species contributed 37 and 26 % or 107 and 75 kg/h respectively while cephalopods, accounted for 4 % of the total catch. On the outer shelf and slope between 101-250 m the 'other' group were dominant with 81 % of the catch. The main part of the catch in this group consisted of *Ariomma bondi* particularly from two large hauls of 1200 and 1600 kg/h in trawls 1256 and 1297. The demersal group contributed 11%, or 52 kg/h. On the lower slope, >250 m depth sharks and rays comprised 30 % of the catch and an average catch of 45 kg/h. This higher than normal catch figure was due to one single specimen of shark *Odontaspis ferox* of 205 kg in trawl 1296. However, the most dominant group was the "other" group, with an

average catch of 70 kg/h or 46% of the total. This consisted mainly of a variety of deep sea, non-commercial fish species, shrimps, other crustaceans, and echinodermata.

Shrimps are important commercial species in the region. *Penaeus monodon* together with *Penaeus notialis*, *Parapenaeopsis atlantica* and *Nematopaeleomon hastatus* were all frequently caught in shallow waters <50 m depth, while *Penaeus kerathurus* was found less frequent. *Parapenaeus longirostris* was most dominant deeper than 50 m depth. The catch rates of shrimps were low, 1.5 kg/h between 0-50 m depth, 0.5 kg/h between 51-100 m depth and 0.4 kg/h between 101 and 250 m depth and 4.66 kg/h outside of 250 m depth, consistently lower than in 2005. Further analysis of the shrimp data resulted in *Nematopaeleomon hastatus* dominated the shrimp catch in the inner shelf. *P. notialis, P. monodon* and *P. atlantica* average catch rates were less than one kilogram per hour between 0 and 50 m. However, this year *P. notialis* were found to have an wider depth range between 51 and 70 m depth of waters. The rose shrimp, *Parapenaeus longirostris* average catch rate increased from 0.11 kg/h at 0-50 m to 3.13 kg/h at the lower slope (>250 m), while the deep sea shrimp composed of *Aristeus varidens, Parapandal narval, Herocarpus ensifer, Nematocarcinus africanua, Pesiopenaeus edwardsianus, Plesionika martia* and *Solencera africana* dominated the catch at >250 m. The average catch rate of these species were 2 kg/h.

The group of cephalopods was dominated by *Sepia officinalis hierredda, Sepiella ornata, Sepia orbignyana,* (Sepiidae), together with the less frequently caught *Illex coindetii, Ornithoteuthis antillarum, Todaropsis eblane, Todarodes sagittatus sigittatus* (Ommastrephidae), *Allotheutis africana, Loligoncula mercatoris, Loligo vulgaris* (Lolignidae) and octopus sp. (Octopodidae). Catch rates of all cephalopods were low inshore of 50 m depth, 192 kg/h, and increasingly higher with deeper depths, 12 kg/h at 51-100 m, 21 kg/h at 101-250 m and 26 kg/h deeper than 250 m depth respectively. The catch rates at 101-250 m and >250 m were higher than in 2005. The average catch rates of Sepiidae increased from 1.6 kg in the inner shelf (0-50 m) to 6.8 kg/h in the mid shelf (51-100 m) and then decreased to 1.02 kg/h in the outer shelf and slope(101-250 m). Ommastrephidae average catch rates in the inner shelf was very low 0.2 kg/h and increased with depth to 0.7 kg/h in the mid shelf, 19.5 kg/h in the outer shelf and outer slope to dominate at 32.7 kg/h in the lower slope (>250 m). Lolignidae was most dominant in the mid shelf with average catch rate of 3.7 kg/h. *Octopus vulgaris,* were present in small quantities at all depths.

Sharks and rays were also present across the shelf but more dominant on the outer shelf. In total 13 species of sharks was encountered, but only two species, *Squatina oculata* and *Mustelus mustelus* was found more frequent. A rare and endangered species, *Odontaspis ferox* found mostly in the Mediterranean and Indian Ocean was encounters at 400 m depth. Five species of rays were found, but only *Raja miraletus* were caught frequently. Catch rates were 8 kg/h at 51-100 m 10 kg/h at 101-250 m and 45 kg/h at >250 m. The occurrence of sharks

were less than in 2005. The length frequencies of all main species together with the mean length-weight parameters are shown in Annex II and III.

Table 5.1 Nigeria. Catch rates (kg/h) by main groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) Inner shelf, 0-50 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1212	41	24.8	68.6	0.4	9.8	0.0	83.9	187.6
1213	20	53.5	96.0	7.0	0.4	1.9	283.4	442.1
1214	26	38.0	190.9	4.5	1.1	0.0	43.2	277.6
1215	42	16.1	28.6	0.9	1.8	0.0	119.5	166.9
1219	39	17.2	90.0	1.7	2.5	0.0	42.4	153.7
1220	26	18.2	65.4	0.9	0.0	0.0	25.7	110.1
1221	25	0.0	14.0	0.0	1.4	0.0	3.3	18.7
1226	38	20.8	77.1	2.5	2.9	2.6	31.4	137.4
1227	20	41.3	71.2	2.0	0.0	0.0	38.2	152.6
1228	27	30.7	104.9	0.2	0.0	0.0	34.2	169.9
1229	42	26.8	99.0	0.2	0.3	0.0	7.6	134.0
1232	39	30.3	55.9	4.9	1.0	0.0	8.7	100.7
1233	25	63.6	172.1	0.8	0.8	0.0	67.7	304.9
1234	28	20.5	305.7	0.2	0.0	0.0	31.9	358.4
1235	39	74.3	98.4	0.1	0.0	0.0	18.6	191.4
1242	28	23.6	203.2	2.0	0.7	0.0	30.0	259.5
1243	47	47.2	51.7	0.8	6.3	0.0	7.2	113.3
1250	42	25.3	34.9	5.2	1.3	0.0	6.1	72.8
1251	43	60.6	107.4	0.4	0.0	0.0	5.2	173.5
1259	38	27.5	75.8	1.2	5.4	0.0	13.5	123.4
1260	29	24.7	63.9	0.3	0.0	0.0	12.7	101.6
1265	48	4.8	1.4	0.0	0.8	0.0	235.0	242.0
1266	34	3.8	11.0	0.0	0.8	0.0	42.7	58.2
1267	30	92.6	1852.8	0.0	0.0	0.0	86.6	2032.1
1268	37	43.2	39.0	0.4	4.8	0.0	17.4	104.7
1272	39	107.1	10.8	0.3	1.4	10.7	12.3	142.5
1273	22	149.5	159.1	13.7	0.7	1.3	33.1	357.3
1274	38	6.5	29.2	0.6	0.4	0.0	11.3	48.0
1280	48	2.3	21.9	0.1	2.1	0.0	14.5	40.8
1281	30	28.6	25.7	0.0	3.6	16.0	37.3	111.2
1282	26	8.5	111.9	0.6	1.2	1.1	18.6	141.8
1283	39	6.9	5.9	0.0	0.6	0.0	309.9	323.3
1286	41	35.8	33.1	0.1	2.0	0.0	40.4	111.3
1287	41	96.3	92.2	0.3	14.0	0.0	19.2	221.9
1293	33	2.6	54.7	0.3	0.7	0.0	13.5	71.8
1294	23	3.9	27.7	0.1	0.1	0.0	24.0	55.8
1299	49	51.5	13.4	2.6	2.4	0.0	7.6	77.6
Mean	34.6	35.9	123.4	1.5	1.9	0.9	49.7	213.2
SD		33.2	299.2	2.7	2.9	3.1	73.2	
%Catch		16.8	57.8	0.7	0.9	0.4	23.3	

b) Mid-shelf, 51-100 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1211	74	40.4	5.7	0.0	6.9	0.0	15.7	68.8
1216	57	55.3	26.6	2.8	19.5	16.0	334.7	454.9
1218	91	222.1	0.3	0.0	11.2	13.8	85.5	333.0
1222	78	210.8	98.2	0.0	53.4	11.4	118.9	492.7
1225	59	32.9	198.0	1.6	0.2	18.6	9.2	260.5
1230	94	31.8	0.9	0.0	16.4	38.6	1089.5	1177.1
1231	77	27.8	199.6	0.1	9.9	2.1	5.6	245.0
1236	64	99.0	33.8	0.2	11.8	0.0	208.8	353.6
1241	74	409.0	756.5	1.2	12.5	16.5	10.7	1206.3
1244	81	118.4	25.1	0.1	2.0	0.0	49.8	195.4
1248	82	14.3	20.8	0.0	3.9	1.5	100.6	141.3
1249	59	92.7	30.6	2.2	4.1	13.0	9.0	151.6
1252	68	36.7	5.9	0.2	0.7	5.8	2.1	51.3
1257	86	18.5	86.5	1.9	15.1	3.3	30.0	155.3
1258	62	2.4	3.4	0.1	8.2	0.0	2.6	16.6
1261	64	707.8	57.7	0.0	3.9	0.0	7.2	776.6
1264	80	39.9	0.4	0.0	31.4	0.0	122.2	193.8
1269	65	57.8	0.6	0.0	24.0	2.6	4.3	89.3
1270	99	489.6	1.3	0.0	10.5	0.0	16.1	517.4
1271	77	6.4	1.7	0.0	19.9	0.0	30.9	59.0
1275	63	55.5	16.8	0.0	17.5	0.0	5.8	95.5
1279	80	59.7	428.9	0.0	6.1	32.9	59.9	587.4
1284	76	47.4	5.7	0.0	13.6	13.6	4.4	84.6
1285	64	2.9	2.8	0.9	5.0	0.0	14.6	26.2
1288	70	2.9	24.8	0.2	4.1	0.0	33.5	65.4
1292	80	3.5	4.5	0.1	5.5	22.3	31.1	67.0
1298	66	12.1	0.4	0.4	2.9	0.0	4.0	19.8
Mean	73.7	107.3	75.5	0.4	11.9	7.8	89.1	292.1
SD		169.5	164.9	0.8	11.2	10.8	213.6	
%Catch		36.7	25.8	0.2	4.1	2.7	30.5	

c) Outer shelf and slope, 101-250 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1237	115	42.4	13.4	0.4	13.6	12.0	81.5	163.3
1240	106	22.7	1.1	0.0	8.0	12.0	335.3	379.1
1245	144	20.7	5.3	0.2	13.4	23.6	241.7	305.0
1253	102	17.4	3.4	0.0	3.0	10.0	374.4	408.2
1256	192	25.7	2.2	0.7	73.6	12.4	1238.7	1353.3
1262	135	7.1	7.3	0.2	11.2	5.6	76.4	107.8
1276	151	30.3	11.2	0.9	44.5	24.9	18.0	129.9
1277	179	23.5	7.0	2.5	22.4	0.0	296.2	351.6
1289	126	306.9	8.8	0.1	4.8	4.8	54.4	379.7
1291	135	27.1	1.7	0.0	8.3	5.2	199.5	241.8
1295	134	37.2	5.1	0.0	28.3	3.8	46.7	121.2
1297	151	64.1	1.1	0.0	23.3	0.0	1640.5	1729.0
Mean	139.2	52.1	5.6	0.4	21.2	9.5	383.6	472.5
SD		13.9	8.7	0.3	4.0	0.0	179.5	517.1
%Catch		11.0	1.2	0.1	4.5	2.0	81.2	

d) Lower slope, >250 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1224	260	4.7	0.0	16.0	7.4	2.5	377.0	407.5
1238	275	0.0	0.0	5.8	0.9	0.0	22.4	29.1
1246	388	0.0	6.7	1.1	1.2	0.0	22.5	31.4
1247	344	0.0	7.5	2.4	1.7	0.9	75.4	87.9
1254	540	2.8	1.6	4.9	3.4	0.6	35.0	48.2
1255	282	0.0	0.0	3.9	219.9	7.7	53.1	284.7
1290	418	0.0	8.3	6.0	0.8	0.0	16.0	31.0
1296	442	0.0	11.4	1.9	0.0	392.4	25.1	430.7
Mean	368.6	0.9	4.4	5.2	29.4	50.5	78.3	168.8
SD		1.8	4.5	4.7	77.0	138.2	122.3	
%Catch		0.6	2.6	3.1	17.4	29.9	46.4	

Table 5.2 a and b show the catch rates of the main pelagic families caught in the bottom trawl on the inner, and mid shelf respectively. Pelagic species were relatively uncommon in deeper waters except some *Trichiurus lepturus*. The dominant species group at the inner shelf were carangids dominated by *Chloroscombrus chrysurus and Selene dorsalis* with average catch rate of about 74 kg/h, constituting 35% of the total catch. Hairtails, *Trichiurus lepturus*, were second, with catches of 20 kg/h contributing about 10% to the total, while clupeids, mostly *Ilisha africana, Sardinella maderensis* and *S. aurita* contributed about 7%. Barracudas, mainly *Sphyraena guachancho*, contributed about 6% to the total catch. The catch rates for carangid species are much higher than last year (47 kg/h in 2005), and also the *Trichiurus lepturus* show increased catches (12 kg/h in 2005) while the other pelagic species generally had small changes in catch rates in this depth stratum.

The midshelf region between 51-100 was dominated by carangids. This group contributed 60 kg/h or 20% of the total catch. *Selar crumenophthalmus*, *Decapterus punctatus*, *Selene dorsalis* and *Chloroscombrus chrysurus* were the most frequently caught species, but were less abundant than further inshore. Barracudas, hairtails, clupeids and scombrids were also present at these depths, but in small quantities. The catch rates for carangid species are much higher than last year (15 kg/h in 2005) while the other pelagic species generally have a small increase in this depth stratum.

The outer shelf and slope region between 101 and 250 m depth gave very small catches of pelagic species. *Trichiurus lepturus* was found frequently but with relatively low catch rates (4.5 kg/h) while other pelagic species were insignificant in the catches.

Table 5.2 Nigeria. Catch rates (kg/h) by main pelagic families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) Inner shelf, 0-50 m

Station	*Depth*	*Clupeoids*	*Carangids*	*Scombrids*	*Hairtails*	*Barracudas*	*Other*	*Total*
1212	41	5.4	50.9	1.3	3.6	7.5	118.9	187.6
1213	20	22.8	10.1	0.8	62.0	0.2	346.1	442.1
1214	26	91.7	7.6	0.4	83.0	8.2	86.7	277.6
1215	42	11.9	2.1	0.0	11.5	3.1	138.3	166.9
1219	39	10.0	45.8	2.9	27.1	4.2	63.7	153.7
1220	26	18.8	9.0	3.6	18.7	15.3	44.7	110.1
1221	25	0.0	12.8	1.2	0.0	0.0	4.8	18.7
1226	38	11.5	8.4	3.3	51.5	2.4	60.2	137.4
1227	20	10.5	9.8	5.1	18.4	27.4	81.4	152.6
1228	27	20.2	33.3	4.8	7.9	38.7	65.1	169.9
1229	42	4.3	20.6	5.0	38.2	30.8	35.0	134.0
1232	39	10.5	17.0	3.7	22.5	2.3	44.7	100.7
1233	25	52.8	45.8	2.8	38.7	32.1	132.8	304.9
1234	28	22.0	229.2	4.3	1.5	48.8	52.7	358.4
1235	39	11.1	19.4	2.9	61.7	3.4	93.0	191.4
1242	28	87.9	40.4	6.2	47.0	21.7	56.3	259.5
1243	47	0.3	8.3	0.3	12.3	30.5	61.5	113.3
1250	42	9.7	7.5	0.7	16.3	0.8	37.9	72.8
1251	43	11.7	74.7	0.0	19.4	1.5	66.1	173.5
1259	38	9.6	54.9	2.1	6.4	2.8	47.6	123.4
1260	29	12.0	14.5	2.3	13.9	21.1	37.7	101.6
1265	48	0.1	1.3	0.0	0.0	0.0	240.6	242.0
1266	34	5.0	6.0	0.0	0.0	0.0	47.2	58.2
1267	30	6.7	1784.4	13.2	1.8	46.8	179.2	2032.1
1268	37	1.0	9.0	0.0	0.0	29.0	65.6	104.7
1272	39	0.4	0.8	0.0	0.4	9.2	131.8	142.5
1273	22	36.6	21.0	5.0	83.9	12.5	198.2	357.3
1274	38	1.9	6.1	6.9	13.8	0.4	18.8	48.0
1280	48	0.1	15.6	1.3	4.9	0.0	18.9	40.8
1281	30	1.5	16.9	0.0	0.0	7.3	85.5	111.2
1282	26	18.2	60.0	2.6	30.5	0.6	30.0	141.8
1283	39	0.0	5.7	0.0	0.2	0.0	317.4	323.3
1286	41	0.9	11.3	2.5	6.5	11.9	78.2	111.3
1287	41	1.9	40.9	2.6	39.8	7.1	129.7	221.9
1293	33	12.1	29.7	3.1	0.8	9.0	17.1	71.8
1294	23	1.0	10.4	6.1	0.0	10.3	28.1	55.8
1299	49	0.8	1.3	0.0	7.0	4.3	64.1	77.6
Mean	34.6	14.1	74.1	2.6	20.3	12.2	89.9	213.2
SD		21.4	291.6	2.7	23.7	14.0	78.5	
%Catch		6.6	34.8	1.2	9.5	5.7	42.2	

b) Mid-shelf, 51-100 m

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1211	74	0.1	0.2	0.0	4.8	0.6	63.1	68.8
1216	57	0.0	0.0	0.0	24.2	2.4	428.2	454.9
1218	91	0.0	0.0	0.0	0.3	0.0	332.7	333.0
1222	78	33.6	43.2	0.8	0.0	20.6	394.5	492.7
1225	59	0.2	102.4	1.5	90.0	4.0	62.5	260.5
1230	94	0.3	0.6	0.0	0.0	0.0	1176.3	1177.2
1231	77	0.0	175.0	0.0	0.1	24.6	45.5	245.0
1236	64	0.0	21.2	0.0	4.0	8.6	319.8	353.6
1241	74	6.6	669.5	0.0	0.0	80.5	449.8	1206.3
1244	81	0.1	1.0	0.0	2.9	21.2	170.2	195.4
1248	82	1.2	12.7	0.0	6.9	0.0	120.4	141.3
1249	59	1.9	0.1	0.0	25.6	3.0	121.0	151.6
1252	68	0.1	1.5	0.0	2.7	1.6	45.4	51.3
1257	86	0.0	82.8	0.0	3.7	0.0	68.8	155.3
1258	62	0.0	2.8	0.0	0.4	0.3	13.2	16.6
1261	64	0.0	54.1	0.0	0.0	3.6	718.9	776.6
1264	80	0.0	0.0	0.0	0.0	0.4	193.4	193.8
1269	65	0.0	0.5	0.0	0.0	0.1	88.8	89.3
1270	99	0.0	0.0	0.0	0.0	1.3	516.1	517.4
1271	77	0.0	1.6	0.0	0.2	0.0	57.3	59.0
1275	63	0.0	0.3	0.0	0.0	16.5	78.7	95.5
1279	80	1.6	427.1	0.0	0.3	0.0	158.5	587.4
1284	76	0.3	0.6	0.0	2.9	2.1	78.9	84.6
1285	64	0.1	0.1	0.0	2.0	0.5	23.4	26.2
1288	70	0.1	18.0	0.0	5.3	1.4	40.6	65.4
1292	80	0.0	0.1	0.0	4.4	0.0	62.5	67.0
1298	66	0.1	0.3	0.0	0.0	0.0	19.4	19.8
Mean	73.7	1.7	59.8	0.1	6.7	7.2	216.6	292.1
SD		6.5	150.3	0.3	17.9	16.4	264.7	
%Catch		0.6	20.5	0.0	2.3	2.5	74.2	

Catch rates of the commercially most important demersal fish groups on the shelf are presented in Table 5.3 a, b and c. The catch rates on the inner shelf were similar to the catches in 2005 and in general low. The croakers were the most important group in this stratum and contributed 6% with average catch rate of 13 kg/h. the most frequently caught species were *Pseudotolithus senegalensis* while some *P. elongatus* was caught close to the coast. *P. typus* was caught less frequently. Seabream, snappers, groupers and grunts were only present in very low abundance and contributed only 1.5% of the total catch. Note that *Brachydeuterus auritus* was included in the tables of grunts in the cruise report in 2004 and 2005. This year *Brachydeuterus auritus* were excluded from the analyses of the total catch of grunts because it is not considered as commercial species. However, *B. auritus* gave an average catch of 19 kg/h.

Table 5.3 Nigeria. Catch rates (kg/h) of valuable demersal species grouped by families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) Inner shelf, 0-50 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1212	41	1.5	0.0	0.0	7.8	1.1	177.1	187.6
1213	20	0.0	0.0	0.0	0.0	35.6	406.5	442.1
1214	26	0.0	0.0	0.2	5.3	20.0	252.1	277.6
1215	42	0.0	0.0	0.0	0.0	8.2	158.8	166.9
1219	39	0.0	0.0	0.5	0.0	14.8	138.5	153.7
1220	26	0.2	0.4	0.0	1.1	11.3	97.0	110.1
1221	25	0.0	0.0	0.0	0.0	0.0	18.7	18.7
1226	38	0.0	0.0	0.1	0.0	11.9	125.3	137.4
1227	20	0.0	0.0	0.0	6.4	31.4	114.8	152.6
1228	27	0.0	0.0	0.0	18.7	11.6	139.6	169.9
1229	42	0.0	0.0	0.0	0.0	2.7	131.2	134.0
1232	39	0.0	0.0	0.0	0.0	21.5	79.2	100.7
1233	25	0.0	0.0	0.0	1.3	57.0	246.7	304.9
1234	28	0.0	0.0	0.0	0.0	13.3	345.0	358.4
1235	39	0.0	0.0	0.0	0.0	19.3	172.1	191.4
1242	28	0.0	0.0	0.0	0.0	16.5	243.0	259.5
1243	47	0.0	0.0	0.0	0.0	2.9	110.3	113.3
1250	42	0.0	0.0	0.0	0.0	16.4	56.4	72.8
1251	43	0.0	0.0	0.0	0.0	6.0	167.5	173.5
1259	38	0.0	0.0	2.5	0.0	9.1	111.7	123.4
1260	29	0.0	0.0	0.0	0.0	10.6	91.0	101.6
1265	48	4.8	0.0	0.0	0.0	0.0	237.1	242.0
1266	34	3.8	0.0	0.0	0.0	0.0	54.5	58.2
1267	30	22.7	0.0	1.8	6.9	3.4	1997.2	2032.1
1268	37	6.2	0.0	1.1	1.1	8.6	87.6	104.7
1272	39	1.7	0.0	0.0	4.9	0.0	136.0	142.5
1273	22	0.0	0.0	0.1	0.1	147.5	209.6	357.3
1274	38	2.6	0.0	0.0	0.0	0.0	45.4	48.0
1280	48	0.0	0.0	0.0	0.0	0.0	40.8	40.8
1281	30	5.0	0.0	0.6	1.0	0.9	103.6	111.2
1282	26	0.0	0.0	0.0	0.0	1.6	140.3	141.8
1283	39	0.9	0.0	0.3	0.0	0.0	322.0	323.3
1286	41	0.0	0.0	1.6	0.0	0.2	109.5	111.3
1287	41	0.0	0.0	0.2	1.1	3.5	217.1	221.9
1293	33	0.0	0.0	0.0	1.4	0.2	70.3	71.8
1294	23	0.0	0.0	0.0	0.9	0.4	54.5	55.8
1299	49	0.0	0.0	0.0	0.0	3.7	73.9	77.6
Mean	*34.6*	*1.3*	*0.0*	*0.2*	*1.6*	*13.3*	*196.8*	*213.2*
SD		4.0	0.1	0.6	3.6	25.7	316.9	
%Catch		0.6	0.0	0.1	0.7	6.2	92.3	

b) Mid-shelf, 51-100 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1211	74	38.2		0.0		1.1	29.5	68.8
1216	57	7.5		1.3		25.0	421.1	454.9
1218	91	215.1		0.0		6.0	111.8	333.0
1222	78	159.0		15.0		0.0	318.7	492.7
1225	59	0.4		0.0		6.3	253.8	260.5
1230	94	31.3		0.0		0.5	1145.4	1177.2
1231	77	6.5		0.1		13.8	224.6	245.0
1236	64	0.0		0.0		0.0	353.6	353.6
1241	74	0.5		20.8		7.7	1177.3	1206.3
1244	81	1.7		0.0		1.0	192.7	195.4
1248	82	3.4		5.4		4.6	127.9	141.3
1249	59	0.0		0.1		7.4	144.2	151.6
1252	68	0.0		0.0		0.5	50.7	51.3
1257	86	4.0		13.8		0.8	136.8	155.3
1258	62	0.0		1.6		0.0	15.0	16.6
1261	64	512.0		45.3		23.5	195.8	776.6
1264	80	37.7		2.2		0.0	154.0	193.8
1269	65	49.8		7.3		0.0	32.2	89.3
1270	99	473.9		15.7		0.0	27.9	517.4
1271	77	5.8		0.6		0.0	52.5	59.0
1275	63	54.1		0.4		1.0	40.1	95.5
1279	80	11.7		33.4		5.2	537.1	587.4
1284	76	1.9		0.0		3.4	79.2	84.6
1285	64	0.0		0.0		2.2	24.0	26.2
1288	70	0.2		0.0		0.0	65.2	65.4
1292	80	0.1		0.2		2.1	64.6	67.0
1298	66	0.4		0.0		0.9	18.5	19.8
Mean	73.7	59.8		6.0		4.2	222.0	292.1
SD		134.6		11.4		6.7	301.8	
%Catch		20.5		2.1		1.4	76.0	

The most important demersal group on the mid shelf was the seabreams, mainly *Dentex congoensis, D. angolensis, Pagrus caeruleostictus* and some few *Pagellus bellottii.* These species together had average catches of 60 kg/h, or 20% of the total catch. The groupers contributed with an average catch of 2% or 6 kg/h of the total on the mid shelf while croakers gave low catches, 1% or 4 kg/h of the total. No snappers and grunts of commercial importance were present in the total catch. but *Brachydeuterus auritus* had an average catch rate of 35 kg/h. The sea breams has increased from recorded 37 kg/h on the mid shelf in 2005 while the other species only showed minor changes.

Croakers dominated on the outer shelf and slope with a relative contribution of 7% and an average catch rate of 35 kg/h of the total, however, this was mainly due to one large catch (st. 1289) that increased the mean considerably. *Pentheroscion mbizi* was dominant in catches at these depths. The second most dominant group was seabreams with 16 kg/h, or 3% of the total catch. The only species in this group, at this depth, were *Dentex angolensis, D. congoensis and Pagrus caeruleostictus.* Groupers contributed 0.04% to the total catch, while

no grunts and snappers were caught. The most abundant of all demersal species at the outer shelf and slope was *Ariomma bondi* who gave average catch rates of 343 kg/h compared with 125 kg/h last year. *A. bondi* is not considered a commercial species.

c) Outer shelf and slope, 100-250 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1237	115	25.0		0.0		14.7	123.5	163.3
1240	106	15.3		0.0		6.7	357.1	379.1
1245	144	6.8		0.0		13.3	284.9	305.0
1253	102	13.7		1.2		2.4	390.8	408.2
1256	192	7.6		0.0		18.1	1327.5	1353.3
1262	135	5.0		0.0		2.0	100.7	107.8
1276	151	8.7		1.2		20.4	99.5	129.9
1277	179	12.0		0.0		10.4	329.1	351.6
1289	126	5.8		0.0		301.0	72.9	379.7
1291	135	26.5		0.0		0.6	214.7	241.8
1295	134	20.6		0.0		16.4	84.1	121.2
1297	151	49.7		0.0		13.5	1665.8	1729.0
Mean	139.2	16.4		0.2		35.0	420.9	472.5
SD		12.8		0.5		84.0	520.0	517.1
%Catch		3.5	0	0.0	0	7.4	89.1	

5.2 Cameroon

A total of 43 swept-area trawl hauls were made on the shelf off Cameroon, and 212 different species were registered in the hauls. The shelf was mainly even, with mud and sandy substrate, and suited for bottom trawling except in the southern parts, around Campo, were corrals and hard bottom made bottom trawling difficult in some localities. The slope was steep with variable hardness from hard to muddy substrate, and trawling was difficult in areas.

Table 5.5 a, b c and d shows catch rates by main groups for the inner (0-50 m), mid (51-100 m) outer shelf and slope (101-250 m) and lower slope (>250 m) respectively. The total catch rates in Cameroon were slightly lower than in Nigeria (Table 5.2) and lower than the catch rates in Cameroon last year, with the exception of the slope in the depth region between 100 m and 250 m were catches were considerably higher than last year.

The average catch rate at the inner shelf, 0-50 m depth, was 195 kg/h The mean catch rates of pelagic species from 0-50 m depth were 83 kg/h or 43 % of the total catch while demersal species contributed 49 kg/h or 25% of the total catch. Shrimps, cephalopods and sharks and rays contributed only marginally to the total catch in this depth region, with 5.1%, 1.6% and 1.2% respectively. The group of "other" species had a mean catch rate of 48 kg/h or 24% of the total. Last year the total catch in this depth region was on average 285 kg/h, while the average total catch rate in 2004 was 383 kg/h.

The average catch rate on the mid shelf between 51-100 m depth, was 193 kg/h compared to 343 kg/h in 2005, in 2004 the catch rate in this region was 72 kg/h. Table 5.5 b show that demersal species had an average catch rate of 35 kg/h or 18% of the total. The pelagic fish group had 8% of the total catch. while shrimps contributed with average catches of 0.3 kg/h and cephalopods gave average catches of 17 kg/h or 9 %. Sharks and rays had average catches of 5 kg/h. The 'other' group dominated the total with 121 kg/h or 62 %. The catch composition differs from last year were the pelagic species dominated the catch, however, this was at least in parts due to one large catch of pelagic fish.

The deeper stations at the outer shelf and slope, between 101 and 250 m depth, were all collected in the southern parts of Cameroon, approximately from the latitude of the Sanaga river system (3°30'N). Several areas on the outer shelf and shelf break gave good acoustic registrations of demersal fish. The average total catch was 790 kg/h, twice higher than last year (340 kg/h). The group of demersal species contributed 19 % to the total catch while the group of other species, mainly *Ariomma bondi*, contributed with 74 % of the total catch in this region. *A. bondi* dominated the catches in this depth region and were far more abundant on the shelf edge than last year.

Table 5.5 d shows the lower slope the 'other' group dominated the catch with 160.5 kg/h or 78%. The demersal and pelagic group contributed 2.1% and 0.8%. while the shrimps, cephalopods, sharks and rays contributed 7.4%, 4% and 7.6% respectively to the total catch.

Shrimps are important commercial species in the Gulf of Guinea region, and abundant on the inner shelf and the estuaries. Shrimps were less common on the shelf compared to last year and no major catches were made. The most abundant shrimp was *Nematopaleomon hastatus*, who was most dominant on the inner shelf between 0 and 31 m with an average catch of 7.0 kg/h, the highest catch rate of 100 kg/h was recorded at 31 m. Also occurring in the inner shelf were *Penaeus notialis* and *Parapenaeopsis atlantica* with average catch rate of 1.5 kg/h and 1.0 kg/h respectively. This year the depth range of the pink shrimp *P. notialis* extended into mid shelf. *Parapenaeus longirostris* occurred throughout the depth range but dominated at the lower slope with average catch rate of 10 kg/h at >250 m depths. A variety of deep sea shrimps such as *Aristeus varidens, Parapandal narval, Herocarpus ensifer, Nematocarcinus africanua, Pesiopenaeus edwardsianus, Plesionika martia* and *Solencera africana* were recorded in low abundance at the outer shelf and lower slope with average catch rate of 2 kg/h.

Squids are also important in the fishery in Cameroon. Trawl catches of cephalopods recorded at the inner shelf, 0-50 m was 2 kg/h, mid shelf 12 kg/h, outer shelf 21 kg/h and lower slope 29 kg/h. The cephalopods group caught in Cameroon were *Sepia officinalis hierredda, Sepiella ornata, Sepia orbignyana,* (Sepiidae), together with *Illex coindetii, Ornithoteuthis antillarum, Todaropsis eblane, Todarodes sagittatus sigittatus* (Ommastrephidae), *Allotheutis africana, Loligoncula mercatoris, Loligo vulgaris* (Lolignidae) and *Octopus* sp.

(Octopodidae). In the inner shelf the dominant families were mostly sepiidae and Loliginidae 1.0 kg/h. while other families were less than one percent. On the mid shelf 51-100 m, sepiidae also dominated the catch with average catch rate of 11.2 kg/h followed by Loliginidae 3.0 kg/h and Ommastrephidae 1.4 kg/h. Octopodidae were absent at this depths. On the outer shelf and slope 101-250 m the average catch rate of sepiidae decreased to 1.4 kg/h while Ommastrephidae dominated the catch with average catch rate of 22 kg/h. Loliginidae was less than one percent and again *Octopus vulgaris* was absent at these depths. At the lower slope >250 m Ommastrephidae was dominant with average catch rate of 14.2 kg/h while Sepiidae was less than one percent and Loliginidae and Octopodidae were absent at these depths.

Table 5.4 Cameroon. Catch rates (kg/h) by main groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) Inner shelf, 0-50 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1302	18	64.9	46.1	28.7	1.7	3.4	19.0	163.7
1304	22	39.5	162.3	8.9	1.0	0.0	29.9	241.6
1305	46	29.4	140.0	3.2	12.2	0.0	11.6	196.4
1308	42	1.3	1.5	0.0	3.2	0.0	74.4	80.4
1309	25	80.1	120.2	4.4	1.9	0.0	52.6	259.1
1310	31	48.5	76.2	103.2	2.5	5.6	35.1	271.1
1313	44	525.2	168.5	11.6	5.4	0.0	7.9	718.5
1314	23	42.1	211.1	10.1	0.6	7.7	19.5	291.0
1315	40	8.5	24.7	0.0	3.5	0.0	19.8	56.6
1316	26	50.2	442.8	2.1	2.2	0.0	14.6	511.9
1317	23	74.0	94.3	37.9	0.7	1.7	47.1	255.8
1318	23	28.3	91.3	1.2	0.6	0.0	28.1	149.4
1320	33	4.8	10.2	0.0	0.2	0.0	40.0	55.2
1324	36	4.6	6.5	0.0	5.5	0.0	20.6	37.2
1325	20	11.2	44.2	0.1	1.2	0.0	365.2	421.9
1326	38	2.5	13.8	0.0	8.6	8.6	15.1	48.5
1327	30	4.3	6.9	16.9	5.5	0.0	57.4	91.1
1331	36	4.3	5.7	0.1	4.9	2.2	15.5	32.7
1332	24	46.6	25.4	0.0	3.6	0.0	15.1	90.8
1339	49	6.7	17.7	0.2	4.3	15.2	166.9	211.0
1340	27	58.6	152.2	5.2	0.0	0.0	48.2	264.2
1341	39	8.0	48.0	0.3	3.0	12.4	15.4	87.0
1344	34	21.8	55.4	2.6	0.9	0.0	9.4	90.1
1345	50	9.3	30.4	0.6	2.6	0.0	13.0	55.9
Mean	32.5	48.9	83.1	9.9	3.2	2.4	47.6	195.0
SD		104.4	98.3	22.1	2.9	4.3	75.4	
%Catch		25.1	42.6	5.1	1.6	1.2	24.4	100.0

b) Mid-shelf, 51-100 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1301	63	6.1	31.8	0.8	1.1	0	2.5	42.3
1306	64	70.9	3.3	0.1	6.2	0	2.4	82.9
1307	63	72.5	1.2	0	7.8	18.4	6.4	106.3
1312	57	22.9	25.1	1.2	12.8	0.1	12.8	74.8
1321	88	63.6	0	0	4.2	10.9	75.7	154.4
1323	67	23.4	54.0	0	7.1	21.5	851.5	957.5
1330	73	29.3	35.1	0	33.6	0	39.1	137.0
1333	67	21.0	10.4	0.3	33.0	0	26.8	91.4
1338	83	10.4	3.8	0.6	49.4	0	57.0	121.3
1342	88	20.5	0.6	0.5	19.1	10.2	86.1	137.1
1346	91	43.6	2.5	0	8.8	0	172.6	227.5
Mean	73.1	34.9	15.2	0.3	16.6	5.5	121.2	193.9
SD		24.0	18.4	0.4	15.5	8.3	247.4	
%Catch		18.0	7.9	0.2	8.6	2.9	62.5	100.0

c) Outer shelf and slope, 101-250 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1322	114	241.5	0	0	4.3	11.4	802.0	1059.2
1328	215	11.0	0	3.7	33.1	122.6	30.8	201.2
1329	122	173.7	0	0	33.0	9.0	138.0	353.8
1334	113	61.2	0	0	22.0	0	255.2	338.4
1337	138	250.8	0	0	34.3	13.3	1700.5	1998.9
Mean	140.4	147.6	0	0.8	25.3	31.3	585.3	790.2
SD		107.6	0.0	1.7	12.8	51.3	690.5	
%Catch		18.7	0.0	0.1	3.2	4.0	74.1	100.0

d) Lower slope, >250 m

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1335	270	3.6	3	26.1	17.3	20.4	215.7	286.1
1336	281	9.3	2.1	10.0	6.2	0	126.2	153.7
1343	396	0	0	9.8	1.0	26.2	139.6	176.6
Mean	315.7	4.3	1.7	15.3	8.1	15.5	160.5	205.5
SD		4.7	1.5	9.3	8.4	13.8	48.3	
%Catch		2.1	0.8	7.4	4.0	7.6	78.1	100.0

The catches of the different pelagic groups off Cameroon is described in Table 5.6. As expected, and similar to last year, most pelagic species had higher catch rates in the northern part of Cameroon, and in the Campo River estuary. However, the major part of the concentrations of pelagic fish were found inshore of the 30 m isobath, in considerably shallower waters than last year, possibly also explaining the large decrease in the acoustic abundance estimates. Carangids dominated the pelagic part of the catches on the inner and mid shelf. Catches of carangids comprised 18% of the total catch on the inner shelf, with an average catch of 36 kg/h. The catches declined to 13 kg/h on the mid shelf. Clupeoids had an

average catch rate of 21 kg/h on the inner shelf and 0.6 kg/h on the mid shelf. This group consisted mainly of *Ilisha africana*, and some few *S. maderensis*. No *Ethmalosa fimbriata* was found in the catches. Hairtails, *Trichiurus lepturus*, barracudas, mainly *Sphyraena guachancho* and scombrids had catch rates on the inner shelf of 17 kg/h, 7 kg/h and 1.8 kg/h respectively while catches were insignificant on the mid shelf. The dominating carangids in this depth region were, as last year, *Selene dorsalis* and *Chloroscombrus chrysurus*. *Caranx hippos* and *Selar crumenophthalmus* were frequent in the catches but gave low catch rates.

The pelagic group were totally absent on the outer shelf and slope, and at the lower slope except from hairtails that occurred at the lower slope and contributed 0.8% to the total catch.

Table 5.5 Cameroon. Catch rates (kg/h) by main pelagic families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m).

a) Inner shelf, 0-50 m

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1302	18	18.9	6.4	0.0	20.2	0.5	117.6	163.7
1304	22	60.0	27.2	2.9	59.6	12.6	79.3	241.6
1305	46	0.0	128.9	0.0	1.3	9.8	56.4	196.4
1308	42	0.0	0.2	1.2	0.1	0.0	78.9	80.4
1309	25	43.9	13.1	16.0	41.1	6.2	138.9	259.1
1310	31	2.5	16.6	3.6	51.8	1.6	194.9	271.1
1313	44	2.3	107.5	0.0	15.5	43.2	550.0	718.5
1314	23	77.3	25.0	0.0	106.6	2.2	79.9	291.0
1315	40	0.2	24.0	0.3	0.2	0.0	31.9	56.6
1316	26	54.6	315.7	3.4	53.1	16.1	69.1	511.9
1317	23	24.6	30.1	1.0	38.6	0.0	161.5	255.8
1318	23	24.8	20.8	1.2	21.9	22.6	58.2	149.4
1320	33	0.0	9.1	0.9	0.0	0.1	45.0	55.2
1324	36	0.0	6.5	0.0	0.0	0.0	30.7	37.2
1325	20	1.3	32.2	3.8	0.8	6.1	377.7	421.9
1326	38	0.0	6.2	0.0	0.0	7.6	34.7	48.5
1327	30	3.6	1.7	0.0	0.0	1.7	84.2	91.1
1331	36	0.0	5.7	0.0	0.0	0.0	27.0	32.7
1332	24	0.2	5.9	3.7	0.1	15.5	65.4	90.8
1339	49	0.0	14.4	3.1	0.0	0.3	193.3	211.0
1340	27	127.0	13.5	0.0	0.0	11.6	112.1	264.2
1341	39	29.8	9.3	2.6	0.0	6.3	39.0	87.0
1344	34	41.8	6.3	0.0	0.3	6.9	34.7	90.1
1345	50	0.3	30.1	0.0	0.0	0.0	25.5	55.9
Mean	32.458333	21.4	35.7	1.8	17.1	7.1	111.9	195.0
SD		32.2	67.2	3.3	27.7	10.0	122.0	
%Catch		11.0	18.3	0.9	8.8	3.7	57.4	100.0

b) Mid-shelf, 51-100 m

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1301	63	0.1	24.4	2.9	2.2	2.3	10.4	42.3
1306	64	1.3	0.8	0.0	0.9	0.3	79.6	82.9
1307	63	0.4	0.7	0.0	0.0	0.1	105.1	106.3
1312	57	4.3	16.1	0.2	0.0	4.5	49.7	74.8
1321	88	0.0	0.0	0.0	0.0	0.0	154.4	154.4
1323	67	0.0	54.0	0.0	0.0	0.0	903.5	957.5
1330	73	0.0	34.6	0.0	0.4	0.0	102.0	137.0
1333	67	0.0	7.3	0.0	0.0	3.0	81.1	91.4
1338	83	0.0	0.0	3.8	0.0	0.0	117.5	121.3
1342	88	0.0	0.4	0.0	0.0	0.3	136.4	137.1
1346	91	0.0	2.5	0.0	0.0	0.0	225.0	227.5
Mean	73.1	0.6	12.8	0.6	0.3	1.0	178.6	193.9
SD		1.3	18.0	1.4	0.7	1.6	246.8	
%Catch		0.3	6.6	0.3	0.2	0.5	92.1	100.0

Catch rates of the commercially most important demersal fish groups in Cameroon are presented in Table 5.6 a, b, c and d. Croakers, especially *Pseudotolithus elongatus, Pseudotolithus senegalensis and Pseudotolithus typus* were the most abundant on the inner shelf between 0-50 m depth with average catch rates of 16.3 kg/h, or 8 %. Seabreams, groupers, snappers and grunts were less abundant with 1.4 kg/h, 1.4 kg/h, 0.9 kg/h and 0.7 kg/h. respectively. The typical inshore demersal species such as Cynoglossidae, Drepanidae, Pomadasyidae, Polynemidae and Mullidae were less abundant this year than 2005.

Seabreams was the only abundant group between 51 and 100 m depth. with mean catches of 20 kg/h, contributing 10 % to the overall catches at this depth. The two most dominant species in this group were *Dentex congoensis* and *D. angolensis*. Other groups were less important. Groupers contributed 4.7 kg/h, croakers contributed 0.5 kg/h and no snappers or grunts were found in this depth region. *B. auritus* are not considered among the commercially important grunts but was abundant both on the inner shelf between 0-30 m and between 31-50 m depth, with catch rates of 6.0 kg/h and 46.6 kg/h respectively, compared to 20 kg/h and 32 kg/h in the same depth regions in 2005.

On the outer shelf and slope (101-250 m) seabreams were, with average catches of 140 kg/h or 18 % of the total catch, the only dominant group of the important commercial species. Groupers contributed 6 kg/h or 0.7% to the total catches while no catches were made of snappers, grunts and croakers. These findings are similar to observations the two previous years. *Dentex congoensis* and *D. angolensis*, were the two dominant commercial species in this depth region. The group of other species contributed 82% of the total catch. This group mainly consisted of *Ariomma bondi*, a presently non-commercial species that were abundant on the shelf break with average catch rates of 466 kg/h or 59% compared with 125kg/h or 38% of the total last year.

Table 5.6 Cameroon. Catch rates (kg/h) of valuable demersal species grouped by families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) Inner shelf, 0-50 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1302	18	0.0	0.0	0.0	0.0	63.2	100.5	163.7
1304	22	0.0	0.2	0.0	1.2	36.4	203.9	241.6
1305	46	0.0	0.0	1.1	0.0	0.0	195.3	196.4
1308	42	0.2	0.0	0.0	0.0	0.0	80.2	80.4
1309	25	1.9	0.0	0.0	0.0	74.7	182.5	259.1
1310	31	0.0	0.0	0.0	0.0	33.0	238.1	271.1
1313	44	1.9	0.0	0.5	0.0	1.1	715.0	718.5
1314	23	0.0	0.0	0.0	0.0	35.2	255.8	291.0
1315	40	0.0	0.0	0.0	0.0	0.0	56.6	56.6
1316	26	0.0	0.0	0.0	0.0	43.9	468.1	511.9
1317	23	0.0	0.0	0.0	0.0	69.5	186.4	255.8
1318	23	0.0	0.0	0.0	0.0	22.8	126.6	149.4
1320	33	0.0	0.0	3.3	0.0	0.0	51.9	55.2
1324	36	1.8	0.0	2.8	0.0	0.0	32.6	37.2
1325	20	0.0	5.8	0.0	0.3	3.3	412.5	421.9
1326	38	1.8	0.0	0.2	0.0	0.0	46.5	48.5
1327	30	1.2	0.0	1.2	0.0	0.0	88.7	91.1
1331	36	4.3	0.0	0.0	0.0	0.0	28.4	32.7
1332	24	7.3	7.6	12.5	7.0	0.0	56.4	90.8
1339	49	0.1	0.0	4.1	0.0	0.0	206.8	211.0
1340	27	6.7	6.8	6.5	7.3	4.9	232.1	264.2
1341	39	1.0	0.2	0.0	0.0	0.9	84.9	87.0
1344	34	0.0	0.0	0.5	0.8	3.0	85.8	90.1
1345	50	5.3	0.0	0.1	0.0	0.0	50.5	55.9
Mean	32.5	1.4	0.9	1.4	0.7	16.3	174.4	195.0
SD		2.2	2.3	2.9	2.0	24.8	162.5	
%Catch		0.7	0.4	0.7	0.4	8.4	89.4	100.0

b) Mid-shelf, 51-100 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1301	63	0.8	0.0	0.0	0.0	0.0	41.5	42.3
1306	64	1.5	0.0	34.7	0.0	0.0	46.7	82.9
1307	63	19.6	0.0	10.7	0.0	0.3	75.6	106.3
1312	57	10.3	0.0	4.0	0.0	0.0	60.5	74.8
1321	88	57.6	0.0	0.9	0.0	5.2	90.8	154.4
1323	67	23.4	0.0	0.0	0.0	0.0	934.1	957.5
1330	73	28.6	0.0	0.7	0.0	0.0	107.7	137.0
1333	67	1.9	0.0	0.2	0.0	0.0	89.4	91.4
1338	83	9.6	0.0	0.8	0.0	0.0	110.9	121.3
1342	88	20.4	0.0	0.0	0.0	0.0	116.6	137.1
1346	91	43.6	0.0	0.0	0.0	0.0	183.8	227.5
Mean	73.1	19.8	0.0	4.7	0.0	0.5	168.9	193.9
SD		18.2	0.0	10.4	0.0	1.6	256.8	
%Catch		10.2	0.0	2.4	0.0	0.3	87.1	100.0

c) Outer shelf and slope, 101-250 m

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1322	114	209.1	0.0	24.2	0.0	0.0	825.8	1059.2
1328	215	10.0	0.0	0.0	0.0	0.0	191.2	201.2
1329	122	169.9	0.0	3.8	0.0	0.0	180.1	353.8
1334	113	60.8	0.0	0.4	0.0	0.0	277.2	338.4
1337	138	249.7	0.0	0.0	0.0	0.0	1749.2	1998.9
Mean	140.4	139.9	0.0	5.7	0.0	0.0	644.7	790.3
SD		101.1	0.0	10.5	0.0	0.0	672.5	
%Catch		17.7	0.0	0.7	0.0	0.0	81.6	100.0

5.3 São Tomé and Principe

São Tomé and Principe are volcanic islands generally characterized by narrow rocky shelf's, and very steep shelf breaks. Demersal fish were seen frequently on the echo sounder on the shelf break, but the rough bottom made trawling difficult. The area, were also characterized with abundant seabirds, and several observations were made of whales and dolphins. Predators like these were absent off the mainland of Nigeria and Cameroon during the survey. The analyses are done for each island separately.

Principe

Demersal fish were seen frequently on the narrow shelf off Principe. Trawling was difficult because of the uneven bottom. A total of 57 different species were found in the six bottom trawls conducted on the island. All trawls were conducted on the shelf between 30 and 80 m depth. The catch rates and biomass was calculated in one stratum only, from 0-100 m. The low number of trawls on the island did not make a more detailed separation feasible. The total average catch from all stations at Principe was 181 kg/h compared to 286 kg/h last year, Table 5.7. The most dominant group was seabream (Sparidae) with a mean of 79 kg/h or 43% of the total catch. *Pagellus bellottii* was the most abundant of the seabreams. The cephalopods made up 7% of the catch with average catches of 13 kg/h while carangids, dominated by *Selar crumenophthalmus,* made up 1% of the species with 2 kg/h. The group of other species made up 47 % of the total catch. This group was dominated by the flying gurnard *Dactylopterus volitans.*

Table 5.7 The main groups and species caught on the inner a) and outer shelf of Principe (0-50 m), catches in kg/h.

a) 0-100 m depth

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1347	62	0.1	0.3	0	4.6	0	122.2	127.1
1348	38	5.7	10.5	0	2.5	0	173.0	191.7
1349	80	148.6	0	0	12.6	0	62.8	224.1
1350	66	111.1	1.2	0	26.7	0	47.7	186.7
1351	73	137.7	0	0	16.2	0	67.9	221.8
1352	53	83.9	0	0	13.1	0	39.7	136.8
Mean	60.9	81.2	2.0	0.0	12.6	0.0	85.6	181.4
SD		64.7	4.2	0.0	8.7	0.0	51.7	
%Catch		44.8	1.1	0.0	7.0	0.0	47.2	100.0

São Tomé

A total of 9 swept area trawl stations was carried out, two on the south-western side, and the seven others on the east coast. One trawl was not accepted for swept area analyses. No trawls were conducted on the steep north western side of the island, as this is generally untrawlable. All trawl stations were between 30-80 m as the shelf generally is very steep and no trawl stations were possible either deeper or shallower than this.

The catch rate was on average 424 kg/h. Demersal species were the most frequent in the catches, and in particular the seabreams, represented mainly by *Pagellus bellottii* and *Pagrus caeruleostictus,* who gave average catches of 109 kg/h or 26%. Snappers, dominated by *Lutjanus fulgens*, contributed with 10% of the catch and 43 kg/h, while pelagic species, mainly carangids, *Caranx hippos*, comprised 5% of the catch and 20 kg/h. Squid, and especially *Sepia officinalis hierredda* comprised 2 % of the catch, with average catch rates of 10 kg/h. The group of other species contributed 237 kg/h and 56% to the overall catches. The most dominant species in this group was the flying gurnard, *Dactylopterus volitans.*

Table 5.8 São Tomé. Catch rates (kg/h) of main demersal species grouped by families in swept-area bottom-trawl hauls on the shelf (0-100 m).

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1353	71	99.0	103.4	0	0.9	0	39.2	242.5
1355	48	164.1	29.6	0	2.3	0	150.2	346.3
1356	71	109.9	11.0	0	7.6	0	150.2	278.6
1357	56	163.7	3.1	0.16	12.7	0	278.4	458.1
1359	70	173.3	13.0	0	10.0	0	42.2	238.4
1360	53	129.9	2.3	0	22.6	0	1104.0	1258.8
1361	77	154.6	0	0	5.5	0	119.4	279.5
1362	33	345.6	20.4	0	25.3	0	165.0	555.2
Mean	59.9	167.5	22.9	0.0	10.8	0.0	255.9	457.2
SD		76.9	34.0	0.1	8.9	0.0	350.9	
%Catch		36.6	5.0	0.0	2.4	0.0	56.0	100.0

5.4 Gabon

The coast of Gabon is generally characterised by a relatively wide shelf with a shelf that breaks at around 100 m depth in the north and approximately 200 m depth in the south of the country. Cape Lopez divides the shelf into two separate shelf zones, which are separated by a strong temperature front during the winter. Because of this, fish communities are different between these regions and swept area analyses have consequently been carried out for each region separately.

North of Cape Lopez
A total of 27 swept-area trawl hauls were made on the northern shelf of Gabon. Some trawl hauls was aborted after <30 min trawling because of either very uneven, hard bottom, or very soft bottom. However, all bottom trawl hauls of more than 20 min duration was accepted for swept area analyses.

Table 5.9 a, b, c and d shows catch rates by main groups for the inner (0-50 m), mid (51-100 m) and outer shelf (101-200 m) and slope (200-500 m) respectively. The total catch rates per depth region was 204 kg/h, 372 kg/h, 743 kg/h and 241 kg/h respectively, compared to the recorded catches of 228 kg/h, 698 kg/h, 497 kg/h, 221 kg/h in the same depth regions in 2005. The highest fish densities showed a more offshore distribution this year with highest catches between 101-200 m compared to highest catch rates between 51-100 m last year. No bottom trawl survey was conducted in this region in 2004.

Pelagic species dominated in the inshore region with 69 kg/h or 34% of the catches. The second most important group was demersal species which contributed with 47.5 kg/h and 23% of the catches. The cephalopods contributed with 4.4 kg/h (2%) and shrimps 1.0 kg/h, much lower than in 2005. Sharks and rays were absent in this depth region except in one haul at 44 m. The group 'other' species had a mean catch rate of 82 kg/h or 40% of the total.

Between 51 and 100 m the demersal group dominated the catch with average catch rate of 181 kg/h or 49%. The second most dominant group were the pelagic species with 146 kg/h or 39% of the total, while cephalopods, sharks and rays and shrimps contributed 5.4 kg/h, 1.1 kg/h and <1% respectively.

Catches were highest between 101 and 200 m depth with total catch rates of 743 kg/h. The relative contribution of the different species groups had shifted from last year. This year the demersal groups dominated with a catch rate of 371 kg/h or 50%, while in 2005 the pelagic species were the most abundant with 45% of the catch. This year the pelagic group average catch rate was 175 kg/h or 24%. The group of other species gave 181 kg/h or24% of the catches. Sharks and rays, cephalopods and shrimps, had catch rates of 8.4 kg/h, 6.2 kg/h and 1.0 kg/h respectively. In 2005 no shrimps, and sharks and rays were caught at these depths.
Shrimps became far more important in deeper waters, >200 m depth, and contributed with 50 kg/h or 21% of the overall catch while in 2005 shrimp gave average catch rates of 22 kg/h.

The most dominant species were *Parapenaeus longirostris* and *Nematocarcinus africanus,* which contributed the main part of the shrimps in deep waters. Catches of cephalopods, sharks and rays also increased in deeper waters to 19 kg/h or 8% and 14.3 kg/h or 6% to the overall catch. The group of 'other' contributed 137 kg/h or 57% while catch rated of pelagic and demersal species decreased tremendously in deeper waters to 14 kg/h or 6% and 7 kg/h or 3% respectively

Table 5.9 Gabon, north of Cape Lopez. Catch rates (kg/h) by main groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m) and slope (201-500 m).

a) Inner shelf (0-50 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1390	19	84.4	53.6	0.0	9.0	0.0	28.7	175.7
1373	21	52.6	120.0	0.2	2.7	0.0	51.0	226.4
1366	23	18.2	215.0	3.3	2.8	0.0	39.8	279.0
1381	23	86.6	13.0	0.0	7.0	0.0	19.0	125.5
1372	25	20.0	20.3	0.0	11.9	0.0	14.6	66.9
1382	28	9.5	100.1	0.0	0.2	0.0	2.8	112.7
1389	41	54.8	7.0	0.0	1.9	0.0	99.0	162.7
1371	43	37.1	19.3	0.0	0.9	0.0	623.5	680.8
1380	44	23.3	8.1	0.3	1.9	5.2	36.5	75.4
1365	45	29.1	4.2	2.6	3.5	0.0	13.2	52.7
1374	45	45.3	4.8	1.3	2.4	0.0	10.1	64.0
1383	48	109.6	264.5	4.1	8.8	0.0	40.5	427.4
Mean	33.8	47.5	69.2	1.0	4.4	0.4	81.6	204.1
SD		31.5	89.0	1.5	3.8	1.5	172.6	
%Catch		23.3	33.9	0.5	2.2	0.2	40.0	100.0

b) Mid-shelf 51-100

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1364	65	214.2	1.9	0.3	2.7	0.0	40.2	259.4
1388	67	59.7	132.1	0.0	10.1	3.0	19.2	224.1
1379	68	376.6	584.1	0.0	0.0	0.0	45.4	1006.1
1375	69	61.8	42.1	0.0	4.5	1.1	29.7	139.1
1370	76	281.5	10.1	0.0	11.9	2.6	13.7	319.8
1363	97	94.5	105.2	0.0	3.2	0.0	82.9	285.9
Mean	73.7	181.4	145.9	0.1	5.4	1.1	38.5	372.4
SD		131.1	220.8	0.1	4.6	1.4	24.9	
%Catch		48.7	39.2	0.0	1.4	0.3	10.3	100.0

c) Outer shelf (101-200 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1378	113	1022.4	604.5	0.0	9.0	0.0	179.1	1815.0
1369	114	245.3	73.7	0.0	4.2	12.0	119.7	455.0
1387	116	164.0	22.7	0.0	5.9	4.9	340.2	537.7
1384	174	51.1	0.0	2.7	5.7	16.5	86.3	162.2
Mean	129.3	370.7	175.2	0.7	6.2	8.4	181.3	742.5
SD		441.7	287.8	1.3	2.0	7.3	112.7	
%Catch		49.9	23.6	0.1	0.8	1.1	24.4	100.0

d) Slope (201-500 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1367	229	7.8	0.0	7.4	67.7	0.0	103.0	185.9
1376	230	15.2	0.0	22.4	0.9	50.2	178.1	266.8
1386	354	0.0	21.8	123.6	17.8	7.5	217.6	388.3
1368	390	16.7	31.2	10.5	18.7	27.2	138.0	242.3
1385	400	0.0	12.6	82.3	5.4	0.0	58.7	159.0
1377	441	0.3	17.8	52.5	3.8	1.0	128.1	203.6
Mean	340.7	6.7	13.9	49.8	19.0	14.3	137.2	241.0
SD		7.8	12.4	46.1	25.0	20.4	55.8	
%Catch		2.8	5.8	20.7	7.9	5.9	56.9	100.0

Between 0-50 m depth carangids and clupeids had catch rates of 40 kg/h (20%) and 12.4 kg/h (6%) respectively. The same two groups dominated between 51-100 m depth with 103.4 kg/h (28%) and 42.5 kg/h (11%) respectively., The catch rates of the two groups between 101-200 m were 89 kg/h (12%) and 80 kg/h (11%).

The dominant species of carangids between 0-50 m depth were *Decapterus punctatus, Trachurus trecae* and *Selar crumenophthalmus,* while at 51-100 m depth *Caranx senegallus, Caranx hippos, Caranx crysos* and *Decapterus punctatus* dominated. The two species of carangids found between 101-200 m was *Trachurus trecae* and *Decapterus punctatus.* In 2005 the dominant carangids were *Selene dorsalis, Caranx hippos* and *Caranx senegallus* in the inshore region, and *Decapterus punctatus* in deeper waters.

The clupeids present north of Cape Lopez were *Sardinella aurita, Ilisha africana* and *S. maderensis,* but only *S. aurita* was abundant. *S. maderensis* was only caught in one haul made at 50 m depth while the only catch of *Ilisha africana* was made further inshore. *S. aurita* were caught in ten trawls, both in shallow and deeper than >100 m depth, but with the highest catch rates offshore.

Apart from the carangids and the clupeids, barracudas occurred inshore (0–50 m) with average an catch rate of 11.3 kg/h or 5.5%, while the hairtail dominated the pelagic component of the catches were the bottom depth was >200 m.

Table 5.10 Gabon, north of Cape Lopez. Catch rates (kg/h) by main pelagic families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) c).

a) inner shelf (0-50 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1390	19	0	53.1	0	0	0.5	122.1	175.7
1373	21	26.5	12.7	25.4	0	55.4	106.4	226.4
1366	23	2.4	190.7	0.6	0	21.2	64.0	279.0
1381	23	0	3.6	4.1	0	5.3	112.5	125.5
1372	25	0	3.7	4.2	0	12.5	46.5	66.9
1382	28	0.5	30.1	32.0	0	37.6	12.6	112.7
1389	41	0	7.0	0	0	0	155.6	162.7
1371	43	0	19.3	0	0	0	661.5	680.8
1380	44	0	6.8	1.4	0	0	67.2	75.4
1365	45	0	3.8	0	0	0.5	48.4	52.7
1374	45	0.6	2.9	0	0	1.3	59.2	64.0
1383	48	119.4	143.9	0.4	0	0.8	162.9	427.4
Mean	33.8	12.4	39.8	5.7	0.0	11.3	134.9	204.1
SD		34.5	62.1	10.9	0.0	18.1	172.0	
%Catch		6.1	19.5	2.8	0.0	5.5	66.1	100.0

b) mid shelf (51-100 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1364	65	1.9	0	0	0	0	257.4	259.4
1388	67	32.0	100.2	0	0	0	92.0	224.1
1379	68	159	425.1	0	0	0	422.0	1006.1
1375	69	2.6	39.5	0	0	0	97.0	139.1
1370	76	2.7	7.4	0	0	0	309.7	319.8
1363	97	57	48.2	0	0	0	180.6	285.9
Mean	73.7	42.5	103.4	0.0	0.0	0.0	226.4	372.4
SD		61.2	161.6	0.0	0.0	0.0	128.9	
%Catch		11.4	27.8	0.0	0.0	0.0	60.8	100.0

The valuable demersal species, Seabreams, excluding *Boops boops*, Snappers, Groupers, Grunts (excluding *Brachydeuterus auritus*) and Croakers were caught in low abundance on the inner shelf, 47.5 kg/h, highest abundance at mid shelf, 371 kg/h, medium abundance on the outer shelf,181 kg/h, and low abundance at the lower slope, 6.7 kg/h.

Seabreams dominated in all depth regions. On the inner shelf seabreams contributed 12% to the total catch with average catch rates of 24 kg/h. The most important species were *Pagellus bellottii, Dentex congoensis, Dentex canariensis, Dentex macrophthlamus, Dentex barnardi and Pagrus caeruleostictus*. The grunts contributed 4% or 8 kg/h to the total. Groupers were represented by *Epinephelus aeneus, Serranus accraensis* and *Serranus africana*, and contributed 3.4 kg/h to the total catch. The average catch rate of snappers, *Lutjanus fulgens,* was less than one percent of the total catch compared to 2005 when the species contributed 5% or 11 kg/h to the total catch.

The seabreams on the mid shelf was dominated by *Dentex congoensis* and *Dentex angolensis*. Only *Dentex angolensis* dominated the catch in 2005. The average catches of this group was 147 kg/h and 40% of the total. Only one catch of snappers was made, giving an average catch of 5.8 kg/h while groupers, mainly *Epinephelus aeneus*, *Serranus accraensis* and *Serranus africana*, had average catches of 6 kg/h or 2% of the total. The sciaenid appeared only in one haul represented by *Umbrina canariensis* with an average catch rate of <1 kg/h.

Seabream contributed 48% or 357 kg/h to the total catch between 101 m and 200 m depth, and *Dentex angolensis* were the only sparid found. A few sciaenids, *Umbrina canariensis* and *Pentheroscion mbizi*, were also present at this depth, with average catch rate of 6.1 kg/h. In 2005 only seabreams were found between 101 and 200 m depth. The catch rates were 65 kg/h or 13%, and the species caught were *Dentex angolensis* and *Dentex congoensis*.

Table 5.11 Gabon, north of Cape Lopez. Catch rates (kg/h) of valuable demersal species grouped by families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf and slope (101-250).

a) inner shelf (0-50 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1390	19	0	0	0	82.5	0	93.2	175.7
1373	21	7.0	0	0.4	0	0	219.1	226.4
1366	23	0.5	0.3	0	5.3	0	272.9	279.0
1381	23	64.4	0	10.7	7.5	0	42.9	125.5
1372	25	11.4	0	7.5	1.1	0	46.9	66.9
1382	28	0	0	0	0	0	112.8	112.7
1389	41	40.9	0	13.8	0	0	107.9	162.7
1371	43	24.6	0	0	0	0	656.2	680.8
1380	44	19.1	0	0.2	0	0	56.1	75.4
1365	45	23.1	0	0.3	0	0	29.3	52.7
1374	45	37.0	0	2.2	0	0	24.8	64.0
1383	48	56.2	0	3	0	0	368.2	427.4
Mean	33.8	23.7	0.0	3.2	8.0	0.0	169.2	204.1
SD		22.0	0.1	4.8	23.6	0.0	187.5	
%Catch		11.6	0.0	1.6	3.9	0.0	82.9	100.0

b) mid shelf (51-100 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1364	65	212	0	2.2	0	0	45.2	259.4
1388	67	59.7	0	0	0	0	164.4	224.1
1379	68	296.7	0	1.3	0	0	708.1	1006.1
1375	69	59.2	0	0.4	0	0	79.5	139.1
1370	76	175.8	34.8	31.4	0	3.7	74.1	319.8
1363	97	81.2	0	0	0	0	204.6	285.9
Mean	73.7	147.4	5.8	5.9	0.0	0.6	212.7	372.4
SD		97.1	14.2	12.5	0.0	1.5	250.1	
%Catch		39.6	1.6	1.6	0.0	0.2	57.1	100.0

c) outer shelf and slope (101-200)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1378	113	998.3	0	0	0	0	816.7	1815.0
1369	114	243.0	0	0	0	2.3	209.6	455.0
1387	116	164.0	0	0	0	0	373.7	537.7
1384	174	22.5	0	0	0	22.1	117.6	162.2
Mean	129.3	357.0	0.0	0.0	0.0	6.1	379.4	742.5
SD		437.2	0.0	0.0	0.0	10.7	310.2	
%Catch		48.1	0.0	0.0	0.0	0.8	51.1	100.0

South of Cape Lopez

A total of 55 swept-area trawl hauls were accepted on the southern shelf of Gabon. Some trawl hauls was aborted after <30 min trawling because of either very uneven, hard bottom, or very soft bottom. However, all bottom trawl hauls of more than 20 min duration was accepted for swept area analyses. Two trawls were excluded from the analyses.

Table 5.12 a, b, c and d shows catch rates by main groups for the inner (0-50 m), mid (51-100 m) and outer shelf (101-200 m) and slope (201-500 m) respectively. The overall catch rates were highest on the inner shelf between 0-50 m depth with 1359 kg/h. This was much higher than the catch rates on the inner shelf in the northern part of Gabon, but only half of the figure obtained in the depth region in 2005. Pelagic species contributed most of this catch with 768 kg/h or 56.5% of the total. Of this *Sardinella aurita* was by far the most dominant species. The second most dominant group in the inner shelf were the demersal species with 268 kg/h or 20% to the total catch. Cephalopods, sharks and rays and shrimps contributed 24.4 kg/h, 3.4 kg/h and less than one kilogram per hour to the total catch respectively.

The overall catch rate on the mid shelf (51-100 m) was 345 kg/h, this is lower than in 2005 when average catch rates were 470 kg/h, although the catches of pelagic species increased slightly. This year demersal and pelagic species contributed equally to the average catch in this depth region with catch rates of 131 kg/h and 132 kg/h, or 38% respectively. Cephalopods and sharks contributed 21 kg/h, 6%, and 4.4 kg/h, 1.3%, to the total catch while shrimps did not occur in this depth region.

The outer shelf and slope between 101-200 m had an overall catch rate of 411 kg/h, compared with 376 kg/h last year. The region was dominated by the group of 'other' species with 166 kg/h and 40% of the catch, followed by the demersal species with mean catch rates of 117 kg/h and 28%. Pelagic species contributed with 105 kg/h or 25.5% of the total while cephalopods and sharks gave catch rates of 15 or 4% and 8 kg/h or 2% respectively. Shrimps occurred in small quantities but was not significant in this depth region.

The catch rate between 201 and 500 m was 474 kg/h compared to 356 kg/h last year. There was a change in species composition compared to the more inshore region, 101-200 m. The 'other' group were still the most abundant with 250 kg/h and 53% of the overall catch. Shrimps were important with an average catch rate of 114 kg/h or 24% of the catch, twice the

catch rate in 2005. This group was dominated by *Nematocarcinus africanus*, *Aristeus varidens*, *Plesionika martia* and *Plesionika edwardsii*. Cephalopods also gave relatively good catch rates with 71 kg/h or 15%. The group was dominated *Illex coindetii* and *Todaropsis eblanae* dominated the catch. Shark and rays contributed 9 kg/h or 2% to the total.

Table 5.12 Gabon, south of Cape Lopez. Catch rates (kg/h) by main pelagic families in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m) and slope (201-500 m).

a) inner shelf (0-50 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1415	20	475.7	3312.9	0.0	0.0	0.0	69.4	3858.0
1397	21	6.7	66.6	0.0	92.7	0.0	153.7	319.6
1423	21	66.6	657.9	0.0	31.2	0.0	77.1	832.8
1405	22	226.1	36.9	0.3	20.3	0.0	303.9	587.5
1406	22	53.2	675.8	0.0	185.1	0.0	1086.6	2000.7
1432	23	160.4	134.1	0.0	19.5	0.0	33.9	347.8
1433	24	180.8	60.8	0.3	17.0	0.0	44.0	302.8
1439	25	98.2	178.7	7.3	1.2	0.0	39.3	324.7
1424	26	516.6	382.8	0.0	0.0	59.9	258.7	1217.9
1440	28	119.1	155.5	1.5	9.4	2.2	81.3	369.0
1404	37	31.7	6.2	0.0	10.7	0.0	86.1	134.7
1416	37	767.2	4649.4	0.0	0.0	0.0	47.6	5464.2
1398	38	170.2	3.2	0.8	36.9	0.0	293.3	504.4
1407	38	485.8	26.0	0.0	3.8	0.0	3013.9	3529.5
1414	41	130.6	110.7	0.0	1.2	0.0	31.5	274.0
1431	43	410.1	4496.1	0.0	1.3	0.0	83.0	4990.5
1447	44	241.8	47.3	0.0	9.4	0.0	56.0	354.4
1396	46	112.8	15.0	0.1	8.2	0.0	18.4	154.4
1422	46	1052.5	210.1	0.0	37.7	0.0	92.5	1392.7
1441	48	54.1	142.4	0.0	2.6	6.1	26.6	231.8
Mean	32.5	268.0	768.4	0.5	24.4	3.4	294.8	1359.6
SD		273.3	1490.3	1.6	43.6	13.4	682.4	
%Catch		19.7	56.5	0.0	1.8	0.3	21.7	100.0

b) mid-shelf (51-100 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1438	51	277.9	16.8	0.0	34.7	0.0	21.5	350.9
1417	52	200.5	567.6	0.0	15.3	4.0	133.1	920.5
1425	54	409.5	223.8	0.0	7.1	0.0	122.6	763.0
1408	55	132.8	214.8	0.0	1.4	0.0	90.4	439.4
1391	59	121.1	4.8	0.0	0.7	31.1	57.2	215.0
1399	61	179.3	253.7	0.0	7.9	0.0	130.3	571.2
1434	63	67.8	133.0	0.0	56.2	6.9	22.8	286.7
1442	67	42.5	37.1	0.0	23.3	0.0	18.2	121.0
1403	68	112.7	332.0	0.0	41.6	0.0	41.9	528.2
1395	70	56.1	186.9	0.0	7.7	0.0	26.3	277.0
1421	74	86.1	3.3	0.0	24.6	0.0	8.0	122.0
1430	74	4.4	27.4	0.0	52.4	10.1	15.9	110.2
1413	79	105.2	8.3	0.0	25.6	11.0	58.7	208.8
1446	80	128.2	47.7	0.0	8.0	3.7	13.9	201.5
1412	96	69.7	57.5	0.0	10.1	0.0	43.5	180.7
1420	100	99.9	0.7	0.0	12.4	3.9	108.5	225.4
Mean	77.1	130.9	132.2	0.0	20.6	4.4	57.0	345.1
SD		99.2	157.9	0.0	17.5	8.0	45.1	
%Catch		37.9	38.3	0.0	6.0	1.3	16.5	100.0

c) outer shelf and slope (101-200)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1429	101	40.7	2.7	0.0	27.3	1.8	94.8	167.3
1437	104	156.4	969.7	0.0	29.1	2.6	325.0	1482.7
1402	105	63.8	21.2	0.0	22.5	6.0	29.3	142.8
1418	105	135.4	7.6	0.5	9.2	9.9	104.3	266.9
1445	105	130.0	133.7	0.0	9.8	0.0	38.2	311.7
1394	110	400.4	7.4	0.0	1.3	6.1	94.0	509.1
1392	162	36.3	0.0	0.9	10.1	9.6	142.1	198.9
1409	162	56.8	0.0	0.0	26.6	0.0	382.6	466.0
1436	175	88.3	1.3	0.5	4.3	47.4	302.2	444.1
1426	177	91.4	0.0	0.0	19.0	6.9	190.1	307.3
1443	192	83.4	10.0	6.4	3.6	1.0	124.3	228.7
Mean	139.7	116.6	104.9	0.8	14.8	8.3	166.1	411.4
SD		101.9	289.5	1.9	10.4	13.5	119.5	
%Catch		28.3	25.5	0.2	3.6	2.0	40.4	100.0

d) Slope (201-500 m)

Station	*Depth*	*Demersal*	*Pelagic*	*Shrimps*	*Cephalopods*	*Sharks + Rays*	*Other*	*Total*
1419	243	112.2	0.0	0.0	51.0	26.5	1657.0	1846.6
1401	282	5.6	0.0	0.0	560.4	7.9	116.3	690.1
1427	343	25.1	0.0	6.6	7.4	9.6	98.4	147.0
1410	*374*	*2.8*	*2.1*	*5.5*	*10.5*	*0.0*	*131.4*	*152.4*
1444	378	16.0	25.0	108.2	0.0	33.3	130.3	312.8
1393	427	14.2	28.2	120.0	0.6	0.0	20.1	183.1
1428	434	7.8	11.8	360.1	7.3	2.1	28.0	417.1
1411	*471*	*5.4*	*3.6*	*167.6*	*0.5*	*0.0*	*49.5*	*226.6*
1400	475	0.0	4.2	259.0	3.1	2.2	24.5	293.0
Mean	380.8	21.0	8.3	114.1	71.2	9.1	250.6	474.3
SD		35.0	11.0	129.3	184.1	12.4	529.4	
%Catch		4.4	1.8	24.1	15.0	1.9	52.8	100.0

Pelagic species were frequent in the catches on the inner shelf between 0-50 m depth, Table 5.13. Clupeoids were most abundant and contributed 625 kg/h or 46% to the total catch. This was still only about 50% of the average catch rate in 2005. The clupeoid species present in the catches were *Sardinella aurita, S. maderensis, Illisha africana and Engraulis encrasicolus.* The catches were dominated in weight by *S. aurita* but *I. africana* was most frequently caught. The second most important group were the carangids with a mean catch of 78 kg/h or 6% of the total catch. The dominant species, in order of abundance, were *Decapterus punctatus, Chloroscombrus chrysurus, Decapterus rhonchus, Trachurus trecae, Decapterus macarellus* and *Selar crumenophthalmus*. Barracudas, hairtails and scombrids contributed 43, 21 and 1,1 kg/h to the total catch respectively while the group of 'other' species contributed 591 kg/h or 44% to the total catch.

The catch composition changed on the mid shelf (50-100 m depth). Carangids, particularly *Trachurus trecae* dominated the group with 80.1 kg/h and 23% of the total, followed by *Clupeoids*, that dominated on the inner shelf but were less important on the mid shelf with average catches of 34 kg/h and 10% of the total. *Sardinella aurita* was the dominant species in the catches. Catch rates of hairtails was 16 kg/h and 7%, while scombrids gave average catches of 2.2 kg/h and 0.6%. Barracudas were not caught in this depth region.

Carangids dominated on the outer shelf and slope (101-200 m) and contributed 24% or 98 kg/h to the total catch. The dominant carangid species in the catches was *Trachurus trecae.* All other pelagic species groups were insignificant in the catches, but some hairtails, *Trichiurus lepturus,* and scombrids were present at this depth zone. Hairtails were also the only pelagic species caught beyond 201 m

Table 5.13 Gabon, south of Cape Lopez. Catch rates (kg/h) by main pelagic groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m) and slope (201-500 m).

a) inner shelf (0-50 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1415	20	2560.3	105.4	0.0	0.0	647.1	545.2	3858.0
1397	21	0.9	65.3	0.4	0.0	0.0	253.1	319.6
1423	21	494.1	159.9	0.0	2.4	1.5	174.9	832.8
1405	22	11.2	17.7	6.9	0.0	1.1	550.6	587.5
1406	22	6.7	668.2	0.8	0.0	0.0	1325.0	2000.7
1432	23	83.5	21.1	0.0	24.9	4.6	213.7	347.8
1433	24	9.4	2.1	0.0	32.3	17.0	242.0	302.8
1439	25	112.0	2.9	7.3	55.8	0.7	146.0	324.7
1424	26	299.5	0.0	0.0	8.9	74.5	835.1	1217.9
1440	28	58.5	0.0	0.0	97.0	0.0	213.5	369.0
1404	37	0.7	3.2	2.4	0.0	0.0	128.5	134.7
1416	37	4499.6	149.8	0.0	0.0	0.0	814.8	5464.2
1398	38	0.0	3.2	0.0	0.0	0.0	501.2	504.4
1407	38	0.0	26.0	0.0	0.0	0.0	3503.5	3529.5
1414	41	1.1	109.6	0.0	0.0	0.0	163.2	274.0
1431	43	4300.1	62.1	0.0	23.7	110.3	494.4	4990.5
1447	44	0.0	0.5	1.1	45.6	0.0	307.2	354.4
1396	46	1.2	13.8	0.0	0.0	0.0	139.4	154.4
1422	46	57.9	145.5	3.0	3.7	0.0	1182.6	1392.7
1441	48	0.0	7.8	0.0	134.6	0.0	89.4	231.8
Mean	32.5	624.8	78.2	1.1	21.4	42.8	591.2	1359.6
SD		1411.3	149.8	2.2	36.9	145.1	772.1	
%Catch		46.0	5.8	0.1	1.6	3.2	43.5	100.0

b) mid shelf (51-100 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1438	51	5.6	8.9	0.0	2.3	0.0	334.1	350.9
1417	52	117.8	449.8	0.0	0.0	0.0	352.9	920.5
1425	54	15.2	208.7	0.0	0.0	0.0	539.1	763.0
1408	55	0.0	161.1	1.5	52.2	0.0	224.5	439.4
1391	59	0.0	4.8	0.0	0.0	0.0	210.2	215.0
1399	61	13.5	213.1	27.1	0.0	0.0	317.6	571.2
1434	63	0.0	0.0	0.0	133.0	0.0	153.7	286.7
1442	67	0.5	5.0	0.0	31.6	0.0	83.9	121.0
1403	68	258.7	73.3	0.0	0.0	0.0	196.2	528.2
1395	70	132.4	52.3	1.5	0.8	0.0	90.1	277.0
1421	74	0.0	2.2	0.0	1.1	0.0	118.7	122.0
1430	74	0.0	0.2	0.0	27.3	0.0	82.8	110.2
1413	79	0.0	7.3	0.0	1.0	0.0	200.5	208.8
1446	80	0.0	41.7	0.0	6.0	0.0	153.8	201.5
1412	96	0.0	53.4	4.0	0.0	0.0	123.3	180.7
1420	100	0.0	0.4	0.4	0.0	0.0	224.7	225.4
Mean	77.1	34.0	80.1	2.2	16.0	0.0	212.9	345.1
SD		73.2	123.1	6.7	34.8	0.0	122.5	
%Catch		9.8	23.2	0.6	4.6	0.0	61.7	100.0

The group of valuable demersal species; seabreams, excluding *Boops boops*, snappers, groupers, grunts, excluding *Brachydeuterus auritus*, and croakers were more frequent in the

catches south of Cape Lopez but catch rates were generally much lower than in 2005, Table 5.14, but similar to in 2005 seabreams dominated in all depth regions. On the inner shelf seabreams gave average catch rates of 87 kg/h, 6.4%. The percentage was low due to very high catches of pelagic species in this depth region. The most important species in this depth region were *Pagellus bellottii* and *Pagrus caeruleostictus*, the same species as in 2005. Croakers dominated mainly by *Umbrina canariensis* had average catches of 29 kg/h, while grunts contributed with 26 kg/h, mainly *Pomadasys incisus*. The abundance of snappers and groupers in the region was low with average catches of 5.3 kg/h and 5.2 kg/h respectively. The two groups were dominated by *Epinephelus aeneus* and *Lutjanus fulgens,* who were also the most dominant species in these groups last year.

The seabreams on the midshelf was dominated by *Pagellus bellottii* together with *Dentex congoensis* and *D. angolensis*. The average catches of this group was 84 kg/h and 24% of the total. Croakers, mainly *Umbrina canariensis* showed average catch rates of 7.5 kg/h, while the other demersal groups showed low catch rates.

Catches on the outer shelf and lower slope between 101-250 m and 251-500 m depth were also dominated by seabreams. *Dentex congoensis* and *Dentex angolensis,* were the most abundant species, and contributed 73 kg/h or 18% to the total catch. Also caught on the outer shelf were the croakers who contributed 15 kg/h to the total catch, while groupers, and grunts were present but with low density. Snappers were not caught at this depth zone. Of the valuable demersal species only seabreams were caught at depths >250 m.

Table 5.14 Gabon, South of Cape Lopez. Catch rates (kg/h) by valuable demersal species swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m) and slope (201-500 m).

a) inner shelf (0-50 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1415	20	24.9	0.0	21.4	24.9	159.4	3627.4	3858.0
1397	21	6.1	0.0	0.6	0.0	0.0	313.0	319.6
1423	21	19.5	0.0	0.0	11.0	9.1	793.2	832.8
1405	22	202.2	0.0	0.0	0.0	0.0	385.3	587.5
1406	22	53.2	0.0	0.0	0.0	0.0	1947.5	2000.7
1432	23	20.8	28.1	0.0	21.3	5.7	271.9	347.8
1433	24	81.9	3.8	15.2	22.2	24.7	155.0	302.8
1439	25	3.3	0.0	0.7	4.8	56.8	259.0	324.7
1424	26	160.2	0.0	2.2	152.9	85.6	816.9	1217.9
1440	28	0.9	0.0	3.3	63.5	27.2	274.0	369.0
1404	37	31.7	0.0	0.0	0.0	0.0	103.0	134.7
1416	37	271.6	0.0	0.0	99.4	0.0	5093.2	5464.2
1398	38	169.8	0.0	0.0	0.0	0.0	334.7	504.4
1407	38	196.3	27.5	18.5	4.8	93.6	3188.8	3529.5
1414	41	32.4	10.9	0.0	56.3	8.1	166.3	274.0
1431	43	170.5	13.9	1.5	1.3	11.7	4791.6	4990.5
1447	44	32.8	2.5	24.8	32.6	101.6	160.2	354.4
1396	46	77.4	18.6	16.7	0.0	0.0	41.6	154.4
1422	46	173.4	0.0	0.0	16.1	0.0	1203.1	1392.7
1441	48	19.0	0.0	0.0	3.4	4.9	204.5	231.8
Mean	32.5	87.4	5.3	5.2	25.7	29.4	1206.5	1359.6
SD		84.2	9.4	8.6	39.9	45.6	1628.0	
%Catch		6.4	0.4	0.4	1.9	2.2	88.7	100.0

b) mid shelf (51-100 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1438	51	128.1	0.0	0.0	28.6	3.4	190.8	350.9
1417	52	108.4	0.0	0.0	0.0	19.5	792.6	920.5
1425	54	256.4	78.7	0.0	39.9	33.8	354.2	763.0
1408	55	62.7	0.7	0.0	9.3	16.3	350.4	439.4
1391	59	113.1	0.0	4.7	0.0	0.0	97.1	215.0
1399	61	163.0	0.0	0.0	0.0	0.0	408.2	571.2
1434	63	20.6	7.8	0.0	9.7	28.6	220.0	286.7
1442	67	23.4	0.0	3.7	0.3	4.1	89.5	121.0
1403	68	83.9	0.0	0.0	0.0	0.0	444.3	528.2
1395	70	53.3	0.0	0.0	0.0	0.0	223.7	277.0
1421	74	59.8	0.0	17.5	0.0	0.0	44.7	122.0
1430	74	4.1	0.0	0.0	0.0	0.0	106.1	110.2
1413	79	88.6	0.0	0.0	0.0	0.0	120.1	208.8
1446	80	114.9	0.0	7.7	0.0	1.0	78.0	201.5
1412	96	42.4	0.0	0.0	0.0	13.7	124.7	180.7
1420	100	19.3	0.0	0.0	0.0	0.0	206.1	225.4
Mean	77.1	83.9	5.4	2.1	5.5	7.5	240.7	345.1
SD		64.5	19.6	4.7	11.8	11.3	192.9	
%Catch		24.3	1.6	0.6	1.6	2.2	69.7	100.0

c) outer shelf and slope (101-200 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1429	101	25.6	0.0	0.0	0.0	0.0	141.8	167.3
1437	104	87.8	0.0	19.9	0.0	4.4	1370.6	1482.7
1402	105	61.7	0.0	0.0	0.0	1.4	79.7	142.8
1418	105	37.1	0.0	0.0	0.0	0.0	229.8	266.9
1445	105	37.1	0.0	39.7	0.0	50.3	184.5	311.7
1394	110	306.7	0.0	0.0	0.0	87.9	114.5	509.1
1392	162	32.6	0.0	0.0	0.0	3.1	163.2	198.9
1409	162	53.0	0.0	0.0	0.0	0.0	413.0	466.0
1436	175	52.2	0.0	0.0	4.2	1.7	386.0	444.1
1426	177	61.2	0.0	0.0	0.0	9.0	237.1	307.3
1443	192	44.5	0.0	0.0	0.0	4.3	179.9	228.7
Mean	139.7	72.7	0.0	5.4	0.4	14.7	318.2	411.4
SD		79.5	0.0	12.9	1.3	28.3	364.2	
%Catch		17.7	0.0	1.3	0.1	3.6	77.3	100.0

5.5 Congo

The shelf of Congo is similar in character to the southern shelf of Gabon. The southern part, bordering Angola, is at times heavily influenced by the Congo River freshwater plume. Sediments are fine grained on the midshelf while the bottom is harder and more uneven on the shelf break and close inshore. Oil platforms and pipelines in the area make demersal trawling operation difficult.

Table 5.15 a, b, c and d shows catch rates by main groups for the inner (0-50 m), mid (51-100 m) and outer shelf and slope (101-200 m) and lower slope (200–500 m) respectively. The overall catch rates were highest on the outer shelf and slope between 101-200 m depth with 751 kg/h, the inner shelf had second highest catch rates with 601 kg/h, and higher density of commercial species. Lower catch rates were recorded on the mid shelf, 222 kg/h, and the lower slope, 261 kg/h.

This year pelagic species were the most dominant in the catches from the inner shelf with an average catch rate of 365 kg/h and 61% of the catch. *Ilisha africana,* and *Trichiurus lepturus,* were the most dominant species. In 2005 the dominant pelagic species were sardinellas. Demersal species, mainly *Pteroscion peli, Brachydeuterus auritus* and *Pseudotolithus senegalensis,* contributed with 145 kg/h and 24 % of the catch, while shrimps, mainly *Parapenaeopsis atlantica,* contributed with 19 kg/h and 3% of the catch. Cephalopods and sharks contributed 5 kg/h and 3 kg/h of the catch respectively.

Demersal species dominant the catch between 51 and 100 m, and contributed 110 kg/h and 49% of the catch. the dominant species were *Pentheroscion mbizi, Brotula barbata, Brachydeuterus auritus,* and *Dentex angolensis.* The pelagic species were dominated by

Trichiurus lepturus and *Trachurus trecae* who contributed 49 kg/h and 22% of the total catch. Cephalopods, shrimps sharks and rays contributed 7 kg/h, 3 kg/h and 2 kg/h respectively. The dominant shrimp species at this depth region was *Parapenaeus longirostris.*

The highest catch rates were found between 101-200 m depth. Due to a single haul at station 1451 of manta ray, *Manta birostris,* with total weight of 1500 kg. 77%, or 577 kg/h of the catch in this depth region was rays. The second dominant groups were the demersal species that contributed 118 kg/h and 16% of the catch. The dominant species were *Pentherosion mbizi, Brotula barbata, Dentex angolensis, Umbrina canariensis.* Pelagic species contributed with 4% of the average catch and a catch rate of 31 kg/h. The most dominant species were *Trachurus trecae* and *Trichiurus lepturus.* Catches of shrimps *Parapenaeus longirostris* were high at this depth region and contributed 18 kg/h and 2% to the total. Cephalopods consisted of *Sepia officinalis, Illex coindetii* and *Octopus vulagris* contributed 6 kg/h to the total catch.

The highest catch of shrimps was recorded on the slope between 200-500 m depth. The shrimp species, mainly *Nematocarcinus africanus, Parapenaeus longirostris* and *Aristeus varidens,* contributed 76 kg/h and 29% of the catch. Demersal species were second most abundant in this depth region with average catches of 63 kg/h and 24% of the total. The dominant species were *Merluccius polli, Pterothrissus belloci, Brotula barbata* and *Pentheroscion mbizi.* Sharks, represented by *Centrophorus uyato,* contributed with 17 kg/h and 7% of the catch, while pelagic species represented by *Trichiurus lepturus,* were not important in the catches but contributed 7 kg/h and 3% of the total.

Table 5.15 Congo. Catch rates (kg/h) by main groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m), d) slope (201-500 m) and e) deep water (>500 m).

a) inner shelf (0-50 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1448	22	412.3	629.2	2.8	17.5	23.9	163.4	1249.1
1457	22	107.4	238.1	61.6	0.3	0.0	39.2	446.6
1456	23	155.6	101.2	84.6	0.8	0.0	58.0	400.2
1465	24	117.0	180.3	4.9	1.6	0.0	67.6	371.4
1455	38	158.7	80.5	2.0	9.9	0.0	50.6	301.6
1466	39	68.4	1346.6	7.7	1.1	0.0	72.2	1496.0
1474	40	72.4	478.1	5.1	10.8	0.0	71.1	637.5
1464	42	52.6	174.9	0.5	0.0	0.0	7.4	235.3
1449	46	163.4	60.4	1.4	0.3	0.1	48.1	273.7
Mean	32.9	145.3	365.5	19.0	4.7	2.7	64.2	601.3
SD		108.4	414.7	31.3	6.4	7.9	42.3	
%Catch		24.2	60.8	3.2	0.8	0.4	10.7	100.0

b) mid shelf (51-100 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1467	53	154.2	102.9	5.8	0.0	0.0	25.0	287.8
1454	74	158.9	9.2	6.3	17.4	0.0	42.4	234.2
1463	74	28.3	27.4	1.7	4.0	0.0	45.1	106.5
1450	76	23.6	59.5	0.1	10.7	3.5	19.2	116.5
1473	85	101.1	37.0	0.0	2.3	6.2	28.6	175.2
1458	100	191.6	56.1	6.5	17.4	0.0	141.4	413.0
Mean	77.0	109.6	48.7	3.4	8.6	1.6	50.3	222.2
SD		71.0	32.4	3.1	7.7	2.6	45.7	
%Catch		49.3	21.9	1.5	3.9	0.7	22.6	100.0

c) outer shelf (101-200 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1453	102	181.5	35.6	9.1	14.3	0.0	101.0	341.5
1472	108	41.4	3.5	0.5	0.5	6.2	9.9	61.9
1451	115	34.9	43.7	0.0	8.0	0.0	3127.3	3213.8
1462	115	55.9	79.6	15.1	5.4	3.5	29.0	188.4
1468	167	212.7	15.9	10.0	8.2	0.0	130.6	377.3
1459	181	181.1	5.5	72.0	0.0	0.0	62.7	321.3
Mean	131.3	117.9	30.6	17.8	6.1	1.6	576.7	750.7
SD		82.0	28.9	27.2	5.4	2.6	1250.3	
%Catch		15.7	4.1	2.4	0.8	0.2	76.8	100.0

d) slope (200-500 m)

Station	Depth	Demersal	Pelagic	Shrimps	Cephalopods	Sharks + Rays	Other	Total
1452	266	27.7	21.9	0.0	0.6	3.3	73.8	127.4
1471	298	67.4	11.1	17.1	0.4	0.0	63.6	159.6
1461	306	136.7	5.2	10.0	2.5	18.4	39.1	211.9
1460	412	92.1	2.0	327.5	2.6	33.8	140.1	598.1
1470	451	43.4	0.0	77.4	0.0	33.0	147.6	301.4
1469	599	10.2	0.0	23.6	1.1	13.0	123.4	171.3
Mean	388.7	62.9	6.7	75.9	1.2	16.9	97.9	261.6
SD		46.3	8.6	126.2	1.1	14.4	45.0	
%Catch		24.0	2.6	29.0	0.5	6.5	37.4	100.0

Pelagic species, Table 5.16, were frequent in the catches on the inner shelf 0-50 m depth, carangids were most abundant and contributed 152 kg/h or 25% to the total catch, this was due to one big haul of carangids at station 1466 of *Trachurus trecae* at 39 m depth. Other species of carangids present in the catches were *Chloroscombrus chrysurus*, and *Selene dorsalis*. Hairtails were more abundant than the clupeids and contributed 113 kg/h and 19% of the catch. The clupeid contributed 100 kg/h or 17% of the catches and were dominated by *Ilisha africana*, and the most frequent in this depth zone. Also present was *Sardinella aurita*. Scombrids and barracuda were totally absent from the catch in this depth zone.

Catches of pelagic species changed in the mid shelf (50 and 100 m depth), the group of clupeids were totally absent. Hairtails were the most important group and contributed 28 kg/h and 13% of the catch followed by carangids with 20.1 kg/h or 9%. Scombrids were less important and barracudas were not caught in this depth region.

In the outer shelf and slope, (101-200 m), hairtails and carangids contributed 20 kg/h and 3%, 10 kg/h and 1% to the catches at this depth region. Between 201->500 m hairtails were the present and contributed 7 kg/h or 3% while the all other pelagic groups were absent

Table 5.16 Congo. Catch rates (kg/h) by main pelagic groups in swept-area bottom-trawl hauls on the a) inner shelf (0-50 m) and b) mid shelf (51-100 m)

a) inner shelf (0-50 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1448	22	523.6	32.8	0.0	72.7	0.0	619.9	1249.1
1457	22	194.5	0.2	0.0	43.4	0.0	208.5	446.6
1456	23	63.4	1.1	0.0	36.7	0.0	299.0	400.2
1465	24	117.2	10.8	0.0	50.7	1.6	191.1	371.4
1455	38	0.0	0.9	0.0	79.6	0.0	221.2	301.6
1466	39	0.0	1245.2	0.0	101.4	0.0	149.4	1496.0
1474	40	0.0	46.5	0.0	431.6	0.0	159.4	637.5
1464	42	5.2	27.1	0.0	142.6	0.0	60.4	235.3
1449	46	0.0	0.0	0.0	60.4	0.0	213.3	273.7
Mean	32.9	100.4	151.6	0.0	113.2	0.2	235.8	601.3
SD		172.8	410.4	0.0	123.8	0.5	157.8	
%Catch		16.7	25.2	0.0	18.8	0.0	39.2	100.0

b) mid shelf (51-100 m)

Station	Depth	*Clupeoids*	Carangids	Scombrids	Hairtails	Barracudas	Other	Total
1467	53	0.0	10.9	0.0	92.0	0.0	185.0	287.8
1454	74	0.0	1.2	0.0	7.9	0.0	225.0	234.2
1463	74	0.0	16.2	0.0	11.2	0.0	79.1	106.5
1450	76	0.0	11.0	0.0	48.5	0.0	57.0	116.5
1473	85	0.0	35.4	0.7	0.9	0.0	138.2	175.2
1458	100	0.0	45.7	0.0	10.4	0.0	356.9	413.0
Mean	77.0	0.0	20.1	0.1	28.5	0.0	173.5	222.2
SD		0.0	16.9	0.3	35.3	0.0	109.7	
%Catch		0.0	9.0	0.0	12.8	0.0	78.1	100.0

The valuable demersal species, seabreams, snappers, groupers, grunts (exclusive *Brachydeuterus auritus*) and croakers were less frequent in the catches, Table 5.17. Croakers dominated the catch in all depth region, unlike other countries were seabreams dominated in all depth regions. Some grunts were found inshore of 50 m depth, while seabreams were present in low density in all depth regions.

Table 5.17 Congo. Catch rates (kg/h) by valuable demersal species swept-area bottom-trawl hauls on the a) inner shelf (0-50 m), b) mid shelf (51-100 m) and c) outer shelf (101-200 m).

a) inner shelf (0-50 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1448	22	0.0	0.0	0.0	118.3	15.0	1115.8	1249.1
1457	22	0.0	0.0	0.0	0.0	77.1	369.5	446.6
1456	23	0.0	0.0	0.0	0.0	134.9	265.3	400.2
1465	24	0.0	0.0	0.0	0.0	12.9	358.5	371.4
1455	38	2.3	0.0	0.0	3.0	122.1	174.3	301.6
1466	39	0.0	0.0	0.0	0.0	45.1	1450.9	1496.0
1474	40	0.0	0.0	0.0	0.0	49.6	587.9	637.5
1464	42	0.0	0.0	0.0	0.0	6.7	228.6	235.3
1449	46	0.5	0.0	0.5	0.0	148.0	124.7	273.7
Mean	32.9	0.3	0.0	0.1	13.5	67.9	519.5	601.3
SD		0.8	0.0	0.2	39.3	55.2	461.1	
%Catch		0.1	0.0	0.0	2.2	11.3	86.4	100.0

b) mid shelf (51-100 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1467	53	0.0	0.0	0.0	0.0	21.3	266.6	287.8
1454	74	43.6	0.0	1.0	0.0	73.9	115.8	234.2
1463	74	1.3	0.0	0.0	0.0	4.9	100.3	106.5
1450	76	19.9	0.0	0.0	0.0	1.0	95.6	116.5
1473	85	20.3	0.0	26.0	0.0	51.2	77.7	175.2
1458	100	56.2	0.0	0.0	0.0	28.6	328.3	413.0
Mean	77.0	23.5	0.0	4.5	0.0	30.1	164.0	222.2
SD		22.5	0.0	10.5	0.0	28.0	105.8	
%Catch		10.6	0.0	2.0	0.0	13.6	73.8	100.0

c) outer shelf (101-200 m)

Station	Depth	Seabreams	Snappers	Groupers	Grunts	Croakers	Other	Total
1453	102	33.9	0.0	0.0	0.0	110.2	197.5	341.5
1472	108	39.2	0.0	0.0	0.0	0.0	22.7	61.9
1451	115	18.6	0.0	0.5	0.0	15.3	3179.4	3213.8
1462	115	14.2	0.0	0.0	0.0	30.7	143.5	188.4
1468	167	55.5	0.0	0.0	0.0	102.1	219.8	377.3
1459	181	40.9	0.0	0.0	0.0	8.0	272.4	321.3
Mean	131.3	33.7	0.0	0.1	0.0	44.4	672.5	750.7
SD		15.3	0.0	0.2	0.0	49.0	1231.0	
%Catch		4.5	0.0	0.0	0.0	5.9	89.6	100.0

5.6 Review of results

The survey was conducted in the middle of the rainy season, and the weather was generally overcast and calm, with occasional heavy rainfall associated with strong winds north of equator Sea surface temperature was typically >26°C in the northern part of the survey area, and dropping rapidly from 26°C towards 22°C south of Cape Lopez. The frontal zone at Cape Lopez was clear, but slightly less pronounced than last year.

Nigeria and Cameroon

The Nigerian coastline is about 853 km long. The literature describes four distinct geomorphological zones; the barrier islands outside Lagos, the mud coast, the delta area and the strand coast. Two canyons (Avon and Mahin) present off Lagos separates the mud coast and the Niger delta area. Nigerian continental shelf becomes progressively wider from west to east. The sediment distribution on the shelf will be analysed from samples collected during this and previous surveys. Generally coarse to fine sand are found from 0 to about 30 m except on the mud coast zone and some estuarine areas around the delta. The shelf becomes gradually muddier with sediments containing more fine sand and higher silt and clay content in deeper areas. The wider shelf length around the Niger delta is a result of the alluvial input and deposition from the Niger River. The Niger delta is also the third largest mangrove area in the world and mangroves line the creeks and river systems from the edge of the sea to upper reaches of the seawater.

The coastline of Cameroon is approximately 420 km long. The northern part of the shelf, bordering Nigeria is characterised by shallow water soft sandy to muddy bottom habitat. The bottom becomes sandier further south on the inner shelf, with several patches of coral and hard bottom substrate. The shelf break and slope is very steep, irregular and in places untrawlable.

The coast of Nigeria and Cameroon is heavily influenced by their river systems, and the seasonal discharge from these. Large current systems also play a role. Especially the Guinea current coming from the west, affecting the western shelf of Nigeria, and the Angola current that at times reaches the southern coast of Cameroon.

The survey off Nigeria and Cameroon and the observations made in the area were similar to last year and 2004. Oil platforms and pipelines hampered, in places, trawling in the most shallow and reportedly more productive parts of the coast, mainly <30 m depth. The shelf generally had a lack of seabirds and marine mammal predators, otherwise frequently observed along most of West Africa. Some terns and gulls were observed especially in the area outside Limbe and the southern end of Cameroon. A total biomass of 90 thousand tonnes was estimated in Nigeria and 14 thousand in Cameroon for selected groups in 2006 compared with 56 thousand tonnes and 15 thousand tonnes for the same groups in 2005. Average total catch rates between 0-200 m depth were 8.5 t/nm^2 in Nigeria and 8.4 t/nm^2 in Cameroon in 2006, compared with 6.4 t/nm^2 and 9.9 t/nm^2 in Nigeria and Cameroon respectively in 2005.

The biomass of the major demersal groups are listed in Table 5. together with other important species groups in the region. The most abundant group in Nigeria was the *Ariomma bondi* and *A. melanum*. These are not caught for commercial purposes, but are abundant on the shelf from approximately 100 m depth. The total biomass of the two species were 23 thousand tonnes compared with 12 thousand tonnes last year. Seabreams were the most abundant of the commercial species with a total biomass for all depth strata of 8 thousand tonnes, compared with 6 thousand tonnes last year. The second most abundant of the commercial important

groups were the croakers with a biomass of 7 thousand tonnes, slightly higher than 5,300 tonnes as found during the survey last year. The grunts biomass were 516 tonnes while last year grunts, groupers and snappers were less abundant with an estimated biomass of 400 tonnes, 400 tonnes and 100 tonnes respectively. *Brachydeuterus auritus* was excluded from the biomass estimate of grunts, and the abundance was calculated separately. The biomass of *B. auritus* was estimated at 7 thousand tonnes, somewhat lower than the 9 thousand tonnes estimates last year. The biomass of sharks and rays was also low, estimated to be 1,600 tonnes and 400 tonnes respectively compared with 3 thousand tonnes and 900 tonnes last year. Swept area estimates were also produced for several species that are not truly demersal, and estimates using this method will therefore normally underestimate the biomass. These were mainly the carangids, barracudas and cephalopods. The biomass of these groups calculated by the swept area method gave 31 thousand tonnes, 4 thousand tonnes and 6 thousand tonnes respectively. Last year these groups gave an estimated biomass of 11 thousand tonnes, 3,500 tonnes and 4,800 tonnes respectively.

The most abundant species in Cameroon was the *Ariomma bondi* with an estimated biomass of 4,400 tonnes compared with 1,100 tonnes last year. Of the commercially important demersal species the most abundant groups were the seabream and croakers with biomasses estimates of 1,700 and 1,600 tonnes respectively, compared with 1,500 tonnes each last year. The biomass of snappers and grunts declined from last year and became less important with 93 and 77 tonnes this year compared with 700 tonnes and 150 tonnes respectively in 2005, while the abundance of groupers increased from 100 tonnes to 248 tonnes. The biomass estimate for this year are lower than last compared to for snappers and grunts. Other abundant groups were the carangids with an estimated biomass of 2,800 tonnes, compared with 6,700 tonnes last year, and the *Brachydeuterus auritus*, with an estimated biomass of 1,200 tonnes compared to 1,700 tonnes last year. Sharks biomass estimate was stable at 270 tonnes while rays biomass estimate increased from 200 tonnes in 2005 to 369 tonnes in 2006.

São Tomé and Principe

São Tomé and Principe are volcanic islands approximately 200 km from the coast of the mainland of Africa, and as such are characterised by an oceanic environment with higher salinity and lower temperatures than the coast of Nigeria and Cameroon. The bottom topography and substrate differs greatly from that on the mainland. The coast is rocky and very steep, with a shelf break on both islands around 80-100 m depth and bottom depths typically >1000 m off the shelf. The shelf is relatively flat and hard with corral and stones, but with patches of sandy substrate in between. Demersal species dominates on the islands. While the biomass estimate for Nigeria and Cameroon was calculated from 0-500 m depth, the biomass estimate for São Tomé and Principe was only calculated for the area between 0-100 m depth, because no trawls were possible off the shelf break. The biomass on both islands is probably underestimated by the swept area method because of the large areas with rough bottom that are untrawlable, but were acoustic recordings indicates high concentrations of demersal fish. The large untrawlable areas also consequently give a low number of trawl hauls and low precision on the estimates. The abundance of selected species groups has

decreased from last year, both on Principe and São Tomé. The total catch of these species groups were 1 thousand tonnes and 800 tonnes respectively in 2006 compared with 1 400 tonnes and 5 700 tonnes in 2005. Note that the biomass estimate from São Tomé in 2005 may be an overestimate due to one large catch of Snappers. Average total catch rates decreased between 30-100 m depth with estimates of 6.1 t/nm^2 in Principe and 15.3 t/nm^2 in São Tomé in 2006, compared with 9.1 t/nm^2 and 50.3 t/nm^2 in Principe and São Tomé respectively in 2005.

The dominant species on Principe was gurnards, *Dactylopterus volitans,* and seabreams. The gurnards has little commercial value and no biomass estimate was therefore produced, while the biomass of seabreams was 800 tonnes compared with 1 200 tonnes in 2005. The biomass estimate for cephalopods was 130 tonnes while 14 tonnes of carangids was estimated. Rays, snappers and Ariomma estimates were 16 tonnes, 4 tonnes and 2 tonnes respectively.

The most important commercial group in São Tomé were seabreams with biomass estimate of 470 tonnes, this estimate is consistent with values obtained for 2005 and 2004. Snappers were the second most abundant group with estimated biomass of 202 tonnes compared to last year, when an average biomass of 4 900 tonnes was estimated from a single catch. Biomass estimate for groupers was very low (4 tonnes) compared to 130 tonnes, in 2005 and 2004. The gurnard, *Dactylopterus volitans* was a dominant group also on São Tomé but no biomass estimate was calculated for this group. The biomass of carangids, cephalopods, and barracudas were estimated at 81 tonnes, 45 tonnes and 12 tonnes respectively.

Gabon

Gabon has a long coastline and a relatively long shelf with steep shelf break between 100 and 200 m depth. Bottom substrate is variable with hard rocky patches between softer substrates. The midshelf immediately north of Cape Lopez is very soft. The shelf is narrow and steep at Cape Lopez and divides Gabon into two separate systems divided by a frontal zone with a steep temperature gradient. The shelf is relatively abundant with life, compared with the rest of the area covered by the survey. Whale and dolphin sightings are daily. Of particular importance are maybe the observations of juvenile pelagic fish, *Sardinella maderensis, sardinella aurita, Trachurus trecae, Scomber japonicus* and other more demersal species, e.g. *Brachydeuterus auritus* and *Pagellus bellottii.* These were found south of Cape Lopez, and underline the importance of the shelf of Gabon and Congo as a nursery area for fish. Biomass is presented for the whole region of Gabon but separate catch rates for the region north and south of Cape Lopez can be found in Annex V. Total catch rates for the northern, and the southern shelf of Gabon was 11.3 t/nm^2 and 26.3 t/nm^2 compared with 11.8 t/nm^2 and 52.5 t/nm^2 in 2005. It is noteworthy that the catch rates south of Cape Lopez was only half of that in 2005.

Estimated biomass for the main species groups were generally lower than in 2005, particularly because of the lowered catch rates south of Cape Lopez. Seabreams were the most

abundant group with an estimated abundance of 30 thousand tonnes, compared to 36 thousand tonnes in 2005. Carangids were the second most abundant species group in Gabon with an estimated biomass of 26 500 tonnes, proximately half of the 2005 estimate. The third most abundant was *Brachydeuterus auritus* with an estimated biomass of 12 thousand tonnes, also this was considerably lower than the 33 thousand tonnes estimated in 2005. Other valuable species, croakers, grunts, groupers and snappers had an estimated biomasses of 5 thousand tonnes, 4 thousand tonnes, 1 thousand tonnes, and 1 thousand tonnes respectively. It is also worth mentioning that although the estimate of cephalopods were lower than last year, Gabon still has the highest abundance of this species group in the region.

Congo

The shelf of Congo is an extension of the southern shelf of Gabon and as such has many of the same characteristics. The shelf is increasingly more influenced by freshwater and high sedimentation rates southwards because of the close proximity to the Congo River. Oil installations and closed safety zones around these limits trawling operation in the area.

This year the croakers was the most abundant species group in Congo with an estimated biomass of 4 thousand tonnes, the estimate was similar in 2005. The second most important was the carangid group with 4 thousand tonnes compared with 26 thousand tonnes in 2005. *Brachydeuterus auritus* had an estimated biomass of 3 thousand tonnes compared with 47 thousand tonnes in 2005. Seabreams, grunts and groupers had estimated abundance of 2 thousand tonnes, 500 tonnes and 125 tonnes. The overall biomass estimate in Gabon this year was considerably lower than the estimates in 2005. It was in particular the reduced abundance of Brachydeuterus and of Carangids that affected the overall density reduction.

Table 5.22 Swept area biomass estimates for the main fish groups and Cephalopods encountered during the bottom trawl survey in the Gulf of Guinea. Total for all depth strata, 0-200 m for Nigeria and Cameroon, 50-100 m for the islands of Principe and São Tomé. 0-500 m depth for Gabon and Congo. Values in tonnes. Please note: 1. Biomass estimates of Grunts in 2004 included *Brachydeuterus auritus* 2. The survey off Gabon and Congo in 2004 was an acoustic survey only, and no swept area estimate was calculated. 3. The biomass estimate of snappers in São Tomé in 2005 is based on one large catch and may be an overestimated.

Country	Year	Seabreams	Grunts [1]	Croakers	Groupers	Snappers	*B. auritus*	Sharks	Rays	Barracudas	Cephalopods	Ariomma	Carangids	**Group Total**
Nigeria	2006	8054	516	7064	712	0	7079	1594	359	4463	6441	22759	30795	**89836**
	2005	5960	434	5337	370	104	9036	3048	870	3539	4835	12303	10607	**56443**
	2004	6460	6763	5371	804	52	-	1676	489	4586	6332	8037	24481	**65051**
Cameroon	2006	1655	77	1604	248	93	1231	270	369	532	467	4449	2799	**13795**
	2005	1526	149	1520	111	738	1710	283	204	1006	395	1081	6668	**15391**
	2004	976	6371	1609	181	217	-	112	92	562	510	8065	1892	**20587**
Principe	2006	794	0	0	0	4	0	0	16	0	129	2	14	**959**
	2005	1223	0	0	0	0	0	0	0	0	132	0	23	**1378**
	2004	1106	0	0	0	0	-	0	0	0	75	0	18	**1199**
São Tomé	2006	471	5	0	4	202	1	0	8	12	45	0	81	**829**
	2005	456	42	0	131	4895[3]	76	0	0	0	92	0	13	**810**
	2004	397	19	0	127	147	-	6	4	0	66	0	21	**787**
Gabon	2006	30416	3574	4737	1372	1222	12065	1311	2471	5235	8243	2143	26489	**99277**
	2005	35841	1121	3205	3231	3062	33107	2102	3813	3033	10648	8459	54709	**162331**
	2004[2]													
Congo	2006	1797	487	4196	125	0	2593	167	484	0	537	41	3705	**14131**
	2005	5249	430	4359	95	0	46703	440	1191	0	3951	33	25505	**87954**
	2004[2]													

ANNEX I Records of fishing stations

PROJECT STATION:1211

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 610

start stop duration Long E 249

TIME :07:48:41 08:19:13 31 (min) Purpose code: 3

LOG :2440.11 2441.62 1.51 Area code : 5

FDEPTH: 73 74 GearCond.code:

BDEPTH: 73 74 Validity code:

Towing dir: 80ø Wire out: 210 m Speed: 3 kn*10

Sorted: 35 Kg Total catch: 35.53 CATCH/HOUR: 68.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	29.23	304	42.50	5241
J E L L Y F I S H	8.73	52	12.69	
Pagellus bellottii	8.17	153	11.88	5242
Trichiurus lepturus	4.82	83	7.01	5247
Alloteuthis africana	4.57	1303	6.65	
Priacanthus arenatus	2.44	72	3.55	5248
Sepia officinalis hierredda	2.36	33	3.43	
Pseudupeneus prayensis	1.72	50	2.50	5244
Saurida brasiliensis	1.41	350	2.05	
Brotula barbata	1.12	6	1.63	5246
Pentheroscion mbizi	1.08	6	1.57	5245
Pagrus caeruleostictus	0.77	6	1.12	5243
Sphyraena guachancho	0.58	6	0.84	
Lepidotrigla cadmani	0.46	12	0.67	
Lagocephalus laevigatus	0.35	2	0.51	
Citharus linguatula	0.31	12	0.45	
Fistularia petimba	0.19	4	0.28	
Decapterus punctatus	0.17	8	0.25	5240
Boops boops	0.06	4	0.09	
Sphoeroides marmoratus	0.06	2	0.09	
Sardinella aurita	0.06	2	0.09	
Bathygobius paganellus	0.04	2	0.06	
Engraulis encrasicolus	0.02	2	0.03	
Syacium micrurum	0.02	4	0.03	
Parapenaeus longirostris	0.02	2	0.03	
Total	68.76		100.00	

PROJECT STATION:1213

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 620

start stop duration Long E 250

TIME :11:10:00 11:40:57 30 (min) Purpose code: 3

LOG :2457.28 2458.91 1.61 Area code : 5

FDEPTH: 19 20 GearCond.code:

BDEPTH: 19 20 Validity code:

Towing dir: 90ø Wire out: 100 m Speed: 3 kn*10

Sorted: 37 Kg Total catch: 221.07 CATCH/HOUR: 442.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	250.80	1620	56.72	
Trichiurus lepturus	62.04	780	14.03	5260
Pseudotolithus senegalensis	24.00	180	5.43	
Ilisha africana	20.52	1392	4.64	
Brachydeuterus auritus	17.88	324	4.04	5261
Pentanemus quinquarius	15.96	264	3.61	
Pseudotolithus typus	7.32	96	1.66	
Dasyatis margarita	5.88	12	1.33	
Parapenaeopsis atlantica	5.76	1344	1.30	
Chloroscombrus chrysurus	5.52	708	1.25	5262
Portunus validus	4.44	12	1.00	
Pteroscion peli	4.32	120	0.98	
Galeoides decadactylus	3.12	108	0.71	
Sardinella maderensis	2.28	36	0.52	
Caranx crysos	2.16	12	0.49	
Selene dorsalis	2.04	708	0.46	
Sphyrna lewini	1.86	2	0.42	
Drepane africana	1.68	132	0.38	
Callinectes amnicola	1.44	48	0.33	
Nematopalaemon hastatus	1.20	728	0.27	
Scomberomorus tritor	0.84	12	0.19	
Sepia officinalis hierredda	0.36	12	0.08	
Alectis alexandrinus	0.36	12	0.08	
Sphyraena guachancho	0.24	12	0.05	
Lagocephalus laevigatus	0.12	12	0.03	
Total	442.14		100.00	

PROJECT STATION:1212

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 615

start stop duration Long E 250

TIME :09:09:58 09:40:00 30 (min) Purpose code: 3

LOG :2447.44 2448.98 1.54 Area code : 5

FDEPTH: 41 41 GearCond.code:

BDEPTH: 41 41 Validity code:

Towing dir: 270ø Wire out: 120 m Speed: 3 kn*10

Sorted: 93 Kg Total catch: 93.79 CATCH/HOUR: 187.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	47.10	108	25.11	
Selene dorsalis	43.20	198	23.03	5256
Galeoides decadactylus	23.10	148	12.31	5251
Brachydeuterus auritus	14.32	874	7.63	5257
Stromateus fiatola	12.02	32	6.41	5259
Uraspis helvola	7.52	16	4.01	5249
Sphyraena guachancho	7.46	272	3.98	5250
Ilisha africana	5.40	170	2.88	5258
Sepia officinalis hierredda	5.36	6	2.86	
Pomadasys rogeri	4.34	16	2.31	5252
Trichiurus lepturus	3.60	280	1.92	
Pomadasys jubelini	3.46	8	1.84	5253
Sepiella ornata	3.42	1850	1.82	
Scomberomorus tritor	1.30	2	0.69	
Pagellus bellottii	1.22	10	0.65	
Alloteuthis africana	0.98	242	0.52	
Pteroscion peli	0.54	14	0.29	
Raja miraletus	0.52	2	0.28	
Pseudotolithus senegalensis	0.44	2	0.23	
Scyllarides herklotsii	0.40	78	0.21	
Penaeus notialis	0.36	8	0.19	
Lagocephalus laevigatus	0.30	62	0.16	
Dentex angolensis	0.30	4	0.16	
Priacanthus arenatus	0.18	6	0.10	
Umbrina canariensis	0.16	2	0.09	
Decapterus punctatus	0.14	2	0.07	5254
Eucinostomus melanopterus	0.12	2	0.06	
Todaropsis eblanae	0.08	12	0.04	
Bothus podas africanus	0.06	2	0.03	
Saurida brasiliensis	0.04	12	0.02	
Chaetodipterus goreensis	0.04	2	0.02	
Syacium micrurum	0.04	2	0.02	
Epinephelus aeneus	0.02	2	0.01	5255
Bathygobius paganellus	0.02	2	0.01	
Naucrates ductor	0.02	2	0.01	
Total	187.58		99.97	

PROJECT STATION:1214

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 619

start stop duration Long E 306

TIME :13:33:47 14:03:28 30 (min) Purpose code: 3

LOG :2474.41 2475.91 1.50 Area code : 5

FDEPTH: 26 25 GearCond.code:

BDEPTH: 26 25 Validity code:

Towing dir: 270ø Wire out: 130 m Speed: 3 kn*10

Sorted: 69 Kg Total catch: 138.82 CATCH/HOUR: 277.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	91.00	6984	32.78	5270
Trichiurus lepturus	83.00	2868	29.89	5273
Galeoides decadactylus	22.56	204	8.13	5264
Brachydeuterus auritus	12.44	176	4.48	5271
Pteroscion peli	10.56	244	3.80	5272
Pseudotolithus senegalensis	8.56	76	3.08	5274
Sphyraena guachancho	8.24	116	2.97	5269
Drepane africana	6.84	104	2.46	
Albula vulpes	5.56	32	2.00	5268
Pomadasys jubelini	5.28	20	1.90	5265
Parapenaeopsis atlantica	3.72	932	1.34	
Chloroscombrus chrysurus	3.52	204	1.27	5267
Cynoponticus ferox	3.08	8	1.11	
Alectis alexandrinus	1.96	4	0.71	
Selene dorsalis	1.96	108	0.71	
J E L L Y F I S H	1.60	4	0.58	
Polydactylus quadrifilis	1.28	8	0.46	
Pseudotolithus typus	0.92	4	0.33	
Portunus validus	0.88	32	0.32	
Panulirus regius	0.76	4	0.27	
Sardinella aurita	0.72	96	0.26	5266
Todaropsis eblanae	0.64	276	0.23	
Penaeus monodon	0.64	4	0.23	
Sepia officinalis hierredda	0.44	4	0.16	
Scomberomorus tritor	0.36	4	0.13	
Lagocephalus laevigatus	0.36	4	0.13	
Pentanemus quinquarius	0.28	4	0.10	
Epinephelus alexandrinus	0.20	4	0.07	
Decapterus rhonchus	0.16	4	0.06	
Nematopalaemon hastatus	0.08	80	0.03	
Penaeus notialis	0.04	4	0.01	
Total	277.64		100.00	

PROJECT STATION:1215

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 616

	start	stop	duration			Long E 308
TIME	:16:19:44	16:49:23	30	(min)	Purpose code:	3
LOG	:2483.57	2485.14	1.55		Area code :	5
FDEPTH:	42	41			GearCond.code:	
BDEPTH:	42	41			Validity code:	

Towing dir: 270ø Wire out: 180 m Speed: 30 kn*10

Sorted: 28 Kg Total catch: 83.46 CATCH/HOUR: 166.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	119.40		71.53	
Ilisha africana	11.94	528	7.15	5277
Trichiurus lepturus	11.46	1080	6.87	
Pteroscion peli	8.16	696	4.89	
Brachydeuterus auritus	7.92	606	4.74	5275
Sphyraena guachancho	3.12	132	1.87	5276
Selene dorsalis	2.10	432	1.26	5278
Sepia officinalis hierredda	1.80	12	1.08	
Penaeus notialis	0.90	72	0.54	
Squilla mantis	0.12	18	0.07	
Total	166.92		100.00	

PROJECT STATION:1216

DATE:10/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 614

	start	stop	duration			Long E 308
TIME	:17:48:02	18:18:08	30	(min)	Purpose code:	3
LOG	:2490.84	2492.48	1.62		Area code :	5
FDEPTH:	57	56			GearCond.code:	
BDEPTH:	57	56			Validity code:	

Towing dir: 270ø Wire out: 200 m Speed: 32 kn*10

Sorted: 40 Kg Total catch: 227.43 CATCH/HOUR: 454.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	311.30	694	68.44	
Trichiurus lepturus	24.20	892	5.32	
Pentheroscion mbizi	23.98	232	5.27	5279
Sepia officinalis hierredda	17.28	44	3.80	
Brachydeuterus auritus	16.72	682	3.68	
Mustelus mustelus	16.00	8	3.52	
Uranoscopus albesca	8.80	56	1.93	
Raja miraletus	7.92	56	1.74	
Pagellus bellottii	7.48	110	1.64	5280
Brotula barbata	4.84	56	1.06	5281
Sphyraena guachancho	2.42	100	0.53	
Alloteuthis africana	2.20	584	0.48	
Cynoponticus ferox	2.10	4	0.46	
Syacium micrurum	*1.98*	*122*	*0.44*	
Penaeus notialis	1.98	198	0.44	
Scyllarides herklotsii	1.22	166	0.27	
Citharus linguatula	1.00	44	0.22	
Pteroscion peli	1.00	78	0.22	
Serranus accraensis	0.88	44	0.19	
Parapenaeus longirostris	0.78	342	0.17	
Epinephelus aeneus	0.44	12	0.10	
Grammoplites gruveli	0.22	12	0.05	
Priacanthus arenatus	0.12	12	0.03	
Total	454.86		100.00	

PROJECT STATION:1217

DATE:10/ 6/06 GEAR TYPE: PT No: 2 POSITION:Lat N 606

	start	stop	duration			Long E 259
TIME	:21:06:50	21:37:43	31	(min)	Purpose code:	3
LOG	:2506.48	2508.45	1.94		Area code :	5
FDEPTH:	50	55			GearCond.code:	
BDEPTH:	951	1065			Validity code:	

Towing dir: 270ø Wire out: 150 m Speed: 34 kn*10

Sorted: 25 Kg Total catch: 25.55 CATCH/HOUR: 49.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	42.77	27135	86.49	
Todarodes sagittatus	5.11	6	10.33	
PARALEPIDIDAE	0.31	54	0.63	
Gempylus serpens	0.27	2	0.55	
Promethichthys prometheus	0.25	21	0.51	
Hypoclydonia bella	0.19	79	0.38	
SEPIIDAE	0.15	45	0.30	
Selene dorsalis	0.12	126	0.24	
J E L L Y F I S H	0.08	6	0.16	
Cryptopsaras couesii	0.08	2	0.16	
BOTHIDAE	0.04	43	0.08	
ASTRONESTHIDAE	0.02	4	0.04	
JUVENILE FISHES	*0.02*	*14*	*0.04*	
FISH LARVAE	0.02	31	0.04	
Brama brama	0.02	4	0.04	
Total	49.45		99.99	

PROJECT STATION:1218

DATE:11/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 611

	start	stop	duration			Long E 317
TIME	:05:51:14	06:20:09	29	(min)	Purpose code:	3
LOG	:2566.00	2567.42	1.39		Area code :	5
FDEPTH:	93	89			GearCond.code:	
BDEPTH:	93	89			Validity code:	

Towing dir: 90ø Wire out: 303 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 160.99 CATCH/HOUR: 333.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	191.59	4237	57.52	5283
Lagocephalus laevigatus	57.66	58	17.31	
Dentex angolensis	*23.52*	*310*	*7.06*	*5282*
Priacanthus arenatus	19.24	548	5.78	
Squatina aculeata	13.80	17	4.14	
Sepia officinalis hierredda	9.56	21	2.87	
Pentheroscion mbizi	6.04	41	1.81	
Raja miraletus	4.03	21	1.21	
Illex coindetii	1.66	31	0.50	
Ariomma bondi	1.49	25	0.45	
Sphoeroides marmoratus	1.39	14	0.42	
Boops boops	0.97	14	0.29	
Fistularia petimba	0.62	14	0.19	
Lepidotrigla cadmani	0.46	10	0.14	
Chilomycterus spinosus mauret.	0.31	4	0.09	
Trichiurus lepturus	0.25	4	0.08	
Microchirus frechkopi	0.10	4	0.03	
Syacium micrurum	0.10	14	0.03	
Scyllarides herklotsii	0.10	25	0.03	
Citharus linguatula	0.04	4	0.01	
Decapterus punctatus	0.04	4	0.01	
Total	332.97		99.97	

PROJECT STATION:1219

DATE:11/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 617

	start	stop	duration			Long E 318
TIME	:09:23:51	09:55:57	32	(min)	Purpose code:	3
LOG	:2577.52	2579.26	1.71		Area code :	5
FDEPTH:	39	39			GearCond.code:	
BDEPTH:	39	39			Validity code:	

Towing dir: 250ø Wire out: 120 m Speed: 32 kn*10

Sorted: 49 Kg Total catch: 81.94 CATCH/HOUR: 153.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	34.86	150	22.69	
Chloroscombrus chrysurus	34.28	1166	22.31	
Trichiurus lepturus	27.11	1808	17.65	
Pteroscion peli	14.16	1416	9.22	
Selene dorsalis	11.46	2528	7.46	
Ilisha africana	7.03	326	4.58	5284
Sphyraena guachancho	4.24	71	2.76	
Portunus validus	3.64	13	2.37	
Scomberomorus tritor	2.87	6	1.87	
Balistes punctatus	2.76	4	1.80	
Sepia officinalis hierredda	2.46	13	1.60	
Sardinella maderensis	2.08	28	1.35	5285
Brachydeuterus auritus	1.93	128	1.26	
Penaeus notialis	1.05	43	0.68	
Sardinella aurita	0.84	32	0.55	5286
Pseudotolithus senegalensis	0.60	9	0.39	
Pisodonophis semicinctus	0.53	6	0.34	
Epinephelus aeneus	0.47	15	0.31	
Parapenaeopsis atlantica	0.41	118	0.27	
Antennarius occidentalis	0.28	13	0.18	
Grammoplites gruveli	0.19	23	0.12	
Nematopalaemon hastatus	0.15	51	0.10	
Lagocephalus laevigatus	0.06	13	0.04	
Sepiella ornata	0.06	9	0.04	
Sicyonia galeata	0.04	4	0.03	
Alectis alexandrinus	*0.04*	*4*	*0.03*	
PECTINIDAE	0.04	23	0.03	
Raja miraletus	0.04	4	0.03	
Total	153.68		100.06	

PROJECT STATION:1220

DATE:11/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 620
start stop duration Long E 316
TIME :10:41:55 11:12:49 31 (min) Purpose code: 3
LOG :2582.61 2584.27 1.64 Area code : 5
FDEPTH: 26 25 GearCond.code:
BDEPTH: 26 25 Validity code:
Towing dir: 90ø Wire out: 100 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 56.89 CATCH/HOUR: 110.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	18.72	430	17.00	
Ilisha africana	15.50	699	14.08	
Sphyraena guachancho	15.25	112	13.85	5291
Galeoides decadactylus	10.20	168	9.26	5287
Pseudotolithus senegalensis	6.00	74	5.45	5290
Pteroscion peli	5.34	118	4.85	
Brachydeuterus auritus	5.11	77	4.64	5288
Chloroscombrus chrysurus	5.11	290	4.64	
Albula vulpes	4.92	31	4.47	
Scomberomorus tritor	3.58	17	3.25	
Sardinella maderensis	3.29	106	2.99	
J E L L Y F I S H	3.27	12	2.97	
Caranx hippos	2.40	17	2.18	
Drepane africana	2.01	31	1.83	5289
Lagocephalus laevigatus	1.57	10	1.43	
Selene dorsalis	1.24	64	1.13	
Pomadasys jubelini	1.14	8	1.04	
Portunus validus	1.14	4	1.04	
Eucinostomus melanopterus	0.74	17	0.67	
Callinectes pallidus	0.68	27	0.62	
Penaeus kerathurus	0.62	31	0.56	
Pentanemus quinquarius	0.52	14	0.47	
Cynoponticus ferox	0.43	2	0.39	
Lutjanus goreensis	0.43	2	0.39	
Alectis alexandrinus	0.29	2	0.26	
Penaeus notialis	0.25	60	0.23	
Pseudupeneus prayensis	0.19	4	0.17	
Dentex angolensis	0.17	2	0.15	
Total	110.11		100.01	

PROJECT STATION:1221

DATE:11/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 622
start stop duration Long E 352
TIME :15:37:38 16:07:35 30 (min) Purpose code: 3
LOG :2620.43 2621.95 1.49 Area code : 5
FDEPTH: 24 26 GearCond.code:
BDEPTH: 24 26 Validity code:
Towing dir: 280ø Wire out: 115 m Speed: 30 kn*10

Sorted: 9 Kg Total catch: 9.37 CATCH/HOUR: 18.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Alectis alexandrinus	12.30	10	65.64	
Lagocephalus laevigatus	3.32	2	17.72	
Sepia officinalis hierredda	1.44	2	7.68	
Scomberomorus tritor	1.20	2	6.40	
Caranx hippos	0.48	2	2.56	
Total	18.74		100.00	

PROJECT STATION:1222

DATE:11/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 615
start stop duration Long E 348
TIME :17:29:08 17:59:05 30 (min) Purpose code: 3
LOG :2630.91 2632.43 1.50 Area code : 5
FDEPTH: 78 77 GearCond.code:
BDEPTH: 78 77 Validity code:
Towing dir: 258ø Wire out: 277 m Speed: 30 kn*10

Sorted: 34 Kg Total catch: 246.36 CATCH/HOUR: 492.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	124.80	2288	25.33	5297
Ariomma bondi	87.80	1630	17.82	5292
Sepia officinalis hierredda	50.20	108	10.19	
Decapterus punctatus	43.20	1060	8.77	5293
Boops boops	36.80	612	7.47	
Dentex angolensis	34.20	288	6.94	5296
Sardinella aurita	33.60	1010	6.82	5294
Sphyraena guachancho	20.60	68	4.18	5298
Epinephelus aeneus	15.00	4	3.04	
Squatina oculata	11.40	10	2.31	
Priacanthus arenatus	10.60	180	2.15	
Pseudupeneus prayensis	10.40	264	2.11	5295
Raja miraletus	3.80	24	0.77	
Octopus vulgaris	2.18	2	0.44	
Chaetodon marcellae	1.90	4	0.39	
Fistularia petimba	1.68	36	0.34	
Dactylopterus volitans	1.62	6	0.33	
Portunus validus	1.02	2	0.21	
Illex coindetii	1.00	120	0.20	
Scomberomorus tritor	0.82	2	0.17	
Syacium micrurum	0.12	12	0.02	
Total	492.74		100.00	

PROJECT STATION:1223

DATE:11/ 6/06 GEAR TYPE: PT No: 5 POSITION:Lat N 601
start stop duration Long E 346
TIME :19:51:01 20:21:20 30 (min) Purpose code: 3
LOG :2646.36 2648.10 1.75 Area code : 5
FDEPTH: 0 36 GearCond.code:
BDEPTH: 1154 1439 Validity code:
Towing dir: 180ø Wire out: 100 m Speed: 34 kn*10

Sorted: 19 Kg Total catch: 19.51 CATCH/HOUR: 39.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	16.40	7974	42.03	
Thunnus obesus	13.80	4	35.37	
Brama brama	6.18	44	15.84	5299
Leptocephalus	0.80	290	2.05	
Todarodes sagittatus	0.62	2	1.59	
Gempylus serpens	0.42	6	1.08	
Promethichthys prometheus	0.24	16	0.62	
Cubiceps gracilis	0.20	42	0.51	
Selene dorsalis	0.18	184	0.46	
PARALEPIDIDAE	0.18	54	0.46	
Total	39.02		100.01	

PROJECT STATION:1224

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 605
start stop duration Long E 400
TIME :05:42:47 06:15:17 33 (min) Purpose code: 3
LOG :2697.44 2698.89 1.24 Area code : 5
FDEPTH: 259 260 GearCond.code:
BDEPTH: 259 260 Validity code:
Towing dir: 110ø Wire out: 799 m Speed: 30 kn*10

Sorted: 36 Kg Total catch: 224.14 CATCH/HOUR: 407.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hypoclydonia bella	176.18	17116	43.23	
Parasudis fraser-bruenneri	157.64	19396	38.68	
Parapenaeus longirostris	16.04	3316	3.94	
Ariomma melanum	10.69	262	2.62	
Zenion longipinnis	9.71	1495	2.38	
Chlorophthalmus atlanticus	7.20	578	1.77	
Synagrops microlepis	5.89	458	1.45	
Pentheroscion mbizi	4.51	29	1.11	
Illex coindatii	3.93	44	0.96	
Zeus faber	2.98	2	0.73	
Squalus blainvillei	2.45	2	0.60	
Sepia sp.	1.85	535	0.45	
Promethichthys prometheus	1.75	22	0.43	
Sphoeroides pachgaster	1.53	11	0.38	
Gephyroberyx darwini	1.20	22	0.29	
Todaropsis eblanae	0.65	33	0.16	
Dactylopterus volitans	0.55	2	0.13	
Sepia officinalis hierredda	0.55	22	0.13	
Cyttopsis roseus	0.55	33	0.13	
Raja miraletus	0.49	2	0.12	
Torpedo nobiliana	0.49	2	0.12	
OMMASTREPHIDAE	0.22	22	0.05	
Octopus vulgaris	0.20	2	0.05	
Dentex angolensis	0.18	2	0.04	
Chascanopsetta lugubris	0.11	11	0.03	
Total	407.54		99.98	

PROJECT STATION:1225

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 610
start stop duration Long E 403
TIME :07:24:44 07:54:29 30 (min) Purpose code: 3
LOG :2705.35 2706.85 1.47 Area code : 5
FDEPTH: 61 56 GearCond.code:
BDEPTH: 61 56 Validity code:
Towing dir: 90ø Wire out: 186 m Speed: 30 kn*10

Sorted: 38 Kg Total catch: 130.27 CATCH/HOUR: 260.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	100.20	868	38.46	5303
Trichiurus lepturus	90.00	7314	34.54	
Brachydeuterus auritus	26.10	1868	10.02	5302
Squatina oculata	18.60	6	7.14	
J E L L Y F I S H	7.44	138	2.86	
Pentheroscion mbizi	6.34	68	2.43	5301
Sphyraena guachancho	3.96	30	1.52	5300
Uraspis helvola	2.16	6	0.83	
Parapenaeus longirostris	1.56	372	0.60	
Raja miraletus	1.46	8	0.56	
Scomberomorus tritor	1.46	2	0.56	
Pagellus bellottii	0.44	4	0.17	
Loligo vulgaris	0.24	348	0.09	
Sardinella aurita	0.22	2	0.08	
Citharus linguatula	0.12	6	0.05	
Saurida brasiliensis	0.12	48	0.05	
Penaeus notialis	0.06	6	0.02	
Bathygobius paganellus	0.06	6	0.02	
Total	260.54		100.00	

PROJECT STATION:1226

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 616
start stop duration Long E 404
TIME :08:56:37 09:27:33 31 (min) Purpose code: 3
LOG :2713.78 2715.41 1.61 Area code : 5
FDEPTH: 37 39 GearCond.code:
BDEPTH: 37 39 Validity code:
Towing dir: 283ø Wire out: 100 m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 70.96 CATCH/HOUR: 137.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	51.48	2443	37.48	
J E L L Y F I S H	20.79	581	15.14	
Ilisha africana	11.52	538	8.39	5304
Pteroscion peli	10.45	201	7.61	5308
Arius latiscutatus	7.74	2	5.64	
Selene dorsalis	7.24	166	5.27	5310
Portunus validus	4.63	17	3.37	
Galeoides decadactylus	3.56	93	2.59	5305
Scomberomorus tritor	3.33	6	2.42	5306
Mustelus mustelus	2.61	2	1.90	
Sphyraena guachancho	2.36	27	1.72	5309
Penaeus notialis	2.25	128	1.64	
Sepia officinalis hierredda	1.97	4	1.43	
Pseudotolithus senegalensis	1.49	6	1.08	5307
Ophichthus ophis	1.12	2	0.82	
Brachydeuterus auritus	1.05	50	0.76	
Stromateus fiatola	0.95	2	0.69	
Caranx hippos	0.77	4	0.56	
Sepiella ornata	0.66	81	0.48	
Chloroscombrus chrysurus	0.43	4	0.31	
Nematopalaemon hastatus	0.23	240	0.17	
Loligo vulgaris	0.15	132	0.11	
Lagocephalus laevigatus	0.12	27	0.09	
Raja miraletus	0.10	2	0.07	
Epinephelus aeneus	0.10	2	0.07	
Octopus vulgaris	0.10	2	0.07	
Scyllarides herklotsii	0.04	12	0.03	
Monochirus hispidus	0.04	4	0.03	
Sicyonia galeata	0.04	4	0.03	
Ephippion guttifer	0.04	4	0.03	
Total	137.36		100.00	

PROJECT STATION:1228

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 613
start stop duration Long E 420
TIME :12:58:44 13:28:30 30 (min) Purpose code: 3
LOG :2739.64 2741.29 1.62 Area code : 5
FDEPTH: 27 26 GearCond.code:
BDEPTH: 27 26 Validity code:
Towing dir: 290ø Wire out: 140 m Speed: 30 kn*10

Sorted: 84 Kg Total catch: 84.97 CATCH/HOUR: 169.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphyraena guachancho	38.70	264	22.77	5326
Pomadasys jubelini	18.70	96	11.00	5327
Ilisha africana	18.00	1048	10.59	
Chloroscombrus chrysurus	15.60	364	9.18	
Albula vulpes	8.60	40	5.06	
Pseudotolithus typus	8.10	88	4.77	5322
Trichiurus lepturus	7.94	322	4.67	
Elops lacerta	6.98	84	4.11	
Drepane africana	6.84	60	4.02	
Caranx hippos	6.60	64	3.88	5323
Selene dorsalis	6.32	230	3.72	
Pentanemus quinquarius	6.06	18	3.57	
Scomberomorus tritor	4.76	34	2.80	
Caranx crysos	4.00	38	2.35	5324
Galeoides decadactylus	2.70	60	1.59	5325
Pseudotolithus senegalensis	2.04	22	1.20	5321
Sardinella maderensis	1.72	36	1.01	
Pteroscion peli	1.48	30	0.87	5326
Portunus validus	1.32	8	0.78	
Panulirus regius	0.74	2	0.44	
Lagocephalus laevigatus	0.72	4	0.42	
Caranx senegallus	0.44	2	0.26	
Ethmalosa fimbriata	0.44	2	0.26	
Brachydeuterus auritus	0.42	6	0.25	
Selar crumenophthalmus	0.36	2	0.21	
Callinectes amnicola	0.20	2	0.12	
Penaeus notialis	0.10	2	0.06	
Parapenaeopsis atlantica	0.06	2	0.04	
Total	169.94		100.00	

PROJECT STATION:1229

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 610
start stop duration Long E 420
TIME :14:40:19 15:10:08 30 (min) Purpose code: 3
LOG :2749.08 2750.74 1.63 Area code : 5
FDEPTH: 41 43 GearCond.code:
BDEPTH: 41 43 Validity code:
Towing dir: 280ø Wire out: 175 m Speed: 30 kn*10

Sorted: 33 Kg Total catch: 66.98 CATCH/HOUR: 133.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	38.20	5624	28.52	
Sphyraena guachancho	30.80	120	22.99	5331
Brachydeuterus auritus	24.12	576	18.01	5329
Selene dorsalis	15.32	208	11.44	5332
Chloroscombrus chrysurus	5.32	56	3.97	5330
Scomberomorus tritor	5.04	8	3.76	
Ilisha africana	4.32	260	3.22	5333
Cynoponticus ferox	3.76	8	2.81	
Callinectes amnicola	2.84	12	2.12	
Pteroscion peli	1.80	72	1.34	
Pseudotolithus typus	0.92	12	0.69	
Lagocephalus laevigatus	0.32	4	0.24	
Galeoides decadactylus	0.32	8	0.24	
Sepia officinalis hierredda	0.28	4	0.21	
Penaeus notialis	0.20	8	0.15	
Drepane africana	0.20	4	0.15	
Bothus podas africanus	0.16	4	0.12	
Parapenaeus longirostris	0.04	4	0.03	
Total	133.96		100.01	

PROJECT STATION:1227

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 619
start stop duration Long E 403
TIME :10:15:57 10:46:56 31 (min) Purpose code: 3
LOG :2720.06 2721.65 1.57 Area code : 5
FDEPTH: 20 19 GearCond.code:
BDEPTH: 20 19 Validity code:
Towing dir: 100ø Wire out: 100 m Speed: 30 kn*10

Sorted: 79 Kg Total catch: 78.82 CATCH/HOUR: 152.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	25.55	341	16.75	5320
Trichiurus lepturus	18.39	627	12.06	
Sphyraena guachancho	17.54	128	11.50	5319
Sphyraena afra	9.87	2	6.47	
Ilisha africana	9.56	819	6.27	
Pseudotolithus typus	8.48	62	5.56	5312
Pseudotolithus senegalensis	8.48	46	5.56	
Pseudotolithus elongatus	7.10	118	4.65	5313
Pomadasys jubelini	6.37	15	4.18	5311
Chloroscombrus chrysurus	5.96	83	3.91	5315
Scomberomorus tritor	5.05	14	3.31	
Pentanemus quinquarius	4.94	105	3.24	
Drepane africana	3.33	60	2.18	5318
Brachydeuterus auritus	2.94	52	1.93	5314
Pseudotolithus brachygnathus	2.57	19	1.68	
Pseudotolithus epipercus	2.57	19	1.68	
Pteroscion peli	2.15	45	1.41	
Selene dorsalis	1.76	254	1.15	5316
Caranx hippos	1.70	15	1.11	
Dasyatis margarita	1.57	2	1.03	
Nematopalaemon hastatus	1.43	124	0.94	
Portunus validus	1.14	12	0.75	
Sardinella maderensis	0.95	33	0.62	5317
Lethrinus atlanticus	0.60	4	0.39	
Cynoponticus ferox	0.52	2	0.34	
Parapenaeopsis atlantica	0.48	68	0.31	
Elops lacerta	0.41	2	0.27	
Alectis alexandrinus	0.37	4	0.24	
Psettodes belcheri	0.29	2	0.19	
Callinectes amnicola	0.27	14	0.18	
Squilla aculata calmani	0.10	4	0.07	
Trachinocephalus myops	0.08	4	0.05	
Penaeus kerathurus	0.02	2	0.01	
Penaeus monodon	0.02	2	0.01	
Total	152.56		100.00	

PROJECT STATION:1230

DATE:12/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 603
start stop duration Long E 417
TIME :17:24:56 17:45:43 21 (min) Purpose code: 3
LOG :2762.54 2763.65 1.10 Area code : 5
FDEPTH: 92 95 GearCond.code:
BDEPTH: 92 95 Validity code:
Towing dir: 280ø Wire out: 290 m Speed: 30 kn*10

Sorted: 93 Kg Total catch: 412.01 CATCH/HOUR: 1177.17

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Priacanthus arenatus	1067.43	22774	90.68	
Squatina oculata	38.57	9	3.28	
Dentex congoensis	18.57	311	1.58	5336
Ariomma bondi	17.71	411	1.50	5334
Sepia officinalis hierredda	15.86	31	1.35	
Dentex angolensis	11.60	123	0.99	5335
Fistularia petimba	1.77	17	0.15	
Portunus validus	1.57	3	0.13	
Pagellus bellottii	1.14	20	0.10	
Sphoeroides marmoratus	0.77	9	0.07	
Chloroscombrus chrysurus	0.57	6	0.05	
Illex coindetii	0.54	6	0.05	
Pentheroscion mbizi	0.49	3	0.04	
Sardinella aurita	0.34	9	0.03	
Lepidotrigla cadmani	0.23	6	0.02	
Total	1177.16		100.02	

PROJECT STATION:1231

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 556

	start	stop	duration			
					Long	E 430
TIME	:05:35:48	06:07:27	32	(min)	Purpose code:	3
LOG	:2838.89	2840.60	1.70		Area code :	5
FDEPTH:	72	81			GearCond.code:	
BDEPTH:	72	81			Validity code:	

Towing dir: 290ø Wire out: 252 m Speed: 30 kn*10

Sorted: 131 Kg Total catch: 130.68 CATCH/HOUR: 245.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selar crumenophthalmus	171.00	1110	69.79	5337
Sphyraena guachancho	24.56	328	10.02	5342
Pentheroscion mbizi	13.82	358	5.64	5339
Octopus vulgaris	8.14	2316	3.32	
Brachydeuterus auritus	7.13	450	2.91	
Pagellus bellottii	4.31	56	1.76	5340
Uraspis secunda	3.77	9	1.54	5343
Dentex angolensis	2.21	24	0.90	5338
Squatina oculata	2.06	2	0.84	
Pseudupeneus prayensis	1.74	45	0.71	5341
J E L L Y F I S H	1.54	23	0.63	
Sepia officinalis hierredda	1.52	8	0.62	
Ariomma bondi	1.07	13	0.44	
Fistularia petimba	0.71	19	0.29	
Priacanthus arenatus	0.32	2	0.13	
Brotula barbata	0.26	2	0.11	
Illex coindetii	0.19	2	0.08	
Selene dorsalis	0.19	2	0.08	
Parapenaeus longirostris	0.11	11	0.04	
Lepidotrigla cadmani	0.09	2	0.04	
Grammoplites gruveli	0.09	4	0.04	
Serranus accraensis	0.08	2	0.03	
Trichiurus lepturus	0.06	2	0.02	
Syacium micrurum	0.02	6	0.01	
Sphoeroides marmoratus	0.02	2	0.01	
Saurida brasiliensis	0.02	8	0.01	
Total	245.03		100.01	

PROJECT STATION:1232

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 601

	start	stop	duration			
					Long	E 433
TIME	:07:22:46	07:57:00	34	(min)	Purpose code:	3
LOG	:2848.91	2850.63	1.71		Area code :	5
FDEPTH:	38	40			GearCond.code:	
BDEPTH:	38	40			Validity code:	

Towing dir: 300ø Wire out: 120 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 57.04 CATCH/HOUR: 100.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	22.50	1174	22.35	
Pteroscion peli	17.56	919	17.44	5351
Selene dorsalis	12.28	238	12.20	5344
Ilisha africana	10.45	529	10.38	5350
Brachydeuterus auritus	8.79	203	8.73	5346
Pseudotolithus senegalensis	3.90	41	3.87	5345
Scomberomorus tritor	3.72	11	3.70	5349
Penaeus notialis	3.67	141	3.65	
Portunus validus	2.82	14	2.80	
Chloroscombrus chrysurus	2.68	28	2.66	5347
Sphyraena guachancho	2.26	12	2.25	5348
Cynoponticus ferox	2.19	7	2.18	
Selar crumenophthalmus	2.05	11	2.04	
J E L L Y F I S H	1.09	12	1.08	
Galeoides decadactylus	0.90	19	0.89	
Octopus vulgaris	0.78	9	0.77	
Nematopalaemon hastatus	0.76	1366	0.76	
Stromateus fiatola	0.58	2	0.58	
Cynoglossus canariensis	0.49	5	0.49	
Lagocephalus laevigatus	0.48	7	0.48	
Parapenaeopsis atlantica	0.42	102	0.42	
Alloteuthis africana	0.11	35	0.11	
Grammoplites gruveli	0.09	4	0.09	
Sepia officinalis hierredda	0.07	11	0.07	
Sphoeroides marmoratus	0.02	2	0.02	
Total	100.66		100.01	

PROJECT STATION:1233

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 604

	start	stop	duration			
					Long	E 434
TIME	:08:46:39	09:20:00	33	(min)	Purpose code:	3
LOG	:2854.99	2856.69	1.69		Area code :	5
FDEPTH:	25	24			GearCond.code:	
BDEPTH:	25	24			Validity code:	

Towing dir: 125ø Wire out: 100 m Speed: 30 kn*10

Sorted: 37 Kg Total catch: 167.71 CATCH/HOUR: 304.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	49.64	4207	16.28	
Trichiurus lepturus	38.67	1085	12.68	
Chloroscombrus chrysurus	36.55	491	11.99	
Pseudotolithus elongatus	34.73	225	11.39	5352
Elops lacerta	33.05	169	10.84	5354
Sphyraena guachancho	32.09	145	10.52	5357
Galeoides decadactylus	20.29	235	6.65	5353
Pseudotolithus senegalensis	17.82	211	5.84	5356
Portunus validus	7.15	65	2.34	
Selene dorsalis	6.11	300	2.00	
Brachydeuterus auritus	5.35	71	1.75	
Pentanemus quinquarius	4.15	98	1.36	
Pteroscion peli	3.22	87	1.06	
Ethmalosa fimbriata	3.05	13	1.00	
Scomberomorus tritor	2.80	15	0.92	
Caranx senegallus	1.89	7	0.62	
Cynoponticus ferox	1.45	5	0.48	
Pomadasys jubelini	1.27	7	0.42	5355
Lagocephalus laevigatus	1.25	5	0.41	
Pseudotolithus typus	1.18	15	0.39	5358
Alectis alexandrinus	0.64	5	0.21	
Alloteuthis africana	0.60	420	0.20	
Caranx hippos	0.58	5	0.19	
Parapenaeopsis atlantica	0.44	82	0.14	
Cynoglossus canariensis	0.20	2	0.07	
Sepia officinalis hierredda	0.16	5	0.05	
Penaeus notialis	0.16	11	0.05	
Penaeus monodon	0.16	2	0.05	
Drepane africana	0.11	16	0.04	
Sardinella aurita	0.11	7	0.04	
Echeneis naucrates	0.05	5	0.02	
Total	304.92		100.00	

PROJECT STATION:1234

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 553

	start	stop	duration			
					Long	E 443
TIME	:11:01:35	11:32:09	31	(min)	Purpose code:	3
LOG	:2869.44	2871.01	1.56		Area code :	5
FDEPTH:	28	28			GearCond.code:	
BDEPTH:	28	28			Validity code:	

Towing dir: 140ø Wire out: 100 m Speed: 30 kn*10

Sorted: 158 Kg Total catch: 185.16 CATCH/HOUR: 358.37

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chloroscombrus chrysurus	213.10	2719	59.46	5366
Sphyraena guachancho	48.77	199	13.61	5370
Albula vulpes	24.00	122	6.70	
Ilisha africana	18.52	933	5.17	5362
Caranx hippos	10.99	19	3.07	
Pseudotolithus senegalensis	8.07	85	2.25	5363
Brachydeuterus auritus	7.20	149	2.01	5360
Scomberomorus tritor	4.32	8	1.21	
Galeoides decadactylus	3.41	41	0.95	5367
Callinectes amnicola	2.77	15	0.77	
Pseudotolithus elongatus	2.46	21	0.69	5368
Sardinella maderensis	2.40	29	0.67	5364
Pseudotolithus typus	2.17	14	0.61	5369
Caranx senegallus	1.88	8	0.52	
Selar crumenophthalmus	1.74	12	0.49	
Selene dorsalis	1.49	35	0.42	5359
Trichiurus lepturus	1.45	46	0.40	
Ethmalosa fimbriata	1.05	6	0.29	
Portunus validus	0.99	8	0.28	
Pteroscion peli	0.64	25	0.18	5361
Drepane africana	0.52	15	0.15	5365
Lagocephalus laevigatus	0.25	2	0.07	
Penaeus notialis	0.17	4	0.05	
Parapenaeopsis atlantica	0.02	2	0.01	
Total	358.38		100.03	

PROJECT STATION:1235

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 550

	start	stop	duration			
					Long	E 441
TIME	:13:12:38	13:43:14	31	(min)	Purpose code:	3
LOG	:2876.65	2878.32	1.67		Area code :	5
FDEPTH:	39	38			GearCond.code:	
BDEPTH:	39	38			Validity code:	

Towing dir: 130ø Wire out: 155 m Speed: 30 kn*10

Sorted: 43 Kg Total catch: 98.91 CATCH/HOUR: 191.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	61.74	1994	32.26	
Brachydeuterus auritus	54.97	1306	28.71	5374
Selene dorsalis	19.35	232	10.11	5372
J E L L Y F I S H	12.00	240	6.27	
Ilisha africana	10.61	348	5.54	5375
Pseudotolithus typus	6.35	10	3.32	
Pteroscion peli	5.38	135	2.81	5376
Pseudotolithus brachygnathus	4.26	4	2.23	
Sphyraena guachancho	3.39	12	1.77	
Galeoides decadactylus	3.39	35	1.77	5373
Pseudotolithus senegalensis	3.31	72	1.73	5371
Scomberomorus tritor	2.86	6	1.49	
Drepane africana	2.13	23	1.11	5377
Portunus validus	1.12	8	0.59	
Sardinella maderensis	0.46	4	0.24	
Penaeus notialis	0.08	2	0.04	
Parapenaeopsis atlantica	0.04	23	0.02	
Total	191.44		100.00	

PROJECT STATION:1236

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 547

	start	stop	duration			Long E 438
TIME	:15:22:56	15:43:15	20	(min)	Purpose code:	3
LOG	:2884.89	2885.87	0.98		Area code	: 5
FDEPTH:	63	64			GearCond.code:	
BDEPTH:	63	64			Validity code:	

Towing dir: 145ø Wire out: 212 m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 117.88 CATCH/HOUR: 353.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	208.20	1476	58.87	
Brachydeuterus auritus	99.00	4071	27.99	5378
Selene dorsalis	15.96	144	4.51	
Alloteuthis africana	11.76	3708	3.33	
Sphyraena guachancho	8.64	36	2.44	
Selar crumenophthalmus	5.28	72	1.49	
Trichiurus lepturus	3.96	444	1.12	
Grammoplites gruveli	0.60	3	0.17	
Parapenaeopsis atlantica	0.24	36	0.07	
Total	353.64		99.99	

PROJECT STATION:1239

DATE:14/ 6/06 GEAR TYPE: PT No: 2 POSITION:Lat N 517

	start	stop	duration			Long E 430
TIME	:02:50:10	05:20:57	31	(min)	Purpose code:	3
LOG	:2955.31	2957.53	2.23		Area code	: 5
FDEPTH:	0	0			GearCond.code:	
BDEPTH:	617	522			Validity code:	

Towing dir: 46ø Wire out: 150 m Speed: 45 kn*10

Sorted: 1 Kg Total catch: 1.08 CATCH/HOUR: 2.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brama brama	1.34	14	64.11	
MYCTOPHIDAE	0.56	308	26.79	
Todarodes sagittatus	0.17	2	8.13	
Heterocarpus ensifer	0.02	6	0.96	
Total	2.09		99.99	

PROJECT STATION:1237

DATE:13/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 544

	start	stop	duration			Long E 436
TIME	:17:42:30	18:12:45	30	(min)	Purpose code:	3
LOG	:2891.94	2893.38	1.43		Area code	: 5
FDEPTH:	114	116			GearCond.code:	
BDEPTH:	114	116			Validity code:	

Towing dir: 150ø Wire out: 359 m Speed: 30 kn*10

Sorted: 30 Kg Total catch: 81.65 CATCH/HOUR: 163.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	21.52	252	13.18	5379
Lepidotrigla cadmani	14.84	250	9.09	
Pentheroscion mbizi	14.72	226	9.01	5382
Trichiurus lepturus	13.00	212	7.96	5380
Synagrops microlepis	12.92	6912	7.91	
Squatina oculata	12.00	6	7.35	
Saurida brasiliensis	11.80	3540	7.23	
Scorpaena normani	9.20	180	5.63	
Pterothrissus belloci	7.40	44	4.53	
Ariomma bondi	7.00	188	4.29	5381
Sphoeroides pachgaster	5.80	64	3.55	
Todarodes sagittatus	4.92	308	3.01	
Sepia officinalis hierredda	4.46	40	2.73	
Raja miraletus	3.84	20	2.35	
Dentex congoensis	3.52	48	2.16	
Uranoscopus albesca	2.84	40	1.74	
Citharus linguatula	2.80	108	1.71	
Brotula barbata	2.62	10	1.60	
Octopus vulgaris	2.14	2	1.31	
Todaropsis eblanae	2.12	108	1.30	
Priacanthus arenatus	1.36	16	0.83	
Lepidotrigla carolae	1.20	56	0.73	
Fistularia petimba	0.40	4	0.24	
Parapenaeus longirostris	0.36	168	0.22	
Sphyraena guachancho	0.28	4	0.17	
Sardinella aurita	0.12	4	0.07	
Bathygobius paganellus	0.12	24	0.07	
Total	163.30		99.97	

PROJECT STATION:1240

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 530

	start	stop	duration			Long E 444
TIME	:05:41:51	06:13:15	31	(min)	Purpose code:	3
LOG	:2976.03	2977.62	1.59		Area code	: 5
FDEPTH:	104	108			GearCond.code:	
BDEPTH:	104	108			Validity code:	

Towing dir: 322ø Wire out: 333 m Speed: 30 kn*10

Sorted: 73 Kg Total catch: 195.88 CATCH/HOUR: 379.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	292.74	8139	77.22	5383
Priacanthus arenatus	28.03	1245	7.39	
Squatina oculata	12.00	6	3.17	
Dentex angolensis	10.90	155	2.88	5384
Pentheroscion mbizi	6.70	50	1.77	5386
Dentex congoensis	3.83	74	1.01	5385
Sepia officinalis hierredda	3.54	15	0.93	
Raja miraletus	3.10	17	0.82	
Todaropsis eblanae	2.86	306	0.75	
Lepidotrigla cadmani	2.86	74	0.75	
Sphoeroides pachgaster	2.17	17	0.57	
Saurida brasiliensis	1.74	435	0.46	
Fistularia petimba	1.66	21	0.44	
Lepidotrigla carolae	0.93	74	0.25	
Todarodes sagittatus	0.93	48	0.25	
Pterothrissus belloci	0.83	6	0.22	
Brotula barbata	0.75	4	0.20	
Illex coindetii	0.68	10	0.18	
Pagellus acarne	0.54	6	0.14	
Sardinella maderensis	0.54	15	0.14	
Trichiurus lepturus	0.52	10	0.14	
Scorpaena normani	0.48	10	0.13	
Uranoscopus albesca	0.31	6	0.08	
Citharus linguatula	0.19	10	0.05	
Microchirus frechkopi	0.15	6	0.04	
Bathygobius paganellus	0.06	6	0.02	
Blennius normani	0.06	6	0.02	
Total	379.10		100.02	

PROJECT STATION:1238

DATE:13/ 6/06 GEAR TYPE: PT No: 2 POSITION:Lat N 539

	start	stop	duration			Long E 432
TIME	:20:09:04	20:19:54	11	(min)	Purpose code:	3
LOG	:2903.95	2904.56	0.61		Area code	: 5
FDEPTH:	285	264			GearCond.code:	
BDEPTH:	306	291			Validity code:	

Towing dir: 146ø Wire out: 700 m Speed: 35 kn*10

Sorted: 1 Kg Total catch: 5.34 CATCH/HOUR: 29.13

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zenion longipinnis	14.40	3469	49.43	
Heterocarpus ensifer	3.27	1353	11.23	
MYCTOPHIDAE	2.29	993	7.86	
Plesionika martia	2.18	1233	7.48	
Setarches guentheri	1.42	55	4.87	
Parasudis fraser-brunneri	1.20	207	4.12	
Xenolepidichthys dagleishi	1.15	142	3.95	
Small squids	0.93	425	3.19	
Malacocephalus laevis	0.38	16	1.30	
Synagrops microlepis	0.22	11	0.76	
Hypoclydonia bella	0.22	16	0.76	
Solenocera africana	0.22	22	0.76	
PARALEPIDIDAE	0.22	33	0.76	
Astronesthes sp.	0.16	11	0.55	
APOGONIDAE	0.16	33	0.55	
Stereomastis sp.	0.16	5	0.55	
Chlorophthalmus atlanticus	0.16	16	0.55	
Parapenaeus longirostris	0.11	11	0.38	
Peristedion cataphractum	0.11	5	0.38	
Chascanopsetta lugubris	0.11	5	0.38	
Argyropelecus sp.	0.05	5	0.17	
Total	29.12		99.98	

PROJECT STATION:1241

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 533

	start	stop	duration			Long E 446
TIME	:07:16:54	07:47:49	31	(min)	Purpose code:	3
LOG	:2983.43	2985.19	1.74		Area code	: 5
FDEPTH:	65	82			GearCond.code:	
BDEPTH:	65	82			Validity code:	

Towing dir: 246ø Wire out: 200 m Speed: 30 kn*10

Sorted: 67 Kg Total catch: 623.26 CATCH/HOUR: 1206.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	665.48	6383	55.17	5388
Brachydeuterus auritus	380.03	25105	31.50	5390
Sphyraena guachancho	80.48	937	6.67	5387
Epinephelus aeneus	20.81	2	1.73	
Squatina oculata	16.45	6	1.36	
Alloteuthis africana	12.50	3964	1.04	
Pentheroscion mbizi	7.74	75	0.64	5389
Sardinella aurita	6.58	215	0.55	
Lagocephalus laevigatus	3.60	21	0.30	
Selar crumenophthalmus	3.29	83	0.27	
Ariomma bondi	1.82	83	0.15	
J E L L Y F I S H	1.49	379	0.12	
Priacanthus arenatus	1.45	12	0.12	
Parapandalus narval	1.16	658	0.10	
Sphoeroides pachgaster	0.99	17	0.08	
Uraspis secunda	0.70	2	0.06	
Pseudupeneus prayensis	0.46	12	0.04	
Dentex angolensis	0.45	14	0.04	
Fistularia petimba	0.43	2	0.04	
Raja miraletus	0.41	2	0.03	
Total	1206.32		100.01	

PROJECT STATION:1242

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 522
start stop duration Long E 501
TIME :10:41:37 11:13:23 32 (min) Purpose code: 3
LOG :3008.77 3010.53 1.76 Area code : 5
FDEPTH: 28 27 GearCond.code:
BDEPTH: 28 27 Validity code:
Towing dir: 345ø Wire out: 100 m Speed: 30 kn*10

Sorted: 35 Kg Total catch: 138.39 CATCH/HOUR: 259.48

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	85.97	4073	33.13	5392
Trichiurus lepturus	46.99	3589	18.11	
Caranx hippos	23.94	32	9.23	
Sphyraena guachancho	21.66	163	8.35	5393
Elops lacerta	13.26	58	5.11	
Selene dorsalis	11.42	840	4.40	
Pteroscion peli	10.82	281	4.17	5391
Brachydeuterus auritus	7.09	178	2.73	5397
Scomberomorus tritor	6.23	21	2.40	5398
Drepane africana	5.96	84	2.30	
Pseudotolithus typus	5.72	60	2.20	5395
Chloroscombrus chrysurus	4.33	257	1.67	5394
Portunus validus	3.86	13	1.49	
Cynoponticus ferox	3.41	6	1.31	
Galeoides decadactylus	2.63	79	1.01	5396
Sardinella aurita	1.97	79	0.76	
Penaeus notialis	1.44	39	0.55	
Loligo vulgaris	0.71	6	0.27	
Hemicaranx bicolor	0.66	6	0.25	
Penaeus monodon	0.56	6	0.22	
Pisodonophis semicinctus	0.49	4	0.19	
Citharus linguatula	0.19	6	0.07	
Antennarius occidentalis	0.19	6	0.07	
Total	259.50		99.99	

PROJECT STATION:1243

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 523
start stop duration Long E 456
TIME :12:12:29 12:42:20 30 (min) Purpose code: 3
LOG :3017.11 3018.58 1.47 Area code : 5
FDEPTH: 47 46 GearCond.code:
BDEPTH: 47 46 Validity code:
Towing dir: 140ø Wire out: 177 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 56.63 CATCH/HOUR: 113.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	44.30	4064	39.11	5399
Sphyraena guachancho	30.50	96	26.93	
Trichiurus lepturus	12.32	888	10.88	5400
Selene dorsalis	6.20	162	5.47	
Sepia orbignyana	4.86	16	4.29	
Balistes punctatus	2.02	2	1.78	
Caranx hippos	1.70	10	1.50	5401
Raja miraletus	1.62	2	1.43	
Portunus validus	1.44	2	1.27	
Pteroscion peli	1.22	16	1.08	
Pseudotolithus senegalensis	1.18	6	1.04	
Pseudupeneus prayensis	0.84	6	0.74	
Sepia officinalis hierredda	0.76	2	0.67	
Penaeus notialis	0.68	28	0.60	
J E L L Y F I S H	0.62	10	0.55	
Pseudotolithus typus	0.52	8	0.46	
Alloteuthis africana	0.40	24	0.35	
Scomberomorus tritor	0.34	2	0.30	
Loligo vulgaris	0.32	4	0.28	
Sardinella maderensis	0.28	10	0.25	
Selar crumenophthalmus	0.26	2	0.23	
Citharus linguatula	0.24	28	0.21	
Lagocephalus laevigatus	0.22	6	0.19	
Saurida brasiliensis	0.20	60	0.18	
Chloroscombrus chrysurus	0.10	6	0.09	
Parapenaeopsis atlantica	0.08	14	0.07	
Grammoplites gruveli	0.02	2	0.02	
Engraulis encrasicolus	0.02	2	0.02	
Total	113.26		99.99	

PROJECT STATION:1244

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 519
start stop duration Long E 452
TIME :14:01:28 14:31:51 30 (min) Purpose code: 3
LOG :3025.96 3027.40 1.44 Area code : 5
FDEPTH: 82 80 GearCond.code:
BDEPTH: 82 80 Validity code:
Towing dir: 145ø Wire out: 267 m Speed: 30 kn*10

Sorted: 98 Kg Total catch: 97.68 CATCH/HOUR: 195.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	115.70	11788	59.22	5406
Lagocephalus laevigatus	44.10	202	22.57	
Sphyraena guachancho	21.20	282	10.85	5403
Trichiurus lepturus	2.86	56	1.46	
Priacanthus arenatus	2.02	22	1.03	5407
Portunus validus	1.16	2	0.59	
Dentex angolensis	1.08	12	0.55	5404
Selene dorsalis	1.00	24	0.51	5405
Pentheroscion mbizi	0.98	6	0.50	
Trigla lyra	0.80	34	0.41	
Illex coindetii	0.74	10	0.38	
Dentex congoensis	0.64	16	0.33	5402
Alloteuthis africana	0.56	78	0.29	
Raja miraletus	0.54	6	0.28	
Todarodes sagittatus	0.54	18	0.28	
Ariomma bondi	0.54	18	0.28	
J E L L Y F I S H	0.18	2	0.09	
Pseudupeneus prayensis	0.18	4	0.09	
Fistularia petimba	0.16	4	0.08	
Loligo vulgaris	0.14	4	0.07	
Citharus linguatula	0.08	6	0.04	
Parapenaeus longirostris	0.08	4	0.04	
Sardinella maderensis	0.06	2	0.03	
Scyllarides herklotsii	0.02	2	0.01	
Total	195.36		99.98	

PROJECT STATION:1245

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 515
start stop duration Long E 448
TIME :15:35:17 16:05:17 30 (min) Purpose code: 3
LOG :3033.47 3035.08 1.60 Area code : 5
FDEPTH: 138 149 GearCond.code:
BDEPTH: 138 149 Validity code:
Towing dir: 330ø Wire out: 440 m Speed: 30 kn*10

Sorted: 152 Kg Total catch: 152.48 CATCH/HOUR: 304.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	163.60	5498	53.65	5410
Synagrops microlepis	53.00	18378	17.38	
Squatina oculata	18.20	6	5.97	
Illex coindetii	13.42	354	4.40	
Pentheroscion mbizi	13.30	116	4.36	5409
Dentex congoensis	6.76	54	2.22	5408
Squalus megalops	5.40	4	1.77	
Trichiurus lepturus	5.30	86	1.74	5411
Priacanthus arenatus	5.26	66	1.72	
Lepidotrigla carolae	5.08	90	1.67	
Pterothrissus belloci	4.86	48	1.59	
Raja miraletus	3.94	22	1.29	
Uranoscopus albesca	2.22	22	0.73	
Ephippion guttifer	1.72	16	0.56	
Fistularia petimba	0.82	2	0.27	
Brachydeuterus auritus	0.68	46	0.22	
Citharus linguatula	0.44	20	0.14	
Grammoplites gruveli	0.24	8	0.08	
Scorpaena sp.	0.20	4	0.07	
Parapenaeus longirostris	0.18	50	0.06	
Zenopsis conchifer	0.16	2	0.05	
TRGPE01	0.10	2	0.03	
Sphyraena guachancho	0.04	2	0.01	
Saurida brasiliensis	0.02	2	0.01	
Bathygobius paganellus	0.02	2	0.01	
Total	304.96		100.00	

PROJECT STATION:1246

DATE:14/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 514
start stop duration Long E 442
TIME :19:56:37 20:27:05 30 (min) Purpose code: 3
LOG :3047.98 3049.51 1.52 Area code : 5
FDEPTH: 394 382 GearCond.code:
BDEPTH: 394 382 Validity code:
Towing dir: 337ø Wire out:1050 m Speed: 31 kn*10

Sorted: 15 Kg Total catch: 15.70 CATCH/HOUR: 31.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chaunax pictus	8.64	288	27.52	
Benthodesmus sp.	6.68	386	21.27	
Hoplostethus cadenati	4.66	112	14.84	
Malacocephalus laevis	1.82	202	5.80	
Stereomastis sp.	1.48	68	4.71	
Illex coindetii	1.16	10	3.69	
Trigla lyra	1.06	10	3.38	
Solenocera africana	0.72	58	2.29	
Nezumia aequalis	0.68	28	2.17	
Polymetme corythaeola	0.42	14	1.34	
Cyttopsis roseus	0.42	10	1.34	
Parasudis sp.	0.38	10	1.21	
Shrimps, small, non comm.	0.36	864	1.15	
ARGENTINIDAE	0.34	36	1.08	
Cynoponticus ferox	0.34	2	1.08	
Dibranchus atlanticus	0.32	32	1.02	
Chascanopsetta lugubris	0.30	2	0.96	
Lepidotrigla cadmani	0.28	4	0.89	
Synagrops microlepis	0.24	16	0.76	
Bembrops greyi	0.18	6	0.57	
Zenion longipinnis	0.18	16	0.57	
Coelorinchus coelorhincus	0.16	2	0.51	
TRGPE01	0.12	12	0.38	
Hymenocephalus italicus	0.10	2	0.32	
Diretmoides parini	0.08	4	0.25	
Hypoclydonia bella	0.06	4	0.19	
MYCTOPHIDAE	0.06	38	0.19	
Yarrella blackfordi	0.06	2	0.19	
Parexocoetus brachypterus	0.04	2	0.13	
Halosaurus ovenii	0.04	2	0.13	
Xenolepidichthys dagleishi	0.02	2	0.06	
Total	31.40		99.99	

PROJECT STATION:1247

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 457

	start	stop	duration				Long E 447
TIME	:03:12:02	03:41:01	29	(min)	Purpose code:	3	
LOG	:3095.56	3097.11	1.54		Area code	: 5	
FDEPTH:	345	342			GearCond.code:		
BDEPTH:	345	342			Validity code:		

Towing dir: 130ø Wire out:1050 m Speed: 30 kn*10

Sorted: 21 Kg Total catch: 42.46 CATCH/HOUR: 87.85

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zenion longipinnis	45.93	6186	52.28	
Chlorophthalmus atlanticus	21.52	737	24.50	
Trichiurus lepturus	7.49	650	8.53	
Malacocephalus occidentalis	2.52	87	2.87	
Parapenaeus longirostris	1.94	132	2.21	
Illex coindetii	1.66	14	1.89	
Lepidotrigla cadmani	1.37	33	1.56	
Chascanopsetta lugubris	1.12	33	1.27	
Cyttopsis roseus	1.12	79	1.27	
Galeus polli	0.91	4	1.04	
SQUILLIDAE	0.54	29	0.61	
Heterocarpus ensifer	0.41	66	0.47	
Synaphobranchus kaupii	0.37	4	0.42	
Xenolepidichthys dagleishi	0.33	21	0.38	
Dibranchus atlanticus	0.21	33	0.24	
Chaunax pictus	0.17	12	0.19	
Setarches guentheri	0.12	8	0.14	
Photichthys argenteus	0.12	12	0.14	
Total	87.85		100.01	

PROJECT STATION:1249

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 503

	start	stop	duration				Long E 502
TIME	:07:18:03	07:48:50	31	(min)	Purpose code:	3	
LOG	:3118.28	3119.80	1.51		Area code	: 5	
FDEPTH:	59	59			GearCond.code:		
BDEPTH:	59	59			Validity code:		

Towing dir: 329ø Wire out: 180 m Speed: 30 kn*10

Sorted: 14 Kg Total catch: 78.35 CATCH/HOUR: 151.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	84.77	9507	55.90	
Trichiurus lepturus	25.63	2563	16.90	
Mustelus mustelus	12.97	6	8.55	
Pentheroscion mbizi	7.41	97	4.89	5420
Sepia officinalis hierredda	3.06	112	2.02	
Sphyraena guachancho	3.02	39	1.99	5421
Lagocephalus laevigatus	2.83	27	1.87	
Raja miraletus	1.66	12	1.09	
Engraulis encrasicolus	1.47	530	0.97	5422
Parapenaeus longirostris	1.24	248	0.82	
Illex coindetii	1.08	15	0.71	
J E L L Y F I S H	0.93	46	0.61	
Penaeus notialis	0.89	43	0.59	
Saurida brasiliensis	0.85	186	0.56	
Priacanthus arenatus	0.81	19	0.53	
Bathygobius paganellus	0.66	128	0.44	
Brotula barbata	0.46	4	0.30	
Citharus linguatula	0.39	39	0.26	
Scyllarides herklotsii	0.31	39	0.20	
Sardinella maderensis	0.23	12	0.15	
Sardinella aurita	0.19	4	0.13	
Peristedion cataphractum	0.19	8	0.13	
Syacium micrurum	0.15	27	0.10	
Lepidotrigla cadmani	0.08	8	0.05	
Selene dorsalis	0.08	4	0.05	
Microchirus frechkopi	0.08	4	0.05	
Uranoscopus albesca	0.08	8	0.05	
Serranus accraensis	0.08	4	0.05	
Sicyonia galeata	0.04	4	0.03	
Total	151.64		99.99	

PROJECT STATION:1248

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 500

	start	stop	duration				Long E 457
TIME	:05:43:24	06:15:51	32	(min)	Purpose code:	3	
LOG	:3109.99	3111.65	1.64		Area code	: 5	
FDEPTH:	82	81			GearCond.code:		
BDEPTH:	*82*	*81*			*Validity code:*		

Towing dir: 145ø Wire out: 277 m Speed: 30 kn*10

Sorted: 75 Kg Total catch: 75.31 CATCH/HOUR: 141.21

SPECIES	CATCH/HOUR *weight*	*numbers*	% OF TOT. C	SAMP
Ariomma bondi	68.91	1543	48.80	5412
Priacanthus arenatus	13.28	289	9.40	
Decapterus punctatus	10.97	285	7.77	5413
Trichiurus lepturus	6.94	107	4.91	5414
Epinephelus aeneus	5.40	6	3.82	
Lagocephalus laevigatus	4.93	39	3.49	
Pentheroscion mbizi	4.59	38	3.25	5419
Dentex angolensis	3.36	58	2.38	5416
Pseudupeneus prayensis	2.72	62	1.93	5415
Alloteuthis africana	2.70	1151	1.91	
Scorpaena stephanica	2.25	2	1.59	
Peristedion cataphractum	2.23	75	1.58	
Saurida brasiliensis	1.84	690	1.30	
Parasudis fraser-bruenneri	1.65	60	1.17	
Squatina oculata	1.54	2	1.09	
Selar crumenophthalmus	1.54	19	1.09	5417
Sardinella aurita	1.20	23	0.85	5418
Chlorophthalmus atlanticus	1.11	38	0.79	
Brachydeuterus auritus	0.98	58	0.69	
Illex coindetii	0.81	9	0.57	
Sepia officinalis hierredda	0.43	6	0.30	
Lepidotrigla cadmani	0.36	21	0.25	
Fistularia petimba	0.34	4	0.24	
Raja miraletus	0.24	2	0.17	
Selene dorsalis	0.19	2	0.13	
Trachinus pellegrini	0.17	4	0.12	
Zeus faber	0.15	2	0.11	
Bembrops greyi	0.11	4	0.08	
Dibranchus atlanticus	0.11	21	0.08	
Syacium micrurum	0.08	9	0.06	
Stereomastis sp.	0.08	4	0.06	
Blennius normani	0.02	2	0.01	
Bathygobius paganellus	0.02	2	0.01	
Total	141.25		100.00	

PROJECT STATION:1250

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 506

	start	stop	duration				Long E 506
TIME	:08:48:48	09:20:05	31	(min)	Purpose code:	3	
LOG	*:3125.90*	*3127.69*	*1.77*		*Area code*	: 5	
FDEPTH:	41	42			GearCond.code:		
BDEPTH:	41	42			Validity code:		

Towing dir: 160ø Wire out: 120 m Speed: 33 kn*10

Sorted: 38 Kg Total catch: 37.59 CATCH/HOUR: 72.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	16.26	2408	22.35	
Pteroscion peli	15.87	1119	21.81	5425
Ilisha africana	9.70	1183	13.33	5424
Brachydeuterus auritus	8.81	546	12.11	5427
Selene dorsalis	7.45	215	10.24	5423
Pertunus validus	2.13	6	2.93	
Parapenaeus longirostris	1.94	741	2.67	
Nematopalaemon hastatus	1.82	2456	2.50	
Stromateus fiatola	1.41	2	1.94	
Penaeus notialis	1.41	46	1.94	
Sepia officinalis hierredda	1.03	2	1.42	
Sphyraena guachancho	0.77	8	1.06	5426
Scomberomorus tritor	0.68	2	0.93	
Cynoglossus canariensis	0.52	2	0.71	
Pseudotolithus senegalensis	0.52	4	0.71	
Lagocephalus laevigatus	0.52	15	0.71	
Pisodonophis semicinctus	0.39	4	0.54	
Grammoplites gruveli	0.33	15	0.45	
Octopus vulgaris	0.29	4	0.40	
Raja miraletus	0.27	4	0.37	
Galeoides decadactylus	0.19	12	0.26	
Antennarius occidentalis	0.15	8	0.21	
J E L L Y F I S H	0.10	19	0.14	
Brotula barbata	0.08	2	0.11	
Sicyonia galeata	0.02	2	0.03	
Chloroscombrus chrysurus	0.02	2	0.03	
Alectis alexandrinus	0.02	2	0.03	
Microchirus frechkopi	0.02	2	0.03	
Umbrina canariensis	0.02	2	0.03	
Uranoscopus albesca	0.02	6	0.03	
Total	72.76		100.02	

PROJECT STATION:1251

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 456
start stop duration Long E 510
TIME :10:46:11 11:18:15 32 (min) Purpose code: 3
LOG :3137.17 3138.75 1.59 Area code : 5
FDEPTH: 42 43 GearCond.code:
BDEPTH: 42 43 Validity code:
Towing dir: 160ø Wire out: 120 m Speed: 30 kn*10

Sorted: 92 Kg Total catch: 92.50 CATCH/HOUR: 173.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	73.88	576	42.60	5431
Brachydeuterus auritus	54.38	2501	31.35	5429
Trichiurus lepturus	19.41	1479	11.19	
Ilisha africana	11.63	379	6.71	
Pteroscion peli	5.74	263	3.31	5428
J E L L Y F I S H	2.78	47	1.60	
Sphyraena guachancho	1.48	8	0.85	5430
Caranx hippos	0.84	2	0.48	
Raja miraletus	0.83	4	0.48	
Priacanthus arenatus	0.53	2	0.31	
Penaeus notialis	0.36	19	0.21	
Portunus validus	0.30	2	0.17	
Uranoscopus albesca	0.26	8	0.15	
Galeoides decadactylus	0.24	2	0.14	
Pseudotolithus typus	0.24	4	0.14	
Brotula barbata	0.24	6	0.14	
Lagocephalus laevigatus	0.15	8	0.09	
Sardinella maderensis	0.11	2	0.06	
Citharus linguatula	0.06	2	0.03	
Total	173.46		100.01	

PROJECT STATION:1252

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 453
start stop duration Long E 505
TIME :13:07:53 13:37:33 30 (min) Purpose code: 3
LOG :3145.79 3147.22 1.43 Area code : 5
FDEPTH: 67 68 GearCond.code:
BDEPTH: 67 68 Validity code:
Towing dir: 333ø Wire out: 222 m Speed: 30 kn*10

Sorted: 26 Kg Total catch: 25.67 CATCH/HOUR: 51.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	36.10	1442	70.32	
Squatina oculata	5.76	2	11.22	
Trichiurus lepturus	2.68	78	5.22	
Sphyraena guachancho	1.64	28	3.19	5433
Selene dorsalis	1.48	12	2.88	5432
Lagocephalus laevigatus	1.42	8	2.77	
Pentheroscion mbizi	0.52	6	1.01	
Portunus validus	0.50	2	0.97	
Illex coindetii	0.44	6	0.86	
Ornithoteuthis antillarum	0.28	66	0.55	
Parapenaeus longirostris	0.18	18	0.35	
Fistularia petimba	0.08	2	0.16	
Lepidotrigla cadmani	0.08	4	0.16	
Engraulis encrasicolus	0.06	10	0.12	
Serranus accraensis	0.04	2	0.08	
Selar crumenophthalmus	0.04	2	0.08	
Dentex congoensis	0.04	2	0.08	
Total	51.34		100.02	

PROJECT STATION:1253

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 451
start stop duration Long E 459
TIME :16:04:33 16:34:10 30 (min) Purpose code: 3
LOG :3156.91 3158.41 1.48 Area code : 5
FDEPTH: 102 102 GearCond.code:
BDEPTH: 102 102 Validity code:
Towing dir: 160ø Wire out: 323 m Speed: 30 kn*10

Sorted: 204 Kg Total catch: 204.26 CATCH/HOUR: 408.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	364.40	9896	89.20	5434
Squatina oculata '	10.04	4	2.46	
Dentex angolensis	8.76	136	2.14	5436
Dentex congoensis	4.96	102	1.21	5437
Priacanthus arenatus	3.10	52	0.76	
Illex coindetii	2.76	86	0.68	
Pentheroscion mbizi	2.42	20	0.59	5439
Fistularia petimba	2.26	52	0.55	
Selar crumenophthalmus	1.50	20	0.37	5438
Lepidotrigla carolae	1.36	48	0.33	
Raja miraletus	1.32	6	0.32	
Sardinella aurita	1.24	20	0.30	5435
Epinephelus aeneus	1.22	2	0.30	
Zeus faber	0.86	8	0.21	
Trichiurus lepturus	0.62	14	0.15	
Lagocephalus laevigatus	0.30	2	0.07	
Saurida brasiliensis	0.30	70	0.07	
Citharus linguatula	0.28	16	0.07	
Sepia officinalis hierredda	0.26	4	0.06	
Scorpaena scrofa	0.12	2	0.03	
Pseudupeneus prayensis	0.06	2	0.01	
Serranus accraensis	0.02	2		
Total	408.16		99.97	

PROJECT STATION:1254

DATE:15/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 445
start stop duration Long E 451
TIME :19:44:29 20:14:54 30 (min) Purpose code: 3
LOG :3177.40 3178.94 1.55 Area code : 5
FDEPTH: 541 539 GearCond.code:
BDEPTH: 541 539 Validity code:
Towing dir: 200ø Wire out:1350 m Speed: 32 kn*10

Sorted: 22 Kg Total catch: 21.72 CATCH/HOUR: 43.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Yarrella corythaeola	15.58	486	35.87	
Laemonema laureysi	4.68	34	10.77	
SCYLLARIDAE	4.58	208	10.54	
Shrimps, small, non comm.	3.54	1062	8.15	
Alepocephalus sp.	3.38	16	7.78	
Chaunax pictus	2.54	12	5.85	
Opisthoteuthis sp.	1.80	2	4.14	
Benthodesmus sp.	1.58	36	3.64	
Lamprogrammus exutus	1.52	6	3.50	
Monomitopus metriostoma	1.26	66	2.90	
Histioteuthis sp.	1.10	6	2.53	
Kuronezumia leonis	0.92	12	2.12	
Plesiopenaeus edwardsianus	0.78	14	1.80	
Malacocephalus laevis	0.60	20	1.38	
Aristeus varidens	0.58	64	1.34	
Hydrolagus sp.	0.58	12	1.34	
Polymetme corythaeola	0.48	18	1.10	
Illex coindetii	0.48	6	1.10	
Xenodermichthys copei	0.44	18	1.01	
UNIDENTIFIED FISH	0.32	54	0.74	
Cubiceps gracilis	0.32	12	0.74	
MYCTOPHIDAE	0.24	60	0.55	
Halosaurus ovenii	0.16	2	0.37	
Nephropsis atlantica	0.12	10	0.28	
Lepidotrigla carolae	0.12	2	0.28	
Peristedion cataphractum	0.12	4	0.28	
Diretmoides parini	0.10	4	0.23	
CARISTIIDAE	0.08	4	0.18	
Woplostethus cadenati	0.04	4	0.09	
Synaphobranchus sp.	0.04	2	0.09	
GEMPYLIDAE	0.04	2	0.09	
Synaphobranchus kaupii	0.04	2	0.09	
Ectreposebastes imus	0.04	8	0.09	
Argyropelecus sp.	0.02	2	0.05	
Ebinania costaecanariæ	0.02	2	0.05	
Total	48.24		99.98	

PROJECT STATION:1255

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 432
start stop duration Long E 459
TIME :03:20:10 03:50:59 31 (min) Purpose code: 3
LOG :3229.34 3230.92 1.57 Area code : 5
FDEPTH: 282 281 GearCond.code:
BDEPTH: 282 281 Validity code:
Towing dir: 340ø Wire out: 850 m Speed: 30 kn*10

Sorted: 33 Kg Total catch: 147.08 CATCH/HOUR: 284.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Illex coindetii	219.91	3285	77.25	
Chlorophthalmus atlanticus	13.66	724	4.80	
Peristedion cataphractum	12.97	428	4.56	
Scyliorhinus cervigoni	7.74	27	2.72	
Aulopus cadenati	6.00	958	2.11	
Lepidotrigla cadmani	4.88	97	1.71	
Pterothrissus belloci	4.01	35	1.41	
Parapenaeus longirostris	3.91	662	1.37	
Cyttopsis roseus	2.17	122	0.76	
Pontinus accraensis	1.57	27	0.55	
Cynoponticus ferox	1.57	17	0.55	
Chascanopsetta lugubris	1.57	35	0.55	
Setarches guentheri	0.87	17	0.31	
Zenion longipinnis	0.77	35	0.27	
Stereomastis sp.	0.77	149	0.27	
Syacium micrurum	0.60	35	0.21	
Dibranchus atlanticus	0.60	45	0.21	
Ariomma melanum	0.35	10	0.12	
Coelorinchus coelorhincus	0.25	10	0.09	
Photichthys argenteus	0.17	10	0.06	
Gadella imberbis	0.17	10	0.06	
Gonostoma elongatum	0.08	10	0.03	
Antigonia capros	0.08	10	0.03	
Total	284.67		100.00	

PROJECT STATION:1256

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 434
start stop duration Long E 503
TIME :05:50:29 06:23:16 33 (min) Purpose code: 3
LOG :3239.52 3241.15 1.62 Area code : 5
FDEPTH: 192 192 GearCond.code:
BDEPTH: 192 192 Validity code:
Towing dir: 340ø Wire out: 575 m Speed: 31 kn*10

Sorted: 147 Kg Total catch: 744.30 CATCH/HOUR: 1353.27

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	1184.09	35491	87.50	5441
Illex coindetii	73.55	3564	5.43	
Antigonia capros	21.91	427	1.62	
Pantheroscion mbizi	18.09	127	1.34	5440
Squatina oculata	10.00	5	0.74	
Peristedion cataphractum	10.00	327	0.74	
Pterothrissus belloci	8.91	91	0.66	
Dentex angolensis	7.64	82	0.56	5442
Priacanthus arenatus	3.36	45	0.25	
Raja miraletus	3.18	18	0.23	
Mustelus mustelus	2.36	2	0.17	
Trichiurus lepturus	2.18	36	0.16	
Dibranchus atlanticus	2.00	36	0.15	
Lepidotrigla cadmani	1.82	36	0.13	
Synagrops microlepis	0.91	455	0.07	
Parapenaeus longirostris	0.73	291	0.05	
Scorpaena normani	0.73	18	0.05	
Bathygobius paganellus	0.55	73	0.04	
Bembrops greyi	0.36	18	0.03	
Saurida brasiliensis	0.36	45	0.03	
Citharus linguatula	0.27	9	0.02	
Syacium micrurum	0.18	9	0.01	
Nemichthys scolopaceus	0.09	9	0.01	
Total	1353.27		99.99	

PROJECT STATION:1257

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 437
start stop duration Long E 512
TIME :07:51:28 08:26:09 35 (min) Purpose code: 3
LOG :3251.77 3253.62 1.84 Area code : 5
FDEPTH: 88 84 GearCond.code:
BDEPTH: 88 84 Validity code:
Towing dir: 141ø Wire out: 270 m Speed: 33 kn*10

Sorted: 91 Kg Total catch: 90.53 CATCH/HOUR: 155.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selar crumenophthalmus	78.51	766	50.59	5443
Ariomma bondi	21.51	331	13.86	5444
Epinephelus aeneus	13.71	2	8.83	
Sepia orbignyana	9.17	15	5.91	
Priacanthus arenatus	6.14	72	3.96	
Decapterus punctatus	4.30	144	2.77	5446
Dentex angolensis	3.84	51	2.47	5445
Trichiurus lepturus	3.70	70	2.38	5447
Squatina oculata	3.26	2	2.10	
Illex coindetii	3.19	89	2.06	
Alloteuthis africana	2.76	998	1.78	
Parapandalus narval	1.94	929	1.25	
Lagocephalus laevigatus	1.46	10	0.94	
Pantheroscion mbizi	0.75	5	0.48	
Lepidotrigla cadmani	0.31	5	0.20	
Citharus linguatula	0.17	5	0.11	
Saurida brasiliensis	0.14	24	0.09	
Dentex congoensis	0.12	3	0.08	
J E L L Y F I S H	0.10	2	0.06	
Fistularia petimba	0.09	2	0.06	
Serranus accraensis	0.05	3	0.03	
Scorpaena normani	0.03	2	0.02	
Dibranchus atlanticus	0.02	2	0.01	
Total	155.27		100.04	

PROJECT STATION:1258

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 437
start stop duration Long E 515
TIME :08:20:25 08:21:19 31 (min) Purpose code: 3
LOG :3256.89 3258.39 1.49 Area code : 5
FDEPTH: 62 61 GearCond.code:
BDEPTH: 62 61 Validity code:
Towing dir: 330ø Wire out: 180 m Speed: 31 kn*10

Sorted: 9 Kg Total catch: 8.56 CATCH/HOUR: 16.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Alloteuthis africana	7.51	3441	45.32	
Caranx crysos	1.57	10	9.47	
Epinephelus aeneus	1.51	2	9.11	
Selar crumenophthalmus	0.97	10	5.85	
Lagocephalus laevigatus	0.87	6	5.25	
Brachydeuterus auritus	0.79	74	4.77	
Illex coindetii	0.66	17	3.98	
Ariomma bondi	0.45	10	2.72	
Priacanthus arenatus	0.45	10	2.72	
Trichiurus lepturus	0.35	2	2.11	
J E L L Y F I S H	0.33	4	1.99	
Sphyraena afra	0.27	6	1.63	
Pseudupeneus prayensis	0.27	4	1.63	
Selene dorsalis	0.25	2	1.51	
Fistularia petimba	0.12	2	0.72	
Parapenaeus longirostris	0.06	6	0.36	
Serranus accraensis	0.06	2	0.36	
Saurida brasiliensis	0.04	4	0.24	
Syacium micrurum	0.02	2	0.12	
Parapandalus narval	0.02	4	0.12	
Blennius normani	0.02	2	0.12	
Total	16.59		100.10	

PROJECT STATION:1259

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 439
start stop duration Long E 519
TIME :10:52:47 11:23:15 30 (min) Purpose code: 3
LOG :3264.32 3265.81 1.48 Area code : 5
FDEPTH: 38 38 GearCond.code:
BDEPTH: 38 38 Validity code:
Towing dir: 160ø Wire out: 120 m Speed: 30 kn*10

Sorted: 62 Kg Total catch: 62.06 CATCH/HOUR: 124.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	47.60	320	38.35	5449
Brachydeuterus auritus	15.84	534	12.76	5453
Ilisha africana	9.62	302	7.75	5454
Trichiurus lepturus	6.38	144	5.14	
J E L L Y F I S H	5.18	70	4.17	
Galeoides decadactylus	4.76	32	3.83	
Sepia officinalis hierredda	4.20	6	3.38	
Pseudotolithus typus	3.58	14	2.88	
Pteroscion peli	3.28	44	2.64	5452
Sphyraena guachancho	2.80	18	2.26	5448
Caranx hippos	2.72	8	2.19	5450
Caranx crysos	2.56	10	2.06	5451
Epinephelus aeneus	2.52	2	2.03	
Pseudotolithus senegalensis	2.28	2	1.84	
Scomberomorus tritor	2.12	6	1.71	
Portunus validus	1.28	4	1.03	
Penaeus notialis	1.20	14	0.97	
Alloteuthis africana	1.12	242	0.90	
Decapterus punctatus	1.06	2	0.85	
Alectis alexandrinus	0.94	18	0.76	
Priacanthus arenatus	0.80	2	0.64	
Raja miraletus	0.68	2	0.55	
Scyllarides herklotsii	0.58	138	0.47	
Loligo vulgaris	0.10	2	0.08	
Fistularia petimba	0.10	2	0.08	
Bothus podas africanus	0.08	2	0.06	
Citharus linguatula	0.02	2	0.02	
Total	123.40		99.98	

PROJECT STATION:1260

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 433
start stop duration Long E 525
TIME :12:28:09 12:58:05 30 (min) Purpose code: 3
LOG :3273.38 3275.01 1.63 Area code : 5
FDEPTH: 29 28 GearCond.code:
BDEPTH: 29 28 Validity code:
Towing dir: 160ø Wire out: 128 m Speed: 30 kn*10

Sorted: 51 Kg Total catch: 50.78 CATCH/HOUR: 101.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphyraena guachancho	21.10	88	20.78	5456
Brachydeuterus auritus	14.14	288	13.92	5461
Trichiurus lepturus	13.90	846	13.69	5463
Ilisha africana	11.70	418	11.52	5462
Galeoides decadactylus	10.12	124	9.96	5459
Pteroscion peli	9.90	190	9.75	5460
Chloroscombrus chrysurus	9.32	118	9.18	5457
Selene dorsalis	3.84	46	3.78	5455
Scomberomorus tritor	2.34	8	2.30	
Caranx hippos	1.34	4	1.32	
Stromateus fiatola	1.06	2	1.04	
Portunus validus	1.00	4	0.98	
Pseudotolithus senegalensis	0.66	4	0.65	
Sardinella maderensis	0.34	18	0.33	5458
Penaeus notialis	0.28	6	0.28	
Drepane africana	0.24	2	0.24	
Bothus podas africanus	0.14	2	0.14	
Balistes capriscus	0.10	2	0.10	
Scyllarides herklotsii	0.04	4	0.04	
Total	101.56		100.00	

PROJECT STATION:1261

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 426
start stop duration Long E 520
TIME :15:03:40 15:33:24 30 (min) Purpose code: 3
LOG :3286.32 3287.72 1.41 Area code : 5
FDEPTH: 62 65 GearCond.code:
BDEPTH: 62 65 Validity code:
Towing dir: 328ø Wire out: 202 m Speed: 30 kn*10

Sorted: 86 Kg Total catch: 388.29 CATCH/HOUR: 776.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagrus caeruleostictus	498.00	1828	64.13	5464
Brachydeuterus auritus	127.00	6180	16.35	
Epinephelus aeneus	45.30	10	5.83	5467
Decapterus punctatus	38.60	5326	4.97	
Umbrina canariensis	23.50	76	3.03	5466
Pagellus bellottii	14.00	62	1.80	5465
Selene dorsalis	12.34	104	1.59	
Sphyraena guachancho	3.56	12	0.46	
Selar crumenophthalmus	3.16	72	0.41	
Alloteuthis africana	2.90	888	0.37	
Fistularia petimba	2.04	14	0.26	
Anthias anthias	1.70	86	0.22	
Pseudupeneus prayensis	1.70	44	0.22	
Sepia orbignyana	0.66	2	0.08	
Portunus validus	0.60	2	0.08	
Dactylopterus volitans	0.44	2	0.06	
Bathygobius paganellus	0.42	2	0.05	
Erythrocles monodi	0.34	98	0.04	
Illex coindetii	0.32	4	0.04	
Total	776.58		99.99	

PROJECT STATION:1262

DATE:16/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 425
start stop duration Long E 515
TIME :16:50:29 17:20:18 30 (min) Purpose code: 3
LOG :3294.93 3296.58 1.63 Area code : 5
FDEPTH: 138 132 GearCond.code:
BDEPTH: 138 132 Validity code:
Towing dir: 155ø Wire out: 404 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 53.91 CATCH/HOUR: 107.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	71.00	1648	65.85	5471
Illex coindetii	9.66	300	8.96	
Squatina oculata	5.60	4	5.19	
Dentex angolensis	4.66	50	4.32	5468
Trichiurus lepturus	4.12	52	3.82	5472
Decapterus punctatus	2.38	190	2.21	
Pentheroscion mbizi	2.04	20	1.89	5469
Saurida brasiliensis	1.94	398	1.80	
Raja miraletus	1.44	8	1.34	
Alloteuthis africana	1.18	472	1.09	
Selar crumenophthalmus	0.80	6	0.74	
Lepidotrigla cadmani	0.74	12	0.69	
Priacanthus arenatus	0.46	6	0.43	
Dentex congoensis	0.38	6	0.35	5470
Sepia officinalis hierredda	0.38	4	0.35	
Scorpaena normani	0.34	6	0.32	
Parapenaeus longirostris	0.20	30	0.19	
Citharus linguatula	0.18	8	0.17	
Fistularia petimba	0.16	2	0.15	
Sphoeroides pachgaster	0.14	6	0.13	
Syacium micrurum	0.02	2	0.02	
Total	107.82		100.01	

PROJECT STATION:1263

DATE:17/ 6/06 GEAR TYPE: PT No: 5 POSITION:Lat N 359
start stop duration Long E 507
TIME :02:37:16 03:07:13 30 (min) Purpose code: 3
LOG :3357.80 3359.92 2.10 Area code : 5
FDEPTH: 0 0 GearCond.code:
BDEPTH: 886 837 Validity code:
Towing dir: ø Wire out: 120 m Speed: 45 kn*10

Sorted: 7 Kg Total catch: 7.32 CATCH/HOUR: 14.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hypoclydonia bella	12.70	536	86.75	
Illex coindetii	1.28	16	8.74	
PARALEPIDIDAE	0.38	126	2.60	
Brama brama	0.14	4	0.96	
Unidentified fish	0.14	4	0.96	
Total	14.64		100.01	

PROJECT STATION:1264

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 409
start stop duration Long E 526
TIME :05:43:34 06:14:17 31 (min) Purpose code: 3
LOG :3379.80 3381.23 1.42 Area code : 5
FDEPTH: 76 83 GearCond.code:
BDEPTH: 76 83 Validity code:
Towing dir: 324ø Wire out: 241 m Speed: 30 kn*10

Sorted: 6 Kg Total catch: 100.15 CATCH/HOUR: 193.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	114.19	2400	58.91	5473
Sepia officinalis hierredda	25.06	58	12.93	
Dentex angolensis	24.87	194	12.83	
Dentex congoensis	12.87	242	6.64	
Alloteuthis africana	6.10	2439	3.15	
Fistularia petimba	3.39	35	1.75	
Priacanthus arenatus	2.38	45	1.23	
Epinephelus aeneus	2.15	4	1.11	
Zeus faber	0.85	2	0.44	
Raja miraletus	0.60	4	0.31	
Sphyraena guachancho	0.41	2	0.21	
Dactylopterus volitans	0.35	2	0.18	
Illex coindetii	0.19	2	0.10	
Chilomycterus spinosus mauret.	0.17	2	0.09	
Citharus linguatula	0.10	6	0.05	
Lepidotrigla cadmani	0.08	2	0.04	
Syacium micrurum	0.06	6	0.03	
Sphoeroides marmoratus	0.02	2	0.01	
Total	193.84		100.01	

PROJECT STATION:1265

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 412
start stop duration Long E 528
TIME :07:07:18 07:38:28 31 (min) Purpose code: 3
LOG :3386.15 3387.91 1.74 Area code : 5
FDEPTH: 50 46 GearCond.code:
BDEPTH: 50 46 Validity code:
Towing dir: 160ø Wire out: 160 m Speed: 30 kn*10

Sorted: 5 Kg Total catch: 125.03 CATCH/HOUR: 241.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	202.35	1227	83.62	
Balistes capriscus	20.23	93	8.36	5476
Pseudupeneus prayensis	9.62	99	3.98	5474
Pagrus caeruleostictus	4.84	46	2.00	5475
Priacanthus arenatus	1.66	14	0.69	
Dactylopterus volitans	1.08	8	0.45	
Selar crumenophthalmus	0.79	12	0.33	
Alloteuthis africana	0.75	391	0.31	
Caranx senegallus	0.52	4	0.21	
Sardinella maderensis	0.12	2	0.05	
Syacium micrurum	0.02	2	0.01	
Total	241.98		100.01	

PROJECT STATION:1266

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 414
start stop duration Long E 531
TIME :08:41:16 09:09:22 28 (min) Purpose code: 3
LOG :3394.92 3396.59 1.67 Area code : 5
FDEPTH: 33 34 GearCond.code:
BDEPTH: 33 34 Validity code:
Towing dir: 160ø Wire out: 100 m Speed: 35 kn*10

Sorted: 6 Kg Total catch: 27.17 CATCH/HOUR: 58.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	24.43	120	41.96	
Balistes capriscus	10.61	51	18.22	5481
Pseudupeneus prayensis	6.30	49	10.82	5477
Caranx crysos	5.40	51	9.28	5480
Sardinella maderensis	5.04	45	8.66	5478
Pagrus caeruleostictus	3.75	34	6.44	5479
Alloteuthis africana	0.79	362	1.36	
Portunus validus	0.75	2	1.29	
Selar crumenophthalmus	0.56	9	0.96	
Priacanthus arenatus	0.32	2	0.55	
Fistularia petimba	0.26	4	0.45	
Echeneis naucrates	0.02	2	0.03	
Total	58.23		100.02	

PROJECT STATION:1267

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 408
start stop duration Long E 540
TIME :10:28:47 10:58:54 30 (min) Purpose code: 3
LOG :3407.56 3409.35 1.77 Area code : 5
FDEPTH: 30 29 GearCond.code:
BDEPTH: 30 29 Validity code:
Towing dir: 90ø Wire out: 100 m Speed: 30 kn*10

Sorted: 143 Kg Total catch: 1016.04 CATCH/HOUR: 2032.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chloroscombrus chrysurus	1757.20	25952	86.47	5487
Galeoides decadactylus	58.20	516	2.86	
Brachydeuterus auritus	57.80	1292	2.84	
Sphyraena guachancho	35.80	156	1.76	5484
Pagrus caeruleostictus	22.72	218	1.12	
Portunus validus	15.24	40	0.75	
Scomberomorus tritor	13.20	56	0.65	5485
Selene dorsalis	11.96	340	0.59	
Sphyraena afra	11.00	2	0.54	
Decapterus punctatus	8.44	54	0.42	
Balistes capriscus	7.34	54	0.36	
Pomadasys jubelini	6.86	70	0.34	5483
Sardinella maderensis	6.66	104	0.33	5486
Bothus podas africanus	4.76	54	0.23	
Caranx hippos	3.00	14	0.15	5482
Caranx crysos	2.44	14	0.12	
Epinephelus aeneus	1.82	2	0.09	
Trichiurus lepturus	1.78	8	0.09	
Pteroscion peli	1.64	28	0.08	
Caranx senegallus	1.36	14	0.07	
Pseudotolithus typus	1.34	8	0.07	
Eucinostomus melanopterus	0.54	14	0.03	
Pseudotolithus senegalensis	0.46	2	0.02	
Pseudupeneus prayensis	0.24	2	0.01	
Drepane africana	0.14	14	0.01	
Fistularia petimba	0.14	14	0.01	
Total	2032.08		100.01	

PROJECT STATION:1268

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 404
start stop duration Long E 538
TIME :11:57:51 12:28:41 31 (min) Purpose code: 3
LOG :3415.60 3417.08 1.48 Area code : 5
FDEPTH: 37 36 GearCond.code:
BDEPTH: 37 36 Validity code:
Towing dir: 330ø Wire out: 120 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 54.07 CATCH/HOUR: 104.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphyraena guachancho	29.03	296	27.74	5488
Brachydeuterus auritus	26.13	585	24.97	5489
Pseudotolithus typus	7.41	12	7.08	
Selene dorsalis	6.83	103	6.53	
Pagrus caeruleostictus	6.19	58	5.91	
Balistes punctatus	4.80	41	4.59	
Lagocephalus laevigatus	4.12	17	3.94	
Sepiella ornata	3.43	544	3.28	
Pseudupeneus prayensis	3.37	25	3.22	
Portunus validus	2.15	6	2.05	
Caranx hippos	1.70	8	1.62	
Sepia officinalis hierredda	1.32	10	1.26	
Pteroscion peli	1.22	12	1.17	
Citharus linguatula	1.16	21	1.11	
Pomadasys jubelini	1.12	4	1.07	
Epinephelus aeneus	1.08	2	1.03	
Ilisha africana	1.03	25	0.98	
J E L L Y F I S H	0.89	17	0.85	
Aluterus heudelotii	0.85	6	0.81	
Chloroscombrus chrysurus	0.43	6	0.41	
Penaeus notialis	0.33	10	0.32	
Trachinocephalus myops	0.04	2	0.04	
Penaeus kerathurus	0.02	2	0.02	
Total	104.65		100.00	

PROJECT STATION:1269

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 358

	start	stop	duration			
					Long	E 532
TIME	:13:50:24	14:20:33	30 (min)	Purpose code:	3	
LOG	:3426.14	3427.83	1.66	Area code	: 5	
FDEPTH:	67	63		GearCond.code:		
BDEPTH:	67	63		Validity code:		

Towing dir: 150ø Wire out: 202 m Speed: 30 kn*10

Sorted: 45 Kg Total catch: 44.67 CATCH/HOUR: 89.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	49.80	340	55.74	5490
Sepia officinalis hierredda	17.00	22	19.03	
Epinephelus aeneus	7.30	14	8.17	5491
Sepiella ornata	7.04	982	7.88	
Mustelus mustelus	2.60	2	2.91	
Lepidotrigla cadmani	1.78	36	1.99	
Portunus validus	1.12	2	1.25	
Zeus faber	0.76	2	0.85	
Brachydeuterus auritus	0.72	8	0.81	
Decapterus punctatus	0.50	8	0.56	
Priacanthus arenatus	0.26	6	0.29	
Balistes capriscus	0.24	2	0.27	
Citharus linguatula	0.08	4	0.09	
Sphyraena guachancho	0.08	16	0.09	
Fistularia petimba	0.06	2	0.07	
Total	89.34		100.00	

PROJECT STATION:1272

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 400

	start	stop	duration			
					Long	E 552
TIME	:07:38:57	08:10:00	31 (min)	Purpose code:	3	
LOG	:3520.75	3522.33	1.67	Area code	: 5	
FDEPTH:	39	39		GearCond.code:		
BDEPTH:	39	39		Validity code:		

Towing dir: 280ø Wire out: 120 m Speed: 30 kn*10

Sorted: 2 Kg Total catch: 73.63 CATCH/HOUR: 142.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	100.55	3271	70.56	5496
Squatina oculata	10.65	2	7.47	
Sphyraena afra	9.19	147	6.45	5498
Galeoides decadactylus	6.27	39	4.40	5500
Pomadasys jubelini	4.88	19	3.42	5499
J E L L Y F I S H	2.19	56	1.54	
Pagrus caeruleostictus	1.68	14	1.18	5497
Priacanthus arenatus	1.63	29	1.14	
Portunus validus	1.22	2	0.86	
Alloteuthis africana	0.79	416	0.55	
Selene dorsalis	0.56	15	0.39	
Sepiella ornata	0.50	352	0.35	
Lagocephalus laevigatus	0.46	2	0.32	
Trichiurus lepturus	0.39	114	0.27	
Raja miraletus	0.37	4	0.26	
Engraulis encrasicolus	0.35	854	0.25	
Penaeus notialis	0.27	19	0.19	
Selar crumenophthalmus	0.27	4	0.19	
Citharichthys stampflii	0.14	4	0.10	
Loligo vulgaris	0.10	165	0.07	
C R A B S	0.04	2	0.03	
Scyllarides sp.	0.02	10	0.01	
Total	142.52		100.00	

PROJECT STATION:1270

DATE:17/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 355

	start	stop	duration			
					Long	E 532
TIME	:16:29:36	16:59:19	30 (min)	Purpose code:	3	
LOG	:3434.22	3435.47	1.24	Area code	: 5	
FDEPTH:	95	102		GearCond.code:		
BDEPTH:	95	102		Validity code:		

Towing dir: 315ø Wire out: 200 m Speed: 30 kn*10

Sorted: 93 Kg Total catch: 258.72 CATCH/HOUR: 517.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	473.86	1744	91.58	5492
Epinephelus aeneus	15.70	2	3.03	
Ariomma bondi	8.58	206	1.66	5493
Sepia officinalis hierredda	6.48	10	1.25	
Sepiella ornata	4.00	1182	0.77	
Zeus faber	3.84	10	0.74	
Priacanthus arenatus	3.62	76	0.70	
Sphyraena guachancho	1.30	16	0.25	
Citharus linguatula	0.06	10	0.01	
Total	517.44		99.99	

PROJECT STATION:1273

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 408

	start	stop	duration			
					Long	E 555
TIME	:09:37:39	10:09:51	32 (min)	Purpose code:	3	
LOG	:3533.04	3534.76	1.71	Area code	: 5	
FDEPTH:	22	22		GearCond.code:		
BDEPTH:	22	22		Validity code:		

Towing dir: 90ø Wire out: 100 m Speed: 30 kn*10

Sorted: 119 Kg Total catch: 190.55 CATCH/HOUR: 356.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	83.91	2503	23.52	
Pseudotolithus typus	57.04	234	15.99	5504
Pseudotolithus elongatus	*50.78*	*1076*	*14.24*	*5506*
Pteroscion peli	33.51		9.39	
Ilisha africana	30.62	1333	8.58	5508
Polydactylus quadrifilis	12.94	2	3.63	
Selene dorsalis	11.18	951	3.13	
Nematopalaemon hastatus	10.97	19378	3.08	
Sphyraena afra	10.69	2	3.00	
Galeoides decadactylus	*6.00*	*56*	*1.68*	
Ethmalosa fimbriata	5.59		1.57	
Pseudotolithus senegalensis	5.49	253	1.54	5505
Chloroscombrus chrysurus	5.44	229	1.53	
Scomberomorus tritor	5.03	32	1.41	5501
Lagocephalus laevigatus	4.73	28	1.33	
Pentanemus quinquarius	4.73	56	1.33	
Caranx hippos	*4.16*	*32*	*1.17*	
Callinectes pallidus	2.31	107	0.65	
Sphyraena guachancho	1.84	9	0.52	
Brachydeuterus auritus	1.80	41	0.50	
Parapenaeopsis atlantica	1.63	512	0.46	
Carcharhinus signatus	1.26	6	0.35	
Penaeus monodon	1.09	8	0.31	
J E L L Y F I S H	*0.71*	*38*	*0.20*	
Pisodonophis semicinctus	0.66	4	0.19	
Pseudotolithus epipercus	0.66	9	0.19	
Sardinella maderensis	0.41	53	0.11	5502
Alloteuthis africana	0.38	159	0.11	
Sepiella ornata	0.32	66	0.09	
Cynoponticus ferox	0.32	4	0.09	
Squilla aculata calmani	0.24	15	0.07	
Sphoeroides marmoratus	0.23	6	0.06	
Caranx crysos	0.23	4	0.06	
Drepane africana	0.13	15	0.04	
Pomadasys jubelini	0.13	4	0.04	
Cephalopholis nigri	0.09	6	0.03	
Cynoglossus canariensis	0.09	9	0.03	
Total	357.34		100.02	

PROJECT STATION:1271

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 352

	start	stop	duration			
					Long	E 548
TIME	:05:40:05	06:11:17	31 (min)	Purpose code:	3	
LOG	:3508.38	3510.13	1.74	Area code	:5	
FDEPTH:	73	80		GearCond.code:		
BDEPTH:	73	80		Validity code:		

Towing dir: 110ø Wire out: 222 m Speed: 30 kn*10

Sorted: 3 Kg Total catch: 30.47 CATCH/HOUR: 58.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	13.65	215	23.15	5495
Priacanthus arenatus	11.54	205	19.57	
Alloteuthis africana	9.91	4066	16.81	
Sepia officinalis hierredda	9.87	17	16.74	
Dentex angolensis	*5.34*	*45*	*9.06*	5494
Fistularia petimba	3.70	35	6.27	
Selar crumenophthalmus	1.24	17	2.10	
Epinephelus aeneus	0.60	2	1.02	
Raja miraletus	0.56	2	0.95	
Scorpaena stephanica	0.52	2	0.88	
Dentex congoensis	0.50	12	0.85	
Pseudupeneus prayensis	*0.39*	*6*	*0.66*	
Lagocephalus laevigatus	0.35	2	0.59	
Decapterus punctatus	0.33	8	0.56	
Lepidotrigla cadmani	0.21	4	0.36	
Trichiurus lepturus	0.15	2	0.25	
Illex coindetii	0.10	6	0.17	
Syacium micrurum	0.02	2	0.03	
Total	58.98		100.02	

PROJECT STATION:1274

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 400
start stop duration Long E 610
TIME :12:00:38 12:32:48 32 (min) Purpose code: 3
LOG :3550.93 3552.74 1.69 Area code : 5
FDEPTH: 36 39 GearCond.code:
BDEPTH: 36 39 Validity code:
Towing dir: 110ø Wire out: 130 m Speed: 30 kn*10

Sorted: 3 Kg Total catch: 25.60 CATCH/HOUR: 48.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	13.80	1151	28.75	
Scomberomorus tritor	6.94	24	14.46	
Pseudupeneus prayensis	6.49	60	13.52	
Caranx crysos	4.33	13	9.02	5509
J E L L Y F I S H	3.84	84	8.00	
Brachydeuterus auritus	3.84	636	8.00	
Pagrus caeruleostictus	2.64	36	5.50	
Ilisha africana	0.96	11	2.00	
Ethmalosa fimbriata	0.96	2	2.00	
Penaeus notialis	0.60	11	1.25	
Selene dorsalis	0.60	11	1.25	
Uraspis secunda	0.43	2	0.90	
Sepia officinalis hierredda	0.43	2	0.90	
Sphyraena guachancho	0.43	24	0.90	5510
Ephippion guttifer	0.39	2	0.81	
Caranx hippos	0.38	4	0.79	
Chloroscombrus chrysurus	0.36	11	0.75	
Callinectes pallidus	0.36	11	0.75	
Balistes punctatus	0.19	2	0.40	
Decapterus punctatus	0.04	2	0.08	
Total	48.01		100.03	

PROJECT STATION:1275

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 354
start stop duration Long E 610
TIME :14:58:19 15:28:11 30 (min) Purpose code: 3
LOG :3560.74 3562.30 1.56 Area code : 5
FDEPTH: 63 62 GearCond.code:
BDEPTH: 63 62 Validity code:
Towing dir: 270ø Wire out: 199 m Speed: 30 kn*10

Sorted: 448 Kg Total catch: 47.77 CATCH/HOUR: 95.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagrus caeruleostictus	27.60	106	28.89	5511
Dentex angolensis	26.50	200	27.74	5512
Sphyraena guachancho	16.52	182	17.29	5513
Alloteuthis sp.	16.40	4	17.17	
Priacanthus arenatus	2.92	32	3.06	
Pseudupeneus prayensis	1.20	12	1.26	
Pentheroscion mbizi	1.00	6	1.05	
Octopus vulgaris	0.72	2	0.75	
Lagocephalus laevigatus	0.50	42	0.52	
Fistularia petimba	0.46	4	0.48	
Raja miraletus	0.44	2	0.46	
Epinephelus aeneus	0.36	6	0.38	
Illex coindetii	0.36	4	0.38	
Decapterus punctatus	0.30	8	0.31	
J E L L Y F I S H	0.16	4	0.17	
Lepidotrigla cadmani	0.08	2	0.08	
Callinectes pallidus	0.02	2	0.02	
Total	95.54		100.01	

PROJECT STATION:1276

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 348
start stop duration Long E 610
TIME :16:39:48 16:59:16 20 (min) Purpose code: 3
LOG :3569.60 3570.67 1.07 Area code : 5
FDEPTH: 148 154 GearCond.code:
BDEPTH: 148 154 Validity code:
Towing dir: 100ø Wire out: 434 m Speed: 30 kn*10

Sorted: 43 Kg Total catch: 43.29 CATCH/HOUR: 129.87

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Illex coindetii	39.75	1053	30.61	
Squatina oculata	24.93	9	19.20	
Pentheroscion mbizi	20.43	144	15.73	5514
Trichiurus lepturus	8.79	126	6.77	
Dentex angolensis	7.65	90	5.89	5515
Pterothrissus belloci	6.87	60	5.29	
Alloteuthis africana	4.29	510	3.30	
Raja miraletus	1.95	18	1.50	
Sphyraena guachancho	1.92	18	1.48	
Uranoscopus albesca	1.86	30	1.43	
Ariomma bondi	1.38	51	1.06	
Epinephelus aeneus	1.23	3	0.95	
Scorpaena normani	1.05	15	0.81	
Lepidotrigla cadmani	1.02	27	0.79	
Pagrus caeruleostictus	1.02	3	0.79	
Priacanthus arenatus	1.02	9	0.79	
Synagrops microlepis	0.99	495	0.76	
Solenocera africana	0.93	237	0.72	
Citharus linguatula	0.72	24	0.55	
Lagocephalus laevigatus	0.51	3	0.39	
Engraulis encrasicolus	0.45	114	0.35	
J E L L Y F I S H	0.33	3	0.25	
Ephippion guttifer	0.24	3	0.18	
Octopus vulgaris	0.24	3	0.18	
Sepia officinalis hierredda	0.21	3	0.16	
Callinectes pallidus	0.09	3	0.07	
Total	129.87		100.00	

PROJECT STATION:1277

DATE:18/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 346
start stop duration Long E 610
TIME :17:40:46 18:01:25 21 (min) Purpose code: 3
LOG :3574.04 3575.09 1.02 Area code :5
FDEPTH: 183 175 GearCond.code:
BDEPTH: 183 175 Validity code:
Towing dir: 285ø Wire out: 545 m Speed: 30 kn*10

Sorted: 68 Kg Total catch: 123.05 CATCH/HOUR: 351.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	244.03	5903	69.41	5518
Pterothrissus belloci	26.34	251	7.49	
Illex coindetii	17.43	580	4.96	
Pentheroscion mbizi	10.43	77	2.97	5517
Dentex angolensis	9.83	97	2.80	5516
Trichiurus lepturus	7.00	103	1.99	5519
Synagrops microlepis	6.69	5277	1.90	
Citharus linguatula	5.89	194	1.68	
Lepidotrigla cadmani	3.71	71	1.06	
Parapenaeus longirostris	2.51	1009	0.71	
Dentex congoensis	2.17	26	0.62	
Sepia officinalis hierredda	1.91	40	0.54	
Uranoscopus albesca	1.91	31	0.54	
Peristedion cataphractum	1.86	51	0.53	
Priacanthus arenatus	1.74	26	0.49	
Todaropsis eblanae	1.69	37	0.48	
Scorpaena normani	1.54	26	0.44	
Todarodes sagittatus	1.40	46	0.40	
Brotula barbata	1.03	6	0.29	
Bembrops greyi	0.89	40	0.25	
Raja miraletus	0.83	6	0.24	
Sphoeroides marmoratus	0.26	20	0.07	
Saurida brasiliensis	0.26	46	0.07	
Bathygobius paganellus	0.11	14	0.03	
Physiculus huloti	0.11	11	0.03	
Total	351.57		99.99	

PROJECT STATION:1278

DATE:18/ 6/06 GEAR TYPE: PT No: 5 POSITION:Lat N 330
start stop duration Long E 604
TIME :21:38:35 22:09:14 31 (min) Purpose code: 3
LOG :3594.59 3596.27 1.68 Area code :5
FDEPTH: 10 10 GearCond.code:
BDEPTH: 794 869 Validity code:
Towing dir: 190ø Wire out: 150 m Speed: 35 kn*10

Sorted: 2 Kg Total catch: 12.19 CATCH/HOUR: 23.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	7.68	14086	32.56	
Paracubiceps multisquamis *	7.08	182	30.01	
Nealotus tripes	4.66	252	19.75	
Illex coindetii	1.66	23	7.04	
Gempylus serpens	1.16	4	4.92	
Brama brama	0.72	6	3.05	
Ariomma melanum	0.27	10	1.14	
Psenes cyanophrys	0.17	2	0.72	
Scopelosaurus sp.	0.10	6	0.42	
PARALEPIDIDAE	0.06	46	0.25	
Bregmaceros sp.	0.02	19	0.08	
Total	23.58		99.94	

PROJECT STATION:1279

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 356
start stop duration Long E 626
TIME :05:41:06 06:12:25 31 (min) Purpose code: 3
LOG :3662.50 3664.14 1.62 Area code : 5
FDEPTH: 77 83 GearCond.code:
BDEPTH: 77 83 Validity code:
Towing dir: 90ø Wire out: 241 m Speed: 30 kn*10

Sorted: 108 Kg Total catch: 303.49 CATCH/HOUR: 587.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selar crumenophthalmus	216.06	2903	36.78	5523
Decapterus punctatus	210.54	7566	35.84	5520
Ariomma bondi	49.41	790	8.41	5522
Epinephelus aeneus	33.29	4	5.67	
Squatina oculata	22.26	6	3.79	
Pagrus caeruleostictus	11.28	35	1.92	5524
Mustelus mustelus	10.65	8	1.81	
Boops boops	9.35	180	1.59	
Pentheroscion mbizi	5.23	48	0.89	5521
Lagocephalus laevigatus	4.16	48	0.71	
Priacanthus arenatus	3.93	97	0.67	
Alloteuthis africana	3.19	1186	0.54	
Sepia officinalis hierredda	2.19	6	0.37	
Sardinella maderensis	1.61	6	0.27	
Erythrocles monodi	1.06	58	0.18	
Illex coindetii	0.68	10	0.12	
Peristedion cataphractum	0.45	15	0.08	
Selene dorsalis	0.45	6	0.08	
Dentex angolensis	0.39	10	0.07	
Pseudupeneus prayensis	0.29	6	0.05	
Fistularia petimba	0.25	15	0.04	
Trichiurus lepturus	0.25	10	0.04	
Serranus accraensis	0.15	6	0.03	
Raja miraletus	0.10	10	0.02	
Saurida brasiliensis	0.10	19	0.02	
Dactylopterus volitans	0.10	6	0.02	
Total	587.42		100.01	

PROJECT STATION:1280

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 400

	start	stop	duration			Long E 627
TIME	:07:09:59	07:43:11	33	(min)	Purpose code:	3
LOG	:3669.94	3671.78	1.83		Area code :	5
FDEPTH:	49	46			GearCond.code:	
BDEPTH:	49	46			Validity code:	

Towing dir: 270ø Wire out: 150 m Speed: 30 kn*10

Sorted: 22 Kg Total catch: 22.44 CATCH/HOUR: 40.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	12.98	787	31.81	
Selene dorsalis	10.67	78	26.15	5525
Trichiurus lepturus	4.87	1060	11.94	
Selar crumenophthalmus	2.85	25	6.99	5526
Brachydeuterus auritus	2.31	42	5.66	5528
Decapterus punctatus	2.07	56	5.07	5527
Scomberomorus tritor	1.33	2	3.26	
Pertunus validus	0.87	2	2.13	
Sepiella ornata	0.84	93	2.06	
Sepia officinalis hierredda	0.80	2	1.96	
Alloteuthis africana	0.40	129	0.98	
Lagocephalus laevigatus	0.27	2	0.66	
Balistes capriscus	0.13	2	0.32	
Priacanthus arenatus	0.09	2	0.22	
Penaeus notialis	0.09	5	0.22	
Loligo vulgaris	0.05	189	0.12	
Peristedion cataphractum	0.05	2	0.12	
Saurida brasiliensis	0.04	9	0.10	
Sardinella maderensis	0.04	2	0.10	
Bathyuchius paganellus	0.02	11	0.05	
Engraulis encrasicolus	0.02	22	0.05	
Total	40.79		99.97	

PROJECT STATION:1282

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 409

	start	stop	duration			Long E 638
TIME	:10:39:32	11:12:06	33	(min)	Purpose code:	3
LOG	:3690.57	3692.17	1.58		Area code :	5
FDEPTH:	26	26			GearCond.code:	
BDEPTH:	26	26			Validity code:	

Towing dir: 39ø Wire out: 100 m Speed: 30 kn*10

Sorted: 78 Kg Total catch: 78.00 CATCH/HOUR: 141.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chloroscombrus chrysurus	38.18	427	26.92	5536
Trichiurus lepturus	30.47	1351	21.48	
Ilisha africana	14.51	951	10.23	5538
Selene dorsalis	13.55	138	9.55	5539
Galeoides decadactylus	12.85	124	9.06	5540
Caranx hippos	7.18	36	5.06	5542
Brachydeuterus auritus	6.93	133	4.89	5537
Sardinella maderensis	3.13	67	2.21	5541
J E L L Y F I S H	3.09	35	2.18	
Scomberomorus tritor	2.58	4	1.82	
Drepane africana	2.13	25	1.50	5543
Pteroscion peli	1.56	38	1.10	
Loligo vulgaris	1.18	144	0.83	
Rhizoprionodon acutus	1.07	2	0.75	
Selar crumenophthalmus	1.05	5	0.74	
Sphyraena guachancho	0.62	2	0.44	
Ethmalosa fimbriata	0.56	4	0.39	
Lagocephalus laevigatus	0.53	4	0.37	
Penaeus monodon	0.49	4	0.35	
Penaeus notialis	0.07	2	0.05	
Sepiella ornata	0.04	13	0.03	
Alectis alexandrinus	0.02	9	0.01	
Squilla sp.	0.02	2	0.01	
Total	141.81		99.97	

PROJECT STATION:1283

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 405

	start	stop	duration			Long E 640
TIME	:12:07:30	12:37:41	30	(min)	Purpose code:	3
LOG	:3697.91	3699.40	1.46		Area code :	5
FDEPTH:	40	38			GearCond.code:	
BDEPTH:	40	38			Validity code:	

Towing dir: 270ø Wire out: 135 m Speed: 30 kn*10

Sorted: 161 Kg Total catch: 161.64 CATCH/HOUR: 323.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	308.40		95.40	
Brachydeuterus auritus	5.66	66	1.75	
Decapterus punctatus	3.24	16	1.00	
Selene dorsalis	1.40	12	0.43	
Chloroscombrus chrysurus	0.68	6	0.21	
Chilomycterus spinosus mauret.	0.68	2	0.21	
Pagrus caeruleostictus	0.68	2	0.21	
Sepia officinalis hierredda	0.60	2	0.19	
Balistes punctatus	0.46	4	0.14	
Caranx senegallus	0.42	2	0.13	
Pseudupeneus prayensis	0.32	2	0.10	
Epinephelus aeneus	0.30	2	0.09	
Dentex angolensis	0.26	2	0.08	
Trichiurus lepturus	0.18	20	0.06	
Total	323.28		100.00	

PROJECT STATION:1281

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 405

	start	stop	duration			Long E 625
TIME	:08:33:31	09:03:35	30	(min)	Purpose code:	3
LOG	:3676.57	3678.00	1.42		Area code :	5
FDEPTH:	31	29			GearCond.code:	
BDEPTH:	31	29			Validity code:	

Towing dir: 39ø Wire out: 100 m Speed: 30 kn*10

Sorted: 55 Kg Total catch: 55.59 CATCH/HOUR: 111.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	34.80	210	31.30	5531
Brachydeuterus auritus	20.40	318	18.35	
Rhizoprionodon acutus	16.00	6	14.39	
Sphyraena guachancho	7.34	40	6.60	5530
Alectis alexandrinus	5.52	46	4.96	5533
Pagrus caeruleostictus	5.00	38	4.50	5534
Chloroscombrus chrysurus	4.42	66	3.98	5532
Selar crumenophthalmus	4.20	22	3.78	5529
Sepia officinalis hierredda	3.56	8	3.20	
Selene dorsalis	2.72	74	2.45	5535
Pomadasys jubelini	1.04	4	0.94	
J E L L Y F I S H	1.04	26	0.94	
Sardinella maderensis	0.92	40	0.83	
Pseudupeneus prayensis	0.76	6	0.68	
Pseudotolithus typus	0.70	2	0.63	
Lethrinus atlanticus	0.62	2	0.56	
Epinephelus aeneus	0.60	2	0.54	
Ilisha africana	0.58	16	0.52	
Trachinocephalus myops	0.28	4	0.25	
Stephanolepis hispidus	0.26	6	0.23	
Pteroscion peli	0.20	2	0.18	
Eucinostomus melanopterus	0.14	2	0.13	
Sepiella ornata	0.08	6	0.07	
Total	111.18		100.01	

PROJECT STATION:1284

DATE:19/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 358

	start	stop	duration			Long E 639
TIME	:14:58:19	15:29:44	31	(min)	Purpose code:	3
LOG	:3708.23	3709.82	1.58		Area code :	5
FDEPTH:	75	76			GearCond.code:	
BDEPTH:	75	76			Validity code:	

Towing dir: 90ø Wire out: 244 m Speed: 30 kn*10

Sorted: 43 Kg Total catch: 43.71 CATCH/HOUR: 84.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	42.00	2783	49.65	5546
Squatina oculata	13.55	10	16.02	
Alloteuthis africana	8.23	16452	9.73	
Pentheroscion mbizi	3.43	27	4.05	5545
Trichiurus lepturus	2.86	108	3.38	5547
Sepia officinalis hierredda	2.69	6	3.18	
Illex coindetii	2.63	17	3.11	
Sphyraena guachancho	2.05	35	2.42	5544
Lagocephalus laevigatus	1.78	10	2.10	
Dentex congoensis	1.55	8	1.83	
J E L L Y F I S H	1.03	29	1.22	
Priacanthus arenatus	0.75	48	0.89	
Decapterus punctatus	0.39	12	0.46	
Raja miraletus	0.31	2	0.37	
Dentex angolensis	0.29	4	0.34	
Pseudupeneus prayensis	0.25	4	0.30	
Sardinella maderensis	0.25	10	0.30	
Decapterus rhonchus	0.19	8	0.22	
Fistularia petimba	0.14	2	0.17	
Lepidotrigla cadmani	0.12	2	0.14	
Pagellus bellottii	0.10	2	0.12	
Citharus linguatula	0.02	4	0.02	
Total	84.61		100.02	

PROJECT STATION:1285

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 401
start stop duration Long E 655
TIME :05:36:41 06:07:00 30 (min) Purpose code: 3
LOG :3798.10 3799.66 1.56 Area code : 5
FDEPTH: 64 64 GearCond.code:
BDEPTH: 64 64 Validity code:
Towing dir: 90ø Wire out: 199 m Speed: 30 kn*10

Sorted: 7 Kg Total catch: 13.10 CATCH/HOUR: 26.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	6.92	372	26.41	
Alloteuthis africana	4.60	2102	17.56	
Peristedion cataphractum	3.34	100	12.75	
Pentheroscion mbizi	2.22	22	8.47	5548
Trichiurus lepturus	2.04	272	7.79	
Priacanthus arenatus	1.82	40	6.95	
Raja miraletus	0.80	8	3.05	
Parapenaeus longirostris	0.70	104	2.67	
Brachydeuterus auritus	0.70	118	2.67	
Raja straeleni	0.54	2	2.06	
Sphyraena guachancho	0.54	18	2.06	
Illex coindetii	0.36	4	1.37	
Pseudupeneus prayensis	0.36	6	1.37	
Lagocephalus laevigatus	0.26	2	0.99	
Penaeus notialis	0.22	6	0.84	
Saurida brasiliensis	0.16	52	0.61	
Decapterus punctatus	0.14	8	0.53	
Syacium micrurum	0.12	20	0.46	
Bembrops greyi	0.08	2	0.31	
Microchirus wittei	0.06	2	0.23	
Sardinella maderensis	0.06	2	0.23	
Ariomma bondi	0.06	16	0.23	
Bathygobius paganellus	0.02	2	0.08	
Fistularia petimba	0.02	2	0.08	
Sepia officinalis hierredda	0.02	2	0.08	
Dibranchus atlanticus	0.02	2	0.08	
Blennius normani	0.02	2	0.08	
Total	26.20		100.01	

PROJECT STATION:1286

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 406
start stop duration Long E 655
TIME :07:11:01 07:41:41 31 (min) Purpose code: 3
LOG :3806.35 3808.01 1.64 Area code : 5
FDEPTH: 40 41 GearCond.code:
BDEPTH: 40 41 Validity code:
Towing dir: 90ø Wire out: 120 m Speed: 32 kn*10

Sorted: 10 Kg Total catch: 57.49 CATCH/HOUR: 111.27

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	34.94	172	31.40	5549
Brachydeuterus auritus	33.97	585	30.53	5550
Sphyraena guachancho	11.94	114	10.73	5551
Trichiurus lepturus	6.46	1136	5.81	
Selene dorsalis	6.46	35	5.81	5552
J E L L Y F I S H	5.40	383	4.85	
Scomberomorus tritor	2.52	6	2.26	
Alectis alexandrinus	1.95	12	1.75	5553
Selar crumenophthalmus	1.59	8	1.43	
Epinephelus aeneus	1.57	6	1.41	
Sepiella ornata	1.47	1030	1.32	
Caranx hippos	0.93	2	0.84	
Ilisha africana	0.85	21	0.76	
Lolliguncula mercatoris	0.37	346	0.33	
Chloroscombrus chrysurus	0.25	2	0.22	
Pentheroscion mbizi	0.23	2	0.21	
Alloteuthis africana	0.15	43	0.13	
Decapterus punctatus	0.08	2	0.07	
Penaeus notialis	0.06	2	0.05	
Raja miraletus	0.04	2	0.04	
Engraulis encrasicolus	0.02	6	0.02	
Scyllarides herklotsii	0.02	4	0.02	
Total	111.27		99.99	

PROJECT STATION:1287

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 406
start stop duration Long E 708
TIME :09:17:27 09:50:05 33 (min) Purpose code: 3
LOG :3819.96 3821.60 1.62 Area code : 5
FDEPTH: 41 40 GearCond.code:
BDEPTH: 41 40 Validity code:
Towing dir: 90ø Wire out: 120 m Speed: 31 kn*10

Sorted: 68 Kg Total catch: 122.04 CATCH/HOUR: 221.89

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	91.31	507	41.15	5556
Trichiurus lepturus	39.76	6484	17.92	
Selene dorsalis	39.44	236	17.77	5554
Galeoides decadactylus	17.64	85	7.95	5555
Sepiella ornata	7.29	2160	3.29	
Sphyraena guachancho	7.07	65	3.19	
Sepia officinalis hierredda	6.42	13	2.89	
Scomberomorus tritor	2.58	4	1.16	
Pseudotolithus senegalensis	1.89	7	0.85	
Ilisha africana	1.87	49	0.84	5557
Pteroscion peli	1.60	25	0.72	
Pomadasys jubelini	1.11	4	0.50	
Chloroscombrus chrysurus	0.75	7	0.34	
J E L L Y F I S H	0.75	195	0.34	
Scyllarides sp.	0.49	85	0.22	
Selar crumenophthalmus	0.42	4	0.19	
Penaeus notialis	0.33	16	0.15	
Alectis alexandrinus	0.29	16	0.13	
Lolliguncula mercatoris	0.25	275	0.11	
Pisodonophis semicinctus	0.24	2	0.11	
Epinephelus aeneus	0.24	4	0.11	
Brotula barbata	0.13	4	0.06	
Grammoplites gruveli	0.04	4	0.02	
Total	221.91		100.01	

PROJECT STATION:1288

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 400
start stop duration Long E 709
TIME :11:57:08 12:27:56 31 (min) Purpose code: 3
LOG :3829.50 3831.16 1.64 Area code : 5
FDEPTH: 70 69 GearCond.code:
BDEPTH: 70 69 Validity code:
Towing dir: 270ø Wire out: 210 m Speed: 30 kn*10

Sorted: 34 Kg Total catch: 33.78 CATCH/HOUR: 65.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	32.23	4200	49.30	
Selene dorsalis	18.00	163	27.53	5558
Trichiurus lepturus	5.30	815	8.11	
Alloteuthis africana	2.92	664	4.47	
Brachydeuterus auritus	2.65	335	4.05	
Sphyraena guachancho	1.37	25	2.10	
Illex coindetii	1.14	15	1.74	
Lagocephalus laevigatus	0.91	6	1.39	
Parapenaeus longirostris	0.23	31	0.35	
Dentex congoensis	0.17	2	0.26	
Pseudupeneus prayensis	0.17	2	0.26	
Priacanthus arenatus	0.08	6	0.12	
Ilisha africana	0.08	2	0.12	
Serranus accraensis	0.04	2	0.06	
Scyllarides herklotsii	0.02	2	0.03	
Citharus linguatula	0.02	2	0.03	
Sepia officinalis hierredda	0.02	2	0.03	
Lepidotrigla carolae	0.02	2	0.03	
Total	65.37		99.98	

PROJECT STATION:1289

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 353
start stop duration Long E 708
TIME :15:23:01 15:53:09 30 (min) Purpose code: 3
LOG :3841.43 3842.95 1.50 Area code : 5
FDEPTH: 127 125 GearCond.code: 1
BDEPTH: 127 125 Validity code:
Towing dir: 90ø Wire out: 363 m Speed: 30 kn*10

Sorted: Kg Total catch: 189.86 CATCH/HOUR: 379.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	301.02	2616	79.27	5559
Ariomma bondi	42.20	900	11.11	5562
Trichiurus lepturus	7.04	138	1.85	
Scorpaena scrofa	6.62	146	1.74	
Squatina oculata	4.80	4	1.26	
Illex coindetii	3.48	82	0.92	
Dentex angolensis	3.38	36	0.89	5561
Lepidotrigla cadmani	2.72	70	0.72	
Dentex congoensis	2.46	30	0.65	5560
Engraulis encrasicolus	1.74	336	0.46	
Pterothrissus belloci	1.34	10	0.35	
Sepia officinalis hierredda	0.76	12	0.20	
Priacanthus arenatus	0.72	16	0.19	
Alloteuthis africana	0.52	48	0.14	
Citharus linguatula	0.44	28	0.12	
Uranoscopus cadenati	0.20	4	0.05	
J E L L Y F I S H	0.14	38	0.04	
Parapenaeus longirostris	0.08	22	0.02	
Peristedion cataphractum	0.06	2	0.02	
Total	379.72		100.00	

PROJECT STATION:1290

DATE:20/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 346
start stop duration Long E 709
TIME :19:41:38 20:12:36 31 (min) Purpose code: 3
LOG :3857.77 3859.31 1.52 Area code : 5
FDEPTH: 415 421 GearCond.code: 1
BDEPTH: 415 421 Validity code:
Towing dir: 90ø Wire out:1000 m Speed: 30 kn*10

Sorted: 4 Kg Total catch: 16.03 CATCH/HOUR: 31.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	8.28	232	26.68	
Nematocarcinus africanus	5.32	468	17.14	
Hymenocephalus italicus	3.66	240	11.80	
Hoplostethus cadenati	3.58	99	11.54	
Stereomastis sp.	1.43	108	4.61	
Xenolepidichthys dagleishi	1.01	72	3.25	
Epigonus telescopus	0.97	21	3.13	
Maurolicus muelleri	0.97	21	3.13	
Illex coindetii	0.75	8	2.42	
MYCTOPHIDAE	0.64	511	2.06	
Zeus capensis	0.52	106	1.68	
S H R I M P S	0.46	50	1.48	
Malacocephalus laevis	0.46	10	1.48	
Gadella imberbis	0.33	2	1.06	
ARGENTINIDAE	0.29	39	0.93	
Cynoponticus ferox	0.29	2	0.93	
Setarches guentheri	0.29	23	0.93	
Laemonema laureysi	0.27	2	0.87	
Lophiodes kempi	0.27	2	0.87	
Solenocera africana	0.21	21	0.68	
Cyttopsis roseus	0.21	6	0.68	
Polymetme corythaeola	0.15	12	0.48	
Bembrops greyi	0.12	2	0.39	
Chaunax pictus	0.12	12	0.39	
Nezumia milleri	0.10	4	0.32	
Parasudis fraser-brunneri	0.08	2	0.26	
Scorpaena normani	0.06	2	0.19	
Saurida brasiliensis	0.06	14	0.19	
Hypoclydonia bella	0.06	4	0.19	
Chlorophthalmus atlanticus	0.04	2	0.13	
UNIDENTIFIED FISH	0.02	6	0.06	
Total	31.02		99.95	

PROJECT STATION:1291

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 351
start stop duration Long E 723
TIME :05:38:54 06:09:05 30 (min) Purpose code: 3
LOG :3923.10 3924.67 1.56 Area code : 5
FDEPTH: 133 137 GearCond.code:
BDEPTH: 133 137 Validity code:
Towing dir: 90ø Wire out: 381 m Speed: 30 kn*10

Sorted: 68 Kg Total catch: 120.90 CATCH/HOUR: 241.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	191.88	4162	79.35	5563
Dentex angolensis	23.50	190	9.72	5564
Illex coindetii	7.52	342	3.11	
Mustelus mustelus	4.50	2	1.86	
Priacanthus arenatus	3.42	42	1.41	
Dentex congoensis	2.98	40	1.23	5565
Pterothrissus belloci	2.42	22	1.00	
Trichiurus lepturus	1.72	18	0.71	
Raja miraletus	1.22	10	0.50	
Squatina oculata	0.68	2	0.28	
Pentheroscion mbizi	0.58	4	0.24	
Sepia officinalis hierredda	0.54	8	0.22	
Citharus linguatula	0.28	14	0.12	
Octopus vulgaris	0.26	4	0.11	
Uranoscopus albesca	0.10	4	0.04	
RAJIDAE	0.08	10	0.03	
Lepidotrigla carolae	0.08	4	0.03	
Dibranchus atlanticus	0.04	10	0.02	
Total	241.80		99.98	

PROJECT STATION:1294

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 413
start stop duration Long E 739
TIME :11:36:55 12:06:26 30 (min) Purpose code: 3
LOG :3960.40 3962.03 1.62 Area code : 5
FDEPTH: 23 23 GearCond.code:
BDEPTH: 23 23 Validity code:
Towing dir: 90ø Wire out: 100 m Speed: 33 kn*10

Sorted: 20 Kg Total catch: 27.91 CATCH/HOUR: 55.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	20.20	136	36.19	5576
Sphyraena guachancho	10.30	38	18.45	
Scomberomorus tritor	6.06	44	10.86	5578
Selene dorsalis	3.98	48	7.13	5580
Caranx hippos	3.90	22	6.99	
Brachydeuterus auritus	2.56	68	4.59	5579
Chaetodipterus goreensis	1.16	4	2.08	
Alectis alexandrinus	1.16	12	2.08	5577
Chloroscombrus chrysurus	1.10	12	1.97	
Portunus validus	1.06	2	1.90	
Pomadasys jubelini	0.92	10	1.65	
Sardinella aurita	0.86	52	1.54	
Drepane africana	0.64	6	1.15	
J E L L Y F I S H	0.56	12	1.00	
Lagocephalus laevigatus	0.42	2	0.75	
Pteroscion peli	0.42	8	0.75	
Caranx crysos	0.20	2	0.36	
Sepia officinalis hierredda	0.10	12	0.18	
Ilisha africana	0.10	4	0.18	
Penaeus notialis	0.06	2	0.11	
Decapterus punctatus	0.06	2	0.11	
Total	55.82		100.02	

PROJECT STATION:1292

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 357
start stop duration Long E 723
TIME :07:19:12 07:50:22 31 (min) Purpose code: 3
LOG :3932.05 3933.57 1.50 Area code : 5
FDEPTH: 78 81 GearCond.code:
BDEPTH: 78 81 Validity code:
Towing dir: 270ø Wire out: 240 m Speed: 29 kn*10

Sorted: 3 Kg Total catch: 34.59 CATCH/HOUR: 66.95

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	23.32	403	34.83	5566
Squatina oculata	22.26	14	33.25	
Trichiurus lepturus	4.39	105	6.56	5567
Priacanthus arenatus	4.20	172	6.27	
Sepia officinalis hierredda	3.46	10	5.17	
J E L L Y F I S H	2.17	79	3.24	
Pentheroscion mbizi	2.05	15	3.06	5568
Alloteuthis africana	1.10	331	1.64	
Illex coindetii	0.97	23	1.45	
Brachydeuterus auritus	0.87	79	1.30	5569
Saurida brasiliensis	0.39	87	0.58	
Pseudupeneus prayensis	0.33	4	0.49	
Lepidotrigla cadmani	0.29	8	0.43	
Brotula barbata	0.25	2	0.37	
Serranus accraensis	0.23	10	0.34	
Lagocephalus laevigatus	0.17	2	0.25	
Lepidotrigla carolae	0.14	6	0.21	
Dentex congoensis	0.12	2	0.18	
Parapenaeus longirostris	0.12	17	0.18	
Decapterus punctatus	0.08	4	0.12	
Citharus linguatula	0.04	4	0.06	
Total	66.95		99.98	

PROJECT STATION:1295

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 352
start stop duration Long E 738
TIME :15:46:33 16:16:25 30 (min) Purpose code: 3
LOG :3986.09 3987.70 1.59 Area code : 5
FDEPTH: 134 134 GearCond.code:
BDEPTH: 134 134 Validity code:
Towing dir: 270ø Wire out: 373 m Speed: 30 kn*10

Sorted: 30 Kg Total catch: 60.64 CATCH/HOUR: 121.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	41.60	1212	34.30	5583
Illex coindetii	28.20	804	23.25	
Pentheroscion mbizi	16.50	148	13.60	5584
Dentex angolensis	10.48	106	8.64	5581
Dentex congoensis	10.16	142	8.38	5582
Squatina oculata	3.82	2	3.15	
Trichiurus lepturus	2.80	30	2.31	
Pterothrissus belloci	1.58	12	1.30	
Priacanthus arenatus	1.50	22	1.24	
Caranx hippos	0.62	4	0.51	
Scomberomorus tritor	0.56	4	0.46	
Galeoides decadactylus	0.56	6	0.46	
Selena dorsalis	0.54	4	0.45	
Lepidotrigla cadmani	0.46	14	0.38	
Scorpaena scrofa	0.42	10	0.35	
Sardinella maderensis	0.36	6	0.30	
Citharus linguatula	0.24	10	0.20	
Decapterus punctatus	0.20	2	0.16	
Brachydeuterus auritus	0.18	2	0.15	
Uranoscopus cadenati	0.18	4	0.15	
Zeus faber	0.18	2	0.15	
Sepia officinalis hierredda	0.14	4	0.12	
Total	121.28		100.01	

PROJECT STATION:1293

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 411
start stop duration Long E 731
TIME :09:59:24 10:31:54 33 (min) Purpose code: 3
LOG :3951.36 3953.09 1.71 Area code : 5
FDEPTH: 33 33 GearCond.code:
BDEPTH: 33 33 Validity code:
Towing dir: 100ø Wire out: 100 m Speed: 30 kn*10

Sorted: 1 Kg Total catch: 39.51 CATCH/HOUR: 71.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Alectis alexandrinus	22.05	5	30.69	
Sardinella maderensis	10.76	342	14.98	5572
Sphyraena guachancho	9.00	151	12.53	5573
J E L L Y F I S H	8.24	225	11.47	
Selene dorsalis	4.31	29	6.00	5571
Scomberomorus tritor	3.13	24	4.36	5570
Galeoides decadactylus	2.49	25	3.47	5574
Chloroscombrus chrysurus	1.60	16	2.23	
Caranx hippos	1.47	7	2.05	
Ilisha africana	1.36	22	1.89	
Pomadasys jubelini	1.36	5	1.89	
Brachydeuterus auritus	1.11	71	1.55	5575
Balistes capriscus	1.00	5	1.39	
Portunus validus	0.96	2	1.34	
Trichiurus lepturus	0.76	36	1.06	
Sepiella ornata	0.49	73	0.68	
Raja miraletus	0.47	2	0.65	
Penaeus notialis	0.33	13	0.46	
Selar crumenophthalmus	0.27	4	0.38	
Lolliguncula mercatoris	0.18	309	0.25	
Pteroscion peli	0.16	7	0.22	
Fistularia petimba	0.16	2	0.22	
Priacanthus arenatus	0.13	4	0.18	
Saurida brasiliensis	0.02	2	0.03	
Total	71.81		99.97	

PROJECT STATION:1296

DATE:21/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 341
start stop duration Long E 740
TIME :20:01:02 20:32:16 31 (min) Purpose code: 3
LOG :4004.56 4006.27 1.72 Area code : 5
FDEPTH: 440 443 GearCond.code:
BDEPTH: 440 443 Validity code:
Towing dir: 90ø Wire out:1100 m Speed: 30 kn*10

Sorted: 209 Kg Total catch: 222.60 CATCH/HOUR: 430.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Odontaspis ferox	387.10	2	89.85	
Hymenocephalus italicus	13.12	937	3.05	
Lepidopus caudatus	11.38	408	2.64	
Centrophorus granulosus	4.94	2	1.15	
Zenion longipinnis	2.81	246	0.65	
Epigonus telescopus	2.28	35	0.53	
Malacocephalus laevis	1.76	15	0.41	
Trigla lyra	1.55	12	0.36	
Solenocera africana	1.37	91	0.32	
Stereomastis sp.	1.20	134	0.28	
Hoplostethus cadenati	0.81	21	0.19	
Laemonema laureysi	0.56	4	0.13	
Aristeus varidens	0.43	29	0.10	
Xenolepidichthys dagleishi	0.35	33	0.08	
Setarches guentheri	0.33	33	0.08	
Etmopterus pusillus	0.19	2	0.04	
Galeus polli	0.14	2	0.03	
Triplophos hemingi	0.14	4	0.03	
Chlorophthalmus atlanticus	0.12	2	0.03	
Heterocarpus ensifer	0.06	19	0.01	
Parasudis fraser-brunneri	0.06	2	0.01	
RAJIDAE	0.04	2	0.01	
Total	430.74		99.98	

PROJECT STATION:1297

DATE:22/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 350
start stop duration Long E 758
TIME :05:37:37 06:08:55 31 (min) Purpose code: 3
LOG :4068.72 4070.33 1.59 Area code : 5
FDEPTH: 154 147 GearCond.code:
BDEPTH: 154 147 Validity code:
Towing dir: 90ø Wire out: 444 m Speed: 30 kn*10

Sorted: 178 Kg Total catch: 893.30 CATCH/HOUR: 1728.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	1516.45	39476	87.71	5586
Priacanthus arenatus	112.74	1355	6.52	
Dentex congoensis	49.74	300	2.88	5585
Illex coindetii	23.32	116	1.35	
Pentheroscion mbizi	13.45	145	0.78	5587
Antigonia capros	3.58	87	0.21	
Raja miraletus	1.82	10	0.11	
Citharus linguatula	1.74	58	0.10	
Spicara alta	1.34	12	0.08	
Pterothrissus belloci	1.26	10	0.07	
Trichiurus lepturus	1.06	10	0.06	
Brotula barbata	0.89	2	0.05	
Lophiodes kempi	0.62	2	0.04	
RAJIDAE	0.56	2	0.03	
Lepidotrigla cadmani	0.39	10	0.02	
Total	1728.96		100.01	

PROJECT STATION:1298

DATE:22/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 401
start stop duration Long E 758
TIME :08:09:00 08:40:00 31 (min) Purpose code: 3
LOG :4085.33 4087.07 1.73 Area code : 5
FDEPTH: 64 67 GearCond.code:
BDEPTH: 64 67 Validity code:
Towing dir: 90ø Wire out: 185 m Speed: 30 kn*10

Sorted: 4 Kg Total catch: 10.22 CATCH/HOUR: 19.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	10.76	631	54.40	5588
Alloteuthis africana	2.65	612	13.40	
J E L L Y F I S H	2.19	149	11.07	
Pentheroscion mbizi	0.91	8	4.60	
Fistularia petimba	0.70	6	3.54	
Priacanthus arenatus	0.48	35	2.43	
Dentex congoensis	0.41	6	2.07	
Parapandalus narval	0.39	85	1.97	
Illex coindetii	0.25	4	1.26	
Seriola dumerili	0.23	2	1.16	
Lepidotrigla cadmani	0.15	4	0.76	
Kyphosus sectatrix	0.15	2	0.76	
Saurida brasiliensis	0.15	39	0.76	
Citharus linguatula	0.08	2	0.40	
Sardinella maderensis	0.08	4	0.40	
Selene dorsalis	0.08	2	0.40	
Ariomma bondi	0.06	17	0.30	
Trichiurus lepturus	0.04	2	0.20	
Dibranchus atlanticus	0.02	4	0.10	
Total	19.78		99.98	

PROJECT STATION:1299

DATE:22/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 405
start stop duration Long E 758
TIME :09:45:24 10:16:47 31 (min) Purpose code: 3
LOG :4093.76 4095.63 1.86 Area code : 5
FDEPTH: 49 48 GearCond.code:
BDEPTH: 49 48 Validity code:
Towing dir: 270ø Wire out: 150 m Speed: 30 kn*10

Sorted: 40 Kg Total catch: 40.08 CATCH/HOUR: 77.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	47.81	3801	61.63	5589
Trichiurus lepturus	7.03	1295	9.06	
Sphyraena guachancho	4.30	77	5.54	5591
J E L L Y F I S H	4.18	255	5.39	
Pentheroscion mbizi	3.68	70	4.74	5590
Parapenaeus longirostris	2.01	315	2.59	
Sepiella ornata	1.80	312	2.32	
Selene dorsalis	0.99	12	1.28	
Sardinella maderensis	0.79	41	1.02	5592
Lagocephalus laevigatus	0.72	6	0.93	
Kyphosus sectatrix	0.64	8	0.83	
Priacanthus arenatus	0.62	29	0.80	
Penaeus notialis	0.62	27	0.80	
Pseudupeneus prayensis	0.48	6	0.62	
Saurida brasiliensis	0.41	114	0.53	
Lolliguncula mercatoris	0.41	1341	0.53	
Raja miraletus	0.37	2	0.48	
Caranx crysos	0.33	2	0.43	
Alloteuthis africana	0.15	43	0.19	
Sepia officinalis hierredda	0.06	2	0.08	
Syacium micrurum	0.04	4	0.05	
Serranus accraensis	0.04	2	0.05	
Bathygobius paganellus	0.02	4	0.03	
Scyllarides herklotsii	0.02	2	0.03	
Uranoscopus albesca	0.02	4	0.03	
Citharus linguatula	0.02	2	0.03	
Sphoeroides marmoratus	0.02	4	0.03	
Total	77.58		100.04	

PROJECT STATION:1300

DATE:22/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 356
start stop duration Long E 811
TIME :14:36:25 15:06:24 30 (min) Purpose code: 3
LOG :4126.99 4128.48 1.48 Area code : 5
FDEPTH: 82 80 GearCond.code:
BDEPTH: 82 80 Validity code:
Towing dir: 270ø Wire out: 235 m Speed: 30 kn*10

Sorted: Kg Total catch: 11.82 CATCH/HOUR: 23.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	12.60	254	53.30	
Dentex angolensis	6.74	58	28.51	
Sepia officinalis hierredda	1.24	2	5.25	
Illex coindetii	0.62	8	2.62	
Fistularia tabacaria	0.50	4	2.12	
Pagellus bellottii	0.36	6	1.52	
Raja miraletus	0.32	2	1.35	
Ariomma bondi	0.32	14	1.35	
Priacanthus arenatus	0.30	6	1.27	
Lepidotrigla cadmani	0.26	6	1.10	
J E L L Y F I S H	0.16	2	0.68	
Boops boops	0.10	2	0.42	
Sphyraena guachancho	0.08	2	0.34	
Citharus linguatula	0.04	2	0.17	
Total	23.64		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1301

DATE:25/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 408
start stop duration Long E 836
TIME :15:03:37 15:33:24 30 (min) Purpose code: 3
LOG :4364.00 4365.61 1.60 Area code : 6
FDEPTH: 62 64 GearCond.code:
BDEPTH: 62 64 Validity code:
Towing dir: 124ø Wire out: 192 m Speed: 30 kn*10

Sorted: Kg Total catch: 21.14 CATCH/HOUR: 42.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	13.34	104	31.55	5593
Selar crumenophthalmus	10.32	46	24.41	5595
Brachydeuterus auritus	5.28	198	12.49	5594
Scomberomorus tritor	2.88	2	6.81	
Sphyraena guachancho	2.34	4	5.53	
Trichiurus lepturus	2.20	174	5.20	
J E L L Y F I S H	1.22	16	2.89	
Lolliguncula mercatoris	0.88	606	2.08	
Caranx crysos	0.70	2	1.66	
Raja miraletus	0.60	4	1.42	
Pagellus bellottii	0.58	2	1.37	
DIODONTIDAE	0.48	2	1.14	
Parapenaeus longirostris	0.40	72	0.95	
Penaeus notialis	0.40	16	0.95	
Dentex angolensis	0.22	2	0.52	
Alloteuthis africana	0.18	46	0.43	
ENGRAULIDIDAE	0.08	60	0.19	
Citharus linguatula	0.06	2	0.14	
Saurida brasiliensis	0.04	12	0.09	
Sepia orbignyana	0.02	6	0.05	
Bathygobius paganellus	0.02	4	0.05	
Scyllarides herklotsii	0.02	4	0.05	
Syacium micrurum	0.02	2	0.05	
Total	42.28		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1302

DATE:25/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 415
start stop duration Long E 841
TIME :17:03:31 17:33:43 30 (min) Purpose code: 3
LOG :4378.22 4379.84 1.62 Area code : 6
FDEPTH: 17 19 GearCond.code:
BDEPTH: 17 19 Validity code:
Towing dir: 116ø Wire out: 100 m Speed: 30 kn*10

Sorted: 13 Kg Total catch: 81.83 CATCH/HOUR: 163.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudotolithus elongatus	45.90	672	28.05	5601
Trichiurus lepturus	20.20	302	12.34	5603
Nematopalaemon hastatus	18.40	46920	11.24	
Ilisha africana	17.60	10330	10.75	5604
Galeoides decadactylus	10.42	136	6.37	5596
Pseudotolithus senegalensis	9.48	326	5.79	5600
Portunus validus	5.84	132	3.57	
Pteroscion peli	5.82	254	3.56	5605
Parapenaeopsis atlantica	5.44	1612	3.32	
Penaeus monodon	4.78	38	2.92	
Sphyrna couardi	3.44	4	2.10	
Chloroscombrus chrysurus	3.20	174	1.96	
Caranx crysos	2.16	12	1.32	5597
Brachydeuterus auritus	1.58	44	0.97	5598
Pseudotolithus typus	1.48	24	0.90	5602
Sardinella maderensis	1.32	48	0.81	5599
Selene dorsalis	1.04	80	0.64	
Pisodonophis semicinctus	1.02	6	0.62	
Lolliguncula mercatoris	0.96	456	0.59	
Sepiella ornata	0.70	76	0.43	
Pseudotolithus brachygnathus	0.52	2	0.32	
Sphyraena guachancho	0.52	6	0.32	
Drepane africana	0.50	20	0.31	
Liza grandisquamis	0.38	2	0.23	
Squilla acuelata calmani	0.24	18	0.15	
J E L L Y F I S H	0.18	8	0.11	
Raja miraletus	0.14	2	0.09	
Cynoponticus ferox	0.10	6	0.06	
Cynoglossus browni	0.10	12	0.06	
Brotula barbata	0.08	10	0.05	
Penaeus notialis	0.04	2	0.02	
Cepola pauciradiatus	0.02	4	0.01	
Citharichthys stampflii	0.02	2	0.01	
Eucinostomus melanopterus	0.02	8	0.01	
Alectis alexandrinus	0.02	2	0.01	
Total	163.66		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1303
DATE:26/ 6/06 GEAR TYPE: PT No: 5 POSITION:Lat N 404
start stop duration Long E 8410
TIME :23:37:38 00:10:43 33 (min) Purpose code: 1
LOG :4407.30 4409.56 8.64 Area code : 6
FDEPTH: 0 0 GearCond.code:
BDEPTH: 56 46 Validity code:
Towing dir: 36ø Wire out: 140 m Speed: 30 kn*10

Sorted: Kg Total catch: 11.62 CATCH/HOUR: 21.13

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	5.27	3824	24.94	
Scomberomorus tritor	5.20	18	24.61	5607
Selene dorsalis	2.75	11	13.01	*5608*
Sphyraena guachancho	2.75	96	13.01	5609
Sardinella maderensis	2.56	195	12.12	5606
Brachydeuterus auritus	0.64	207	3.03	
Lutjanus goreensis	0.49	2	2.32	
Alloteuthis africana	0.33	64	1.56	
Trichiurus lepturus	0.25	33	1.18	
J E L L Y F I S H	0.22	5	1.04	
Sepia orbignyana	0.20	62	0.95	
Caranx crysos	0.16	2	0.76	
Priacanthus arenatus	0.15	18	0.71	
Pentanemus quinquarius	0.04	25	0.19	
Callinectes pallidus	0.04	4	0.19	
Ilisha africana	0.04	2	0.19	
Lagocephalus laevigatus	0.02	4	0.09	
Chloroscombrus Juvenile	0.02	9	0.09	
Decapterus punctatus	0.02	2	0.09	
Total	21.15		100.08	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1304
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 411
start stop duration Long E 849
TIME :05:22:30 05:46:34 24 (min) Purpose code: 3
LOG :4421.96 4423.33 1.35 Area code : 6
FDEPTH: 22 21 GearCond.code:
BDEPTH: 22 21 Validity code:
Towing dir: 100ø Wire out: 100 m Speed: 33 kn*10

Sorted: 6 Kg Total catch: 96.62 CATCH/HOUR: 241.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	59.63	2358	24.69	
Ilisha africana	56.25	3275	23.29	
Chloroscombrus chrysurus	19.50	228	8.07	
Pseudotolithus elongatus	17.25	95	7.14	5615
Sphyraena guachancho	12.63	43	5.23	5616
J E L L Y F I S H	11.35	30	4.70	
Pteroscion peli	9.58	288	3.97	
Caranx crysos	6.95	35	2.88	5611
Pseudotolithus senegalensis	6.55	35	2.71	5612
Nematopalaemon hastatus	6.45	7003	2.67	
Galeoides decadactylus	4.85	135	2.01	5613
Portunus validus	4.03	135	1.67	
Sardinella maderensis	3.73	123	1.54	5610
Pseudotolithus typus	2.98	23	1.23	5614
Scomberomorus tritor	2.90	13	1.20	
Liza grandisquamis	2.00	3	0.83	
Brachydeuterus auritus	1.78	60	0.74	
Pisodonophis semicinctus	1.60	3	0.66	
Cynoponticus ferox	1.58	3	0.65	
Drepane africana	1.43	26	0.59	
Elops lacerta	1.40	8	0.58	
Penaeus monodon	1.40	8	0.58	
Pomadasys jubelini	1.18	8	0.49	
Lolliguncula mercatoris	0.88	723	0.36	
Penaeus notialis	0.83	40	0.34	
Polydactylus quadrifilis	0.73	3	0.30	
Selene dorsalis	0.70	40	0.29	
Lagocephalus laevigatus	0.50	5	0.21	
Parapenaeopsis atlantica	0.23	83	0.10	
Cynoglossus browni	0.20	20	0.08	
Lutjanus goreensis	0.20	3	0.08	
Squilla aculeata calmani	0.18	13	0.07	
Sepia officinalis hierredda	0.08	10	0.03	
Alectis alexandrinus	0.05	5	0.02	
Cynoglossus canariensis	0.05	8	0.02	
Total	241.63		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1305
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 409
start stop duration Long E 848
TIME :06:48:04 07:18:04 30 (min) Purpose code: 3
LOG :4429.77 4431.41 1.63 Area code : 6
FDEPTH: 49 42 GearCond.code:
BDEPTH: 49 42 Validity code:
Towing dir: 100ø Wire out: 150 m Speed: 32 kn*10

Sorted: 24 Kg Total catch: 98.20 CATCH/HOUR: 196.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	118.00	672	60.08	5618
Brachydeuterus auritus	28.32	784	14.42	5617
Sepia officinalis hierredda	11.28	16	5.74	
Sphyraena guachancho	9.84	40	5.01	
Caranx crysos	9.68	24	4.93	
J E L L Y F I S H	6.24	520	3.18	
Galeoides decadactylus	4.32	48	2.20	
Penaeus notialis	2.88	112	1.47	
Trichiurus lepturus	1.28	216	0.65	
Epinephelus aeneus	1.12	16	0.57	
Alloteuthis africana	0.88	168	0.45	
Alectis alexandrinus	0.72	8	0.37	
Chloroscombrus chrysurus	0.48	8	0.24	
Saurida brasiliensis	0.40	216	0.20	
Parapenaeopsis atlantica	0.32	88	0.16	
Eucinostomus melanopterus	0.32	8	0.16	
Portunus validus	0.24	16	0.12	
Bathygobius paganellus	0.08	16	0.04	
Total	196.40		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1306
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 404
start stop duration Long E 844
TIME :08:28:42 08:58:25 30 (min) Purpose code: 3
LOG :4440.01 4441.58 1.56 Area code : 6
FDEPTH: 63 64 GearCond.code:
BDEPTH: 63 64 Validity code:
Towing dir: 125ø Wire out: 180 m Speed: 31 kn*10

Sorted: 2 Kg Total catch: 41.45 CATCH/HOUR: 82.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	34.70	2698	41.86	5619
Epinephelus aeneus	34.70	4	41.86	
Alloteuthis africana	6.14	1730	7.41	
Sardinella maderensis	1.32	52	1.59	*5620*
Trichiurus lepturus	0.92	2	1.11	
Pagellus bellottii	0.92	6	1.11	
Selene dorsalis	0.74	6	0.89	
Dentex angolensis	0.62	6	0.75	
Fistularia petimba	0.60	2	0.72	
J E L L Y F I S H	0.48	8	0.58	
Diodon maculatus	0.46	4	0.55	
Ariomma bondi	0.44	56	0.53	
Sphyraena guachancho	0.26	4	0.31	
Lagocephalus laevigatus	0.24	2	0.29	
Parapenaeus longirostris	0.10	10	0.12	
Decapterus punctatus	0.08	8	0.10	
Priacanthus arenatus	0.08	4	0.10	
Syacium micrurum	0.06	4	0.07	
Sepia officinalis hierredda	0.04	2	0.05	
Total	82.90		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1307
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 357
start stop duration Long E 853
TIME :10:22:50 10:53:49 31 (min) Purpose code: 3
LOG :4451.73 4453.37 1.63 Area code : 6
FDEPTH: 63 62 GearCond.code:
BDEPTH: 63 62 Validity code:
Towing dir: 120ø Wire out: 180 m Speed: 30 kn*10

Sorted: Kg Total catch: 54.89 CATCH/HOUR: 106.24

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	41.90	4446	39.44	5622
Mustelus mustelus	18.39	2	17.31	
Pagellus bellottii	12.27	103	11.55	5621
Epinephelus aeneus	10.74	2	10.11	
Dentex angolensis	7.32	56	6.89	5623
Sepia officinalis hierredda	3.08	15	2.90	
Illex coindetii	3.04	650	2.86	
Ariomma bondi	2.05	195	1.93	5626
Alloteuthis africana	1.68	190	1.58	
Galeoides decadactylus	1.08	12	1.02	
J E L L Y F I S H	0.95	8	0.89	
Priacanthus arenatus	0.74	43	0.70	
Decapterus punctatus	0.70	39	0.66	5624
Raja miraletus	0.43	4	0.40	
Sardinella maderensis	0.39	21	0.37	5625
Saurida brasiliensis	0.31	62	0.29	
Pteroscion peli	0.29	2	0.27	
Lepidotrigla cadmani	0.25	4	0.24	
Lagocephalus laevigatus	0.23	2	0.22	
Sphyraena guachancho	0.10	2	0.09	
Portunus validus	0.06	2	0.06	
Fistularia petimba	0.04	2	0.04	
Venus verrucosa	0.04	4	0.04	
Grammoplites gruveli	0.04	2	0.04	
Citharus linguatula	0.04	2	0.04	
Syacium micrurum	0.04	6	0.04	
Bathygobius paganellus	0.04	4	0.04	
E C H I N O D E R M A T A	0.02	4	0.02	
Total	106.26		100.04	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1308
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 404
start stop duration Long E 856
TIME :12:28:16 12:58:23 30 (min) Purpose code: 3
LOG :4465.28 4466.87 1.58 Area code : 6
FDEPTH: 42 41 GearCond.code:
BDEPTH: 42 41 Validity code:
Towing dir: 290ø Wire out: 141 m Speed: 30 kn*10

Sorted: Kg Total catch: 40.16 CATCH/HOUR: 80.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	72.80	2186	90.64	
Alloteuthis africana	2.66	552	3.31	
Scomberomorus tritor	1.18	2	1.47	
Brachydeuterus auritus	1.08	30	1.34	
Portunus validus	0.96	2	1.20	
Illex coindetii	0.54	612	0.67	
Raja miraletus	0.42	4	0.52	
Caranx hippos	0.18	2	0.22	
Pagellus bellottii	0.18	2	0.22	
Stromateus fiatola	0.12	2	0.15	
Trichiurus lepturus	0.04	40	0.05	
Parapenaeus longirostris	0.04	4	0.05	
Trichiurus lepturus	0.04	40	0.05	
Bathygobius paganellus	0.02	18	0.02	
E C H I N O D E R M A T A	0.02	2	0.02	
Saurida brasiliensis	0.02	2	0.02	
Engraulis encrasicolus	0.02	18	0.02	
Decapterus punctatus	0.02	2	0.02	
Lagocephalus laevigatus	0.02	2	0.02	
Total	80.36		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1309
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 407
start stop duration Long E 857
TIME :13:47:11 14:18:09 31 (min) Purpose code: 3
LOG :4471.55 4473.25 1.69 Area code : 6
FDEPTH: 25 25 GearCond.code:
BDEPTH: 25 25 Validity code:
Towing dir: 290ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 133.88 CATCH/HOUR: 259.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudotolithus elongatus	65.03	441	25.10	5627
Ilisha africana	42.43	5048	16.37	
Trichiurus lepturus	41.11	2284	15.87	
J E L L Y F I S H	24.85	217	9.59	
Scomberomorus tritor	15.95	46	6.16	
Portunus validus	13.39	194	5.17	
Pseudotolithus senegalensis	8.28	93	3.20	5629
Sphyraena guachancho	6.19	85	2.39	5628
Caranx hippos	5.34	23	2.06	
Drepane africana	4.80	101	1.85	
Chloroscombrus chrysurus	4.49	194	1.73	
Elops senegalensis	4.03	15	1.56	
Nematopalaemon hastatus	3.48	401	1.34	
Brachydeuterus auritus	3.41	77	1.32	
Cynoglossus browni	2.79	39	1.08	
Selene dorsalis	2.63	54	1.01	
Galeoides decadactylus	2.32	31	0.90	
Dentex congoensis	1.94	8	0.75	
Sardinella maderensis	1.47	132	0.57	5630
Pteroscion peli	1.39	46	0.54	
Alloteuthis africana	1.24	604	0.48	
Penaeus notialis	0.70	31	0.27	
Lolliguncula mercatoris	0.62	8	0.24	
Alectis alexandrinus	0.62	8	0.24	
Batrachoides liberiensis	0.15	15	0.06	
Penaeus kerathurus	0.08	8	0.03	
Parapenaeopsis atlantica	0.08	23	0.03	
Lophius sp.	0.08	2	0.03	
Grammoplites gruveli	0.08	15	0.03	
Squilla aculeata calmani	0.08	8	0.03	
Sicyonia galeata	0.08	23	0.03	
Total	259.13		100.03	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1310
DATE:26/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 400
start stop duration Long E 905
TIME :15:59:05 16:32:03 33 (min) Purpose code: 3
LOG :4486.97 4488.65 1.66 Area code : 6
FDEPTH: 28 34 GearCond.code:
BDEPTH: 28 34 Validity code:
Towing dir: 300ø Wire out: 121 m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 149.10 CATCH/HOUR: 271.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematopalaemon hastatus	100.00	250000	36.89	
Trichiurus lepturus	51.82	2182	19.12	
Pteroscion peli	28.27	4100	10.43	
Brachydeuterus auritus	15.09	936	5.57	5631
J E L L Y F I S H	11.36	191	4.19	
Selene dorsalis	8.73	536	3.22	
Cynoponticus ferox	6.27	27	2.31	
Portunus validus	6.18	436	2.28	
Rhizoprionodon acutus	5.55	9	2.05	
Caranx crysos	4.91	27	1.81	
Elops lacerta	4.73	18	1.74	
Scomberomorus tritor	3.64	36	1.34	
Penaeus notialis	3.18	255	1.17	
Pseudotolithus senegalensis	2.91	45	1.07	
Ilisha africana	2.45	291	0.90	
Chloroscombrus chrysurus	2.27	18	0.84	
Sphyraena guachancho	1.64	36	0.60	
Galeoides decadactylus	1.64	36	0.60	
Pseudotolithus typus	1.36	18	0.50	
Octopus vulgaris	1.36	9	0.50	
Antennarius occidentalis	1.27	300	0.47	
Bathygobius paganellus	1.00	709	0.37	
Sepiella ornata	0.82	64	0.30	
Squilla aculeata calmani	0.82	55	0.30	
Alectis alexandrinus	0.73	45	0.27	
Brotula barbata	0.45	45	0.17	
Pseudotolithus elongatus	0.45	9	0.17	
Drepane africana	0.45	9	0.17	
Cynoglossus browni	0.36	27	0.13	
Lolliguncula mercatoris	0.36	182	0.13	
Eucinostomus melanopterus	0.27	9	0.10	
Lagocephalus laevigatus	0.27	27	0.10	
Citharus linguatula	0.18	18	0.07	
Grammoplites gruveli	0.18	27	0.07	
Sphoeroides marmoratus	0.09	9	0.03	
Total	271.06		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1311
DATE:26/ 6/06 GEAR TYPE: PT No: 5 POSITION:Lat N 350
start stop duration Long E 905
TIME :22:12:51 22:43:25 31 (min) Purpose code: 1
LOG :4514.83 4516.35 1.50 Area code : 6
FDEPTH: 0 0 GearCond.code:
BDEPTH: 50 48 Validity code:
Towing dir: 40ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 6.28 CATCH/HOUR: 12.15

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella maderensis	2.17	135	17.86	5641
Sphyraena guachancho	2.03	75	16.71	5642
Decapterus punctatus	2.03	41	16.71	
Trichiurus lepturus	1.84	72	15.14	
Saurida brasiliensis	1.26	579	10.37	
Ilisha africana	1.16	10	9.55	
Ariomma bondi	1.10	21	9.05	5640
Alloteuthis africana	0.35	74	2.88	
Priacanthus arenatus	0.14	15	1.15	
Brachydeuterus auritus	0.08	6	0.66	
Total	12.16		100.08	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1312
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 353
start stop duration Long E 901
TIME :05:00:36 05:01:27 31 (min) Purpose code: 3
LOG :4557.20 4558.95 1.74 Area code : 6
FDEPTH: 57 57 GearCond.code:
BDEPTH: 57 57 Validity code:
Towing dir: 130ø Wire out: 180 m Speed: 30 kn*10

Sorted: Kg Total catch: 38.62 CATCH/HOUR: 74.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selar crumenophthalmus	12.66	285	16.94	5636
Pagellus bellottii	10.28	83	13.75	5632
Alloteuthis africana	10.01	2036	13.39	
Brachydeuterus auritus	8.63	915	11.55	
Ariomma bondi	4.88	97	6.53	5634
Sphyraena guachancho	4.47	43	5.98	5633
Sardinella maderensis	4.30	234	5.75	5635
Epinephelus aeneus	3.85	8	5.15	
Selene dorsalis	2.94	33	3.93	
Sepia officinalis hierredda	2.63	19	3.52	
Lagocephalus laevigatus	2.03	12	2.72	
Priacanthus arenatus	1.72	37	2.30	
Raja miraletus	1.59	14	2.13	
Saurida brasiliensis	1.03	286	1.38	
Penaeus notialis	0.64	23	0.86	
Parapenaeus longirostris	0.58	79	0.78	
Chloroscombrus chrysurus	0.54	6	0.72	
Portunus validus	0.41	33	0.55	
Chilomycterus spinosus mauret.	0.35	2	0.47	
Lepidotrigla cadmani	0.27	6	0.36	
Fistularia petimba	0.17	2	0.23	
Scomberomorus tritor	0.15	2	0.20	
Illex coindetii	0.14	2	0.19	
Serranus accraensis	0.12	6	0.16	
Grammoplites gruveli	0.12	8	0.16	
Syacium micrurum	0.10	19	0.13	
Squatina aculeata	0.06	2	0.08	
Blennius normani	0.04	12	0.05	
Zeus faber	0.04	2	0.05	
Sicyonia galeata	0.02	2	0.03	
Total	74.77		100.04	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1313
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 357
start stop duration Long E 904
TIME :20:00:32 25:00:22 31 (min) Purpose code: 3
LOG :4567.72 4569.28 1.55 Area code : 6
FDEPTH: 46 42 GearCond.code:
BDEPTH: 46 42 Validity code:
Towing dir: 126ø Wire out: 150 m Speed: 30 kn*10

Sorted: 100 Kg Total catch: 371.22 CATCH/HOUR: 718.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	521.69	18211	72.61	5638
Selene dorsalis	99.89	1260	13.90	5639
Sphyraena guachancho	43.18	716	6.01	5637
Trichiurus lepturus	15.52	602	2.16	
Parapenaeus longirostris	7.30	1490	1.02	
Alectis alexandrinus	6.08	101	0.85	
Sepia officinalis hierredda	4.22	58	0.59	
Penaeus notialis	4.22	265	0.59	
J E L L Y F I S H	3.29	337	0.46	
Sardinella maderensis	2.28	114	0.32	
Pagellus bellottii	1.86	14	0.26	
Caranx crysos	1.57	8	0.22	
Raja miraletus	1.28	8	0.18	
Saurida brasiliensis	1.20	430	0.17	
Lagocephalus laevigatus	1.20	8	0.17	
Alloteuthis africana	1.14	279	0.16	
Pteroscion peli	1.06	14	0.15	
Citharus linguatula	0.77	43	0.11	
Epinephelus aeneus	0.48	8	0.07	
Grammoplites gruveli	0.14	8	0.02	
Serranus accraensis	0.06	29	0.01	
Sicyonia galeata	0.06	14	0.01	
Total	718.49		100.04	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1314
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 351
start stop duration Long E 911
TIME :09:16:39 09:49:57 33 (min) Purpose code: 3
LOG :4578.58 4580.39 1.81 Area code : 6
FDEPTH: 21 25 GearCond.code:
BDEPTH: 21 25 Validity code:
Towing dir: 326ø Wire out: 100 m Speed: 30 kn*10

Sorted: 69 Kg Total catch: 160.05 CATCH/HOUR: 291.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	106.58	7495	36.63	
Ilisha africana	74.09	5482	25.46	
Pteroscion peli	21.64	618	7.44	
Selene dorsalis	18.91	1327	6.50	
Pseudotolithus senegalensis	13.55	145	4.66	5645
Rhizoprionodon acutus	7.69	36	2.64	
Galeoides decadactylus	*6.82*	115	*2.34*	
Brachydeuterus auritus	6.82	205	2.34	5644
J E L L Y F I S H	5.45	36	1.87	
Nematopalaemon hastatus	4.96	9215	1.70	
Caranx hippos	3.69	36	1.27	
Penaeus monodon	3.45	24	1.19	
Sardinella maderensis	3.24	109	1.11	5643
Portunus validus	2.69	105	0.92	
Chloroscombrus chrysurus	2.40	44	0.82	
Drepane africana	2.18	55	0.75	
Sphyraena guachancho	2.15	27	0.74	
Lagocephalus laevigatus	1.82	5	0.63	
Penaeus notialis	1.69	69	0.58	
Alloteuthis africana	0.55	251	0.19	
Cynoponticus ferox	0.18	5	0.06	
Squilla acuelata calmani	0.18	9	0.06	
Cynoglossus browni	0.05	5	0.02	
Brotula barbata	0.05	5	0.02	
Grammoplites gruveli	0.05	5	0.02	
Antennarius occidentalis	0.05	5	0.02	
Sepia officinalis hierredda	0.05	5	0.02	
Total	290.98		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1315
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 346
start stop duration Long E 908
TIME :11:13:02 11:43:04 30 (min) Purpose code: 3
LOG :4590.31 4591.89 1.57 Area code : 6
FDEPTH: 41 39 GearCond.code:
BDEPTH: 41 39 Validity code:
Towing dir: 136ø Wire out: 151 m Speed: 30 kn*10

Sorted: Kg Total catch: 28.30 CATCH/HOUR: 56.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	15.74	202	27.81	
Galeoides decadactylus	13.70	64	24.20	5646
Brachydeuterus auritus	8.52	246	15.05	5647
Selar crumenophthalmus	6.54	54	11.55	5648
J E L L Y F I S H	4.98	236	8.80	
Alloteuthis africana	3.44	614	6.08	
Psettodes belcheri	1.12	4	1.98	
Caranx hippos	1.04	6	1.84	
Chloroscombrus chrysurus	0.68	12	1.20	
Scomberomorus tritor	0.32	2	0.57	
Trichiurus lepturus	0.24	22	0.42	
Sardinella maderensis	0.14	2	0.25	
Lolliguncula mercatoris	0.10	24	0.18	
Engraulis encrasicolus	0.02	14	0.04	
Portunus validus	0.02	2	0.04	
Total	*56.60*		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1316
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 340
start stop duration Long E 916
TIME :12:56:22 13:26:13 30 (min) Purpose code: 3
LOG :4600.25 4601.94 1.68 Area code : 6
FDEPTH: 26 25 GearCond.code:
BDEPTH: 26 25 Validity code:
Towing dir: 90ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 255.97 CATCH/HOUR: 511.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chloroscombrus chrysurus	276.62	6178	54.03	
Ilisha africana	53.40	2954	10.43	
Trichiurus lepturus	53.14	598	10.38	5650
Pteroscion peli	26.76	874	5.23	
Selene dorsalis	19.86	254	3.88	
Sphyraena guachancho	16.08	102	3.14	
Selar crumenophthalmus	*14.68*	90	*2.87*	
Pseudotolithus senegalensis	11.36	118	2.22	
Galeoides decadactylus	10.24	198	2.00	
Brachydeuterus auritus	6.30	176	1.23	
Drepane africana	3.96	70	0.77	
Scomberomorus tritor	3.36	22	0.66	
Pseudotolithus elongatus	3.26	42	0.64	5651
Trachinotus ovatus	2.88	16	0.56	
Pseudotolithus typus	2.50	22	0.49	
Lolliguncula mercatoris	2.14	256	0.42	
Caranx crysos	1.64	10	0.32	
Penaeus monodon	1.20	6	0.23	
Sardinella maderensis	1.18	6	0.23	5649
Penaeus notialis	0.74	16	0.14	
Portunus validus	0.42	10	0.08	
Sepia officinalis hierredda	0.10	10	0.02	
Sicyonia galeata	0.06	10	0.01	
Parapenaeopsis atlantica	0.06	6	0.01	
Total	511.94		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1317
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 339
start stop duration Long E 927
TIME :15:36:02 16:08:39 33 (min) Purpose code: 3
LOG :4613.12 4614.76 1.63 Area code : 6
FDEPTH: 22 23 GearCond.code:
BDEPTH: 22 23 Validity code:
Towing dir: 170ø Wire out: 111 m Speed: 30 kn*10

Sorted: 66 Kg Total catch: 140.69 CATCH/HOUR: 255.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudotolithus typus	50.36	778	19.69	5654
Trichiurus lepturus	38.55	585	15.07	5656
Nematopalaemon hastatus	35.16	123073	13.75	
Ilisha africana	22.95	1033	8.97	5655
Pseudotolithus elongatus	16.58	273	6.48	5653
Chloroscombrus chrysurus	16.29	309	6.37	
Polydactylus quadrifilis	14.27	2	5.58	
J E L L Y F I S H	11.89	436	4.65	
Hemicaranx bicolor	9.53	182	3.73	5652
Portunus validus	5.02	149	1.96	
Galeoides decadactylus	4.91	47	1.92	5657
Brachydeuterus auritus	4.55	98	1.78	5658
Pentanemus quinquarius	3.82	69	1.49	
Selene dorsalis	2.76	95	1.08	
Pteroscion peli	2.51	120	0.98	
Lagocephalus laevigatus	2.47	15	0.97	
Parapenaeopsis atlantica	2.25	364	0.88	
Pisodonophis semicinctus	2.11	22	0.82	
Rhizoprionodon acutus	1.71	7	0.67	
Sardinella maderensis	1.64	15	0.64	5659
Scomberomorus tritor	1.02	15	0.40	
Selar crumenophthalmus	0.87	4	0.34	
Cynoponticus ferox	0.84	11	0.33	
Lolliguncula mercatoris	0.69	345	0.27	
Caranx crysos	0.69	7	0.27	
Cynoglossus browni	0.65	7	0.25	
Penaeus notialis	0.47	25	0.18	
Cynoglossus canariensis	0.47	4	0.18	
Squilla acuelata calmani	0.40	25	0.16	
Bothus podas africanus	0.11	7	0.04	
Sphoeroides marmoratus	0.07	7	0.03	
Drepane africana	0.07	15	0.03	
Penaeus kerathurus	*0.04*	4	*0.02*	
Brotula barbata	0.04	4	0.02	
Sepiella ornata	0.04	4	0.02	
Total	255.80		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1318
DATE:27/ 6/06 GEAR TYPE: BT No:19 POSITION:Lat N 333
start stop duration Long E 929
TIME :16:59:11 17:30:40 31 (min) Purpose code: 3
LOG :4620.99 4622.69 1.69 Area code : 6
FDEPTH: 23 23 GearCond.code:
BDEPTH: 23 23 Validity code:
Towing dir: 338ø Wire out: 100 m Speed: 33 kn*10

Sorted: 45 Kg Total catch: 77.18 CATCH/HOUR: 149.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	24.41	677	16.34	5660
Sphyraena guachancho	22.63	89	15.15	5661
Trichiurus lepturus	21.87	343	14.64	5663
Pseudotolithus typus	20.79	263	13.92	5665
Galeoides decadactylus	14.11	217	9.45	5662
Chloroscombrus chrysurus	10.06	203	6.73	
J E L L Y F I S H	7.45	75	4.99	
Selene dorsalis	6.35	197	4.25	
Brachydeuterus auritus	5.55	108	3.72	5664
Portunus validus	4.01	33	2.68	
Cynoponticus ferox	2.07	4	1.39	
Caranx crysos	1.84	23	1.23	5667
Pteroscion peli	1.65	52	1.10	
Hemicaranx bicolor	1.28	15	0.86	5666
Scomberomorus tritor	1.18	10	0.79	
Selar crumenophthalmus	1.14	10	0.76	
Penaeus notialis	0.72	19	0.48	
Lolliguncula mercatoris	0.58	207	0.39	
Sardinella maderensis	0.39	4	0.26	
Pseudotolithus elongatus	0.35	6	0.23	
Penaeus monodon	0.25	4	0.17	
Pecten jacobus	0.15	66	0.10	
Parapenaeopsis atlantica	0.14	10	0.09	
Drepane africana	0.14	4	0.09	
Alectis alexandrinus	0.10	4	0.07	
Pentanemus quinquarius	0.10	4	0.07	
Bothus podas africanus	0.06	4	0.04	
Penaeus kerathurus	0.04	6	0.03	
Total	149.41		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1319
DATE:28/ 6/06 GEAR TYPE: PT No: 7 POSITION:Lat N 330
start stop duration Long E 925
TIME :04:03:29 04:33:21 30 (min) Purpose code: 1
LOG :4678.90 4680.94 2.03 Area code : 6
FDEPTH: 0 0 GearCond.code:
BDEPTH: 32 29 Validity code:
Towing dir: 107ø Wire out: 140 m Speed: 30 kn*10

Sorted: Kg Total catch: 1.77 CATCH/HOUR: 3.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scomberomorus tritor	3.00	12	84.75	5668
Caranx hippos	0.20	26	5.65	
Brachydeuterus auritus	0.14	108	3.95	
Portunus validus	0.06	2	1.69	
Antennarius occidentalis	0.04	2	1.13	
Selar crumenophthalmus	0.04	10	1.13	
Saurida brasiliensis	0.02	4	0.56	
Balistes punctatus	0.02	4	0.56	
Sardinella maderensis	0.02	2	0.56	
Total	3.54		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1320
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 331
start stop duration Long E 923
TIME :05:34:43 06:03:55 29 (min) Purpose code: 3
LOG :4686.69 4688.14 1.44 Area code : 6
FDEPTH: 33 32 GearCond.code:
BDEPTH: 33 32 Validity code:
Towing dir: 10ø Wire out: 100 m Speed: 29 kn*10

Sorted: Kg Total catch: 26.68 CATCH/HOUR: 55.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Drepane africana	24.52	108	44.42	5670
Galeoides decadactylus	8.21	27	14.87	5669
Alectis alexandrinus	6.17	4	11.18	
Portunus validus	4.37	12	7.92	
Epinephelus aeneus	3.33	6	6.03	
Selene dorsalis	2.54	21	4.60	
J E L L Y F I S H	1.86	265	3.37	
Brachydeuterus auritus	1.45	50	2.63	
Scomberomorus tritor	0.93	4	1.68	5671
Uranoscopus polli	0.58	2	1.05	
Caranx hippos	0.31	10	0.56	
Cynbium cynbium	0.21	60	0.38	
Sphyraena guachancho	0.14	8	0.25	
Alloteuthis africana	0.10	27	0.18	
Trachinocephalus myops	0.10	4	0.18	
Squilla aculata calmani	0.10	19	0.18	
Selar crumenophthalmus	0.08	2	0.14	
Lolligoncula mercatoris	0.06	99	0.11	
Grammoplites gruveli	0.06	4	0.11	
Parapenaeopsis atlantica	0.04	6	0.07	
Citharus linguatula	0.02	2	0.04	
Total	55.18		99.95	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1321
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 329
start stop duration Long E 919
TIME :07:19:19 07:50:39 31 (min) Purpose code: 3
LOG :4696.81 4698.57 1.75 Area code : 6
FDEPTH: 77 99 GearCond.code:
BDEPTH: 77 99 Validity code:
Towing dir: 168ø Wire out: 235 m Speed: 30 kn*10

Sorted: Kg Total catch: 79.78 CATCH/HOUR: 154.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	51.48	1419	33.34	5674
Ariomma bondi	42.27	1204	27.36	5672
Priacanthus arenatus	22.86	414	14.80	
Squatina oculata	6.54	6	4.24	
Dentex angolensis	5.63	85	3.65	5673
Pentheroscion mbizi	5.19	27	3.36	
Rhizoprionodon acutus	4.35	4	2.82	
Sepia officinalis hierredda	3.43	33	2.22	
Lepidotrigla cadmani	2.26	60	1.46	
Raja miraletus	1.66	10	1.08	
Fistularia petimba	1.59	6	1.03	
Portunus validus	1.51	4	0.98	
Uranoscopus albesca	1.05	15	0.68	
Serranus accraensis	0.85	29	0.55	
Chilomycterus spinosus mauret.	0.62	4	0.40	
E C H I N O D E R M A T A	0.62	211	0.40	
Pagellus bellottii	0.48	14	0.31	
Pterothrissus belloci	0.43	4	0.28	
Alloteuthis africana	0.37	60	0.24	
Illex coindetii	0.37	4	0.24	
J E L L Y F I S H	0.29	6	0.19	
Citharus linguatula	0.29	4	0.19	
Grammoplites gruveli	0.10	4	0.06	
Bathygobius paganellus	0.06	14	0.04	
Syacium micrurum	0.04	4	0.03	
Blennius normani	0.04	4	0.03	
Setarches guentheri	0.04	4	0.03	
Total	154.42		100.03	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1322
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 321
start stop duration Long E 922
TIME :09:08:45 09:37:59 29 (min) Purpose code: 3
LOG :4707.25 4708.88 1.62 Area code : 6
FDEPTH: 116 112 GearCond.code:
BDEPTH: 116 112 Validity code:
Towing dir: 330ø Wire out: 351 m Speed: 30 kn*10

Sorted: Kg Total catch: 511.96 CATCH/HOUR: 1059.23

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	541.28	23534	51.10	5679
Dentex congoensis	153.72	1223	14.51	5678
Raja miraletus	137.17	81	12.95	
Spicara alta	109.34	1587	10.32	5676
Dentex angolensis	55.41	1264	5.23	5677
Epinephelus aeneus	24.21	6	2.29	
Rhizoprionodon acutus	11.38	6	1.07	
Brotula barbata	5.38	14	0.51	
Setarches guentheri	4.43	174	0.42	
Lophiodes kempi	4.16	27	0.39	
Boops boops	2.81	27	0.27	
Sepia officinalis hierredda	2.42	54	0.23	
Illex coindetii	1.74	134	0.16	
Lepidotrigla cadmani	1.47	27	0.14	
Uranoscopus albesca	1.34	68	0.13	
Priacanthus arenatus	1.34	27	0.13	
Citharus linguatula	1.20	134	0.11	
Antigonia capros	0.12	14	0.01	
Alloteuthis africana	0.12	27	0.01	
Bathygobius paganellus	0.12	27	0.01	
Total	1059.16		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1323
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 321
start stop duration Long E 926
TIME :10:57:26 11:27:13 30 (min) Purpose code: 3
LOG :4717.46 4718.98 1.52 Area code : 6
FDEPTH: 69 64 GearCond.code:
BDEPTH: 69 64 Validity code:
Towing dir: 330ø Wire out: 200 m Speed: 30 kn*10

Sorted: Kg Total catch: 478.76 CATCH/HOUR: 957.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	835.80	4858	87.29	5680
Selene dorsalis	48.72	378	5.09	5681
Squatina oculata	21.50	8	2.25	
Dentex angolensis	18.34	196	1.92	5682
Dentex congoensis	5.04	112	0.53	5683
Citharus linguatula	3.92	336	0.41	
Grammoplites gruveli	3.50	168	0.37	
Sepia officinalis hierredda	3.08	28	0.32	
Selar crumenophthalmus	2.94	56	0.31	
Alloteuthis africana	2.80	994	0.29	
Pseudupeneus prayensis	2.24	70	0.23	
Seriola dumerili	1.96	14	0.20	
Raja miraletus	1.66	8	0.17	
Uranoscopus albesca	1.40	42	0.15	
Illex coindetii	1.26	42	0.13	
Lepidotrigla cadmani	0.56	28	0.06	
Scorpaena scrofa	0.42	14	0.04	
Scyllarides herklotsii	0.42	28	0.04	
Decapterus punctatus	0.42	14	0.04	
Ariomma bondi	0.42	42	0.04	
B I V A L V E S	0.14	42	0.01	
G A S T R O P O D S	0.14	14	0.01	
'Spider crab 2'	0.14	14	0.01	
E C H I N O D E R M A T A	0.14	56	0.01	
Arnoglossus imperialis	0.14	42	0.01	
Syacium micrurum	0.14	56	0.01	
Setarches guentheri	0.14	14	0.01	
Saurida brasiliensis	0.14	28	0.01	
Total	957.52		99.9	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1324
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 322
start stop duration Long E 931
TIME :12:30:39 13:00:20 30 (min) Purpose code: 3
LOG :4725.47 4727.00 1.53 Area code : 6
FDEPTH: 37 34 GearCond.code:
BDEPTH: 37 34 Validity code:
Towing dir: 130ø Wire out: 141 m Speed: 30 kn*10

Sorted: Kg Total catch: 18.61 CATCH/HOUR: 37.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	12.74	74	34.23	
Raja miraletus	6.68	46	17.95	
Sepia officinalis hierredda	5.54	14	14.88	
Epinephelus aeneus	2.78	2	7.47	
Alectis alexandrinus juv.	2.74	6	7.36	
Alectis alexandrinus	2.62	4	7.04	
Pagrus caeruleostictus	1.80	8	4.84	
Selene dorsalis	1.08	6	2.90	
Balistes capriscus	1.04	2	2.79	
Vanstraelenia chirophthalmus	0.10	2	0.27	
Decapterus punctatus	0.04	32	0.11	
Starfish	0.02	4	0.05	
Penaeus notialis	0.02	2	0.05	
Serranus accraensis	0.02	2	0.05	
Total	37.22		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1325
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 323
start stop duration Long E 938
TIME :14:01:38 14:31:20 30 (min) Purpose code: 3
LOG :4733.68 4735.24 1.55 Area code : 6
FDEPTH: 20 20 GearCond.code:
BDEPTH: 20 20 Validity code:
Towing dir: 130ø Wire out: 111 m Speed: 30 kn*10

Sorted: Kg Total catch: 210.97 CATCH/HOUR: 421.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	346.90	3252	82.22	
Caranx hippos	14.14	74	3.35	5684
Caranx senegallus	13.94	52	3.30	5685
Galeoides decadactylus	12.98	170	3.08	
Sphyraena guachancho	6.14	38	1.46	
Scomberomorus tritor	3.84	30	0.91	5686
Drepane africana	3.58	46	0.85	
Lutjanus goreensis	3.02	2	0.72	
Lutjanus agennes	2.80	2	0.66	
Pseudotolithus senegalensis	2.20	16	0.52	
Brachydeuterus auritus	1.78	36	0.42	
Selene dorsalis	1.78	16	0.42	
Alectis alexandrinus	1.66	10	0.39	
Ilisha africana	1.24	116	0.29	
Sepia officinalis hierredda	1.22	2	0.29	
Portunus validus	1.10	2	0.26	
Pteroscion peli	0.84	16	0.20	
Trichiurus lepturus	0.80	48	0.19	
Lagocephalus laevigatus	0.42	2	0.10	
Caranx crysos	0.38	4	0.09	
Pomadasys peroteti	0.34	2	0.08	
Chloroscombrus chrysurus	0.28	6	0.07	
Pseudotolithus brachygnathus	0.22	2	0.05	
Uranoscopus polli	0.10	2	0.02	
Grammoplites gruveli	0.06	2	0.01	
Sardinella maderensis	0.04	4	0.01	
Penaeus karathurus	0.04	4	0.01	
Trachinocephalus myops	0.04	2	0.01	
Syacium micrurum	0.02	2		
Parapenaeopsis atlantica	0.02	2		
Trachinus lineolatus	0.02	2		
Total	421.94		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1326
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 315
start stop duration Long E 935
TIME :17:03:37 17:33:59 30 (min) Purpose code: 3
LOG :4756.45 4758.05 1.58 Area code : 6
FDEPTH: 38 38 GearCond.code:
BDEPTH: 38 38 Validity code:
Towing dir: 326ø Wire out: 241 m Speed: 30 kn*10

Sorted: Kg Total catch: 24.29 CATCH/HOUR: 48.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	11.66	70	24.00	
Rhizoprionodon acutus	8.60	2	17.70	
Sphyraena guachancho	7.58	26	15.60	5687
Sepia officinalis hierredda	7.50	20	15.44	
Caranx senegallus	2.94	6	6.05	5688
Pagellus bellottii	1.82	8	3.75	
Selar crumenophthalmus	1.70	8	3.50	5689
Caranx crysos	1.58	6	3.25	5690
J E L L Y F I S H	1.06	32	2.18	
Fistularia petimba	0.70	4	1.44	
Alloteuthis africana	0.68	224	1.40	
Priacanthus arenatus	0.58	4	1.19	
Chilomycterus spinosus mauret.	0.56	6	1.15	
Brachydeuterus auritus	0.44	8	0.91	
Lolliguncula mercatoris	0.40	440	0.82	
Citharichthys stampflii	0.34	8	0.70	
Epinephelus aeneus	0.20	2	0.41	
Grammoplites gruveli	0.10	4	0.21	
Trachinocephalus myops	0.08	4	0.16	
Balistes capriscus	0.02	2	0.04	
Total	48.54		99.90	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1328
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 306
start stop duration Long E 928
TIME :03:49:52 04:12:27 23 (min) Purpose code: 3
LOG :4823.66 4824.79 1.13 Area code : 6
FDEPTH: 229 201 GearCond.code:
BDEPTH: 229 201 Validity code:
Towing dir: 350ø Wire out: 640 m Speed: 30 kn*10

Sorted: Kg Total catch: 77.13 CATCH/HOUR: 201.21

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Squatina oculata	71.87	47	35.72	
Centrophorus uyato	46.30	8	23.01	
Illex coindetii	32.48	610	16.14	
Dentex angolensis	10.02	107	4.98	
Uranoscopus albesca	7.75	73	3.85	
Peristedion cataphractum	4.38	211	2.18	
Oxynotus centrina	4.04	3	2.01	
Parapenaeus longirostris	3.23	1030	1.61	
Lepidotrigla cadmani	2.82	37	1.40	
Hypoclydonia bella	2.56	436	1.27	
Gadella imberbis	2.22	76	1.10	
Parasudis fraser-brunneri	2.19	224	1.09	
Setarches guentheri	2.06	52	1.02	
Promethichthys prometheus	2.06	76	1.02	
Bembrops greyi	1.75	34	0.87	
Brotula barbata	0.94	5	0.47	
MYCTOPHIDAE	0.83	308	0.41	
Sepia officinalis hierredda	0.65	10	0.32	
Pterothrissus belloci	0.63	5	0.31	
Synaphobranchus kaupii	0.55	42	0.27	
Plesionika martia	0.37	86	0.18	
Etmopterus spinax	0.34	5	0.17	
Synagrops microlepis	0.34	50	0.17	
Antigonia capros	0.31	44	0.15	
Zenion longipinnis	0.13	16	0.06	
Aristeus varidens	0.10	16	0.05	
Zenopsis conchifer	0.08	3	0.04	
Conger conger	0.08	5	0.04	
Monolene microstoma	0.05	5	0.02	
Scyllarides herklotsii	0.03	8	0.01	
Heterocarpus ensifer	0.03	5	0.01	
Total	201.19		99.95	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1327
DATE:28/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 319
start stop duration Long E 936
TIME :20:06:29 20:37:17 31 (min) Purpose code: 3
LOG :4771.92 4773.43 1.51 Area code : 6
FDEPTH: 29 31 GearCond.code:
BDEPTH: 29 31 Validity code:
Towing dir: 257ø Wire out: 100 m Speed: 29 kn*10

Sorted: Kg Total catch: 47.03 CATCH/HOUR: 91.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Parapenaeopsis atlantica	11.96	7177	13.14	
Citharus linguatula	9.72	165	10.68	
Chaetodipterus lippei	8.44	19	9.27	5692
Trachinocephalus myops	8.03	722	8.82	
Uranoscopus polli	4.82	93	5.29	
Sepia officinalis hierredda	4.26	93	4.68	
Ilisha africana	3.56	126	3.91	5693
Penaeus kerathurus	3.54	205	3.89	
Raja miraletus	3.48	14	3.82	
Trachinus armatus	2.54	87	2.79	
Saurida brasiliensis	2.50	2683	2.75	
Grammoplites gruveli	2.38	205	2.61	
Paraconger notialis	2.34	14	2.57	
Dicologoglossa cuneata	2.34	19	2.57	
Eucinostomus melanopterus	2.21	48	2.43	5691
Rhinobatos rhinobatos	1.95	2	2.14	
Chilomycterus spinosus mauret.	1.82	8	2.00	
Sphyraena guachancho	1.65	8	1.81	
Selene dorsalis	1.57	2	1.72	
Penaeus nutialis	1.37	54	1.50	
Brotula barbata	1.28	17	1.41	
Pagellus bellottii	1.24	14	1.36	
Dicologoglossa hexophthalma	1.24	29	1.36	
Alloteuthis africana	1.22	304	1.34	
Epinephelus aeneus	1.16	6	1.27	
Galeoides decadactylus	1.16	12	1.27	
Dactylopterus volitans	1.05	23	1.15	
Brachydeuterus auritus	0.64	8	0.70	
Syacium micrurum	0.48	106	0.53	
Sphoeroides marmoratus	0.35	25	0.38	
Bothus podas africanus	0.29	37	0.32	
Selar crumenophthalmus	0.12	101	0.13	
Fistularia petimba	0.08	2	0.09	
Scyllarides herklotsii	0.08	29	0.09	
Portunus validus	0.06	14	0.07	
Maja squinado	0.04	8	0.04	
Sepiella ornata	0.04	14	0.04	
'Spider crab'	0.04	8	0.04	
Total	91.05		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1329
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 301
start stop duration Long E 931
TIME :05:41:38 06:11:33 30 (min) Purpose code: 3
LOG :4834.33 4835.79 1.47 Area code : 6
FDEPTH: 123 120 GearCond.code:
BDEPTH: 123 120 Validity code:
Towing dir: 155ø Wire out: 310 m Speed: 30 kn*10

Sorted: 58 Kg Total catch: 176.90 CATCH/HOUR: 353.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	143.74	3350	40.63	5694
Ariomma bondi	118.80	10580	33.35	5697
Illex coindetii	33.04	3134	9.34	
Dentex angolensis	26.14	284	7.39	5695
Priacanthus arenatus	12.64	300	3.57	
Squatina oculata	9.04	8	2.56	
Epinephelus aeneus	3.80	2	1.07	
Spicara alta	3.60	60	1.02	5696
Peristedion cataphractum	1.14	60	0.32	
Sea cucumbers	0.94	2	0.27	
Lepidotrigla cadmani	0.84	40	0.24	
Uranoscopus albesca	0.30	10	0.08	
Citharus linguatula	0.24	20	0.07	
Scorpaena normani	0.14	10	0.04	
Syacium micrurum	0.10	14	0.03	
Monolene microstoma	0.10	14	0.03	
Total	353.80		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1330
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 303
start stop duration Long E 938
TIME :07:44:56 08:14:31 30 (min) Purpose code: 3
LOG :4847.09 4848.54 1.43 Area code : 6
FDEPTH: 73 73 GearCond.code:
BDEPTH: 73 73 Validity code:
Towing dir: 160ø Wire out: 210 m Speed: 30 kn*10

Sorted: Kg Total catch: 68.52 CATCH/HOUR: 137.04

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Decapterus punctatus	34.16	2420	24.93	5698
Sepia officinalis hierredda	24.66	126	17.99	
Dentex congoensis	18.90	560	13.79	5701
E C H I N O D E R M A T A	13.94	3838	10.17	
Ariomma bondi	7.04	554	5.14	
Alloteuthis africana	5.94	2576	4.33	
Dentex angolensis	5.48	58	4.00	
Pseudupeneus prayensis	5.28	164	3.85	5699
Pagellus bellottii	4.20	176	3.06	5700
Illex coindetii	2.98	190	2.17	
Lepidotrigla cadmani	2.88	114	2.10	
J E L L Y F I S H	2.64	88	1.93	
Priacanthus arenatus	2.04	90	1.49	
Raja miraletus	1.92	12	1.40	
Syacium micrurum	0.88	170	0.64	
Citharus linguatula	0.70	48	0.51	
Lagocephalus laevigatus	0.60	2	0.44	
Serranus accraensis	0.54	26	0.39	
Selar crumenophthalmus	0.46	12	0.34	
Grammoplites gruveli	0.46	22	0.34	
Trichiurus lepturus	0.44	2	0.32	
Epinephelus guaza ?	0.20	2	0.15	
Saurida brasiliensis	0.16	26	0.12	
Antennarius occidentalis	0.12	2	0.09	
Sphoeroides marmoratus	0.12	6	0.09	
Blennius normani	0.10	22	0.07	
Lophiodes kempi	0.06	2	0.04	
Trachinus armatus	0.06	6	0.04	
Zeus faber	0.06	2	0.04	
Peristedion cataphractum	0.02	2	0.01	
Total	137.04		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1332
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 300
start stop duration Long E 949
TIME :11:50:11 12:20:11 30 (min) Purpose code: 3
LOG :4871.80 4873.51 1.25 Area code : 6
FDEPTH: 24 23 GearCond.code:
BDEPTH: 24 23 Validity code:
Towing dir: 350ø Wire out: 111 m Speed: 30 kn*10

Sorted: Kg Total catch: 45.39 CATCH/HOUR: 90.78

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sphyraena guachancho	15.54	60	17.12	
Epinephelus aeneus	12.50	14	13.77	
Lethrinus atlanticus	8.20	38	9.03	
Pagrus caeruleostictus	7.02	22	7.73	
Pomadasys peroteti	6.98	16	7.69	5705
Brachydeuterus auritus	4.04	94	4.45	
Lutjanus dentatus	4.00	2	4.41	
Psettodes belcheri	3.88	20	4.27	5704
Scomberomorus tritor	3.72	22	4.10	
Lutjanus goreensis	3.60	4	3.97	
Drepane africana	3.22	34	3.55	
Sepia officinalis hierredda	3.20	6	3.53	
Raja miraletus	3.02	14	3.33	
Caranx hippos	2.96	18	3.26	
Pseudupeneus prayensis	1.38	12	1.52	
Alectis alexandrinus juv.	1.34	34	1.48	
Balistes punctatus	1.30	4	1.43	
Chaetodipterus goreensis	0.96	16	1.06	
Caranx crysos	0.60	4	0.66	
Selene dorsalis	0.60	12	0.66	
Sepia juveniles	0.44	264	0.48	
Elops lacerta	0.42	2	0.46	
Citharus linguatula	0.34	8	0.37	
Dentex angolensis	0.28	2	0.31	
Aluterus heudelotii	0.24	2	0.26	
Chloroscombrus chrysurus	0.24	4	0.26	
Selar crumenophthalmus	0.16	14	0.18	
Galeoides decadactylus	0.12	2	0.13	
Ilisha africana	0.10	2	0.11	
Trichiurus lepturus	0.08	18	0.09	
Sardinella maderensis	0.08	8	0.09	
Lagocephalus laevigatus	0.06	12	0.07	
Grammoplites gruveli	0.04	4	0.04	
Torpedo torpedo	0.04	2	0.04	
Liocarcinus corrugatus	0.02	2	0.02	
Monochirus hispidus	0.02	2	0.02	
Echelus myrus	0.02	2	0.02	
Antennarius occidentalis	0.02	2	0.02	
Total	90.78		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1331
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 303
start stop duration Long E 945
TIME :09:37:35 10:07:47 30 (min) Purpose code: 3
LOG :4858.55 4859.88 1.32 Area code : 6
FDEPTH: 36 36 GearCond.code:
BDEPTH: 36 36 Validity code:
Towing dir: 165ø Wire out: 110 m Speed: 30 kn*10

Sorted: Kg Total catch: 16.36 CATCH/HOUR: 32.72

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Psettodes belcheri	6.70	24	20.48	
Pagrus caeruleostictus	4.30	20	13.14	5703
Alectis alexandrinus	3.66	22	11.19	
Drepane africana	2.78	16	8.50	5702
Alloteuthis africana	2.74	740	8.37	
Mustelus mustelus	2.24	2	6.85	
Decapterus punctatus	2.06	206	6.30	
Portunus validus	1.72	2	5.26	
Sepia officinalis hierredda	1.70	4	5.20	
Raja miraletus	1.30	10	3.97	
Citharus linguatula	1.08	14	3.30	
Lagocephalus laevigatus	0.68	4	2.08	
Illex coindetii	0.46	26	1.41	
Spicara alta	0.36	6	1.10	
'Spider crab'	0.34	70	1.04	
J E L L Y F I S H	0.26	54	0.79	
Grammoplites gruveli	0.22	14	0.67	
Penaeus notialis	0.06	6	0.18	
Chilomycterus spinosus mauret.	0.04	2	0.12	
Peristedion cataphractum	0.02	2	0.06	
Total	32.72		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1333
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 255
start stop duration Long E 943
TIME :13:52:55 14:22:29 30 (min) Purpose code: 3
LOG :4884.91 4886.37 1.45 Area code : 6
FDEPTH: 65 69 GearCond.code:
BDEPTH: 65 69 Validity code:
Towing dir: 174ø Wire out: 191 m Speed: 30 kn*10

Sorted: 3 Kg Total catch: 45.72 CATCH/HOUR: 91.44

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sepia officinalis hierredda	29.20	378	31.93	
Brachydeuterus auritus	17.60	1724	19.25	
Alectis alexandrinus	6.66	2	7.28	
Lepidotrigla cadmani	6.50	306	7.11	
Raja miraletus	3.06	38	3.35	
Sphyraena guachancho	3.02	12	3.30	
Priacanthus arenatus	3.00	60	3.28	
Grammoplites gruveli	2.66	120	2.91	
Alloteuthis africana	2.64	990	2.89	
Saurida brasiliensis	1.96	370	2.14	
J E L L Y F I S H	1.80	30	1.97	
Torpedo torpedo	1.72	6	1.88	
Citharus linguatula	1.70	150	1.86	
Uranoscopus cadenati	1.62	28	1.77	
Dentex congoensis	1.44	44	1.57	
Brotula barbata	1.34	8	1.47	
Illex coindetii	1.20	14	1.31	
Fistularia petimba	0.52	4	0.57	
Pseudupeneus prayensis	0.48	12	0.52	
Chilomycterus spinosus mauret.	0.44	2	0.48	
Dentex angolensis	0.44	8	0.48	
Penaeus notialis	0.28	42	0.31	
Decapterus punctatus	0.26	54	0.28	
Lophius vaillanti	0.22	10	0.24	
Seriola dumerili	0.22	2	0.24	
Antennarius occidentalis	0.22	10	0.24	
Lagocephalus laevigatus	0.22	2	0.24	
Caranx hippos	0.20	2	0.22	
Cynoglossus canariensis	0.18	30	0.20	
Epinephelus guaza ?	0.16	6	0.17	
Setarches guentheri	0.14	8	0.15	
Microchirus frechkopi	0.14	6	0.15	
Blennius normani	0.12	18	0.13	
Zeus faber	0.04	2	0.04	
Starfish	0.02	4	0.02	
Ariomma bondi	0.02	2	0.02	
Total	91.44		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1334
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 253
start stop duration Long E 936
TIME :15:51:06 16:21:11 30 (min) Purpose code: 3
LOG :4896.89 4898.49 1.59 Area code : 6
FDEPTH: 112 113 GearCond.code:
BDEPTH: 112 113 Validity code:
Towing dir: 337ø Wire out: 303 m Speed: 30 kn*10

Sorted: 9 Kg Total catch: 169.20 CATCH/HOUR: 338.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Priacanthus arenatus	145.44	5472	42.98	
Ariomma bondi	87.12	6480	25.74	5706
Dentex congoensis	57.60	1116	17.02	5707
Illex coindetii	21.96	1368	6.49	
Raja miraletus	18.36	144	5.43	
Dentex angolensis	3.24	36	0.96	
Spicara alta	2.52	36	0.74	
Sphoeroides marmoratus	1.08	36	0.32	
Citharus linguatula	0.72	72	0.21	
Serranus accraensis	0.36	36	0.11	
Total	338.40		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1336
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 246
start stop duration Long E 935
TIME :04:31:59 05:02:10 30 (min) Purpose code: 3
LOG :4959.25 4960.80 1.54 Area code : 6
FDEPTH: 279 282 GearCond.code:
BDEPTH: 279 282 Validity code:
Towing dir: 360ø Wire out: 777 m Speed: 30 kn*10

Sorted: 33 Kg Total catch: 76.86 CATCH/HOUR: 153.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zenion longipinnis	51.52	7986	33.52	
Parasudis fraser-bruenneri	35.28	1468	22.95	
Ijimaia loppei	9.62	14	6.26	
Parapenaeus longirostris	8.46	934	5.50	
Peristedion cataphractum	8.28	358	5.39	
Brotula barbata	7.82	18	5.09	
Illex coindetii	6.16	114	4.01	
Antigonia capros	4.64	10	3.02	
Cynoponticus ferox	4.04	36	2.63	
Hypoclydonia bella	2.40	556	1.56	
MYCTOPHIDAE	2.12	556	1.38	
Trichiurus lepturus	2.06	4	1.34	
Lepidotrigla cadmani	1.60	28	1.04	
Dentex angolensis	1.48	4	0.96	
Heterocarpus ensifer	1.06	124	0.69	
Brama brama	0.96	4	0.62	
Uranoscopus albesca	0.92	4	0.60	
Setarches guentheri	0.82	46	0.53	
Chascanopsetta lugubris	0.78	4	0.51	
Coelorinchus coelorhincus	0.64	18	0.42	
Bembrops greyi	0.56	10	0.36	
Aristeus varidens	0.46	28	0.30	
Lophiodes kempi	0.36	4	0.23	
Scorpaena normani	0.28	4	0.18	
Gadella imberbis	0.28	10	0.18	
Calappa-like with spines	0.22	4	0.14	
Monolene microstoma	0.22	18	0.14	
Synagrops microlepis	0.22	18	0.14	
PARALEPIDIDAE	0.14	10	0.09	
Dibranchus atlanticus	0.14	10	0.09	
Hymenocephalus italicus	0.10	4	0.07	
Merluccius polli	0.04	4	0.03	
GOBIIDAE	0.04	4	0.03	
Total	153.72		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1335
DATE:29/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 252
start stop duration Long E 934
TIME :17:29:35 17:51:34 22 (min) Purpose code: 3
LOG :4905.58 4906.72 1.13 Area code : 6
FDEPTH: 252 287 GearCond.code:
BDEPTH: 252 287 Validity code:
Towing dir: 320ø Wire out: 650 m Speed: 30 kn*10

Sorted: 42 Kg Total catch: 104.87 CATCH/HOUR: 286.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hypoclydonia bella	84.35	3518	29.49	
Bembrops heterurus	45.27	2640	15.83	
Zenion longipinnis	34.91	8048	12.21	
MYCTOPHIDAE	30.55	4265	10.68	
Parapenaeus longirostris	21.46	3180	7.50	
Squatina oculata	20.37	8	7.12	
Illex coindetii	17.32	1129	6.06	
Aristeus varidens	4.45	1631	1.56	
Peristedion cataphractum	4.36	150	1.52	
Trichiurus lepturus	3.00	5	1.05	
Uranoscopus albesca	*2.51*	19	*0.88*	
Raja miraletus	2.32	5	0.81	
Promethichthys prometheus	2.18	87	0.76	
Priacanthus arenatus	2.02	63	0.71	
Dentex angolensis	1.83	14	0.64	
Brotula barbata	1.75	5	0.61	
Pterothrissus belloci	1.55	14	0.54	
Parexocoetus brachypterus	1.12	76	0.39	
Yarrella blackfordi	1.06	101	0.37	
Lophiodes kempi	0.87	5	0.30	
Synagrops microlepis	0.82	175	0.29	
Monolene microstoma	0.49	49	0.17	
Ariomma melanum	0.44	14	0.15	
Lepidotrigla cadmani	0.25	5	0.09	
Antigonia capros	0.19	30	0.07	
Cynoponticus ferox	*0.14*	5	*0.05*	
Solenocera africana	0.14	30	0.05	
Calappa-like with spines	0.14	25	0.05	
'Unidentfied crab'	0.05	14	0.02	
'Spider crab 2'	0.05	25	0.02	
Hymenocephalus italicus	0.05	14	0.02	
Total	286.01		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1337
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 246
start stop duration Long E 936
TIME :06:48:52 07:19:57 31 (min) Purpose code: 3
LOG :4972.55 4974.17 1.61 Area code : 6
FDEPTH: 132 144 GearCond.code:
BDEPTH: 132 144 Validity code:
Towing dir: 180ø Wire out: 350 m Speed: 30 kn*10

Sorted: 102 Kg Total catch: 1032.74 CATCH/HOUR: 1998.85

SPECIES	CATCH/HOUR *weight*	*numbers*	% OF TOT. C	SAMP
Ariomma bondi	1582.26	88200	79.16	5708
Dentex congoensis	196.45	3794	9.83	5710
Spicara alta	60.00	690	3.00	5711
Dentex angolensis	53.23	406	2.66	5709
Illex coindetii	31.16	1645	1.56	
Priacanthus arenatus	12.77	97	0.64	
Zeus faber	10.65	39	0.53	
Scorpaena normani	9.68	19	0.48	
Squatina oculata	9.68	2	0.48	
Peristedion cataphractum	6.97	213	0.35	
Pterothrissus belloci	6.77	77	0.34	
Uranoscopus albesca	5.23	58	0.26	
Rhizoprionodon acutus	3.58	2	0.18	
Sepia officinalis hierredda	3.10	39	0.16	
Dibranchus atlanticus	*1.94*	19	*0.10*	
Citharus linguatula	1.94	213	0.10	
Boops boops	1.16	19	0.06	
Lepidotrigla cadmani	0.97	19	0.05	
Raja miraletus	0.75	6	0.04	
Starfish	0.58	2	0.03	
Total	1998.87		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1338
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 244
start stop duration Long E 941
TIME :08:39:20 09:09:47 30 (min) Purpose code: 3
LOG :4982.20 4983.68 1.48 Area code : 6
FDEPTH: 87 78 GearCond.code:
BDEPTH: 87 78 Validity code:
Towing dir: 186ø Wire out: 240 m Speed: 30 kn*10

Sorted: Kg Total catch: 60.64 CATCH/HOUR: 121.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sepia officinalis hierredda	46.20	546	38.09	
Saurida brasiliensis	30.40	88	25.07	
Ariomma bondi	6.70	92	5.52	5713
Lepidotrigla cadmani	5.44	224	4.49	
Pagellus bellottii	5.20	78	4.29	5712
Dentex congoensis	4.04	144	3.33	5714
Uranoscopus albesca	3.94	58	3.25	
Scomber japonicus	3.78	8	3.12	5715
Priacanthus arenatus	3.28	108	2.70	
Illex coindetii	2.26	52	1.86	
Chilomycterus spinosus mauret.	1.58	8	1.30	
Torpedo torpedo	1.54	4	1.27	
J E L L Y F I S H	1.32	26	1.09	
Alloteuthis africana	0.98	392	0.81	
Citharus linguatula	0.92	38	0.76	
Serranus accraensis	0.82	42	0.68	
Fistularia petimba	0.58	6	0.48	
Parapenaeus longirostris	0.50	108	0.41	
Dentex angolensis	0.36	6	0.30	
Lagocephalus laevigatus	0.32	2	0.26	
Raja miraletus	0.28	4	0.23	
Squilla mantis	0.16	4	0.13	
Maja squinado	0.14	2	0.12	
Sphoeroides marmoratus	0.14	10	0.12	
Blennius normani	0.08	14	0.07	
Bathygobius paganellus	0.06	10	0.05	
Grammoplites gruveli	0.06	2	0.05	
Parapandalus narval	0.06	6	0.05	
Decapterus punctatus	0.04	2	0.03	
Trachinus pellegrini	0.04	4	0.03	
Scorpaena normani	0.02	2	0.02	
Syacium micrurum	0.02	6	0.02	
Zeus faber	0.02	2	0.02	
Total	121.28		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1340
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 242
start stop duration Long E 948
TIME :12:10:04 12:40:13 30 (min) Purpose code: 3
LOG :5002.32 5003.91 2.00 Area code : 6
FDEPTH: 27 27 GearCond.code:
BDEPTH: 27 27 Validity code:
Towing dir: 197ø Wire out: m Speed: kn*10

Sorted: Kg Total catch: 132.12 CATCH/HOUR: 264.24

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	124.56	300	47.14	5717
Brachydeuterus auritus	26.46	324	10.01	5718
Drepane africana	21.90	84	8.29	
Sphyraena guachancho	11.64	108	4.41	
Galeoides decadactylus	11.22	84	4.25	
Pomadasys peroteti	7.26	6	2.75	
Lutjanus dentatus	6.84	18	2.59	
Pagrus caeruleostictus	6.66	36	2.52	
Epinephelus aeneus	6.48	6	2.45	
Penaeus notialis	5.22	12	1.98	
Pseudotolithus senegalensis	4.92	24	1.86	
Caranx hippos	4.74	36	1.79	
Alectis alexandrinus	4.56	84	1.73	
Psettodes belcheri	4.38	18	1.66	
Sardinella maderensis	2.46	258	0.93	
Selene dorsalis	2.22	144	0.84	
Dasyatis margarita	2.04	6	0.77	
Raja miraletus	1.98	6	0.75	
Chloroscombrus chrysurus	1.92	30	0.73	
Chaetodipterus goreensis	1.32	12	0.50	
Torpedo torpedo	1.32	30	0.50	
J E L L Y F I S H	1.20	132	0.45	
Chilomycterus spinosus mauret.	1.14	6	0.43	
Balistes capriscus	1.08	6	0.41	
Grammoplites gruveli	0.24	18	0.09	
Scorpaena normani	0.18	6	0.07	
Vanstraelenia chirophthalmus	0.18	6	0.07	
Scyllarides herklotsii	0.06	6	0.02	
Selar crumenophthalmus	0.06	18	0.02	
Total	264.24		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1339
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 243
start stop duration Long E 944
TIME :10:41:40 11:11:51 30 (min) Purpose code: 3
LOG :4994.82 4996.42 1.60 Area code : 6
FDEPTH: 47 51 GearCond.code:
BDEPTH: 47 51 Validity code:
Towing dir: 8ø Wire out: 150 m Speed: 30 kn*10

Sorted: Kg Total catch: 105.52 CATCH/HOUR: 211.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	147.60	26862	69.94	
Rhizoprionodon acutus	15.20	4	7.20	
Alectis alexandrinus	6.94	14	3.29	5716
Psettodes belcheri	4.66	14	2.21	
Epinephelus aeneus	4.10	8	1.94	
Selar crumenophthalmus	3.92	50	1.86	
Fistularia petimba	3.78	14	1.79	
Sepia officinalis hierredda	3.10	6	1.47	
Selene dorsalis	2.66	20	1.26	
Torpedo torpedo	2.62	8	1.24	
Raja miraletus	2.52	20	1.19	
Brachydeuterus auritus	2.02	32	0.96	
Panulirus regius	1.76	2	0.83	
Scomberomorus tritor	1.72	6	0.82	
Lagocephalus laevigatus	1.42	6	0.67	
Scomber japonicus	1.36	2	0.64	
Uranoscopus albesca	1.00	8	0.47	
Saurida brasiliensis	0.80	28	0.38	
Illex coindetii	0.74	14	0.35	
Caranx hippos	0.50	2	0.24	
Alloteuthis africana	0.44	376	0.21	
Brotula barbata	0.42	2	0.20	
Seriola dumerili	0.36	2	0.17	
Sphyraena guachancho	0.26	2	0.12	
Grammoplites gruveli	0.26	12	0.12	
Priacanthus arenatus	0.24	4	0.11	
Penaeus notialis	0.20	8	0.09	
Dentex congoensis	0.14	2	0.07	
Ariomma bondi	0.14	2	0.07	
'Spider crab 2'	0.06	4	0.03	
Lepidotrigla cadmani	0.06	2	0.03	
'Unidentfied crab'	0.02	4	0.01	
Chloroscombrus chrysurus	0.02	18	0.01	
Total	211.04		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1341
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 235
start stop duration Long E 942
TIME :14:20:11 14:58:22 30 (min) Purpose code: 3
LOG :5017.99 5019.62 1.63 Area code : 6
FDEPTH: 40 38 GearCond.code:
BDEPTH: 40 38 Validity code:
Towing dir: 180ø Wire out: 141 m Speed: 30 kn*10

Sorted: Kg Total catch: 43.49 CATCH/HOUR: 86.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	21.10	1148	24.26	5720
Mustelus mustelus	12.40	4	14.26	
Sardinella maderensis	8.74	1084	10.05	
Galeoides decadactylus	6.78	68	7.79	5722
Sphyraena guachancho	6.30	220	7.24	5719
Brachydeuterus auritus	5.86	644	6.74	5721
Chloroscombrus chrysurus	5.10	72	5.86	
Scomberomorus tritor	2.56	12	2.94	
Psettodes belcheri	2.48	10	2.85	
Lagocephalus laevigatus	1.86	4	2.14	
Sepia officinalis hierredda	1.76	70	2.02	
Alectis alexandrinus	1.74	12	2.00	
Drepane africana	1.60	8	1.84	
Elops lacerta	1.58	4	1.82	
Selene dorsalis	1.32	58	1.52	
Alloteuthis africana	1.22	282	1.40	
Pagrus caeruleostictus	0.98	4	1.13	
Caranx hippos	0.96	8	1.10	
Pseudotolithus senegalensis	0.94	6	1.08	
Portunus validus	0.62	2	0.71	
Vanstraelenia chirophthalmus	0.26	10	0.30	
Penaeus notialis	0.26	8	0.30	
J E L L Y F I S H	0.16	24	0.18	
Selar crumenophthalmus	0.14	20	0.16	
Lutjanus dentatus	0.12	2	0.14	
Lutjanus fulgens	0.06	12	0.07	
Calappa rubroguttata	0.02	2	0.02	
Fistularia petimba	0.02	2	0.02	
Echeneis naucrates	0.02	2	0.02	
Sicyonia galeata	0.02	10	0.02	
Total	86.98		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1342
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 235
start stop duration Long E 935
TIME :16:28:42 16:58:25 30 (min) Purpose code: 3
LOG :5030.47 5031.96 1.49 Area code : 6
FDEPTH: 90 86 GearCond.code:
BDEPTH: 90 86 Validity code:
Towing dir: 195ø Wire out: 252 m Speed: 30 kn*10

Sorted: 9 Kg Total catch: 68.54 CATCH/HOUR: 137.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	66.40	1500	48.44	5723
Dentex congoensis	17.90	542	13.06	5724
Sepia officinalis hierredda	16.64	98	12.14	
Squatina oculata	10.20	4	7.44	
Lepidotrigla cadmani	7.30	198	5.33	
Priacanthus arenatus	5.38	218	3.92	
Dentex angolensis	2.54	34	1.85	5725
Illex coindetii	2.26	96	1.65	
Saurida brasiliensis	1.80	180	1.31	
Uranoscopus albesca	1.54	36	1.12	
Torpedo torpedo	1.20	2	0.88	
Sphoeroides marmoratus	0.58	24	0.42	
Parapenaeus longirostris	0.46	64	0.34	
Raja miraletus	0.42	2	0.31	
Scorpaena normani	0.36	10	0.26	
J E L L Y F I S H	0.30	8	0.22	
Decapterus punctatus	0.30	12	0.22	
Sphyraena guachancho	0.28	2	0.20	
Alloteuthis africana	0.22	68	0.16	
E C H I N O D E R M A T A	0.18	54	0.13	
Fistularia petimba	0.18	2	0.13	
Lophiodes kempi	0.16	2	0.12	
Citharus linguatula	0.12	10	0.09	
Boops boops	0.08	2	0.06	
Trachinus pellegrini	0.06	4	0.04	
Selar crumenophthalmus	0.06	4	0.04	
Spicara alta	0.06	6	0.04	
Bathygobius paganellus	0.04	6	0.03	
Cepola pauciradiatus	0.04	2	0.03	
Hippocampus punctatus	0.02	2	0.01	
Total	137.08		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1343
DATE:30/ 6/06 GEAR TYPE: BT No:18 POSITION:Lat N 234
start stop duration Long E 931
TIME :18:48:47 19:18:44 30 (min) Purpose code: 3
LOG :5041.18 5042.72 1.53 Area code : 6
FDEPTH: 394 398 GearCond.code:
BDEPTH: 394 398 Validity code:
Towing dir: 280ø Wire out: 965 m Speed: 30 kn*10

Sorted: Kg Total catch: 88.32 CATCH/HOUR: 176.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Gadella imberbis	27.28	1680	15.44	
NETTASTOMATIDAE	20.40	1784	11.55	
Stereomastis sp.	16.04	988	9.08	
Sea urchins (waek spines)	13.80	128	7.81	
Centrophorus uyato	13.60	4	7.70	
Centrophorus squamosus	11.80	20	6.68	
Laemonema laureysi	8.28	72	4.69	
Ijimaia loppei	7.60	16	4.30	
Bathyuroconger vicinus	5.84	40	3.31	
Hymenocephalus italicus	5.32	116	3.01	
Cyttopsis roseus	5.04	104	2.85	
Photichthys argenteus	4.76	184	2.69	
Aristeus varidens	4.52	100	2.56	
Plesionika martia	4.12	328	2.33	
Pterothrissus belloci	3.56	28	2.02	
Chaunax pictus	3.36	56	1.90	
Raja straeleni	2.80	4	1.59	
Setarches guentheri	2.44	196	1.38	
Argyropelecus sp.	2.32	20	1.31	
Bembrops greyi	1.84	52	1.04	
Parasudis fraser-bruenneri	1.64	24	0.93	
Hoplostethus cadenati	1.16	32	0.66	
Starfish	1.00	8	0.57	
Illex coindetii	0.96	8	0.54	
Malacocephalus laevis	0.92	4	0.52	
Halosaurus ovenii	0.80	12	0.45	
Scyliorhinus cervigoni	0.80	4	0.45	
Hypoclydonia bella	0.76	36	0.43	
Hoplostethus atlanticus	0.68	4	0.38	
Solenocera africana	0.68	48	0.38	
Dibranchus atlanticus	0.60	68	0.34	
Lophiodes kempi	0.44	4	0.25	
Xenolepidichthys dagleishi	0.44	20	0.25	
Aristeus varidens, male	0.44	40	0.25	
PORTUNIDAE	0.40	4	0.23	
Promethichthys prometheus	0.08	4	0.05	
Heterocarpus ensifer	0.08	16	0.05	
GONEPLACIDAE	0.04	12	0.02	
Total	176.64		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1344
DATE: 1/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 226
start stop duration Long E 941
TIME :05:34:03 05:58:33 25 (min) Purpose code: 3
LOG :5093.46 5094.81 1.33 Area code : 6
FDEPTH: 34 33 GearCond.code:
BDEPTH: 34 33 Validity code:
Towing dir: 176ø Wire out: 110 m Speed: 30 kn*10

Sorted: Kg Total catch: 37.53 CATCH/HOUR: 90.07

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	39.72	3214	44.10	5726
Brachydeuterus auritus	17.52	422	19.45	5727
Sphyraena guachancho	6.94	142	7.71	5728
Drepane africana	4.85	31	5.38	
Chloroscombrus chrysurus	3.10	38	3.44	5733
Penaeus notialis	2.64	120	2.93	
Galeoides decadactylus	2.38	31	2.64	5729
Pseudotolithus senegalensis	2.33	19	2.59	5731
Sardinella maderensis	2.06	247	2.29	5730
Caranx hippos	1.66	12	1.84	5732
Selene dorsalis	0.94	94	1.04	
Sepia officinalis hierredda	0.86	5	0.95	
Pomadasys jubelini	0.82	5	0.91	
Portunus validus	0.72	5	0.80	
Pteroscion peli	0.62	26	0.69	
Alectis alexandrinus	0.60	19	0.67	
Epinephelus aeneus	0.53	7	0.59	
Calappa rubroguttata	0.46	2	0.51	
Trichiurus lepturus	0.34	19	0.38	
Psettodes belcheri	0.29	17	0.32	
Dicologoglossa cuneata	0.19	2	0.21	
Bathygobius paganellus	0.19	144	0.21	
Grammoplites gruveli	0.17	17	0.19	
Pisodonophis semicinctus	0.14	2	0.16	
Citharus linguatula	0.02	5	0.02	
Total	90.09		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1345
DATE: 1/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 225
start stop duration Long E 938
TIME :06:44:24 07:14:34 30 (min) Purpose code: 3
LOG :5099.40 5100.93 1.53 Area code : 6
FDEPTH: 51 49 GearCond.code:
BDEPTH: 51 49 Validity code:
Towing dir: 350ø Wire out: 150 m Speed: 30 kn*10

Sorted: Kg Total catch: 27.95 CATCH/HOUR: 55.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	26.40	164	47.23	5737
J E L L Y F I S H	8.26	1166	14.78	
Brachydeuterus auritus	3.90	64	6.98	5736
Pagrus caeruleostictus	3.84	10	6.87	5734
Alectis alexandrinus	2.84	4	5.08	
Alloteuthis africana	2.60	1270	4.65	
Lagocephalus laevigatus	1.54	10	2.75	
Cymbium cymbium	1.26	2	2.25	
Pagellus bellottii	1.14	6	2.04	5735
Raja miraletus	0.88	4	1.57	
Pseudupeneus prayensis	0.62	8	1.11	
Selar crumenophthalmus	0.56	10	1.00	
Penaeus notialis	0.54	12	0.97	
Dentex congoensis	0.30	6	0.54	
Chloroscombrus chrysurus	0.30	4	0.54	
Ilisha africana	0.28	14	0.50	
Priacanthus arenatus	0.20	2	0.36	
Grammoplites gruveli	0.14	6	0.25	
Serranus accraensis	0.12	4	0.21	
Citharus linguatula	0.06	4	0.11	
Sardinella maderensis	0.06	6	0.11	
Parapenaeus longirostris	0.02	4	0.04	
Saurida brasiliensis	0.02	8	0.04	
Syacium micrurum	0.02	2	0.04	
Total	55.90		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1346
DATE: 1/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 227
start stop duration Long E 933
TIME :08:22:51 08:52:41 30 (min) Purpose code: 3
LOG :5107.98 5109.70 1.72 Area code : 6
FDEPTH: 90 91 GearCond.code:
BDEPTH: 90 91 Validity code:
Towing dir: 350ø Wire out: 260 m Speed: 30 kn*10

Sorted: 71 Kg Total catch: 113.73 CATCH/HOUR: 227.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	164.64	2868	72.38	5738
Dentex congoensis	30.40	662	13.36	5741
Dentex angolensis	13.24	132	5.82	5740
Sepia officinalis hierredda	4.96	16	2.18	
Raja miraletus	2.88	12	1.27	
Illex coindetii	2.84	140	1.25	
Priacanthus arenatus	2.66	52	1.17	
Decapterus punctatus	2.20	90	0.97	5739
Alloteuthis africana	0.96	432	0.42	
J E L L Y F I S H	0.96	44	0.42	
Lepidotrigla cadmani	0.80	16	0.35	
Fistularia petimba	0.36	4	0.16	
Selar crumenophthalmus	0.26	6	0.11	
Citharus linguatula	0.16	12	0.07	
Zeus faber	0.10	4	0.04	
Uranoscopus albesca	0.04	4	0.02	
Total	227.46		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1347
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 141
start stop duration Long E 718
TIME :06:54:35 07:06:21 12 (min) Purpose code: 3
LOG :5273.18 5273.73 0.54 Area code : 8
FDEPTH: 60 64 GearCond.code:
BDEPTH: 60 64 Validity code:
Towing dir: 209ø Wire out: 170 m Speed: 30 kn*10

Sorted: Kg Total catch: 25.41 CATCH/HOUR: 127.05

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	103.75	550	81.66	5742
Chilomycterus spinosus mauret.	5.85	50	4.60	
Sepia officinalis hierredda	4.55	20	3.58	
Sea urchins (waek spines)	4.10	30	3.23	
Diodon hystrix	3.95	45	3.11	
Rypticus saponaceus	1.70	15	1.34	
Chelidonichthys obscurus	0.75	10	0.59	
Acanthostracion notacanthus	0.60	20	0.47	
Stephanolepis hispidus	0.50	5	0.39	
Fistularia tabacaria	0.40	5	0.31	
Decapterus macarellus	0.30	5	0.24	
C R U S T A C E A N S	0.30	10	0.24	
Citharus linguatula	0.25	10	0.20	
Pagrus caeruleostictus	0.05	5	0.04	
Total	127.05		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1350
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 133
start stop duration Long E 718
TIME :12:44:55 13:14:42 30 (min) Purpose code: 3
LOG :5302.81 5304.27 1.46 Area code : 8
FDEPTH: 67 65 GearCond.code:
BDEPTH: 67 65 Validity code:
Towing dir: 355ø Wire out: 202 m Speed: 30 kn*10

Sorted: Kg Total catch: 93.36 CATCH/HOUR: 186.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	96.20	826	51.52	5752
Dactylopterus volitans	39.00	92	20.89	5751
Alloteuthis africana	15.18	9108	8.13	
Pagrus caeruleostictus	12.20	10	6.53	
Sepia officinalis hierredda	11.50	122	6.16	
Chilomycterus spinosus mauret.	2.84	14	1.52	
Lutjanus fulgens	2.74	4	1.47	
Torpedo torpedo	2.18	4	1.17	
Selar crumenophthalmus	1.18	24	0.63	
Raja miraletus	0.82	2	0.44	
Pseudupeneus prayensis	0.76	32	0.41	
Bothus sp.	0.68	20	0.36	
Echelus myrus	0.38	2	0.20	
Lepidotrigla cadmani	0.34	10	0.18	
Arnoglossus imperialis	0.24	62	0.13	
Fistularia tabacaria	0.18	22	0.10	
Lepidotrigla carolae	0.18	26	0.10	
Sea urchins (strong spines)	0.08	2	0.04	
Priacanthus arenatus	0.04	2	0.02	
Total	186.72		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1348
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 142
start stop duration Long E 721
TIME :08:36:23 09:06:29 30 (min) Purpose code: 3
LOG :5281.07 5282.73 1.64 Area code : 8
FDEPTH: 37 39 GearCond.code:
BDEPTH: 37 39 Validity code:
Towing dir: 204ø Wire out: 110 m Speed: 33 kn*10

Sorted: 59 Kg Total catch: 95.84 CATCH/HOUR: 191.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Acanthostrascion guineensis	73.12	698	38.15	
Diodon hystrix	38.88	316	20.28	
Dactylopterus volitans	30.56	90	15.94	5743
Caranx hippos	10.46	10	5.46	5747
Sea urchins (strong spines)	8.12	132	4.24	
Chilomycterus spinosus mauret.	4.84	38	2.53	
Fistularia tabacaria	3.88	16	2.02	
Stephanolepis hispidus	3.64	32	1.90	
Pagrus caeruleostictus	3.62	38	1.89	5744
Acanthostracion notacanthus	3.52	42	1.84	
Fistularia petimba	2.88	20	1.50	
Sepia officinalis hierredda	2.50	12	1.30	
Lethrinus atlanticus	2.12	6	1.11	5745
Bothus sp.	1.08	6	0.56	
Sea urchins (waek spines)	0.96	6	0.50	
Pseudupeneus prayensis	0.92	6	0.48	5746
PECTINIDAE	0.26	6	0.14	
Xyrichtys novacula	0.26	4	0.14	
Torpedo torpedo	0.06	4	0.03	
Total	191.68		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1351
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 126
start stop duration Long E 718
TIME :14:40:08 15:10:08 30 (min) Purpose code: 3
LOG :5314.83 5316.24 1.41 Area code : 8
FDEPTH: 74 71 GearCond.code:
BDEPTH: 74 71 Validity code:
Towing dir: 360ø Wire out: 212 m Speed: 30 kn*10

Sorted: Kg Total catch: 110.92 CATCH/HOUR: 221.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	137.70	730	62.07	
Dactylopterus volitans	45.90	186	20.69	
Sepia officinalis hierredda	15.78	182	7.11	
Trachinus collignoni	7.20	16	3.25	
Chilomycterus spinosus mauret.	6.32	46	2.85	
Pseudupeneus prayensis	4.68	46	2.11	5753
Trachinus radiatus	1.64	4	0.74	
Zeus faber	1.16	6	0.52	
Octopus vulgaris	0.46	2	0.21	
Chelidonichthys gabonensis	0.28	4	0.13	
Trachinocephalus myops	0.24	2	0.11	
Chelidonichthys lucerna	0.22	6	0.10	
Sphoeroides marmoratus	0.10	2	0.05	
Priacanthus arenatus	0.08	2	0.04	
Bothus podas africanus	0.08	2	0.04	
Total	221.84		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1349
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 132
start stop duration Long E 715
TIME :11:06:11 11:36:09 30 (min) Purpose code: 3
LOG :5294.62 5296.15 1.54 Area code : 8
FDEPTH: 81 79 GearCond.code:
BDEPTH: 81 79 Validity code:
Towing dir: 4ø Wire out: 232 m Speed: 30 kn*10

Sorted: Kg Total catch: 112.04 CATCH/HOUR: 224.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	139.50	1346	62.25	5750
Dactylopterus volitans	39.10	126	17.45	5749
Pagrus caeruleostictus	9.14	18	4.08	5748
Alloteuthis africana	7.02	2468	3.13	
Sepia officinalis hierredda	5.60	62	2.50	
Chilomycterus spinosus mauret.	3.08	18	1.37	
Priacanthus arenatus	2.88	8	1.29	
Acanthostrascion guineensis	2.72	24	1.21	
Torpedo torpedo	2.20	6	0.98	
Sea urchins (strong spines)	2.12	34	0.95	
Echelus myrus	1.98	8	0.88	
Torpedo marmorata	1.52	4	0.68	
Ariomma bondi	1.28	144	0.57	
Pseudupeneus prayensis	1.08	10	0.48	
Fistularia tabacaria	0.98	24	0.44	
Lepidotrigla cadmani	0.94	28	0.42	
Sargocentron hastatus	0.66	4	0.29	
Citharus linguatula	0.62	12	0.28	
Raja miraletus	0.60	2	0.27	
Zeus faber	0.36	4	0.16	
Syacium micrurum	0.30	60	0.13	
Lepidotrigla carolae	0.20	16	0.09	
Stephanolepis hispidus	0.18	2	0.08	
Coris julis	0.02	2	0.01	
Total	224.08		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1352
DATE: 2/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 133
start stop duration Long E 729
TIME :17:05:20 17:21:21 16 (min) Purpose code: 3
LOG :5330.86 5331.68 0.81 Area code : 8
FDEPTH: 57 49 GearCond.code:
BDEPTH: 57 49 Validity code:
Towing dir: 240ø Wire out: 180 m Speed: 30 kn*10

Sorted: Kg Total catch: 36.46 CATCH/HOUR: 136.73

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagrus caeruleostictus	68.44	56	50.05	5755
Lethrinus atlanticus	10.65	38	7.79	5754
Dactylopterus volitans	7.09	34	5.19	5757
Sepia officinalis hierredda	6.79	15	4.97	
Alloteuthis africana	6.34	446	4.64	
Psettodes belcheri	6.34	8	4.64	
Pagellus bellottii	4.80	53	3.51	5756
Balistes punctatus	3.94	4	2.88	
Acanthostrascion guineensis	2.96	15	2.16	
Fistularia petimba	2.74	26	2.00	
Rypticus saponaceus	2.44	19	1.78	
Raja miraletus	2.33	4	1.70	
Scorpaena normani	2.21	4	1.62	
Aulostomus strigosus	2.18	8	1.59	
Antennarius occidentalis	2.10	4	1.54	
Stephanolepis hispidus	2.10	15	1.54	
Chilomycterus spinosus mauret.	0.98	8	0.72	
Lycodontis marei	0.86	8	0.63	
Diodon hystrix	0.71	11	0.52	
Monolene microstoma	0.56	4	0.41	
Chaetodon robustus	0.19	4	0.14	
Total	136.75		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1353

DATE: 3/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 9
start stop duration Long E 628
TIME :17:49:24 18:02:24 13 (min) Purpose code: 3
LOG :5507.27 5507.92 0.65 Area code : 8
FDEPTH: 73 69 GearCond.code:
BDEPTH: 73 69 Validity code:
Towing dir: 334ø Wire out: 200 m Speed: 30 kn*10

Sorted: Kg Total catch: 52.53 CATCH/HOUR: 242.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selar crumenophthalmus	96.69	300	39.88	5758
Pagellus bellottii	44.77	582	18.47	5760
Lutjanus fulgens	21.32	42	8.79	5761
Pseudupeneus prayensis	19.98	475	8.24	5759
Pagrus caeruleostictus	16.94	23	6.99	5763
Dactylopterus volitans	13.02	69	5.37	5765
Brotula barbata	9.83	14	4.05	
Uraspis secunda	6.09	9	2.51	5762
Pomadasys incisus	5.40	37	2.23	5764
Torpedo torpedo	1.57	5	0.65	
Chilomycterus spinosus mauret.	1.57	9	0.65	
Citharus linguatula	1.02	14	0.42	
Sepia officinalis hierredda	0.92	28	0.38	
Fistularia petimba	0.88	5	0.36	
Lepidotrigla carolae	0.74	5	0.31	
Boops boops	0.69	46	0.28	
Decapterus punctatus	0.60	51	0.25	
Syacium micrurum	0.18	55	0.07	
Paronchelius stauchi	0.14	28	0.06	
Trachinocephalus myops	0.05	5	0.02	
Saurida brasiliensis	0.05	28	0.02	
Total	242.45		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1356
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 2
start stop duration Long E 635
TIME :08:20:15 08:21:07 29 (min) Purpose code: 3
LOG :5580.44 5581.95 1.50 Area code : 8
FDEPTH: 66 75 GearCond.code:
BDEPTH: 66 75 Validity code:
Towing dir: 217ø Wire out: 190 m Speed: 31 kn*10

Sorted: Kg Total catch: 134.66 CATCH/HOUR: 278.61

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	126.41	437	45.37	5773
Pagellus bellottii	75.83	794	27.22	5783
Dactylopterus volitans	14.07	81	5.05	5782
Dentex macrophthalmus	12.83	6	4.61	5779
Pagrus caeruleostictus	9.83	14	3.53	5781
Sphyraena guachancho	7.37	25	2.65	
Alloteuthis africana	5.07	3999	1.82	
Dentex maroccanus	2.77	2	0.99	5780
Fistularia petimba	2.77	8	0.99	
Brachydeuterus auritus Juv.	2.59	780	0.93	5778
Sepia officinalis hierredda	2.48	17	0.89	
Seriola dumerili	1.99	4	0.71	5775
Dentex angolensis	1.97	6	0.71	5777
Lepidotrigla cadmani	1.90	37	0.68	
Citharus linguatula	1.49	39	0.53	
Epinephelus aeneus	1.47	2	0.53	
Selene dorsalis	1.45	8	0.52	5774
Brotula barbata	1.39	8	0.50	5785
Lutjanus fulgens	1.24	2	0.45	5776
Pseudupeneus prayensis	1.24	10	0.45	5784
Citharichthys stampflii	0.79	8	0.28	
Torpedo nobiliana	0.54	2	0.19	
Torpedo torpedo	0.46	4	0.17	
Chilomycterus spinosus mauret.	0.31	4	0.11	
Selar crumenophthalmus	0.17	2	0.06	
Saurida brasiliensis	0.14	43	0.05	
Priacanthus arenatus	0.06	4	0.02	
Total	278.63		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1354
DATE: 3/ 7/06 GEAR TYPE: BT No: 5 POSITION:Lat N 7
start stop duration Long E 628
TIME :21:40:12 23:20:05 30 (min) Purpose code: 1
LOG :5530.42 5532.07 1.65 Area code : 8
FDEPTH: 0 0 GearCond.code:
BDEPTH: 78 69 Validity code:
Towing dir: 149ø Wire out: 130 m Speed: 40 kn*10

Sorted: Kg Total catch: 5.07 CATCH/HOUR: 10.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Caranx crysos	5.54	2	54.64	
Sardinella maderensis	1.86	246	18.34	
Promethichthys prometheus	1.20	1752	11.83	
Illex coindetii	0.78	22	7.69	
Ariomma bondi	0.74	4	7.30	
Trichiurus lepturus	0.02	2	0.20	
Total	10.14		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1357
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 4
start stop duration Long E 639
TIME :10:36:44 10:58:33 22 (min) Purpose code: 3
LOG :5590.78 5591.86 1.07 Area code : 8
FDEPTH: 53 58 GearCond.code:
BDEPTH: 53 58 Validity code:
Towing dir: 250ø Wire out: 180 m Speed: 30 kn*10

Sorted: Kg Total catch: 167.97 CATCH/HOUR: 458.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	250.09	1585	54.59	5788
Pagellus bellottii	65.18	453	14.23	
Dentex macrophthalmus	63.95	55	13.96	5786
Pagrus caeruleostictus	24.00	44	5.24	5787
Sepia officinalis hierredda	11.48	33	2.51	
Chilomycterus spinosus mauret.	7.88	71	1.72	
Epinephelus aeneus	6.82	5	1.49	5790
Citharus linguatula	4.94	112	1.08	
Pseudupeneus prayensis	4.12	79	0.90	
Lutjanus fulgens	3.68	5	0.80	5789
Psettodes belcheri	2.62	3	0.57	
Torpedo marmorata	2.54	3	0.55	
Seriola dumerili	2.26	5	0.49	
Fistularia petimba	2.21	5	0.48	
Citharichthys stampflii	1.55	44	0.34	
Scorpaena scrofa	1.23	3	0.27	
Octopus vulgaris	1.17	3	0.26	
Grammoplites gruveli	0.71	11	0.15	
Uraspis secunda	0.68	3	0.15	
Sphoeroides marmoratus	0.25	8	0.05	
Decapterus punctatus	0.19	5	0.04	
Microchirus frechkopi	0.16	3	0.03	
Penaeus notialis	0.16	5	0.03	
Syacium micrurum	0.11	16	0.02	
Cephalopholis nigri	0.08	3	0.02	
Starfish	0.03	3	0.01	
Total	458.09		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1355
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 6
start stop duration Long E 630
TIME :05:00:01 05:01:26 15 (min) Purpose code: 3
LOG :5561.89 5562.64 0.74 Area code : 8
FDEPTH: 44 51 GearCond.code:
BDEPTH: 44 51 Validity code:
Towing dir: 311ø Wire out: 120 m Speed: 31 kn*10

Sorted: Kg Total catch: 86.57 CATCH/HOUR: 346.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	130.60	904	37.72	5769
Pagellus bellottii	112.60	956	32.52	5772
Lutjanus fulgens	39.20	4	11.32	
Balistes capriscus	15.52	36	4.48	5766
Pagrus caeruleostictus	12.32	68	3.56	5771
Selene dorsalis	12.08	20	3.49	5770
Caranx senegallus	10.32	12	2.98	5768
Seriola dumerili	3.00	16	0.87	5767
Selar crumenophthalmus	2.88	8	0.83	
Alloteuthis africana	2.32	928	0.67	
Psettodes belcheri	2.32	4	0.67	
Pseudupeneus prayensis	1.76	20	0.51	
Uraspis secunda	1.36	4	0.39	
Total	346.28		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1358
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 8
start stop duration Long E 641
TIME :12:27:20 12:30:48 3 (min) Purpose code: 3
LOG :5600.26 5600.42 0.15 Area code : 8
FDEPTH: 54 54 GearCond.code:
BDEPTH: 54 54 Validity code: 4
Towing dir: 215ø Wire out: m Speed: kn*10

Sorted: Kg Total catch: 8.31 CATCH/HOUR: 166.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	74.20	440	44.65	5792
Dentex macrophthalmus	58.60	40	35.26	5791
Pagrus caeruleostictus	12.40	20	7.46	
Pagellus bellottii	9.80	40	5.90	
Pseudupeneus prayensis	5.20	140	3.13	
Chilomycterus spinosus mauret.	3.00	20	1.81	
Torpedo marmorata	2.20	20	1.32	
Citharus linguatula	0.80	60	0.48	
Total	166.20		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1359
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 10
start stop duration Long E 643
TIME :13:29:08 13:59:09 30 (min) Purpose code: 3
LOG :5606.02 5607.58 1.55 Area code : 8
FDEPTH: 70 69 GearCond.code:
BDEPTH: 70 69 Validity code:
Towing dir: 220ø Wire out: 202 m Speed: 30 kn*10

Sorted: Kg Total catch: 119.22 CATCH/HOUR: 238.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	121.30	1274	50.87	
Pagrus caeruleostictus	26.10	34	10.95	
Dentex congoensis	14.48	334	6.07	5793
Dactylopterus volitans	13.80	66	5.79	
Decapterus punctatus	12.96	218	5.44	5795
Pseudupeneus prayensis	10.36	140	4.34	5794
Dentex macrophthalmus	7.22	4	3.03	
Fistularia petimba	6.78	14	2.84	
Sepia officinalis hierredda	6.10	66	2.56	
Torpedo nobiliana	2.28	4	0.96	
Lepidotrigla cadmani	2.24	32	0.94	
Alloteuthis africana	2.24	1286	0.94	
Dentex angolensis	2.10	6	0.88	
Zeus faber	1.90	4	0.80	
Chilomycterus spinosus mauret.	1.86	12	0.78	
Sepiellea ornata juv.	1.64	1640	0.69	
Lutjanus fulgens	1.42	2	0.60	
Lepidotrigla carolae	0.92	14	0.39	
Chaetodon marcellae	0.50	10	0.21	
Citharichthys stampflii	0.50	6	0.21	
Brotula barbata	0.50	6	0.21	
Torpedo torpedo	0.46	2	0.19	
Citharus linguatula	0.42	6	0.18	
Brachydeuterus auritus Juv.	0.18	36	0.08	
Dicologoglossa hexophthalma	0.06	2	0.03	
Microchirus frechkopi	0.06	2	0.03	
Saurida brasiliensis	0.02	2	0.01	
Total	238.40		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1360
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 14
start stop duration Long E 646
TIME :15:12:38 15:42:28 30 (min) Purpose code: 3
LOG :5615.51 5617.02 1.50 Area code : 8
FDEPTH: 54 52 GearCond.code:
BDEPTH: 54 52 Validity code:
Towing dir: 214ø Wire out: 161 m Speed: 30 kn*10

Sorted: 393 Kg Total catch: 629.37 CATCH/HOUR: 1258.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	1066.72	7298	84.75	5798
Pagellus bellottii	79.84	420	6.34	5797
Pagrus caeruleostictus	47.20	106	3.75	5796
Sepia officinalis hierredda	22.56	100	1.79	
Pseudupeneus prayensis	15.20	202	1.21	5799
Chilomycterus spinosus mauret.	9.54	86	0.76	
Citharichthys stampflii	6.36	70	0.51	
Lutjanus fulgens	2.88	6	0.23	
Lagocephalus laevigatus	2.52	6	0.20	
Acanthostrascion guineensis	1.82	12	0.14	
Sphyraena guachancho	1.64	6	0.13	
Rypticus saponaceus	0.96	6	0.08	
Fistularia petimba	0.86	4	0.07	
Seriola dumerili	0.64	4	0.05	
Total	1258.74		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1361
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 15
start stop duration Long E 647
TIME :16:44:30 17:10:48 26 (min) Purpose code: 3
LOG :5622.69 5623.97 1.28 Area code : 8
FDEPTH: 73 80 GearCond.code:
BDEPTH: 73 80 Validity code:
Towing dir: 192ø Wire out: 202 m Speed: 30 kn*10

Sorted: 60 Kg Total catch: 121.12 CATCH/HOUR: 279.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	135.92	877	48.63	5800
Dactylopterus volitans	103.15	531	36.90	
Lutjanus fulgens	18.69	28	6.69	5801
Sea cucumbers	8.58	9	3.07	
Sepia officinalis hierredda	5.49	106	1.96	
Chilomycterus spinosus mauret.	4.85	37	1.74	
Citharichthys stampflii	2.08	14	0.74	
Trachinus radiatus	0.74	2	0.26	
Total	279.50		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1362
DATE: 4/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 16
start stop duration Long E 646
TIME :17:59:36 18:15:26 16 (min) Purpose code: 3
LOG :5629.55 5630.35 0.80 Area code : 8
FDEPTH: 31 34 GearCond.code:
BDEPTH: 31 34 Validity code:
Towing dir: 188ø Wire out: 100 m Speed: 31 kn*10

Sorted: Kg Total catch: 145.05 CATCH/HOUR: 543.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lutjanus fulgens	294.56	833	54.15	5808
Dactylopterus volitans	41.63	229	7.65	5806
Albula vulpes	25.39	41	4.67	5810
Sepia officinalis hierredda	23.48	56	4.32	
Pagellus bellottii	21.79	64	4.01	5802
Acanthostrascion guineensis	20.85	128	3.83	
Chaetodipterus goreensis	19.39	38	3.56	5805
Galeoides decadactylus	18.49	56	3.40	5809
Lethrinus atlanticus	16.46	38	3.03	5804
Sphyraena guachancho	14.70	68	2.70	5803
Fistularia petimba	12.53	30	2.30	
Boops boops	9.34	53	1.72	5811
Torpedo torpedo	5.70	11	1.05	
Dicologoglossa cuneata	5.06	38	0.93	
Lagocephalus laevigatus	3.79	4	0.70	
Scomberomorus tritor	3.53	4	0.65	
Pomadasys incisus	3.41	4	0.63	
Myrichthys perdalis	2.44	19	0.45	
Torpedo nobiliana	2.25	11	0.41	
Citharichthys stampflii	1.95	19	0.36	
Sardinella aurita	1.91	71	0.35	5807
Octopus vulgaris	1.80	4	0.33	
Balistes punctatus	1.35	4	0.25	
Chilomycterus spinosus mauret.	0.71	8	0.13	
Pseudupeneus prayensis	0.68	26	0.13	
Chaetodon marcellae	0.64	8	0.12	
Trachinocephalus myops	0.56	15	0.10	
Dicologoglossa hexophthalma	0.49	8	0.09	
Decapterus punctatus	0.30	4	0.06	
Bathus podas africanus	0.04	8	0.01	
Total	555.22		102.09	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1363
DATE: 5/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 52
start stop duration Long E 859
TIME :12:52:21 13:22:13 30 (min) Purpose code: 3
LOG :5782.97 5784.54 1.58 Area code : 8
FDEPTH: 99 95 GearCond.code:
BDEPTH: 99 95 Validity code:
Towing dir: 360ø Wire out: 292 m Speed: 30 kn*10

Sorted: Kg Total catch: 142.93 CATCH/HOUR: 285.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	81.24	3574	28.42	5815
Ariomma bondi	69.24	4454	24.22	5813
Sardinella aurita	57.00	1034	19.94	5812
Decapterus punctatus	48.24	1070	16.88	5814
Boops boops	13.24	324	4.63	
Priacanthus arenatus	8.04	110	2.81	
Sepia officinalis hierredda	2.90	50	1.01	
Lepidotrigla cadmani	2.64	80	0.92	
Raja miraletus	1.00	4	0.35	
Lepidotrigla carolae	0.84	40	0.29	
Sphoeroides spengleri	0.70	20	0.24	
Citharus linguatula	0.34	14	0.12	
Illex coindetii	0.30	24	0.10	
Antigonia capros	0.14	10	0.05	
Total	285.86		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1364
DATE: 5/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 53
start stop duration Long E 903
TIME :14:20:54 14:50:47 30 (min) Purpose code: 3
LOG :5789.71 5791.25 1.53 Area code : 8
FDEPTH: 66 63 GearCond.code:
BDEPTH: 66 63 Validity code:
Towing dir: 170ø Wire out: 202 m Speed: 30 kn*10

Sorted: 51 Kg Total catch: 129.69 CATCH/HOUR: 259.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	212.00	5300	81.73	5816
Priacanthus arenatus	19.10	320	7.36	
Pseudupeneus prayensis	8.20	110	3.16	5818
Balistes punctatus	5.54	10	2.14	
Sepia officinalis hierredda	2.74	44	1.06	
Torpedo nobiliana	2.34	34	0.90	
Epinephelus aeneus	2.20	2	0.85	
Sardinella aurita	1.94	74	0.75	5817
Lepidotrigla cadmani	1.50	50	0.58	
Raja miraletus	1.10	10	0.42	
Lepidotrigla carolae	0.64	24	0.25	
Chaetodon hoefleri	0.50	14	0.19	
Penaeus notialis	0.34	4	0.13	
Fistularia petimba	0.34	4	0.13	
Dactylopterus volitans	0.34	4	0.13	
Ariomma bondi	0.30	24	0.12	
Arnoglossus imperialis	0.14	30	0.05	
Citharus linguatula	0.04	10	0.02	
Sphoeroides spengleri	0.04	4	0.02	
Trachinus armatus	0.04	4	0.02	
Total	259.38		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1365
DATE: 5/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 53
start stop duration Long E 909
TIME :15:52:30 16:22:15 30 (min) Purpose code: 3
LOG :5797.89 5799.47 1.57 Area code : 8
FDEPTH: 45 45 GearCond.code:
BDEPTH: 45 45 Validity code:
Towing dir: 180ø Wire out: 151 m Speed: 30 kn*10

Sorted: Kg Total catch: 26.33 CATCH/HOUR: 52.66

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pagrus caeruleostictus	16.70	46	31.71	5820
Pagellus bellottii	6.42	72	12.19	5822
Brachydeuterus auritus	5.74	104	10.90	5819
Raja miraletus	3.20	12	6.08	
Selene dorsalis	2.94	28	5.58	5821
Balistes capriscus	2.78	4	5.28	
Penaeus notialis	2.64	138	5.01	
Alloteuthis africana	2.36	1086	4.48	
Torpedo torpedo	1.64	4	3.11	
Priacanthus arenatus	1.56	24	2.96	
Pseudupeneus prayensis	1.42	12	2.70	5823
J E L L Y F I S H	1.38	22	2.62	
Sepia officinalis hierredda	1.10	18	2.09	
Decapterus punctatus	0.68	22	1.29	5824
Sphyraena guachancho	0.46	2	0.87	
Grammoplites gruveli	0.40	22	0.76	
Dactylopterus volitans	0.30	2	0.57	
Serranus accraensis	0.28	10	0.53	
Sphoeroides marmoratus	0.16	6	0.30	
Selar crumenophthalmus	0.16	8	0.30	
C R A B S	0.08	10	0.15	
Saurida brasiliensis	0.08	20	0.15	
Calappa sp.	0.06	4	0.11	
Syacium micrurum	0.06	12	0.11	
Citharichthys stampflii	0.04	2	0.08	
Zeus faber	0.02	2	0.04	
Total	52.66		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1366
DATE: 5/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 51
start stop duration Long E 913
TIME :17:41:40 18:11:33 30 (min) Purpose code: 3
LOG :5806.27 5807.70 1.43 Area code : 8
FDEPTH: 21 24 GearCond.code:
BDEPTH: 21 24 Validity code:
Towing dir: 190ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 139.59 CATCH/HOUR: 279.18

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Caranx senegallus	153.60	426	55.02	5825
Sphyraena barracuda	17.10	2	6.13	
Chaetodipterus goreensis	*12.94*	*50*	*4.64*	*5829*
Caranx hippos	12.30	42	4.41	5833
Brachydeuterus auritus	11.74	204	4.21	5832
Eucinostomus melanopterus	10.30	188	3.69	5835
Alectis alexandrinus	9.92	34	3.55	5834
Selar crumenophthalmus	6.34	38	2.27	5837
Pomadasys incisus	5.28	18	1.89	5828
Caranx crysos	4.88	12	1.75	5838
Sphyraena guachancho	4.14	22	1.48	5830
Sepia officinalis hierredda	2.76	10	0.99	
Raja miraletus	2.76	10	0.99	
Psettodes belcheri	2.70	12	0.97	
Selene dorsalis	2.52	20	0.90	5831
Sardinella aurita	2.36	24	0.85	5836
Lagocephalus laevigatus	2.10	6	0.75	
Penaeus kerathurus	1.96	74	0.70	
Rhinobatos rhinobatos	1.88	4	0.67	
Galeoides decadactylus	1.80	14	0.64	5826
Citharichthys stampflii	1.72	16	0.62	
Penaeus notialis	1.32	54	0.47	
Decapterus punctatus	1.18	18	0.42	5827
Conger conger	0.90	22	0.32	
Uranoscopus cadenati	0.76	18	0.27	
Scomberomorus tritor	0.64	2	0.23	
Exocoetus volitans	0.56	2	0.20	
Pagrus caeruleostictus	0.54	4	0.19	
Sphoeroides marmoratus	0.46	6	0.16	
Lutjanus fulgens	0.34	2	0.12	
Pseudupeneus prayensis	0.30	2	0.11	
Torpedo torpedo	0.28	4	0.10	
Drepane africana	0.22	2	0.08	
Lethrinus atlanticus	0.22	2	0.08	
Grammoplites gruveli	0.10	4	0.04	
Brotula barbata	0.08	4	0.03	
Trachinocephalus myops	0.02	2	0.01	
Total	279.02		99.95	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1367
DATE: 5/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 47
start stop duration Long E 858
TIME :21:40:33 22:11:04 31 (min) Purpose code: 3
LOG :5832.64 5834.19 1.54 Area code : 8
FDEPTH: 234 223 GearCond.code:
BDEPTH: 234 223 Validity code:
Towing dir: 350ø Wire out: 650 m Speed: 30 kn*10

Sorted: Kg Total catch: 96.04 CATCH/HOUR: 185.88

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Illex coindetii	67.74	844	36.44	
Synagrops microlepis	30.19	166	16.24	
Pontinus kuhlii	19.94	910	10.73	
Lepidotrigla cadmani	17.69	294	9.52	
Peristedion cataphractum	7.59	225	4.08	
Yarrella blackfordi	7.24	1777	3.89	
Parapenaeus longirostris	6.43	925	3.46	
Aulopus cadenati	6.15	50	3.31	
Dentex angolensis	4.06	23	2.18	5839
Brotula barbata	3.75	12	2.02	
Pterothrissus belloci	3.64	27	1.96	
Lophius vaillanti	2.25	15	1.21	
Uranoscopus albesca	2.13	19	1.15	
Malacocephalus occidentalis	1.28	27	0.69	
Bembrops greyi	1.08	12	0.58	
Hypoclydonia bella	0.85	12	0.46	
Plesiopenaeus edwardsianus	0.74	39	0.40	
Citharus linguatula	0.74	35	0.40	
Halosaurus ovenii	0.74	39	0.40	
Saurida brasiliensis	0.66	163	0.36	
Promethichthys prometheus	0.50	8	0.27	
Cynoponticus ferox	0.23	4	0.12	
Solenocera africana	0.19	4	0.10	
Parexocoetus brachypterus	0.04	4	0.02	
Antigonia capros	0.04	8	0.02	
Total	185.89		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1368
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 46
start stop duration Long E 857
TIME :00:11:48 00:42:57 31 (min) Purpose code: 3
LOG :5843.41 5845.06 1.65 Area code : 8
FDEPTH: 383 396 GearCond.code:
BDEPTH: 383 396 Validity code:
Towing dir: 350ø Wire out:1120 m Speed: 30 kn*10

Sorted: Kg Total catch: 125.21 CATCH/HOUR: 242.34

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	40.76	888	16.82	
Trichiurus lepturus	31.24	1150	12.89	
Centrophorus squamosus	27.21	6	11.23	
Illex coindetii	18.70	168	7.72	
Squilla aculeata calmani	*17.07*	*2415*	*7.04*	
Lamprogrammus exutus	16.72	203	6.90	
Hymenocephalus italicus	15.74	1388	6.50	
Parasudis fraser-brunneri	13.76	221	5.68	
Lophius atlanticus	11.21	64	4.63	
Chaceon maritae	8.07	145	3.33	
Epigonus telescopus	6.21	70	2.56	
Gadella imberbis	*6.10*	*250*	*2.52*	
Cyttus hololepis *	5.34	116	2.20	
Solenocera africana	4.99	308	2.06	
Peristedion cataphractum	3.77	122	1.56	
Plesiopenaeus edwardsianus	3.08	87	1.27	
Plesionika martia	2.44	93	1.01	
Bembrops greyi	2.44	99	1.01	
Starfish	*2.15*	*12*	*0.89*	
Dibranchus atlanticus	1.51	215	0.62	
Coelorinchus coelorhincus	1.45	35	0.60	
Photichthys argenteus	0.93	35	0.38	
'Spider crab'	0.87	238	0.36	
Pontinus kuhlii	0.58	23	0.24	
Total	242.34		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1369
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 36
start stop duration Long E 858
TIME :05:34:49 06:04:33 30 (min) Purpose code: 3
LOG :5869.16 5870.60 1.43 Area code : 8
FDEPTH: 115 112 GearCond.code:
BDEPTH: 115 112 Validity code:
Towing dir: 190ø Wire out: 310 m Speed: 30 kn*10

Sorted: 62 Kg Total catch: 227.49 CATCH/HOUR: 454.98

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Dentex congoensis	228.00	5060	50.11	5845
Ariomma bondi	70.00	4780	15.39	5840
Sardinella aurita	43.74	804	9.61	5842
Decapterus punctatus	30.00	874	6.59	5841
Dentex angolensis	15.04	90	3.31	5844
Erythrocles monodi	12.46	104	2.74	
Squatina oculata	12.04	4	2.65	
Spicara alta	9.66	112	2.12	5843
Priacanthus arenatus	9.30	230	2.04	
Zeus faber	5.90	2	1.30	
Scorpaena maderensis *	4.90	6	1.08	
Illex coindetii	4.20	34	0.92	
Lepidotrigla cadmani	3.14	76	0.69	
Umbrina canariensis	2.30	6	0.51	
Raja miraletus	1.88	6	0.41	
Anthias anthias	1.18	42	0.26	
Lophiodes kempi	0.90	6	0.20	
Chaetodon marcellae	0.34	6	0.07	
Total	454.98		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1370
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 35
start stop duration Long E 901
TIME :06:56:37 07:26:17 30 (min) Purpose code: 3
LOG :5874.71 5876.20 1.48 Area code : 8
FDEPTH: 79 72 GearCond.code:
BDEPTH: 79 72 Validity code:
Towing dir: 10ø Wire out: 240 m Speed: 30 kn*10

Sorted: Kg Total catch: 159.88 CATCH/HOUR: 319.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	126.36	4406	39.52	5846
Boops boops	35.32	648	11.05	
Lutjanus fulgens	34.82	76	10.89	5847
Epinephelus aeneus	31.20	12	9.76	
Pagrus caeruleostictus	19.16	54	5.99	5849
Pagellus bellottii	16.74	206	5.24	5848
Dentex maroccanus	11.24	16	3.52	5850
Alloteuthis africana	7.46	438	2.33	
Decapterus punctatus	7.40	276	2.31	
Sepia officinalis hierredda	4.42	152	1.38	
Umbrina canariensis	3.68	10	1.15	
Chromis cadenati	3.02	70	0.94	
Lepidotrigla cadmani	2.80	102	0.88	
Sardinella aurita	2.70	276	0.84	
Squatina oculata	2.60	6	0.81	
Dentex angolensis	2.26	26	0.71	
Priacanthus arenatus	1.78	22	0.56	
Dactylopterus volitans	1.62	6	0.51	
Pseudupeneus prayensis	1.56	16	0.49	
Raja miraletus	1.08	6	0.34	
Sphoeroides marmoratus	0.64	22	0.20	
Chaetodon marcellae	0.64	26	0.20	
Brotula barbata	0.54	6	0.17	
Syacium micrurum	0.26	38	0.08	
Citharus linguatula	0.20	22	0.06	
Serranus africana	0.16	6	0.05	
Grammoplites gruveli	0.10	6	0.03	
Total	319.76		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1371
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 36
start stop duration Long E 907
TIME :08:31:29 09:01:56 30 (min) Purpose code: 3
LOG :5883.53 5884.99 1.46 Area code : 8
FDEPTH: 43 43 GearCond.code:
BDEPTH: 43 43 Validity code:
Towing dir: 180ø Wire out: 140 m Speed: 30 kn*10

Sorted: Kg Total catch: 340.40 CATCH/HOUR: 680.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	598.50	5610	87.91	
Pagellus bellottii	24.60	370	3.61	5851
Balistes punctatus	20.80	20	3.06	
Brachydeuterus auritus	12.50	270	1.84	5852
Caranx crysos	8.60	20	1.26	
Selar crumenophthalmus	7.60	170	1.12	
Decapterus punctatus	3.10	110	0.46	
Priacanthus arenatus	1.50	20	0.22	
Pseudupeneus prayensis	1.50	20	0.22	
Sepia officinalis hierredda	0.90	10	0.13	
Raja miraletus	0.90	10	0.13	
Fistularia petimba	0.30	10	0.04	
Total	680.80		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1372
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 35
start stop duration Long E 913
TIME :10:07:48 10:29:14 21 (min) Purpose code: 3
LOG :5892.60 5893.71 1.12 Area code : 8
FDEPTH: 25 25 GearCond.code:
BDEPTH: 25 25 Validity code:
Towing dir: 360ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 23.40 CATCH/HOUR: 66.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphyraena guachancho	12.46	51	18.64	5854
Sepia officinalis hierredda	11.91	34	17.81	
Dentex macrophthalmus	11.40	43	17.05	5853
Epinephelus aeneus	7.51	6	11.23	
Citharus linguatula	5.83	80	8.72	
Balistes punctatus	5.60	20	8.38	
Scomberomorus tritor	4.17	6	6.24	
Selene dorsalis	2.74	6	4.10	
Pomadasys incisus	1.09	3	1.63	
Torpedo nobiliana	1.00	3	1.50	
Caranx crysos	0.97	3	1.45	
Aluterus heudelotii	0.66	3	0.99	
Chilomycterus spinosus mauret.	0.54	6	0.81	
Torpedo torpedo	0.46	17	0.69	
Pseudupeneus prayensis	0.26	3	0.39	
Dactylopterus volitans	0.26	3	0.39	
Total	66.86		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1373
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 22
start stop duration Long E 914
TIME :12:38:57 13:08:43 30 (min) Purpose code: 3
LOG :5909.92 5911.46 1.53 Area code : 8
FDEPTH: 19 23 GearCond.code:
BDEPTH: 19 23 Validity code:
Towing dir: 175ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 113.22 CATCH/HOUR: 226.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphyraena guachancho	55.40	180	24.47	
Brachydeuterus auritus	45.20	904	19.96	
Ilisha africana	25.52	572	11.27	
Scomberomorus tritor	25.40	44	11.22	5857
Sphoeroides pachgaster	12.64	12	5.58	
Galeoides decadactylus	8.44	128	3.73	
Selene dorsalis	7.72	96	3.41	
Dentex macrophthalmus	6.96	40	3.07	5858
Portunus validus	6.76	4	2.99	
Torpedo torpedo	6.12	12	2.70	
Caranx hippos	4.36	20	1.93	5855
Lagocephalus laevigatus	3.84	12	1.70	
Acanthostracion quadricornis	3.44	24	1.52	
Pseudupeneus prayensis	2.80	40	1.24	5859
Sepia officinalis hierredda	2.72	8	1.20	
J E L L Y F I S H	2.28	4	1.01	
Chilomycterus spinosus mauret.	1.60	4	0.71	
Citharus linguatula	1.32	24	0.58	
Sardinella maderensis	1.00	12	0.44	5856
Fistularia tabacaria	0.72	4	0.32	
Decapterus punctatus	0.60	8	0.26	
Aluterus heudelotii	0.56	16	0.25	
Epinephelus aeneus	0.40	4	0.18	
Psettodes belcheri	0.28	4	0.12	
Penaeus kerathurus	0.16	8	0.07	
Chaetodipterus goreensis	0.12	4	0.05	
Antennarius pardalis	0.04	4	0.02	
Penaeus notialis	0.04	4	0.02	
Total	226.44		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1374
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 21
start stop duration Long E 908
TIME :15:10:31 15:40:22 30 (min) Purpose code: 3
LOG :5920.48 5922.05 1.57 Area code : 8
FDEPTH: 45 44 GearCond.code:
BDEPTH: 45 44 Validity code:
Towing dir: 360ø Wire out: 151 m Speed: 30 kn*10

Sorted: Kg Total catch: 32.00 CATCH/HOUR: 64.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	31.00	420	48.44	5860
Brachydeuterus auritus	6.12	218	9.56	
Dentex macrophthalmus	6.02	32	9.41	
Pseudupeneus prayensis	3.44	42	5.38	
Priacanthus arenatus	3.02	16	4.72	
Decapterus punctatus	2.74	40	4.28	
Epinephelus aeneus	1.78	4	2.78	
Alloteuthis africana	1.36	680	2.13	
Penaeus notialis	1.34	52	2.09	
Sphyraena guachancho	1.28	6	2.00	
Sepia officinalis hierredda	1.04	40	1.63	
Grammoplites gruveli	0.90	74	1.41	
Citharus linguatula	0.78	50	1.22	
Ilisha africana	0.62	12	0.97	
Saurida brasiliensis	0.52	116	0.81	
J E L L Y F I S H	0.48	44	0.75	
Raja miraletus	0.44	2	0.69	
Serranus accraensis	0.40	26	0.63	
Ariomma bondi	0.18	2	0.28	
Selar crumenophthalmus	0.18	2	0.28	
'Spider crab'	0.14	12	0.22	
Lepidotrigla cadmani	0.14	40	0.22	
Sphoeroides marmoratus	0.06	6	0.09	
Stephanolepis hispidus	0.02	2	0.03	
Hippocampus punctatus	0.02	2	0.03	
Total	64.02		100.05	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1375
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 23
start stop duration Long E 859
TIME :16:52:10 17:22:50 31 (min) Purpose code: 3
LOG :5931.86 5933.48 1.63 Area code : 8
FDEPTH: 67 70 GearCond.code:
BDEPTH: 67 70 Validity code:
Towing dir: 180ø Wire out: 202 m Speed: 30 kn*10

Sorted: Kg Total catch: 71.85 CATCH/HOUR: 139.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	43.84	1241	31.53	5866
Selar crumenophthalmus	26.52	677	19.07	5865
Decapterus punctatus	12.93	561	9.30	
Ariomma bondi	12.23	408	8.79	
Priacanthus arenatus	8.34	184	6.00	
Dentex angolensis	7.72	101	5.55	5863
Pagellus bellottii	7.39	141	5.31	5864
Pseudupeneus prayensis	3.64	43	2.62	5861
Alloteuthis africana	3.00	1049	2.16	
Sardinella aurita	2.63	166	1.89	5862
Boops boops	2.17	50	1.56	
Lepidotrigla cadmani	1.84	72	1.32	
Chilomycterus spinosus mauret.	1.34	4	0.96	
Raja miraletus	1.24	6	0.89	
Squatina oculata	1.06	2	0.76	
Sepia officinalis hierredda	0.89	17	0.64	
Illex coindetii	0.56	4	0.40	
J E L L Y F I S H	0.48	12	0.35	
Epinephelus aeneus	0.37	2	0.27	
Pagrus caeruleostictus	0.25	2	0.18	
Dactylopterus volitans	0.19	4	0.14	
Sphoeroides marmoratus	0.14	6	0.10	
Arnoglossus imperialis	0.10	10	0.07	
Stephanolepis hispidus	0.08	2	0.06	
Serranus accraensis	0.04	2	0.03	
Syacium micrurum	0.02	6	0.01	
E C H I N O D E R M A T A	0.02	2	0.01	
Grammoplites gruveli	0.02	2	0.01	
Antennarius occidentalis	0.02	2	0.01	
Total	139.07		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1376
DATE: 6/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 20
start stop duration Long E 852
TIME :20:25:02 20:55:16 30 (min) Purpose code: 3
LOG :5945.02 5946.50 1.48 Area code : 8
FDEPTH: 220 239 GearCond.code:
BDEPTH: 220 239 Validity code:
Towing dir: 350ø Wire out: 500 m Speed: 30 kn*10

Sorted: Kg Total catch: 133.39 CATCH/HOUR: 266.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sea cucumbers	53.34	132	19.99	
Squatina oculata	46.00	14	17.24	
Bembrops heterurus	25.62	314	9.60	
Parapenaeus longirostris	22.18	4122	8.31	
Peristedion cataphractum	20.92	496	7.84	
Parasudis fraser-bruenneri	18.96	378	7.11	
MYCTOPHIDAE	15.26	3660	5.72	
Lepidotrigla cadmani	12.74	266	4.78	
Merluccius polli	7.34	98	2.75	
Citharus linguatula	6.72	174	2.52	
Dentex angolensis	6.44	42	2.41	
Synagrops microlepis	5.94	322	2.23	
Setarches guentheri	5.88	244	2.20	
Squalus megalops	3.80	4	1.42	
Hypoclydonia bella	3.70	126	1.39	
Lophiodes kempi	2.02	14	0.76	
Bembrops greyi	1.54	48	0.58	
Brotula barbata	1.40	6	0.52	
Gadella imberbis	1.40	34	0.52	
Uranoscopus albesca	1.12	14	0.42	
Illex coindetii	0.90	6	0.34	
Pterothrissus belloci	0.84	6	0.31	
Lepidotrigla carolae	0.70	6	0.26	
Antigonia capros	0.70	70	0.26	
Hymenocephalus italicus	0.42	14	0.16	
Scyliorhinus canicula	0.42	6	0.16	
Solenocera africana	0.20	14	0.07	
Cynoponticus ferox	0.14	14	0.05	
Monolene microstoma	0.14	28	0.05	
Total	266.78		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1377
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 3
start stop duration Long E 849
TIME :02:21:49 02:51:34 30 (min) Purpose code: 3
LOG :5988.64 5990.17 1.52 Area code : 8
FDEPTH: 436 445 GearCond.code:
BDEPTH: 436 445 Validity code:
Towing dir: 350ø Wire out:1222 m Speed: 30 kn*10

Sorted: 25 Kg Total catch: 101.78 CATCH/HOUR: 203.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	44.80	16696	22.01	
Lophiodes kempi	30.32	280	14.89	
Stereomastis sp.	21.12	1056	10.38	
Trichiurus lepturus	17.84	592	8.76	
Epigonus telescopus	17.84	600	8.76	
Malacocephalus laevis	16.00	80	7.86	
Hymenocephalus italicus	15.60	1120	7.66	
Sea cucumbers	9.12	56	4.48	
Plesionika martia	7.56	728	3.71	
Nezumia aequalis	7.12	112	3.50	
Illex coindetii	3.76	32	1.85	
Chaceon maritae	2.64	32	1.30	
Parasudis fraser-bruenneri	2.16	40	1.06	
Peristedion cataphractum	2.00	112	0.98	
Dibranchus atlanticus	1.28	152	0.63	
Galeus polli	1.04	16	0.51	
Photichthys argenteus	0.88	40	0.43	
Gadella imberbis	0.80	32	0.39	
Synagrops microlepis	0.64	8	0.31	
Chascanopsetta lugubris	0.40	8	0.20	
Lamprogrammus exutus	0.32	24	0.16	
Solenocera africana	0.16	8	0.08	
Bembrops greyi	0.08	8	0.04	
Monolene microstoma	0.08	8	0.04	
Total	203.56		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1378
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 4
start stop duration Long E 853
TIME :05:59:55 06:31:41 32 (min) Purpose code: 3
LOG :5998.45 6000.12 1.63 Area code : 8
FDEPTH: 104 122 GearCond.code:
BDEPTH: 104 122 Validity code:
Towing dir: 340ø Wire out: 280 m Speed: 31 kn*10

Sorted: 62 Kg Total catch: 967.96 CATCH/HOUR: 1814.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	998.29	32666	55.00	5868
Decapterus punctatus	305.16	9154	16.81	5867
Sardinella aurita	271.73	14706	14.97	5870
Erythrocles monodi	63.06	523	3.47	
Spicara alta	53.76	1249	2.96	5871
Ariomma bondi	34.88	1918	1.92	5869
Scomber japonicus	27.60	144	1.52	5872
Boops boops	24.11	523	1.33	
Anthias anthias	10.46	523	0.58	
Zeus faber	8.42	28	0.46	
Sepia officinalis hierredda	5.51	116	0.30	
Illex coindetii	3.49	233	0.19	
Lepidotrigla cadmani	3.49	116	0.19	
Priacanthus arenatus	2.91	58	0.16	
Rhinobatos albomaculatus	1.50	2	0.08	
Blennius normani	0.58	28	0.03	
Total	1814.95		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1379
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 4
start stop duration Long E 900
TIME :07:51:32 08:21:27 30 (min) Purpose code: 3
LOG :6009.06 6010.64 1.58 Area code : 8
FDEPTH: 66 70 GearCond.code:
BDEPTH: 66 70 Validity code:
Towing dir: 170ø Wire out: 180 m Speed: 30 kn*10

Sorted: 33 Kg Total catch: 503.06 CATCH/HOUR: 1006.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	250.50	6900	24.90	5877
Selar crumenophthalmus	230.10	9300	22.87	5874
Decapterus punctatus	195.00	11760	19.38	5873
Sardinella aurita	159.00	16470	15.80	5876
Boops boops	78.60	2160	7.81	
Pagellus bellottii	29.10	630	2.89	5875
Priacanthus arenatus	22.50	510	2.24	
Dentex angolensis	17.10	240	1.70	5878
Ariomma bondi	6.90	150	0.69	
Pseudupeneus prayensis	5.70	90	0.57	
Scorpaena scrofa	5.10	30	0.51	
Fistularia petimba	4.80	30	0.48	
Epinephelus aeneus	1.30	2	0.13	
Raja miraletus	0.42	2	0.04	
Total	1006.12		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1380
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 6
start stop duration Long E 909
TIME :09:56:57 10:27:39 31 (min) Purpose code: 3
LOG :6021.55 6023.37 1.80 Area code : 8
FDEPTH: 44 44 GearCond.code:
BDEPTH: 44 44 Validity code:
Towing dir: 350ø Wire out: 150 m Speed: 33 kn*10

Sorted: Kg Total catch: 38.93 CATCH/HOUR: 75.35

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
J E L L Y F I S H	30.68	52	40.72	
Pagellus bellottii	18.81	246	24.96	5880
Rhizoprionodon acutus	5.23	4	6.94	
Brachydeuterus auritus	4.01	74	5.32	5882
Selene dorsalis	2.61	23	3.46	
Lagocephalus laevigatus	2.44	4	3.24	
Selar crumenophthalmus	2.30	72	3.05	5883
Fistularia petimba	2.13	12	2.83	5879
Alloteuthis africana	1.59	952	2.11	
Euthynnus alletteratus	1.35	2	1.79	
Decapterus punctatus	1.18	62	1.57	5881
Torpedo torpedo	1.10	2	1.46	
Caranx crysos	0.70	2	0.93	
Sepia officinalis hierredda	0.35	4	0.46	
Penaeus notialis	0.29	10	0.38	
Pagrus caeruleostictus	0.25	2	0.33	
Serranus accraensis	0.19	6	0.25	
Sphoeroides marmoratus	0.08	4	0.11	
Citharus linguatula	0.06	4	0.08	
Total	75.35		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1383
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 10
start stop duration Long E 903
TIME :16:18:11 16:48:15 30 (min) Purpose code: 3
LOG :6060.17 6061.75 1.58 Area code : 8
FDEPTH: 48 47 GearCond.code:
BDEPTH: 48 47 Validity code:
Towing dir: 30ø Wire out: 151 m Speed: 30 kn*10

Sorted: 34 Kg Total catch: 213.69 CATCH/HOUR: 427.38

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Decapterus punctatus	132.00	4280	30.89	5896
Sardinella aurita	119.40	6792	27.94	5897
Pagellus bellottii	53.64	1044	12.55	5895
Brachydeuterus auritus	50.40	3820	11.79	5900
Selar crumenophthalmus	11.88	420	2.78	5899
Ariomma bondi	10.92	168	2.56	5898
Sepia officinalis hierredda	8.76	60	2.05	
Balistes capriscus	6.72	10	1.57	
Lepidotrigla cadmani	4.92	204	1.15	
Pseudupeneus prayensis	4.32	108	1.01	5901
Penaeus notialis	4.08	108	0.95	
Citharichthys stampflii	3.00	24	0.70	
Epinephelus aeneus	3.00	8	0.70	
Priacanthus arenatus	2.88	24	0.67	
Dactylopterus volitans	2.64	12	0.62	
Pagrus caeruleostictus	2.52	12	0.59	
J E L L Y F I S H	2.28	36	0.53	
Fistularia petimba	1.36	4	0.32	
Portunus validus	1.08	2	0.25	
Sphyraena guachancho	0.84	4	0.20	
Raja miraletus	0.38	2	0.09	
Scomberomorus tritor	0.36	2	0.08	
Total	427.38		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1381
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat N 5
start stop duration Long E 916
TIME :11:40:28 12:05:39 25 (min) Purpose code: 3
LOG :6032.12 6033.47 1.34 Area code : 8
FDEPTH: 23 23 GearCond.code:
BDEPTH: 23 23 Validity code:
Towing dir: 190ø Wire out: 111 m Speed: 30 kn*10

Sorted: Kg Total catch: 52.29 CATCH/HOUR: 125.50

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pagrus caeruleostictus	54.00	192	43.03	5884
Epinephelus aeneus	10.68	7	8.51	
Lagocephalus laevigatus	7.99	38	6.37	
Pomadasys incisus	7.54	29	6.01	5885
Dentex barnardi	7.37	19	5.87	5890
Sepia officinalis hierredda	6.96	14	5.55	
Sphyraena guachancho	5.33	14	4.25	5887
Scomber japonicus	4.06	5	3.24	
Pagellus bellottii	3.05	70	2.43	5889
J E L L Y F I S H	2.45	7	1.95	
Pseudupeneus prayensis	2.28	12	1.82	5886
Alectis alexandrinus	2.26	10	1.80	
Lethrinus atlanticus	2.26	10	1.80	5888
Elops lacerta	2.09	5	1.67	
Brachydeuterus auritus	1.66	19	1.32	
Citharichthys stampflii	1.13	12	0.90	
Chloroscombrus chrysurus	0.89	14	0.71	
Chilomycterus spinosus mauret.	0.67	5	0.53	
Caranx crysos	0.48	2	0.38	
Uranoscopus cadenati	0.43	5	0.34	
Acanthostracion notacanthus	0.43	2	0.34	
Fistularia petimba	0.41	2	0.33	
Aluterus heudelotii	0.38	5	0.30	
Acanthostrascion guineensis	0.31	2	0.25	
Scorpaena laevis	0.22	2	0.18	
Torpedo torpedo	0.19	2	0.15	
Total	125.52		100.03	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1384
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 11
start stop duration Long E 852
TIME :19:57:49 20:28:53 31 (min) Purpose code: 3
LOG :6078.84 6080.44 1.59 Area code : 8
FDEPTH: 169 179 GearCond.code:
BDEPTH: 169 179 Validity code:
Towing dir: 15ø Wire out: 430 m Speed: 31 kn*10

Sorted: 30 Kg Total catch: 83.78 CATCH/HOUR: 162.15

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	22.10	1500	13.63	5902
Synagrops microlepis	18.91	1297	11.66	
Pterothrissus belloci	18.19	165	11.22	
Lepidotrigla cadmani	14.23	323	8.78	
Dentex angolensis	13.88	135	8.56	5903
Squatina oculata	12.97	4	8.00	
Dentex congoensis	8.65	110	5.33	
Ariomma bondi	7.78	168	4.80	
Peristedion cataphractum	7.49	387	4.62	
Brotula barbata	6.43	68	3.97	
Illex coindetii	4.59	52	2.83	
Citharus linguatula	3.87	178	2.39	
MYCTOPHIDAE	3.23	1035	1.99	
Anthias squamipinnis	2.85	116	1.76	
Raja miraletus	2.13	4	1.31	
Uranoscopus albesca	2.07	68	1.28	
Aulopus cadenati	1.94	23	1.20	
Squalus megalops	1.90	2	1.17	
Mustelus mustelus	1.65	2	1.02	
Solenocera africana	1.35	87	0.83	
Parapenaeus longirostris	1.30	275	0.80	
Sepia officinalis hierredda	1.10	23	0.68	
Cynoponticus ferox	0.87	19	0.54	
Lophiodas kempi	0.81	4	0.50	
Gadella imberbis	0.68	19	0.42	
Hypoclydonia bella	0.43	14	0.27	
Priacanthus arenatus	0.39	10	0.24	
Bembrops greyi	0.39	14	0.24	
Total	162.18		100.04	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1382
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 6
start stop duration Long E 913
TIME :14:16:06 14:45:19 29 (min) Purpose code: 3
LOG :6046.16 6047.75 1.59 Area code : 8
FDEPTH: 28 27 GearCond.code:
BDEPTH: 28 27 Validity code:
Towing dir: 180ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 54.45 CATCH/HOUR: 112.66

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sphyraena guachancho	37.55	130	33.33	5891
Scomberomorus tritor	31.97	81	28.38	5892
Chloroscombrus chrysurus	17.09	254	15.17	
Brachydeuterus auritus	9.54	3031	8.47	
Selene dorsalis	9.25	223	8.21	
Caranx crysos	2.86	6	2.54	5894
Portunus validus	1.28	2	1.14	
J E L L Y F I S H	1.22	12	1.08	
Sardinella maderensis	0.48	8	0.43	5893
Selar crumenophthalmus	0.46	6	0.41	
Caranx hippos	0.41	2	0.36	
Citharus linguatula	0.33	6	0.29	
Sepia officinalis hierredda	0.23	2	0.20	
Total	112.67		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1385
DATE: 7/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 12
start stop duration Long E 845
TIME :22:17:54 22:47:38 30 (min) Purpose code: 3
LOG :6090.55 6091.99 1.44 Area code : 6
FDEPTH: 400 399 GearCond.code:
BDEPTH: 400 399 Validity code:
Towing dir: 190ø Wire out:1100 m Speed: 30 kn*10

Sorted: Kg Total catch: 79.52 CATCH/HOUR: 159.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	71.60	28640	45.02	
Lophius vaillanti	19.28	880	12.12	
Trichiurus lepturus	12.64	472	7.95	
Stereomastis sp.	10.24	592	6.44	
Chaceon maritae	9.44	24	5.94	
Parapenaeus longirostris	8.08	600	5.08	
Illex coindetii	5.36	48	3.37	
Bembrops heterurus	3.76	80	2.36	
Epigonus telescopus	2.80	128	1.76	
Chlorophthalmus atlanticus	2.56	48	1.61	
Peristedion cataphractum	2.40	104	1.51	
Plesionika sp.	2.08	352	1.31	
Ariomma bondi	1.76	40	1.11	
Hymenocephalus italicus	1.68	216	1.06	
Raja miraletus	1.52	8	0.96	
Dibranchus atlanticus	0.88	64	0.55	
Malacocephalus laevis	0.72	8	0.45	
Yarrella corythaeola	0.72	248	0.45	
Coelorinchus coelorhincus	0.64	16	0.40	
Solenocera africana	0.56	24	0.35	
Monolene microstoma	0.16	8	0.10	
NETTASTOMATIDAE	0.16	8	0.10	
Total	159.04		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1386
DATE: 8/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 24
start stop duration Long E 843
TIME :00:45:47 01:15:33 30 (min) Purpose code: 3
LOG :6103.63 6105.11 1.47 Area code : 8
FDEPTH: 357 350 GearCond.code:
BDEPTH: 357 350 Validity code:
Towing dir: 185ø Wire out: 989 m Speed: 30 kn*10

Sorted: 15 Kg Total catch: 194.87 CATCH/HOUR: 389.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
E C H I N O D E R M A T A	177.76	2376	45.61	
Nematocarcinus africanus	114.00	58608	29.25	
Trichiurus lepturus	21.84	1464	5.60	
Illex coindetii	17.76	168	4.56	
Dibranchus atlanticus	16.32	480	4.19	
Parapenaeus longirostris	9.60	1008	2.46	
Centrophorus uyato	7.50	2	1.92	
Malacocephalus laevis	7.44	96	1.91	
Lophius vaillanti	5.04	120	1.29	
Bembrops greyi	2.40	96	0.62	
Cyttopsis roseus	1.92	24	0.49	
Stereomastis sp.	1.68	144	0.43	
Yarrella corythaeola	1.68	576	0.43	
Hymenocephalus italicus	1.44	144	0.37	
Peristedion cataphractum	1.44	72	0.37	
Nezumia aequalis	0.96	24	0.25	
Starfish	0.96	264	0.25	
Total	389.74		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1387
DATE: 8/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 26
start stop duration Long E 848
TIME :05:39:33 06:09:46 30 (min) Purpose code: 3
LOG :6121.32 6122.87 1.53 Area code : 8
FDEPTH: 129 103 GearCond.code:
BDEPTH: 129 103 Validity code:
Towing dir: 66ø Wire out: 350 m Speed: 30 kn*10

Sorted: 62 Kg Total catch: 268.86 CATCH/HOUR: 537.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	302.60	5834	56.27	5906
Dentex congoensis	109.64	2536	20.39	5908
Dentex angolensis	54.40	442	10.12	5904
Trachurus trecae	19.54	280	3.63	5905
Spicara alta	14.62	442	2.72	5907
Lepidotrigla cadmani	6.80	170	1.26	
Squatina oculata	4.94	6	0.92	
Raja miraletus	4.58	26	0.85	
Illex coindetii	4.34	136	0.81	
Priacanthus arenatus	3.48	34	0.65	
Scorpaena scrofa	2.04	8	0.38	
Pterothrissus belloci	1.70	16	0.32	
Sardinella aurita	1.62	26	0.30	
Scomber japonicus	1.52	8	0.28	
Sepia officinalis hierredda	1.52	34	0.28	
Citharus linguatula	1.52	76	0.28	
Dibranchus atlanticus	1.18	186	0.22	
Zeus faber	1.00	2	0.19	
Setarches guentheri	0.68	16	0.13	
Total	537.72		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1388
DATE: 8/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 27
start stop duration Long E 849
TIME :07:25:01 07:50:21 25 (min) Purpose code: 3
LOG :6127.98 6129.27 1.28 Area code : 8
FDEPTH: 70 64 GearCond.code:
BDEPTH: 70 64 Validity code:
Towing dir: 35ø Wire out: 200 m Speed: 30 kn*10

Sorted: 30 Kg Total catch: 93.37 CATCH/HOUR: 224.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus punctatus	99.72	4327	44.50	5912
Dentex congoensis	50.40	2273	22.49	5909
Sardinella aurita	31.97	1884	14.27	5910
Pagellus bellottii	8.71	281	3.89	5913
Sepia officinalis hierredda	6.34	72	2.83	
Pseudupeneus prayensis	5.90	209	2.63	5911
Priacanthus arenatus	5.11	151	2.28	
Illex coindetii	3.74	43	1.67	
Squatina oculata	2.95	7	1.32	
Ariomma bondi	2.09	36	0.93	
Fistularia petimba	2.06	12	0.92	
Chilomycterus spinosus mauret.	1.15	7	0.51	
Dactylopterus volitans	1.15	14	0.51	
Torpedo torpedo	1.13	2	0.50	
Dentex angolensis	0.58	22	0.26	
Lepidotrigla cadmani	0.43	14	0.19	
Trachurus trecae	0.42	7	0.19	
Sphoeroides marmoratus	0.14	7	0.06	
Saurida brasiliensis	0.07	7	0.03	
Total	224.07		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1389
DATE: 8/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 26
start stop duration Long E 853
TIME :08:38:51 09:12:06 33 (min) Purpose code: 3
LOG :6133.56 6135.40 1.82 Area code : 8
FDEPTH: 38 43 GearCond.code:
BDEPTH: 38 43 Validity code:
Towing dir: 200ø Wire out: 120 m Speed: 30 kn*10

Sorted: Kg Total catch: 89.46 CATCH/HOUR: 162.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	69.00	578	42.42	
Pagellus bellottii	40.64	511	24.99	5914
Epinephelus aeneus	13.82	4	8.50	5917
Balistes capriscus	13.40	11	8.24	5916
Seriola dumerili	4.71	4	2.90	
Pseudupeneus prayensis	3.82	36	2.35	5915
Decapterus punctatus	2.13	62	1.31	
Raja miraletus	2.11	7	1.30	
Dactylopterus volitans	2.02	5	1.24	
Citharichthys stampflii	1.69	15	1.04	
Torpedo torpedo	1.67	5	1.03	
Sepia officinalis hierredda	1.58	13	0.97	
Lagocephalus laevigatus	1.49	2	0.92	
Priacanthus arenatus	1.45	22	0.89	
Lepidotrigla cadmani	0.91	4	0.56	
Fistularia petimba	0.38	15	0.23	
Chilomycterus spinosus mauret.	0.35	2	0.22	
Pagrus caeruleostictus	0.29	2	0.18	
Illex coindetii	0.27	4	0.17	
Stephanolepis hispidus	0.20	2	0.12	
Selar crumenophthalmus	0.18	2	0.11	
Sphoeroides marmoratus	0.16	5	0.10	
Sea urchins (strong spines)	0.13	2	0.08	
Pecten jacobus	0.11	4	0.07	
Lophiodes kempi	0.11	2	0.07	
Arnoglossus imperialis	0.04	7	0.02	
Total	162.66		100.03	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1390
DATE: 8/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 26
start stop duration Long E 906
TIME :11:08:21 11:38:08 30 (min) Purpose code: 3
LOG :6152.09 6153.82 1.72 Area code : 8
FDEPTH: 19 18 GearCond.code:
BDEPTH: 19 18 Validity code:
Towing dir: 225ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 87.84 CATCH/HOUR: 175.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pomadasys incisus	82.50	110	46.96	5913
Chloroscombrus chrysurus	29.10	138	16.56	5917
Galeoides decadactylus	14.10	110	8.03	5916
Caranx senegallus	11.26	20	6.41	5914
J E L L Y F I S H	9.62	308	5.48	
Sepia officinalis hierredda	9.00	10	5.12	
Caranx hippos	4.54	24	2.58	5915
Selene dorsalis	4.26	34	2.42	5918
Caranx crysos	3.02	8	1.72	
Balistes punctatus	2.86	4	1.63	
Brachydeuterus auritus	1.92	34	1.09	5919
Lagocephalus laevigatus	1.14	2	0.65	
Hemicaranx bicolor	0.92	8	0.52	
Raja miraletus	0.66	2	0.38	
Sphyraena guachancho	0.46	2	0.26	
Scorpaena laevis	0.24	2	0.14	
Priacanthus cruentatus	0.08	2	0.05	
Total	175.68		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1391
DATE: 9/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 51
start stop duration Long E 833
TIME :17:20:30 17:49:54 29 (min) Purpose code: 3
LOG :6233.24 6234.71 1.45 Area code : 8
FDEPTH: 59 58 GearCond.code:
BDEPTH: 59 58 Validity code:
Towing dir: 40ø Wire out: 170 m Speed: 30 kn*10

Sorted: 44 Kg Total catch: 103.91 CATCH/HOUR: 214.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	101.17	2181	47.06	5926
Squatina oculata	31.14	25	14.48	
Ariomma bondi	29.50	521	13.72	5925
Cynoglossus canariensis	11.71	37	5.45	5928
Pagellus bellottii	8.77	149	4.08	5927
Selar crumenophthalmus	3.85	112	1.79	
Dentex angolensis	3.19	41	1.48	
Chilomycterus spinosus mauret.	2.94	8	1.37	
Scorpaena scrofa	2.90	4	1.35	
Epinephelus aeneus	2.86	4	1.33	
Brotula barbata	2.77	12	1.29	
Raja miraletus	2.40	8	1.12	
Torpedo torpedo	1.99	4	0.93	
Serranus accraensis	1.86	54	0.87	
Priacanthus arenatus	1.66	25	0.77	
Pseudupeneus prayensis	1.41	12	0.66	
Selene dorsalis	0.99	8	0.46	
Sepia officinalis hierredda	0.70	25	0.33	
Grammoplites gruveli	0.70	29	0.33	
Calappa rubroguttata	0.66	4	0.31	
Boops boops	0.50	12	0.23	
Saurida brasiliensis	0.50	33	0.23	
Dicologoglossa hexophthalma	0.33	12	0.15	
Sphoeroides marmoratus	0.33	17	0.15	
Citharus linguatula	0.08	2	0.04	
Syacium micrurum	0.04	8	0.02	
Arnoglossus imperialis	0.04	4	0.02	
Total	214.99		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1392
DATE: 9/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 121
start stop duration Long E 827
TIME :23:26:08 23:50:22 24 (min) Purpose code: 3
LOG :6274.25 6275.67 1.41 Area code : 8
FDEPTH: 161 163 GearCond.code:
BDEPTH: 161 163 Validity code:
Towing dir: 335ø Wire out: 474 m Speed: 30 kn*10

Sorted: Kg Total catch: 79.54 CATCH/HOUR: 198.85

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Bembrops heterurus	62.43	903	31.40	
Dentex congoensis	32.63	828	16.41	5930
Antigonia capros	27.38	653	13.77	
Raja miraletus	12.53	48	6.30	
Lepidotrigla cadmani	11.70	220	5.88	
Illex coindetii	10.08	105	5.07	
Heptranchias perlo	9.55	8	4.80	
Synagrops microlepis	7.43	623	3.74	
Lampadena sp.	6.33	1930	3.18	
Peristedion cataphractum	3.93	100	1.98	
Umbrina canariensis	3.08	8	1.55	5929
Citharus linguatula	3.03	135	1.52	
Ariomma bondi	2.65	53	1.33	
Mystriophis rostellatus	1.88	8	0.95	
Priacanthus arenatus	0.98	8	0.49	
OPHIDIIDAE	0.63	33	0.32	
Parapenaeopsis atlantica	0.63	70	0.32	
Spicara alta	0.45	3	0.23	
Hypoclydonia bella	0.45	3	0.23	
Uranoscopus cadenati	0.33	3	0.17	
GEMPYLIDAE	0.25	18	0.13	
Solenocera africana	0.25	30	0.13	
Grammoplites gruveli	0.18	10	0.09	
Maja squinado	0.15	3	0.08	
Total	198.93		100.07	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1393
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 126
start stop duration Long E 828
TIME :01:35:01 02:05:26 30 (min) Purpose code: 3
LOG :6286.67 6288.04 1.36 Area code : 8
FDEPTH: 432 422 GearCond.code:
BDEPTH: 432 422 Validity code:
Towing dir: 330ø Wire out:1200 m Speed: 30 kn*10

Sorted: Kg Total catch: 91.56 CATCH/HOUR: 183.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	98.00	11664	53.52	
Trichiurus lepturus	28.16	1048	15.38	
Plesionika martia	20.64	2136	11.27	
Merluccius polli	14.00	32	7.65	
Malacocephalus laevis	9.84	136	5.37	
Chlorophthalmus atlanticus	4.64	72	2.53	
Lophius vaillanti	1.20	96	0.66	
Hymenocephalus italicus	1.04	88	0.57	
Antigonia capros	1.04	32	0.57	
Aristeus varidens	0.88	112	0.48	
Hypoclydonia bella	0.80	16	0.44	
Peristedion cataphractum	0.72	16	0.39	
Todaropsis eblanae	0.64	16	0.35	
Glyphus marsupialis	0.48	72	0.26	
Lepidotrigla cadmani	0.40	8	0.22	
Lamprogrammus exutus	0.24	8	0.13	
Gonostoma elongatum	0.16	8	0.09	
Coelorinchus coelorhincus	0.08	8	0.04	
Photichthys argenteus	0.08	16	0.04	
NOMEIDAE	0.08	16	0.04	
Total	183.12		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1394
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 144
start stop duration Long E 844
TIME :05:39:04 06:10:25 31 (min) Purpose code: 3
LOG :6317.54 6319.17 1.60 Area code : 8
FDEPTH: 110 109 GearCond.code:
BDEPTH: 110 109 Validity code:
Towing dir: 140ø Wire out: 330 m Speed: 31 kn*10

Sorted: 53 Kg Total catch: 263.05 CATCH/HOUR: 509.13

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	285.29	4428	56.03	5931
Umbrina canariensis	87.87	286	17.26	5932
Spicara alta	50.48	689	9.91	5934
Ariomma bondi	15.64	266	3.07	5933
Dentex angolensis	13.01	46	2.56	
Scorpaena angolensis	12.93	15	2.54	
Trachurus trecae	6.12	93	1.20	
Boops boops	5.81	139	1.14	
Pagellus bellottii	4.72	54	0.93	
Anthias anthias	4.41	263	0.87	
Pagrus caeruleostictus	3.72	8	0.73	
Rhizoprionodon acutus	3.50	2	0.69	
Fistularia petimba	2.96	12	0.58	
Torpedo torpedo	2.65	4	0.52	
Squatina oculata	2.59	2	0.51	
Zeus faber	1.53	4	0.30	
Illex coindetii	1.32	15	0.26	
Scomber japonicus	1.24	8	0.24	
Lepidotrigla cadmani	1.24	15	0.24	
Raja miraletus	0.72	2	0.14	
Peristedion cataphractum	0.54	15	0.11	
Saurida brasiliensis	0.46	62	0.09	
Chaetodon marcellae	0.39	8	0.08	
Total	509.14		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1395
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 141
start stop duration Long E 850
TIME :09:04:27 09:35:07 31 (min) Purpose code: 3
LOG :6327.58 6329.22 1.64 Area code : 8
FDEPTH: 70 69 GearCond.code:
BDEPTH: 70 69 Validity code:
Towing dir: 320ø Wire out: 210 m Speed: 32 kn*10

Sorted: Kg Total catch: 143.13 CATCH/HOUR: 277.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita - Juveniles	132.39	11311	47.79	5935
Trachurus trecae, juvenile	52.26	1339	18.86	5939
Dentex congoensis	43.12	1130	15.57	5937
Pseudupeneus prayensis	10.68	186	3.86	5936
Pagellus bellottii	10.22	310	3.69	5938
Sepia officinalis hierredda	7.66	62	2.77	
Priacanthus arenatus	2.25	15	0.81	
Ariomma bondi	1.86	23	0.67	
Brachydeuterus auritus	1.78	23	0.64	
Scorpaena angolensis	1.76	2	0.64	
Dactylopterus volitans	1.70	8	0.61	
Fistularia petimba	1.70	12	0.61	
Euthynnus alletteratus	1.47	2	0.53	
Raja miraletus	1.41	4	0.51	
Chilomycterus spinoaus mauret.	1.24	8	0.45	
Lepidotrigla cadmani	1.08	23	0.39	
Boops boops	1.01	23	0.36	
Grammoplites gruveli	1.01	46	0.36	
Trachinus radiatus	0.77	2	0.28	
Trichiurus lepturus	0.77	2	0.28	
Trachinus armatus	0.48	8	0.17	
Saurida brasiliensis	0.39	46	0.14	
Total	277.01		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1396
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 137
start stop duration Long E 857
TIME :11:02:03 11:30:28 28 (min) Purpose code: 3
LOG :6339.58 6341.00 1.42 Area code : 8
FDEPTH: 43 48 GearCond.code:
BDEPTH: 43 48 Validity code:
Towing dir: 180ø Wire out: 120 m Speed: 30 kn*10

Sorted: Kg Total catch: 72.04 CATCH/HOUR: 154.37

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	31.18	51	20.20	5942
Pagellus bellottii	24.96	281	16.17	5941
Pagrus caeruleostictus	21.28	60	13.79	5940
Lutjanus fulgens	18.64	2	12.07	
Epinephelus aeneus	16.71	2	10.82	
Sepia officinalis hierredda	7.61	11	4.93	
Caranx crysos	6.09	9	3.95	5943
J E L L Y F I S H	5.57	19	3.61	
Seriola dumerili	3.54	2	2.29	
Hemicaranx bicolor	2.40	4	1.55	
Dactylopterus volitans	2.31	13	1.50	
Priacanthus cruentatus	2.25	32	1.46	
Decapterus rhonchus	1.67	43	1.08	5945
Balistes capriscus	1.56	2	1.01	
Raja miraletus	1.54	2	1.00	
Citharus linguatula	1.41	26	0.91	
Lagocephalus laevigatus	1.31	30	0.85	
Zeus faber	1.20	2	0.78	
Sardinella aurita	1.18	69	0.76	5944
Pseudupeneus prayensis	0.94	11	0.61	
Alloteuthis africana	0.58	204	0.38	
Fistularia tabacaria	0.24	2	0.16	
Decapterus punctatus	0.09	2	0.06	
Penaeus notialis	0.06	2	0.04	
Grammoplites gruveli	0.04	2	0.03	
Total	154.36		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1397
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 143
start stop duration Long E 910
TIME :13:25:58 13:55:47 30 (min) Purpose code: 3
LOG :6356.78 6358.25 1.47 Area code : 8
FDEPTH: 21 21 GearCond.code:
BDEPTH: 21 21 Validity code:
Towing dir: 160ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 159.81 CATCH/HOUR: 319.62

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	146.70	86	45.90	
Sepia orbignyana	92.60	74	28.97	5948
Decapterus punctatus	44.60	2930	13.95	
Decapterus rhonchus	9.14	26	2.86	5946
Chloroscombrus chrysurus	8.76	92	2.74	
Pagellus bellottii	4.98	66	1.56	
Pseudupeneus prayensis	4.92	54	1.54	5947
Caranx crysos	2.64	4	0.83	
Pagrus caercleostictus	1.08	2	0.34	
Raja miraletus	0.90	2	0.28	
Sardinella maderensis	0.62	4	0.19	
Epinephelus aeneus	0.60	2	0.19	
Fistularia petimba	0.46	4	0.14	
Euthynnus alletteratus	0.36	2	0.11	
Lagocephalus laevigatus	*0.34*	*4*	*0.11*	
Sardinella aurita	0.30	22	0.09	
Trachinocephalus myops	0.16	8	0.05	
Xyrichtys novacula	0.14	2	0.04	
Alectis alexandrinus	0.14	2	0.04	
Starfish	0.10	2	0.03	
Alloteuthis africana	0.08	24	0.03	
Total	319.62		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1398
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 149
start stop duration Long E 906
TIME :14:57:17 15:29:34 32 (min) Purpose code: 3
LOG :6364.81 6366.38 1.56 Area code : 8
FDEPTH: 38 38 GearCond.code:
BDEPTH: 38 38 Validity code:
Towing dir: 145ø Wire out: 140 m Speed: 30 kn*10

Sorted: 100 Kg Total catch: 269.02 CATCH/HOUR: 504.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	169.78	3023	33.66	
J E L L Y F I S H	145.88	319	28.92	
Pseudupeneus prayensis	121.76	18204	24.14	
Sepia orbignyana	32.06	66	6.36	
Lagocephalus laevigatus	12.08	159	2.39	
Alloteuthis africana	4.88	1286	0.97	
Citharus linguatula	3.49	81	0.69	
Citharichthys stampflii	3.34	54	0.66	
Trachinocephalus myops	2.04	15	0.40	
Raja miraletus	2.04	6	0.40	
Seriola dumerili	1.65	9	0.33	
Selar crumenophthalmus	*1.56*	*83*	*0.31*	
Dactylopterus volitans	1.50	21	0.30	
Penaeus notialis	0.75	15	0.15	
Priacanthus arenatus	0.66	9	0.13	
Saurida brasiliensis	0.51	39	0.10	
Brachydeuterus auritus	0.45	6	0.09	
Total	504.43		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1399
DATE:10/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 155
start stop duration Long E 900
TIME :16:54:37 17:24:04 29 (min) Purpose code: 3
LOG :6376.82 6378.53 1.88 Area code : 8
FDEPTH: 61 61 GearCond.code:
BDEPTH: 61 61 Validity code:
Towing dir: 335ø Wire out: 180 m Speed: 30 kn*10

Sorted: 66 Kg Total catch: 276.09 CATCH/HOUR: 571.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	213.10	5677	37.31	5951
Pagellus bellottii	163.03	2342	28.54	5950
Dactylopterus volitans	46.68	662	8.17	
Scomber japonicus	27.06	273	4.74	5954
Boops boops	16.30	455	2.85	
Pseudupeneus prayensis	14.98	215	2.62	5953
Trachinus armatus	14.57	223	2.55	
Sardinella aurita - Juveniles	13.49	720	2.36	5952
Raja miraletus	12.58	33	2.20	
Trachinocephalus myops	11.92	66	2.09	
Fistularia petimba	11.48	52	2.01	5949
Ariomma bondi	8.19	124	1.43	
Sepia officinalis hierredda	7.94	50	1.39	
Lagocephalus laevigatus	4.68	4	0.82	
Chilomycterus spinosus mauret.	1.41	8	0.25	
Uranoscopus polli	0.99	8	0.17	
Priacanthus arenatus	0.99	17	0.17	
Lepidotrigla cadmani	0.91	17	0.16	
Bothus podas africanus	0.91	25	0.16	
Total	571.21		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1400
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 211
start stop duration Long E 849
TIME :00:10:42 00:40:33 30 (min) Purpose code: 3
LOG :6418.48 6420.05 1.58 Area code : 8
FDEPTH: 469 480 GearCond.code:
BDEPTH: 469 480 Validity code:
Towing dir: 350ø Wire out:1331 m Speed: 30 kn*10

Sorted: Kg Total catch: 146.51 CATCH/HOUR: 293.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	220.50	84516	75.25	
Plesionika martia	32.90	4270	11.23	
Heplostethus cadenati	11.06	406	3.77	
Plesionika edwardsii	4.76	84	1.62	
Trichiurus lepturus	4.20	112	1.43	
Lophius vaillanti	3.36	154	1.15	
Octopus vulgaris	3.08	14	1.05	
Yarrella blackfordi	2.52	84	0.86	
Galeus polli	2.24	14	0.76	
Lophius sp.	1.96	42	0.67	
Triplophos hemingi	1.68	280	0.57	
Stereomastis sp.	1.54	70	0.53	
MELANOSTOMIATIDAE	1.12	14	0.38	
Gadella imberbis	0.84	28	0.29	
Glyphus marsupialis	*0.42*	*70*	*0.14*	
Aristeus varidens	0.28	84	0.10	
Symbolophorus barnardi	0.28	98	0.10	
Parapandalus narval	0.14	14	0.05	
Notacanthus sexspinis	0.14	14	0.05	
Total	293.02		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1401
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 218
start stop duration Long E 853
TIME :03:03:10 03:30:44 28 (min) Purpose code: 3
LOG :6434.41 6435.84 1.42 Area code : 8
FDEPTH: 280 284 GearCond.code:
BDEPTH: 280 284 Validity code:
Towing dir: 345ø Wire out: 767 m Speed: 30 kn*10

Sorted: Kg Total catch: 322.05 CATCH/HOUR: 690.11

SPECIES	*CATCH/HOUR* weight	numbers	*% OF TOT. C*	*SAMP*
Illex coindetii	560.36	6986	81.20	
Raja straeleni	30.00	21	4.35	
Chlorophthalmus atlanticus	24.86	2186	3.60	
'Spider crab'	18.43	1393	2.67	
Peristedion cataphractum	11.57	343	1.68	
Chascanopsetta lugubris	8.57	193	1.24	
Trigla lyra	8.36	86	1.21	
Squalus megalops	7.93	6	1.15	
Paramola cuvieri	6.32	2	0.92	
Merluccius polli	5.57	43	0.81	
Hymenocephalus italicus	4.50	579	0.65	
Epigonus telescopus	2.14	450	0.31	
Argyropelecus sp.	0.86	707	0.12	
Nezumia aequalis	0.43	21	0.06	
Yarrella blackfordi	0.21	21	0.03	
Total	690.11		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1402
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 215
start stop duration Long E 857
TIME :05:53:01 06:23:20 30 (min) Purpose code: 3
LOG :6443.92 6445.45 1.51 Area code : 8
FDEPTH: 105 105 GearCond.code:
BDEPTH: 105 105 Validity code:
Towing dir: 150ø Wire out: 300 m Speed: 30 kn*10

Sorted: Kg Total catch: 71.39 CATCH/HOUR: 142.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex congoensis	55.00	1964	38.52	5955
Trachurus trecae	20.60	558	14.43	5957
Illex coindetii	*18.00*	*260*	*12.61*	
Lepidotrigla cadmani	16.30	358	11.42	
Pagellus bellottii	6.70	220	4.69	5956
Rhizoprionodon acutus	6.00	2	4.20	
Sepia officinalis hierredda	3.68	52	2.58	
Fistularia petimba	2.46	10	1.72	
Torpedo torpedo	2.28	4	1.60	
Zeus faber	1.82	8	1.27	
Raja miraletus	1.52	4	1.06	
Umbrina canariensis	1.40	4	0.98	
Ariomma bondi	1.18	22	0.83	
Peristedion cataphractum	1.06	40	0.74	
Citharus linguatula	0.98	26	0.69	
Octopus vulgaris	0.84	2	0.59	
Mystriophis rostellatus	0.72	2	0.50	
Boops boops	0.68	40	0.48	
Pseudupeneus prayensis	0.66	6	0.46	
Scomber japonicus	0.56	10	0.39	
Chilomycterus spinosus mauret.	0.10	2	0.07	
Spicara alta	0.10	4	0.07	
Antigonia capros	0.06	14	0.04	
Grammoplites gruveli	0.06	4	0.04	
Trachinus armatus	0.02	2	0.01	
Total	142.78		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1403
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 209
start stop duration Long E 904
TIME :07:46:58 08:23:22 36 (min) Purpose code: 3
LOG :6455.48 6457.41 1.93 Area code : 8
FDEPTH: 68 68 GearCond.code:
BDEPTH: 68 68 Validity code:
Towing dir: 340ø Wire out: 200 m Speed: 32 kn*10

Sorted: 38 Kg Total catch: 316.88 CATCH/HOUR: 528.13

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sardinella aurita - Juveniles	258.67	30787	48.98	5958
Pagellus bellottii	83.87	1040	15.88	5959
Trachurus trecae	73.33	1480	13.88	5960
Boops boops	28.80	533	5.45	
Alloteuthis africana	15.87	6107	3.00	
Sepia officinalis hierredda	15.47	93	2.93	
Priacanthus arenatus	14.67	307	2.78	
Dactylopterus volitans	11.87	27	2.25	
Illex coindetii	6.67	27	1.26	
Fistularia petimba	4.93	27	0.93	
Pseudupeneus prayensis	4.00	27	0.76	
Octopus vulgaris	3.60	2	0.68	
Lepidotrigla cadmani	2.80	107	0.53	
Chilomycterus spinosus mauret.	2.27	13	0.43	
Grammoplites gruveli	0.80	40	0.15	
Saurida brasiliensis	0.53	93	0.10	
Total	528.15		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1404
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 202
start stop duration Long E 912
TIME :10:26:10 10:41:58 16 (min) Purpose code: 3
LOG :6474.37 6475.22 0.84 Area code : 8
FDEPTH: 37 37 GearCond.code: 9
BDEPTH: 37 37 Validity code: 3
Towing dir: 320ø Wire out: 110 m Speed: 30 kn*10

Sorted: Kg Total catch: 35.91 CATCH/HOUR: 134.66

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Lagocephalus laevigatus	43.13	1181	32.03	
J E L L Y F I S H	36.00	34	26.73	
Pagellus bellottii	30.00	480	22.28	5962
Sepia officinalis hierredda	6.98	38	5.18	
Caranx crysos	3.15	23	2.34	5963
Citharus linguatula	2.74	38	2.03	
Alloteuthis africana	2.51	1380	1.86	
Euthynnus alletteratus	2.36	4	1.75	
Pagrus caeruleostictus	1.69	15	1.26	5961
Priacanthus arenatus	1.35	30	1.00	
Illex coindetii	1.16	15	0.86	
Fistularia petimba	1.05	8	0.78	
Dactylopterus volitans	0.98	26	0.73	
Pseudupeneus prayensis	0.86	34	0.64	5964
Sardinella aurita - Juveniles	0.71	90	0.53	
Total	134.67		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1405
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 159
start stop duration Long E 915
TIME :11:33:03 12:03:11 30 (min) Purpose code: 3
LOG :6479.89 6481.43 1.54 Area code : 8
FDEPTH: 22 22 GearCond.code:
BDEPTH: 22 22 Validity code:
Towing dir: 140ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 293.74 CATCH/HOUR: 587.48

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
J E L L Y F I S H	226.62	106	38.57	
Pagellus bellottii	202.16	3882	34.41	5969
Pseudupeneus prayensis	50.54	1722	8.60	5966
Lagocephalus laevigatus	25.38	718	4.32	
Brachydeuterus auritus	23.94	1100	4.08	5967
Sepia officinalis hierredda	17.92	20	3.05	5970
Chloroscombrus chrysurus	12.24	174	2.08	5968
Sardinella aurita	11.06	138	1.88	5965
Scomberomorus tritor	3.46	4	0.59	
Euthynnus alletteratus	3.46	4	0.59	
Decapterus rhonchus	2.34	10	0.40	
Selar crumenophthalmus	1.96	58	0.33	
Citharus linguatula	1.38	20	0.23	
Sepia orbignyana	1.10	10	0.19	5971
Sphyraena guachancho	1.06	4	0.18	
Alloteuthis africana	0.84	280	0.14	
Caranx crysos	0.74	4	0.13	
Selene dorsalis	0.46	4	0.08	
Illex coindetii	0.42	4	0.07	
Penaeus notialis	0.26	14	0.04	
Sardinella maderensis - Juv.	0.14	4	0.02	
Total	587.48		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1406
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 210
start stop duration Long E 921
TIME :13:34:17 14:04:08 30 (min) Purpose code: 3
LOG :6492.94 6494.50 1.56 Area code : 8
FDEPTH: 21 22 GearCond.code:
BDEPTH: 21 22 Validity code:
Towing dir: 155ø Wire out: 101 m Speed: 30 kn*10

Sorted: 179 Kg Total catch: 1000.36 CATCH/HOUR: 2000.72

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
J E L L Y F I S H	969.14	628	48.44	
Decapterus rhonchus	518.56	2184	25.92	5974
Sepia officinalis hierredda	185.14	124	9.25	
Decapterus macarellus	115.36	6518	5.77	5972
Lagocephalus laevigatus	93.52	1748	4.67	
Pagellus bellottii	53.20	930	2.66	
Chloroscombrus chrysurus	34.28	348	1.71	
Pseudupeneus prayensis	23.96	918	1.20	5975
Sardinella maderensis - Juv.	6.72	594	0.34	5973
Sarda sarda	0.84	2	0.04	
Total	2000.72		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1407
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 215
start stop duration Long E 919
TIME :14:53:04 15:23:10 30 (min) Purpose code: 3
LOG :6499.19 6500.72 1.52 Area code : 8
FDEPTH: 38 38 GearCond.code:
BDEPTH: 38 38 Validity code:
Towing dir: 150ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 1764.77 CATCH/HOUR: 3529.54

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Scyllarides herklotsii	2846.00	6	80.63	
Pagellus bellottii	181.20	1560	5.13	5978
Brachydeuterus auritus	105.36	1368	2.99	5979
Umbrina canariensis	93.60	228	2.65	5976
J E L L Y F I S H	70.80	84	2.01	
Priacanthus arenatus	51.60	120	1.46	
Lethrinus atlanticus	36.24	60	1.03	5977
Lutjanus fulgens	22.20	8	0.63	
Selar crumenophthalmus	19.92	1104	0.56	
Mycteroperca rubra	18.50	2	0.52	
Torpedo marmorata	17.50	2	0.50	
Psettodes belcheri	9.24	12	0.26	
Dentex macrophthalmus	8.04	12	0.23	
Pagrus caeruleostictus	7.08	36	0.20	
Raja miraletus	6.24	24	0.18	
Decapterus rhonchus	6.12	24	0.17	
Lutjanus goreensis	5.30	2	0.15	
Paronchelius stauchi	5.16	462	0.15	
Pomadasys incisus	4.80	12	0.14	
Pseudupeneus prayensis	3.96	72	0.11	
Alloteuthis africana	3.84	1380	0.11	
Boops boops	3.48	204	0.10	
Citharichthys stampflii	2.88	36	0.08	
Fistularia petimba	0.48	12	0.01	
Total	3529.54		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1408
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 221
start stop duration Long E 913
TIME :16:36:00 17:07:46 32 (min) Purpose code: 3
LOG :6509.87 6511.76 1.87 Area code : 8
FDEPTH: 55 54 GearCond.code:
BDEPTH: 55 54 Validity code:
Towing dir: 320ø Wire out: 175 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 234.30 CATCH/HOUR: 439.31

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trecae	128.63	1699	29.28	5984
Pagellus bellottii	62.66	486	14.26	5980
Trichiurus lepturus	52.22	94	11.89	5981
Boops boops	43.84	564	9.98	
Decapterus rhonchus	32.48	118	7.39	5985
J E L L Y F I S H	17.25	51	3.93	
Trachinocephalus myops	16.59	71	3.78	
Umbrina canariensis	16.28	66	3.71	5986
Dactylopterus volitans	14.18	45	3.23	
Pseudupeneus prayensis	10.03	118	2.28	5982
Fistularia petimba	9.66	62	2.20	
Pomadasys incisus	9.32	66	2.12	5983
Trachinus armatus	3.68	45	0.84	
Acanthurus monroviae	2.87	6	0.65	
Citharichthys stampflii	2.63	19	0.60	
Priacanthus arenatus	2.63	6	0.60	
Trachinus radiatus	2.16	6	0.49	
Chromis cadenati	1.97	19	0.45	
Uranoscopus polli	1.71	19	0.39	
Scomberomorus tritor	1.50	13	0.34	
Alloteuthis africana	1.37	478	0.31	
Lepidotrigla cadmani	1.24	13	0.28	
Zeus faber	1.24	4	0.28	
Torpedo torpedo	1.05	2	0.24	
Raja miraletus	0.83	2	0.19	
Apsilus fuscus	0.69	6	0.16	
Dicologoglossa hexophthalma	0.39	6	0.09	
Bothus podas africanus	0.26	6	0.06	
Total	439.36		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1409
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 232
start stop duration Long E 859
TIME :20:28:46 20:59:41 31 (min) Purpose code: 3
LOG :6531.54 6533.19 1.65 Area code : 8
FDEPTH: 170 154 GearCond.code:
BDEPTH: 170 154 Validity code:
Towing dir: 140ø Wire out: 400 m Speed: 30 kn*10

Sorted: Kg Total catch: 241.15 CATCH/HOUR: 466.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Antigonia capros	213.52	6091	45.75	
Bembrops heterurus	83.46	1581	17.88	
Lepidotrigla cadmani	54.50	2123	11.68	
Dentex congoensis	52.99	1819	11.35	
Illex coindetii	21.29	314	4.56	
Spicara alta	10.84	271	2.32	
Sepia officinalis hierredda	5.30	54	1.14	
Uranoscopus polli	3.89	54	0.83	
Raja miraletus	3.04	8	0.65	
Hypoclydonia bella	2.81	43	0.60	
Raja clavata	2.79	2	0.60	
Boops boops	2.71	97	0.58	
Pterothriasus belloci	1.95	2	0.42	
Ariomma bondi	1.18	21	0.25	
OPHIDIIDAE	1.08	75	0.23	
MYCTOPHIDAE	1.08	281	0.23	
J E L L Y F I S H	0.91	2	0.19	
Citharus linguatula	0.85	21	0.18	
Lophiodes kempi	0.64	2	0.14	
Sphoeroides marmoratus	0.52	2	0.11	
Mystriophis rostellatus	0.48	2	0.10	
Sea cucumbers	0.14	2	0.03	
Total	465.97		99.82	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1410
DATE:11/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 236
start stop duration Long E 857
TIME :22:43:37 23:13:24 30 (min) Purpose code: 3
LOG :6542.02 6543.59 1.56 Area code : 8
FDEPTH: 346 402 GearCond.code:
BDEPTH: 346 402 Validity code:
Towing dir: 330ø Wire out: 925 m Speed: 30 kn*10

Sorted: Kg Total catch: 76.19 CATCH/HOUR: 152.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ijimaia loppei	64.40	10	42.26	
Chlorophthalmus atlanticus	39.36	918	25.83	
Illex coindetii	10.52	110	6.90	
Lophius vaillanti	8.12	8	5.33	
Parasudis fraser-bruenneri	5.24	176	3.44	
Raja straeleni	3.48	6	2.28	
Plesionika edwardsii	3.32	554	2.18	
Merluccius polli	2.82	6	1.85	
Trichiurus lepturus	2.10	104	1.38	
Yarrella blackfordi	1.52	92	1.00	
Chascanopsetta lugubris	1.44	38	0.95	
Parapenaeus longirostris	1.38	128	0.91	
Raja miraletus	1.32	2	0.87	
'Spider crab'	0.90	198	0.59	
Antigonia capros	0.86	30	0.56	
Zeus capensis	0.80	78	0.53	
Gadella imberbis	0.72	26	0.47	
Plesionika martia	0.66	144	0.43	
Hymenocephalus italicus	0.62	146	0.41	
Bembrops heterurus	0.56	14	0.37	
Chaceon maritae	0.54	8	0.35	
Lophiodes kempi	0.54	2	0.35	
Coelorinchus coelorhincus	0.36	8	0.24	
Hypoclydonia bella	0.20	38	0.13	
Laemonema laureysi	0.18	2	0.12	
Lepidotrigla carolae	0.18	8	0.12	
Nematocarcinus africanus	0.14	20	0.09	
Maja squinado	0.08	12	0.05	
Solenocera africana	0.02	6	0.01	
Total	152.38		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1411
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 239
start stop duration Long E 858
TIME :00:30:45 01:00:32 30 (min) Purpose code: 3
LOG :6549.22 6550.72 1.49 Area code : 8
FDEPTH: 475 467 GearCond.code:
BDEPTH: 475 467 Validity code:
Towing dir: 135ø Wire out:1303 m Speed: 30 kn*10

Sorted: Kg Total catch: 113.31 CATCH/HOUR: 226.62

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aristeus varidens	159.60	46544	70.43	
Chaceon maritae	27.90	86	12.31	
Lophius vaillanti	19.84	8	8.75	
Plesionika martia	6.88	1416	3.04	
Merluccius polli	5.44	8	2.40	
Trichiurus lepturus	3.60	144	1.59	
Plesionika edwardsii	1.12	24	0.49	
Gadella imberbis	0.72	32	0.32	
Hoplostethus cadenati	0.72	24	0.32	
Illex coindetii	0.48	8	0.21	
Hymenocephalus italicus	0.16	8	0.07	
Triplophos hemingi	0.08	8	0.04	
Stereomastis sp.	0.08	16	0.04	
Total	226.62		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1412
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 241
start stop duration Long E 911
TIME :05:33:10 06:03:56 31 (min) Purpose code: 3
LOG :6569.93 6571.55 1.63 Area code : 8
FDEPTH: 96 96 GearCond.code:
BDEPTH: 96 96 Validity code:
Towing dir: 320ø Wire out: 280 m Speed: 32 kn*10

Sorted: Kg Total catch: 93.38 CATCH/HOUR: 180.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	53.42	834	29.56	5988
Pagellus bellottii	29.61	346	16.38	5990
Lepidotrigla cadmani	13.70	447	7.58	
Umbrina canariensis	13.68	39	7.57	5989
Boops boops	13.66	335	7.56	
Dentex congoensis	10.22	245	5.65	5987
Illex coindetii	6.29	157	3.48	
Zeus faber	5.42	19	3.00	
Raja miraletus	4.51	12	2.50	
Rhinobatos albomaculatus	4.26	2	2.36	
Pseudupeneus prayensis	3.87	41	2.14	5991
Sepia officinalis hierredda	3.79	54	2.10	
Dactylopterus volitans	3.66	25	2.03	
Scomberomorus tritor	3.29	2	1.82	
Dentex angolensis	2.55	21	1.41	
Fistularia petimba	2.46	10	1.36	
Chromis cadenati	2.09	21	1.16	
Scorpaena angolensis	0.79	2	0.44	
Scomber japonicus	0.75	4	0.41	
Priacanthus arenatus	0.64	6	0.35	
Lepidotrigla carolae	0.54	2	0.30	
Spicara alta	0.50	2	0.28	
Uranoscopus polli	0.41	2	0.23	
Sargocentron hastatus	0.37	2	0.20	
Citharus linguatula	0.23	4	0.13	
Total	180.71		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1413
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 235
start stop duration Long E 918
TIME :07:36:29 08:05:38 29 (min) Purpose code: 3
LOG :6582.32 6583.81 1.48 Area code : 8
FDEPTH: 79 79 GearCond.code:
BDEPTH: 79 79 Validity code:
Towing dir: 140ø Wire out: 200 m Speed: 30 kn*10

Sorted: Kg Total catch: 100.91 CATCH/HOUR: 208.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	76.76	1895	36.77	5993
Sepia officinalis hierredda	20.69	126	9.91	
Dactylopterus volitans	18.17	91	8.70	5992
Boops boops	16.51	484	7.91	
Dentex congoensis	11.88	325	5.69	5994
Lepidotrigla cadmani	8.75	240	4.19	
Zeus faber	8.67	17	4.15	
Trachurus trecae	7.32	128	3.51	5995
Rhizoprionodon acutus	6.31	2	3.02	
Fistularia petimba	4.80	120	2.30	
Squatina oculata	4.66	2	2.23	
Torpedo torpedo	4.24	8	2.03	
Rhinobatos albomaculatus	4.24	2	2.03	
Raja miraletus	3.37	8	1.61	
Octopus vulgaris	3.10	8	1.48	
Citharichthys stampflii	1.63	6	0.78	
Priacanthus arenatus	1.37	12	0.66	
Alloteuthis africana	1.06	317	0.51	
Trichiurus lepturus	1.01	2	0.48	
Saurida brasiliensis	0.93	155	0.45	
Chilomycterus spinosus mauret.	0.83	4	0.40	
Illex coindetii	0.74	10	0.35	
Grammoplites gruveli	0.46	12	0.22	
Antennarius occidentalis	0.31	4	0.15	
Pseudupeneus prayensis	0.31	4	0.15	
Sphoeroides marmoratus	0.19	2	0.09	
'Spider crab 2'	0.17	68	0.08	
Citharus linguatula	0.14	2	0.07	
Sea urchins (wask spines)	0.10	17	0.05	
Blennius normani	0.06	2	0.03	
Total	208.78		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1414
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 233
start stop duration Long E 930
TIME :10:08:21 10:38:38 30 (min) Purpose code: 3
LOG :6599.78 6601.49 1.70 Area code : 8
FDEPTH: 42 40 GearCond.code:
BDEPTH: 42 40 Validity code:
Towing dir: 360ø Wire out: 120 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 136.99 CATCH/HOUR: 273.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus punctatus	60.10	1370	21.94	6000
Pomadasys incisus	50.30	502	18.36	5999
Decapterus macarellus	49.50	1626	18.07	5996
Dentex macrophthalmus	16.74	14	6.11	
Brachydeuterus auritus	13.60	200	4.96	5998
Pagellus bellottii	11.24	84	4.10	
Lutjanus fulgens	10.90	24	3.98	
Bodianus speciosus	10.00	14	3.65	
Umbrina canariensis	8.14	14	2.97	
Pseudupeneus prayensis	7.64	54	2.79	
Lethrinus atlanticus	6.34	14	2.31	
Plectorhinchus macrolepis	5.96	2	2.18	
Pagrus auriga	4.44	4	1.62	
Fistularia petimba	3.10	24	1.13	
Torpedo torpedo	2.94	4	1.07	
Boops boops	2.94	114	1.07	
Dactylopterus volitans	2.60	20	0.95	
Priacanthus arenatus	2.10	4	0.77	
Zeus faber	1.90	4	0.69	
Sardinella aurita	1.14	44	0.42	5997
Paronchelius stauchi	0.64	84	0.23	
Alloteuthis africana	0.64	200	0.23	
Illex coindetii	0.54	10	0.20	
Chaetodon robustus	0.34	4	0.12	
Lepidotrigla cadmani	0.20	4	0.07	
Total	273.98		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1415
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 225
start stop duration Long E 934
TIME :11:43:03 11:56:47 14 (min) Purpose code: 3
LOG :6609.04 6609.72 0.67 Area code : 8
FDEPTH: 20 20 GearCond.code: 9
BDEPTH: 20 20 Validity code: 3
Towing dir: 140ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 900.20 CATCH/HOUR: 3858.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella maderensis - Juv.	1795.71	190371	46.55	
Sardinella aurita - Juveniles	754.29	51771	19.55	
Sphyraena guachancho	647.14	1029	16.77	
Brachydeuterus auritus	245.14	134143	6.35	
Pseudotolithus senegalensis	159.43	257	4.13	
Chloroscombrus chrysurus	50.57	686	1.31	
Pseudupeneus prayensis	48.00	686	1.24	
Decapterus punctatus	42.86	171	1.11	
Pomadasys incisus	24.86	171	0.64	
Pagellus bellottii	24.86	600	0.64	
Epinephelus aeneus	21.43	86	0.56	
Lagocephalus laevigatus	21.43	257	0.56	
Ilisha africana	10.29	343	0.27	
Selar crumenophthalmus	7.71	171	0.20	
Selene dorsalis	4.29	257	0.11	
Total	3858.01		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1416
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 238
start stop duration Long E 939
TIME :14:06:55 14:36:48 30 (min) Purpose code: 3
LOG :6626.09 6627.56 1.48 Area code : 8
FDEPTH: 37 37 GearCond.code:
BDEPTH: 37 37 Validity code:
Towing dir: 140ø Wire out: 131 m Speed: 30 kn*10

Sorted: Kg Total catch: 2732.10 CATCH/HOUR: 5464.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita - Juveniles	3542.00	478940	64.82	
Engraulis encrasicolus	957.60	132720	17.52	
Brachydeuterus auritus	396.20	6020	7.25	
Pagellus bellottii	211.40	2940	3.87	6001
Decapterus punctatus	135.80	3500	2.49	6002
Pomadasys incisus	99.40	140	1.82	
Pagrus caeruleostictus	60.20	280	1.10	
Torpedo torpedo	47.60	140	0.87	
Decapterus macarellus	14.00	700	0.26	
Total	5464.20		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1417
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 242
start stop duration Long E 936
TIME :15:42:07 16:12:24 30 (min) Purpose code: 3
LOG :6634.47 6636.14 1.67 Area code : 8
FDEPTH: 52 52 GearCond.code:
BDEPTH: 52 52 Validity code:
Towing dir: 312ø Wire out: 161 m Speed: 30 kn*10

Sorted: Kg Total catch: 460.25 CATCH/HOUR: 920.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	429.00	11258	46.61	
Sardinella aurita	117.78	6370	12.80	
Pagellus bellottii	108.42	2210	11.78	
Boops boops	72.54	2418	7.88	
Dactylopterus volitans	51.22	260	5.56	
Raja miraletus	31.98	52	3.47	
Decapterus punctatus	20.80	884	2.26	
Umbrina canariensis	19.50	26	2.12	
Balistes capriscus	15.60	26	1.69	
Sepia officinalis hierredda	15.34	52	1.67	
Priacanthus arenatus	9.88	26	1.07	
Citharus linguatula	7.28	78	0.79	
Lagocephalus laevigatus	6.24	52	0.68	
Chilomycterus spinosus mauret.	5.72	26	0.62	
Rhizoprionodon acutus	4.00	2	0.43	
Pseudupeneus prayensis	3.38	78	0.37	
Lepidotrigla cadmani	1.82	26	0.20	
Total	920.50		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1418
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 251
start stop duration Long E 924
TIME :17:58:28 18:22:45 24 (min) Purpose code: 3
LOG :6651.59 6652.83 1.23 Area code : 8
FDEPTH: 103 107 GearCond.code:
BDEPTH: 103 107 Validity code:
Towing dir: 140ø Wire out: 280 m Speed: 30 kn*10

Sorted: Kg Total catch: 106.71 CATCH/HOUR: 266.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Boops boops	92.33	3075	34.61	
Lepidotrigla cadmani	53.88	1113	20.20	
Pagellus bellottii	23.65	1143	8.86	6003
Dentex congoensis	13.40	323	5.02	6004
Saurida brasiliensis	10.83	1205	4.06	
Rhizoprionodon acutus	9.88	3	3.70	
Citharus linguatula	8.63	188	3.23	
Trichiurus lepturus	7.63	13	2.86	
Uranoscopus albesca	6.70	13	2.51	
Torpedo torpedo	6.13	13	2.30	
OPHIDIIDAE	6.00	408	2.25	
Sepia officinalis hierredda	5.65	75	2.12	
Trachinus lineolatus	5.13	170	1.92	
Raja miraletus	4.65	13	1.74	
Echelus myrus	3.33	13	1.25	
Octopus vulgaris	2.23	5	0.84	
Grammoplites gruveli	1.98	35	0.74	
Zeus faber	1.33	5	0.50	
Illex coindetii	1.28	30	0.48	
Cynoglossus browni	1.10	5	0.41	
Parapandalus narval	0.53	188	0.20	
Microchirus frechkopi	0.23	5	0.09	
Antigonia capros	0.18	18	0.07	
Squilla aculata calmani	0.18	5	0.07	
Total	266.86		100.03	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1419
DATE:12/ 7/06 GEAR TYPE: BT No:18 POSITION:Lat S 256
start stop duration Long E 918
TIME :21:37:52 22:10:28 33 (min) Purpose code: 3
LOG :6664.47 6666.06 1.58 Area code : 8
FDEPTH: 264 221 GearCond.code:
BDEPTH: 264 221 Validity code:
Towing dir: 120ø Wire out: 675 m Speed: 29 kn*10

Sorted: Kg Total catch: 1015.61 CATCH/HOUR: 1846.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Spicara alta	1264.80	8916	68.49	6006
Aulopus cadenati	109.91	856	5.95	
Dentex angolensis	60.76	169	3.29	6005
Peristedion cataphractum	47.69	1127	2.58	
Illex coindetii	46.22	698	2.50	
Lepidotrigla cadmani	44.98	325	2.44	
Torpedo nobiliana	41.71	11	2.26	
Merluccius polli	33.47	135	1.81	
Pontinus accraensis	30.78	416	1.67	
Scyliorhinus cervigoni	26.49	100	1.43	
Paramola cuvieri	19.82	5	1.07	
Gephyroberyx darwini	18.49	124	1.00	
Brotula barbata	16.80	44	0.91	
Cyttopsis roseus	16.35	145	0.89	
Zenopsis conchifer	14.09	11	0.76	
Lophius vaillanti	12.51	22	0.68	
Gadella imberbis	6.31	191	0.34	
Hymenocephalus italicus	5.64	89	0.31	
Uranoscopus albesca	5.07	44	0.27	
Raja straeleni	4.84	11	0.26	
Octopus vulgaris	4.75	4	0.26	
Cynoponticus ferox	4.62	22	0.25	
Symbolophorus barnardi	3.95	1860	0.21	
Echelus myrus	2.25	11	0.12	
Grammoplites gruveli	1.91	44	0.10	
Malacocephalus laevis	1.24	22	0.07	
Boops boops	1.13	67	0.06	
Total	1846.58		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1420
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 300
start stop duration Long E 937
TIME :05:58:47 06:29:30 31 (min) Purpose code: 3
LOG :6718.23 6719.87 1.63 Area code : 8
FDEPTH: 101 99 GearCond.code:
BDEPTH: 101 99 Validity code:
Towing dir: 330ø Wire out: 290 m Speed: 30 kn*10

Sorted: Kg Total catch: 116.45 CATCH/HOUR: 225.39

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Boops boops	80.57	4634	35.75	
Saurida brasiliensis	80.13	13502	35.55	
Dentex congoensis	13.80	356	6.12	6007
Zeus faber	11.88	41	5.27	
Lepidotrigla cadmani	8.81	209	3.91	
Sepia officinalis hierredda	8.46	35	3.75	
Pagellus bellottii	5.48	93	2.43	6008
Fistularia petimba	4.22	10	1.87	
Rhizoprionodon acutus	3.87	2	1.72	
Octopus vulgaris	2.32	2	1.03	
Torpedo torpedo	1.82	4	0.81	
Illex coindetii	1.43	75	0.63	
Raja miraletus	0.79	2	0.35	
Spicara alta	0.62	54	0.28	
Trachurus trecae	0.35	10	0.16	
Scomber japonicus	0.35	10	0.16	
Citharus linguatula	0.27	4	0.12	
Alloteuthis africana	0.21	72	0.09	
Total	225.38		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1421
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 255
start stop duration Long E 940
TIME :07:47:04 08:18:13 31 (min) Purpose code: 3
LOG :6728.84 6730.43 1.59 Area code : 8
FDEPTH: 74 74 GearCond.code:
BDEPTH: 74 74 Validity code:
Towing dir: 320ø Wire out: 245 m Speed: 30 kn*10

Sorted: Kg Total catch: 63.01 CATCH/HOUR: 121.95

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	42.87	323	35.15	6010
Epinephelus aeneus	17.52	2	14.37	
Sepia officinalis hierredda	13.70	27	11.23	
Dentex barnardi	12.58	12	10.32	6011
Alloteuthis africana	10.18	3122	8.35	
Brachydeuterus auritus	7.76	81	6.36	6009
Pagrus caeruleostictus	4.32	12	3.54	6012
Zeus faber	3.02	8	2.48	
Raja miraletus	1.57	4	1.29	
Trachurus trecae	1.55	14	1.27	
Pseudupeneus prayensis	1.24	12	1.02	
Trichiurus lepturus	1.10	2	0.90	
Dactylopterus volitans	1.06	4	0.87	
Boops boops	1.05	52	0.86	
Illex coindetii	0.68	15	0.56	
Selene dorsalis	0.64	2	0.52	
Saurida brasiliensis	0.58	103	0.48	
Fistularia petimba	0.31	6	0.25	
Lepidotrigla cadmani	0.23	10	0.19	
Total	121.96		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1422
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 250
start stop duration Long E 945
TIME :09:31:54 10:03:33 32 (min) Purpose code: 3
LOG :6738.99 6740.52 1.52 Area code : 8
FDEPTH: 46 46 GearCond.code:
BDEPTH: 46 46 Validity code:
Towing dir: 140ø Wire out: 150 m Speed: 30 kn*10

Sorted: Kg Total catch: 742.75 CATCH/HOUR: 1392.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	852.19	17569	61.19	
Pagellus bellottii	173.44	2756	12.45	
Trachurus trecae	133.13	2756	9.56	
Sardinella aurita - Juveniles	57.94	1163	4.16	
Dactylopterus volitans	38.81	150	2.79	
Pseudupeneus prayensis	30.19	413	2.17	
Alloteuthis africana	29.25	12225	2.10	
Pomadasys incisus	16.13	11	1.16	
Boops boops	10.69	225	0.77	
Sepia officinalis hierredda	8.44	8	0.61	
Decapterus punctatus	7.31	413	0.52	
Zeus faber	6.75	19	0.48	
Rhinobatos albomaculatus	5.72	2	0.41	
Raja miraletus	5.16	9	0.37	
Seriola dumerili	5.06	19	0.36	
Trichiurus lepturus	3.66	4	0.26	
Scomberomorus tritor	2.96	4	0.21	
Torpedo torpedo	1.84	4	0.13	
Balistes capriscus	1.67	4	0.12	
Aluterus heudelotii	1.01	4	0.07	
Lagocephalus laevigatus	0.92	11	0.07	
J E L L Y F I S H	0.41	2	0.03	
Total	1392.68		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1423
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 248
start stop duration Long E 954
TIME :11:42:35 12:14:24 32 (min) Purpose code: 3
LOG :6752.01 6753.60 1.57 Area code : 8
FDEPTH: 20 22 GearCond.code:
BDEPTH: 20 22 Validity code:
Towing dir: 145ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 444.14 CATCH/HOUR: 832.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita - Juveniles	481.89	86044	57.87	
Chloroscombrus chrysurus	159.41	2316	19.14	
Sepia officinalis hierredda	31.20	24	3.75	
Brachydeuterus auritus	27.06	14503	3.25	
Gymnura micrura	22.98	6	2.75	
Pagellus bellottii	19.50	195	2.34	
Galeoides decadactylus	15.84	73	1.90	
Raja miraletus	13.65	24	1.64	
Ephippion guttifer	13.22	9	1.59	
Sardinella maderensis - Juv.	11.70	1731	1.40	
Pomadasys peroteti	10.97	24	1.32	
Torpedo torpedo	9.51	24	1.14	
Pseudotolithus typus	6.88	2	0.83	
Trichiurus lepturus	2.44	24	0.29	
Pseudotolithus senegalensis	2.23	4	0.27	
Panulirus regius	1.71	2	0.21	
Sphyraena guachancho	1.46	49	0.18	
Selene dorsalis	0.49	244	0.06	
Ilisha africana	0.49	219	0.06	
Lagocephalus lagocephalus	0.24	24	0.03	
Total	832.77		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1424
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 257
start stop duration Long E 1004
TIME :14:04:39 14:26:43 22 (min) Purpose code: 3
LOG :6768.42 6769.56 1.13 Area code : 8
FDEPTH: 26 26 GearCond.code:
BDEPTH: 26 26 Validity code:
Towing dir: 313ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 446.55 CATCH/HOUR: 1217.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	273.41	19759	22.45	
Galeoides decadactylus	201.82	905	16.57	6013
Pagrus caeruleostictus	128.18	286	10.53	6016
Pomadasys peroteti	119.32	150	9.80	6014
Arius parkii	90.68	177	7.45	
Sphyraena guachancho	74.45	273	6.11	
Pseudotolithus typus	63.82	11	5.24	
Leptocharias smithii	39.14	25	3.21	
Pomadasys incisus	33.55	164	2.75	
Dentex macrophthalmus	32.05	41	2.63	6015
Sardinella maderensis	26.05	4950	2.14	
Brachydeuterus auritus	24.95	3	2.05	
Raja straeleni	23.45	27	1.93	
Paragaleus pectoralis	20.73	3	1.70	
Psettodes belcheri	18.27	27	1.50	
Pseudotolithus senegalensis	15.27	16	1.25	
Drepane africana	11.18	14	0.92	
Trichiurus lepturus	8.86	491	0.73	
Umbrina canariensis	6.55	14	0.54	
Elops lacerta	3.95	14	0.32	
Epinephelus aeneus	2.18	3	0.18	
Total	1217.86		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1425
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 303
start stop duration Long E 955
TIME :16:01:00 16:22:07 21 (min) Purpose code: 3
LOG :6781.72 6782.80 1.06 Area code : 8
FDEPTH: 53 54 *GearCond.code:*
BDEPTH: 53 54 Validity code:
Towing dir: 130ø Wire out: 166 m Speed: 30 kn*10

Sorted: Kg Total catch: 267.04 CATCH/HOUR: 762.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	207.00	4783	27.13	
Pagellus bellottii	172.29	1440	22.58	
Apsilus fuscus	47.94	77	6.28	6017
Pagrus caeruleostictus	42.57	129	5.58	6021
Pomadasys incisus	39.86	217	5.22	6022
Umbrina canariensis	33.83	63	4.43	
Acanthurus monroviae	33.69	37	4.42	
Lutjanus fulgens	30.71	51	4.03	
Pagrus auriga	20.83	11	2.73	
Dentex barnardi	20.71	37	2.71	6019
Sardinella aurita	15.17	951	1.99	6018
Zeus faber	15.17	26	1.99	
Dactylopterus volitans	12.60	6	1.65	
Raja miraletus	10.54	26	1.38	
Chromis cadenati	10.03	129	1.31	
Balistes capriscus	8.63	11	1.13	
Pseudupeneus prayensis	8.37	77	1.10	
Torpedo torpedo	6.94	11	0.91	
Alloteuthis africana	5.40	2083	0.71	
Chaetodon robustus	4.37	26	0.57	
Citharus linguatula	3.86	37	0.51	
Lagocephalus laevigatus	2.71	26	0.36	
Scorpaena angolensis	2.06	11	0.27	
Sepia officinalis hierredda	1.66	37	0.22	
Decapterus punctatus	1.66	51	0.22	
Priacanthus arenatus	1.54	11	0.20	
Lepidotrigla cadmani	1.29	11	0.17	
Boops boops	0.77	77	0.10	
Fistularia petimba	0.40	11	0.05	
Chaetodon marcellae	0.37	11	0.05	
Total	762.97		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1426
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 316
start stop duration Long E 939
TIME :19:50:16 20:21:21 31 (min) Purpose code: 3
LOG :6806.70 6808.19 1.48 Area code : 8
FDEPTH: 170 184 GearCond.code:
BDEPTH: 170 184 Validity code:
Towing dir: 140ø Wire out: 450 m Speed: 30 kn*10

Sorted: Kg Total catch: 158.75 CATCH/HOUR: 307.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aulopus cadenati	85.74	1103	27.90	
Dentex congoensis	59.81	1152	19.47	6023
Antigonia capros	41.42	1568	13.48	
Merluccius polli	18.10	97	5.89	
Illex coindetii	15.97	300	5.20	
Lepidotrigla cadmani	15.68	435	5.10	
Pentheroscion mbizi	9.00	426	2.93	
MYCTOPHIDAE	8.52	3523	2.77	
Chlorophthalmus atlanticus	8.13	232	2.65	
Echelus myrus	7.16	29	2.33	
Peristedion cataphractum	6.97	174	2.27	
Squalus mitsukurii	6.87	6	2.24	
Trigla lyra	6.68	39	2.17	
Raja miraletus	4.45	10	1.45	
Boops boops	3.10	77	1.01	
Sepia officinalis hierredda	3.00	29	0.98	
Uranoscopus albesca	2.71	10	0.88	
Setarches guentheri	1.65	29	0.54	
Dentex angolensis	1.35	10	0.44	
Dicologoglossa hexophthalma	0.97	29	0.32	
Total	307.28		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1427
DATE:13/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 317
start stop duration Long E 938
TIME :21:24:48 21:55:42 31 (min) Purpose code: 3
LOG :6811.69 6813.28 1.58 Area code : 8
FDEPTH: 351 334 GearCond.code:
BDEPTH: 351 334 Validity code:
Towing dir: 320ø Wire out: 860 m Speed: 30 kn*10

Sorted: Kg Total catch: 75.96 CATCH/HOUR: 147.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	71.94	1301	48.93	
Merluccius polli	25.06	174	17.05	
Malacocephalus laevis	7.97	110	5.42	
Centrophorus uyato	7.65	2	5.20	
Illex coindetii	7.39	72	5.03	
Hypoclydonia bella	4.68	184	3.18	
Plesionika martia	4.30	465	2.92	
Trigla lyra	3.04	14	2.07	
Aristeus varidens	2.13	706	1.45	
Galeus polli	1.94	43	1.32	
Zenion hololepis	1.74	120	1.18	
Hymenocephalus italicus	1.74	207	1.18	
Symbolophorus barnardi	1.49	1107	1.01	
Chascanopsetta lugubris	1.01	23	0.69	
Photichthys argenteus	1.01	77	0.69	
Peristedion cataphractum	0.77	29	0.52	
Lophiodes kempi	0.62	4	0.42	
Laemonema laureysi	0.58	10	0.39	
Lophius vaillanti	0.52	14	0.35	
Antigonia capros	0.39	14	0.27	
Cyttopsis roseus	0.29	4	0.20	
Nezumia aequalis	0.23	4	0.16	
Nematocarcinus africanus	0.19	43	0.13	
Dibranchus atlanticus	0.19	48	0.13	
'Spider crab'	0.14	33	0.10	
Total	147.01		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1428
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 321
start stop duration Long E 940
TIME :23:52:23 00:14:13 22 (min) Purpose code: 3
LOG :6824.04 6825.13 1.09 Area code : 8
FDEPTH: 463 404 GearCond.code:
BDEPTH: 463 404 Validity code:
Towing dir: 128ø Wire out:1268 m Speed: 30 kn*10

Sorted: Kg Total catch: 152.95 CATCH/HOUR: 417.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	325.88	68605	78.12	
Plesionika martia	33.03	5073	7.92	
Hoplostethus cadenati	12.98	496	3.11	
Trichiurus lepturus	11.84	267	2.84	
Merluccius polli	7.83	19	1.88	
Illex coindetii	7.25	57	1.74	
Triplophos hemingi	4.77	630	1.14	
Yarrella blackfordi	4.58	153	1.10	
Malacocephalus laevis	2.29	19	0.55	
Centroscymnus crepidater	2.10	19	0.50	
Aristeus varidens	1.15	172	0.28	
DICAA00	0.76	19	0.18	
Halosaurus ovenii	0.57	19	0.14	
Dibranchus atlanticus	0.57	95	0.14	
Photichthys argenteus	0.38	19	0.09	
'Spider crab'	0.38	38	0.09	
Symbolophorus barnardi	0.38	134	0.09	
Lophiodes kempi	0.19	19	0.05	
Gadella imberbis	0.19	19	0.05	
Total	417.12		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1429
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 322
start stop duration Long E 958
TIME :05:39:25 06:11:22 32 (min) Purpose code: 3
LOG :6854.37 6856.07 1.70 Area code : 8
FDEPTH: 101 100 GearCond.code:
BDEPTH: 101 100 Validity code:
Towing dir: 320ø Wire out: 280 m Speed: 30 kn*10

Sorted: 41 Kg Total catch: 89.23 CATCH/HOUR: 167.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Saurida brasiliensis	70.88	20325	42.36	
Pagellus bellottii	20.85	851	12.46	6025
Boops boops	15.11	739	9.03	
Illex coindetii	15.04	900	8.99	
Sepia officinalis hierredda	10.46	19	6.25	
Lepidotrigla cadmani	7.88	131	4.71	
Ariomma bondi	5.70	90	3.41	
Dentex congoensis	4.73	124	2.83	6024
Trachurus trecae	2.70	64	1.61	
Fistularia petimba	2.49	6	1.49	
Torpedo torpedo	1.97	4	1.18	
Alloteuthis africana	1.84	491	1.10	
Rhizoprionodon acutus	1.82	2	1.09	
Zeus faber	1.65	11	0.99	
Priacanthus arenatus	1.39	4	0.83	
Echeneis naucrates	1.24	2	0.74	
Citharus linguatula	0.83	11	0.50	
Spicara alta	0.75	79	0.45	
Total	167.33		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1430
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 317
start stop duration Long E 1002
TIME :07:22:11 07:53:02 31 (min) Purpose code: 3
LOG :6863.43 6865.05 1.60 Area code : 8
FDEPTH: 73 74 GearCond.code:
BDEPTH: 73 74 Validity code:
Towing dir: 150ø Wire out: 200 m Speed: 30 kn*10

Sorted: Kg Total catch: 56.93 CATCH/HOUR: 110.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	27.29	39	24.77	6026
Sepia officinalis hierredda	22.94	8	20.82	
Sepia orbignyana	18.97	19	17.22	
Alloteuthis africana	9.93	4171	9.01	
Rhinobatos albomaculatus	9.39	4	8.52	
Squatina oculata	8.32	4	7.55	
Fistularia petimba	3.52	12	3.19	
Pagellus bellottii	3.48	60	3.16	6027
Rhizoprionodon acutus	1.74	2	1.58	
Torpedo torpedo	1.49	4	1.35	
Priacanthus arenatus	0.62	2	0.56	
Illex coindetii	0.54	29	0.49	
Pagrus caeruleostictus	0.41	2	0.37	
Raja miraletus	0.41	2	0.37	
Saurida brasiliensis	0.33	112	0.30	
Boops boops	0.31	10	0.28	
Dentex congoensis	0.21	2	0.19	
Trachurus trecae	0.15	2	0.14	
Citharus linguatula	0.14	2	0.13	
Total	110.19		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1431
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 312
start stop duration Long E 1011
TIME :09:34:00 10:08:06 34 (min) Purpose code: 3
LOG :6877.22 6879.05 1.83 Area code : 8
FDEPTH: 42 44 GearCond.code:
BDEPTH: 42 44 Validity code:
Towing dir: 150ø Wire out: 120 m Speed: 30 kn*10

Sorted: Kg Total catch: 2827.92 CATCH/HOUR: 4990.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita - Juveniles	4033.24	551065	80.82	6031
Engraulis encrasicolus	266.82	49669	5.35	
Brachydeuterus auritus	211.24	6424	4.23	
Pagrus caeruleostictus	139.59	247	2.80	
Sphyraena guachancho	110.29	148	2.21	6028
Decapterus macarellus	34.59	1359	0.69	
Aluterus heudelotii	33.35	124	0.67	
Pagellus bellottii	30.88	247	0.62	
Priacanthus arenatus	29.65	124	0.59	
Trichiurus lepturus	23.65	35	0.47	
Decapterus punctatus	22.24	371	0.45	
Lutjanus fulgens	13.94	30	0.28	6029
Umbrina canariensis	7.69	12	0.15	
Galeoides decadactylus	4.25	11	0.09	
Fistularia petimba	3.62	14	0.07	
Pseudupeneus prayensis	3.62	23	0.07	6030
Stromateus fiatola	3.21	4	0.06	
Decapterus rhonchus	2.52	5	0.05	
Pseudotolithus brachygnathus	2.14	2	0.04	
Seriola dumerili	2.01	4	0.04	
Pseudotolithus senegalensis	1.89	2	0.04	
Epinephelus aeneus	1.46	2	0.03	
Sepia officinalis hierredda	1.29	5	0.03	
Pomadasys incisus	1.27	5	0.03	
Acanthurus monroviae	1.22	2	0.02	
Zeus faber	0.94	2	0.02	
Raja miraletus	0.90	2	0.02	
Echeneis naucrates	0.86	2	0.02	
Dactylopterus volitans	0.58	2	0.01	
Balistes capriscus	0.48	2	0.01	
Alectis alexandrinus	0.41	2	0.01	
Selene dorsalis	0.32	4	0.01	
Citharichthys stampflii	0.26	2	0.01	
Chaetodon robustus	0.04	2		
Total	4990.46		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1432
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 307
start stop duration Long E 1020
TIME :11:52:10 12:22:18 30 (min) Purpose code: 3
LOG :6892.26 6893.74 1.47 Area code : 8
FDEPTH: 22 23 GearCond.code:
BDEPTH: 22 23 Validity code:
Towing dir: 145ø Wire out: 101 m Speed: 30 kn*10

Sorted: Kg Total catch: 173.90 CATCH/HOUR: 347.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	84.50	11560	24.30	
Ilisha africana	83.50	6060	24.01	
Lutjanus fulgens	28.10	4	8.08	
Trichiurus lepturus	24.90	460	7.16	
Galeoides decadactylus	24.00	260	6.90	
Sepia officinalis hierredda	19.46	10	5.60	
Chloroscombrus chrysurus	15.00	290	4.31	
Pagellus bellottii	12.70	80	3.65	
Plectorhinchus macrolepis	10.00	4	2.88	
Pomadasys jubelini	6.90	6	1.98	
Pseudotolithus senegalensis	5.68	10	1.63	
Dentex macrophthalmus	5.30	4	1.52	
Selene dorsalis	5.20	200	1.50	
Sphyraena guachancho	4.56	22	1.31	
Drepane africana	4.30	10	1.24	
Plectorhinchus macrolepis	2.88	2	0.83	
Pagrus caeruleostictus	2.80	12	0.81	
Stromateus fiatola	2.14	6	0.62	
Pomadasys incisus	1.50	10	0.43	
Lagocephalus laevigatus	1.10	10	0.32	
Acanthurus monroviae	0.96	2	0.28	
Trachurus trecae	0.90	20	0.26	
Scyllarides herklotsii	0.60	2	0.17	
Pseudupeneus prayensis	0.30	10	0.09	
Balistes capriscus	0.28	2	0.08	
Torpedo nobiliana	0.20	2	0.06	
Total	347.78		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1434
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 326
start stop duration Long E 1014
TIME :16:34:55 17:05:19 30 (min) Purpose code: 3
LOG :6924.96 6926.44 1.46 Area code : 8
FDEPTH: 63 63 GearCond.code:
BDEPTH: 63 63 Validity code:
Towing dir: 136ø Wire out: 190 m Speed: 30 kn*10

Sorted: Kg Total catch: 143.37 CATCH/HOUR: 286.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	133.00	266	46.38	6034
Umbrina canariensis	28.60	62	9.97	6033
Alloteuthis africana	27.10	15830	9.45	
Sepia officinalis hierredda	25.80	24	9.00	
Pagellus bellottii	15.86	326	5.53	6035
Pomadasys incisus	9.74	44	3.40	6036
Lutjanus fulgens	7.80	8	2.72	
Rhizoprionodon acutus	6.90	4	2.41	
Chromis cadenati	4.86	74	1.69	
Pseudupeneus prayensis	4.80	58	1.67	6037
Octopus vulgaris	3.34	2	1.16	
Raja miraletus	2.92	6	1.02	
Fistularia petimba	2.84	12	0.99	
Pagrus caeruleostictus	2.78	10	0.97	
Zeus faber	2.38	6	0.83	
Dentex barnardi	1.92	4	0.67	
Saurida brasiliensis	1.08	176	0.38	
Chaetodon robustus	0.98	8	0.34	
Boops boops	0.90	52	0.31	
Sargocentron hastatus	0.82	4	0.29	
Citharichthys stampflii	0.64	4	0.22	
Chilomycterus spinosus mauret.	0.44	2	0.15	
Torpedo torpedo	0.38	2	0.13	
Dactylopterus volitans	0.36	2	0.13	
Brachydeuterus auritus	0.22	6	0.08	
Scorpaena angolensis	0.14	2	0.05	
Chaetodon marcellae	0.10	2	0.03	
Lepidotrigla cadmani	0.04	2	0.01	
Total	286.74		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1435
DATE:14/ 7/06 GEAR TYPE: PT No: 5 POSITION:Lat S 330
start stop duration Long E 1009
TIME :20:15:56 20:47:26 32 (min) Purpose code: 1
LOG :6936.15 6937.96 1.80 Area code : 8
FDEPTH: 10 10 GearCond.code:
BDEPTH: 92 102 Validity code:
Towing dir: 235ø Wire out: 150 m Speed: 35 kn*10

Sorted: Kg Total catch: 75.71 CATCH/HOUR: 141.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Saurida brasiliensis	88.88	29106	62.61	
Trichiurus lepturus	37.78	54	26.61	
Sepia officinalis hierredda	6.00	26	4.23	
Alloteuthis africana	4.65	971	3.28	
Scomber japonicus	2.66	6	1.87	
Echeneis naucrates	1.74	2	1.23	
Pagellus bellottii	0.08	34	0.06	
Trachurus trecae	0.08	2	0.06	
Arionma bondi juv.	0.06	17	0.04	
Selene dorsalis	0.02	4	0.01	
Priacanthus arenatus	0.02	2	0.01	
Total	141.97		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1433
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 315
start stop duration Long E 1026
TIME :13:46:29 14:16:19 30 (min) Purpose code: 3
LOG :6903.57 6905.17 1.59 Area code : 8
FDEPTH: 23 24 GearCond.code:
BDEPTH: 23 24 Validity code:
Towing dir: 322ø Wire out: 111 m Speed: 30 kn*10

Sorted: Kg Total catch: 151.39 CATCH/HOUR: 302.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	47.50	60	15.69	
Trichiurus lepturus	32.30	354	10.67	
Brachydeuterus auritus	30.80	780	10.17	
Galeoides decadactylus	22.12	114	7.31	
Pagellus bellottii	19.30	112	6.37	
Pseudotolithus typus	18.80	10	6.21	
Sphyraena guachancho	17.00	104	5.61	
Sepia officinalis hierredda	17.00	8	5.61	
Pomadasys incisus	16.36	92	5.40	
Epinephalus aeneus	15.20	2	5.02	
Pagrus caeruleostictus	15.08	46	4.98	
Drepane africana	13.98	40	4.62	
Ilisha africana	9.38	456	3.10	
Pseudotolithus senegalensis	5.90	6	1.95	
Pomadasys jubelini	5.86	12	1.94	
Lutjanus fulgens	3.80	14	1.26	6032
Lagocephalus laevigatus	2.78	6	0.92	
Balistes capriscus	2.20	6	0.73	
Arius parkii	2.16	4	0.71	
Pseudupeneus prayensis	1.98	16	0.65	
Selene dorsalis	1.44	26	0.48	
Zeus faber	0.90	2	0.30	
Chloroscombrus chrysurus	0.66	6	0.22	
Penaeus notialis	0.18	2	0.06	
Penaeus kerathurus	0.10	2	0.03	
Total	302.78		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1436
DATE:14/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 337
start stop duration Long E 1000
TIME :22:44:00 23:15:41 32 (min) Purpose code: 3
LOG :6948.77 6950.30 1.54 Area code : 8
FDEPTH: 172 177 GearCond.code:
BDEPTH: 172 177 Validity code:
Towing dir: 130ø Wire out: 470 m Speed: 30 kn*10

Sorted: Kg Total catch: 236.84 CATCH/HOUR: 444.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aulopus cadenati	104.61	1299	23.56	
Antigonia capros	58.28	1759	13.12	
Dentex congoensis	52.24	998	11.76	6038
Spicara alta	49.61	1168	11.17	
Squatina aculeata	47.44	2	10.68	
Synagrops microlepis	47.38	2271	10.67	
Merluccius polli	30.19	158	6.80	
Lepidotrigla carolae	11.42	341	2.57	
Raja miraletus	7.09	13	1.60	
Raja straeleni	5.38	13	1.21	
Symbolophorus barnardi	4.86	2139	1.09	
Peristedion cataphractum	4.73	118	1.07	
Illex coindetii	4.33	53	0.98	
Pomadasys incisus	4.20	13	0.95	
Lepidotrigla cadmani	3.81	39	0.86	
Pontinus accraensis	3.02	39	0.68	
Pentheroscion mbizi	1.71	13	0.39	
Trichiurus lepturus	1.31	13	0.29	
Physiculus sp.	1.18	13	0.27	
Parapenaeus longirostris	0.53	13	0.12	
Scorpaena normani	0.53	13	0.12	
CALLIONYMIDAE	0.26	13	0.06	
Total	444.11		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1437
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 344
start stop duration Long E 1019
TIME :06:35:15 07:05:17 30 (min) Purpose code: 3
LOG :6996.11 6997.71 1.60 Area code : 8
FDEPTH: 104 103 GearCond.code:
BDEPTH: 104 103 Validity code:
Towing dir: 340ø Wire out: 300 m Speed: 30 kn*10

Sorted: 74 Kg Total catch: 741.36 CATCH/HOUR: 1482.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	966.14	21812	65.16	6039
Saurida brasiliensis	246.04	59166	16.59	
Dentex congoensis	47.88	1292	3.23	6040
Boops boops	44.26	2204	2.99	
Pagellus bellottii	36.66	474	2.47	6041
Zeus faber	26.98	132	1.82	
Ariomma bondi	24.70	1330	1.67	
Sepia officinalis hierredda	22.10	28	1.49	
Epinephelus aeneus	19.90	2	1.34	
Fistularia petimba	12.30	24	0.83	
Lepidotrigla cadmani	8.16	76	0.55	
Illex coindetii	7.02	512	0.47	
Umbrina canariensis	4.44	6	0.30	
Sarda sarda	3.56	2	0.24	
Dentex angolensis	3.22	38	0.22	
Citharus linguatula	3.04	38	0.21	
Spicara alta	1.90	132	0.13	
Rhizoprionodon acutus	1.88	2	0.13	
Raja miraletus	1.10	2	0.07	
Synchiropus phaeton	0.76	18	0.05	
Squatina oculata	0.68	2	0.05	
Total	1482.72		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1439
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 327
start stop duration Long E 1037
TIME :11:17:29 11:47:33 30 (min) Purpose code: 3
LOG :7027.47 7029.07 1.59 Area code : 8
FDEPTH: 26 24 GearCond.code:
BDEPTH: 26 24 Validity code:
Towing dir: 135ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 162.33 CATCH/HOUR: 324.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	112.00	9330	34.50	
Trichiurus lepturus	55.80	890	17.19	
Pseudotolithus senegalensis	32.40	194	9.98	6046
Brachydeuterus auritus	31.50	2660	9.70	
Pentheroscion mbizi	24.40	780	7.52	
Galeoides decadactylus	24.20	242	7.45	6047
Scomberomorus tritor	7.26	10	2.24	
Penaeus notialis	5.62	184	1.73	
Raja straeleni	3.78	4	1.16	
Pomadasys peroteti	3.76	6	1.16	
Pagellus bellottii	3.12	14	0.96	
Raja miraletus	3.00	6	0.92	
Hemicaranx bicolor	2.40	10	0.74	
Stromateus fiatola	1.54	2	0.47	
Portunus validus	1.50	2	0.46	
Pentanemus quinquarius	1.46	18	0.45	
Sepia officinalis hierredda	1.18	4	0.36	
Parapenaeus longirostris	1.14	142	0.35	
Pomadasys incisus	1.02	8	0.31	
Ephippion guttifer	0.90	2	0.28	
Arius gigas	0.80	6	0.25	
Drepane africana	0.80	10	0.25	
Epinephelus aeneus	0.74	2	0.23	
Sphyraena guachancho	0.68	2	0.21	
Cynoglossus canariensis	0.52	2	0.16	
Penaeus kerathurus	0.50	12	0.15	
Chaetodon robustus	0.46	6	0.14	
Citharus linguatula	0.30	10	0.09	
Selene dorsalis	0.30	30	0.09	
Arius parkii	0.28	2	0.09	
Pseudupeneus prayensis	0.28	2	0.09	
Calappa rubroguttata	0.24	2	0.07	
Uranoscopus polli	0.22	4	0.07	
Trachurus trecae	0.22	2	0.07	
Pagrus caeruleostictus	0.20	2	0.06	
Trachinocephalus myops	0.08	2	0.02	
Citharichthys stampflii	0.04	2	0.01	
Trachinus lineolatus	0.02	2	0.01	
Total	324.66		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1438
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 335
start stop duration Long E 1028
TIME :09:09:10 09:40:01 31 (min) Purpose code: 3
LOG :7012.78 7014.41 1.62 Area code : 8
FDEPTH: 51 51 GearCond.code:
BDEPTH: 51 51 Validity code:
Towing dir: 320ø Wire out: 150 m Speed: 30 kn*10

Sorted: Kg Total catch: 181.30 CATCH/HOUR: 350.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Boops boops	117.81	4142	33.57	
Pagellus bellottii	104.75	590	29.85	6045
Sepia officinalis hierredda	30.23	14	8.61	
Pomadasys incisus	28.55	159	8.14	6042
Dentex barnardi	17.46	14	4.98	
Trachurus trecae	7.55	97	2.15	6043
Sardinella aurita	5.55	1649	1.58	6044
Alloteuthis africana	4.49	2025	1.28	
Rhinobatos cemiculus	4.26	2	1.21	
Umbrina canariensis	3.41	10	0.97	
Chromis cadenati	3.10	213	0.88	
Pagrus caeruleostictus	3.00	14	0.85	
Pagrus auriga	2.92	2	0.83	
Zeus faber	2.38	8	0.68	
Trichiurus lepturus	2.30	4	0.66	
Aluterus heudelotii	2.25	2	0.64	
Balistes capriscus	1.95	2	0.56	
Lagocephalus laevigatus	1.65	2	0.47	
Priacanthus arenatus	1.37	4	0.39	
Decapterus punctatus	1.35	101	0.38	
Torpedo torpedo	0.97	2	0.28	
Saurida brasiliensis	0.81	226	0.23	
Pseudupeneus prayensis	0.81	10	0.23	
Chaetodon robustus	0.75	6	0.21	
Scorpaena elongata	0.68	4	0.19	
Fistularia petimba	0.35	4	0.10	
Anthias anthias	0.19	4	0.05	
Total	350.89		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1440
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 333
start stop duration Long E 1044
TIME :12:50:04 13:20:04 30 (min) Purpose code: 3
LOG :7036.36 7037.96 1.60 Area code : 8
FDEPTH: 28 27 GearCond.code:
BDEPTH: 28 27 Validity code:
Towing dir: 135ø Wire out: 121 m Speed: 30 kn*10

Sorted: Kg Total catch: 184.48 CATCH/HOUR: 368.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	97.00	1230	26.29	
Ilisha africana	58.50	8520	15.86	
Galeoides decadactylus	52.90	290	14.34	6050
Pomadasys jubelini	39.80	118	10.79	6049
Pomadasys incisus	23.70	180	6.42	
Pseudotolithus senegalensis	15.00	26	4.07	6048
Arius gigas	14.10	90	3.82	
Pteroscion peli	12.20	230	3.31	
Stromateus fiatola	10.60	16	2.87	
Brachydeuterus auritus	10.10	616	2.74	
Sepia officinalis hierredda	9.36	12	2.54	
Panulirus regius	4.06	8	1.10	
Pentanemus quinquarius	3.40	30	0.92	
Epinephelus aeneus	3.30	2	0.89	
Rhinobatos albomaculatus	2.40	2	0.65	
Mustelus mustelus	2.20	2	0.60	
Citharichthys stampflii	2.10	50	0.57	
Torpedo torpedo	1.66	4	0.45	
Psettodes belcheri	1.34	2	0.36	
Pseudupeneus prayensis	1.12	8	0.30	
Lagocephalus laevigatus	1.00	8	0.27	
Pagrus pagrus	0.94	4	0.25	
Penaeus notialis	0.74	20	0.20	
Chaceon maritae	0.70	10	0.19	
Parapenaeopsis atlantica	0.46	92	0.12	
Penaeus kerathurus	0.28	6	0.08	
Total	368.96		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1441
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 344
start stop duration Long E 1040
TIME :15:30:28 16:00:12 30 (min) Purpose code: 3
LOG :7050.96 7052.39 1.43 Area code : 8
FDEPTH: 48 48 GearCond.code:
BDEPTH: 48 48 Validity code:
Towing dir: 133ø Wire out: 153 m Speed: 30 kn*10

Sorted: Kg Total catch: 115.91 CATCH/HOUR: 231.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	*134.60*	*308*	*58.06*	
Brachydeuterus auritus	24.48	332	10.56	
Pagellus bellottii	19.00	122	8.20	6051
Alectis alexandrinus	6.30	6	2.72	
Rhizoprionodon acutus	6.10	4	2.63	
Pseudotolithus senegalensis	4.92	6	2.12	6052
Balistes capriscus	3.90	4	1.68	
Trachinocephalus myops	3.84	34	1.66	
Uranoscopus polli	3.34	14	1.44	
Pomadasys incisus	3.18	16	1.37	
J E L L Y F I S H	2.92	8	1.26	
Torpedo torpedo	2.72	4	1.17	
Trachinus radiatus	2.48	4	1.07	
Arius heudeloti	2.32	14	1.00	
Trachinus armatus	2.08	30	0.90	
Sepia officinalis hierredda	1.64	8	0.71	
Stromateus fiatola	1.58	2	0.68	
Trachurus trecae	1.50	24	0.65	
Lepidotrigla cadmani	0.98	8	0.42	
Chilomycterus spinosus mauret.	0.90	2	0.39	
Loliginoula mercatoris	0.84	728	0.36	
Aluterus heudelotii	0.78	2	0.34	
Zeus faber	0.48	2	0.21	
Pseudupeneus prayensis	0.38	4	0.16	
Pomadasys jubelini	0.24	2	0.10	
Lagocephalus laevigatus	0.18	2	0.08	
Alloteuthis africana	0.14	32	0.06	
Total	*231.82*		*100.00*	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1443
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 359
start stop duration Long E 1023
TIME :21:29:23 22:00:20 31 (min) Purpose code: 3
LOG :7082.10 7083.61 1.48 Area code : 8
FDEPTH: 197 186 GearCond.code:
BDEPTH: 197 186 Validity code:
Towing dir: 130ø Wire out: 500 m Speed: 30 kn*10

Sorted: Kg Total catch: 118.16 CATCH/HOUR: 228.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aulopus cadenati	*45.23*	*470*	*19.78*	
Merluccius polli	34.32	186	15.01	
Dentex congoensis	27.93	476	12.21	6054
Uranoscopus cadenati	20.67	157	9.04	
Dentex angolensis	16.61	110	7.26	6053
Symbolophorus barnardi	12.72	447	5.56	
Scomber scombrus	8.50	8	3.72	
Lepidotrigla cadmani	7.32	75	3.20	
Parapenaeus longirostris	6.10	958	2.67	
Peristedion cataphractum	5.86	279	2.56	
Echelus myrus	5.17	35	2.26	
Hypoclydonia bella	4.01	650	1.75	
Spicara alta	3.89	52	1.70	
Illex coindetii	3.14	46	1.37	
Umbrina canariensis	3.12	6	1.36	6055
Antigonia capros	2.73	203	1.19	
Synagrops microlepis	2.73	105	1.19	
Pterothrissus belloci	2.67	29	1.17	
Pontinus accraensis	2.50	29	1.09	
Raja miraletus	1.95	6	0.85	
Ariomma bondi	1.68	29	0.73	
Chlorophthalmus atlanticus	1.63	81	0.71	
Trichiurus lepturus	1.53	6	0.67	
Pentheroscion mbizi	1.16	6	0.51	
Gadella imberbis	1.10	35	0.48	
Chelidonichthys gabonensis	0.99	6	0.43	
Squatina aculeata	0.87	2	0.38	
Halosaurus ovenii	0.70	58	0.31	
Chascanopsetta lugubris	*0.58*	*6*	*0.25*	
Octopus vulgaris	0.45	2	0.20	
Boops boops	0.23	12	0.10	
Solenocera africana	0.17	29	0.07	
Plesionika martia	0.17	41	0.07	
NETTASTOMATIDAE	0.17	6	0.07	
Galeus polli	0.12	8	0.05	
Total	228.72		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1442
DATE:15/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 348
start stop duration Long E 1037
TIME :16:55:38 17:27:24 32 (min) Purpose code: 3
LOG :7058.91 7060.79 1.86 Area code : 8
FDEPTH: 67 66 GearCond.code:
BDEPTH: 67 66 Validity code:
Towing dir: 218ø Wire out: 212 m Speed: 30 kn*10

Sorted: Kg Total catch: 64.51 CATCH/HOUR: 120.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	31.59	79	26.12	
Pagellus bellottii	23.44	602	19.38	
Alloteuthis africana	*14.91*	*6098*	*12.33*	
Boops boops	10.31	630	8.52	
Sepia officinalis hierredda	8.19	9	6.77	
Fistularia petimba	6.94	21	5.74	
Raja miraletus	5.16	11	4.27	
Trachurus trecae	4.29	156	3.55	
Umbrina canariensis	4.05	6	3.35	
Epinephelus aeneus	3.66	2	3.03	
Balistes punctatus	2.16	2	1.79	
Pseudupeneus prayensis	0.96	21	0.79	
J E L L Y F I S H	0.90	2	0.74	
Dactylopterus volitans	0.77	2	0.64	
Decapterus rhonchus	0.69	2	0.57	
Brachydeuterus auritus	0.68	9	0.56	
Zeus faber	0.56	2	0.46	
Sardinella aurita	0.49	39	0.41	
Citharichthys stampflii	0.34	4	0.28	
Pomadasys incisus	0.32	2	0.26	
Mystriophis rostellatus	0.26	2	0.21	
Saurida brasiliensis	0.15	26	0.12	
Illex coindetii	0.15	2	0.12	
Total	120.97		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1444
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 407
start stop duration Long E 1028
TIME :23:49:13 00:20:00 31 (min) Purpose code: 3
LOG :7094.32 7095.87 1.48 Area code : 8
FDEPTH: 398 358 GearCond.code:
BDEPTH: 398 358 Validity code:
Towing dir: 110ø Wire out: m Speed: kn*10

Sorted: Kg Total catch: 162.44 CATCH/HOUR: 314.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	104.52	24945	33.24	
Chlorophthalmus atlanticus	57.14	975	18.17	
Hoplostethus cadenati	45.17	546	14.37	
Trichiurus lepturus	24.97	12	7.94	
Centrophorus uyato	16.16	4	5.14	
Merluccius polli	16.03	58	5.10	
Deania profundorum	15.64	27	4.97	
Raja straeleni	7.08	10	2.25	
Lophiodes kempi	5.81	93	1.85	
Peristedion cataphractum	3.48	139	1.11	
Epigonus telescopus	*2.90*	*70*	*0.92*	
Chascanopsetta lugubris	2.21	23	0.70	
Plesionika martia	1.86	139	0.59	
Laemonema laureysi	1.74	35	0.55	
Malacocephalus laevis	1.63	12	0.52	
Parasudis fraser-bruenneri	1.39	35	0.44	
Scyliorhinus cervigoni	1.39	8	0.44	
Aristeus varidens	0.93	105	0.30	
Parapenaeus longirostris	0.81	93	0.26	
Hymenocephalus italicus	0.58	81	0.18	
Cynoponticus ferox	0.56	4	0.18	
Chaceon maritae	0.52	2	0.17	
Gadella imberbis	0.46	12	0.15	
'Spider crab'	0.46	93	0.15	
Symbolophorus barnardi	0.35	116	0.11	
Galeus polli	0.14	4	0.04	
Solenocera africana	0.12	12	0.04	
Dibranchus atlanticus	0.12	12	0.04	
Halosaurus ovenii	0.12	12	0.04	
Antigonia capros	0.12	12	0.04	
Total	314.41		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1445
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 404
start stop duration Long E 1042
TIME :05:39:05 06:12:18 33 (min) Purpose code: 3
LOG :7116.66 7118.44 1.80 Area code : 8
FDEPTH: 104 105 GearCond.code:
BDEPTH: 104 105 Validity code:
Towing dir: 320ø Wire out: 300 m Speed: 30 kn*10

Sorted: Kg Total catch: 171.43 CATCH/HOUR: 311.69

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	79.04	693	25.36	
Trichiurus lepturus	54.64	58	17.53	
Umbrina canariensis	49.36	142	15.84	
Epinephelus aeneus	39.73	5	12.75	
Dentex angolensis	34.27	149	10.99	
Saurida brasiliensis	11.20	2393	3.59	
Branchiostegus semifasciatus	6.15	7	1.97	
Rhinobatos albomaculatus	5.91	2	1.90	
Sepia officinalis hierredda	5.65	9	1.81	
Alloteuthis africana	3.33	776	1.07	
Scorpaena normani	3.13	7	1.00	
Priacanthus arenatus	3.04	7	0.98	
Raja miraletus	3.00	5	0.96	
Dentex barnardi	2.85	4	0.91	
Brotula barbata	2.84	5	0.91	
J E L L Y F I S H	1.69	42	0.54	
Citharus linguatula	1.16	25	0.37	
Pentheroscion mbizi	0.98	2	0.31	
Illex coindetii	0.85	24	0.27	
Dactylopterus volitans	0.82	5	0.26	
Chaetodon marcellae	0.67	4	0.21	
Zeus faber	0.49	2	0.16	
Sargocentron hastatus	0.38	2	0.12	
Lepidotrigla cadmani	0.35	11	0.11	
Dibranchus atlanticus	0.16	15	0.05	
Total	311.69		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1447
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 355
start stop duration Long E 1051
TIME :09:08:50 09:38:37 30 (min) Purpose code: 3
LOG :7135.32 7136.90 1.57 Area code : 8
FDEPTH: 44 44 GearCond.code:
BDEPTH: 44 44 Validity code:
Towing dir: 320ø Wire out: 145 m Speed: 30 kn*10

Sorted: Kg Total catch: 177.22 CATCH/HOUR: 354.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudotolithus senegalensis	66.10	64	18.65	
Trichiurus lepturus	45.60	2280	12.87	
Brachydeuterus auritus	41.50	710	11.71	
Pomadasys incisus	25.80	204	7.28	
Epinephelus aeneus	24.80	4	7.00	
Umbrina canariensis	19.70	40	5.56	
Galeoides decadactylus	17.30	44	4.88	
Pentheroscion mbizi	15.82	186	4.46	
Dentex barnardi	9.78	10	2.76	
Sepia officinalis hierredda	9.38	6	2.65	
Dasyatis marmorata	7.44	8	2.10	
Pagrus caeruleostictus	6.96	20	1.96	
Pomadasys olivaceum	6.76	6	1.91	
Raja miraletus	6.76	12	1.91	
J E L L Y F I S H	6.14	22	1.73	
Arius parkii	6.10	2	1.72	
Pagellus bellottii	6.02	22	1.70	
Torpedo torpedo	5.82	6	1.64	
Pagrus auriga	4.68	8	1.32	
Pseudupeneus prayensis	3.56	28	1.00	
Drepane africana	3.24	2	0.91	
Lutjanus fulgens	2.46	4	0.69	
Lagocephalus laevigatus	1.96	4	0.55	
Dactylopterus volitans	1.32	4	0.37	
Bodianus speciosus	1.14	2	0.32	
Scomberomorus tritor	1.12	24	0.32	
Dentex angolensis	0.68	2	0.19	
Syacium micrurum	0.60	4	0.17	
Chaetodon robustus	0.58	6	0.16	
Trachurus trecae	0.54	10	0.15	
Trachinocephalus myops	0.10	4	0.03	
Total	349.76		98.67	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1446
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 359
start stop duration Long E 1045
TIME :07:24:27 07:55:51 31 (min) Purpose code: 3
LOG :7125.55 7127.12 1.57 Area code : 8
FDEPTH: 79 80 GearCond.code:
BDEPTH: 79 80 Validity code:
Towing dir: 140ø Wire out: 240 m Speed: 29 kn*10

Sorted: Kg Total catch: 104.09 CATCH/HOUR: 201.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	106.55	480	52.89	
Selene dorsalis	26.03	52	12.92	
Trachurus trecae	15.68	203	7.78	
Epinephelus aeneus	7.65	2	3.80	
Trichiurus lepturus	5.96	6	2.96	
Brotula barbata	4.72	4	2.34	
Pagellus bellottii	4.51	48	2.24	
Alloteuthis africana	4.37	1165	2.17	
Dentex congoensis	3.83	43	1.90	
Squatina oculata	3.68	2	1.83	
Sepia officinalis hierredda	3.50	2	1.74	
Pseudupeneus prayensis	3.06	19	1.52	
Torpedo torpedo	2.79	2	1.38	
Raja miraletus	1.92	2	0.95	
Fistularia petimba	1.84	4	0.91	
Zeus faber	1.74	6	0.86	
Pentheroscion mbizi	0.95	4	0.47	
J E L L Y F I S H	0.68	203	0.34	
Saurida brasiliensis	0.56	124	0.28	
Chaetodon marcellae	0.43	2	0.21	
Branchiostegus semifasciatus	0.39	2	0.19	
Lepidotrigla cadmani	0.33	4	0.16	
Illex coindetii	0.15	4	0.07	
Citharus linguatula	0.15	4	0.07	
Total	201.47		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1448
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 402
start stop duration Long E 1103
TIME :11:47:41 11:47:49 22 (min) Purpose code: 3
LOG :7154.21 7155.31 1.09 Area code : 9
FDEPTH: 22 21 GearCond.code:
BDEPTH: 22 21 Validity code:
Towing dir: 114ø Wire out: 111 m Speed: 30 kn*10

Sorted: Kg Total catch: 458.01 CATCH/HOUR: 1249.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ilisha africana	510.00	29700	40.83	6061
Brachydeuterus auritus	279.00	26204	22.34	6059
Pomadasys jubelini	111.60	180	8.93	6057
Trichiurus lepturus	72.74	1004	5.82	
Stromateus fiatola	61.80	164	4.95	
Chloroscombrus chrysurus	32.10	570	2.57	6058
Rhizoprionodon acutus	19.36	14	1.55	
Sepia officinalis hierredda	17.54	30	1.40	
Balistes punctatus	17.54	14	1.40	
Cynoglossus cadenati	15.60	74	1.25	
Lagocephalus laevigatus	13.04	194	1.04	
Ephippion guttifer	12.90	74	1.03	
J E L L Y F I S H	11.40	30	0.91	
Pteroscion peli	11.24	300	0.90	
Panulirus regius	11.24	16	0.90	
Sardinella maderensis	10.94	1184	0.88	6060
Raja miraletus	7.94	14	0.64	
Pomadasys incisus	6.74	30	0.54	6062
Torpedo nobiliana	5.84	14	0.47	
Leptocharias smithii	4.50	5	0.36	
Portunus validus	3.87	11	0.31	
Pseudotolithus senegalensis	3.74	14	0.30	
Sardinella aurita	2.54	300	0.20	
Parapenaeopsis atlantica	2.24	434	0.18	
Rhinobatos albomaculatus	2.21	3	0.18	
Selene dorsalis	0.74	14	0.06	
Penaeus notialis	0.60	14	0.05	
Engraulis encrasicolus	0.14	14	0.01	
Total	1249.14		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1449
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 406
start stop duration Long E 1101
TIME :13:42:59 14:12:46 30 (min) Purpose code: 3
LOG :7161.62 7163.08 1.45 Area code : 9
FDEPTH: 47 45 GearCond.code:
BDEPTH: 47 45 Validity code:
Towing dir: 133ø Wire out: 151 m Speed: 30 kn*10

Sorted: 2 Kg Total catch: 136.92 CATCH/HOUR: 273.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	141.10	1520	51.53	6064
Trichiurus lepturus	60.40	2642	22.06	
J E L L Y F I S H	17.60	122	6.43	
Raja miraletus	13.34	50	4.87	
Brachydeuterus auritus	10.06	134	3.67	6063
Pseudotolithus senegalensis	6.92	18	2.53	6065
Cynoglossus cadenati	6.50	24	2.37	
Arius gigas	4.12	2	1.50	
Cynoponticus ferox	3.28	8	1.20	
Galeoides decadactylus	1.64	6	0.60	6066
Torpedo torpedo	1.50	6	0.55	
Penaeus notialis	1.42	58	0.52	
Panulirus regius	1.26	2	0.46	
Pisodonophis semicinctus	1.18	4	0.43	
Grammoplites gruveli	0.94	54	0.34	
Epinephelus aeneus	0.50	2	0.18	
Pagellus bellottii	*0.49*	2	*0.18*	
Citharichthys stampflii	0.36	6	0.13	
Sepia officinalis hierredda	0.30	24	0.11	
Arnoglossus imperialis	0.22	10	0.08	
Brotula barbata	0.20	8	0.07	
Pontinus accraensis	0.14	8	0.05	
Scyllarides sp.	0.12	12	0.04	
Mustelus mustelus	0.10	2	0.04	
Total	273.68		99.94	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1450
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 410
start stop duration Long E 1058
TIME :15:13:26 15:43:10 30 (min) Purpose code: 3
LOG :7169.51 7171.22 1.70 Area code : 9
FDEPTH: 76 76 GearCond.code:
BDEPTH: 76 76 Validity code:
Towing dir: 317ø Wire out: 225 m Speed: 30 kn*10

Sorted: Kg Total catch: 58.26 CATCH/HOUR: 116.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	48.50	168	41.62	
Dentex angolensis	17.74	74	15.22	6069
Trachurus trecae	11.02	94	9.46	6067
Raja miraletus	9.84	24	8.44	
Sepia officinalis hierredda	6.38	6	5.48	
Fistularia petimba	5.46	8	4.69	
Mustelus mustelus	3.50	2	3.00	
Octopus vulgaris	2.52	2	2.16	
Brotula barbata	2.52	2	2.16	
Pagellus bellottii	2.16	18	1.85	6068
Alloteuthis africana	1.76	516	1.51	
Stromateus fiatola	1.76	2	1.51	
Branchiostegus semifasciatus	1.46	6	1.25	
Pentheroscion mbizi	0.66	4	0.57	
Pseudupeneus prayensis	0.36	4	0.31	
Umbrina canariensis	0.32	2	0.27	
Brachydeuterus auritus	0.16	2	0.14	
Citharichthys stampflii	*0.14*	2	*0.12*	
Saurida brasiliensis	0.12	16	0.10	
Penaeus notialis	0.08	6	0.07	
Grammoplites gruveli	0.06	4	0.05	
Total	116.52		99.96	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1451
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 415
start stop duration Long E 1050
TIME :16:50:33 17:40:32 30 (min) Purpose code: 3
LOG :7183.11 7184.70 1.58 Area code : 9
FDEPTH: 115 114 GearCond.code:
BDEPTH: 115 114 Validity code:
Towing dir: 303ø Wire out: 330 m Speed: 30 kn*10

Sorted: 42 Kg Total catch: 1606.89 CATCH/HOUR: 3213.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Manta birostris	3000.00	2	93.35	
Lepidotrigla cadmani	56.80	2052	1.77	
Trichiurus lepturus	35.60	44	1.11	6076
Spicara alta	26.20	796	0.82	6070
Saurida brasiliensis	14.96	5868	0.47	
Pentheroscion mbizi	13.20	24	0.41	6075
Dentex angolensis	8.36	164	0.26	6073
Trachurus trecae	8.08	104	0.25	6074
Zeus faber	6.92	40	0.22	
Ariomma bondi	6.52	88	0.20	
Dentex congoensis	6.24	156	0.19	6071
Aulopus cadenati	5.28	152	0.16	
Sepia officinalis hierredda	5.08	60	0.16	
Raja miraletus	4.12	12	0.13	
Pagellus bellottii	4.04	32	0.13	6072
Illex coindetii	2.88	116	0.09	
Echeneis naucrates	2.66	6	0.08	
Scorpaena angolensis	2.20	4	0.07	
Umbrina canariensis	2.08	4	0.06	
Setarches guentheri	0.80	12	0.02	
Serranus accraensis	0.48	20	0.01	
Boops boops	*0.48*	24	*0.01*	
Antigonia capros	0.32	16	0.01	
Antennarius occidentalis	0.24	4	0.01	
Syacium micrurum	0.24	44	0.01	
Total	3213.78		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1452
DATE:16/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 421
start stop duration Long E 1044
TIME :21:54:19 22:44:28 32 (min) Purpose code: 3
LOG :7197.81 7199.27 1.45 Area code : 8
FDEPTH: 273 258 GearCond.code:
BDEPTH: 273 258 Validity code:
Towing dir: 122ø Wire out: 675 m Speed: 30 kn*10

Sorted: Kg Total catch: 67.91 CATCH/HOUR: 127.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
'Spider crab'	49.22	16403	38.66	
Merluccius polli	27.73	84	21.78	
Trichiurus lepturus	21.94	2098	17.23	
Setarches guentheri	6.36	231	4.99	
Pterothrissus belloci	3.83	23	3.01	
Chlorophthalmus atlanticus	3.54	163	2.78	
Galeus polli	3.30	8	2.59	
Chascanopsetta lugubris	2.48	73	1.95	
Malacocephalus laevis	2.03	28	1.59	
Symbolophorus barnardi	1.63	928	1.28	
Cynoponticus ferox	1.58	17	1.24	
Trachinus sp.	0.90	28	0.71	
Gadella imberbis	0.90	23	0.71	
Octopus vulgaris	0.56	11	0.44	
Zenion longipinnis	0.45	45	0.35	
Halosaurus ovenii	0.23	6	0.18	
Laemonema laureysi	*0.23*	*23*	*0.18*	
Epigonus telescopus	0.17	6	0.13	
Peristedion cataphractum	0.17	17	0.13	
Chelidonichthys gabonensis	0.11	17	0.09	
Total	127.36		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1453
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 423
start stop duration Long E 1105
TIME :05:48:35 06:19:27 31 (min) Purpose code: 3
LOG :7243.76 7245.21 1.44 Area code : 9
FDEPTH: 102 101 GearCond.code:
BDEPTH: 102 101 Validity code:
Towing dir: 125ø Wire out: 280 m Speed: 29 kn*10

Sorted: Kg Total catch: 176.44 CATCH/HOUR: 341.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	107.13	6300	31.37	6077
Saurida brasiliensis	50.23	8373	14.71	
Brotula barbata	37.45	52	10.97	6081
Dentex angolensis	33.85	244	9.91	6080
Trichiurus lepturus	20.81	29	6.09	6078
Trachurus trecae	14.81	308	4.34	6079
Citharus linguatula	13.76	499	4.03	
Scorpaena normani	11.21	174	3.28	
Parapenaeus longirostris	9.06	1697	2.65	
Lepidotrigla cadmani	8.19	70	2.40	
Sepia officinalis hierredda	5.98	64	1.75	
Uranoscopus albesca	5.28	105	1.55	
Octopus vulgaris	4.84	6	1.42	
Illex coindetii	3.48	163	1.02	
Umbrina canariensis	3.08	12	0.90	
Zeus faber	2.67	12	0.78	
Branchiostegus semifasciatus	2.26	6	0.66	
Ariomma bondi	2.15	23	0.63	
Raja miraletus	2.13	4	0.62	
Bathygobius paganellus	*2.09*	*238*	*0.61*	
Cynoglossus browni	0.70	6	0.20	
Antennarius pardalis	0.23	4	0.07	
Peristedion cataphractum	0.12	23	0.04	
Total	341.51		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1454
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 419
start stop duration Long E 1109
TIME :07:26:48 07:58:16 31 (min) Purpose code: 3
LOG :7252.73 7254.37 1.62 Area code : 9
FDEPTH: 74 74 GearCond.code:
BDEPTH: 74 74 Validity code:
Towing dir: 230ø Wire out: 280 m Speed: 30 kn*10

Sorted: Kg Total catch: 121.00 CATCH/HOUR: 234.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	73.94	476	31.57	6083
Pagellus bellottii	43.55	434	18.60	6085
Brachydeuterus auritus Juv.	29.19	6081	12.46	
Sepia officinalis hierredda	11.90	21	5.08	
Brotula barbata	11.23	23	4.80	6082
Uranoscopus albesca	9.75	105	4.16	
Trichiurus lepturus	7.94	48	3.39	6084
Citharus linguatula	6.12	217	2.61	
Parapenaeus longirostris	6.04	1022	2.58	
Bathygobius paganellus	5.07	1595	2.16	
Lepidotrigla cadmani	4.95	19	2.11	
Fistularia petimba	4.65	10	1.99	
Dicologoglossa cuneata	3.75	39	1.60	
Zeus faber	3.58	15	1.53	
Octopus vulgaris	2.90	2	1.24	
Raja miraletus	2.59	4	1.11	
Sepiella ornata	2.25	46	0.96	
J E L L Y F I S H	1.63	12	0.70	
Trachurus trecae	1.24	19	0.53	
Serranus accraensis	*0.97*	*19*	*0.41*	
Illex coindetii	0.39	15	0.17	
Penaeus notialis	0.27	4	0.12	
Grammoplites gruveli	0.27	4	0.12	
Scorpaena normani	0.04	12	0.02	
Total	234.21		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1455
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 414
start stop duration Long E 1113
TIME :09:23:25 09:54:44 31 (min) Purpose code: 3
LOG :7262.90 7264.53 1.62 Area code : 9
FDEPTH: 38 38 GearCond.code:
BDEPTH: 38 38 Validity code:
Towing dir: 314ø Wire out: 120 m Speed: 30 kn*10

Sorted: Kg Total catch: 155.85 CATCH/HOUR: 301.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pteroscion peli	113.52	1701	37.63	6087
Trichiurus lepturus	79.55	1109	26.37	
Brachydeuterus auritus	31.06	465	10.30	6088
J E L L Y F I S H	13.94	134	4.62	
Galeoides decadactylus	13.24	41	4.39	6086
Cynoponticus ferox	8.81	10	2.92	
Pseudotolithus senegalensis	8.54	64	2.83	6089
Sepia officinalis hierredda	7.49	43	2.48	
Pentanemus quinquarius	6.50	99	2.15	
Raja miraletus	3.77	12	1.25	
Pomadasys incisus	2.96	12	0.98	
Pagellus bellottii	2.32	12	0.77	
Fistularia petimba	1.41	2	0.47	
Alloteuthis africana	1.28	621	0.42	
Penaeus notialis	1.22	35	0.40	
Citharichthys stampflii	0.99	35	0.33	
Panulirus regius	0.93	4	0.31	
Selene dorsalis	0.93	6	0.31	
Parapenaeopsis atlantica	0.81	145	0.27	
Illex coindetii	0.64	17	0.21	
Cynoglossus canariensis	0.46	6	0.15	
Octopus vulgaris	0.46	6	0.15	
Grammoplites gruveli	0.35	29	0.12	
Brotula barbata	0.29	12	0.10	
Scyllarides herklotsii	0.17	87	0.06	
Total	301.64		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1458
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 434
start stop duration Long E 1117
TIME :16:34:58 17:03:59 29 (min) Purpose code: 3
LOG :7303.17 7304.55 1.38 Area code : 9
FDEPTH: 100 100 GearCond.code:
BDEPTH: 100 100 Validity code:
Towing dir: 150ø Wire out: 303 m Speed: 30 kn*10

Sorted: 42 Kg Total catch: 199.61 CATCH/HOUR: 412.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brotula barbata	103.66	161	25.10	6099
Dentex angolensis	54.93	323	13.30	6097
Scorpaena normani	54.31	844	13.15	
Trachurus trecae	45.68	881	11.06	6096
Lepidotrigla cadmani	27.81	174	6.73	
Pentheroscion mbizi	22.97	1874	5.56	6098
Uranoscopus albesca	17.01	292	4.12	
Saurida brasiliensis	11.86	2086	2.87	
Trichiurus lepturus	10.43	12	2.53	
Citharus linguatula	9.00	254	2.18	
Sepia officinalis hierredda	8.63	46	2.09	
Octopus vulgaris	7.92	6	1.92	
Cynoponticus ferox	6.79	4	1.64	
Parapenaeus longirostris	6.52	1272	1.58	
Pterothrissus belloci	5.59	37	1.35	
Umbrina canariensis	5.59	12	1.35	
Arius gigas	3.23	2	0.78	
Dicologoglossa cuneata	2.73	25	0.66	
Bathygobius paganellus	2.05	298	0.50	
Branchiostegus semifasciatus	2.05	6	0.50	
Zeus faber	1.55	6	0.38	
Pagellus bellottii	1.24	25	0.30	
Illex coindetii	0.87	31	0.21	
Grammoplites gruveli	0.56	12	0.14	
Lophiodes kempi	0.04	2	0.01	
Total	413.02		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1456
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 412
start stop duration Long E 1117
TIME :10:59:59 11:29:36 30 (min) Purpose code: 3
LOG :7271.37 7272.78 1.40 Area code : 9
FDEPTH: 23 23 GearCond.code:
BDEPTH: 23 23 Validity code:
Towing dir: 135ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 200.34 CATCH/HOUR: 400.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pteroscion peli	71.64	2424	17.88	6090
Ilisha africana	63.00	2748	15.72	6091
Parapenaeopsis atlantica	55.92	2556	13.96	
Pseudotolithus senegalensis	53.76	588	13.42	6092
Trichiurus lepturus	36.72	612	9.16	
Nematopalaemon hastatus	28.68	822	7.16	
Brachydeuterus auritus	20.64	720	5.15	
Torpedo marmorata	19.80	12	4.94	
Cynoglossus sp.	13.20	168	3.29	
Pentanemus quinquarius	10.68	684	2.67	
Pseudotolithus typus	9.48	180	2.37	6093
Portunus validus	8.04	48	2.01	
Dicologoglossa cuneata	3.00	84	0.75	
Cynoponticus ferox	1.68	12	0.42	
Pisodonophis semicinctus	1.56	12	0.39	
Chloroscombrus chrysurus	1.08	12	0.27	
Sepia officinalis hierredda	0.84	264	0.21	
Sardinella aurita	0.36	12	0.09	
Arius parkii	0.12	2	0.03	
Total	400.20		99.89	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1459
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 439
start stop duration Long E 1108
TIME :20:27:11 20:59:27 32 (min) Purpose code: 3
LOG :7318.39 7319.95 1.55 Area code : 9
FDEPTH: 181 181 GearCond.code:
BDEPTH: 181 181 Validity code:
Towing dir: 130ø Wire out: 500 m Speed: 29 kn*10

Sorted: Kg Total catch: 171.31 CATCH/HOUR: 321.21

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brotula barbata	80.10	863	24.94	
Parapenaeus longirostris	72.00	23595	22.42	
Merluccius polli	52.13	203	16.23	
Dentex angolensis	40.88	218	12.73	6100
Aulopus cadenati	21.90	210	6.82	
Chlorophthalmus atlanticus	17.03	773	5.30	
Pterothrissus belloci	10.73	68	3.34	
Umbrina canariensis	6.38	15	1.99	
Trichiurus lepturus	5.53	11	1.72	
GONOSTOMATIDAE	5.18	1808	1.61	
Gadella imberbis	2.25	60	0.70	
Setarches guentheri	2.10	8	0.65	
Lepidotrigla cadmani	1.95	30	0.61	
Pentheroscion mbizi	1.58	195	0.49	
Citharus linguatula	0.83	38	0.26	
Scorpaena normani	0.68	15	0.21	
Total	321.25		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1457
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 418
start stop duration Long E 1122
TIME :12:30:07 13:00:07 30 (min) Purpose code: 3
LOG :7278.79 7280.34 1.54 Area code : 9
FDEPTH: 22 22 GearCond.code:
BDEPTH: 22 22 Validity code:
Towing dir: 135ø Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 223.31 CATCH/HOUR: 446.62

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita	156.26	780	34.99	6094
Pteroscion peli	62.14	2888	13.91	
Parapenaeopsis atlantica	55.12	15300	12.34	
Trichiurus lepturus	43.42	858	9.72	
Ilisha africana	36.40	3834	8.15	
Arius parkii	21.18	12	4.74	
Cynoglossus senegalensis	15.20	78	3.40	
Pseudotolithus senegalensis	14.94	260	3.35	6095
Portunus validus	13.26	38	2.97	
Brachydeuterus auritus	9.10	416	2.04	
J E L L Y F I S H	6.50	26	1.46	
Nematopalaemon hastatus	6.50	15600	1.46	
Pentanemus quinquarius	2.72	260	0.61	
Sardinella maderensis	1.82	38	0.41	
Dicologoglossa cuneata	1.56	64	0.35	
Sepia officinalis hierredda	0.26	90	0.06	
Chloroscombrus chrysurus	0.12	12	0.03	
Hemicaranx bicolor juv.	0.12	26	0.03	
Total	446.62		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1460
DATE:17/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 447
start stop duration Long E 1112
TIME :22:36:15 23:08:50 33 (min) Purpose code: 3
LOG :7327.43 7329.03 1.61 Area code : 9
FDEPTH: 411 412 GearCond.code:
BDEPTH: 411 412 Validity code:
Towing dir: 144ø Wire out:1000 m Speed: 30 kn*10

Sorted: Kg Total catch: 328.92 CATCH/HOUR: 598.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	325.09	50793	54.36	
Merluccius polli	92.07	196	15.40	
Hoplostethus cadenati	74.62	829	12.48	
Centrophorus uyato	33.82	65	5.66	
Malacocephalus laevis	27.93	327	4.67	
Raja miraletus	15.27	22	2.55	
Cynoponticus ferox	4.15	44	0.69	
Triplophos hemingi	3.93	1113	0.66	
Todaropsis eblanae	2.62	22	0.44	
Laemonema laureysi	2.18	109	0.36	
Halosaurus ovenii	2.18	131	0.36	
Lophius vaillanti	1.96	22	0.33	
Trichiurus lepturus	1.96	393	0.33	
MELANOSTOMIATIDAE	1.75	22	0.29	
Gadella imberbis	1.75	87	0.29	
Aristeus varidens	1.53	218	0.26	
Conger conger	1.31	22	0.22	
Citharus linguatula	1.31	22	0.22	
Stereomastis sp.	1.09	87	0.18	
Plesionika martia	0.65	131	0.11	
Symbolophorus barnardi	0.44	262	0.07	
Glyphus marsupialis	0.22	22	0.04	
Lophiodes kempi	0.22	22	0.04	
Total	598.05		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1461
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 450
start stop duration Long E 1116
TIME :00:24:19 00:54:19 30 (min) Purpose code: 3
LOG :7333.43 7334.94 1.50 Area code : 9
FDEPTH: 313 299 GearCond.code:
BDEPTH: 313 299 Validity code:
Towing dir: 140ø Wire out: 858 m Speed: 30 kn*10

Sorted: Kg Total catch: 105.93 CATCH/HOUR: 211.86

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	66.48	450	31.38	
Merluccius polli	48.60	162	22.94	
Brotula barbata	21.60	24	10.20	
Galeus polli	18.42	126	8.69	
Laemonema laureysi	7.98	204	3.77	
Hoplostethus cadenati	7.80	132	3.68	
Raja straeleni	5.46	6	2.58	
Trichiurus lepturus	5.16	354	2.44	
Nematocarcinus africanus	4.68	2016	2.21	
Parapenaeus longirostris	4.62	474	2.18	
Lophius vaillanti	4.50	6	2.12	
Pontinus kuhlii	4.32	66	2.04	
Paraconger notialis	3.06	36	1.44	
Todaropsis eblanae	1.92	12	0.91	
Nezumia aequalis	1.50	36	0.71	
Chlorophthalmus atlanticus	0.72	12	0.34	
Chascanopsetta lugubris	0.66	6	0.31	
Illex coindetii	0.60	6	0.28	
Hymenocephalus italicus	0.60	138	0.28	
Symbolophorus barnardi	0.54	282	0.25	
Plesionika martia	0.42	48	0.20	
Gadella imberbis	0.42	12	0.20	
Physiculus sp.	0.36	12	0.17	
Triplophos hemingi	0.36	156	0.17	
Epigonus telescopus	0.30	30	0.14	
Aristeus varidens	0.24	6	0.11	
Scorpaena normani	0.24	12	0.11	
Peristedion cataphractum	0.24	24	0.11	
NEMICHTHYIDAE	0.06	6	0.03	
Total	211.86		99.99	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1462
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 446
start stop duration Long E 1121
TIME :05:45:14 06:18:21 33 (min) Purpose code: 3
LOG :7351.26 7353.00 1.74 Area code : 9
FDEPTH: 115 115 GearCond.code:
BDEPTH: 115 115 Validity code:
Towing dir: 330ø Wire out: 300 m Speed: 30 kn*10

Sorted: Kg Total catch: 103.64 CATCH/HOUR: 188.44

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trichiurus lepturus	39.91	38	21.18	6103
Trachurus trecae	38.91	742	20.65	6105
Umbrina canariensis	30.73	69	16.31	6104
Parapenaeus longirostris	15.09	6036	8.01	
Dentex angolensis	14.18	55	7.52	6101
Brotula barbata	11.00	15	5.84	6102
Scorpaena normani	9.09	15	4.82	
Saurida brasiliensis	5.89	2462	3.13	
Illex coindetii	5.42	51	2.88	
Raja miraletus	4.36	11	2.31	
J E L L Y F I S H	4.33	11	2.30	
Squatina aculeata	3.45	2	1.83	
Citharus linguatula	2.25	84	1.19	
Branchiostegus semifasciatus	1.49	4	0.79	
Scomber japonicus	0.75	2	0.40	
Zeus faber	0.53	2	0.28	
Schedophilus pemarco	0.40	2	0.21	
Lepidotrigla cadmani	0.40	4	0.21	
Spicara alta	0.11	4	0.06	
Peristedion cataphractum	0.11	22	0.06	
Uranoscopus albesca	0.04	4	0.02	
Total	188.44		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1463
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 441
start stop duration Long E 1128
TIME :07:59:15 08:30:06 31 (min) Purpose code: 3
LOG :7365.19 7366.71 1.51 Area code : 9
FDEPTH: 73 74 GearCond.code:
BDEPTH: 73 74 Validity code:
Towing dir: 140ø Wire out: 210 m Speed: 30 kn*10

Sorted: Kg Total catch: 55.04 CATCH/HOUR: 106.53

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Stromateus fiatola	18.48	29	17.35	6109
Brachydeuterus auritus Juv.	*18.00*	*5485*	*16.90*	
Trachurus trecae	16.06	366	15.08	6107
Raja miraletus	13.03	21	12.23	
Trichiurus lepturus	11.15	21	10.47	
J E L L Y F I S H	6.29	915	5.90	
Zeus faber	5.54	29	5.20	
Pentheroscion mbizi	4.34	35	4.07	6106
Brotula barbata	4.14	*6*	*3.89*	
Sepia officinalis hierredda	2.96	6	2.78	
Parapenaeus longirostris	1.68	319	1.58	
Pagellus bellottii	1.32	17	1.24	6108
Priacanthus arenatus	1.06	4	1.00	
Illex coindetii	0.87	46	0.82	
Umbrina canariensis	0.54	2	0.51	
Torpedo torpedo	0.46	2	*0.43*	
Alloteuthis africana	0.21	95	0.20	
Bathygobius paganellus	0.17	56	0.16	
Selene dorsalis	0.17	2	0.16	
Citharus linguatula	0.04	4	0.04	
Total	106.51		100.01	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1464
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 437
start stop duration Long E 1133
TIME :09:46:41 10:16:13 30 (min) Purpose code: 3
LOG :7375.41 7377.20 1.78 Area code : 9
FDEPTH: 41 42 GearCond.code:
BDEPTH: 41 42 Validity code:
Towing dir: 320ø Wire out: 120 m Speed: 30 kn*10

Sorted: Kg Total catch: 117.64 CATCH/HOUR: 235.28

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trichiurus lepturus	142.60	2666	60.61	
Brachydeuterus auritus	33.08	586	14.06	6110
Selene dorsalis	13.94	140	5.92	
Arius parkii	12.54	10	5.33	
Chloroscombrus chrysurus	11.08	134	4.71	
Pentheroscion mbizi	6.70	130	2.85	
Ilisha africana	5.18	56	2.20	
Cynoponticus ferox	3.50	4	1.49	
Trachurus trecae	2.10	10	0.89	
Priacanthus arenatus	1.86	4	0.79	
Raja miraletus	1.68	4	0.71	
Penaeus notialis	0.46	4	0.20	
Scorpaena scrofa	0.32	4	0.14	
Brotula barbata	0.24	4	0.10	
Total	235.28		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1465
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 433
start stop duration Long E 1137
TIME :11:17:50 11:47:35 30 (min) Purpose code: 3
LOG :7383.61 7385.18 1.56 Area code : 9
FDEPTH: 23 24 GearCond.code:
BDEPTH: 23 24 Validity code:
Towing dir: 130ø Wire out: 103 m Speed: 30 kn*10

Sorted: Kg Total catch: 185.69 CATCH/HOUR: 371.38

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Ilisha africana	116.00	4480	31.23	
Brachydeuterus auritus	100.50	8990	27.06	
Trichiurus lepturus	50.70	1530	13.65	
J E L L Y F I S H	39.40	40	10.61	
Pentanemus quinquarius	15.40	320	4.15	
Chloroscombrus chrysurus	10.60	320	2.85	
Pteroscion peli	8.00	600	2.15	
Stromateus fiatola	5.86	14	1.58	6112
Pseudotolithus senegalensis	4.90	80	1.32	6111
Parapenaeopsis atlantica	4.60	950	1.24	
Arius parkii	3.60	10	0.97	
Cynoglossus senegalensis	2.50	16	0.67	
Galeoides decadactylus	1.86	10	0.50	6113
Sepia officinalis hierredda	1.60	140	0.43	
Sphyraena guachancho	1.56	4	0.42	
Sardinella maderensis	1.20	70	0.32	
Lagocephalus lagocephalus	1.20	40	0.32	
Dicologoglossa cuneata	0.90	50	0.24	
Perulibatrachus elminensis	0.50	10	0.13	
Nematopalaemon hastatus	0.20	290	0.05	
Selene dorsalis	0.20	30	0.05	
Parapandalus narval	0.10	20	0.03	
Total	371.38		99.97	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1466
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 448
start stop duration Long E 1145
TIME :14:21:54 14:51:46 30 (min) Purpose code: 3
LOG :7405.10 7406.79 1.69 Area code : 9
FDEPTH: 38 39 GearCond.code:
BDEPTH: 38 39 Validity code:
Towing dir: 310ø Wire out: 141 m Speed: 30 kn*10

Sorted: Kg Total catch: 748.02 CATCH/HOUR: 1496.04

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trecae	1245.20	4664	83.23	6114
Trichiurus lepturus	101.42	5632	6.78	
Pteroscion peli	40.04	2222	2.68	
J E L L Y F I S H	32.56	22	2.18	
Cynoglossus senegalensis	22.22	*88*	1.49	
Brachydeuterus auritus	21.56	3234	1.44	
Cynoponticus ferox	10.60	10	0.71	
Parapenaeopsis atlantica	7.04	2926	0.47	
Pseudotolithus senegalensis	5.06	66	0.34	
Pentanemus quinquarius	5.06	132	0.34	
Brotula barbata	1.76	110	0.12	
Sepia officinalis hierredda	1.10	*110*	*0.07*	
Penaeus notialis	0.66	22	0.04	
Scyllarides herklotsii	0.66	88	0.04	
Halosaurus ovenii	0.66	22	0.04	
Grammoplites gruveli	0.44	22	0.03	
Total	1496.04		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1467
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 449
start stop duration Long E 1141
TIME :15:45:22 16:15:18 30 (min) Purpose code: 3
LOG :7412.00 7413.70 1.69 Area code : 9
FDEPTH: 53 52 GearCond.code:
BDEPTH: 53 52 Validity code:
Towing dir: 320ø Wire out: 161 m Speed: 30 kn*10

Sorted: Kg Total catch: 143.92 CATCH/HOUR: 287.84

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Brachydeuterus auritus Juv.	120.80	4098	41.97	
Trichiurus lepturus	92.00	306	31.96	6116
Pentheroscion mbizi	21.28	264	7.39	6115
Brotula barbata	12.16	128	4.22	6117
Raja miraletus	11.12	16	3.86	
Trachurus trecae	9.76	48	3.39	
J E L L Y F I S H	7.28	16	2.53	
Penaeus notialis	2.96	136	1.03	
Parapenaeus longirostris	2.80	840	0.97	
Citharus linguatula	2.56	120	0.89	
Cynoglossus senegalensis	1.44	8	0.50	
Scorpaena scrofa	1.36	16	0.47	
Selene dorsalis	1.12	8	0.39	
Setarches guentheri	0.96	56	0.33	
Bathygobius paganellus	0.24	64	0.08	
Total	287.84		99.98	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1468
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 500
start stop duration Long E 1125
TIME :20:26:30 20:57:17 31 (min) Purpose code: 3
LOG :7437.26 7438.77 1.50 Area code : 9
FDEPTH: 167 166 GearCond.code:
BDEPTH: 167 166 Validity code:
Towing dir: 340ø Wire out: 550 m Speed: 30 kn*10

Sorted: Kg Total catch: 194.95 CATCH/HOUR: 377.32

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pterothrissus belloci	104.52	852	27.70	
Pentheroscion mbizi	102.10	799	27.06	
Dentex angolensis	55.45	203	14.70	6118
Brotula barbata	55.16	135	14.62	6119
Trichiurus lepturus	15.87	17	4.21	
Parapenaeus longirostris	9.97	41	2.64	
Octopus vulgaris	7.35	8	1.95	
Cynoponticus ferox	6.97	213	1.85	
Scorpaena scrofa	3.58	29	0.95	
Aulopus cadenati	3.39	10	0.90	
Parasudis fraser-bruenneri	2.71	10	0.72	
Lepidotrigla cadmani	2.52	19	0.67	
Gadella imberbis	2.13	58	0.56	
Zeus faber	1.84	10	0.49	
GONOSTOMATIDAE	1.26	455	0.33	
Chlorophthalmus atlanticus	0.97	135	0.26	
Illex coindetii	0.87	19	0.23	
Bembrops greyi	0.68	10	0.18	
Total	377.34		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1469
DATE:18/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 506
start stop duration Long E 1122
TIME :22:55:00 23:25:04 30 (min) Purpose code: 3
LOG :7448.14 7449.59 1.45 Area code : 9
FDEPTH: 593 605 GearCond.code:
BDEPTH: 593 605 Validity code:
Towing dir: 150ø Wire out:1380 m Speed: 30 kn*10

Sorted: Kg Total catch: 85.66 CATCH/HOUR: 171.32

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	39.48	480	23.04	
Nematocarcinus africanus	23.10	20790	13.48	
Hydrolagus sp.	13.02	30	7.60	
Nezumia aequalis	11.52	126	6.72	
Triplophos hemingi	10.56	1278	6.16	
Yarrella corythaecla	10.38	186	6.06	
Malacocephalus laevis	10.32	114	6.02	
Trachipterus trachypterus	9.80	2	5.72	
Lamprogrammus exutus	8.70	42	5.08	
Stereomastis sp.	7.80	648	4.55	
Xenodermichthys copei	5.10	168	2.98	
Echiostoma barbartum	3.96	78	2.31	
Talismania longifilis	3.78	42	2.21	
Melanonus zugmayeri	2.64	186	1.54	
Bathyuroconger vicinus	2.64	48	1.54	
Raja alba	1.92	30	1.12	
CONGRIDAE	1.62	12	0.95	
Brotula barbata	1.50	36	0.88	
Illex coindetii	1.14	18	0.67	
GONOSTOMATIDAE	0.84	30	0.49	
Phrynichthys wedli	0.60	12	0.35	
Parapandalus narval	0.48	168	0.28	
Photonectes braueri	0.24	12	0.14	
Gadella imberbis	0.18	6	0.11	
Total	171.32		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1470
DATE:19/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 509
start stop duration Long E 1126
TIME :02:25:09 02:55:12 30 (min) Purpose code: 3
LOG :7467.71 7469.17 1.44 Area code : 9
FDEPTH: 449 452 GearCond.code:
BDEPTH: 449 452 Validity code:
Towing dir: 150ø Wire out:1221 m Speed: 30 kn*10

Sorted: Kg Total catch: 150.69 CATCH/HOUR: 301.38

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	92.00	980	30.53	
Nematocarcinus africanus	71.60	14320	23.76	
Merluccius polli	42.00	70	13.94	
Centrophorus squamosus	30.40	8	10.09	
Triplophos hemingi	13.10	1310	4.35	
Nezumia aequalis	12.00	300	3.98	
Echiostoma barbartum	6.10	100	2.02	
Aristeus varidens	5.80	970	1.92	
Halosaurus ovenii	5.50	170	1.82	
Yarrella blackfordi	5.10	130	1.69	
Laemonema laureysi	4.20	360	1.39	
Bathyuroconger vicinus	3.80	30	1.26	
Paraconger notialis	2.60	70	0.86	
Deania profundorum	2.58	8	0.86	
Lamprogrammus exutus	1.40	90	0.46	
Hymenocephalus italicus	1.20	840	0.40	
Stereomastis sp.	0.80	80	0.27	
Gadella imberbis	0.50	30	0.17	
Gonostoma elongatum	0.30	30	0.10	
Raja alba	0.20	10	0.07	
Argyropelecus aculeatus	0.10	10	0.03	
Cynoglossus sp.	0.10	10	0.03	
Total	301.38		100.00	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1471
DATE:19/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 511
start stop duration Long E 1130
TIME :04:23:33 04:53:27 30 (min) Purpose code: 3
LOG :7475.85 7477.39 1.53 Area code : 9
FDEPTH: 291 304 GearCond.code:
BDEPTH: 291 304 Validity code:
Towing dir: 330ø Wire out: 848 m Speed: 30 kn*10

Sorted: Kg Total catch: 79.84 CATCH/HOUR: 159.68

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius polli	61.70	256	38.64	
Pterothrissus belloci	45.40	272	28.43	
Parapenaeus longirostris	17.10	1710	10.71	
Trichiurus lepturus	11.06	556	6.93	
Brotula barbata	5.70	4	3.57	
Laemonema laureysi	3.20	26	2.00	
Raja straeleni	2.70	6	1.69	
Scorpaena scrofa	2.42	20	1.52	
Hoplostethus cadenati	1.84	32	1.15	
Setarches guentheri	1.56	42	0.98	
Echiostoma barbartum	1.30	26	0.81	
Cynoponticus ferox	1.06	18	0.66	
Gadella imberbis	0.94	32	0.59	
Lophius vaillanti	0.76	2	0.48	
Malacocephalus laevis	0.62	16	0.39	
Nezumia aequalis	0.60	2	0.38	
Illex coindetii	0.44	4	0.28	
Bathynectes piperitus	0.42	8	0.26	
Chlorophthalmus atlanticus	0.34	10	0.21	
Dicologoglossa hexophthalma	0.22	6	0.14	
GONOSTOMATIDAE	0.08	42	0.05	
Halosaurus ovenii	0.06	2	0.04	
Physiculus huloti	0.06	4	0.04	
Xenolepidichthys dagleishi	0.02	2	0.01	
Total	159.60		99.96	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1472
DATE:19/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 511
start stop duration Long E 1139
TIME :08:00:03 08:27:54 28 (min) Purpose code: 3
LOG :7504.10 7505.41 1.25 Area code : 9
FDEPTH: 107 108 GearCond.code:
BDEPTH: 107 108 Validity code:
Towing dir: 320ø Wire out: 280 m Speed: 30 kn*10

Sorted: Kg Total catch: 28.90 CATCH/HOUR: 61.93

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Dentex angolensis	39.21	131	63.31	6120
Squatina oculata	6.15	2	9.93	
Lepidotrigla cadmani	4.18	32	6.75	
Trichiurus lepturus	3.47	266	5.60	
Brotula barbata	2.19	4	3.54	
J E L L Y F I S H	1.93	176	3.12	
Zeus faber	1.48	6	2.39	
Scorpaena stephanica	1.11	2	1.79	
Raja straeleni	0.64	2	1.03	
Parapenaeus longirostris	0.49	69	0.79	
Pterothrissus belloci	0.36	2	0.58	
Sepia officinalis hierredda	0.30	2	0.48	
Todaropsis eblanae	0.21	17	0.34	
Citharus linguatula	0.17	2	0.27	
Peristedion cataphractum	0.02	2	0.03	
Total	61.91		99.95	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1473
DATE:19/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 502
start stop duration Long E 1142
TIME :11:55:50 12:25:35 30 (min) Purpose code: 3
LOG :7521.30 7522.81 1.50 Area code : 9
FDEPTH: 86 84 GearCond.code:
BDEPTH: 86 84 Validity code:
*Towing dir: 140ø Wire out: 256 m Speed: 30 kn*10*

Sorted: Kg Total catch: 87.59 CATCH/HOUR: 175.18

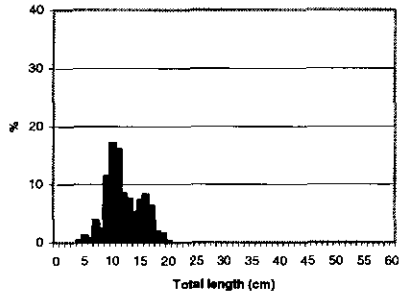
SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pentheroscion mbizi	51.20	304	29.23	6121
Trachurus trecae	35.40	320	20.21	6123
Epinephelus aeneus	26.00	2	14.84	
Dentex angolensis	16.96	104	9.68	6122
J E L L Y F I S H	6.76	392	3.86	
Squatina oculata	6.20	4	3.54	
Zeus faber	4.86	16	2.77	
Brotula barbata	3.60	8	2.06	
Pterothrissus belloci	3.56	20	2.03	
Dasyatis marmorata	3.44	2	1.96	
Lepidotrigla cadmani	3.04	22	1.74	
Raja miraletus	2.94	4	1.68	
Dentex macrophthalmus	2.54	4	1.45	
Sepia officinalis hierredda	2.08	4	1.19	
Fistularia petimba	1.42	4	0.81	
Citharus linguatula	1.12	22	0.64	
Priacanthus arenatus	0.96	2	0.55	
Trichiurus lepturus	0.92	66	0.53	
Pagellus bellottii	0.80	4	0.46	
Scomber japonicus	0.66	2	0.38	
Uranoscopus cadenati	0.22	2	0.13	
Illex coindetii	0.20	8	0.11	
Pontinus accraensis	0.14	2	0.08	
Saurida brasiliensis	0.10	8	0.06	
Bathygobius paganellus	0.06	10	0.03	
Total	175.18		100.02	

DR. FRIDTJOF NANSEN PROJECT:IG PROJECT STATION:1474
DATE:19/ 7/06 GEAR TYPE: BT No:19 POSITION:Lat S 452
start stop duration Long E 1148
TIME :14:44:06 15:14:44 31 (min) Purpose code: 3
LOG :7540.99 7542.56 1.57 Area code : 9
FDEPTH: 40 39 GearCond.code:
BDEPTH: 40 39 Validity code:
Towing dir: 135ø Wire out: 141 m Speed: 30 kn*10

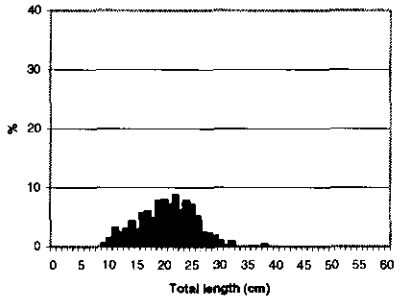
Sorted: 31 Kg Total catch: 329.37 CATCH/HOUR: 637.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	431.61	6948	67.70	6125
Trachurus trecae	46.45	194	7.29	
Cynoponticus ferox	34.06	21	5.34	
Pseudotolithus senegalensis	27.10	135	4.25	6124
Brachydeuterus auritus	22.06	1490	3.46	
J E L L Y F I S H	20.71	58	3.25	
Pteroscion peli	13.55	581	2.13	
Sepia officinalis hierredda	10.84	19	1.70	
Pentheroscion mbizi	8.90	116	1.40	
Cynoglossus senegalensis	7.97	21	1.25	
Penaeus notialis	5.03	77	0.79	
Grammoplites gruveli	2.71	174	0.43	
Pentanemus quinquarius	2.42	45	0.38	6126
Panulirus regius	0.99	4	0.16	
Stromateus fiatola	0.77	39	0.12	
Brotula barbata	0.77	39	0.12	
Uranoscopus polli	0.58	19	0.09	
Galeoides decadactylus	0.58	19	0.09	
Dicologoglossa cuneata	0.35	2	0.05	
Sicyonia galeata	0.02	19		
Total	637.47		100.00	

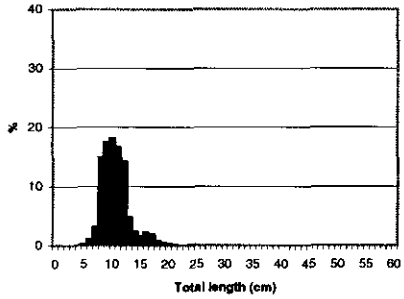
Annex II Length distribution of main species



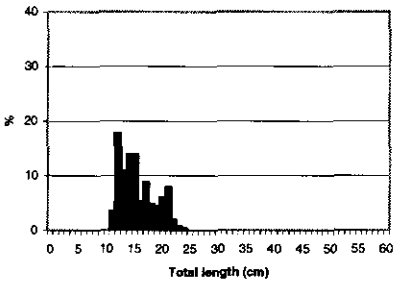
Pteroscion peli NIGERIA
Mean length = 12.5 cm N = 550



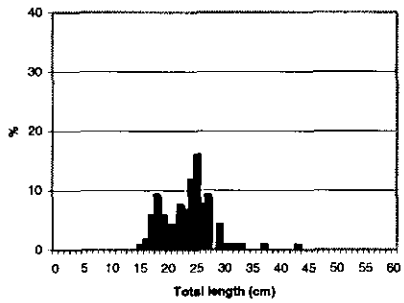
Galeoides decadctylus NIGERIA
Mean length = 20.9 cm N = 725



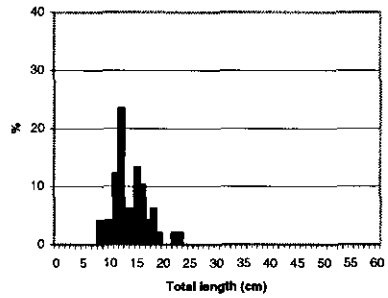
Brachydeuterus auritus NIGERIA
Mean length = 12.3 cm N = 2477



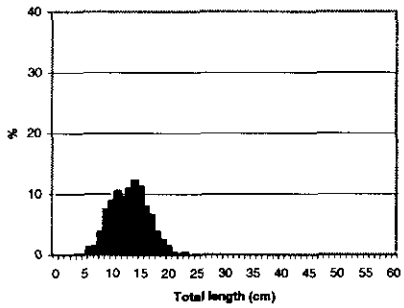
Pseudupeneus prayensis NIGERIA
Mean length = 16 cm N = 178



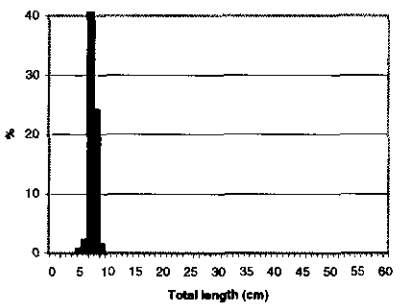
Pomadasys jubelini NIGERIA
Mean length = 23.8 cm N = 114



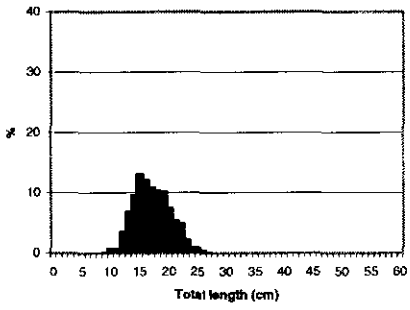
Drepane africana NIGERIA
Mean length = 14.1 cm N = 44



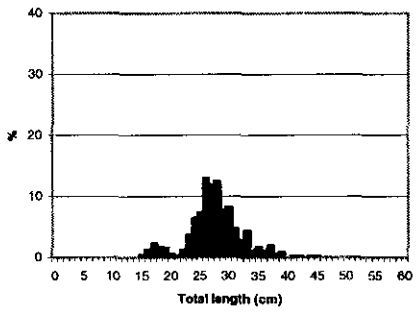
Ilisha africana NIGERIA
Mean length = 13.6 cm N = 1503



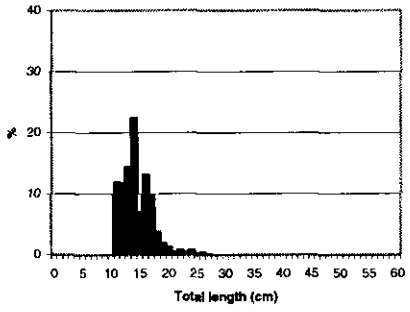
Engraulis encrasicolus NIGERIA
Mean length = 7.7 cm N = 137



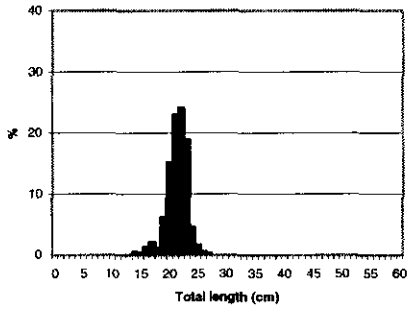
Dentex angolensis NIGERIA
Mean length = 17.57 cm N = 825



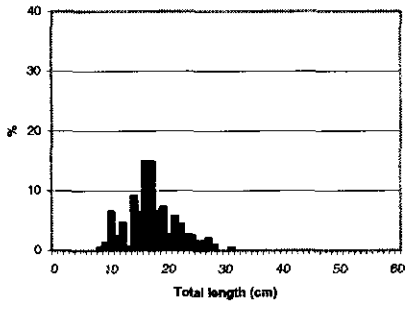
Pagrus caeruleostictus NIGERIA
Mean length = 28.04 cm N = 403



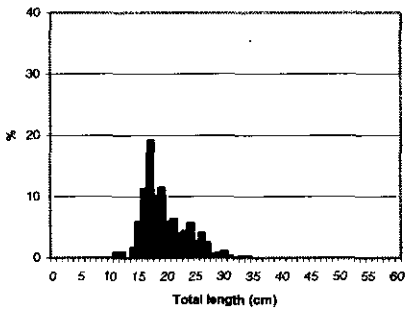
Dentex congoensis NIGERIA
Mean length = 15 cm N = 461



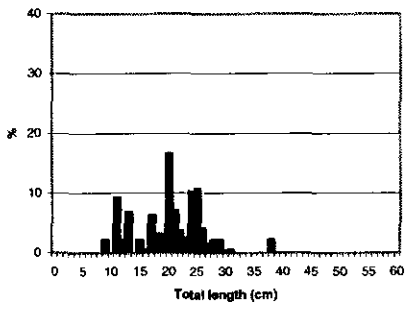
Pentheroscion mbizi NIGERIA
Mean length = 21.9 cm N = 653



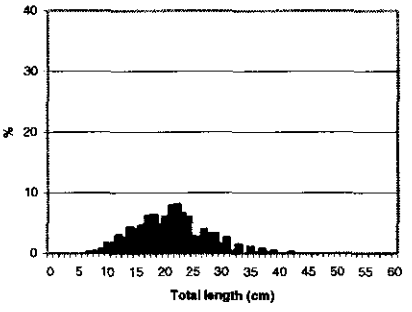
Pagellus bellottii NIGERIA
Mean length = 17.7 cm N = 138



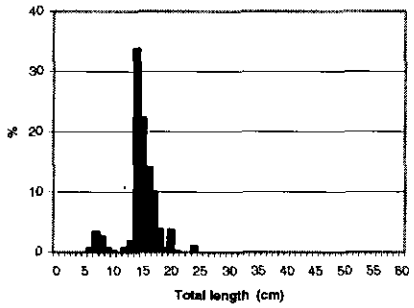
Pseudotolithus elongatus NIGERIA
Mean length = 20 cm N = 288



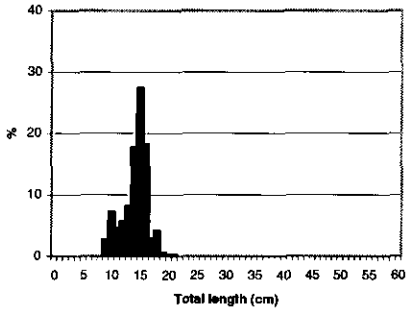
Pseudotolithus typus NIGERIA
Mean length = 20.7 cm N = 93



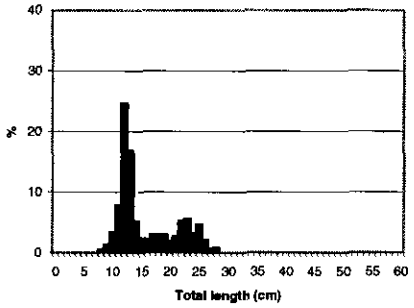
Pseudotolithus senegalensis NIGERIA
Mean length = 21.6 cm N = 375



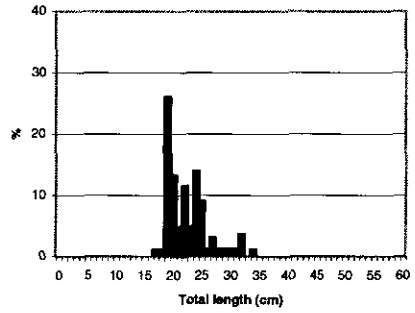
Sardinella aurita NIGERIA
Mean length = 15.3 cm N = 141



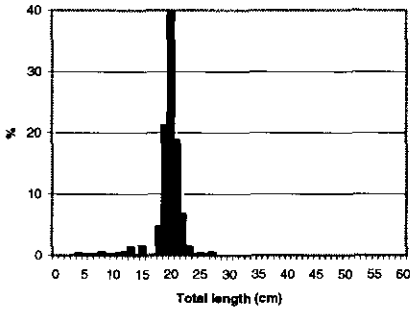
Decapterus punctatus NIGERIA
Mean length = 13.3 cm N = 171



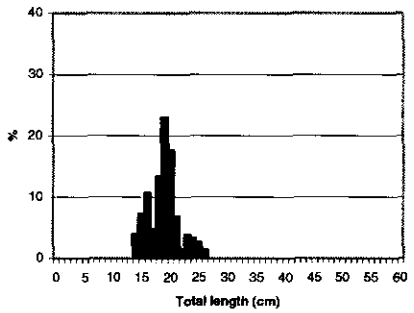
Sardinella maderensis NIGERIA
Mean length = 16.3 cm N = 384



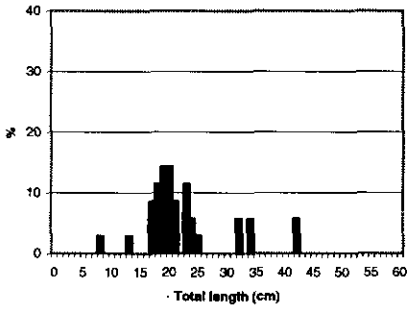
Caranx hippos NIGERIA
Mean length = 23 cm N = 78



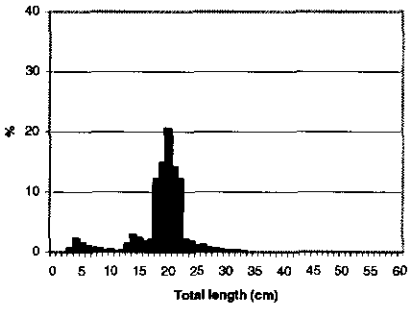
Chloroscombrus chrysurus NIGERIA
Mean length = 20.1 cm N = 440



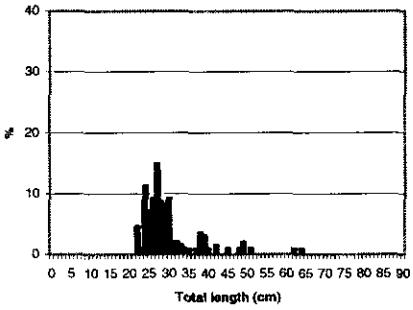
Selar crumenophthalmus NIGERIA
Mean length = 19.4 cm N = 279



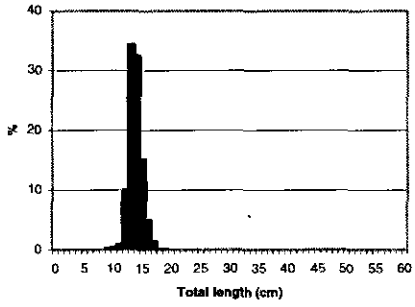
Alectis alexandrinus NIGERIA
Mean length = 22.9 cm N =35



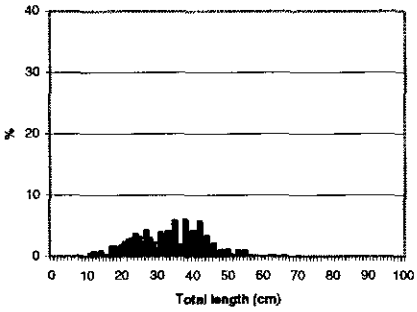
Selene dorsalis NIGERIA
Mean length = 19.4 cm N = 1158



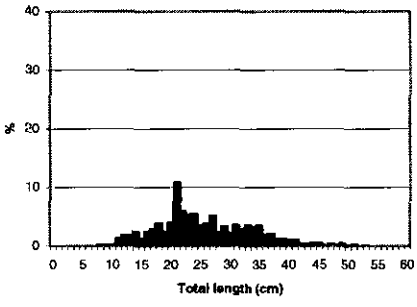
Scomberomorus tritor NIGERIA
Mean length = 30.7 cm N = 93



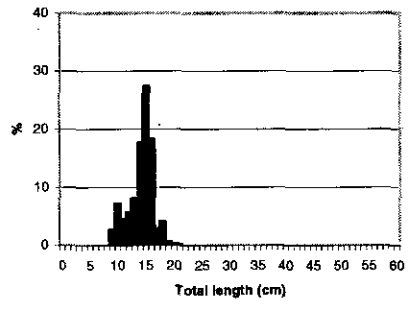
Ariomma bondi NIGERIA
Mean length = 14.2 cm N = 1696



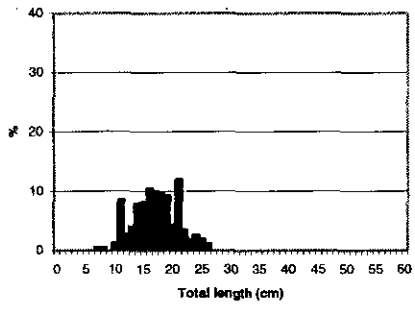
Trichiurus lepturus NIGERIA
Mean length = 34.cm N = 612



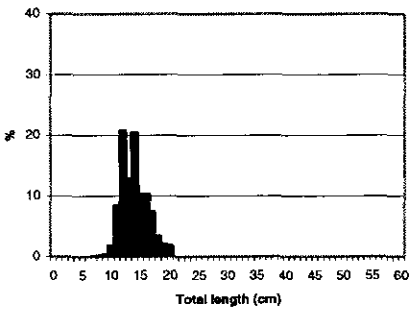
Sphyraena guachancho NIGERIA
Mean length = 26.2 cm N = 1170



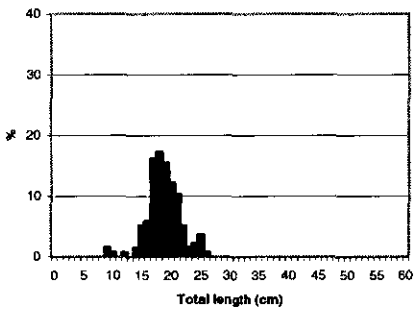
Decapterus punctatus NIGERIA
Mean length = 14.7 N = 453



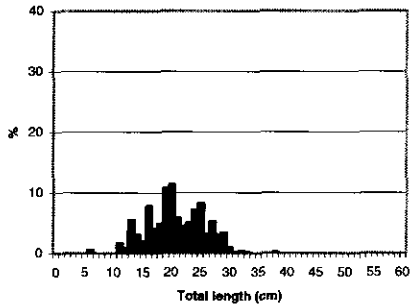
Dentex angolensis CAMEROON
Mean length = 17.6 cm N = 291



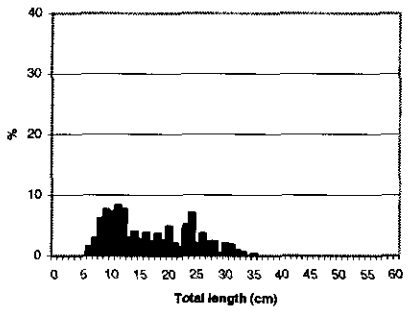
Dentex congoensis CAMEROON
Mean length = 14.5 cm N = 519



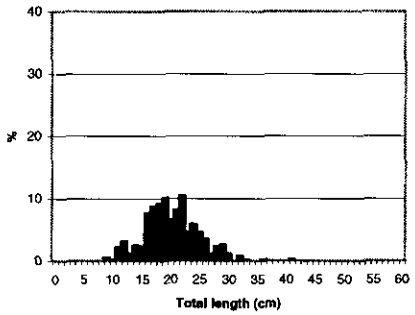
Pagellus bellottii CAMEROON
Mean length = 19.2cm N = 138



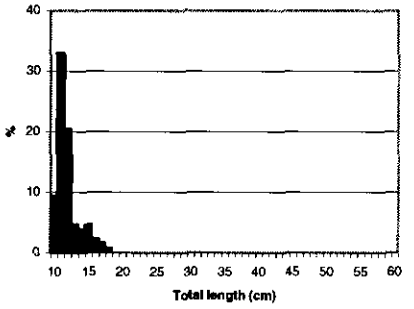
Pseudotolithus elongatus CAMEROON
Mean length = 21.2 cm N = 229



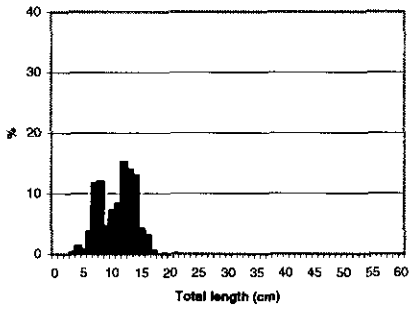
Pseudotolithus senegalensis CAMEROON
Mean length = 17.2 cm N = 229



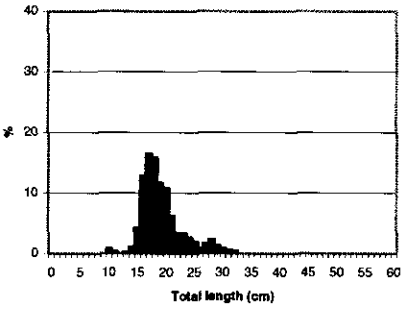
Pseudotolithus typus CAMEROON
Mean length = 20.7 cm N = 194



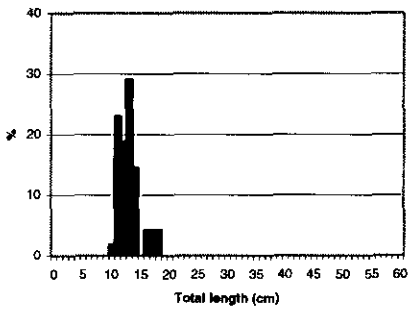
Pteroscion peli CAMEROON
Mean length =11.6 cm N = 127



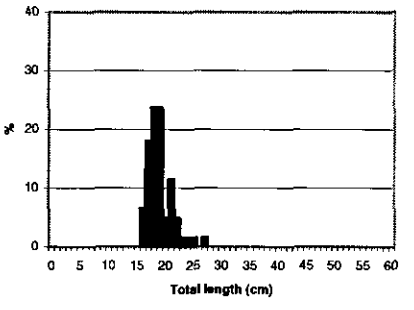
Brachydeuterus auritus CAMEROON
Mean length = 11.3 cm N = 1208



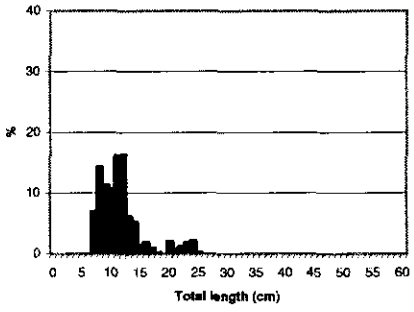
Galeoides decadactylus CAMEROON
Mean length = 19.8 cm N = 293



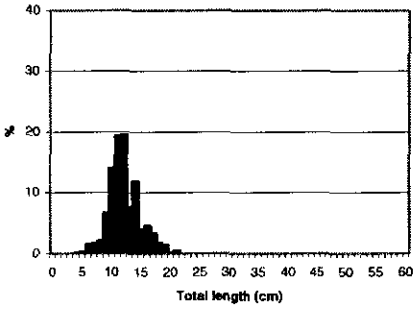
Pseudupeneus prayensis CAMEROON
Mean length = 13.5 cm N = 48



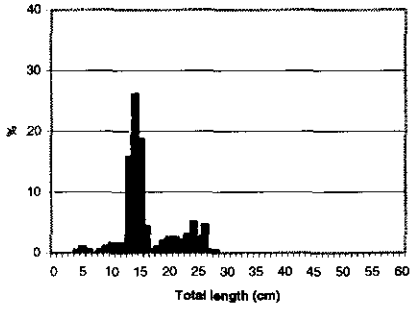
Drepane africana CAMEROON
Mean length = 19.5 cm N = 60



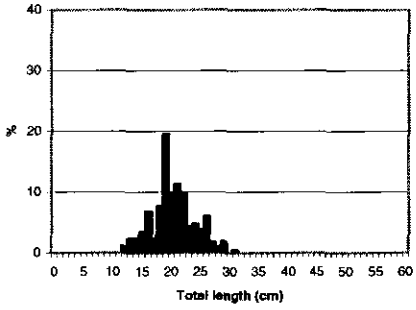
Sardinella maderensis CAMEROON
Mean length = 12.1 cm N = 471



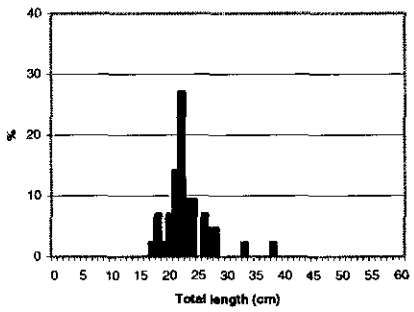
Ilisha africana CAMEROON
Mean length = 12.6 cm N = 627



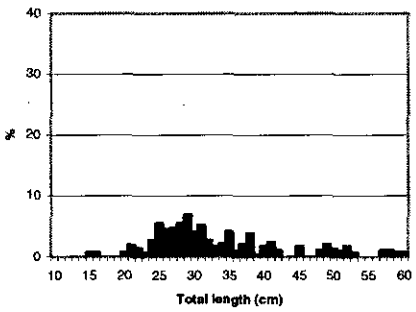
Selar crumenophthalmus CAMEROON
Mean length = 16.1 cm N = 201



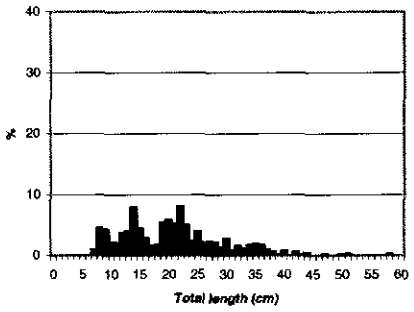
Selene dorsalis CAMEROON
Mean length = 20.8 cm N = 238



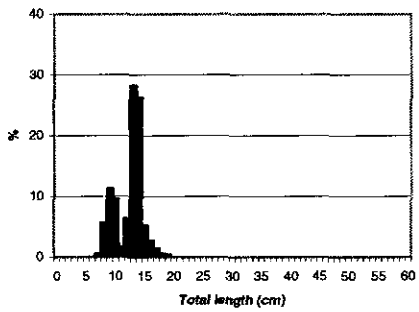
Caranx hippos CAMEROON
Mean length =23.5 cm N = 42



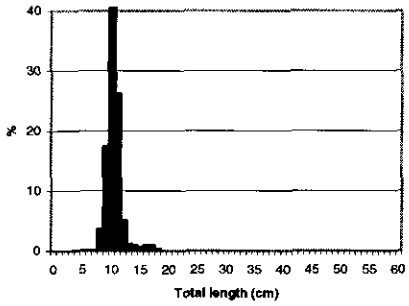
Trichiurus lepturus CAMEROON
Mean length = 40 cm N = 124



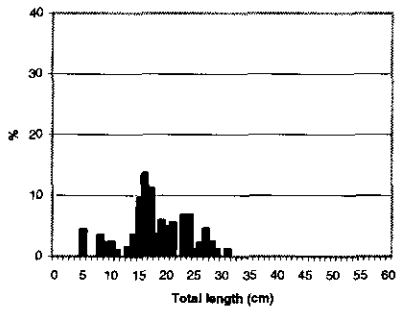
Sphyraena guachancho CAMEROON
Mean length = 21.4 cm N = 397



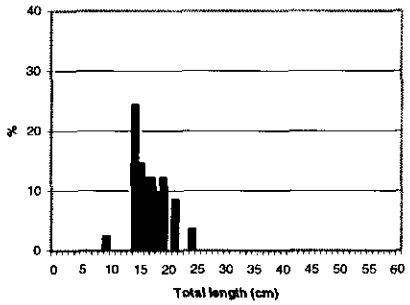
Ariomma bondi CAMEROON
Mean length = 12.9 cm N = 872



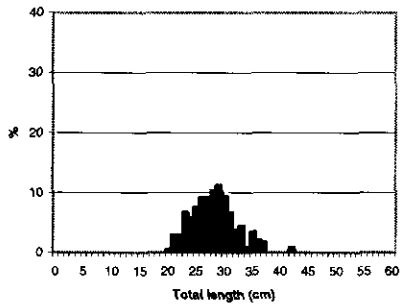
Decapterus punctatus CAMEROON
Mean length = 10.9 cm N = 215



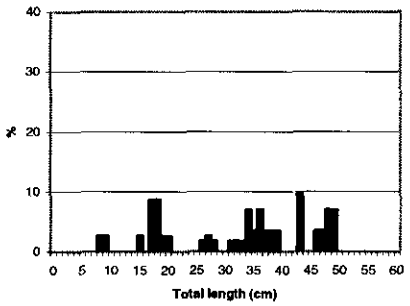
Pagellus bellottii PRINCIPE
Mean length = 18.5 cm N = 98



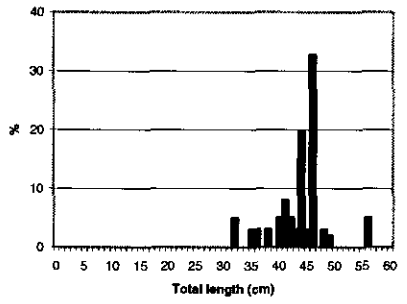
Pseudupeneus prayensis PRINCIPE
Mean length = 17.1 cm N = 40



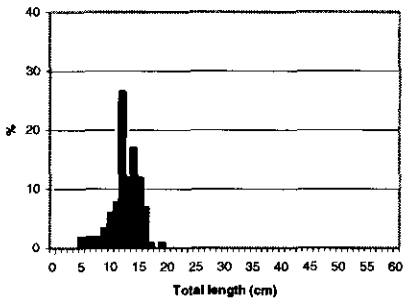
Dactylopterus volitans PRINCIPE
Mean length = 28.6 cm N = 65



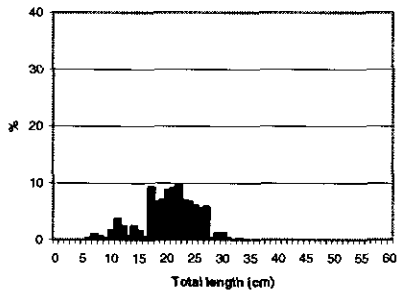
Pagrus caeruleostictus PRINCIPE
Mean length = 32.9 cm N = 36



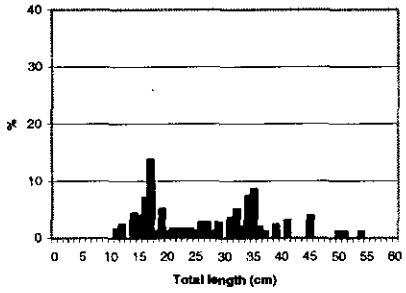
Dentex macrophthalmus SÃO TOMÉ
Mean length = 45 cm N = 25



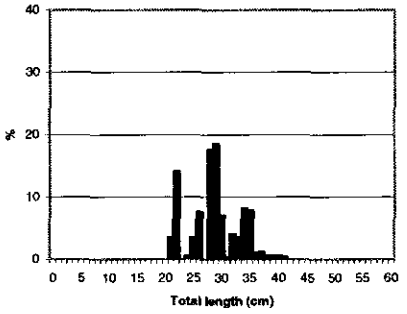
Dentex congoensis SÃO TOMÉ
Mean length = 13.0 cm N = 117



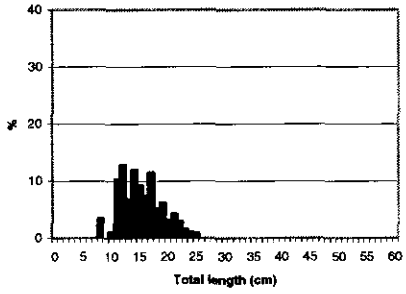
Pagellus bellottii SÃO TOMÉ
Mean length = 20.9 cm N = 271



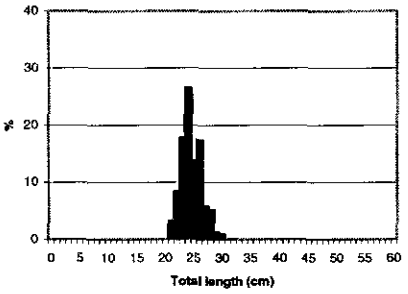
Pagrus caeruleostictus SÃO TOMÉ
Mean length =27.1 cm N = 78



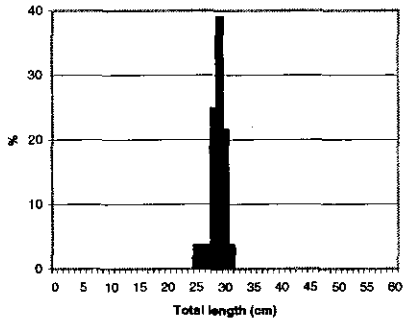
Lutjanus fulgens SÃO TOMÉ
Mean length = 29.4 cm N = 44



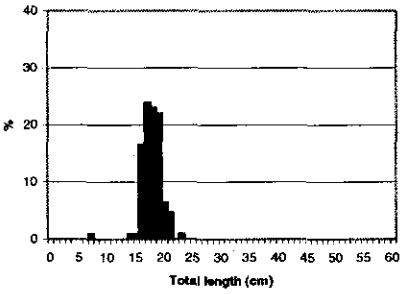
Pseudupeneus prayensis SÃO TOMÉ
Mean length = 15.8 cm N = 241



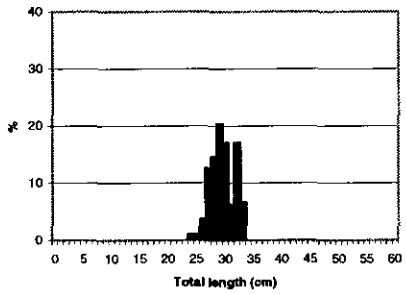
Dactylopterus volitans SÃO TOMÉ
Mean length =25.0 cm N = 207



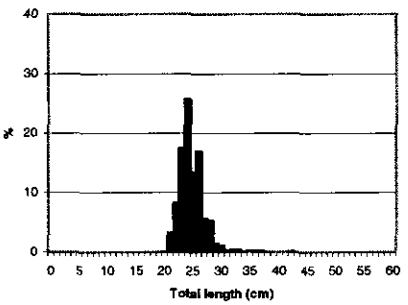
Selar crumenophthalmus SÃO TOMÉ
Mean length = 29.2 cm N = 28



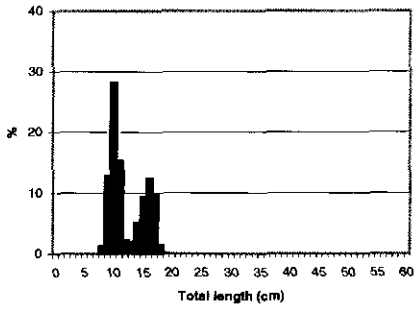
Decapterus punctatus SÃO TOMÉ
Mean length = 18.3 cm N = 109



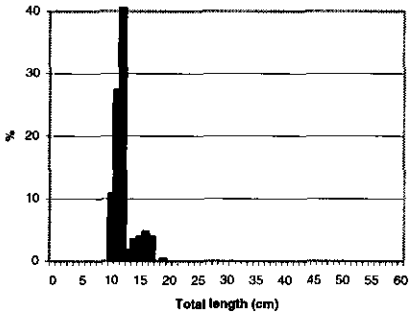
Galeoides decadactylus SÃO TOMÉ
Mean length = 30 cm N = 113



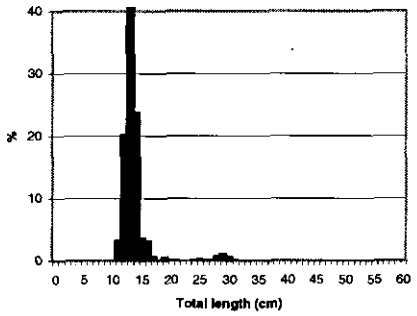
Dactylopterus volitans GABON
Mean length = 25.2 cm N = 269



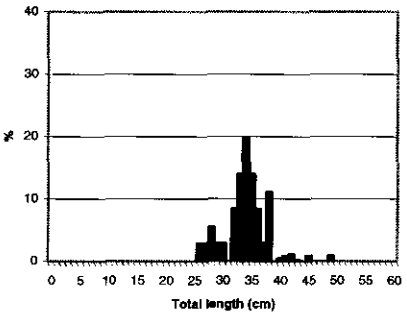
Ariomma bondi GABON
Mean length = 12.8 cm N = 562



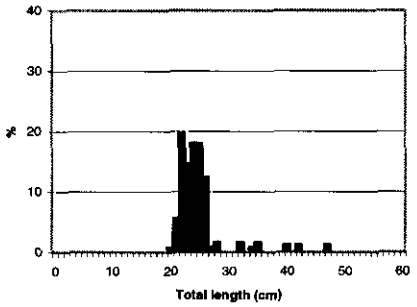
Decapterus macarellus GABON
Mean length = 12.6 cm N = 89



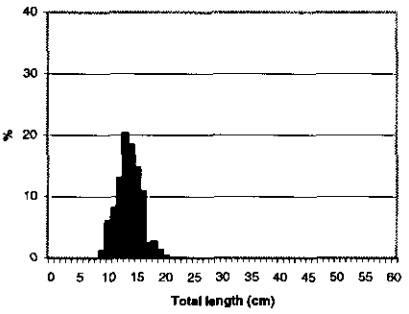
Selar crumenophthalmus GABON
Mean length =14.2 cm N = 234



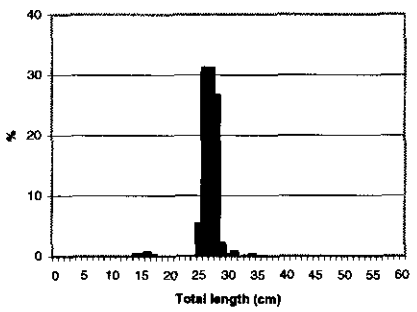
Caranx senegallus GABON
Mean length = 34.4 cm N = 47



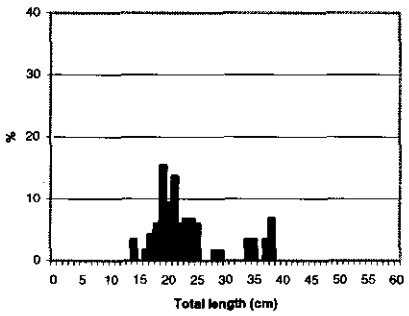
Caranx hippos GABON
Mean length = 25.4 cm N = 41



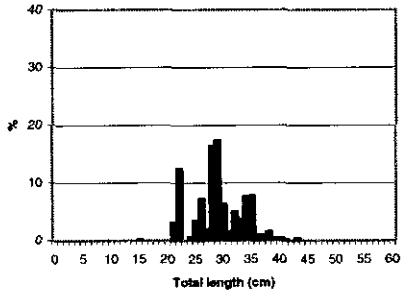
Decapterus punctatus GABON
Mean length = 14.2 cm N = 705



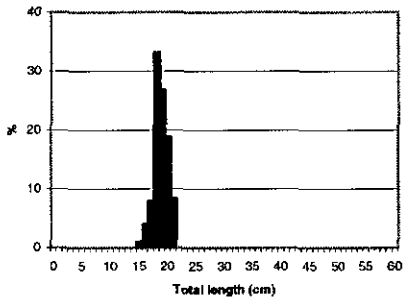
Decapterus rhonchus GABON
Mean length = 27.3 cm N = 66



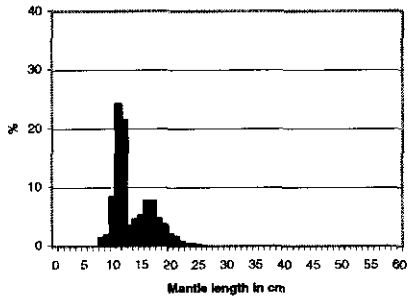
Selene dorsalis GABON
Mean length = 24 cm N = 49



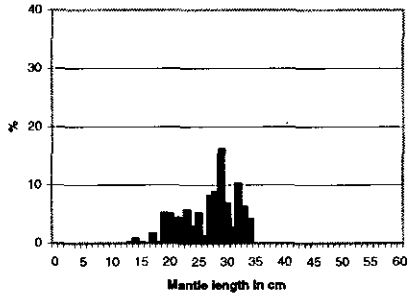
Lutjanus fulgens GABON
Mean length = 29.5 cm N = 82



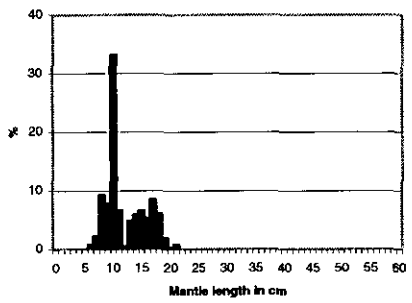
Chloroscombrus chrysurus GABON
Mean length = 19.2 cm N = 154



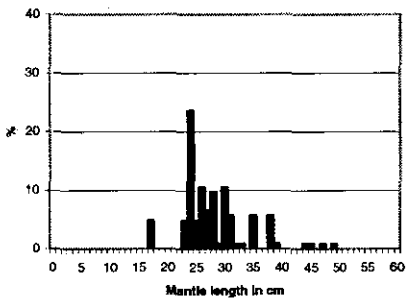
Pseudupeneus prayensis GABON
Mean length = 14 cm N = 627



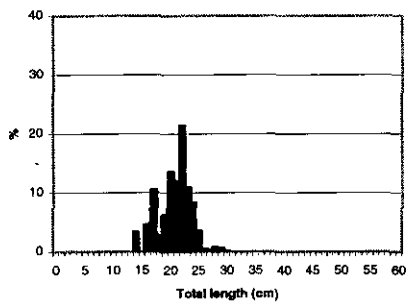
Galeoides decadactylus GABON
Mean length = 27.4 cm N = 208



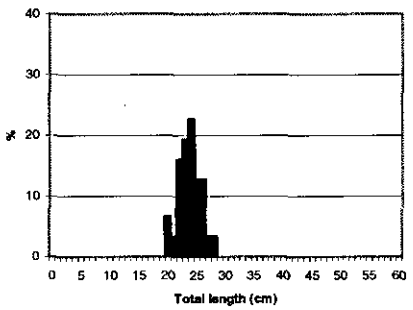
Brachydeuterus auritus GABON
Mean length = 12.6 cm N = 454



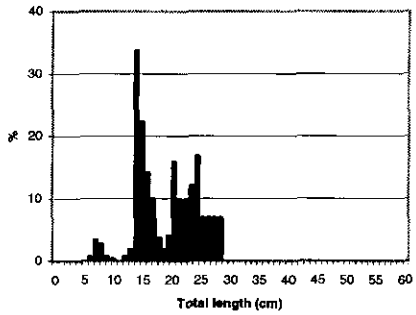
Pseudotolithus elongatus GABON
Mean length = 28.9 cm N = 34



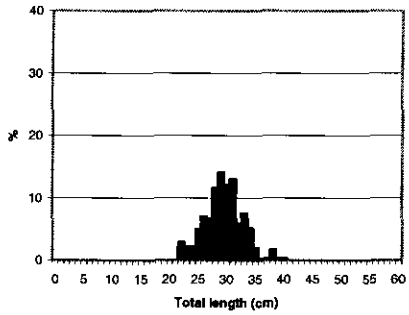
Pomadasys incisus GABON
Mean length = 21.3 cm N = 189



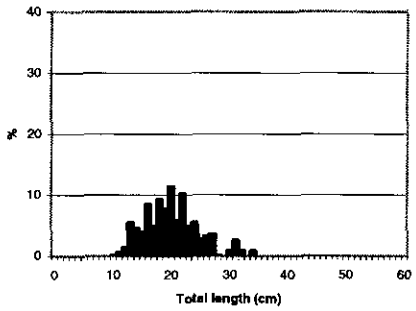
Pentheroscion mbizi GABON
Mean length = 24.2 cm N = 31



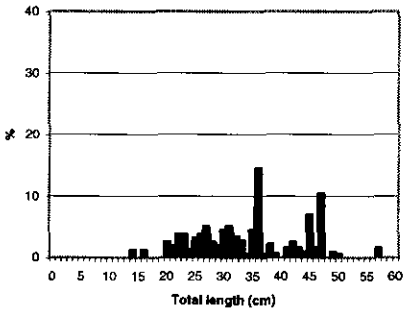
Scomber japonicus GABON
Mean length = 23.5 cm N = 38



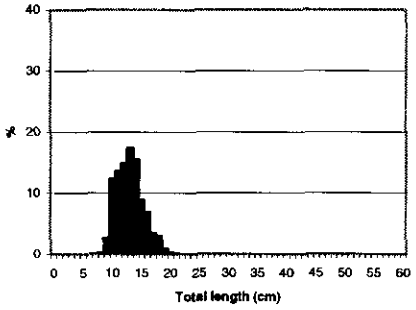
Umbrina canariensis GABON
Mean length = 29.9 cm N = 122



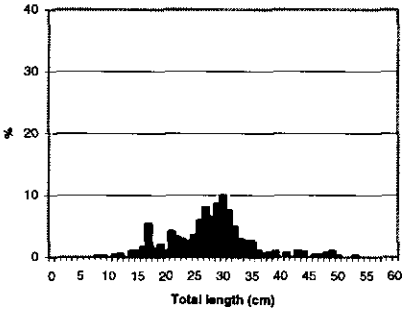
Dentex angolensis GABON
Mean length = 20.5 cm N = 196



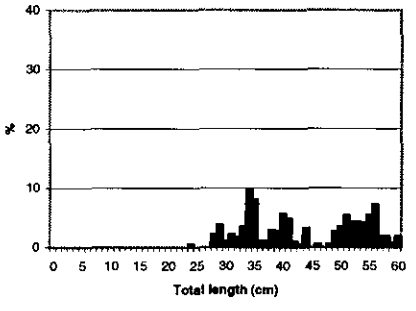
Dentex macrophthalmus GABON
Mean length = 34.7 cm N = 90



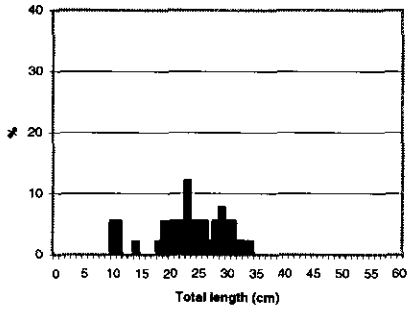
Dentex congoensis GABON
Mean length = 13.5 cm N = 1405



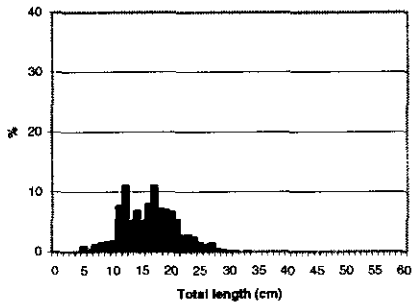
Pagrus caeruleostictus GABON
Mean length = 28.2 cm N = 277



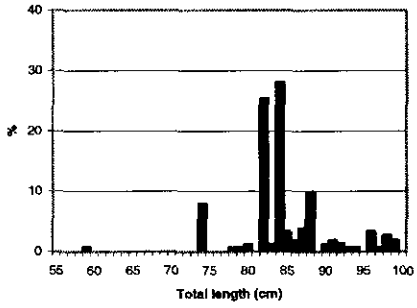
Sphyraena guachancho GABON
Mean length = 14.2 cm N = 98



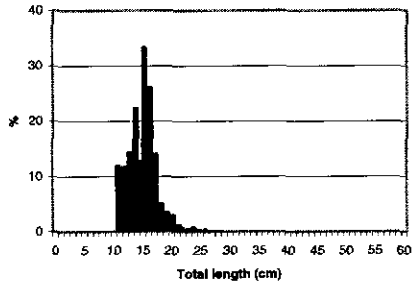
Sepia orbigyana GABON
Mean length = 29.1 cm N = 36



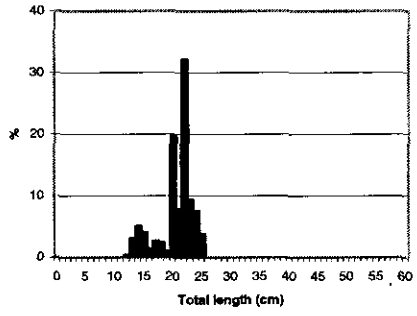
Pagellus bellottii GABON
Mean length = 16.9 cm N = 1785



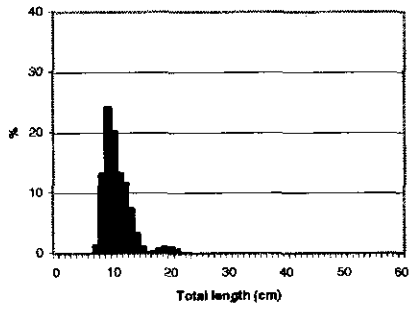
Trichiurus lepturus GABON
Mean length = 85.8 cm N = 62



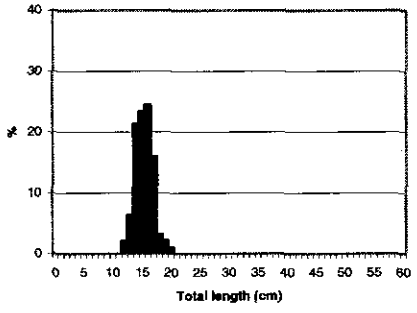
Trachurus trecae GABON
Mean length = 16.5 cm N = 596



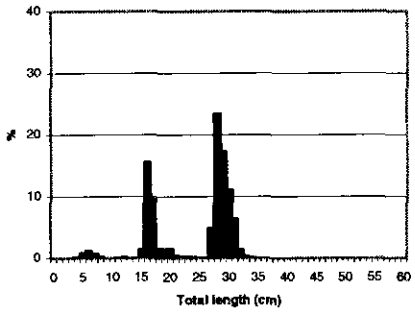
Spicara alta GABON
Mean length = 21.1 cm N = 240



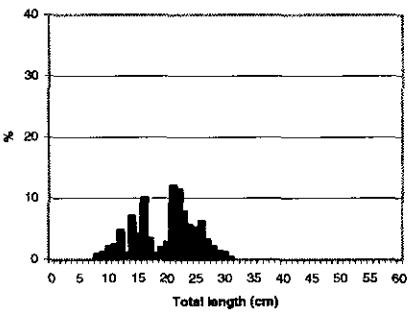
Sardinella aurita GABON
Mean length = 11.1 cm N = 1287



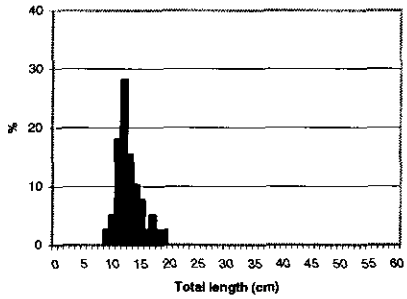
Eucinostomus melanopterus GABON
men length = 15.9 cm N = 94



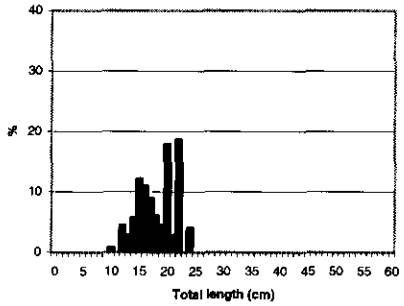
Trachurus trecae CONGO
Mean length = 24.8 cm N = 433



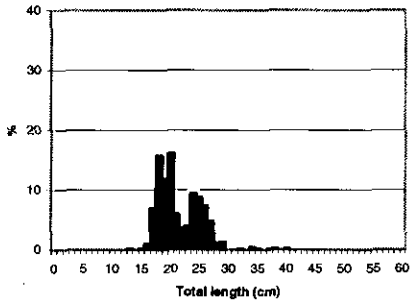
Dentex angolensis CONGO
Mean length = 20.3 cm N = 303



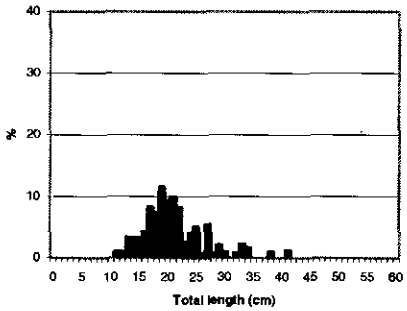
Dentex congoensis CONGO
Mean length =13 cm N = 39



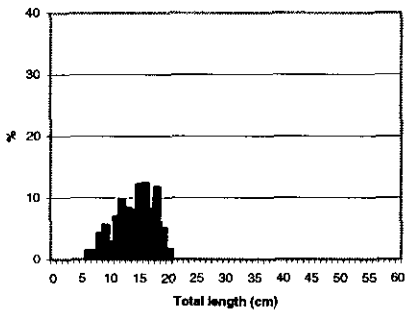
Pagellus bellottii CONGO
Mean length = 18.4 cm N = 57



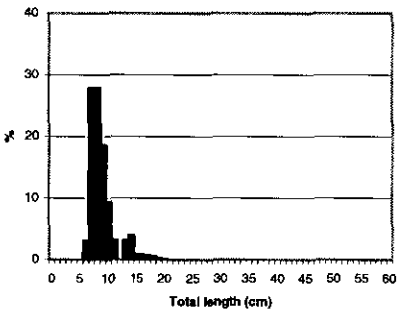
Pentheroscion mbizi CONGO
Mean length = 22.1 cm N = 146



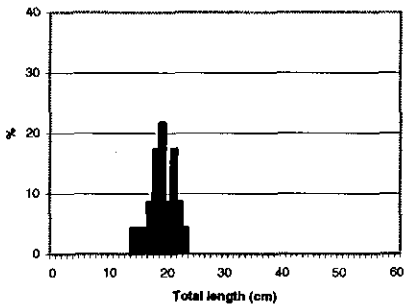
Pseudotolithus senegalensis CONGO
Mean length = 21.6 cm N = 100



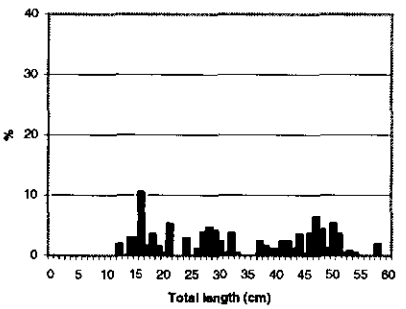
Pteroscion peli CONGO
Mean length = 14.6 cm N = 60



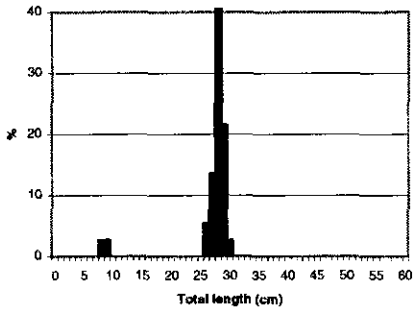
Brachydeuterus auritus CONGO
Mean length = 9.3 cm N = 115



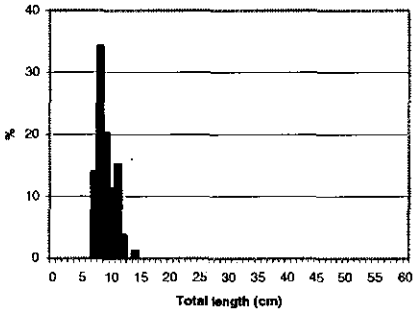
Pentanemus quinquarius CONGO
Mean length = 19.5 cm N = 23



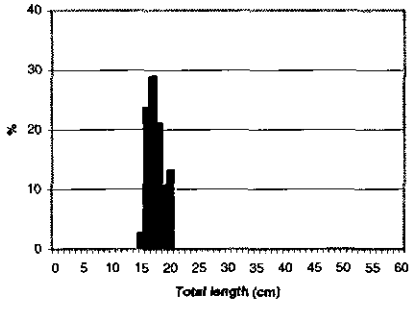
Brotula barbata CONGO
Mean length = 33.8 cm N = 85



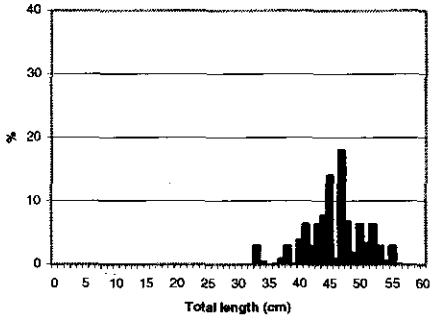
Sardinella aurita CONGO
Mean length = 27.5 cm N = 37



Sardinella maderensis CONGO
Mean length = 9.5 cm N = 79



Chloroscombrus chrysurus CONGO
Mean length = 18 cm N = 38



Trichiurus lepturus CONGO
Mean length = 48 cm N = 108

Annex III Summary of biological samples

Nigeria

S/n	Species	# samples	Cond. Fac	St. Dev	Min TL	Max TL	Length-weight Relationship		
							a	b	R
1	*Dentex angolensis*	190	1.43	0.18	10.0	25.5	0.026	2.79	0.96
2	*Dentex congoensis*	141	1.42	0.32	7.5	20.5	0.040	2.62	0.91
3	*Pagellus bellottii*	32	1.37	0.07	20.0	31.8	0.018	2.91	0.98
4	*Pagrus caeruleostictus*	85	1.47	0.13	18.7	41.0	0.019	2.92	0.95
5	*Stromateus fiatola*	14	1.18	0.08	30.6	36.7	0.277	2.75	0.78
6	*Urapsis secunda*	8	1.50	0.07	28.5	33.5	0.024	2.86	0.94
7	*Pomadasys jubelini*	48	1.37	0.08	16.2	33.5	0.011	3.07	0.99
8	*Pomadasys rogeri*	8	1.38	0.07	25.1	28.7	0.042	2.66	0.88
9	*Caranx crysos*	24	1.08	0.08	16.8	27.0	0.036	2.60	0.98
10	*Caranx hippos*	7	1.27	0.09	23.5	26.0	1.632	1.49	0.54
11	*Alectis alexandrinus*	52	1.46	1.31	11.7	85.0	0.065	2.49	0.93
12	*Chloroscombrus chrysurus*	57	0.85	0.05	17.1	24.2	0.012	2.89	0.93
13	*Decapterus punctatus*	95	0.85	0.21	7.5	18.7	0.012	2.87	0.92
14	*Selene dorsalis*	44	1.07	0.14	14.0	33.5	0.012	2.97	0.95
15	*Selar crumenophthlamus*	163	1.23	0.09	13.5	27.5	0.005	3.29	0.99
16	*Galeoides decadactylus*	206	1.06	0.07	14.5	32.5	0.010	3.02	0.98
17	*Brachydeuterus auritus*	148	1.39	0.14	7.2	20.2	0.010	3.13	0.96
18	*Scomberomorus tritor*	48	0.54	0.04	21.5	65.9	0.005	3.00	0.99
19	*Pseudotolithus elongatus*	59	0.80	0.12	17.3	30.4	0.004	3.21	0.93
20	*Pseudupenus prayensis*	68	1.29	0.15	15.0	24.1	0.030	2.72	0.88
21	*Pseudotolithus senegalensis*	23	0.73	0.06	17.7	29.1	0.004	3.21	0.97
22	*Ariomma bondi*	184	1.30	0.08	8.2	19.2	0.014	2.98	0.96
23	*Pentheroscion mbizi*	117	1.06	0.07	16.6	26.0	0.016	2.86	0.89
24	*Sphyraena guachancho*	166	0.47	0.69	9.0	50.5	0.008	2.84	0.98
25	*Penaeus notialis*	77	70.82	5.41	2.5	4.4	1.138	2.59	0.98
26	*Ethmalosa fimbriata*	7	0.95	0.09	27.0	32.5	0.104	2.29	0.86
27	*Sardinella aurita*	31	0.96	0.13	8.5	29.1	0.017	2.78	0.98
28	*Sardinella maderensis*	236	0.93	0.08	10.0	26.5	0.017	2.77	0.98
29	*Ilisha africana*	114	0.70	0.10	8.3	20.9	0.007	3.01	0.97
30	*Engraulis encrasicolus*	137	0.66	0.07	4.8	9.4	0.012	2.69	0.77
31	*Trichiurus lepturus*	165	0.05	0.01	13.2	78.6	0.000	3.36	0.97
32	*Umbrina canarensis*	39	1.69	0.06	21.2	38.0	0.016	2.91	0.98
	Sum	2793							

Cameroon

S/N	Species	# Samples	Cond. Fact	St. Dev	Min TL	Max TL	Length-weight Relationship a	b	R^2
1	*Brachydeuterus auritus*	205	1.31	0.13	6.0	18.4	0.014	2.97	0.97
2	*Caranx crysos*	27	1.17	0.09	19.5	41.0	0.009	3.09	0.99
3	*Caranx hippos*	37	1.26	0.10	18.5	33.5	0.011	3.04	0.97
4	*Caranx senegallus*	30	0.82	0.18	19.3	45.0	0.010	2.95	0.96
5	*Selene dorsalis*	163	1.11	0.08	19.0	35.0	0.024	2.76	0.95
6	*Selar crumenophthalmus*	50	1.23	0.08	10.2	28.0	0.006	3.26	0.99
7	*Ariomma bondi*	58	1.22	0.10	6.5	16.0	0.009	3.12	0.98
8	*Dentex angolensis*	88	1.43	0.13	11.0	35.0	0.016	2.97	0.98
9	*Dentex congoensis*	84	1.33	0.08	11.3	20.6	0.011	3.08	0.98
10	*Pagrus caeruleostictus*	12	2.09	0.19	9.6	35.5	0.020	3.01	0.99
11	*Sphyraena guachancho*	77	0.52	0.06	7.5	52.0	0.007	2.89	1.00
12	*Pagellus bellottii*	96	1.42	0.11	12.8	26.5	0.117	3.07	0.96
13	*Drepane africana*	52	2.73	0.24	16.3	27.0	0.014	3.22	0.94
14	*Galeoides decadactylus*	104	1.06	0.07	15.5	32.0	0.010	3.00	0.98
15	*Penaeus monodon*	27	57.29	6.94	4.9	7.9	1.848	2.35	0.94
16	*Penaeus notialis*	72	75.40	12.06	1.6	5.0	1.191	2.57	0.96
17	*Psedotolithus elongatus*	113	0.78	0.11	11.0	39.5	0.007	3.05	0.97
18	*Pseudotolithus typus*	109	0.68	0.08	11.5	42.6	0.006	3.04	0.97
19	*Pseudotolithus senegalensis*	105	0.68	0.09	10.5	33.3	0.004	3.17	0.98
20	*Sardinella maderensis*	171	0.92	0.08	7.2	27.5	0.012	2.91	0.99
21	*Scomberomorus tritor*	23	0.54	0.04	22.0	42.5	0.008	2.89	0.98
22	*Trichiurus lepturus*	64	0.06	0.05	22.0	78.2	0.000	3.40	0.92
23	*Chloroscmobrus chrysurus*	16	0.84	0.11	10.6	24.1	0.037	2.50	0.98
24	*Alectis alexandrinus*	7	1.14	0.09	29.4	43.0	0.025	2.78	0.96
25	*Ilisha africana*	192	0.68	0.05	8.0	18.8	0.006	3.04	0.98
26	Spicara alta	46	1.18	0.10	15.0	19.7	0.028	2.70	0.82

São Tomé and Principe

S/N	Species	# samples	Cond. Fac	st. Dev	Min TL	Max TL	Length-Weight Relationship a	b	R^2
1	*Albula vulpes*	10	0.81	0.02	29.6	45.6	0.01	2.86	0.97
2	*Balistes capriscus*	9	1.29	0.164	22.3	35.5	0.16	2.27	0.97
3	*Boops boops*	14	1.01	0.038	9.4	39.8	0.01	2.95	1.00
4	*Brachydeuterus aurita*	228	1.33	0.121	5.5	8.6	0.03	2.52	0.81
6	*Chaetodipterus goreensis*	10	2.43	0.183	25.2	30.8	0.06	2.73	0.84
7	*Dactylopterus volitans*	173	0.90	0.060	21.4	34.8	0.02	2.78	0.93
8	*Decapterus punctatus*	64	0.91	0.067	15.9	23.1	0.03	2.61	0.92
9	*Dentex congoensis*	60	1.28	0.213	6	30.6	0.02	2.78	0.99
10	*Dentex macrophthalmus*	26	1.40	0.092	32.2	57.2	0.03	2.83	0.97
11	*Fistularis petimba*	8	0.04	0.008	94.2	119.5			
12	*Galeoides decadactylus*	113	1.01	0.063	24.6	35.4	0.01	2.89	0.93
13	*Lethrinus atlanticus*	20	1.37	0.069	24.6	33.9	0.01	3.02	0.98
14	*Lutjanus fulgens*	31	1.25	0.134	23.3	85.9	0.01	3.19	0.98
15	*Pagellus bellottii*	244	1.26	0.151	6.1	31.5	0.02	2.83	0.99
16	*Pagrus caeruleostictus*	98	1.44	0.090	8.9	54.1	0.01	3.00	1.00
17	*Pomadasys incisus*	9	1.18	0.074	19.2	25.1	0.01	3.17	0.97
18	*Pseudupenus prayensis*	246	1.21	0.407	6.6	25.4	0.01	3.00	0.95
19	*Sardinella aurita*	19	0.79	0.032	9.6	28.1	0.01	3.04	1.00
20	*Sardinella maderensis*	61	0.79	0.072	8.5	11.5	0.02	2.52	0.71
21	*Selar crumenophthalmus*	64	1.19	0.081	26.6	36	0.67	1.81	0.62
22	*Selene dorsalis*	14	1.01	0.134	24.6	49.6	0.02	2.74	0.97
24	*Sphyraena guachancho*	18	0.42	0.025	28.7	42.9	0.00	3.09	0.98

Gabon

S/N	Species	# Samples	Cond. Fac	St. Dev	Min TL	Max TL	Length-Weight Relationship a	b	R^2
1	*Ariomma bondi*	62	1.16	0.10	9.8	19.1	0.010	3.07	0.99
2	*Aspilus fucus*	6	1.04	0.02	34.9	41.8	0.008	3.07	0.99
3	*Brachydeuterus auritus*	281	1.34	0.22	8.6	23.2	0.011	3.06	0.94
4	*Caranx crysos*	19	1.10	0.08	22.6	46.4	0.011	3.00	0.99
5	*Caranx hippos*	39	1.24	0.12	21.2	35.4	0.017	2.89	0.92
6	*Caranx senegallus*	43	0.82	0.09	26.2	45.7	0.022	2.72	0.92
7	*Chloroscombrus chrysurus*	71	0.84	0.08	15.1	22.4	0.002	3.44	0.91
8	*Cynoglossus canariensis*	9	0.47	0.04	28.8	49.3	0.005	3.00	0.97
9	*Dactylopterus volitans*	7	0.98	0.06	20.5	39.3	0.011	2.97	0.99
10	*Dentex macarellus*	38	0.81	0.06	11.9	19.7	0.009	2.97	0.96
11	*Decapterus punctatus*	161	0.82	0.05	9.4	23.2	0.006	3.13	0.98
12	*Decapterus rhonchus*	66	1.02	0.20	13.3	37.9	0.011	2.97	0.97
13	*Dentex angolensis*	155	1.41	0.13	10.6	33.6	0.017	2.93	0.99
14	*Dentex barnardi*	17	1.42	0.16	25.7	42.3	0.009	3.14	0.95
15	*Dentex congoensis*	336	1.40	0.11	8.7	21.4	0.019	2.88	0.98
16	*Dentex macrophthalmus*	53	1.46	0.17	15.7	45.2	0.026	2.83	0.98
17	*Eucinostomus melanopterus*	61	1.28	0.07	12.9	18.9	0.009	3.13	0.97
18	*Fistularia petimba*	24	0.05	0.01	50.9	105.3	0.004	2.55	0.93
19	*Galeoides decadactylus*	84	1.13	0.12	13.7	34.7	0.020	2.81	0.97
20	*Lethrinus atlanticus*	9	1.51	0.22	21.3	39.1	0.014	3.03	0.95
21	*Lutjanus fulgens*	24	1.28	0.10	16.1	43.8	0.013	3.00	0.98
22	*Pagellus bellottii*	519	1.31	0.08	6.9	29.5	0.016	2.92	0.99
23	*Pagrus caeruleostictus*	98	1.49	0.10	18.7	39.6	0.027	2.82	0.98
24	*Penaeus notialis*	9	68.44	5.56	2.9	5.3	1.149	2.60	1.00
25	*Pentheroscion mbizi*	31	0.98	0.05	21.1	28.9	0.010	2.99	0.95
26	*Pomadasys incisus*	138	1.37	0.09	13.9	31.2	0.014	2.99	0.98
27	*Pomadasys jubelini*	41	1.32	0.07	11.6	36.9	0.011	3.06	1.00
28	*Pseudotolithus senegalensis*	18	0.77	0.06	17.6	37.5	0.004	3.19	0.98
29	*Pseudupeneus prayensis*	251	1.26	0.08	7.9	25.6	0.011	3.04	0.99
30	*Sardinella aurita*	654	0.72	0.06	6.9	25.1	0.005	3.15	0.97
31	*Scomber japonicus*	33	0.87	0.04	15.9	25.4	0.004	3.23	0.98
32	*Scomberomorus tritor*	20	0.51	0.05	29.4	57	0.004	3.05	0.97
33	*Selar crumenophthalmus*	37	0.97	0.07	12.7	21.6	0.004	3.30	0.97
34	*Selene dorsalis*	17	1.15	0.11	15.5	28.3	0.034	2.65	0.96
35	*Sepia officinalis*	10	8.65	1.47	8.8	32.4	0.223	2.65	0.99
36	*Sepia orbigyana*	36	8.01	1.00	10.1	33.1	0.185	2.74	0.98
37	*Sphyraena guachancho*	56	0.47	0.10	24.6	62.2	0.005	3.00	0.96
38	*Spicara alta*	135	1.22	0.07	12.9	25.7	0.017	2.88	0.99
39	*Trachurus trecae*	239	0.92	0.08	11.4	28.9	0.008	3.03	0.98
40	*Trichiurus lepturus*	37	0.06	0.01	81.9	127.2		3.70	0.98
41	*Umbrina canariensis*	58	1.19	0.09	23	35.9	0.014	2.96	0.94
Sum		4002							

Congo

S/N	Species	# Samples	Cond. Fact	St. Dev	Min TL	Max TL	Length-Weight Relationship a	b	R^2
1	*Brachydeterus auritus*	26	1.36	0.08	14.7	19.2	0.004	3.42	0.97
2	*Brotula barbata*	56	1.04	0.34	8.6	55.2	0.063	2.47	0.98
3	*Chloroscombrus chrysurus*	38	0.84	0.09	15.2	21.1	0.013	2.85	0.84
4	*Dentex angolensis*	208	1.51	0.14	10.2	31.3	0.015	3.00	0.97
5	*Galeoides decadactylus*	10	1.01	0.08	25.9	36.3	0.005	3.22	0.95
6	*Pagellus bellottii*	20	1.34	0.08	10.7	25.7	0.012	3.04	1.00
7	*Parapenaeopsis atlantica*	34	0.04	0.01	16	36	0.002	2.50	0.95
8	*Pentheroscion mbizi*	39	1.01	0.10	16.2	34.1	0.028	2.67	0.95
9	*Pomadasys jubelini*	7	1.39	0.05	25.3	31.6	0.007	3.20	0.97
10	*Pseudotolithus senegalensis*	48	0.76	0.06	16.9	41.1	0.004	3.25	0.99
11	*Pseudotolithus typus*	35	0.71	0.07	12.2	24.9	0.002	3.37	0.98
12	*Pseudpeneus prayensis*	7	0.81	0.07	26.2	41.4	0.002	3.44	0.99
13	*Pteroscion peli*	61	1.17	0.10	14.8	29.3	0.022	2.78	0.98
14	*Sardinella aurita*	37	0.87	0.07	6.6	30.1	0.011	2.93	0.99
15	*Sardinella maderensis*	76	0.86	0.12	4.6	14.7	0.017	2.69	0.95
16	*Stromateus fiatola*	10	1.06	0.16	34.8	48.2	7.407	1.19	0.76
17	*Trachurus trecae*	194	0.94	0.11	13.3	32.8	0.007	3.07	0.98
18	*Trichiurus lepturus*	19	0.07	0.01	103	132.3	0.002	2.79	0.74
19	*Umbrina canariensis*	19	1.18	0.07	27.3	45.2	0.046	2.61	0.99

Annex IV Benthos sample stations

A total of 78 grab stations and seven benthos sledge stations were collected during the survey. Five replicates were attempted from each station. Two replicates was retained in the region while three replicates have been shipped to the University of Bergen.

						Position	
Date	St. Code	Country	CTD St.	Depth	No. Rep.	Lat.	Long.
10/06/2006	N01	Nigeria	697	45	5	6.18.871N	3.05.588
11/06/2006	N02	Nigeria	706	87	5	6.11.587N	3.18.634E
11/06/2006	N03	Nigeria	707	24	5	6.20.290N	3.18.403E
12/06/2006	N04	Nigeria	717	42	5	6.10.377N	4.14.616E
13/06/2006	N05	Nigeria	718	103	5	6.02.685N	4.14.240E
13/06/2006	N06	Nigeria	727	37	3	5.49.272N	4.42.540E
13/06/2006	N07	Nigeria	728	64	5	5.46.543N	4.38.431E
14/06/2006	N08	Nigeria	736	142	5	5.15.496N	4.48.016E
15/06/2006	N09	Nigeria	747	44	5	4.54.026N	5.10.712E
15/06/2006	N10	Nigeria	748	67.9	5	4.53.507N	5.04.884E
16/06/2006	N11	Nigeria	756	26.5	3	4.31.266N	5.26.207E
16/06/2006	N12	Nigeria	758	123	5	4.23.058N	5.16.505E
17/06/2006	N13	Nigeria	769	61	5	3.56.908N	5.34.250E
18/06/2006	N14	Nigeria	775	41	5	3.58.963N	6.12.950E
19/06/2006	N15	Nigeria	785	40	5	4.04.303N	6.38.635E
19/06/2006	N16	Nigeria	786	78	5	3.58.069N	6.41.570E
19/06/2006	N17	Nigeria	790	43.2	5	4.05.293N	7.10.102E
20/06/2006	N18	Nigeria	791	68	5	4.00.262N	7.07.656E
20/06/2006	N19	Nigeria	792	125	5	3.52.932N	7.09.073E
21/06/2006	N20	Nigeria	802	24	5	4.13.267N	7.41.661E
21/06/2006	N21	Nigeria	803	129	5	3.52.801N	7.36.154E
22/06/2006	N22	Nigeria	811	48	5	4.05.488N	7.55.498E
22/06/2006	N23	Nigeria	812	84	5	3.55.343N	8.09.846E

25/06/2006	C01	Cameroon	815	22.7	5	4.12.189N	8.46.937E
25/06/2006	C02	Cameroon		64	5	4.5.905N	8.39.630E
25/06/2006	C03	Cameroon		59.8	5	4.03.341N	8.48.551E
26/06/2006	C04	Cameroon		24.8	5	4.08.829N	8.53.256E
26/06/2006	C05	Cameroon		33.8	5	4.02.745N	9.01.294E
26/06/2006	C06	Cameroon		60.7	5	3.57.450N	9.03.098E
26/06/2006	C07	Cameroon		51	5	3.49.821N	9.04.330E
26/06/2006	C08	Cameroon		19.3	5	3.56.410N	9.09.396E
27/06/2006	C09	Cameroon		18.6	5	3.46.370N	9.13.821E
27/06/2006	C10	Cameroon		32.6	5	3.43.072N	9.11.245E
27/06/2006	C11	Cameroon	828	22.4	5	3.39.812N	9.27.023E
27/06/2006	C12	Cameroon		42	5	3.33.428N	9.17.705E
27/06/2006	C13	Cameroon		99	5	3.24.827N	9.20.566E
28/06/2006	C14	Cameroon		22	5	3.27.906N	9.32.775E
28/06/2006	C15	Cameroon		21	5	3.20.106N	9.41.135E
29/06/2006	C16	Cameroon		105	5	2.57.020N	9.35.630E
29/06/2006	C17	Cameroon		59	5	2.58.437N	9.42.467E
30/06/2006	C18	Cameroon		37	5	2.47.321N	9.47.039E
30/06/2006	C19	Cameroon		104	5	2.48.411N	9.38.181E
30/06/2006	C20	Cameroon		89	5	2.38.573N	9.37.348E
01/07/2006	C21	Cameroon		25	5	2.38.015N	9.46.320E
01/07/2006	C22	Cameroon		20	5	2.24.503N	9.44.144E
01/07/2006	C23	Cameroon		92	5	2.29.631N	9.32.781E
02/07/2006	SP01	Principe	874	40		1.37.431N	7.29.242E
02/07/2006	Sledge 1	Principe		47		1.6578N	7.3298E
02/07/2006	Sledge 2	Principe		49		1.5502N	7.472E
02/07/2006	Sledge 3	Principe		70		1.4137N	7.294E
03/07/2006	Sledge 4	São Tomé		54		0.3723	6.5718E
03/07/2006	Sledge 5	São Tomé		59		0.233	6.4467E
04/07/2006	Sledge 6	São Tomé		49		0.0633	6.6197E
04/07/2006	Sledge 7	São Tomé		55		0.3277	6.7822E

05/07/2006	G01	Gabon	924	24	5	0.48.751N	9.13.030E
06/07/2006	G02	Gabon	927	118	5	0.37.307N	8.58.111E
06/07/2006	G03	Gabon	931	21	5	0.20.838N	9.14.338E
06/07/2006	G04	Gabon	933	70	5	0.20.753N	8.58.612E
07/07/2006	G05	Gabon	938	108	5	0.04.517N	8.53.132E
07/07/2006	G06	Gabon	943	28	5	0.06.329S	9.13.505
07/07/2006	G07	Gabon	944	47	5	0.07.886S	9.04.264E
08/07/2006	G08	Gabon	948	102	5	0.24.493S	8.50.347E
08/07/2006	G09	Gabon	951	17	5	0.27.534S	9.04.048E
10/07/2006	G10	Gabon	959	60	5	0.49.996S	8.34.040E
10/07/2006	G11	Gabon	962	111	5	1.45.438S	8.45.142E
11/07/2006	G12	Gabon	968	57	5	1.52.287S	8.59.839E
11/07/2006	G13	Gabon	975	103	5	2.13.412S	8.56.529E
12/07/2006	G14	Gabon	981	58	5	2.20.103S	9.10.781E
12/07/2006	G15	Gabon	985	98	5	2.47.985S	9.11.714E
13/07/2006	G16	Gabon	992	106	5	2.51.255S	9.23.411E
13/07/2006	G17	Gabon	996	101	5	3.0041.S	9.37.151E
14/07/2006	G18	Gabon	1005	99	5	3.22.134S	9.58.740E
14/07/2006	G19	Gabon	1011	68	5	3.26.095S	10.13.840E
15/07/2006	G20	Gabon	1016	100	5	3.42.362S	10.17.970E
15/07/2006	G21	Gabon	1021	65	5	3.46.177S	10.35.533E
16/07/2006	G22	Gabon	1024	105	5	4.04.098S	10.42.168E
16/07/2006	CB01	Congo Brazz.	1027	21	5	4.01.896S	11.03.853E
16/07/2006	CB02	Congo Brazz.	1031	117	5	4.13.098S	10.46.711E
17/07/2006	CB03	Congo Brazz.	1036	102	5	4.21.874S	11.03.784E
17/07/2006	CB04	Congo Brazz.	1040	22	5	4.22.729S	11.26.573E
17/07/2006	CB05	Congo Brazz.	1041	102	5	4.35.947S	11.17.505E
18/07/2006	CB06	Congo Brazz.	1045	115	5	4.48.790S	11.22.596E
18/07/2006	CB07	Congo Brazz.	1051	52	5	4.47.678S	11.40.160E
19/07/2006	CB08	Congo Brazz.	1059	110	5	5.08.416S	11.36.987E
19/07/2006	CB09	Congo Brazz.	1061	40	5	4.52.893S	11.48.486E
19/07/2006	CB10	Congo Brazz.	1061	22	5	4.52.232S	11.51.836E

Annex V Swept-area biomass estimates

NIGERIA

SWEPT AREA ANALYSIS FROM STATION 1211 TO STATION 1300

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² - 30m	30- 50m	50-100m	100-200m
Ariomma bondi	15	6	5	1	2		35	1.83			0.48	11.34
Chloroscombrus chrysurus	22	3	1			1	33	0.76	0.67	2.14		
Brachydeuterus auritus	38	9	5	1			65	0.65	0.16	0.83	1.07	
J E L L Y F I S H	38	3	4	1			56	0.57	0.48	0.82	0.65	
Priacanthus arenatus	43		1			1	55	0.52		0.01	1.27	0.44
Selene dorsalis	44	4	1	1			61	0.46	0.12	0.45	0.86	
Trichiurus lepturus	51	10	1				76	0.39	0.76	0.46	0.21	0.15
Dentex angolensis	27	2		1			37	0.37			0.91	0.30
Pagrus caeruleostictus	12			1			16	0.25		0.06	0.65	
Sphyraena guachancho	46	7					65	0.24	0.41	0.26	0.21	0.01
Pentheroscion mbizi	31			1			39	0.21		0.01	0.10	1.16
Dentex congoensis	20	1	2				28	0.19			0.43	0.24
Selar crumenophthalmus	22	1	2				30	0.19	0.01	0.02	0.53	0.01
Ilisha africana	26	2	1				35	0.18	0.69	0.13		
Lagocephalus laevigatus	39	2	1				51	0.14	0.03	0.29	0.15	
Galeoides decadactylus	24	3					33	0.13	0.27	0.25		
Decapterus punctatus	20	2	1				28	0.13		0.02	0.35	0.01
Squatina oculata	22	1					28	0.11		0.01	0.19	0.28
Illex coindetii	32	2					41	0.10	0.01		0.02	0.60
Sepia officinalis hierredda	47	1					59	0.09	0.01	0.04	0.19	0.03
Epinephelus aeneus	23	2					30	0.07		0.01	0.19	0.01
Pteroscion peli	28	1					35	0.07	0.16	0.12		
Nematopalaemon hastatus	8						10	0.01	0.03			
Penaeus notialis	32						39	0.01	0.01	0.02		
Parapenaeus longirostris	20						24	0.01		0.01	0.01	0.01
Parapenaeopsis atlantica	12						15	0.01	0.02			
Solenocera africana	1						1					
Sicyonia galeata	4						5					
Penaeus monodon	6						7		0.01			
Penaeus kerathurus	3						4					
Parapandalus narval	4						5					
Heterocarpus ensifer	1						1					
Other fish								0.83	1.47	0.60	0.58	1.00
Sum all species								8.52	5.32	6.56	9.05	15.59
Sum Snappers												
Sum Groupers								0.07		0.01	0.19	0.01
Sum Grunts								0.67	0.22	0.87	1.07	
Sum Croakers								0.41	0.68	0.19	0.13	1.16
Sum Seabreams								0.85		0.06	2.08	0.54
Sum Sharks								0.14		0.03	0.24	0.31
Sum Rays								0.02	0.01	0.01	0.03	0.06
Sum Squids								0.28	0.02	0.09	0.37	0.70
Sum 0.03												
Number of stations included in analysis, total and by depth strata								82	17	24	29	12

SWEPT AREA ANALYSIS FROM STATION 1211 TO STATION 1300

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² 200-300m	300-400m	400-500m	500-999m
Odontaspis ferox				1			13	1.45			5.81	
Hypoclydonia bella	3		1				50	0.98	2.61			
Illex coindetii	5		1				63	0.94	2.47	0.05	0.01	0.02
Parasudis fraser-bruenneri	3		1				50	0.88	2.34			
Zenion longipinnis	5	1					75	0.30	0.30	0.72	0.04	
Chlorophthalmus atlanticus	6						75	0.18	0.26	0.34		
Parapenaeus longirostris	4						50	0.11	0.28	0.03		
Lepidopus caudatus	2						25	0.08			0.31	
Hymenocephalus italicus	3						38	0.07			0.26	
Yarrella corythaeola	1						13	0.06				0.50
Ariomma melanum	2						25	0.06	0.16			
Peristedion cataphractum	3						38	0.05	0.14			
Chaunax pictus	4						50	0.05		0.15		0.08
Nematocarcinus africanus	1						13	0.02			0.09	
Shrimps, small, non comm.	2						25	0.02		0.01		0.11
Solenocera africana	4						50	0.01		0.01	0.02	
Plesionika martia	1						13	0.01	0.02			
Heterocarpus ensifer	3						38	0.01	0.03	0.01		
Plesiopenaeus edwardsianus	1						13					0.03
Aristeus varidens	2						13				0.01	0.02
S H R I M P S	1						13				0.01	
Other fish								0.61	0.82	0.62	0.41	0.79
Sum all species								5.89	9.43	1.94	6.97	1.55
Sum Snappers												
Sum Groupers												
Sum Grunts												
Sum Croakers								0.03	0.07			
Sum Seabreams												
Sum Sharks								1.51	0.13	0.02	5.88	0.02
Sum Rays									0.02			
Sum Squids								0.96	2.53	0.05	0.01	0.12
Sum 0.05												
Number of stations included in analysis, total and by depth strata								8	3	2	2	1

CAMEROON

SWEPT AREA ANALYSIS FROM STATION 1300 TO STATION 1347

SPECIES NAME	SAMPLE	DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm						% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm²			
		>0	10	30	100	300	1000			- 30m	30- 50m	50-100m	100-200m
Ariomma bondi	9	3	2	1	1			40	2.07			0.69	18.42
Lagocephalus laevigatus	20			1				53	0.72	0.02	0.07	2.13	
Brachydeuterus auritus	24	2		1				68	0.63	0.18	1.53	0.28	
Dentex congoensis	10	2	3					38	0.55	0.01		0.34	4.40
J E L L Y F I S H	26	1	1	1				73	0.54	1.31	0.61	0.05	
Ilisha africana	9	5	1					38	0.35	1.20	0.16		
Trichiurus lepturus	13	5	1					45	0.32	1.05	0.18	0.01	
Selene dorsalis	22	1	2					63	0.32	0.17	0.62	0.23	
Chloroscombrus chrysurus	17		1					45	0.26	1.01	0.03		
Priacanthus arenatus	16		1					43	0.17			0.10	1.36
Sepia officinalis hierredda	25	2						68	0.16	0.02	0.10	0.35	0.04
Dentex angolensis	14	2						40	0.16			0.15	1.09
Raja miraletus	23		1					60	0.15	0.02	0.04	0.04	1.17
Sphyraena guachancho	24	1						63	0.14	0.29	0.19	0.03	
Nematopalaemon hastatus	4	1	1					15	0.14	0.22	0.26		
Spicara alta	4	1	1					15	0.14				1.35
Pseudotolithus elongatus	5	2						18	0.12	0.46			
Illex coindetii	16	1						43	0.09			0.04	0.72
Epinephelus aeneus	14	1						38	0.09	0.07	0.03	0.12	0.21
Galeoides decadactylus	18							45	0.09	0.24	0.09		
Pteroscion peli	12							30	0.08	0.21	0.08		
Pseudotolithus typus	5	1						15	0.07	0.25			
Drepane africana	15							38	0.06	0.12	0.09		
Squatina oculata	5							13	0.05			0.10	0.16
Rhizoprionodon acutus	8							20	0.05	0.03	0.07	0.01	0.11
Pseudotolithus senegalensis	10							25	0.05	0.17	0.02		
Penaeus notialis	21							53	0.02	0.03	0.04	0.01	
Parapenaeopsis atlantica	10							25	0.02	0.03	0.03		
Penaeus monodon	5							13	0.01	0.03			
Parapenaeus longirostris	8							20	0.01		0.02	0.01	
Sicyonia galeata	5							13					
Penaeus kerathurus	5							13			0.01		
Parapandalus narval	1							3					
Other fish									0.76	1.03	0.67	0.82	0.59
Sum all species									8.39	8.17	4.94	5.51	29.62
Sum Snappers									0.02	0.07			
Sum Groupers									0.09	0.07	0.03	0.13	0.21
Sum Grunts									0.64	0.23	1.53	0.28	
Sum Croakers									0.32	1.09	0.10	0.01	
Sum Seabreams									0.76	0.06	0.03	0.59	5.52
Sum Sharks									0.13	0.04	0.11	0.16	0.27
Sum Rays									0.16	0.03	0.06	0.05	1.17
Sum Squids									0.30	0.05	0.14	0.48	0.76
Sum 0.36													
Number of stations included in analysis, total and by depth strata									40	10	13	13	4

SWEPT AREA ANALYSIS FROM STATION 1300 TO STATION 1347

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0 10 30 100 300 1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² 200-300m	300-400m	400-500m	500-999m
Squatina oculata	1 1	25	0.78	1.03			
Hypoclydonia bella	3 1	100	0.73	0.97	0.03		
Zenion longipinnis	1 2	75	0.70	0.94			
Centrophorus uyato	1 1	50	0.50	0.52	0.44		
Illex coindetii	3 1	100	0.47	0.62	0.03		
Bembrops heterurus	1	25	0.37	0.49			
Parasudis fraser-bruenneri	2 1	75	0.32	0.41	0.05		
Parapenaeus longirostris	3	75	0.27	0.36			
MYCTOPHIDAE	3	75	0.27	0.36			
Gadella imberbis	3	75	0.24	0.03	0.89		
NETTASTOMATIDAE	1	25	0.17		0.67		
Peristedion cataphractum	3	75	0.14	0.19			
Iijimaia loppei	2	50	0.14	0.10	0.25		
Stereomastis sp.	1		0.13		0.52		
Dentex angolensis	3	75	0.11	0.15			
Sea urchins (waek spines)	1	25	0.11		0.45		
Centrophorus squamosus	1		0.10		0.39		
Uranoscopus albesca	3	75	0.09	0.13			
Brotula barbata	3	75	0.09	0.11			
Aristeus varidens	4	100	0.08	0.05	0.15		
Laemonema laureysi	1		0.07		0.27		
Hymenocephalus italicus	3	75	0.05		0.17		
Bathyuroconger vicinus	1		0.05		0.19		
Pterothrissus belloci	3	75	0.05	0.02	0.12		
Plesionika martia	2	50	0.04		0.14		
Solenocera africana	2	50	0.01		0.02		
Heterocarpus ensifer	3	75	0.01	0.01			
Aristeus varidens, male	1				0.01		
Other fish			0.65	0.55	0.98		
Sum all species			6.74	7.04	5.77		
Sum Snappers							
Sum Groupers							
Sum Grunts							
Sum Croakers							
Sum Seabreams			0.11	0.15			
Sum Sharks			1.42	1.60	0.86		
Sum Rays			0.04	0.03	0.09		
Sum Squids			0.48	0.63	0.03		
Sum 0.32							
Number of stations included in analysis, total and by depth strata			4	3	1		

PRINCIPE

SWEPT AREA ANALYSIS FROM STATION 1347 TO STATION 1352

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² - 30m	30- 50m	50-100m	100-999m
Pagellus bellottii	1		3				67	2.14			2.57	
Dactylopterus volitans	2	3	1				83	1.54		0.93	1.66	
Pagrus caeruleostictus	4	1					83	0.51		0.11	0.59	
Acanthostrascion guineensis	2	1					50	0.40		2.23	0.04	
Sepia officinalis hierredda	6						100	0.27		0.08	0.31	
Diodon hystrix	2	1					50	0.23		1.19	0.03	
Alloteuthis africana	3						50	0.16			0.19	
Chilomycterus spinosus mauret.	6						100	0.14		0.15	0.13	
Lethrinus atlanticus	2						17	0.07		0.07	0.07	
Sea urchins (strong spines)	3						50	0.05		0.25	0.01	
Caranx hippos	1						17	0.05		0.32		
Other fish								0.53		0.54	0.54	
Sum all species								6.09		5.87	6.14	
Sum Snappers								0.02			0.02	
Sum Groupers												
Sum Grunts												
Sum Croakers												
Sum Seabreams								2.65		0.11	3.16	
Sum Sharks												
Sum Rays								0.06			0.07	
Sum Squids								0.43		0.08	0.50	
Sum												
Number of stations included in analysis, total and by depth strata								6		1	5	

SAO TOME

SWEPT AREA ANALYSIS FROM STATION 1353 TO STATION 1362

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² - 30m	30- 50m	50-100m	100-999m
Dactylopterus volitans	3	1	3		1		100	6.84		2.90	8.16	
Pagellus bellottii	1	4	3				100	2.73		2.27	2.89	
Lutjanus fulgens	6	1	1				100	1.60		5.57	0.28	
Galeoides decadactylus	1		1				25	0.59		0.31	0.68	
Pagrus caeruleostictus	5	1					75	0.57		0.21	0.69	
Selar crumenophthalmus	2		1				38	0.42		0.05	0.54	
Dentex macrophthalmus	2	1					38	0.36			0.47	
Sepia officinalis hierredda	7						88	0.30		0.39	0.27	
Pseudupeneus prayensis	7						88	0.22		0.04	0.28	
Fistularia petimba	6						75	0.11		0.21	0.07	
Chilomycterus spinosus mauret.	7						88	0.11		0.01	0.15	
Albula vulpes	1						13	0.11		0.42		
Sphyraena guachancho	3						38	0.10		0.25	0.05	
Acanthostrascion guineensis	2						25	0.10		0.35	0.01	
Chaetodipterus goreensis	1						13	0.08		0.32		
Lethrinus atlanticus	1						13	0.07		0.28		
Balistes capriscus	1						13	0.07		0.26		
Dentex congoensis	1							0.06			0.08	
Selene dorsalis	2						25	0.06		0.20	0.01	
Decapterus punctatus	4						50	0.06		0.01	0.07	
Citharichthys stampflii	6						75	0.06		0.03	0.06	
Brotula barbata	3						38	0.05			0.07	
Penaeus notialis	1											
Other fish								0.63		1.05	0.50	
Sum all species								15.30		15.13	15.33	
Sum Snappers								1.60		5.57	0.28	
Sum Groupers								0.04			0.05	
Sum Grunts								0.05		0.06	0.05	
Sum Croakers												
Sum Seabreams								3.79		2.64	4.17	
Sum Sharks												
Sum Rays								0.06		0.14	0.05	
Sum Squids								0.36		0.46	0.33	
Sum												
Number of stations included in analysis, total and by depth strata								8		2	6	

GABON, NORTH OF CAPE LOPEZ

SWEPT AREA ANALYSIS FROM STATION 1363 TO STATION 1390

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² - 30m	30- 50m	50-100m	100-200m
Dentex congoensis	2	2	4			1	41	2.88		0.17	2.98	11.13
Decapterus punctatus	9	2	4				68	1.24	0.01	0.75	1.93	2.76
J E L L Y F I S H	9	1		1			50	1.09	0.08	3.93		
Sardinella aurita	5	3	3				50	1.02	0.01	0.63	1.35	2.62
Ariomma bondi	7	3	1				50	0.77		0.06	0.48	3.43
Dentex angolensis	6	2	1				36	0.48			1.29	0.69
Selar crumenophthalmus	9		1				45	0.41	0.04	0.12	1.35	
Pagellus bellottii	8	2					45	0.30	0.02	0.75	0.33	
Caranx senegallus	1		1				9	0.26	0.95			
Boops boops	3	2					23	0.23			0.70	0.20
Brachydeuterus auritus	8	2					45	0.22	0.38	0.42		
Sphyraena guachancho	7	2					41	0.17	0.61	0.01		
Pagrus caeruleostictus	7	1					36	0.14	0.28	0.11	0.11	
Priacanthus arenatus	15						68	0.14		0.06	0.35	0.14
Pomadasys incisus	3	1					18	0.13	0.48			
Spicara alta	2	1					14	0.12				0.64
Sepia officinalis hierredda	20						91	0.11	0.17	0.07	0.09	0.07
Epinephelus aeneus	9	1					45	0.11	0.10	0.10	0.20	
Erythrocles monodi	1	1					9	0.11				0.63
Scomberomorus tritor	5						23	0.09	0.33			
Pseudupeneus prayensis	14						64	0.07	0.03	0.08	0.14	
Lepidotrigla cadmani	12						55	0.06		0.03	0.05	0.23
Squatina oculata	6						27	0.06			0.04	0.25
Chloroscombrus chrysurus	3						14	0.06	0.23			
Scomber japonicus	3						14	0.05	0.02			0.24
Lutjanus fulgens	1	1					9	0.05			0.20	
Selene dorsalis	7						32	0.05	0.14	0.03		
Balistes punctatus	4						18	0.05	0.04	0.12	0.03	
Penaeus notialis	7						32	0.02	0.01	0.04		
Solenocera africana	1						5					0.01
Penaeus kerathurus	2						9		0.01			
Parapenaeus longirostris	1											0.01
Other fish								0.84	1.37	0.49	0.36	1.51
Sum all species								11.33	5.31	7.97	11.98	24.56
Sum Snappers								0.05			0.20	
Sum Groupers								0.11	0.10	0.11	0.20	
Sum Grunts								0.35	0.86	0.42		
Sum Croakers								0.04			0.02	0.20
Sum Seabreams								4.10	0.44	1.06	5.47	12.02
Sum Sharks								0.07		0.03	0.04	0.28
Sum Rays								0.07	0.08	0.06	0.05	0.08
Sum Squids								0.16	0.17	0.10	0.18	0.21
Sum 0.04												
Number of stations included in analysis, total and by depth strata								22	6	6	6	4

SWEPT AREA ANALYSIS FROM STATION 1363 TO STATION 1390

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² 200-300m	300-400m	400-500m	500-999m
Nematocarcinus africanus		2	1				50	1.31		1.94	1.98	
E C H I N O D E R M A T A			1				17	1.01		3.02		
Illex coindetii	5	1					100	0.63	1.15	0.60	0.16	
Trichiurus lepturus	4						67	*0.46*		*0.86*	*0.51*	
Sea cucumbers	1	1					33	0.35	0.90		0.15	
Parapenaeus longirostris	4						67	0.26	0.48	0.16	0.14	
Squatina oculata		1						0.26	0.78			
Chlorophthalmus atlanticus	1	1					33	0.23		0.64	0.05	
Peristedion cataphractum	6						100	0.21	0.48	0.08	0.08	
Synagrops microlepis	2	1					50	0.21	0.61		0.01	
Hymenocephalus italicus	5						83	0.19	0.01	0.27	0.29	
Stereomastis sp.	3						50	0.19		0.03	0.53	
Parasudis fraser-bruenneri	3						50	0.19	0.32	0.22	0.04	
Lophiodes kempi	2						33	0.18	0.03		0.50	
Lepidotrigla cadmani	2						33	0.17	0.51			
Bembrops heterurus	2						33	0.17	0.43		0.07	
Lophius vaillanti	3						50	0.15	0.04	0.09	0.34	
Epigonus telescopus	3						50	0.15		0.10	0.34	
Centrophorus squamosus	1						17	0.14		0.43		
Malacocephalus laevis	3						50	0.13		0.13	0.28	
Pontinus kuhlii	2						33	*0.12*	*0.34*	*0.01*		
Dibranchus atlanticus	4						67	0.11		0.30	0.04	
Chaceon maritae	3						50	0.11		0.13	0.21	
Lamprogrammus exutus	2						33	0.09		0.26	0.01	
MYCTOPHIDAE	1							0.09	0.26			
Squilla acuelata calmani	1							0.09		0.27		
Dentex angolensis	2						33	0.06	0.18			
Lophius atlanticus	1						17	0.06		0.18		
Plesionika martia	2						33	0.05		0.04	0.13	
Nezumia aequalis	2						33	0.05		0.02	0.12	
Solenocera africana	5						83	0.03	0.01	0.08	0.01	
Plesiopenaeus edwardsianus	2						33	0.02	0.01	0.05		
Plesionika sp.	1						17	0.01			0.04	
Other fish								0.57	1.09	0.55	0.15	
Sum all species								8.05	7.63	10.46	6.18	
Sum Snappers												
Sum Groupers												
Sum Grunts												
Sum Croakers												
Sum Seabreams								0.06	0.18			
Sum Sharks								0.47	0.85	0.56	0.02	
Sum Rays								0.01			0.03	
Sum Squids								0.63	1.15	0.60	0.16	
Sum 2.27												
Number of stations included in analysis, total and by depth strata								6	2	2	2	

GABON, SOUTH OF CAPE LOPEZ

SWEPT AREA ANALYSIS FROM STATION 1391 TO STATION 1447

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm						% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm²			
	>0	10	30	100	300	1000			- 30m	30- 50m	50-100m	100-200m
Sardinella aurita - Juveniles	1	1	2	2		2	17	6.56	4.26	27.40	0.84	
Scyllarides herklotsii	1				1		4	2.04		10.40		
Brachydeuterus auritus	13	2	3	2			43	1.57	1.62	6.21	0.02	
Trachurus trecae	14	3	4	1	1		50	1.57		0.53	2.27	2.80
Pagellus bellottii	23	6	9				83	1.52	1.11	3.11	1.85	0.26
Sardinella maderensis - Juv.	3				1		9	1.37	6.32			
J E L L Y F I S H	9	1	3		1		30	1.13	4.34	0.87	0.04	0.01
Engraulis encrasicolus			1		1		4	0.88		4.51		
Sphyraena guachancho	5	1	1	1			17	0.63	2.58	0.38		
Dentex congoensis	9	6	2				37	0.58			0.37	1.75
Trichiurus lepturus	15	5	3				50	0.53	0.70	0.78	0.55	0.17
Boops boops	20	4	2				57	0.40		0.06	0.66	0.65
Decapterus rhonchus	7			1			17	0.40	1.70	0.04	0.06	
Sepia officinalis hierredda	32	1	1				74	0.39	0.91	0.11	0.38	0.17
Ilisha africana	3	2	2				15	0.39	1.77			
Pagrus caeruleostictus	12	2	2				35	0.31	0.48	0.83	0.12	0.01
Saurida brasiliensis	14	2	1				37	0.29			0.01	1.10
Umbrina canariensis	14	3	1				39	0.28	0.02	0.47	0.25	0.39
Pomadasys incisus	15	3	1				41	0.28	0.33	0.73	0.19	0.01
Pseudupeneus prayensis	27	3	1				67	0.27	0.44	0.65	0.14	
Galeoides decadactylus	6	1	1				17	0.25	1.10	0.08		
Decapterus punctatus	6	3	1				22	0.24	0.30	0.81	0.05	
Antigonia capros	4	2	1				15	0.24				0.92
Pseudotolithus senegalensis	7	2	1				22	0.22	0.80	0.26		
Chloroscombrus chrysurus	4	2	1				15	0.21	0.95			
Aulopus cadenati		2	1				7	0.18				0.68
Lepidotrigla cadmani	23	2					54	0.16			0.07	0.51
Decapterus macarellus	1	2	1				9	0.15	0.37	0.33		
Dactylopterus volitans	15	3					39	0.14		0.18	0.32	
Lagocephalus laevigatus	15	1					35	0.13	0.47	0.06	0.03	
Dentex angolensis	7	1	1				20	0.13			0.25	0.18
Epinephelus aeneus	14	1					33	0.12	0.14	0.15	0.07	0.15
Sepia orbignyana	2	1	1				9	0.11	0.32	0.12	0.04	
Raja miraletus	33						72	0.11	0.06	0.08	0.16	0.11
Alloteuthis africana	20	1					46	0.10		0.15	0.20	0.01
Dentex macrophthalmus	3	3					13	0.10	0.27	0.20		
Pomadasys peroteti	2		1				7	0.10	0.44			
Bembrops heterurus		2					4	0.10				0.37
Lutjanus fulgens	8	1					20	0.10	0.11	0.24	0.09	
Sardinella aurita	7		1				17	0.10	0.04	0.01	0.28	
Priacanthus arenatus	17	1					39	0.09		0.30	0.08	0.01
Spicara alta	8	2					22	0.09				0.33
Illex coindetii	21						46	0.08			0.03	0.27
Torpedo torpedo	19	1					43	0.08	0.04	0.23	0.04	0.04
Zeus faber	22						48	0.07		0.04	0.09	0.12
Arius parkii	3	1					9	0.07	0.30	0.02		
Pseudotolithus typus	2	1					7	0.06	0.29			
Merluccius polli	1	2					7	0.06				0.24
Fistularia petimba	22						48	0.06		0.02	0.10	0.06
Ariomma bondi	10						22	0.06			0.08	0.14
Dentex barnardi	6						13	0.05		0.04	0.11	0.01
Penaeus notialis	6						13	0.01	0.02			
Parapenaeus longirostris	3						7	0.01				0.02
Solenocera africana	2						4					
Penaeus kerathurus	3						7					
Parapenaeopsis atlantica	2						4					
Plesionika martia	1						2					
Parapandalus narval	1						2					
Other fish								1.17	1.34	1.10	1.07	1.23
Sum all species								26.34	33.94	61.50	10.91	12.72
Sum Snappers								0.14	0.11	0.26	0.20	
Sum Groupers								0.13	0.14	0.22	0.07	0.15
Sum Grunts								2.01	2.60	6.98	0.21	0.01
Sum Croakers								0.61	1.23	0.80	0.25	0.43
Sum Seabreams								3.11	1.86	4.27	3.41	2.86
Sum Sharks								0.19	0.21	0.02	0.15	0.26
Sum Rays								0.27	0.28	0.42	0.25	0.20
Sum Squids								0.69	1.23	0.38	0.67	0.47
Sum												
Number of stations included in analysis, total and by depth strata								46	10	9	15	12

SWEPT AREA ANALYSIS FROM STATION 1391 TO STATION 1447

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² 200-300m	300-400m	400-500m	500-999m
Spicara alta					1		11	4.89	22.01			
Nematocarcinus africanus	2		3	1			67	2.80		1.22	5.39	
Illex coindetii	4	1		1			67	2.32	10.01	0.19	0.07	
Chlorophthalmus atlanticus	2	3					56	0.73	0.41	1.87	0.04	
Aristeus varidens	5		1				67	0.62		0.03	1.36	
Aulopus cadenati			1				11	0.43	1.91			
Merluccius polli	7	1					89	0.42	0.67	0.49	0.24	
Plesionika martia	5	2					78	0.37		0.08	0.79	
Trichiurus lepturus	5	1					67	0.29		0.31	0.42	
Hoplostethus cadenati	3	1					44	0.27		0.53	0.20	
Peristedion cataphractum	4	1					56	0.25	1.02	0.05	0.01	
Dentex angolensis		1						0.24	1.06			
Ijimaia loppei		1					11	0.23		0.69		
Lepidotrigla cadmani	1	1					22	0.18	0.78			
Raja straeleni	4						44	0.17	0.58	0.12		
Lophius vaillanti	6						67	0.17	0.22	0.09	0.20	
Torpedo nobiliana		1					11	0.16	0.73			
Pontinus accraensis		1						0.12	0.54			
Scyliorhinus cervigoni	2						11	0.11	0.46	0.02		
Chaceon maritae	3						33	0.11		0.01	0.23	
Paramola cuvieri	2						22	0.10	0.45			
Centrophorus uyato	2						22	0.09		0.27		
Malacocephalus laevis	5						56	0.09	0.02	0.11	0.11	
Gephyroberyx darwini	1						11	0.07	0.32			
Brotula barbata	1						11	0.07	0.29			
'Spider crab'	5						56	0.07	0.30	0.02		
Cyttopsis roseus	2						11	0.06	0.29			
Deania profundorum	1							0.06		0.18		
Zenopsis conchifer	1						11	0.05	0.25			
Hymenocephalus italicus	7						78	0.05	0.17	0.03	0.01	
Chascanopsetta lugubris	4						44	0.05	0.14	0.05		
Plesionika edwardsii	3						33	0.03		0.04	0.05	
Parapenaeus longirostris	2						22	0.01		0.02		
Solenocera africana	2						22					
Glyphus marsupialis	2						22				0.01	
Parapandalus narval	1						11					
Other fish								0.47	0.85	0.45	0.29	
Sum all species								16.15	43.48	6.87	9.42	
Sum Snappers												
Sum Groupers												
Sum Grunts												
Sum Croakers												
Sum Seabreams								0.24	1.08			
Sum Sharks								0.32	0.59	0.49	0.04	
Sum Rays								0.34	1.31	0.13		
Sum Squids								2.35	10.09	0.19	0.10	
Sum 1.39												
Number of stations included in analysis, total and by depth strata								9	2	3	4	

CONGO

SWEPT AREA ANALYSIS FROM STATION 1448 TO STATION 1474

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² - 30m	30- 50m	50-100m	100-200m
Manta birostris						1	5	4.52				13.56
Trachurus trecae	7	4				1	57	2.12		7.69	0.48	0.52
Trichiurus lepturus	8	10	2	1			100	1.99	1.70	5.17	0.96	0.62
Ilisha africana	1	2	1	1			24	1.16	6.08	0.03		
Pentheroscion mbizi	8	2	3				62	0.90		1.07	0.97	1.23
Brachydeuterus auritus	8		2				48	0.82	3.41	0.73		
Brotula barbata	12	3	1				76	0.53		0.02	0.21	1.44
Pteroscion peli	3	3	1				33	0.50	1.30	1.05		
Dentex angolensis	4	5					43	0.46			0.22	1.23
J E L L Y F I S H	12	1					62	0.26	0.46	0.54	0.14	0.03
Sardinella aurita	2		1				14	0.25	1.29			
Brachydeuterus auritus Juv.	2		1				14	0.24			1.02	
Pterothrissus belloci	4		1				24	0.21			0.02	0.60
Parapenaeus longirostris	8	1					43	0.20			0.07	0.55
Parapenaeopsis atlantica	4	2					29	0.20	1.00	0.05		
Pseudotolithus senegalensis	7	1					38	0.20	0.67	0.31		
Pomadasys jubelini			1				5	0.18	0.94			
Lepidotrigla cadmani	8	1					43	0.17			0.05	0.48
Saurida brasiliensis	5	1					29	0.14				0.41
Stromateus fiatola	4	1					24	0.14	0.57	0.01	0.14	
Sepia officinalis hierredda	16						76	0.13	0.17	0.13	0.15	0.10
Scorpaena normani	4	1					24	0.13				0.37
Raja miraletus	12						57	0.12	0.07	0.13	0.25	0.05
Cynoponticus ferox	7	1					38	0.12	0.02	0.39		0.07
Pagellus bellottii	7	1					38	0.09		0.02	0.31	0.02
Merluccius polli		1					5	0.09				0.26
Umbrina canariensis	7						33	0.08			0.01	0.22
Chloroscombrus chrysurus	4	1					24	0.08	0.37	0.06		
Pentanemus quinquarius	6						29	0.07	0.24	0.09		
Cynoglossus senegalensis	5						24	0.07	0.14	0.18	0.01	
Nematopalaemon hastatus	2	1					14	0.06	0.31			
Citharus linguatula	9						43	0.06			0.06	0.13
Arius parkii	4						19	0.06	0.20	0.07		
Zeus faber	9						43	0.05			0.09	0.07
Uranoscopus albesca	4						19	0.05			0.06	0.11
Aulopus cadenati	3						14	0.05				0.15
Penaeus notialis	9						43	0.02	0.01	0.06	0.02	
Sicyonia galeata	1						5					
Parapandalus narval	1						5					
Other fish								0.79	1.76	0.40	0.52	0.69
Sum all species								17.31	20.71	18.20	5.76	22.91
Sum Snappers												
Sum Groupers								0.04			0.18	
Sum Grunts								1.26	4.41	0.75	1.02	
Sum Croakers								1.70	2.06	2.43	0.98	1.45
Sum Seabreams								0.56		0.02	0.55	1.28
Sum Sharks								0.08	0.20		0.06	0.05
Sum Rays								4.69	0.32	0.14	0.27	13.61
Sum Squids								0.21	0.17	0.14	0.21	0.26
Sum 0.11												
Number of stations included in analysis, total and by depth strata								21	4	5	5	7

SWEPT AREA ANALYSIS FROM STATION 1448 TO STATION 1474

SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES Lower limits, Kg/nm >0	10	30	100	300	1000	% incidence	Mean dens. t/nm²	Mean densities by bottom depth strata t/nm² 200-300m	300-400m	400-500m	500-999m
Nematocarcinus africanus	2	1		1			67	2.42		0.16	6.80	0.80
Merluccius polli		4	1				83	1.54	1.52	1.62	2.30	
Hoplostethus cadenati	2	2	1				83	1.24	0.03	0.26	2.87	1.36
Pentheroscion mbizi		1					17	0.37		2.22		
'Spider crab'		1					17	0.30	0.91			
Pterothrissus belloci	1	1					33	0.27	0.81			
Trichiurus lepturus	4						67	0.24	0.58	0.17	0.03	
Malacocephalus laevis	4						67	0.23	0.05		0.48	0.36
Centrophorus uyato		1					17	0.19			0.58	
Centrophorus squamosus		1					17	0.18			0.53	
Brotula barbata	3						33	0.16	0.09	0.72		0.05
Triplophos hemingi	4						67	0.16		0.01	0.30	0.36
Nezumia aequalis	4						67	0.15	0.01	0.05	0.21	0.40
Parapenaeus longirostris	2						17	0.12	0.28	0.15		
Galeus polli	2						33	0.12	0.06	0.61		
Laemonema laureysi	5						83	0.10	0.06	0.27	0.11	
Raja miraletus	1						17	0.09			0.26	
Hydrolagus sp.	1						17	0.08				0.45
Echiostoma barbartum	3						50	0.07	0.02		0.11	0.14
Trachipterus trachypterus	1						17	0.06				0.34
Yarrella corythaeola	1						17	0.06				0.36
Lamprogrammus exutus	2						33	0.06			0.03	0.30
Stereomastis sp.	3						50	0.06			0.03	0.27
Setarches guentheri	2						33	0.05	0.14			
Raja straeleni	2						33	0.05	0.04	0.18		
Halosaurus ovenii	4						67	0.05	0.01		0.13	
Aristeus varidens	3						50	0.04		0.01	0.13	
Plesionika martia	2						33	0.01		0.01	0.01	
Glyphus marsupialis	1						17					
Parapandalus narval	1						17					0.02
Other fish								0.52	0.34	0.60	0.56	0.73
Sum all species								8.99	4.95	7.04	15.47	5.94
Sum Snappers												
Sum Groupers												
Sum Grunts												
Sum Croakers								0.37		2.22		
Sum Seabreams												
Sum Sharks								0.59	0.06	0.61	1.16	0.45
Sum Rays								0.15	0.04	0.18	0.26	0.07
Sum Squids								0.04	0.02	0.08	0.05	0.04
Sum 0.33												
Number of stations included in analysis, total and by depth strata								6	2	1	2	1

Annex VI Estimates of sample variance

1. STRATIFIED MEAN DENSITY AND CONFIDENCE INTERVALS

The stratified estimator of mean density in the entire area is calculated as (Cochran, 1977; eq. 5.1, p. 91)

$$\bar{y}_{st} = \sum_{i=1}^{L} W_i \bar{y}_i , \tag{1}$$

were

L is the number of strata,

$W_i = \dfrac{area_i}{total\ area}$ is the proportion of the survey area in the i^{th} stratum,

$\bar{y}_i = \dfrac{\sum_{k=1}^{n_i} y_{i,k}}{n_i}$ is the average catch in the i^{th} stratum

n_i is the number of tows in the i^{th} stratum, and

$y_{i,k}$ is the catch by the k^{th} tow in stratum i (normalized to either kg/hour or t/nmi^2 $= \dfrac{y_{ik}}{area\ swept_{ik}}$ for biomass estimates).

The estimated variance of the stratified mean, $\bar{y}_{st}$, is

$$\mathrm{var}(\bar{y}_{st}) = \sum_{i=1}^{L} W_i^2 \frac{s_i^2}{n_i} , \tag{2}$$

were

$$s_i^2 = \frac{\sum_{k=1}^{n_i} (y_{i,k} - \bar{y}_i)^2}{n_i - 1} . \tag{3}$$

When $\bar{y}_{st}$ is estimated in t/nmi^2 then an estimate of the total biomass in the area is calculated by

$$B = \bar{y}_{st} \cdot total\ area \tag{4}$$

2. PRECISION OF THE ESTIMATES OF MEAN DENSITY

2.1. Estimates based on the sample mean

The estimate of the standard error for each stratum mean is given by

$$se(\bar{y}_i) = \sqrt{\frac{s_i^2}{n_i}}, \tag{5}$$

where s_i^2 is from equation (3).

The standard error of the stratified mean ($\bar{y}_{st}$, equation 1), i.e. the square root of the variance of $\bar{y}_{st}$, is calculated as

$$se(\bar{y}_{st}) = \sqrt{\text{var}(\bar{y}_{st})}, \tag{6}$$

where $\text{var}(\bar{y}_{st})$ is defined by equation (2).

If the sample size is "large" enough, then the Central Limit Theorem states that each time a survey is conducted there is a 95% chance that the true mean lies in the interval (see Cochran, 1977, pp. 39-44)

$$\bar{y}_{st} \pm t_{(n-1)} se(\bar{y}_{st}), \tag{7}$$

where t is from Students t-table with (n-1) degrees of freedom and $\alpha = 0.025$.

2.2. Estimates of the mean based on lognormal theory-The Pennington estimator

Since abundance data from marine surveys usually have a large variance (much higher than the mean) and are highly skewed to the right, the sample sizes are typically not large enough so that equation (2) is a valid 95% confidence interval. In fact, the confidence associated with the interval given by equation (7) is usually much lower than 95% (McConnaughey and Conquest, 1992; Conquest *et al.*, 1996; Pennington, 1996). A major problem to the degree of skewness is due to the high proportion of zero tows often observed. Development of confidence intervals is complicated by the asymmetric distribution, and the occurrence of zero catches confounds an effective normalization transformation. Logarithmic transformation will stabilize the variance but data will still not be normally distributed and interpretation of re-transformed means is difficult (Pennington and Grosslein 1978).

One way to generate more precise estimates of the mean and more accurate confidence statements for skewed marine data is to base the estimators on the lognormal Delta

distribution (Pennington, 1983, 1996; Conquest *et al.*, 1996), in which catches are divided into zero and non-zero units, followed by transformation of the non-zero values to natural logarithms. When it is found that the transformed non-zero data are approximated by a lognormal distribution (*i.e.* the logged values are normally distributed), then a more efficient estimator of mean density, c_i, within each stratum is given by (Pennington, 1983, 1996)

$$c_i = \frac{m_i}{n_i}\exp(\bar{x}_i)G_{m_i}(s^2_{x,i}/2), \tag{8}$$

where

m_i is the number of sample values greater than 0 in stratum i,

$\bar{x}_i$ and $s^2_{x,i}$ are the mean and variance, respectively, of the log transformed values of catches greater than 0, and

$G_m(f)$ is an infinite series function of m and f [for example, $m = m_i$ and $f = s^2_{x,i}/2$ in equation (8)] which is used to correct for bias in re-transformation from log to arithmetic scale and is defined by

$$G_m(f) = 1 + \frac{m-1}{m}f + \sum_{j=2}^{\infty}\frac{(m-1)^{2j-1}f^j}{m^j(m+1)(m+3)\cdots(m+2j-3)j!} \tag{9}$$

The variance of c_i is given by

$$\mathrm{var}(c_i) = \frac{m_i}{n_i}\exp(2\bar{x}_i)\left\{\frac{m_i}{n_i}G^2_{m_i}\left(s^2_{x,i}/2\right) - \frac{(m_i-1)}{(n_i-1)}G_{m_i}\left(\frac{m_i-2}{m_i-1}s^2_{x,i}\right)\right\} \tag{10}$$

2.3. The modified Pennington estimator

In contrast to estimates based on the sample mean (equation 1 and 2), which are highly sensitive to a single or a few isolated high catch rates that may account for more than 50% of the total catch, Pennington's estimator (equations 8 and 10) is sensitive to low catch rates which contribute little to the total catch, but when log-transformed may give large negative values resulting in a distribution skewed to the left. In such a case a more precise estimator of mean density within each stratum, $\hat{\mu}_i$, is given by (modified from Pennington, 1983, 1996)

$$\hat{\mu}_i = \frac{(n_i - m_i)}{n_i}\bar{y}'_i + \frac{m_i}{n_i}\exp(\bar{x}_i)G_{m_i}(s^2_{x,i}/2), \tag{11}$$

where

m_i is the number of sample values greater than a defined 'cut-level' (rather than 0 as in equation 8) in stratum i,

$\bar{y}_i'$ denotes the arithmetic mean of the non-transformed values less than the cut-level, and

$\bar{x}_i$ and $s_{x,i}^2$ are the mean and variance, respectively, of the logged values of catches greater than the cut-level.

The variance of $\hat{\mu}_i$ is given by

$$\text{var}(\hat{\mu}_i) = \text{var}(c_i) + \left(\frac{n_i - m_i - 1}{n_i(n_i - 1)}\right) s_i'^2 + \left(\frac{m_i(n_i - m_i)}{n_i^2(n_i - 1)}\right) \bar{y}_i'^2 - 2\left(\frac{n_i - m_i}{n_i(n_i - 1)}\right) \bar{y}_i' \times c_i, \quad (12)$$

where

$s_i'^2$ is the variance of the values less than the cut-level (equation 3), and

c_i and var(c_i) are equations (8) and (10) with m_i bigger than the cut-level.

There is no single objective criterion upon which to define a cut-level bigger than zero. Basically the logged Delta distribution should be viewed (e.g. in GRAFER) in order to determine if it is skewed to the left and/or contains isolated small catches. As a 'rule of thumb' (Pennington pers. com.) the cut-level should be set $= (2\bar{x}_i - x_{\max})$, where $\bar{x}_i$ and $x_{\max}$ are the mean and the largest value, respectively, of the log transformed values of catches greater than 0.

2.4. Stratified mean and confidence interval based on lognormal theory

The stratified estimate of mean density (denoted by $\hat{\mu}_{st}$) in the entire area is calculated by replacing $\bar{y}_i$ with $\hat{\mu}_i$ for each stratum in equation (1). The standard error of $\hat{\mu}_{st}$ is obtained by substituting var($\hat{\mu}_i$) for s_i^2 / n_i (which equals var($\bar{y}_i$)) in equation (2) and then

$$\text{se}(\hat{\mu}_{st}) = \sqrt{\text{var}(\hat{\mu}_{st})} \quad (13)$$

Sometimes the $\hat{\mu}_{st}$-estimator is higher than the one based on the sample mean. This is because, given the sample sizes typical for marine surveys, the sample mean tends to underestimate the true mean most of the time for these highly skewed distributions (Pennington, 1983, 1996; Conquest *et al.*, 1996).

An approximate 95% confidence interval for $\hat{\mu}_{st}$ is given by

$$\hat{\mu}_{st} \pm t_{(n-1)} se(\hat{\mu}_{st}) \quad (14$$

Annex VII Instruments and fishing gear used

Echo sounder

The SIMRAD EK500/38 kHz scientific sounder was used during the survey for fish abundance estimation. The lowering keel was not submerged during the survey. The Bergen Echo Integrator system (BEI) was used to scrutinise the acoustic records. System calibration experiment using a standard copper sphere was performed 11.01.2006 The settings of 38 kHz echo sounder were as follows:

Transceiver-1 menu (38 kHz lowering keel)

Transducer depth	5.50 m
Absorbtion coeff.	10 dB/km
Pulse length	medium (1ms)
Bandwidth	wide
Max power	2000 Watt
2-way beam angle	-21.0 dB
SV transducer gain	26.96 dB
TS transducer gain	27.07 dB
Angle sensitivity	21.9
3 dB beamwidth	6.9 dg along / athwardship: 6.8 dg
Alongship offset	-0.07 "
Athwardship offset	0.08 "

Display menu

Echogram	1 (38 kHz)
Sv colour min	-67 dB

Printer-menu

Echogram	1 (38 kHz)
Range	50, 100, 250, 500, 750 and 1000 m
Range start	0
Bottom range	15 m
Bottom range start	10 m
Sv colour min	-67 dB
TVG	20 log R

Bottom detection menu Minimum level-40 dB

Fishing gear

The vessel has two different sized "Åkrahamn" pelagic trawls and "Gisund super bottom trawl".

The bottom trawl has a headline of 31 m, footrope 47 m and 20 mm meshsize in the codend with an innernet of 10 mm meshsize. The estimated opening is 6 m (observed 5.7) and distance between wings during towing about 18 m. The sweeps are 40 m long. The trawl is equipped with a 12" rubber bobbins gear. The doors are of 'Thyborøn' combi type, 7.81 m^2, 1670 kg, their distance while trawling about 45-55 m in average, depending on the depth (least distance at low depths). This distance can be kept constant (about 50 m) at all depths by the use of a 9.5 m strap between the wires at 130 m distance from the doors, normally applied at depths greater than 80 m. On the present survey, however, the strap was not applied because most of the trawl hauls were made in shallower waters.

The SCANMAR system was used on all trawl hauls. This equipment consists of sensors, a hydrophone, a receiver, a display unit and a battery charger. Communication between sensors and ship is based on acoustic transmission. The doors are fitted with sensors to provide information on their distance and a height sensor is fitted to the bottom trawl to measure the trawl opening and provide information on clearance and bottom contact.

The pelagic trawl can be equipped with a trawleye that provides information on the trawl opening and the distance of the footrope to the bottom.

Annex VIII Example sheet used for calculations of biomass and confidence intervals

Made 23/3 1999 by Jeppe Kolding This example is the biomass of seabreams in Benin 2002

This sheet is used to calculate stratified mean density, total biomass, and 95% confidence limits on the total biomass.
Inputs are only required in the yellow fields and optinally the t-value can be set. NOTE that the Station field MUST be 1 even if there is no catch
Density (t/nm^2) is from NAN-SIS and Coefficient of variation (CV) is from GRAFER using the same depth intervals
The underlying assumption is that the CV from the catch (kg/hour) is equal for for the density (t/nm^2), i.e. that the swept area is constant per hour
Equation numbers (1) and (2) refers to Appendix in report

	Input from NANSIS			GRAFER				
Depth (m)	Area	No Stations	Density (t/nm^2)	CV (kg/hour)	Equation(1)=	SD	Est. Variance	Equation (2)=
20-30	**387**	6	0.08	1.83	0.04	0.146	0.021	0.001
31-50	**134**	6	0.53	1.54	0.09	0.816	0.666	0.003
51-100	**244**	5	2.59	1.20	0.83	3.108	9.660	0.197
Total	5561						Var(strat-mean)=	0.20

t-value = 2

Stratified mean = 0.96 SE(strat-mean)= 0.45

95% Confidence limits:

Total biomass=	734	48	1420