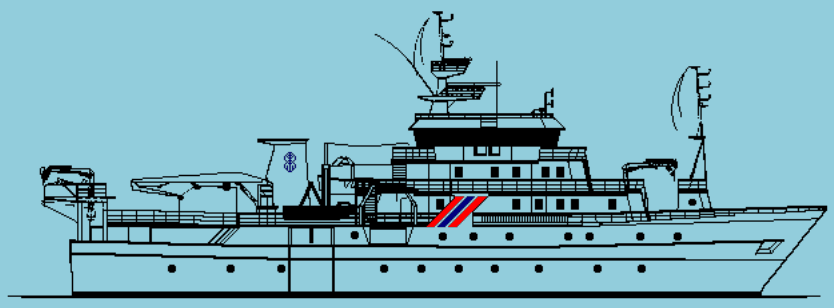
NORAD - FAO PROJECT GCP/INT/003/NOR **CRUISE REPORTS "DR. FRIDTJOF NANSEN"**



CCLME
North West Africa Ecosystem Survey

Guinea - Morocco

05 May – 22 July 2012

Institute of Marine Research

Norway

THE EAF-NANSEN PROJECT

FAO started the implementation of the project “Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries (EAF-Nansen GCP/INT/003/NOR)” in December 2006 with funding from the Norwegian Agency for Development Cooperation (Norad). The EAF-Nansen project is a follow-up to earlier projects/programmes in a partnership involving FAO, Norad and the Institute of Marine Research (IMR), Bergen, Norway on assessment and management of marine fishery resources in developing countries. The project works in partnership with governments and also GEF-supported Large Marine Ecosystem (LME) projects and other projects that have the potential to contribute to some components of the EAF-Nansen project.

The EAF-Nansen project offers an opportunity to coastal countries in sub-Saharan Africa, working in partnership with the project, to receive technical support from FAO for the development of national and regional frameworks for the implementation of Ecosystem Approach to Fisheries management and to acquire additional knowledge on their marine ecosystems for their use in planning and monitoring. The project contributes to building the capacity of national fisheries management administrations in ecological risk assessment methods to identify critical management issues and in the preparation, operationalization and tracking the progress of implementation of fisheries management plans consistent with the ecosystem approach to fisheries.

LE PROJET EAF-NANSEN

La FAO a initié la mise en oeuvre du projet "Renforcement de la base des connaissances pour mettre en œuvre une approche écosystémique des pêcheries marines dans les pays en développement (EAF-Nansen GCP/INT/003/NOR)" en décembre 2006. Le projet est financé par de l'Agence norvégienne de coopération pour le développement (Norad). Le projet EAF-Nansen fait suite aux précédents projets/ programmes dans le cadre du partenariat entre la FAO, Norad et l'Institut de recherche marine (IMR) de Bergen en Norvège, sur l'évaluation et l’aménagement des ressources halieutiques dans les pays en développement. Le projet est mis en oeuvre en partenariat avec les gouvernements et en collaboration avec les projets grands écosystèmes marins (GEM) soutenus par le Fonds pour l’Environnement Mondial (FEM) et d'autres projets régionaux qui ont le potentiel de contribuer à certains éléments du projet EAF-Nansen.

Le projet EAF-Nansen offre l’opportunité aux pays côtiers de l'Afrique subsaharienne partenaires de recevoir un appui technique de la FAO pour le développement de cadres nationaux et régionaux visant une approche écosystémique de l’aménagement des pêches et la possibilité d'acquérir des connaissances complémentaires sur leurs écosystèmes marins. Ces éléments seront utilisés pour la planification et le suivi des pêcheries et de leurs écosystèmes. Le projet contribue à renforcer les capacités des administrations nationales responsables de l’aménagement des pêches en introduisant des méthodes d'évaluation des risques écologiques pour identifier les questions d’aménagement d’importance majeure ainsi que la préparation, la mise en œuvre et le suivi des progrès de la mise en œuvre de plans d’aménagement des ressources marines conformes à l'approche écosystémique des pêches.

CRUISE REPORT "DR. FRIDTJOF NANSEN"

CCLME
North West Africa Ecosystem Survey

Guinea - Morocco

05 May – 22 July 2012

By

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Bergen, 2012

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1. INTRODUCTION

The Canary Current Large Marine Ecosystem (CCLME) project is executed by the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Programme (UNEP) in a combined effort to reverse the degradation of the Canary Current large marine ecosystem caused by over-fishing, habitat modification and changes in water quality by adoption of an ecosystem-based management approach. The current phase of the CCLME project will be operational for five years (2010-2015) in the seven participating countries Cape Verde, Guinea, Guinea Bissau, Mauritania, Morocco, Senegal and The Gambia. The project is funded by the Global Environment Facility (GEF) and co-financed by participating countries and other partners.

Ecosystem based approaches to management include holistic knowledge of the ecosystem and fishery-independent surveys are thus of high relevance. This survey, from 05 May – 22 July 2012, is the second of two Ecosystem surveys carried out using the R/V "Dr. Fridtjof Nansen" to cover the seasonal changes in the Canary Current Ecosystem. The first survey was carried out in October-December 2011. The surveys are a co-operation between the EAF-Nansen Project of FAO and the Canary Current Large marine Ecosystem (CCLME) and the Institutions within the countries visited during the survey. The two surveys constitute a baseline-study of the shelf and slope biodiversity and environment. This will include an evaluation of demersal and pelagic fish resources, recordings of seabirds and marine mammals, collection of benthic invertebrates, zoo- and phytoplankton as well as investigations of the physical environment.

1.1. The Survey area

The CCLME region is one of the world's major cold water upwelling boundary current LME's. It ranks third in the world in terms of primary production and has one of the highest fisheries production of any large African marine ecosystems. The annual fish production in the Canary Current LME is in the range of 2-3 million tonnes and fisheries are of major economic and social importance providing sustainable livelihoods, fish-protein supplies and revenue for the coastal populations and states of the region. The CCLME coastal zone also provides important goods and services to coastal states including provision of critical fish habitat, wood from mangroves and provision of coastal and marine space for agriculture, aquaculture, urban development, tourism and transport.

However, the fishery activities in the Canary Current are currently declining and many resources are classified as fully exploited or overexploited. Some of the underlying causes of the declining fisheries include the over-capacity of fishing fleets (both industrial and artisanal); poor scientific database of a dynamic and complex ecosystem; weak management regime and low monitoring activity, lack of control and surveillance; lack of scientific and technical capacity for management; and poor stakeholders' participation in management decisions. In addition, the region is experiencing degradation of several important habitats including estuaries, wetlands (particularly mangroves) and benthic habitats.

1.2. Aims and objectives

The purpose of the R/V 'Dr. Fridtjof Nansen' survey was established during the second meeting of the Working Group on planning and analysis of ecosystem surveys in the CCLME area held in Casablanca Morocco in 2011, and trough a survey planning workshop from 29-30 March 2012. The Working

Group outlined the priorities in terms of thematic sampling to be achieved during the regional ecosystem survey (CCLME 2011).

Based on the sampling priorities and discussions during the meeting the main objectives of the survey have been set as follows:

- To obtain information on demersal fish abundance and biodiversity by demersal trawling where conditions for bottom-trawling are adequate.
- To determine the distribution and abundance of small pelagic fish resources using acoustic methods and a systematic grid survey strategy.
- Additional biological sampling from trawl catches to collect data on size distribution, further biological information and genetic material from selected species
- To establish as far as possible the distribution, abundance and composition of other taxa at different trophic levels along the shelf (phyto- and zooplankton, egg and fish larvae, cetaceans and sea birds, and benthic biodiversity).
- Map the environmental conditions in the survey area (temperature, salinity, oxygen, chlorophyll, nutrients and sediments)
- Capacity building of CCLME trainees and young scientists.

1.3. Participation

A total of 52 scientists and technicians from 14 different nations participated in the survey. The full list of the participants and their affiliations is given in Table 1.1 below.

Table 1.1 List of participants

Name	Nationality	Date of Embarkation	Date of Disembarkation	Institution
Jens Otto Krakstad	Norway	08 May, Conakry	05 June, Nouakchott	IMR
Oddgeir Berg Alvheim	Norway	08 may, Conakry	05 June, Nouakchott	IMR
Bjørn Arne Krafft	Norway	08 May, Conakry	05 June, Nouakchott	IMR
Thor Egil Johansson	Norway	08 May, Conakry	05 June, Nouakchott	IMR
Jarle Alexander Kristiansen	Norway	08 May, Conakry	05 June, Nouakchott	IMR
Ines Bernardes	Portugal	25 May,Dakar	25 June, Las Palmas	IMR
Kathrine Michalsen	Norway	05 June, Nouakchott	25 June, Las Palmas	IMR
Magne Olsen	Norway	05 June, Nouakchott	25 June, Las Palmas	IMR
Espen Bagøien	Norway	05 June, Nouakchott	22 July, Las Palmas	IMR
Åge Høines	Norway	25 June, Las Palmas	22 July, Las Palmas	IMR
Diana Zaera-Pérez	Venezuela	25 June, Las Palmas	22 July, Las Palmas	IMR
Ole Sverre Fossheim	Norway	05 June, Nouakchott	22 July, Las Palmas	IMR
Jan Frode Wilhelmsen	Norway	05 June, Nouakchott	22 July, Las Palmas	IMR
Raymond Koivogui	Guinea	08 May, Conakry	05 June, Nouakchott	CNSHB
Ibrahima Djénabou Camara	Guinea	08 May, Conakry	25 May, Dakar	CNSHB
Idrissa Bamy	Guinea	08 May, Conakry	25 May, Dakar	CNSHB
Bangoura Soriba Facinet	Guinea	08 May, Conakry	25 May, Dakar	CNSHB
Duarte BUCAL	Guinea Bissau	08 May, Conakry	25 May, Dakar	CIPA
Amadeu Mendes de Almeida	Guinea Bissau	08 May, Conakry	25 May, Dakar	CIPA
Ibra Fall	Senegal	08 May, Conakry	25 May, Dakar	CRODT
Alassane Dieng	Senegal	08 May, Conakry	25 May, Dakar	CRODT
Fambaye Ngom Sow	Senegal	25 May, Dakar	05 June, Nouakchott	CRODT
Abdoulaye Sarré	Senegal	25 May, Dakar	05 June, Nouakchott	CRODT

Abdoulaye Djiba	Senegal	25 May, Dakar	05 June, Nouakchott	IFAN
Ebu Mass Mbye	The Gambia	08 May, Conakry	25 May, Dakar	DF
Vito Melo	Cap Verde	25 May, Dakar	05 June, Nouakchott	INDP
Mohamed Ben lemlih	Mauritania	25 May, Dakar	05 June, Nouakchott	IMROP
Jemal Ould Abed	Mauritania	25 May, Dakar	05 June, Nouakchott	IMROP
Alioune Hamady Niang	Mauritania	25 May, Dakar	05 June, Nouakchott	IMROP
Mamadou Dia	Mauritania	05 June, Nouakchott	18 July, Casablanca	IMROP
Hamoud El Vadel	Mauritania	05 June, Nouakchott	18 July, Casablanca	IMROP
Khalid MANCHIH	Morocco	05 June, Nouakchott	02 July, Agadir	INRH
Said AIT TALEB	Morocco	05 June, Nouakchott	02 July, Agadir	INRH
Tarik BAIBAI	Morocco	05 June, Nouakchott	02 July, Agadir	INRH
Adil CHAIR	Morocco	05 June, Nouakchott	02 July, Agadir	INRH
Hassan OUBAMOUH,	Morocco	05 June, Nouakchott	02 July, Agadir	INRH
Mlle Sophia TALBA	Morocco	05 June, Nouakchott	18 July, Casablanca	INRH
Ali SRAIRI	Morocco	02 July, Agadir	18 July, Casablanca	INRH
Ahmed ELASRI	Morocco	02 July, Agadir	18 July, Casablanca	INRH
Agouzouk ABDELAAZIZ	Morocco	02 July, Agadir	18 July, Casablanca	INRH
Said CHARIB	Morocco	02 July, Agadir	18 July, Casablanca	INRH
Ana RAMOS	Spain	08 May, Conakry	05 June, Nouakchott	IEO
Susana Soto de Matos-Pita	Spain	08 May, Conakry	05 June, Nouakchott	U. de Vigo
Fran Ramil	Spain	05 June, Nouakchott	22 July, Las Palmas	U. de Vigo
Eli Muñoz	Spain	05 June, Nouakchott	22 July, Las Palmas	U. de Vigo
Eva García Isarch	Spain	25 June, Nouakchott	22 July,Las Palmas	IEO Cadiz
Paul Robinson	UK	25 May,Dakar	25 June, Las Palmas	Indépendant
Tomio Iwamoto	USA	08 May, Conakry	05 June, Nouakchott	Indépendant
Koen Van Waerebeck	Belgium	08 May, Conakry	25 May, Dakar	Indépendant
Koen Van Waerebeck	Belgium	25 June, Nouakchott	22 July, Las Palmas	Indépendant
Abdellahi Samba Ould Bilal	Mauritania	05 June, Nouakchott	25 June, Las Palmas	IMROP
Antonello Proto	Italy	25 May, Dakar	05 June, Nouakchott	FAO
Phil Chamberlain	UK	25 May, Dakar	05 June, Nouakchott	FAO

List of institution abbreviations:

CNSHB:	Centre National de Sciences Halieutiques de Boussoura, Guinéa
CERESCOR:	Centre de Recherche Scientifique de Conacry-Rogbane, Guinéa
CIPA:	Centro de Investigação Pesqueira Aplicada, Guinéa Bissau
DF:	Department of Fisheries Banjul, The Gambia
INDP:	Instituto Nacional De Desenvolvimento Das Pescas, Cape Verde
IMR:	Institute of Marine Research, Norway
IEO:	Instituto Español de Oceanografía, Spain
IMROP:	Mauritanian Institute for Oceanographic Research and Fisheries, Mauritania
INRH:	National Institute of Fisheries Research, Morocco
FIBA/IFAN	Fondation international du Banc d'arguin
Indep.	Independent consultant
U. de Vigo:	University of Vigo, Spain

1.4. Narrative

The vessel left port in Conakry in Guinea on the 9 May at 18:40 and started the first transect inshore close to the border of Sierra Leone more or less immediately after departure. The survey was carried out around the clock with the shallow region covered during the day while the deep water region was covered at night. The border between Guinea and Guinea Bissau was crossed 15 May in the early morning.

Transects in Guinea and the southern part of Guinea Bissau were long and only one transect was completed per day. Further north, transects decreased in length and two transects were covered every day. The border between Guinea Bissau and Senegal was reached on the 20th May late in the evening. On the 22 May at 15:00 the vessel entered the territorial waters of The Gambia, and the next day in the evening it returned to Senegalese territorial waters. Fishing activity on the inner shelf between Cap Vert and Conacry made trawling difficult in a few areas and did to some extent limit the trawling operation. The slope in the same region is uneven and steep and is in some places untrawlable. This did not however, limit the work to any large degree. The vessel called port in Dakar the morning of the 25th May for bunkering and change of local scientific crew. Departure was the next day around 16:00. After finalising the southern shelf of Senegal, the vessel moved north of Cap Vert on the 26th May, just after midnight. The border to Mauritania at St. Louis was reached on the 29th May in the evening, and the work continued on the Mauritanian shelf until breaking off in the morning of the 4th June for a call to port in Nouakchott to change crew and scientists. The next day the new crew was onboard, but due to administrative problems, the vessel did not leave Nouakchott before the 7th June at 16:00. Transects between Cap Barbas and Cap Bojador are long and only one transect was achievable per day. The vessel called to port in Las Palmas during the morning of the 24th June for bunkering and change of the local scientific crew. Departure was delayed due to problems with visa approval for Moroccan scientist. The vessel left Las Palmas the 27th at 11:00 and steamed back south to start working on the shallow water stations of the new transects north of Cap Bojador. From Cap Juby and northwards the bottom was relatively uneven and trawling was not achievable for all depth intervals. The shelf was steep and the bottom depth increased from 200-700 m within a short distance. Trawling deeper than 500 m was therefore not possible. Some days with heavy wind (above 42 knots) prevented the vessel from undertaking 2 transects (none of them were "Ecosystem transects"). The 2nd of July the vessel called for port in Agadir to change local scientist. The vessel continued working on the Moroccan shelf all the way up to Gibraltar. Then the vessel turned and headed back to call for port in Casablanca in the morning of the 15th July. The cruise was ended by a wrap-up meeting and offloading of samples.

The survey transects were made perpendicular to depth isobaths and spaced 20 nautical miles (NM) apart. They covered the depth interval between ~20 m depth near the coast to 500 m depth offshore. Bottom trawling was conducted within four different depth strata on each of these transects, between 20-50 m, 50-100 m, 100-200 m and between 200-500 m depth. When time and bottom conditions permitted, occasional trawls were conducted deeper than 500 m. Trawls at depths < 150 m were only conducted during daytime hours to reduce possible effects of diurnal migrations. Pelagic trawls were conducted to sample acoustic targets, but were also made "blindly" along transects when time permitted. CTD's were taken at each bottom trawl station.

Every third transect was termed an "Ecosystem transect" with a more elaborate sampling program. These transects extended to 1000 m depth. CTD's were taken at 1000 m, 500 m, 200 m, 100 m, 50 m and 30 m at the coastal margin of the transect. Additionally, three stations for sampling of nutrients, chlorophyll, phyto and zooplankton, and soft-sediment invertebrates were conducted at 500 m, 100 m and 30 m depth. Trawling was undertaken within the same depth regions as for all other transects.

Acoustic data from the ER 60 echosounder (18 kHz, 38 kHz, 120 kHz and 200 kHz transducers), the multibeam bottom mapping echosounder SM710, ADCP data and data from the thermosalinograph and weather station were recorded continuously during the survey.

Survey effort

For the purpose of acoustic and swept area abundance estimation the coast was divided into five regions. The first region (Region 1) included the area from the border between Sierra Leone and Guinea to Cap vert. Region two covered the coastal waters between Cap Vert to Cap Blanc, region

three covered the area between Cap Blanc to Cap Juby , region four between Cap Juby to Casablanca, and region five covered the northernmost area from Casablanca to Tanger.

Figures 1.1-1.2 show the cruise tracks with bottom trawls, pelagic trawls, hydro graphic stations, and plankton stations. Table 1.2 summarises the survey effort in each sub-area.

Table 1.2 Number of hydrographic (CTD), plankton (PL), pelagic trawl (PT), and bottom trawl (BT), and benthos sampling stations as well as the distance covered (NM) during the survey, by sub-areas.

Subregion/Country	Nautical miles	Bottom trawls valid per depth region						Pelagic trawls	CTD	Plankton	Benthos
		Total	>20	>50	>100	>200	>500				
Casablanca-Tanger	614.8	25	3	6	6	6	4	3	27	9	3
Cap Juby-Casablanca	1666.4	55	13	20	15	7		1	82	23	12
Cap Blanc-Cap Juby	2185	65	12	18	21	14		1	108	23	8
Cape Vert- Cap Blanc	1600	69	16	17	15	12	9	1	103	20	18
Guinea Conacry - Cap Vert	2300	81	18	20	16	17	10	7	120	21	21
Total	8365	295	62	81	73	56	23	13	440	184	62

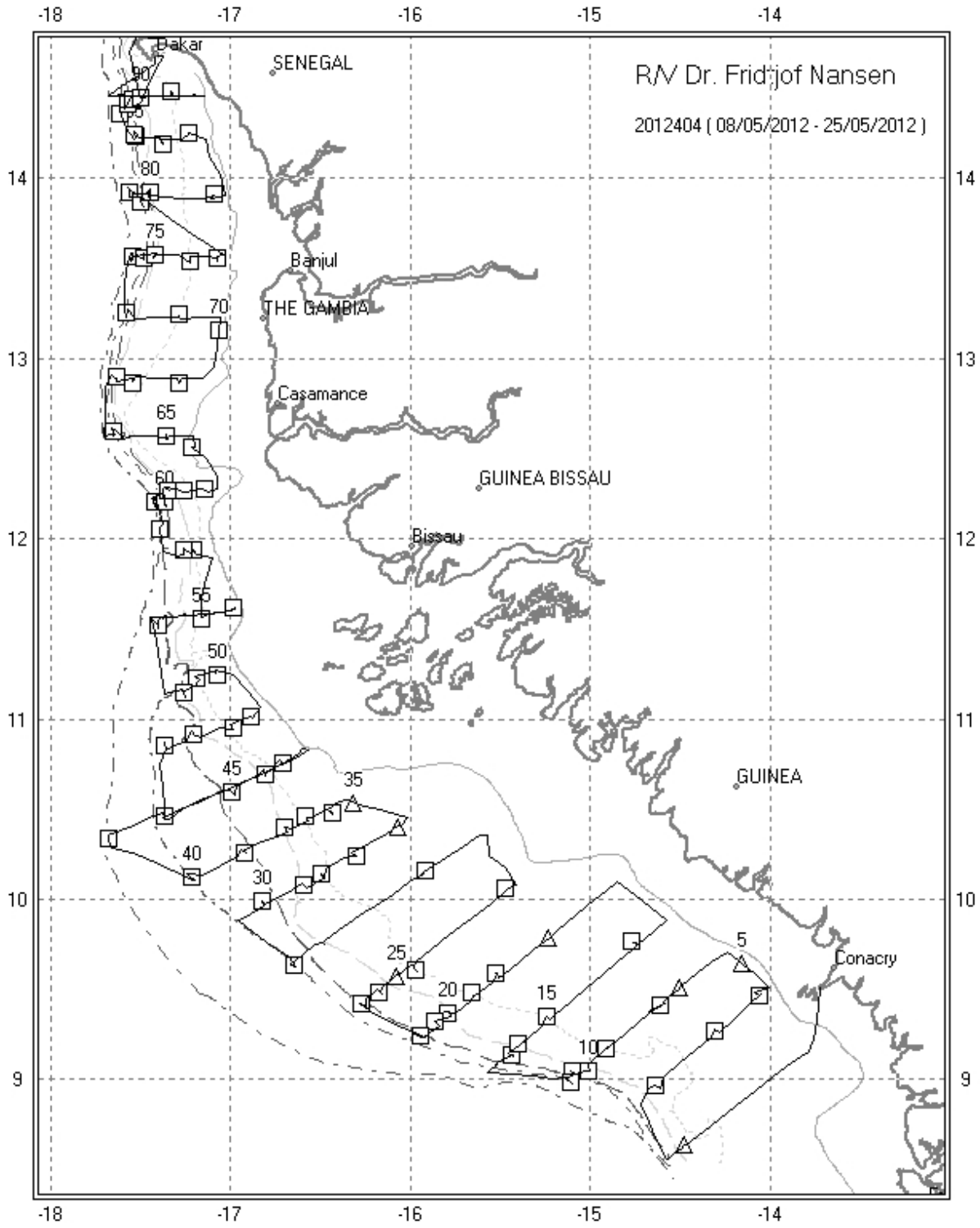


Figure 1.1. Course track Conacry - Cap Vert. a) Bottom trawl (□) and pelagic (Δ) trawl stations, b) Hydrographic (Z), plankton (×) and benthos (◊) stations. The 20, 50, 100, 200, 500 and 1000 m depth contours are indicated

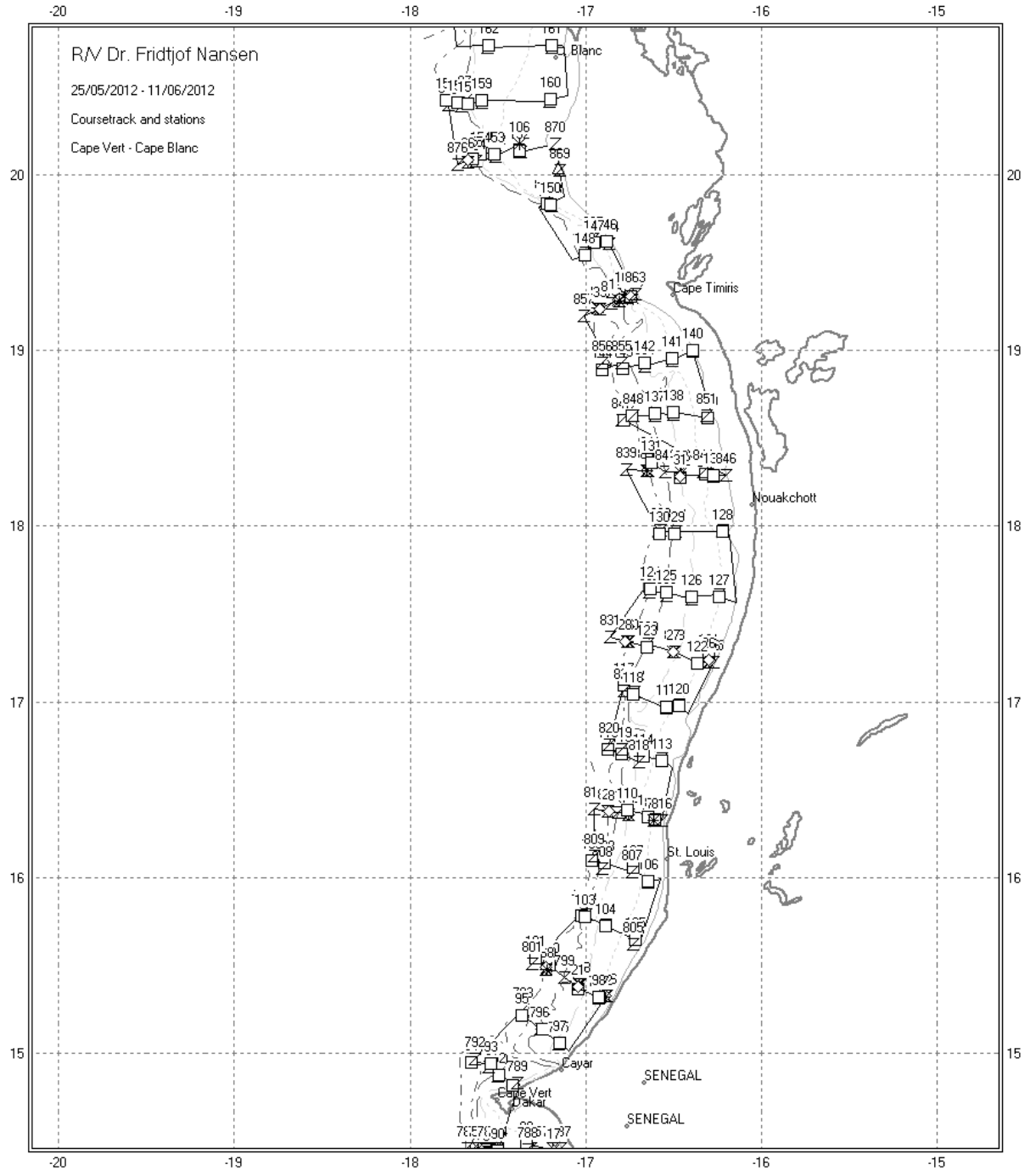


Figure 1.2. Course track Cap Vert- Cap Blanc a) Bottom trawl (□) and pelagic (Δ) trawl stations, b) Hydrographic (Z), plankton (×) and benthos (◊) stations. The 20, 50, 100, 200, 500 and 1000 m depth contours are indicated

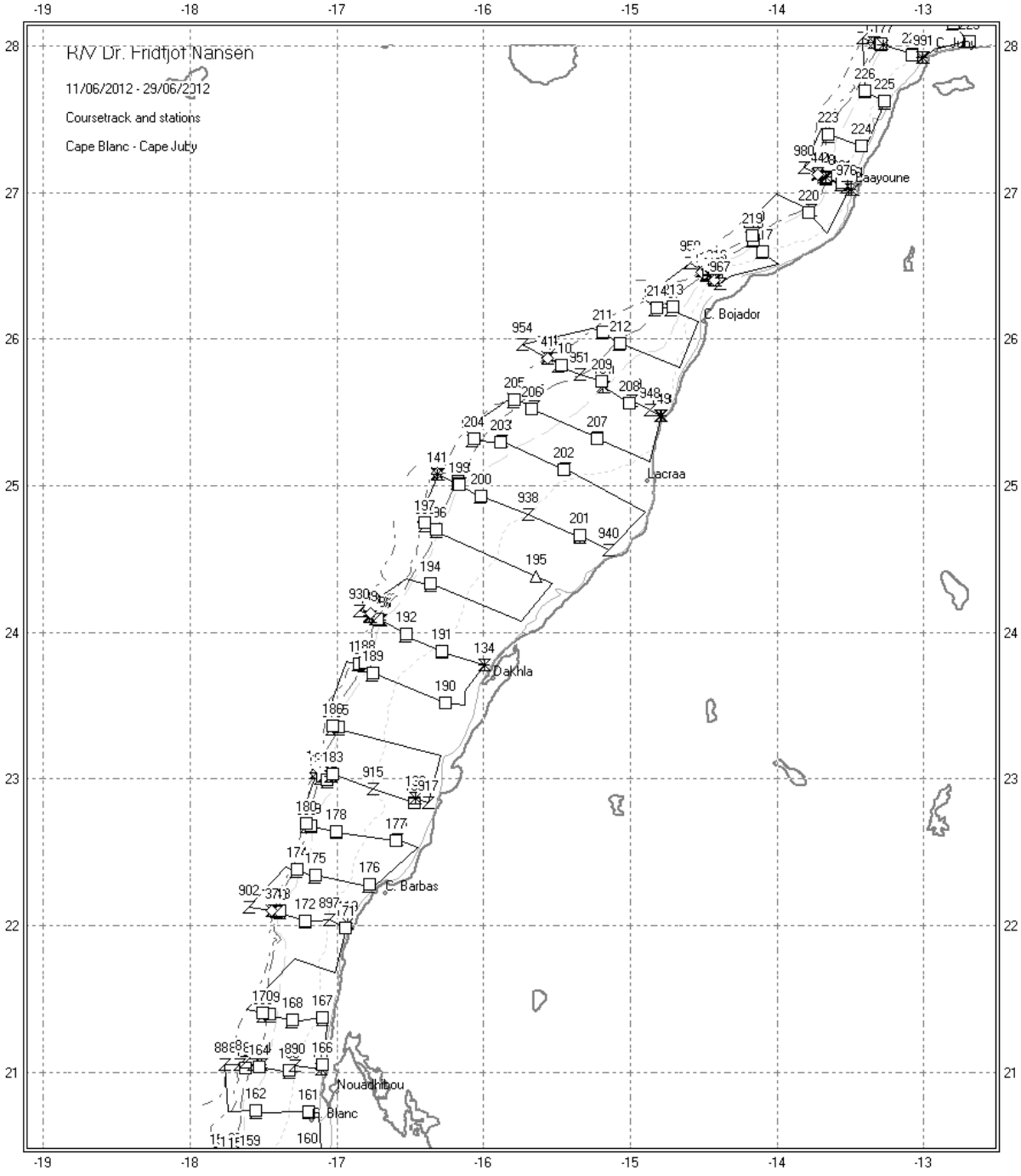


Figure 1.3. Course track Cap Blanc – Cap Juby a) Bottom trawl (□) and pelagic (Δ) trawl stations, b) Hydrographic (Z), plankton (×) and benthos (◊) stations. The 20, 50, 100, 200, 500 and 1000 m depth contours are indicated

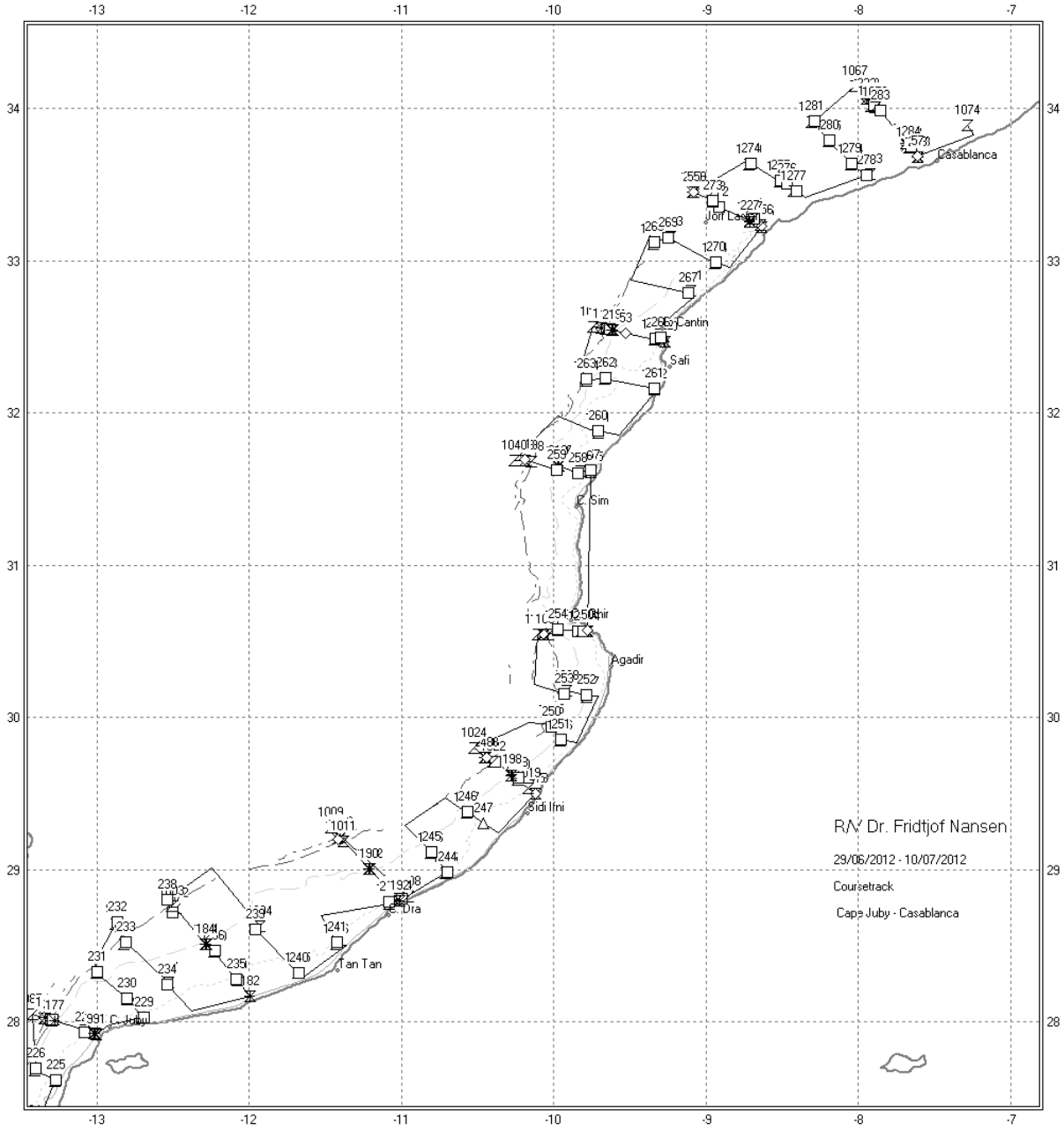


Figure 1.4. Course track Cap Juby – Casablanca a) Bottom trawl (□) and pelagic (Δ) trawl stations, b) Hydrographic (Z), plankton (×) and benthos (◊) stations. The 20, 50, 100, 200, 500 and 1000 m depth contours are indicated

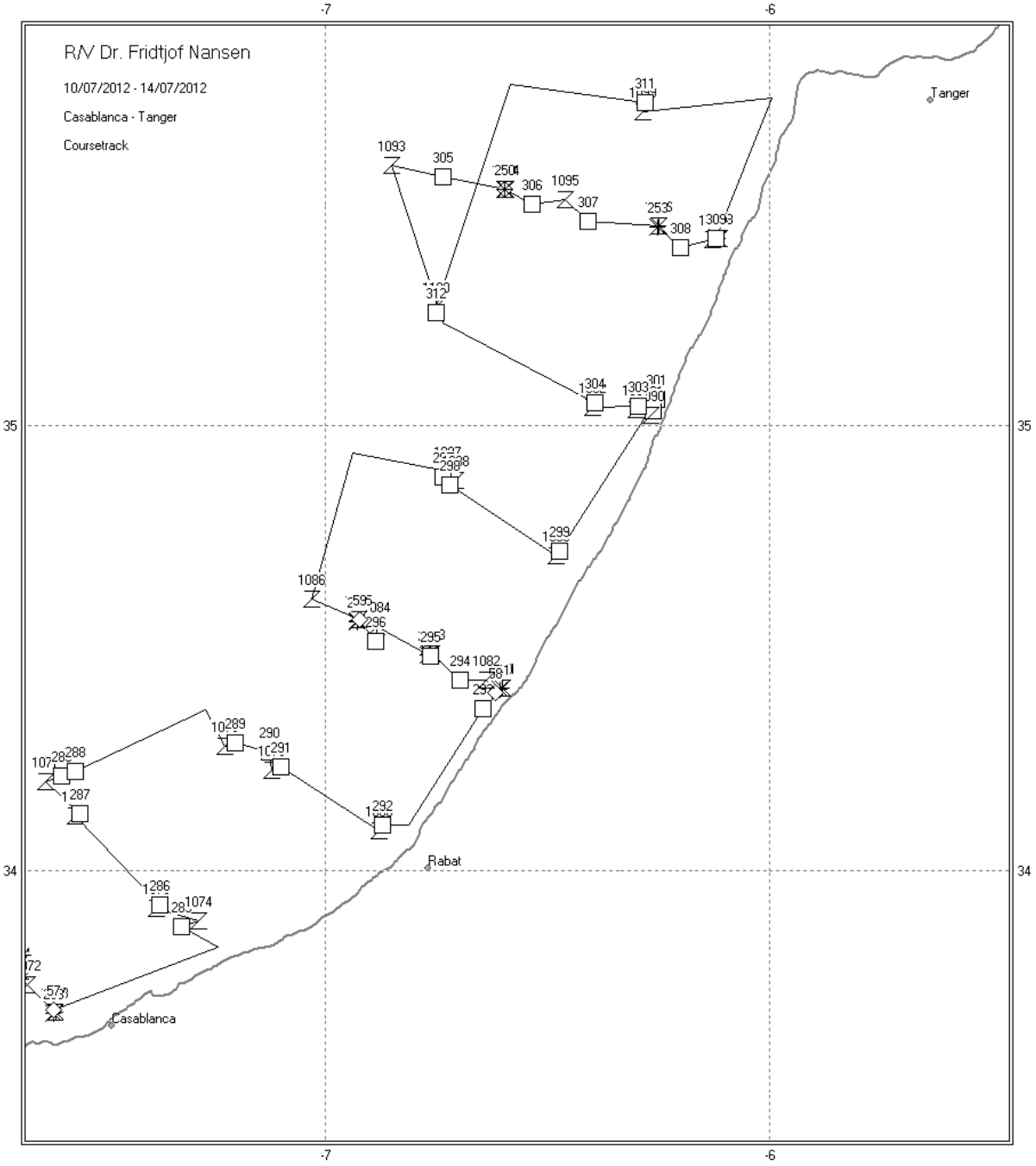


Figure 1.5. Course track Casablanca – Tanger a) Bottom trawl (□) and pelagic (Δ) trawl stations, b) Hydrographic (Z), plankton (×) and benthos (◊) stations. The 20, 50, 100, 200, 500 and 1000 m depth contours are indicated

2. METHODS

2.1. Meteorological and hydrographical sampling

Meteorological observations

Wind direction and speed, air temperature, air pressure, relative humidity, and sea surface temperature (5 m depth) were logged automatically every 60 sec. with an WIMDA meteorological sensor.

CTD

Vertical profiles of temperature, salinity, fluorescence and oxygen were obtained by the Seabird 911 plus probe. The CTD was equipped with an Aqua Tracka MK III fluorometer, SBE 3plus temperature sensor, SBE 4C conductivity sensor and a SBE 43 oxygen sensor. Real time logging and plotting was done using the Seabird Seasave software installed on a PC. Above the shelf and slope, the profiles ranged from the surface to within a few metres above the bottom. Offshore, the maximum sampling depth was 1500 m.

Niskin water-bottles (10 l) attached to a CTD-mounted rosette were used to collect water at predefined depths (see below).

Our Portasal salinometer (mod. 8410), normally used for calibrating the salinity (conductivity) measurements on the CTD, was out of order during this cruise and no calibration of the salinity was performed during the cruise.

For calibration of the oxygen-measurements from the CTD-mounted sensor, the oxygen-concentrations in water-samples from all Niskin-bottles at the deep plankton-stations were analyzed by the Winkler redox titration method, following the procedures of Hagebø (2008). To further improve the calculation of oxygen-concentration per weight-unit of seawater, a water sample for oxygen-analyses was collected first from the Niskin-bottles and subsequently the water temperature from the same bottle was measured. These temperature-data were used to calculate potential temperature at the time when the Winkler-reagents were added.

Samples for nutrient analyses (nitrate, nitrite, phosphate and silicate) were taken from Niskin water-bottles at 25, 10 and 5 m at the shallow plankton-station (30 m bottom-depth), at 100, 75, 50, 25, 10 and 5 m at the intermediately deep plankton station (100 m bottom-depth), and at 500, 400, 300, 200, 150, 100, 75, 50, 25, 10 and 5 m at the deep plankton-station (500 m bottom-depth). The water-samples (20 ml, scintillation vials PE) were added 2 ml chloroform and stored dark onboard at 4°C for subsequent analysis on shore. In addition, an additional sample of 20 ml of seawater from the water-bottles were taken from the same standard depths and frozen on 20 ml scintillation vials at -18 °C without the addition of chloroform. These samples are to be analyzed for an intercomparison of the two methods.

For calculation of chlorophyll *a* and phaeopigment concentrations, water-samples (263 ml) were collected from the same standardized depths as described above for the nutrients. The water-samples were filtered on Munktell glass fiber filters (GF/C, 25 mm diameter) using a custom-made filtration system. The filters were then stored dark at -18°C in for subsequent analysis on shore.

The Mk III Aquatracka fluorometer measures *in situ* fluorescence on a relative scale and can be related to the absolute chlorophyll concentrations obtained from the analyses of the samples collected from the water-bottles.

Thermosalinograph

The SBE 21 Seacat thermosalinograph was running continuously during the survey, obtaining samples of sea surface salinity and relative temperature and fluorescence (5 m depth) every 10 seconds. An attached in-line Turner Design SCUFA Fluorometer measured Chlorophyll a levels [RFU] at 5 m below the sea surface while underway during the entire cruise.

Current speed and direction measurements (ADCP)

The current profiles were continuously recorded along the path of the vessel by the vessel mounted Ocean Surveyor 150 kHz ADCP. The ADCP has a maximum range between 200 – 400 m depth, and transmission of transducer pulses was synchronized with the echo sounder. The system was run in narrow band mode and data were averaged in 8 m vertical bins and stored on files for post survey processing. After the cruise was finished, it was discovered that one of the transducers had not been working properly and that the data from The ADCP should be rejected. No post processing was attempted for that reason.

2.2. Phytoplankton sampling

At each plankton-station, qualitative phytoplankton samples were collected with a net (35 cm in diameter and mesh-size of 10 µm) hauled vertically from the depth of 30m to the surface (25-0m at the shallow stations). The samples were preserved with 2 ml 20% formalin and stored on dark 25 ml glass bottles for subsequent taxonomic analyses on shore.

In addition, water-samples from the Niskin-bottles representing the depth closest to the *in situ* fluorescence maximum were taken at all plankton-stations. The samples were preserved with 2 ml lugol on dark 25 ml glass bottles for later taxonomic analysis on shore.

2.3. Zooplankton sampling

Zooplankton samples were collected with a Hydro-Bios Multinet. The multinet was equipped with 5 nets of mesh-size 180 µm for depth-stratified sampling, a pressure sensor and an electronic flow-meter. Note that one of the five nets by accident was of mesh size 405 µm during a large part of the cruise. The multinet was deployed and retrieved at a speed of ~ 1.5 m per second and was towed obliquely behind the vessel. For the shallow plankton-station one net was towed in the 25-0 depth-stratum, for the medium-deep station four nets sampled the strata of 100-75 m, 75-50 m, 50-25 m and 25-0 m, and at the deep plankton-station five nets sampled the strata of 200-100 m, 100-75 m, 75-50 m, 50-25 m and 25-0 m.

The sample from each net was divided into two half's using a Motoda plankton splitter. Digital photos qualitatively showing the contents of one half were taken at some stations, using a stereoscope. However, the number of stations where this was fully achieved was restricted due to time constraints during and between sampling stations and movement of the ship from rough weather causing problems with the lense focusing of the imagry . This split fraction was preserved with borax-buffered formalin resulting in a final 4% formalin concentration in a 100 ml plastic bottle for later taxonomic analysis on shore. The other half of the sample was sequentially sieved through three filters to obtain the plankton biomasses representing the size-fractions >2000 µm, 2000-1000 µm, and 1000-180 µm. The biomass samples were stored on preweighed aluminium dishes, and dried at ~70 °C for periods of 6–24 h. Limited storage capacity in the drying chamber could restrict the drying period along transects with dense station frequency. After drying, the samples were stored frozen at -18°C for subsequent weighing of biomass dry weight on shore (after a second time of drying).

Additionally, at all plankton-stations a WP2 net (56 cm in diameter, 180 µm) was hauled vertically from the same maximum depth as for the deepest Multinet (shallow plankton-station 25 m, medium-deep plankton-station 100 m, and deep plankton-station 200 m) - to the surface. These zooplankton samples were preserved with borax-buffered formalin resulting in a final 4% formalin concentration on 100 ml plastic bottles for subsequent taxonomic analysis on shore.

2.4. Biological fish sampling

Demersal trawl hauls were taken randomly (within the depth strata described above) on the shelf while pelagic hauls were taken randomly throughout the survey at night and to catch acoustic targets.

Trawl hauls were sampled for species composition by weight and number. The deck sampling procedure is described in detail by Strømme (1992). Length measurements were taken for selected target species on most stations. An Electronic Fish Meter (SCANTROL) connected to a customised data acquisition system (Nansis) running on a Windows PC was used for length measurements. The total length of each fish was recorded to the nearest 1 cm below (rounding down to nearest cm). Sex was collected from the first randomly selected 20-30 individuals of target species.

The carapace length for crustaceans was measured to the nearest 0.1 cm below. Basic information recorded at each fishing station, i.e. trawl hauls, is presented in Annex I. Pooled length frequency distributions, raised to catch per hour, of selected species by region are shown in Annex II.

From Nouakchott and onwards samples were taken for further analysis of environmental pollution and toxin. The sampling procedure and the analysis will be conducted by INRH in Casablanca and the results will be reported when finished.

2.5. Zoobenthos sampling

Zoobenthos samples, mainly from epi- and suprabenthic communities, were collected from the catches obtained in the bottom trawls. Invertebrates were sampled for species composition by number and weight. Total catch or subsamples of total catch, were sorted on deck to morphospecies level, counted and weighed. Pictures of fresh material of all species were taken at all stations in order to obtain images of colour and other characteristics relevant for taxonomic identification. After fixation of the material such information is often lost due to the preservation process,. Finally, a representative collection of samples were preserved in alcohol (80%) or formalin (4%) solutions, for posterior analysis in laboratory.

A complete reference collection of each of the 6 countries (Guinea, Guinea-Bissau, Senegal, The Gambia, Mauritania and Morocco) was taken for the IEO, as the responsible institution of zoobenthos studies in this survey. Additional collection of each area was taken for the coastal country.

In addition, sediment samples were collected in all trawl stations, for granulometry, organic matter and carbonates analysis. The samples were obtained using a cylindrical steel collector, specially designed for this purpose, attached to the trawl. The sediment samples were stored frozen.

Both faunistic data and collection details were punched on board in standard format files created and used by the IEO. The pictures were stored in independent files per trawl stations.

2.6. Soft sediment sampling of macrofauna

The benthic macrofauna was sampled using a Sneli Sledge (Sneli, 1998) and a 0.1 m^2 van Veen grab. Three stations, at 30 m; 100 m and 500 m depth, were sampled every 1° latitude during the whole cruise (every third transect). The Sneil sledge was used for the 30 m and 100 m depth stations, while the van Veen grab was used at 500 m depth. Sub samples were taken from the sledge and two replicates were taken on each grab station. The sediment was separated into light- and heavy fraction and fixed in 8% borax pre-buffered formalaldehyde (formalin) or 95% ethanol. The heavy fraction was screened through two sieves of mesh size 1.0 mm and 0.5 mm, the light fraction only through a sieve with mesh size 0.5 mm. The sediment retained on each sieve was transferred to plastic containers and labelled. Larger animals were sorted out immediately and fixed on separate containers. For the samples fixed on ethanol, this was changed within 24 hours and then again the next day to secure the quality of the material. After the survey the samples were shipped to the University Museum of Bergen, Collections of Natural History, were they will be sorted and identified.

2.7. Seabird visual observations

The objectives of the seabird and cetaceans survey were to record: (1) the perpendicular distance from the observer to all bird and mammal observations whilst the vessel was on transect; and (2) interactions between the vessel and birds during trawls. The transect methods, to enable density estimates, are fully described in Buckland *et al*. 2001. This and the trawl observations followed the protocols currently being used further north in the East Atlantic (www.fameproject.eu). The one observer on board (PR) made observations from dawn to dusk, with short breaks, resulting in 11.5 to 12 hours of observations daily. For transects, observer eye height was 12.5 m, on the deck in front of the wheelhouse. 180 degree forwards scan by eye was used, supplemented by periodic scans with binocular and telescope for cetaceans and to confirm bird identification. Observations were assigned to distance bands with the aid of horizontal and vertical angle measurement to the individual (or estimation, if there was much simultaneous activity) and later triangulation. Birds were assigned to species, number, age, distance, flight direction and behaviour (ESAS coded). Birds behaviour and means of detection were recorded and where possible photographs taken. Environmental variables that could influence detection or behaviour (for example sea state, glare) were recorded at the start of each transect and subsequently whenever they changed. Observations of trawls were made from the back of the boat during the trawl, from setting to landing of nets. Birds were classified according to their behaviour and the vessel activity. During all surveys observations were timed to the nearest minute, synchronised to the vessel computer. Observations were then linked to the vessel position, provided at 2 minute intervals and other attributes simultaneously recorded on the vessel computer. The survey form templates, codes used on the forms and the final data spreadsheet were provided at the end of the survey. The seabird observations was conducted from Dakar to Cape Bojador.

2.8. Cetacean visual observations

The R/V Fridtjof Nansen is used as a platform of opportunity for marine mammal observations in 'passing mode', as the vessel's operation does not allow closing on marine mammal sightings, nor adapt speed in function of sightings. The cruise design, dedicated to fisheries and oceanographic research, requires multiple daily stations for bottom trawling, CTDs, plankton-net hauls and other experiments when the vessel's speed is greatly reduced, typically ranging from 0-5km/h (3 knots or less). Full stops and back-tracking on a completed transect line may also occur.

Evidently, such an operation mode does not allow a line transect sampling protocol for marine mammals as basic assumptions of the model are not fulfilled. Even between stations, cruise speed fluctuates around 10 knots, a borderline velocity, as many cetacean species can match this speed. Mean progress (velocity) along the major track lines is further reduced due to the sampling stations, therefore the probability that the same groups and individuals being re-sighted are high. An evaluation of likely re-sightings is made in situ.

Some measure of relative abundance between-species, such as an encounter rate, will be considered in the data analysis, but comparability with other (non-CCLME) cruises will necessarily be limited.

During transit legs, the single observer visually scans from -90° (port) to 90° (starboard) both with 7x50 binoculars and by naked eye (to spot cetaceans close to the ship) preferentially from the radar deck (at 14 m), if not from the fore-castle deck (9 m), depending on the captain's indications and the need for the primary radar. A maximum amount of effort is concentrated on and near the trackline so as not to miss any sightings there. During low-speed or stationary sampling activities the platform is treated as a quasi-fixed vantage point and 360° are scanned, considering that the probability that cetaceans may approach from behind the vessel is significantly increased.

Main parameters collected include (see datasheet for full list) when available/applicable: species, time, GPS-position, relative position of animals to ship (estimated angle and radial distance), group size estimates, group composition, diagnostic or unusual morphological features, any behavioural comments, basic air/sea conditions and some other info. A sketch of notable external features and of the sighting dynamics may be added.

Species are identified in a strictly conservative way, *i.e*. only when diagnostic features were confirmed, alternatively the sighting is assigned to the family or genus level. When identification is probable but not confirmed, it is classified as a "like-species" (cf. IWC usage).

As a high priority, but depending on distance, it is attempted to take photographs with a Canon reflex camera with a 70-300 mm zoom lens. A GPS waypoint is marked and a paper sighting data form is filled out.

A separate form is used for observer effort information, with indications of sea state, swell and ship's activity (although more detailed data from the vessel's log will be used for analysis).

2.9. Multibeam echo sounder for bottom mapping

The EM 710 multibeam echo sounder is a high to very high-resolution seabed mapping system. Acquisition depth is approximately 3 m below the transducers, and the maximum acquisition depth is limited, in practice, to 1000 - 1500 m on "Dr. Fridtjof Nansen". Across track coverage (swath width) is up to 5.5 times water depth and may be limited by the operator either in angle or in swath width without reducing the number of beams. The operating frequencies are between 70 to 100 kHz. There are 128 beams with dynamic focusing employed in the near field. The transmitting fan is divided into three sectors to maximize range capability and to suppress interference from multiples of strong bottom echoes. The sectors are transmitted sequentially within each ping, and use distinct frequencies or waveforms. The along track beam width is 1 degree. Ping rate is set (manually) according to depth. The receiving beam width is 2 degrees. All raw data from the EM 710 multibeam echo sounder was stored to disk for later analyses. The data was also logged to the Olex plotting system onboard.

2.10. Single beam acoustic sampling

Acoustic equipment

Acoustic data were recorded using a Simrad ER60 scientific echo sounder equipped with keel-mounted transducers at nominal operating frequencies of 18, 38, 120 and 200 kHz. All transceivers were calibrated in Baía dos Elephantes the 8th of March 2012.

Acoustic data were logged and post-processed using the latest acoustic data post-processing software, the Large Scale Survey System (LSSS) Version 1.5. The technical specifications and operational settings of the echo sounder used during the survey are given in Annex III.

Allocation of acoustic energy to species group

The acoustic data were scrutinized using the LSSS version 1. 5. Scatters were displayed at 38 kHz. The mean 5 nautical miles (NM) area backscattering coefficient s_A (m^2/NM^2) was allocated to a predefined set of species groups on the basis of established echogram features. Ground truthing and estimation of mean length and weight were accomplished by means of targeted pelagic and demersal trawling. For carangids and associated species, an overall average length of 23 cm and a condition factor of 0.88 were applied. The target groups used during the survey can be found in Table 2.1, while the complete records of fishing stations and catches are shown in Annex I.

Table 2.1 Allocation of acoustic densities to species groups. Note that for the group's sardinella, horse mackerel, big-eye grunt and sardine all encountered species are listed, while only examples are listed for the remaining groups.

Group	**Taxon**	**Species**
Sardinella	*Sardinella* sp.	*S. aurita*
		S. maderensis
Sardine	Sardina	*S. pilchardus*
Anchovy	Engraulis	*Engraulis encrasicolus*
Horse mackerels	*Trachurus* sp.	*T. trecae*
		T. trachurus
		T. picturatus
	Decapterus	*Decapterus rhonchus*
Pelagic species 1	Clupeidae[1]	*Ilisha africana*
		Ethmalosa fimbriata
Pelagic species 2	Carangidae[2]	*Selene dorsalis*
		Chloroscombrus chrysurus
		Alectis alexandrinus
	Scombridae	*Euthynnus alletteratus*
		Sarda sarda
		Scomber japonicus
	Sphyraenidae	*Sphyraena guachancho*
	Others	*Trichiurus lepturus*
		Zeus faber
Big eye grunt		*Brachydeuterus auritus*
Other demersal species	Demersal families	
Mesopelagic species	Myctophidae	
	Other mesopelagic fish	
Plankton	Calanoidae	*Calanus* sp**.**
	Euphausiidae	*Meganyctiphanes sp.*
	Other plankton	

[1] other than *Sardines* sp.; [2] other than *Trachurus* sp. and *Decapterus rhonchus*

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

$$TS = 20 \log L - 72 \text{ dB} \quad (1)$$

or in the form

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

where L is the total length and C_F is the reciprocal back scattering strength, or the so-called fish conversion factor. Generally, 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

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

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

Further, the traditional method is to sum the number per length group (N_i) to obtain the total number of fish:

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

The length distribution of a given species within an area is computed by simple addition 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 is split in accordance with length distribution and catch rate in numbers in the trawl catches. Biomass per length group (B_i) is 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 is obtained by summing the biomass of each length group:

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

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

However, the combination of low s_A value recorded, few PEL1 and PEL2 in the bottom trawl catch and few pelagic trawls made the splitting by length groups unreliable. Therefore, a theoretic mean length of 23 cm was used to convert the s_A values by stratum (Equation 3) to number of fish. Equation 5 was used to convert the number of fish in the defined average length class (23 cm) to total estimated biomasses of PEL1 and PEL2.

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

Swept area biomass calculations

The biomass calculation of demersal fish in the survey area was based on the swept area method. All valid stations are treated as representative for the relevant depth intervals where the species or group of species were caught. All biomass calculations were done in the software program Nansis.

All equations for the calculations are given in Annex IV. The effective fishing width of trawl gear used by R/V “Dr Fridtjof Nansen” is considered to be 18.5 m. The effective fishing area is the product of the fishing width multiplied by the towing distance measured by the GPS. It is assumed that all fish within the trawling path are caught, which gives a catchability coefficient (q), *i.e*. the fraction of the fish encountered by the trawl that was actually caught, equal to 1.

The catchability coefficient is seldom known, but because the coefficient is assumed to be constant between surveys, the swept-area index will reflect any change in population abundances between surveys.

3. WIND, HYDROGRAPY AND FLUORESCENCE

3.1. Wind pattern, sea surface temperature, salinity and fluorescence.

Wind speed and direction was recorded from the vessels weather station located in the mast above the wheel house and results are illustrated in Figures 3.1 - 3.5. The horizontal distribution of sea surface temperature (SST), sea surface salinity (SSS), oxygen (CTD data measured at 5m) and sea surface fluorescence (SSF) are presented in Figures 3.6 – 3. 9.

Conakry - Cap Vert
A generally calm wind, averaging 9.7 m/s (6.9 - 12.7 m/s, 25% - 75% percentil), increasing slightly as the vessel moved northward. The direction was generally from W-NW but with a few changes in direction to NE connected with a local maximum in air pressure and wind.

The SST in the waters off Guinea and between guinea and Guinea Bissau was the warmest on this leg (28°C), it rapidly became cooler further to the north and more inshore (~24^{o}C).

The SSS is high in this region but this was were we found the lowest levels during this cruice (35.6-35.8). The salinity generally decreased somewhat towards the coast.

The oxygen levels measured at the surface layer during this leg was varying from 4.0-6.0 ml/l. Patches in the southernmost parts outside of Guinea and also around Cape Vert displayed the highest concentrations and the lowest consentrations were found furthest off shore.

The highest SSF concentrations (~0.3-0.4 µg/l) were patchy distributed and found outside Guinea and between The Gambia and Cape Vert close to shore.

Cap Vert – Cap Blanc
The wind speed during the leg between Cap Vert and Cap Blanc was strongest in the area around Cap Blanc (10-17 m/s). The direction was prevailingly from the north

The SST was warmest on this leg around Cape Vert (24°C) and decreased rapidly outside Mauritania before reaching Cape Timiris (17°C).

The SSS levels was more or less homogenious between Cape Vert and Cape trimiris (35.8) except for a small pach close to shore north of Cape Vert, which was lower. The SSS levels increased when passing north of Cape Timiris (>36).

The oxygen levels measured at the surface layer during this entire leg was around 5 ml/l except in the area south of Cape Timiris where the levels were as low as 3.5-4 ml/l.

The lowest SSF concentrations (0.1 µg/l) were found north of Cape Vert, it increased northwards towards Cape Trimiris (0.8-1.0 µg/l), but decreased to 0.4 µg/l before reaching the cape. Patches of high SSF concentrations south and north of Cape Trimiris was also found.

Cap Blanc-Cap Juby
The mean wind speed during the leg between Cap Blanc and Cap Juby was 11.2 m/s. with the highest wind force in the southern part. Mostly the wind blew from the north-easterly direction.

The measured SST during this leg was dominated by inshore waters with temperatures of about 18-19°C, and elements of warmer layers further offshore outside of Cape Bojador and Cape judy (20-21°C).

The SSS displayed during this leg showed little variation. The salinity level was ~ 36.4 in the southern and northern part and slightly higher in the mid–part of this region (36.6).

The surface oxygen levels were rather homogenous (~5 ml/l), except higher concentrations found in a small coastal area between Dakhla and Lacrara (5.5-6.0 ml/l).

The SSF levels were highest close to shore between Dakhla and Lacrara (0.4 µg/l), and the levels were variable, though lower in the remaining parts of this survey stretch (0.1-0.3 µg/l).

Cap Juby – Casablanca
The wind speed during the leg between Cap Juby and Casablanca was rather variable, showing values between 5-23 m/s. With the strongest wind field in the area just north of Agadir (20-24 m/s). Considering the area as a whole, the wind predominantly blew from a north - north-easterly direction.

The measured SST was typically around 17°C, though with some cooler areas close to the coast (16°C) and warmer temperatures (20°C) north of 32°30`N.

The SSS was rather constant at ~36.2 south of 32°30`N and increased north of this to tanger to 36.4 in the more offshore regions and decreased in coastal parts (>36) .

The surface oxygen levels were betwen 5-6 ml/l in this region except in smaller coastal near cape Juby (3.5 ml/l).

The SSF levels recorded were varying between 0.1-04 µg/l from Casablanca to 32°30`N, north of this the levels dropped to 0.1 µg/l.

Casablanca – Tanger
The wind speed during the leg between Casablanca and Tanger was rather low, showing values between 1-12 m/s. Considering the area as a whole, the wind was also in this region predominantly blowing from a northerly direction.

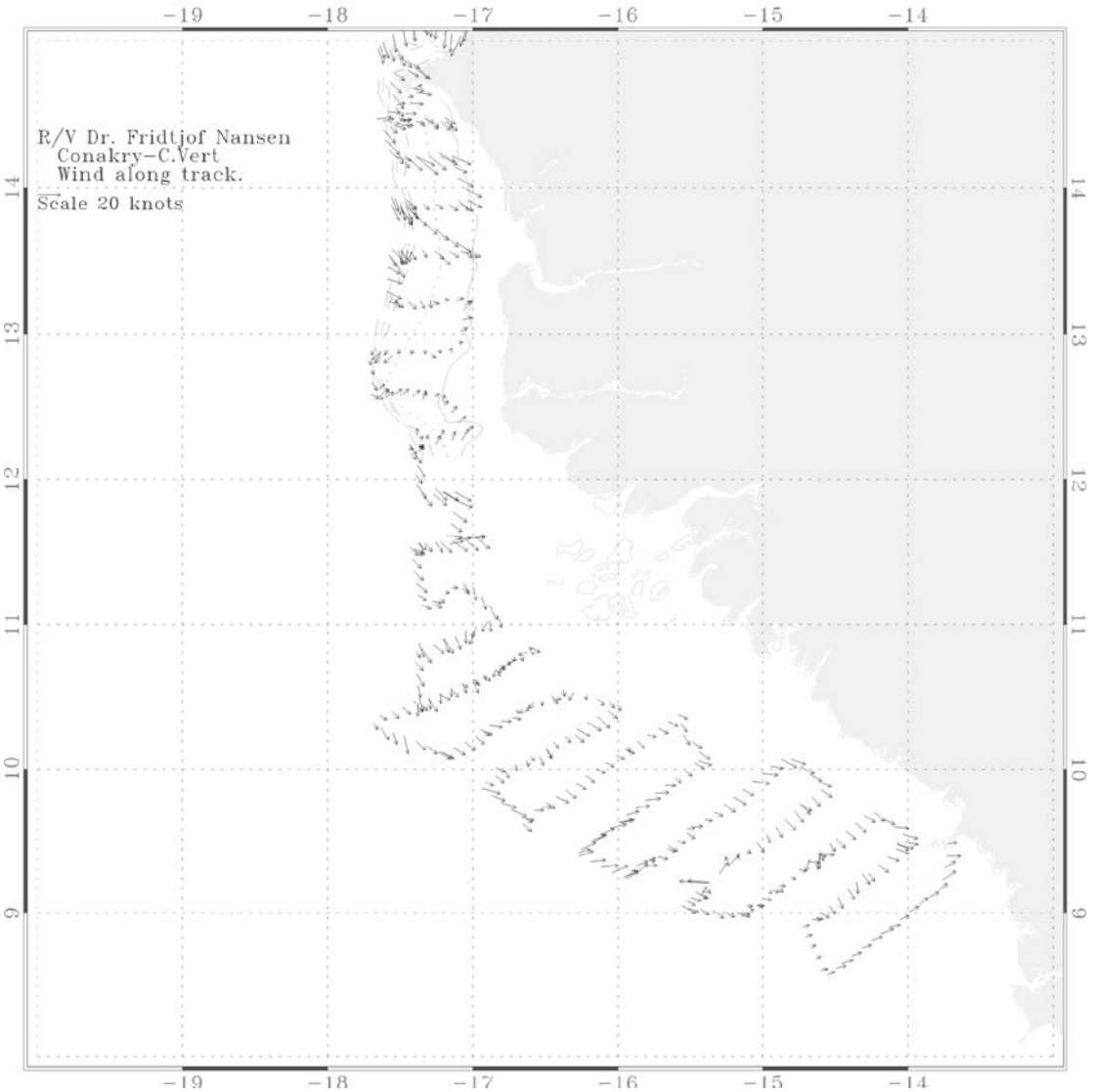


Figure 3.1. Wind vectors (arrows indicate strength and direction) during the survey period from Conacry – Cap Vert.

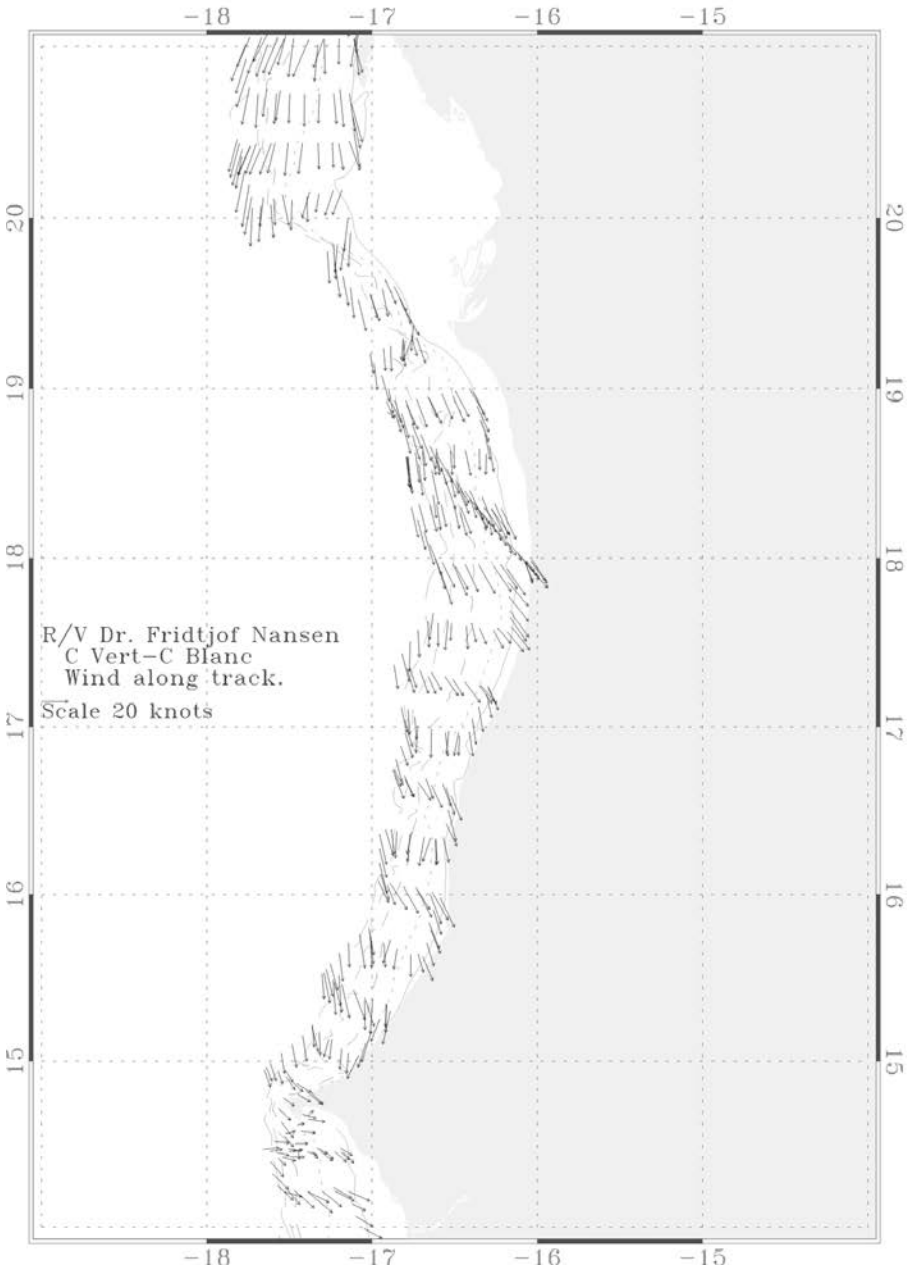


Figure 3.2. Wind vectors (arrows indicate strength and direction) during the survey period from Cap Vert – Cap Blanc.

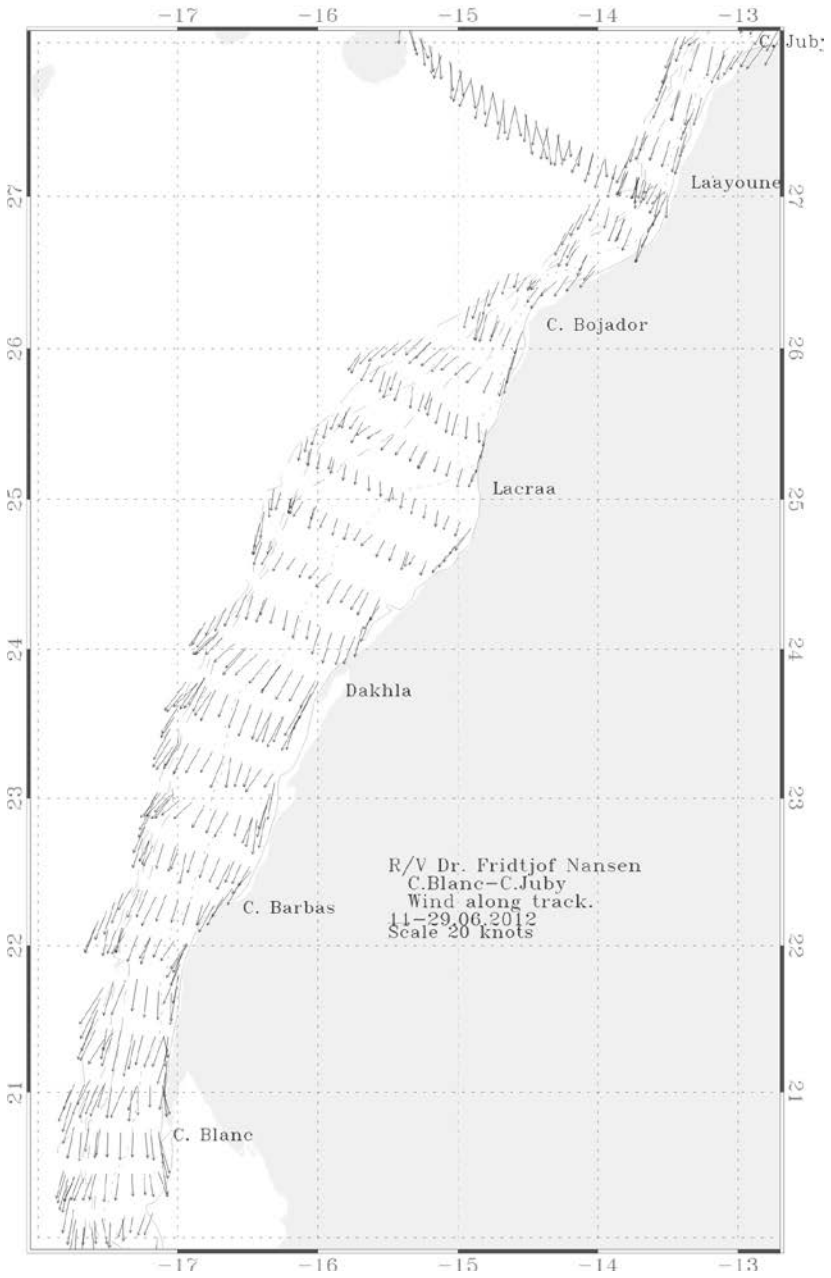


Figure 3.3. Wind vectors (arrows indicate strength and direction) during the survey period from Cap Blanc – Cap Juby.

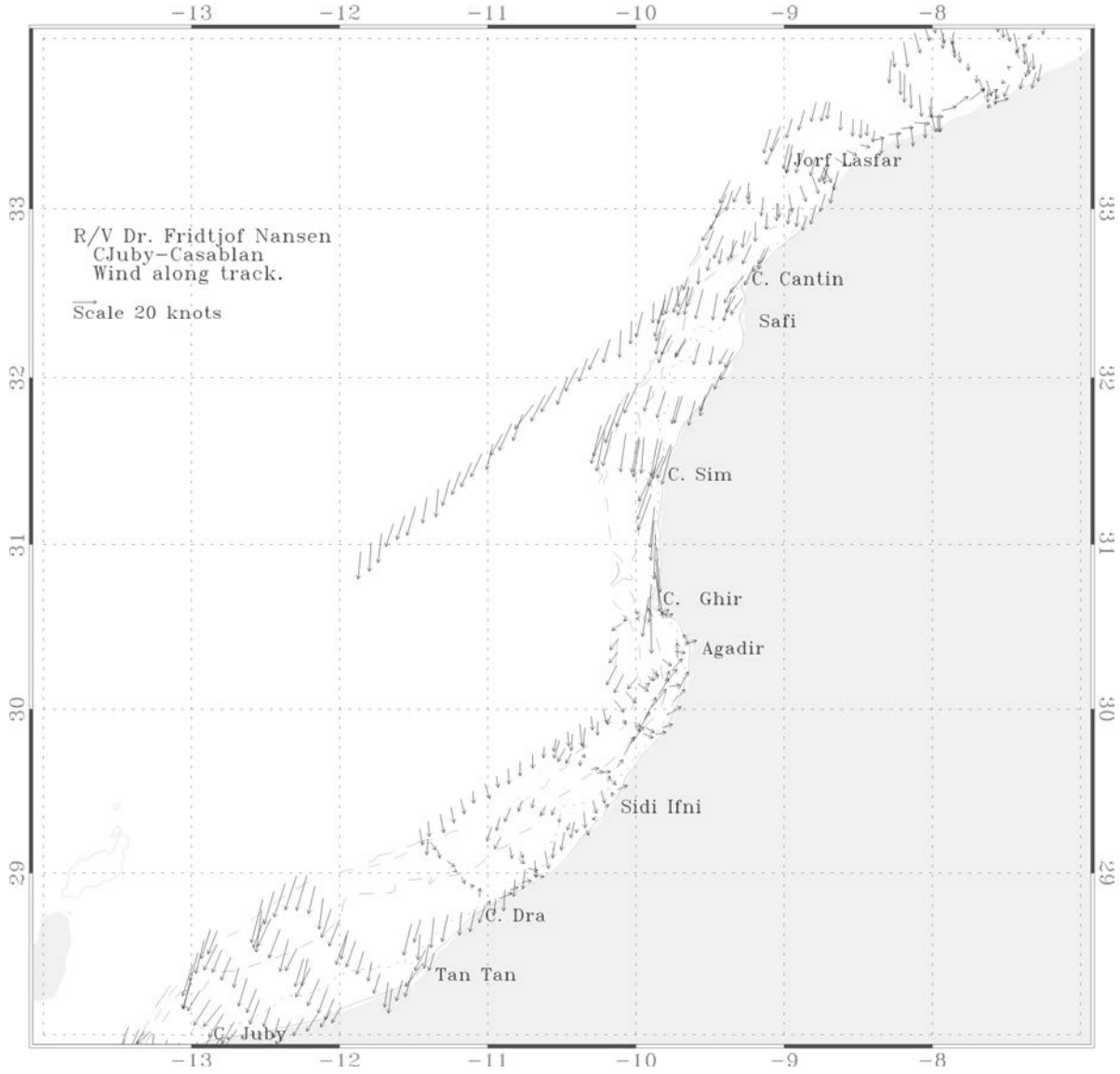


Figure 3.4. Wind vectors (arrows indicate strength and direction) during the survey period from Cap Juby – Casablanca.

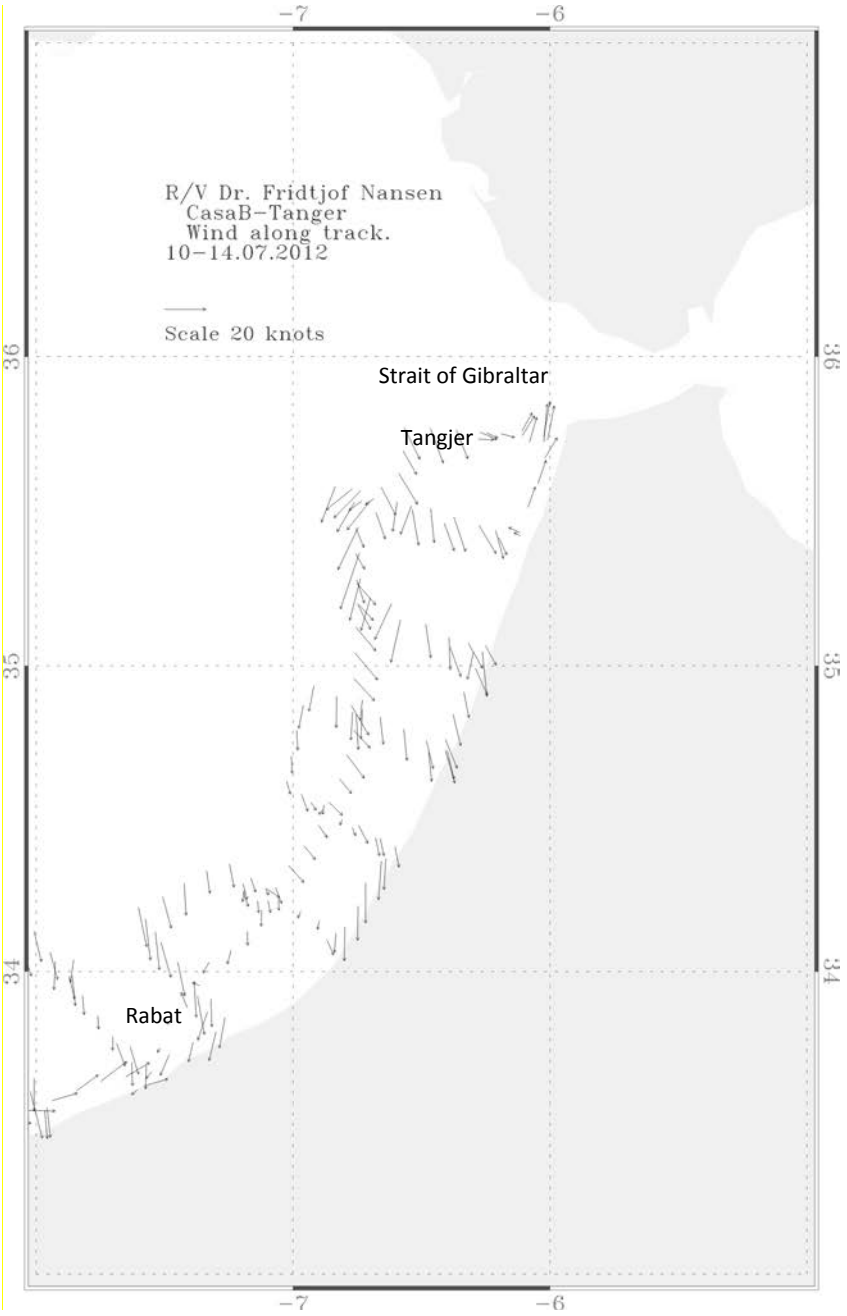


Figure 3.5. Wind vectors (arrows indicate strength and direction) during the survey period from Casablance to Tanger.

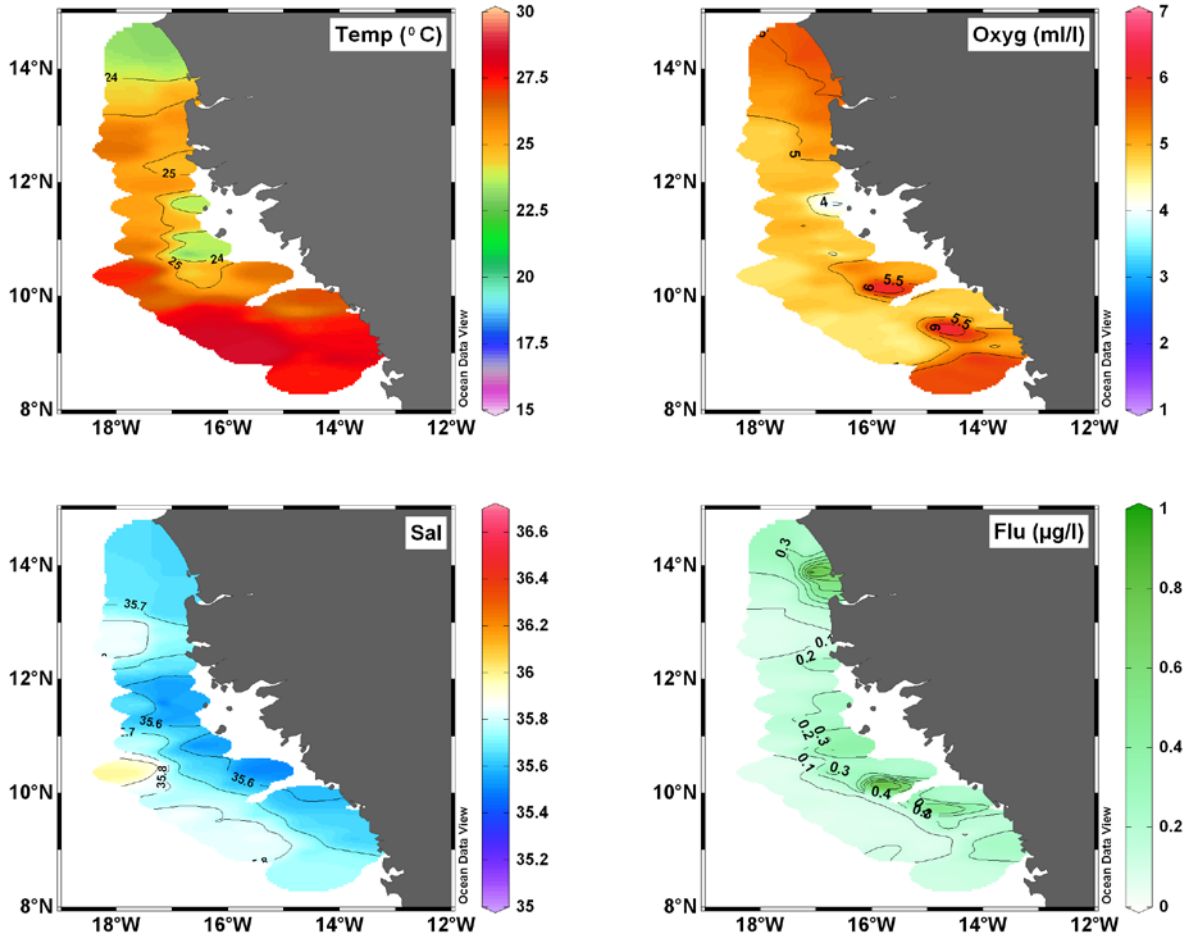


Figure 3.6: Sea Surface isolines of Temperature (SST), Sea Surface Salinity (SSS) (thermosalinograph data) oxygen and Sea Surface Fluorescence (SSF) (CTD data at 5m depth), and between Conacry and Cap Vert.

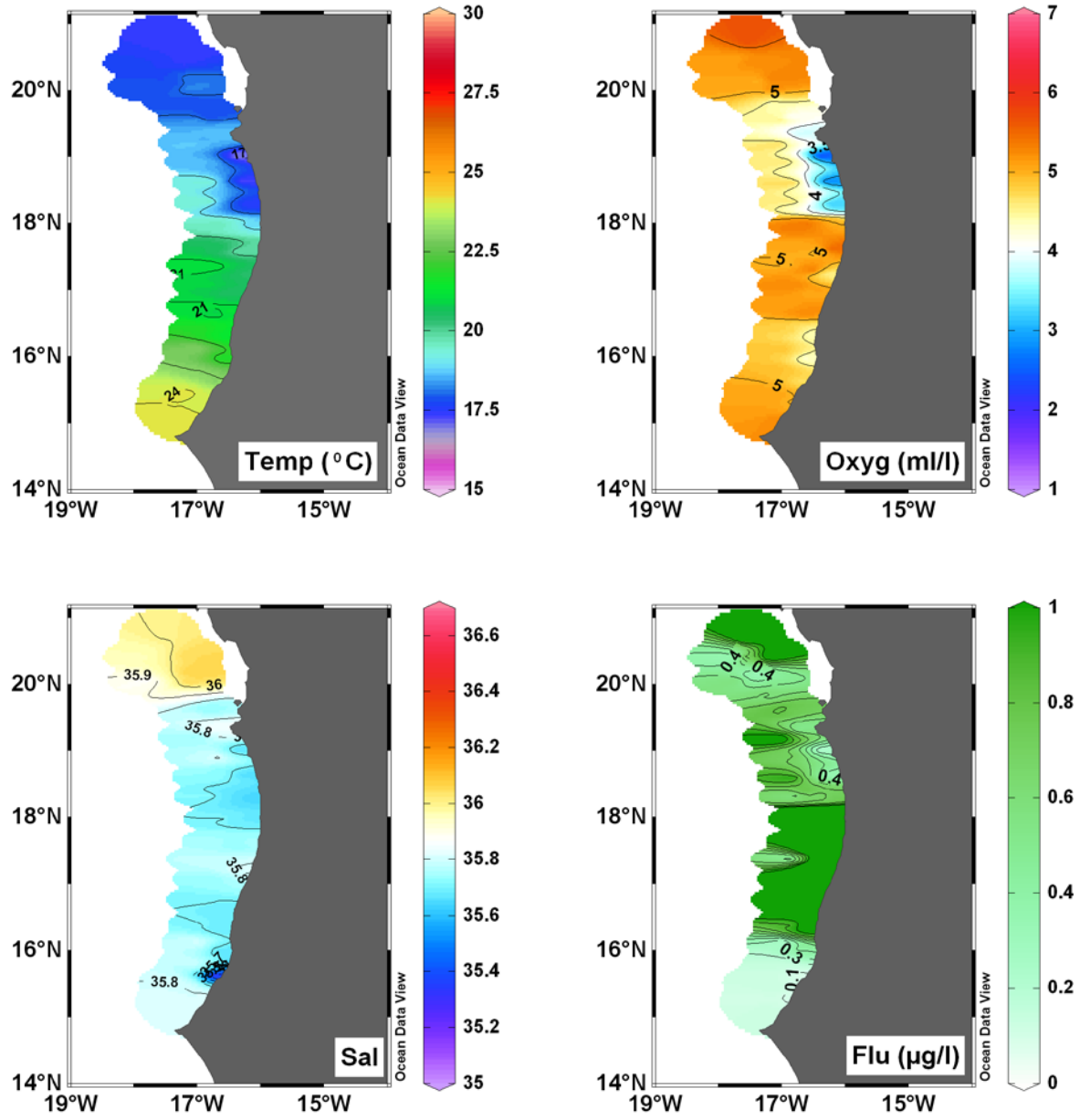


Figure 3.7. Sea Surface isolines of Temperature (SST), Sea Surface Salinity (SSS) (thermosalinograph data) oxygen and Sea Surface Fluorescence (SSF) (CTD data at 5m depth), and between Cap Vert and Cap Blanc.

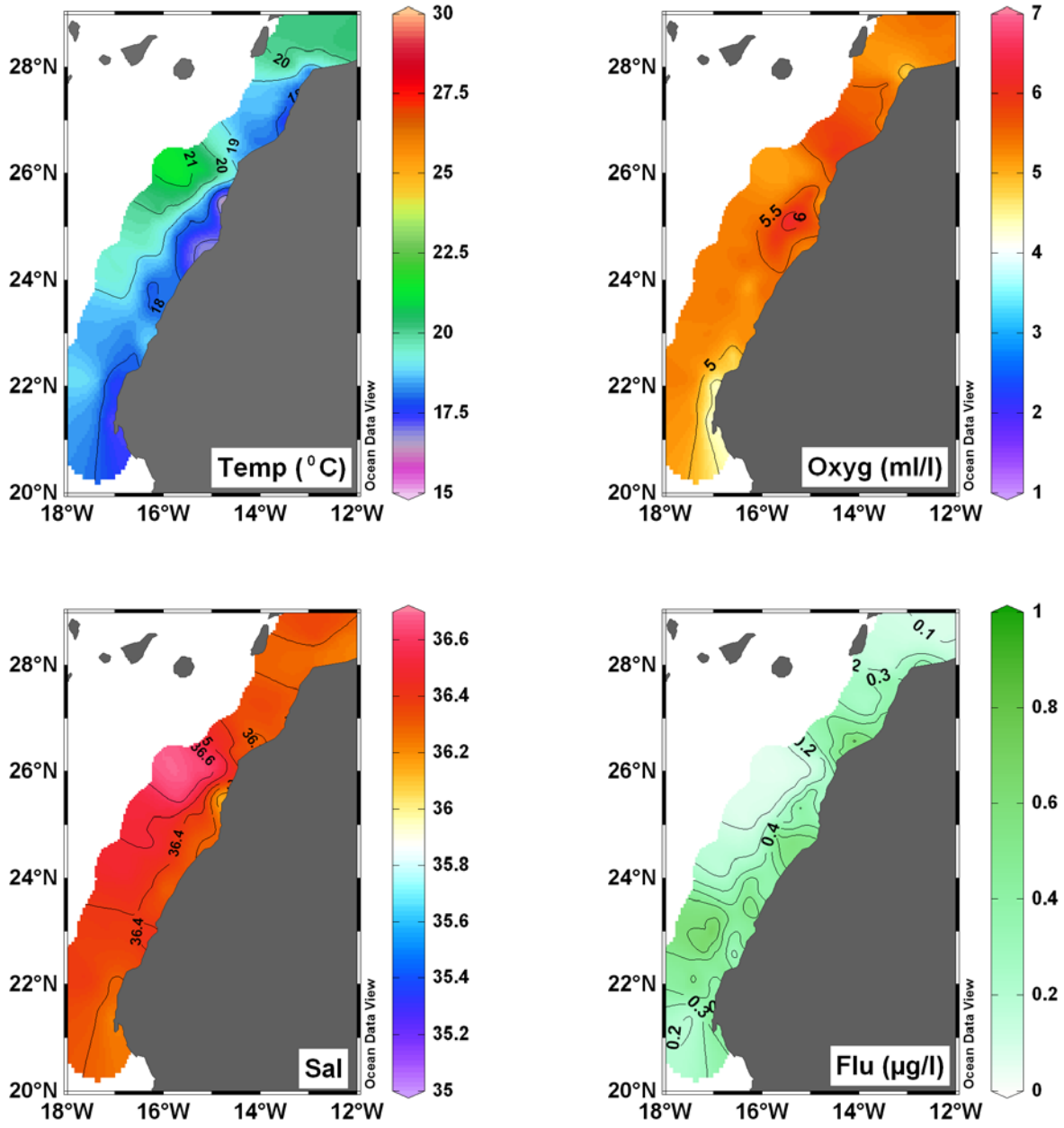


Figure 3.8. Sea Surface isolines of Temperature (SST), Sea Surface Salinity (SSS) (thermosalinograph data) oxygen and Sea Surface Fluorescence (SSF) (CTD data at 5m depth), and between Cap Blanc and Cap Juby.

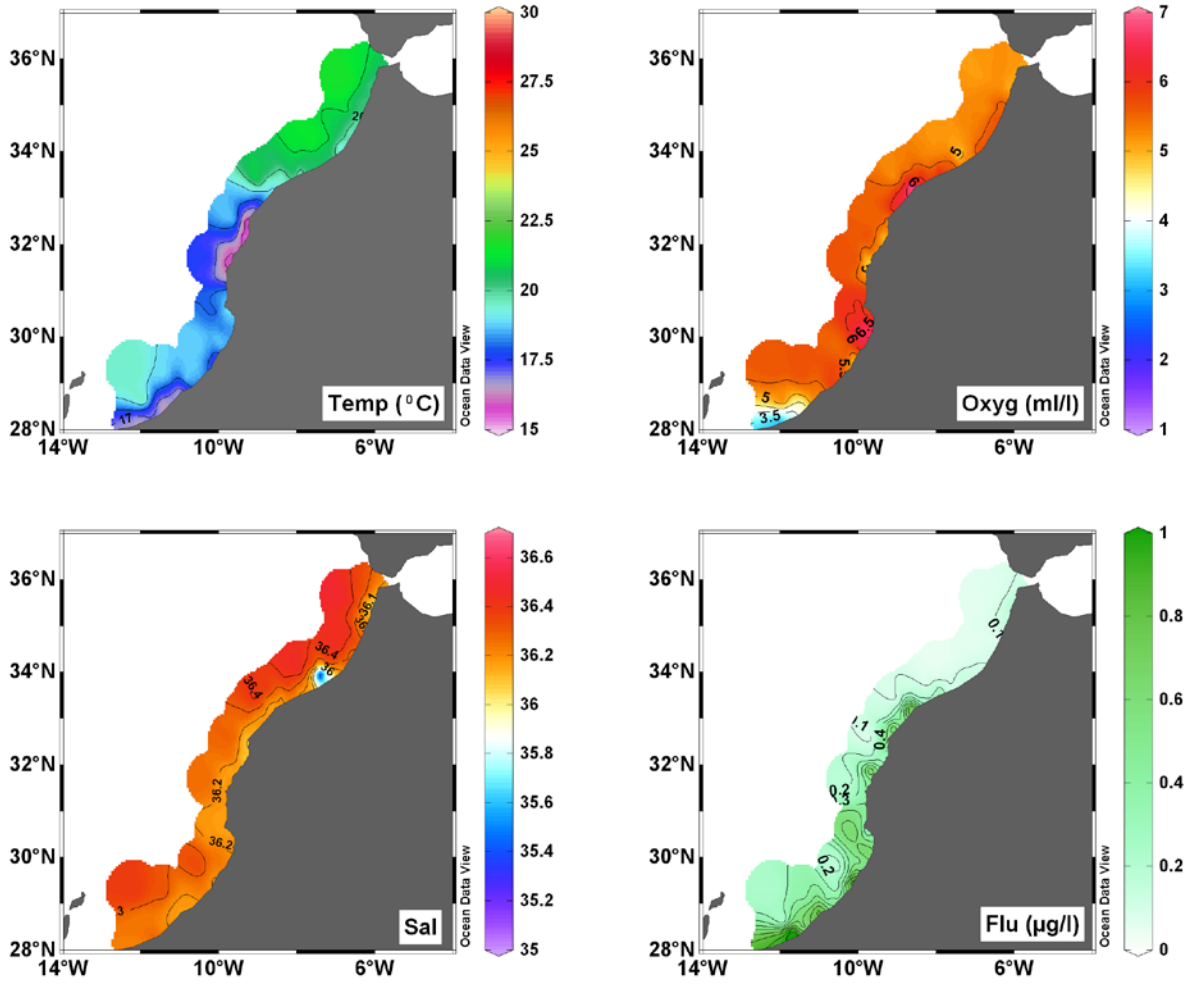


Figure 3.9. Sea Surface isolines of Temperature (SST), Sea Surface Salinity (SSS) (thermosalinograph data) oxygen and Sea Surface Fluorescence (SSF) (CTD data at 5m depth), and between Cap Juby and Tanger.

3.2. Cross shelf hydrographic profiles

Cross shelf CTD profiles were made for all environmental transects. Stations were taken at predefined depths with a maximum depth of 1000 m. All casts were made to a few meters off the bottom. Figure 3.10 shows the distribution of temperature, salinity, oxygen and fluorescence from the "ecosystem" transects down to 500 m depth.

Conakry - Cap Vert

Transects 1 to 5 shows the hydrographic profiles in Guinea to Guinea Bissau while transects 6-8 represent the area between Casamance-Cap Vert. The shelf in Guinea is long and shallow, with a steep break. As one progresses northwards transects becomes shorter and the shelf break slightly deeper. The temperature was stratified on the shelf, with warm surface waters, >27°C in the south, and a relatively strong thermocline at about 10 m depth, moving deeper to 25 m depth in deeper waters. Water masses were well mixed shallower than this depth. Further north surface temperatures gradually became cooler, with a stronger separation between surface water masses on the shelf (>22°C) and further offshore (>20°C). Temperatures decreased gradually to <9°C at 500 m depth and < 5.5°C at 1000 m. Salinity in the surface was around 35.7 in the south, decreasing slightly northwards, and especially off The Gambia (35.6). A local salinity minimum coincided with the near-surface thermocline. Deeper, there was typically a gradual decrease in salinity reaching levels of 34.8 at 500 m depth in the south, but with increasing (>35) salinity northwards. The oxygen content on

the shelf was relatively high in the uppermost 30-40 m, below which an abrupt decline is seen. Off the shelf break the oxygen minimum is observed around 350-400 m depth with values <1 ml/l. The fluorescence plots generally show a peak in the upper 30-40 m depth offshore, just below the thermocline. Inshore water masses are more mixed and clear peaks are sometimes difficult to detect. The production is considerably higher inshore on the shelf than offshore, and increasing as one progress northwards, especially between The Gambia and Dakar. However, the production in the region is low compared with further north.

Cap Vert- Cap Blanc

Environmental transects 9 – 15 represent the surveyed areas in the Senegalese and Mauritanian waters between Cap Vert and Cap Blanc. The surface temperature on transects 9 to 11 ranged between 20-22°C from offshore waters to coastal waters, with a thermocline between about 20 and 35 m. The coastal surface water on transect 12 was colder than for the previous transects (16 – 18°C),but displayed warmer water (20°C) further offshore. The surface water during lines 13-16 was 16-17°C and the deepest thermocline found in transect line 16 at 175m. Temperatures < 11°C was found at depths below 400m except at line 10 were this was found at 350m depth.

Less saline water was found in the deep water, especially below approximately 400 m depth. The highest salinity levels were found in entire water column covering the shelf of transect line 14 and along the entire line 15 to about 200 m depth in the offshelf area. The oxygen levels were highest in the surface waters reaching deepest (75m) at the shelf in line 9. In transect lines 10, 11, 12, 13, 15 and 16, the highest concentrations were found in the upper 50-100m off shore. In line 14 the oxygen consentration was high during the entire transect. The fluorescence values was low (0-0.25 µm/l) along line 9 diplaying highest consentrations close to shore. The same pattern was found for the lines 10-12 only with higher concentrations closer to shore 0.75-1-75µm/l). At line 13 and 14 the highest primary production generally took place in the upper 50m above the shelf break and more off shore. As for line 15 the main primary production was concentrated in the entire water column above the shelf towards the shore.

Cap Blanc – Cap Juby

Environmental transects 16 – 23 represent the area between Cap Blanc and Cap Juby. The temperature below 400 m depth was ~ 11°C for all transects. The surface temperatures are similar for the transects, with values around 19°C west of the coastal ridge and with somewhat cooler surface temperatures closer to shore (˜17-18°C) for the lines 19-21. The fresher waters were allocated to the deeper layers and the highest salinity concentrations were found in the upper 200m, decreasing closer to shore in lines 20-23. Water with low oxygen levels occurred in deep waters and on the shelf in line 16. In lines 17-23 the oxygen levels were high along the transects in the upper 50m and low in deep waters below shelf edge. The fluorescence levels suggested that the main primary production occurred in the upper 50m of the water column for all lines. In line 16 the highest concentrations were patchily distributed over the shelf edge and shelf while for line 17 the highest consentration was above the shelf edge and for lines 18-23 above the shelf.

Cap Juby – Casablanca

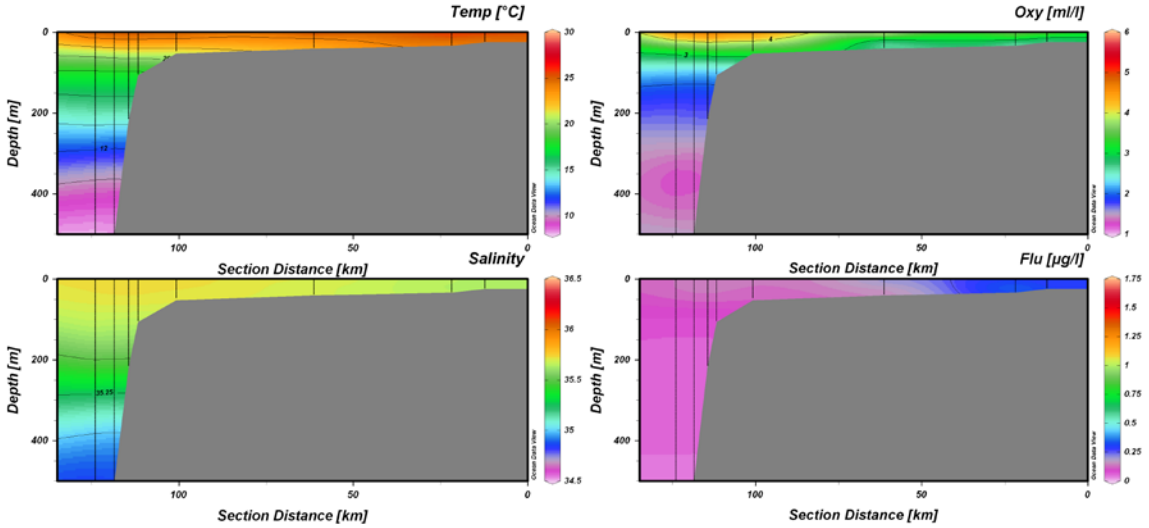
Environmental transects 24 – 31 represent the area between Cap Juby and Casablanca. The deep cold water (<13°C) was located below 350 m on all transects except line 24 with a maximum bottom depth of 200m. The surface water was similar for all transects in this region with temperatures of ~17-21°C, and slightly decreasing from offshore waters towards the coast. The less saline deep water occurred below the shelf edge for transects 24 and 31 and was more mixed into the water above the shelf-edge closer to shore in transects 25 - 31. Water with rather low oxygen levels was found close to shore in lines 24, 25, 26, 27 and 30. The fluorescence levels were highest in the upper parts of water column above the shelf clos to shore**.**

Casablanca - Tanger

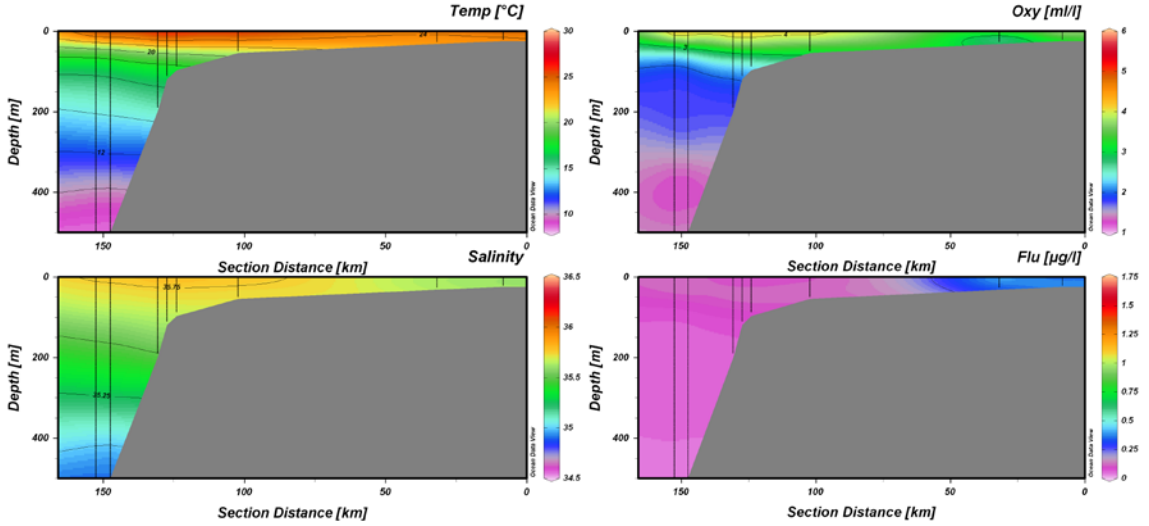
Environmental transects 32 – 33 represent the area between Casablanca and Tanger. The warmest water was found offshore and dropped towards the coast (from 20-21 to 17-18°). The thermocline was found at approximately 30-40 m depth. Cold bottom water (<13°C) was located below 200 m.

For transect 17, less saline water was found offshore and over the shelf into the coast. The main primary production occurred over the shelf close to shore and also here the water with low oxygen saturation was found over the shelf all the way towards the coast.

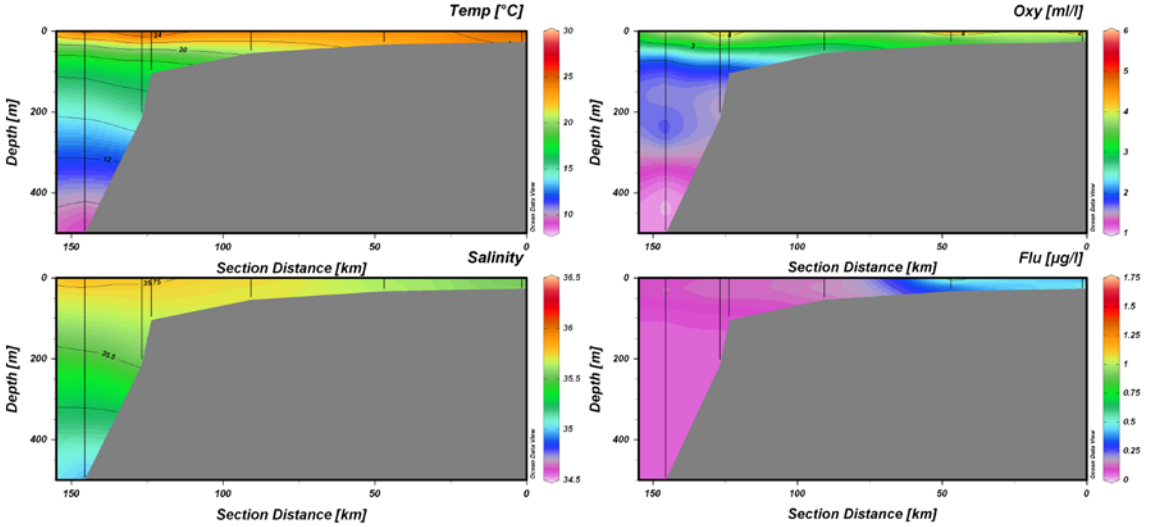
Conakry – Cap Vert Line 1



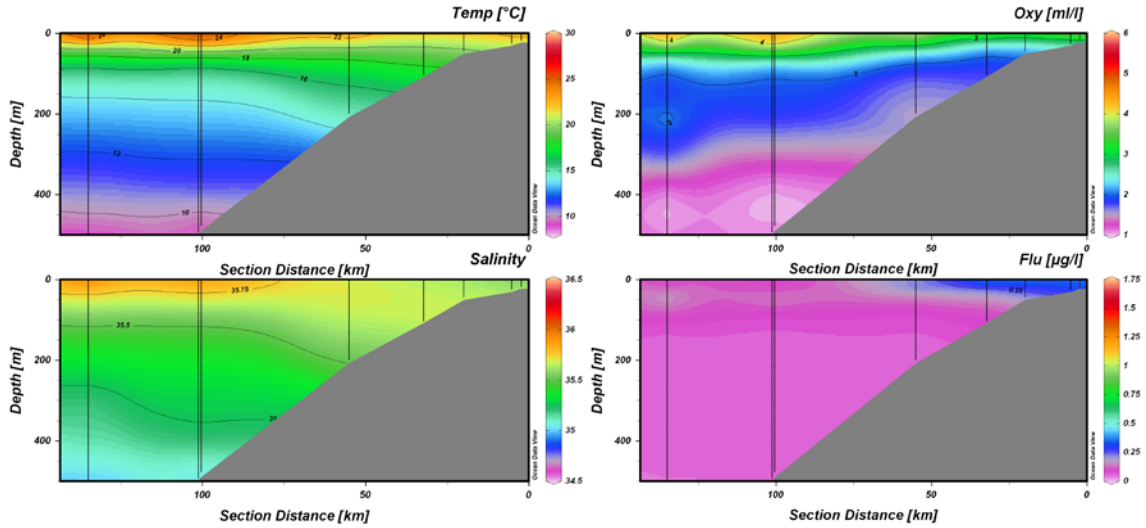
Conakry – Cap Vert Line 2



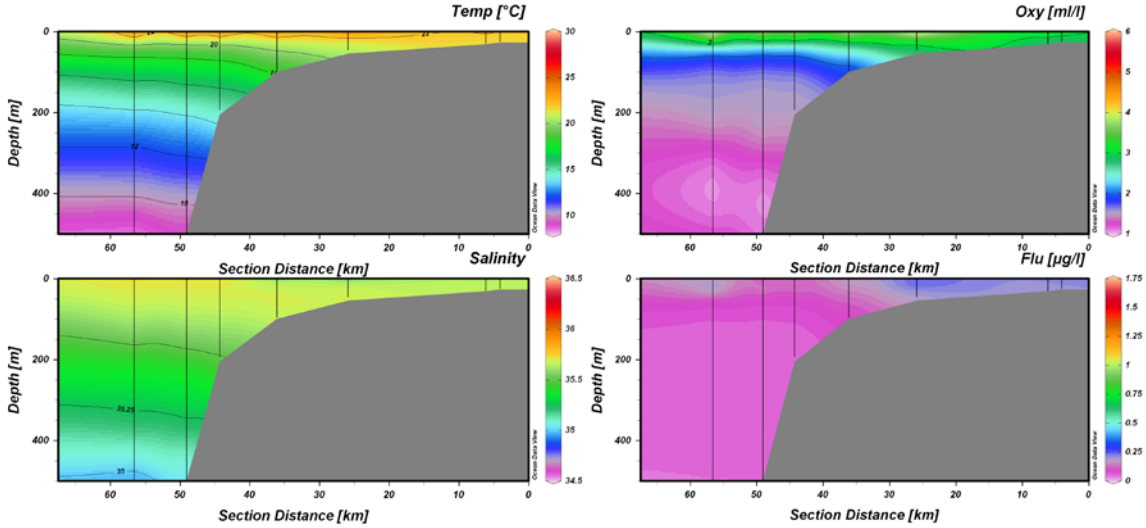
Conakry – Cap Vert Line 3



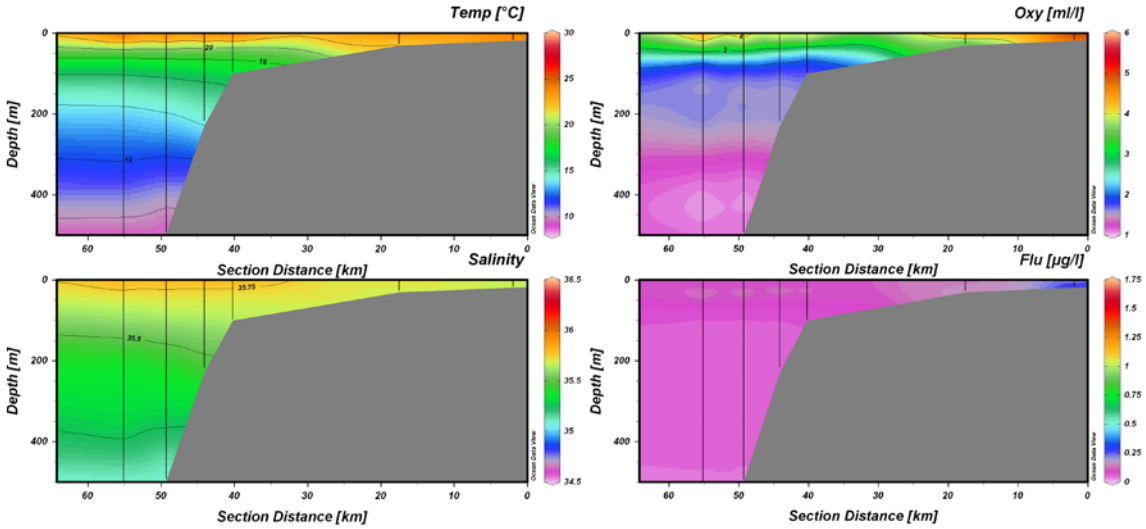
Conakry – Cap Vert Line 4



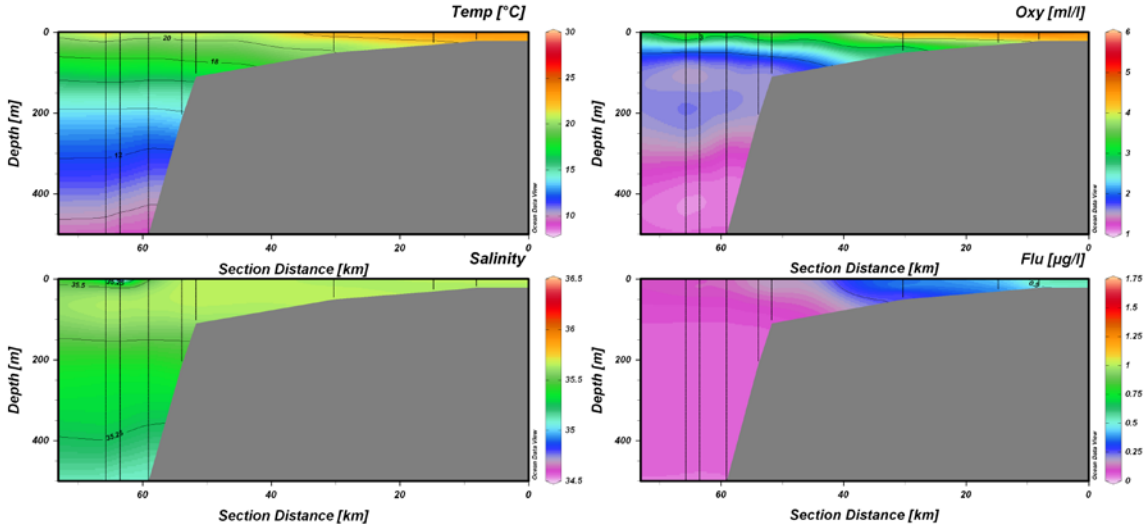
Conakry – Cap Vert Line 5



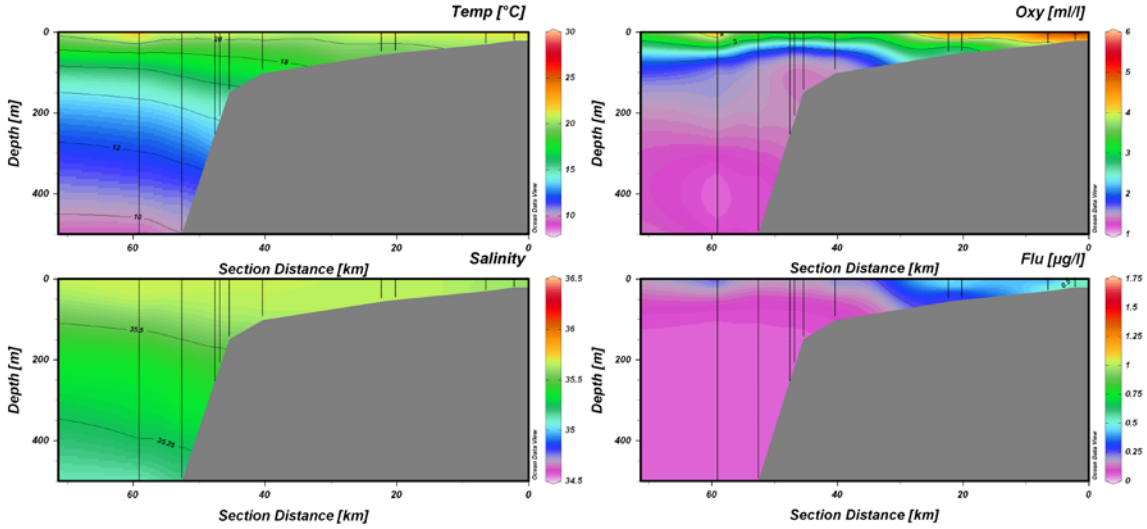
Conakry – Cap Vert Line 6



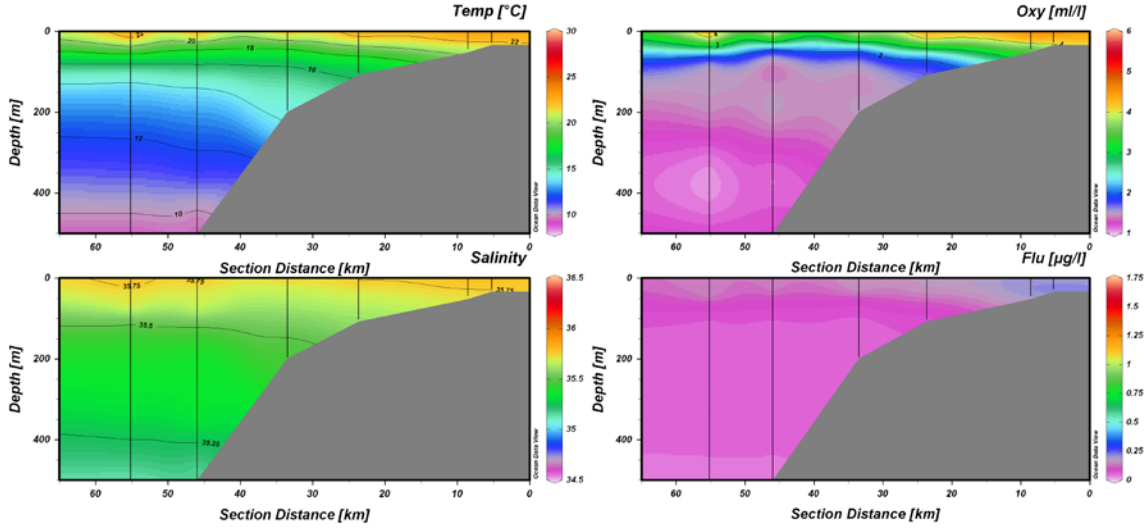
Conakry – Cap Vert Line 7



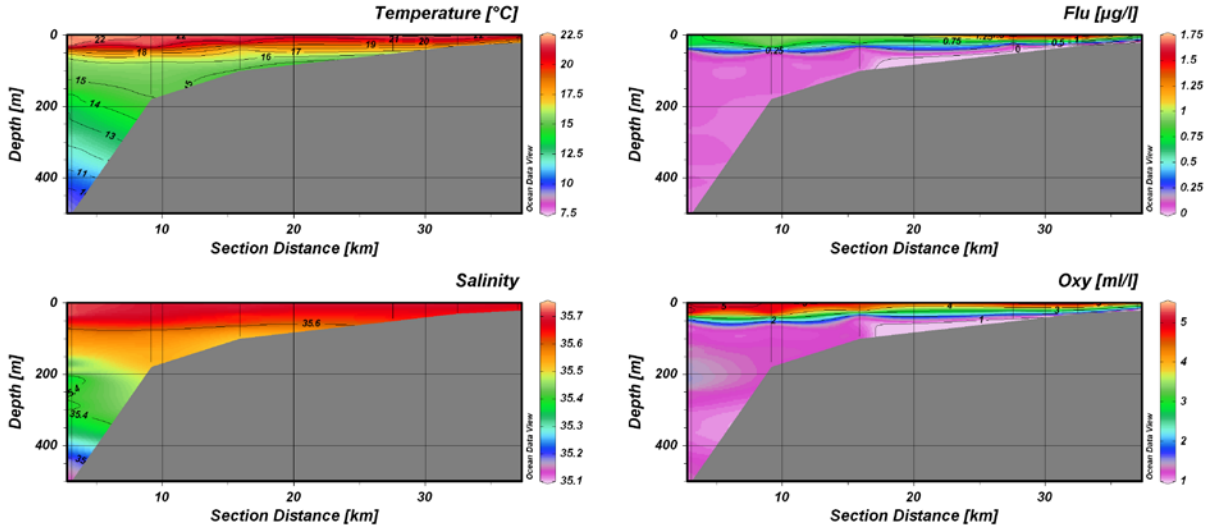
Conakry – Cap Vert Line 8



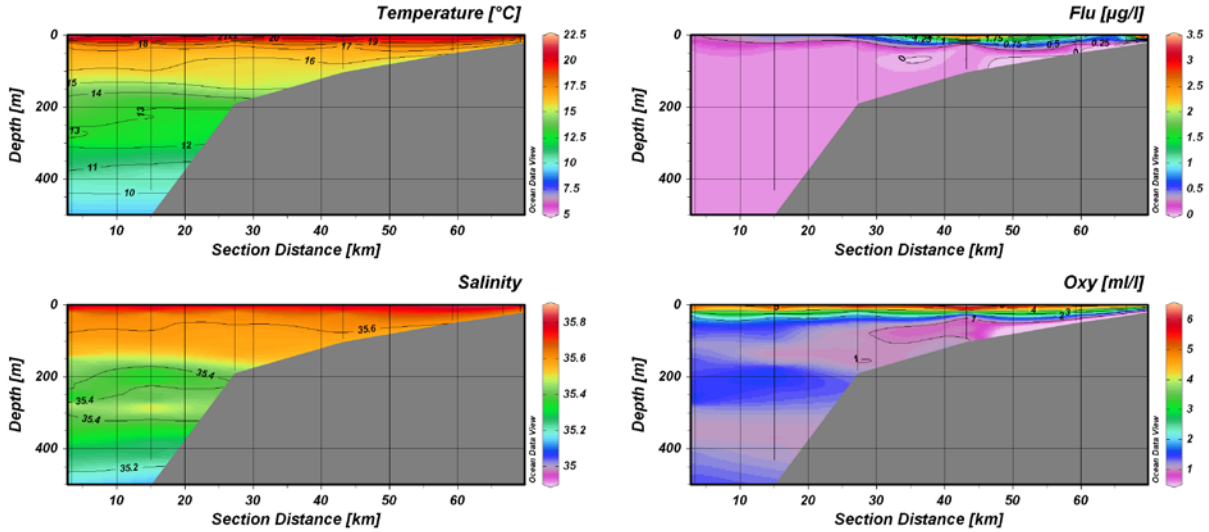
Cap Vert – Cap Blanc Line 9



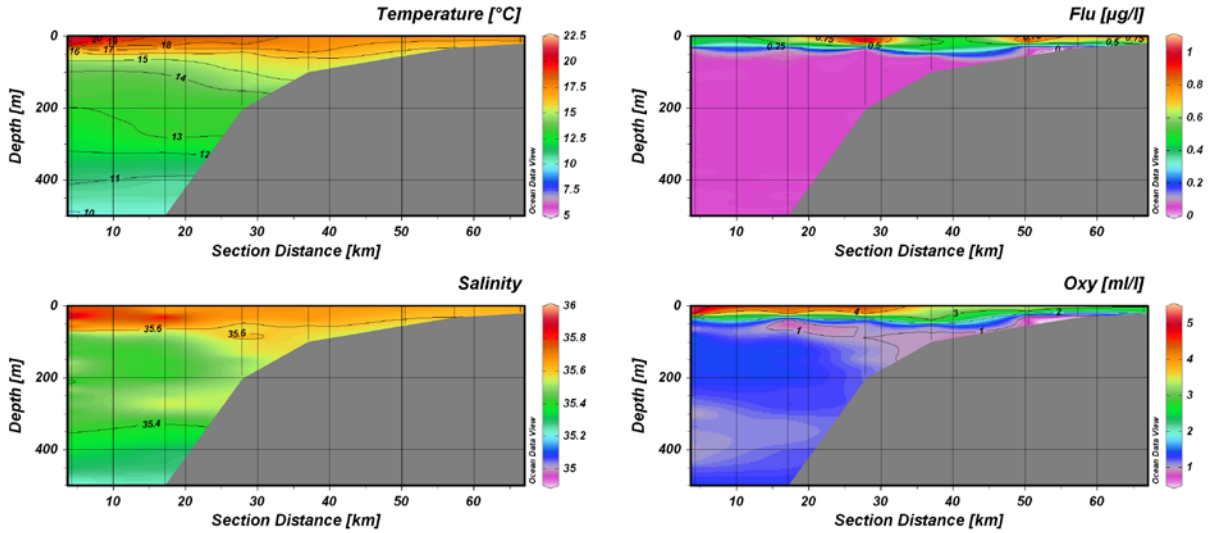
Cap Vert – Cap Blanc Line 10



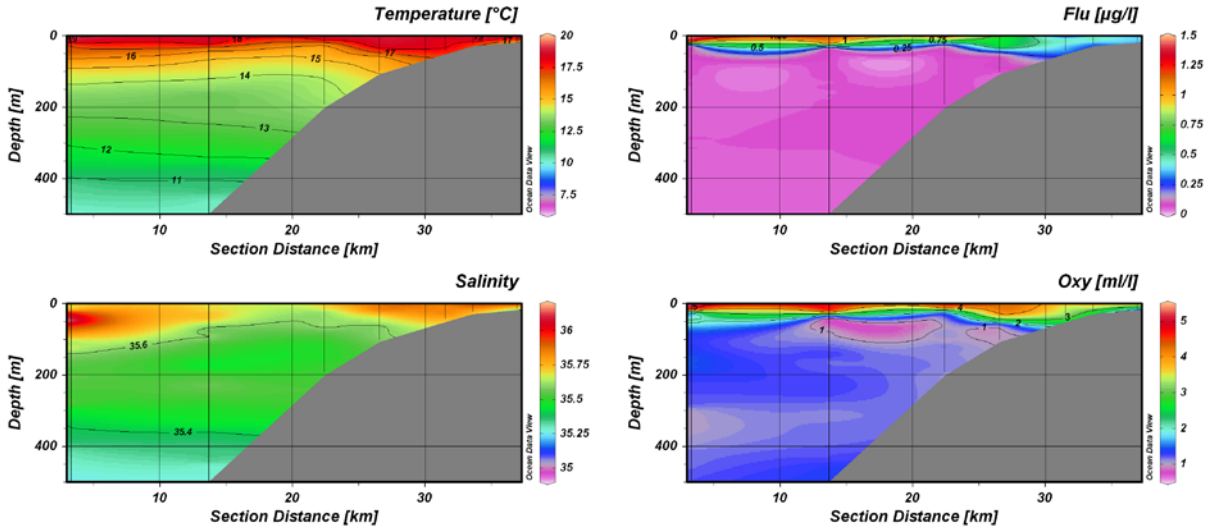
Cap Vert – Cap Blanc Line 11



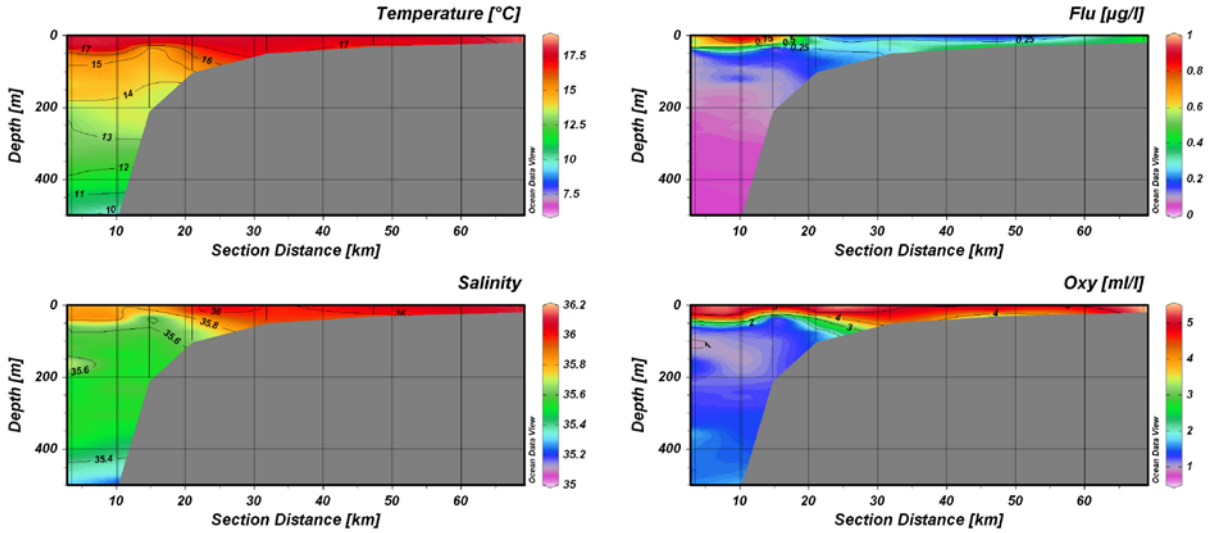
Cap Vert – Cap Blanc Line 12



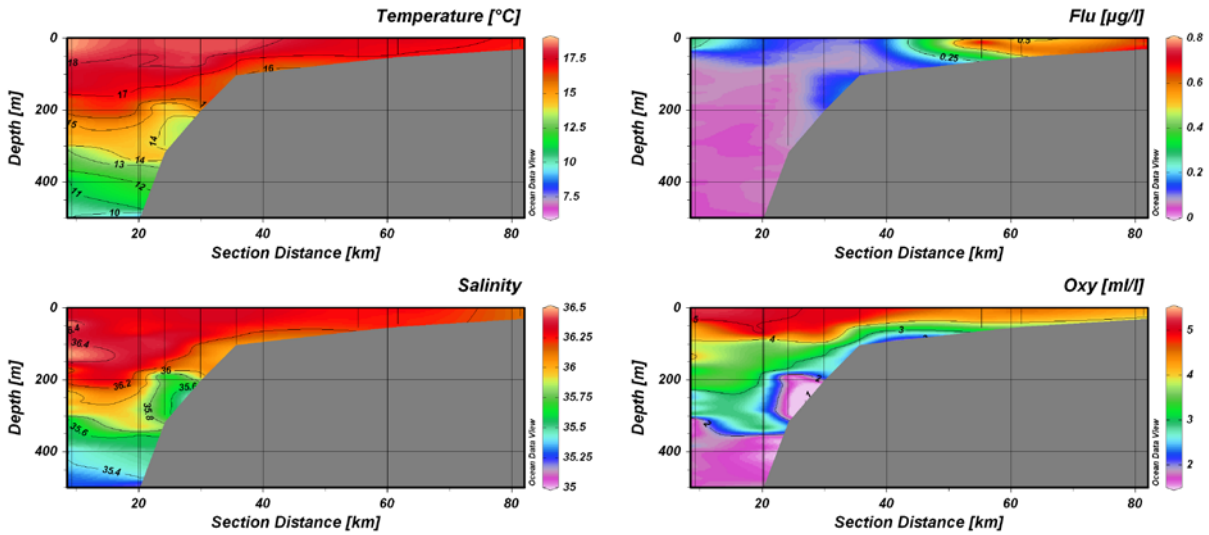
Cap Vert – Cap Blanc Line 13



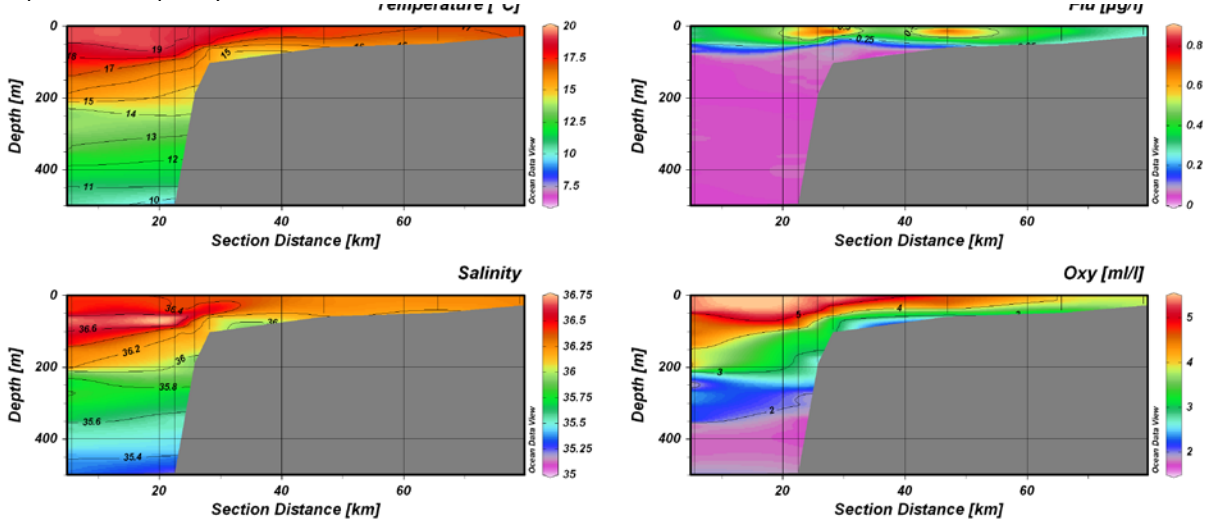
Cap Vert – Cap Blanc Line 14



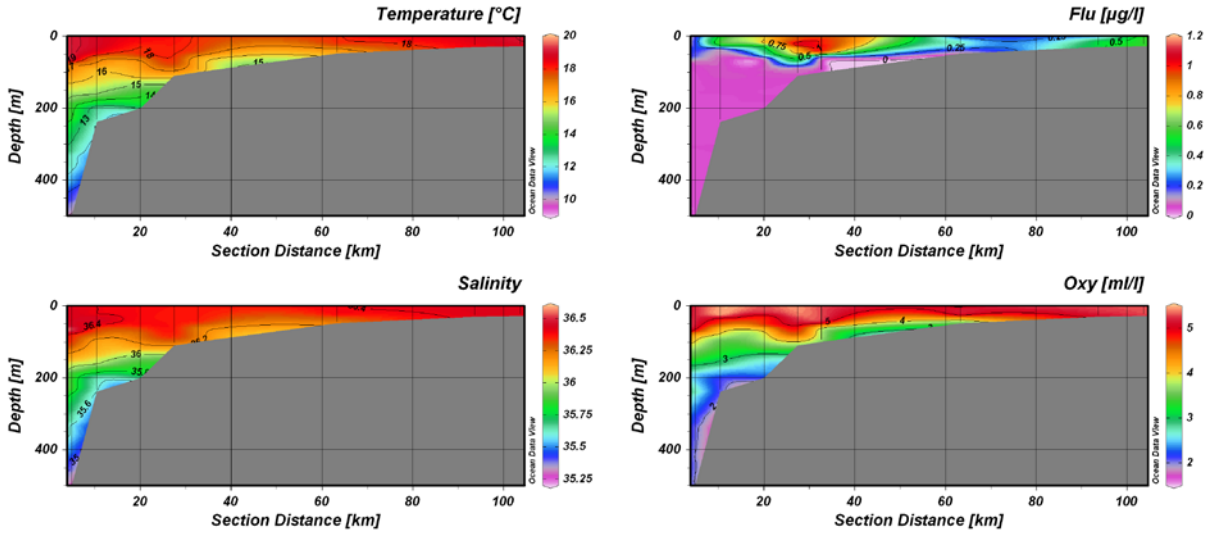
Cap Vert – Cap Blanc Line 15



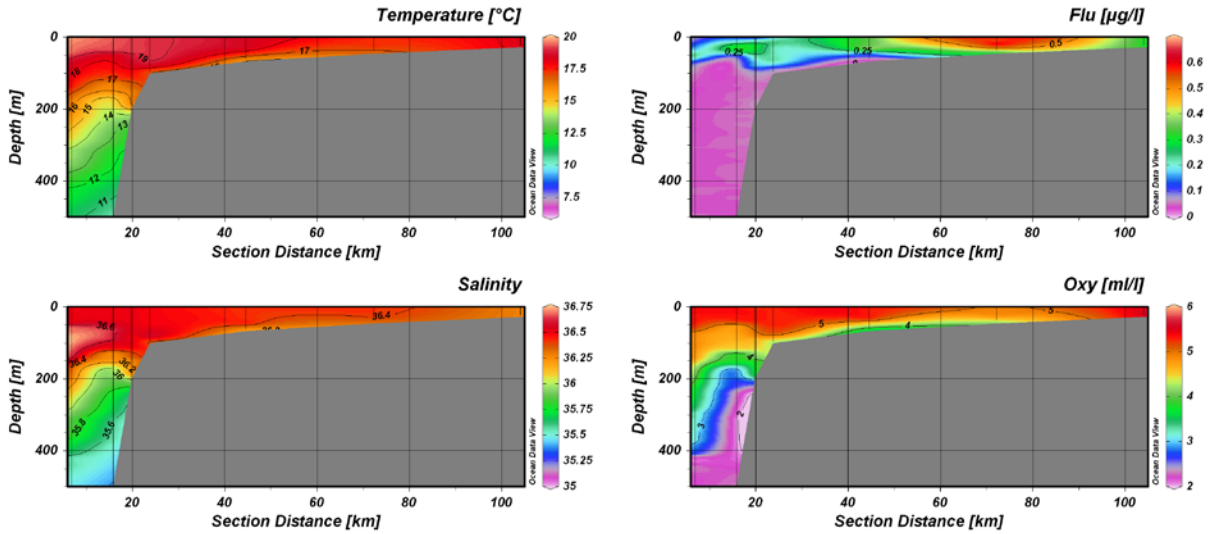
Cap Blanc – Cap Juby Line 16



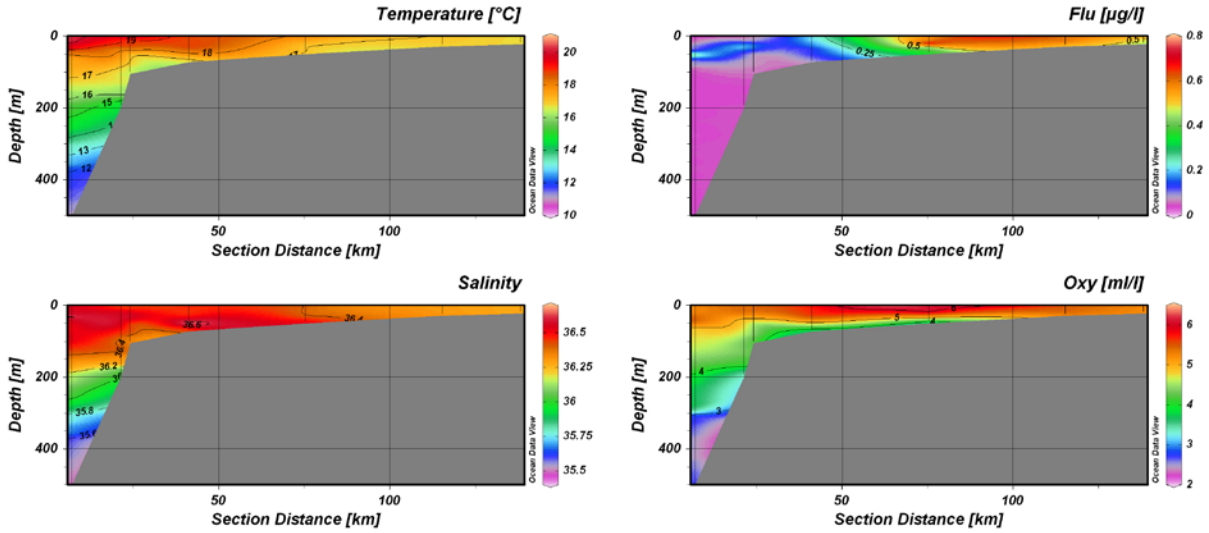
Cap Blanc – Cap Juby Line 17



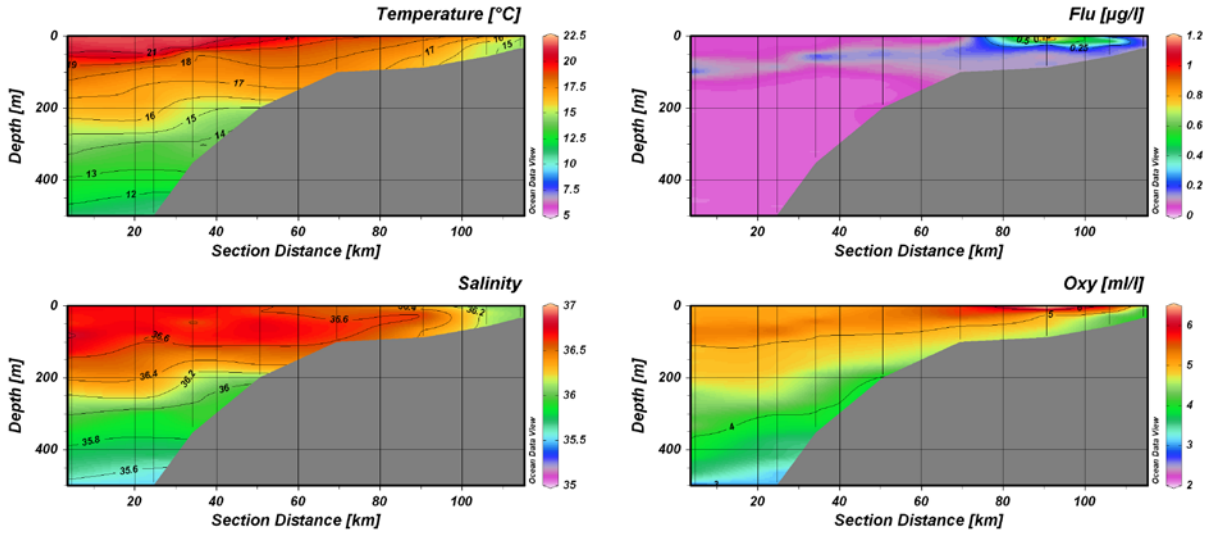
Cap Blanc – Cap Juby Line 18



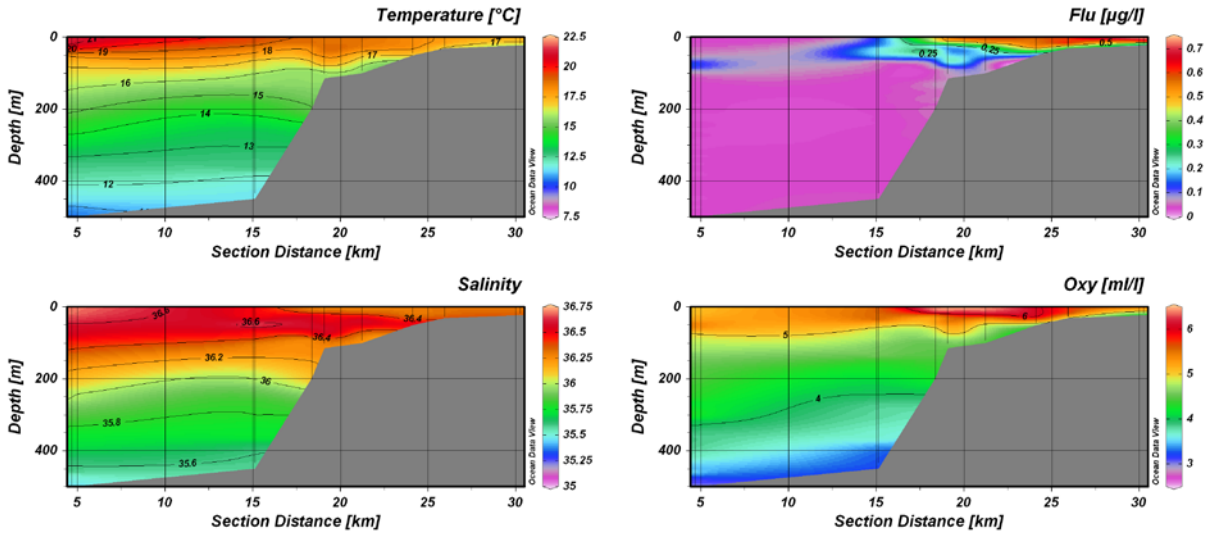
Cap Blanc – Cap Juby Line 19



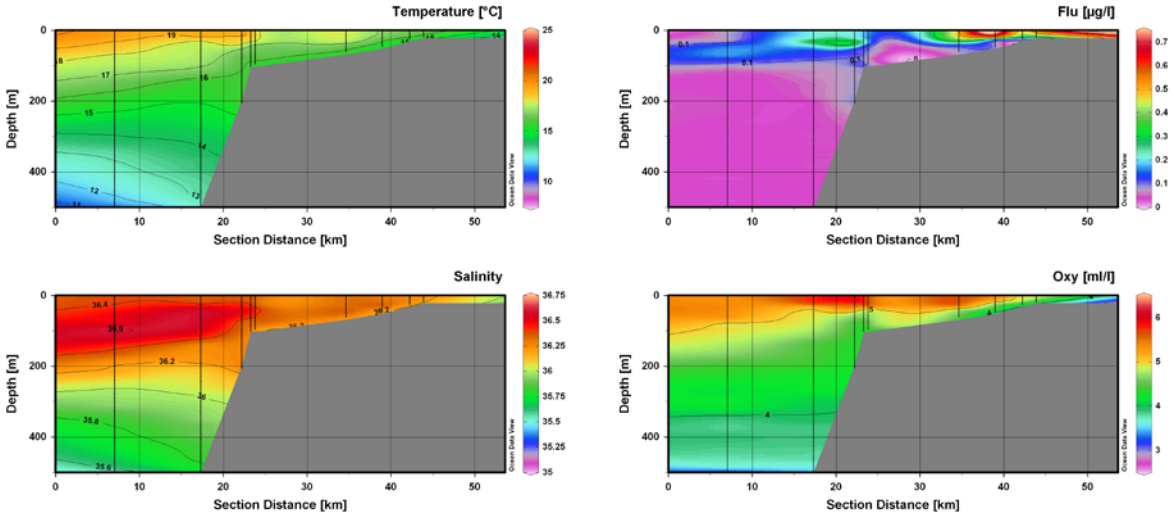
Cap Blanc – Cap Juby Line 20



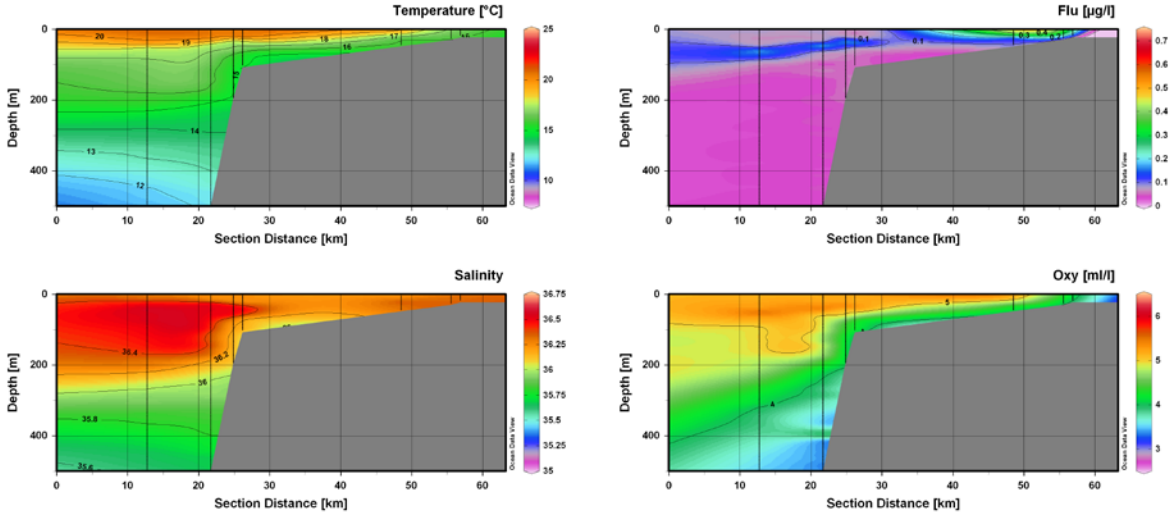
Cap Blanc – Cap Juby Line 21



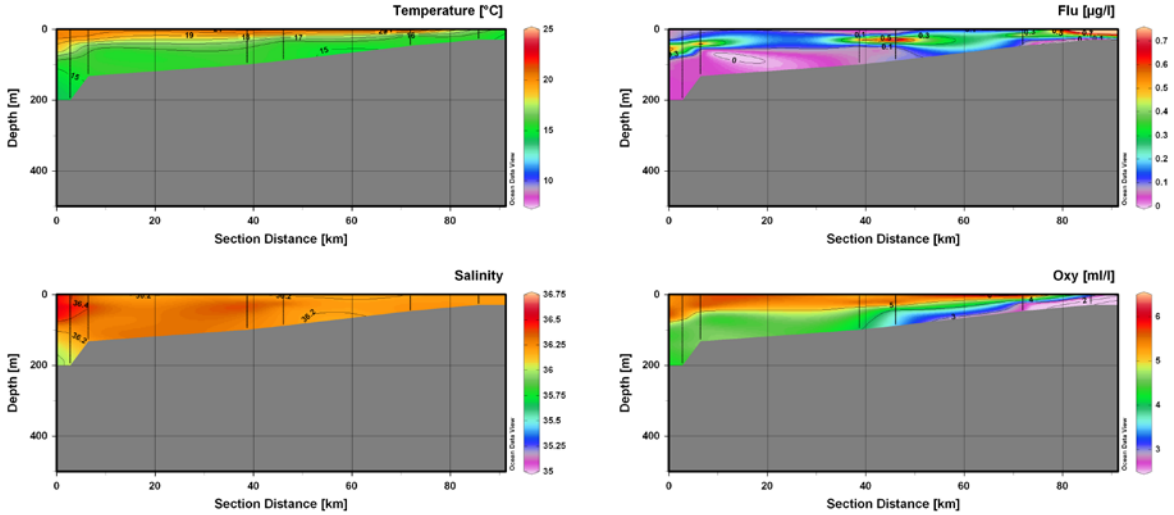
Cap Blanc – Cap Juby Line 22



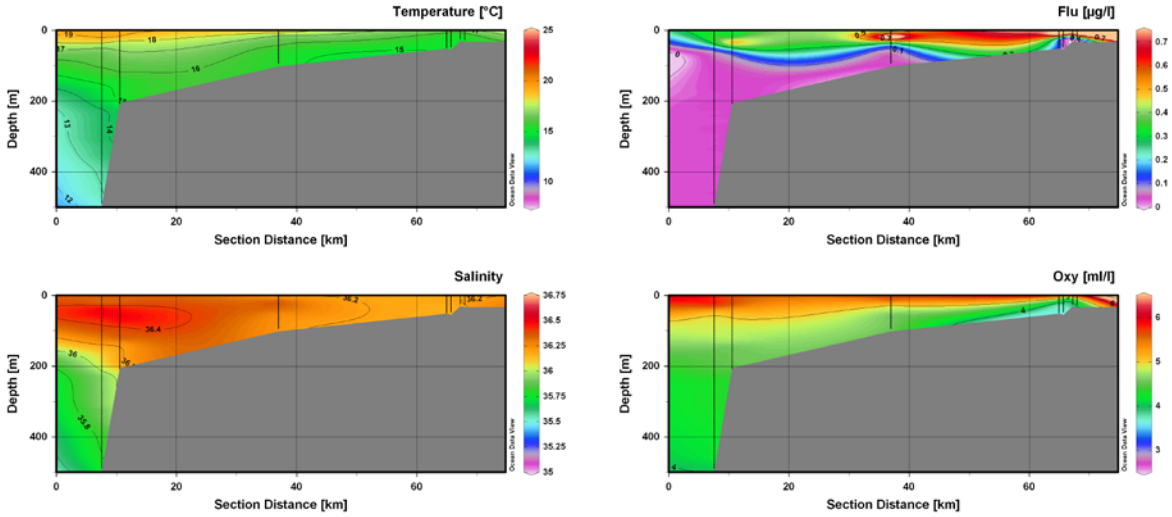
Cap Blanc – Cap Juby Line 23



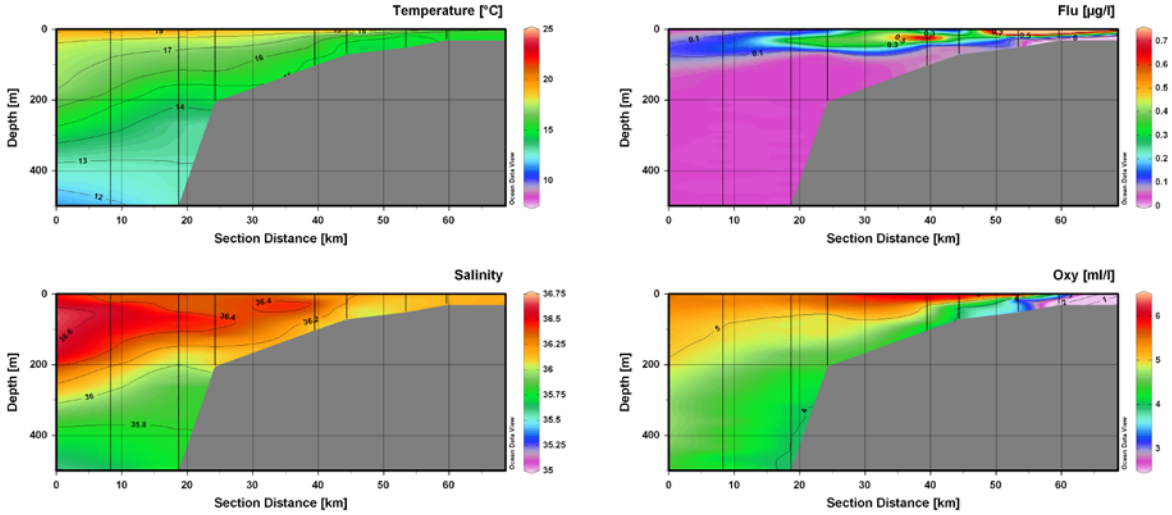
Cap Juby – Casablanca Line 24



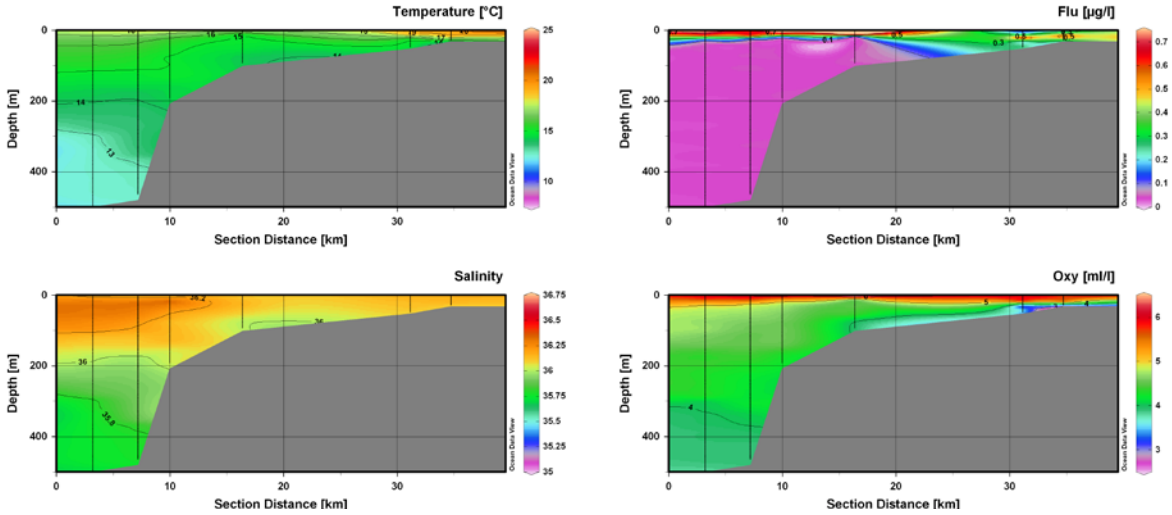
Cap Juby – Casablanca Line 25



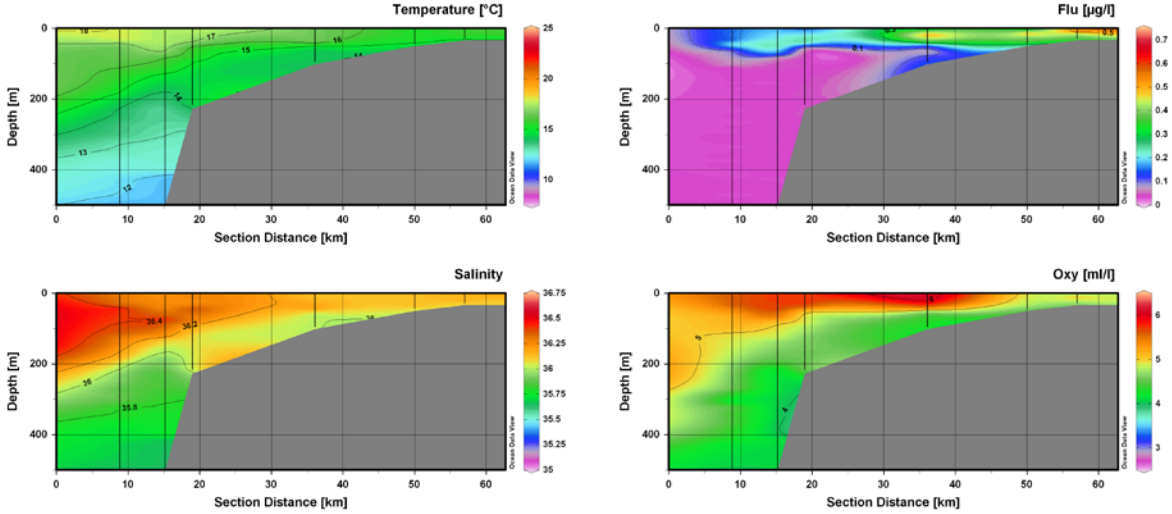
Cap Juby – Casablanca Line 26



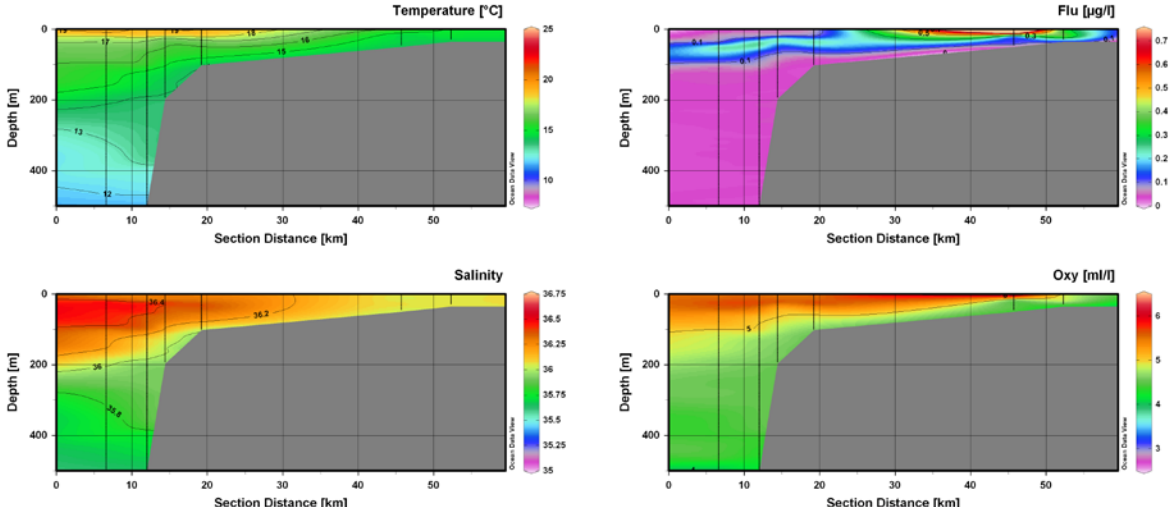
Cap Juby – Casablanca Line 27



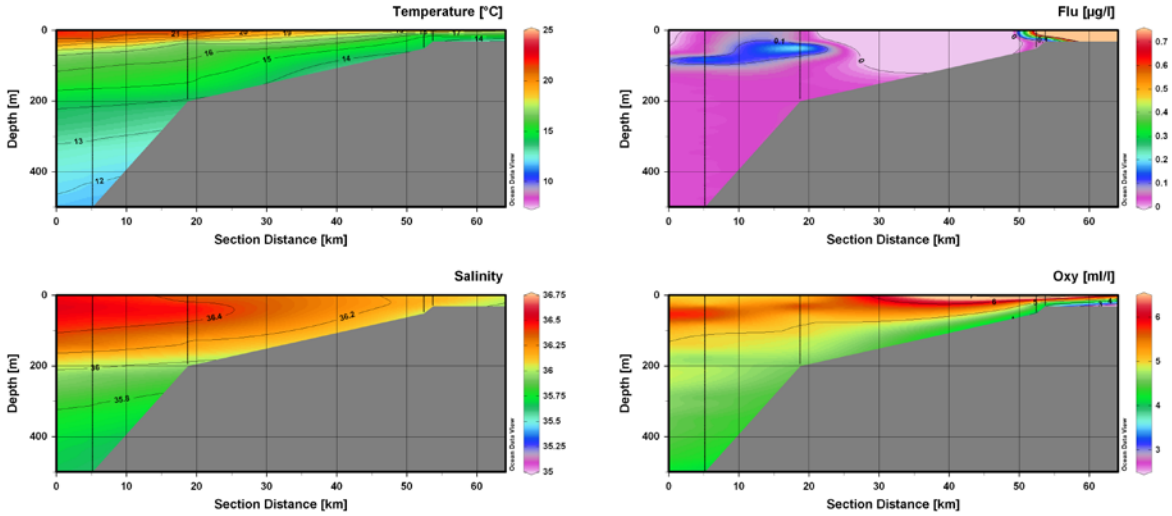
Cap Juby – Casablanca Line 28



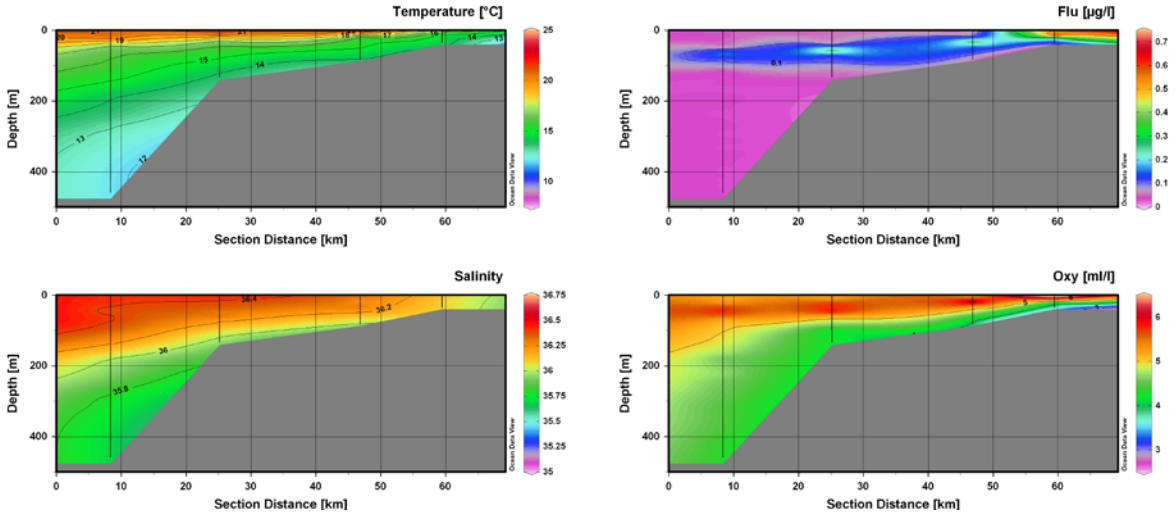
Cap Juby – Casablanca Line 29



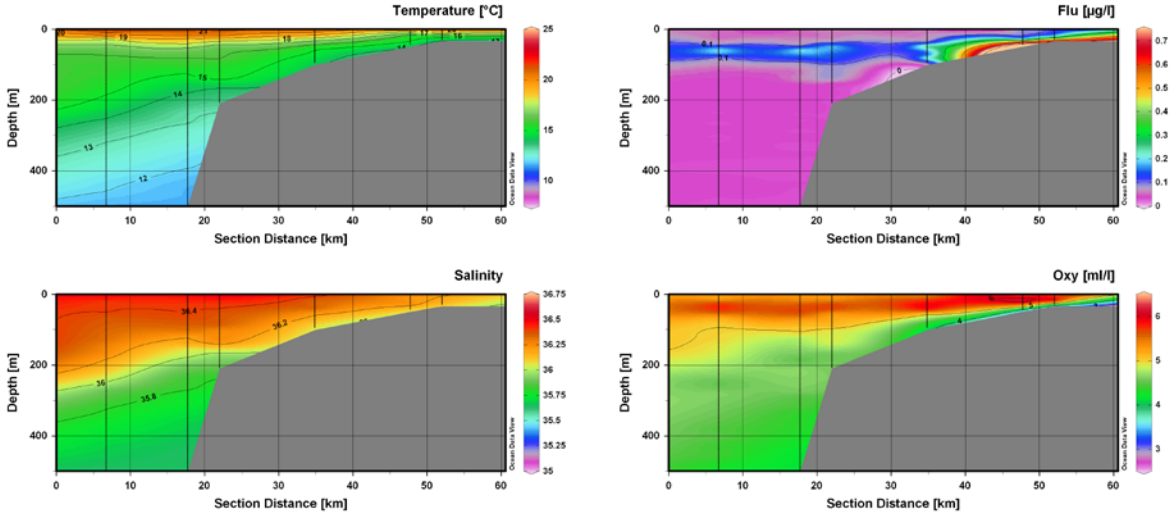
Cap Juby – Casablanca Line 30



Cap Juby – Casablanca Line 31



Casablanca – Tanger Line 32



Casablanca – Tanger Line 33

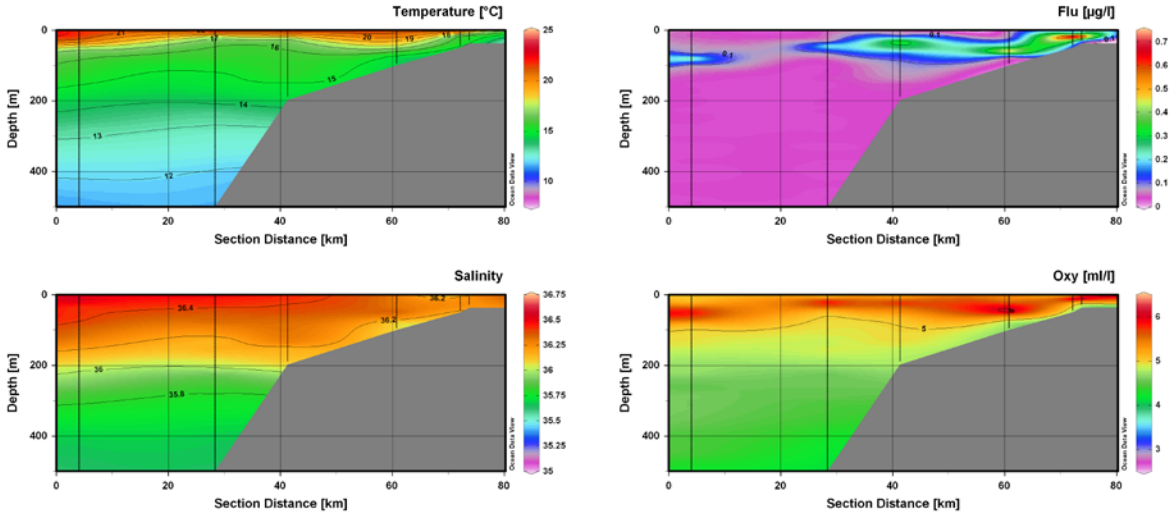


Figure 3.10. Cross shelf CTD profiles were made for all environmental lines executed during the CCLME survey

3.3. Status of analysis of nutrients and plankton data

Nutrient samples
Samples collected for analysis of nitrate, nitrite, phosphate and silicate, and preserved with chloroform will be analysed by the IMR (Institute of Marine Research), Norway, during spring 2012. A selection of frozen nutrient samples (no chloroform added) will also be analysed by the IMR for comparative analyses.

Phytoplankton samples
All chlorophyll samples, as well as phytoplankton samples (both qualitative net samples preserved with formalin and quantitative samples from water bottles preserved with lugol) are currently stored for taxonomic analysis at the INRH.

Zooplankton
All samples for size-fractioned zooplankton biomass will be analysed at the IMR. All formalin-preserved zooplankton samples from the Multinet and WP2 nets are kept for taxonomic analysis at the INRH. The qualitative electronic images from the zooplankton net samples are stored on hard disks at IMR.

4. ACOUSTIC ABUNDANCE AND DISTRIBUTION

The hydro acoustic survey covered the shelf and slope from roughly 20 m depth to 500 m bottom depth (1000 m depth on the ecosystem transects). Continuous acoustic recording and analysis were carried out throughout the survey to depths of 500 m. This survey, as the previous ecosystem survey in the same region between October – December 2011 was not a dedicated acoustic survey. Spacing between transects was 20 NM and very few pelagic trawls were made to verify acoustic targets. As a consequence there is a larger uncertainty around the distribution than during the previous acoustic biomass surveys with the Dr. Fridtjof Nansen in the region (until 2006), and it has been decided by the CCLME not to publish the biomass estimates as their accuracy is less than during the ordinary acoustic surveys. This is especially a problem for the sardinella and sardine species as these have very patchy high density distributions, and also because length samples are biased as they effectively avoid the bottom trawl mainly used during this survey.

The data are presented for five main regions 1. Conakry – Cap Vert, 2. Cap Vert-Cap Blanc
3. Cap Blanc – Cap Juby, 4. Cap Juby – Casablanca and 5. Casablanca – Tanger.

4.1. Conakry– Cap Vert

Acoustic distribution and abundance was estimated for three species groups on the shelf between Conakry and Cap Vert (Figure 4.1-4.2). These were Sardinella, horse mackerel and Pelagic 2.

Sardinella

Both *Sardinella aurita* and *S. maderensis* was found on the shelf between Conakry and Cap Vert. Most of the fish was found between 20 and 50 m depth in three low concentration areas between Casamance and Conacry. A few sardinellas were also found just south of Dakar. The distribution was generally between the inner extent of the survey coverage to about 50 m depth.

The length sample distribution indicates two defined cohorts for each of the species. *S. aurita* showed modal peaks at 9 and 15 cm while *S. maderensis* showed modal peaks at 7 and 12 cm.

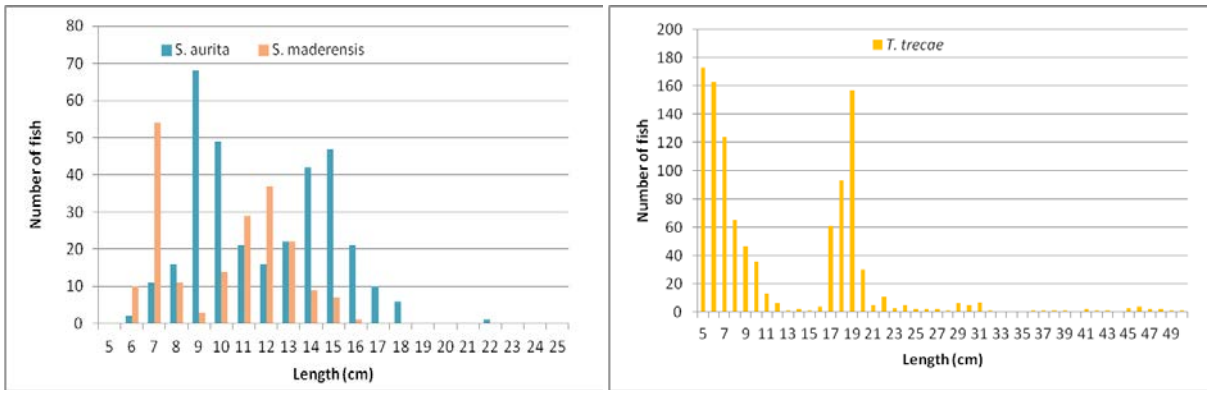


Figure 4.1 Length frequency of sardinella and *T.trecae* caught between Conacry and Cap Vert.

Horse mackerel

During previous acoustic surveys with Dr. Fridtjof Nansen in Senegal the horse mackerel biomass estimate has included *Trachurus trecae* and *Decapterus rhonchus*. However to keep consistency between regions the horse mackerel estimate include only *T. trecae* and *T. trachurus. Decapterus rhonchus* was included as part of the Pel2 estimate.

The distribution of horse mackerel *T.trecae* was found from Guinea Bissau and northwards from the shelf break and in towards the 20 m depth line. The southern part of the distribution area had relatively small but dense concentrations while the distribution became wider and less dense on the shelf between Casamance and Cap Vert.

The length distributions for the species showed two modal peaks at 5 and 19 cm and were generally the same throughout the region. A few very large *T. trecae* around 50 cm was also found.

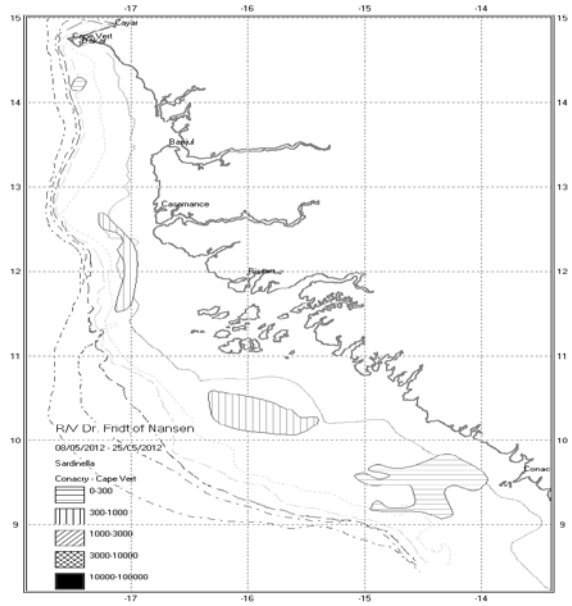
Pel1

No *Ilisha africana or* other Pelagic 1 clupeoid species were found in the region.

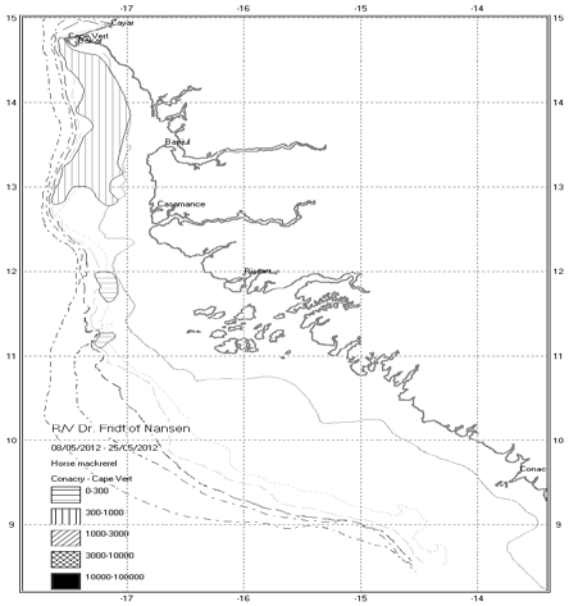
Pel2

A number of pelagic shelf species makes up the acoustic group Pel2 (Table 2.1). The distribution of these species was most abundant in the southern part of the region in Guinea and Guinea Bissau.

a)



b)



c)

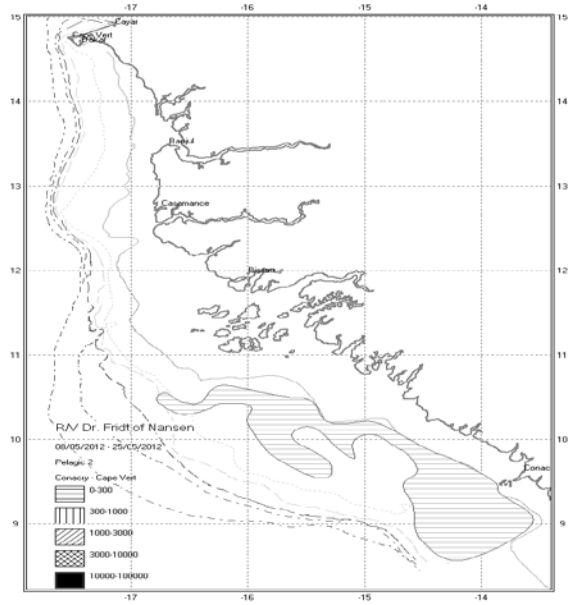


Figure 4.2. Distribution of acoustic backscattering of sardinella a), horse mackerel b) and Pel 2 c) from Conakry to Dakar

4.2. Cap Vert- Cap Blanc

Acoustic distribution and abundance was estimated for three species groups on the shelf between Cap Vert and Cap Blanc (Figure 4.3-4.4). These were sardinella, horse mackerel and Pelagic 2.

Sardine
A small area with schooling Sardine (*Sardina pilchardus*) was found off Nouakchott while the main concentration started further north just south of Cap Blanc, and extended northwards. The length measurements showed one modal peak at 11 cm.

Sardinella
Sardinella was found in two distribution areas, the first from south of St. Louis to Nouackchott, and the second from Cap Timiris to Cap Blanc (Figure 4.4). The southernmost concentration had relatively low density, but with patches of high density inshore and the northern distribution had high density. Both sardinella species were found in the two distributions, but *S. aurita* was the most frequently caught while *S. maderensis* was caught closer to the coast in few trawls but with higher catch rates. *S. aurita* length distribution showed a modal peak around 16 cm (combined from several cohorts) and at 32 cm while *S. maderensis* showed a modal peak at 11 cm and 26 cm.

Horse mackerel
Horse mackerels, both *Trachurus trecae* and *T. trachurus*, were distributed in scattered low density areas from Cap Vert to Cap Blanc with very low concentration in the central part of the area. *T. trecae* had very wide size distribution from juvenile fish <5 cm to adult fish >40 cm. A relative large juvenile cohort can be observed in the region with a modal peak at 7 cm. *T. trachurus* showed a similar large cohort with modal peak around 7 cm, and an adult cohort (probably first spawners) at 17 cm.

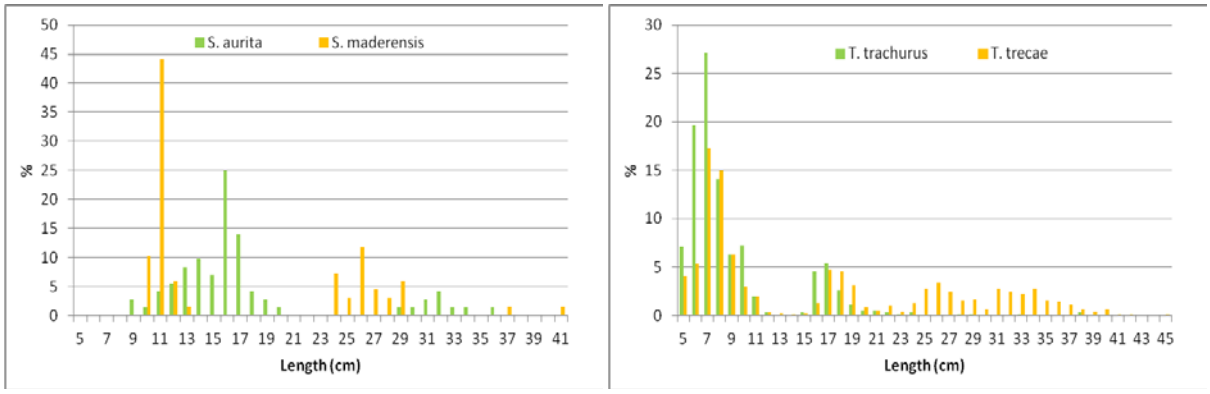


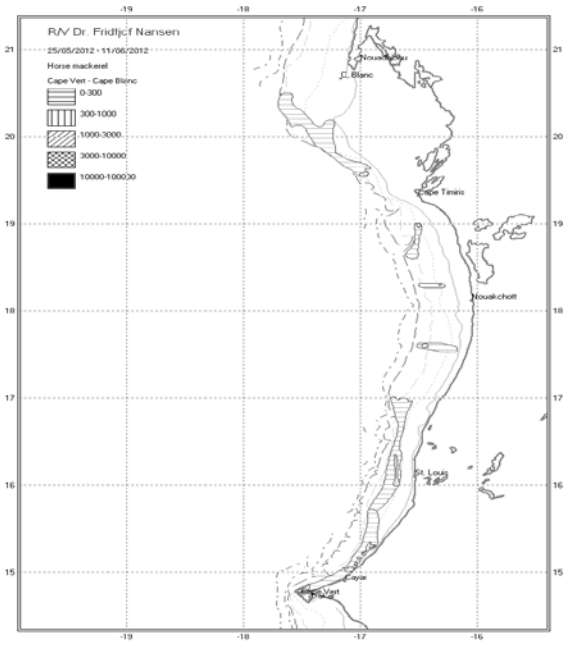
Figure 4.3 Length frequency of sardinella and *T.trecae* and *T. trachurus* caught between Cap Vert and Cap Blanc.

Anchovy
A few weak shoals of anchovy were recorded inshore between Cayar and St. Louis and between Cap Timiris and Cap Blanca around 50 m depth. The size was around 10 cm.

Pelagic 1
Ilisha africana was found in a very small concentration on the petite cote. No distribution map was made.

Pelagic 2
A number of pelagic shelf species makes up the Pelagic 2 group (Figure 4.4). The distribution of these species was generally between Cayar and Nouakchott, but with low scattered fish also north of this, particularly in shallow waters.

a)



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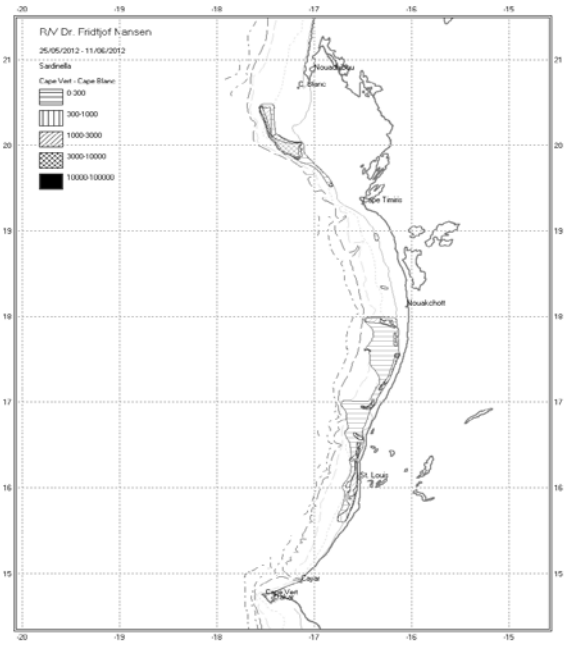

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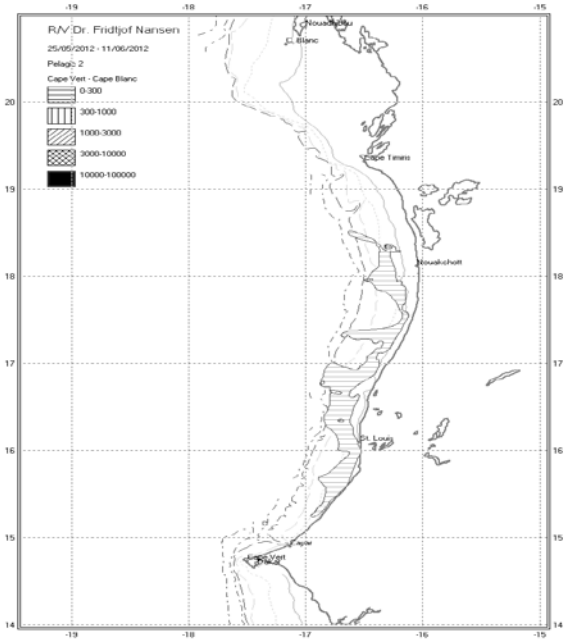


Figure 4.4. Distribution of acoustic backscattering of sardinella a), horse mackerel b) and Pel 2 c) from Cap Vert to Cap Blanc

4.3. Cap Blanc – Cap Juby

Acoustic distribution and abundance was estimated for five species groups on the shelf between Cap Blanc and Cap Juby (Figure 4.5-4.6). These were sardine, sardinella, anchovy, horse mackerel and Pelagic 2.

Sardine
The sardine between Cap Blanc – Cap Juby was found with the densest concentration north of Dakhla, and in a area between Laayoune and Cap Juby, extending further north. Some smaller and lower density areas were found south of Dakhla extending south onto the Banc d'Arguin. The size distribution of sardine from the trawl catches show a range from 5 -29 cm with modal peak of 11 cm. However, several other modes were also present. Smallest fish were found in the southern part of the area.

Sardinella
A few *S. aurita* was found in three small distribution areas between Cap Barbas and Cap Bojador. The size distribution ranged between 9-24 cm.

Anchovy
Anchovy was found between Cap Blanc and just north of Cap Barbas. The anchovy was rather small, between 6 and 13 cm.

Horse mackerel
The highest densities of *T. trecae* stopped south of Cap Barbas, but lower densities were found inshore around 50 m depth towards Cap Bojador. The *T. trachurus* was found across the region with highest catches offshore. The size distribution of the two species was similar. *T. trecae* showed the major modal peaks at 11 and 15-16 cm while *T. trachurus* had a larger cohort of juvenile fish, with modal peak at 11 cm. Two less pronounced peaks were seen at around 17 and 21 cm.

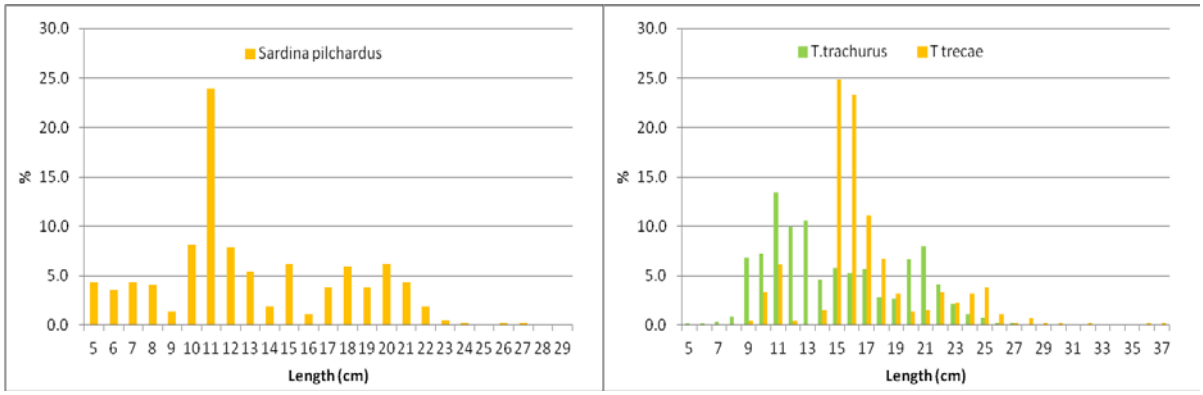


Figure 4.5 Length frequency of sardinella and *T.trecae* and *T. trachurus* caught between Cap Blanc and Cap Juby

Pelagic 2
The pelagic 2 group of species included also mackerel (*Scomber japonicus*) during this survey. From Cap Blanc and north the Pelagic 2 group of species consisted almost exclusively of this species and the distribution map illustrate this. The species was distributed mainly in relatively low densities all across the shelf between Cap Blanc and Cap Juby. Higher concentrations were found north of Dakhla. The size distribution ranged from 12- 34 cm, with modal peaks at 15, 19 and 23 cm.

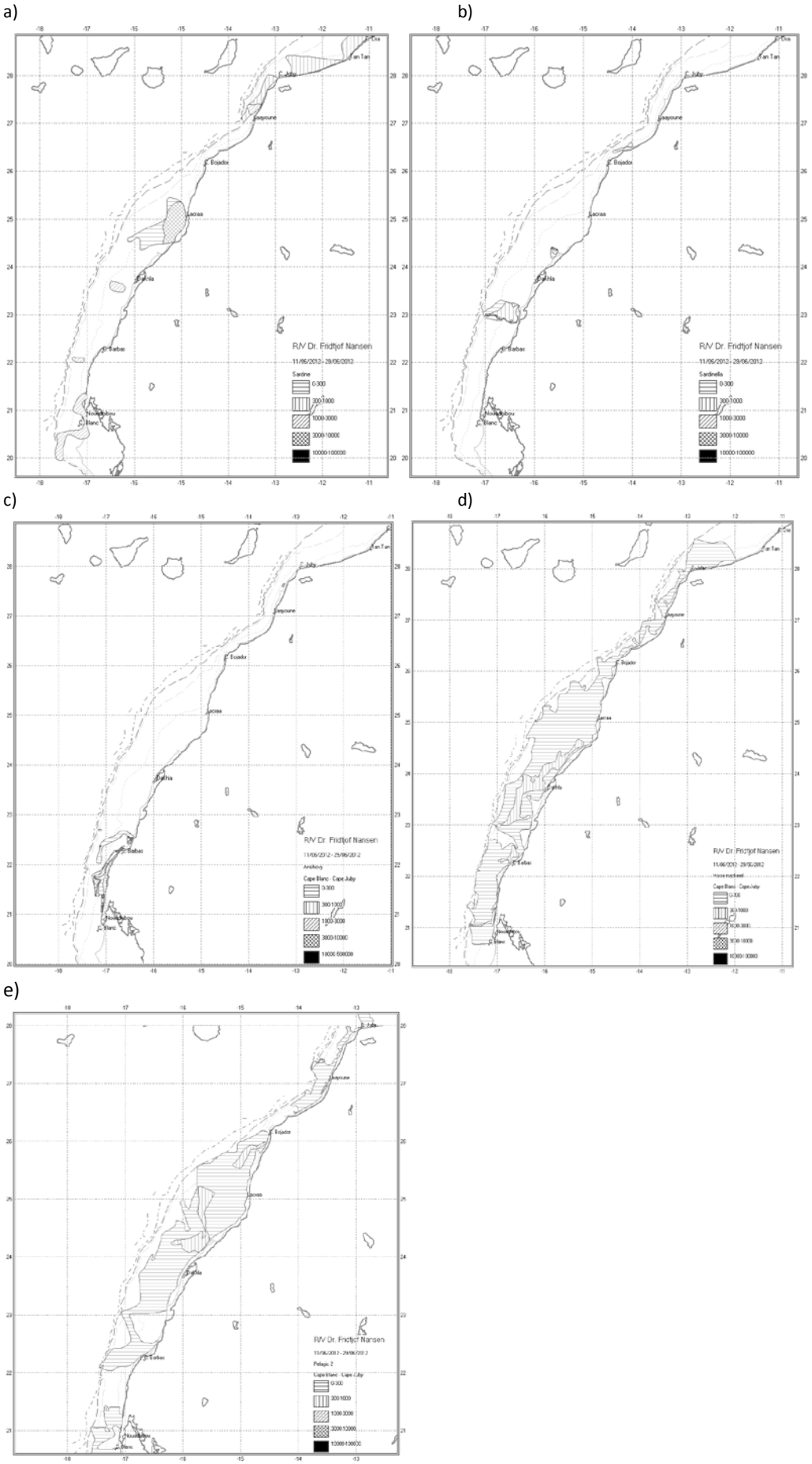


Figure 4.6. Distribution of acoustic backscattering of a) sardine, b) sardinella, c) anchovy, d) horse mackerel and e) Pel2 from Cap Blanc to Cap Juby

4.4. Cap Juby – Casablanca - Tanger

Acoustic distribution and abundance was estimated for four species groups on the shelf between Cap Blanc and Cap Juby (Figure 4.7-4.8). These were sardine, anchovy, horse mackerel and Pelagic 2.

Sardine
The sardine was distributed across the whole area in relatively shallow waters < 50 m all the way to Tanger. Also in this region the recordings of sardine were mainly scattered, with low to medium density. Most length samples showed young sardine, generally smaller than 20 cm two modal peaks at 10 cm and 14 cm was observed.

Sardinella
No sardinella was recorded in this region.

Anchovy
Anchovy was found across the region in four low and medium density distribution areas. Lengths ranged from 10 – 17 cm with a peak at 11 cm.

Horse mackerel
Horse mackerel *(Trachurus trachurus)* was recorded continuously along the coast to Casablanca. Recordings were low density but with higher density patches between Cap Ghir and Safi. Most of the horse mackerel was juvenile and young fish, and a large modal peak at 11 cm was observed. Another modal peak of can be seen at 20 cm.

Pelagic 2 species
From Cap Blanc and north the Pelagic 2 group of species consisted almost exclusively of *Scomber japonicus.* The size distribution ranged between 12 and 29 cm with most of the fish been between 15 – 24 cm.

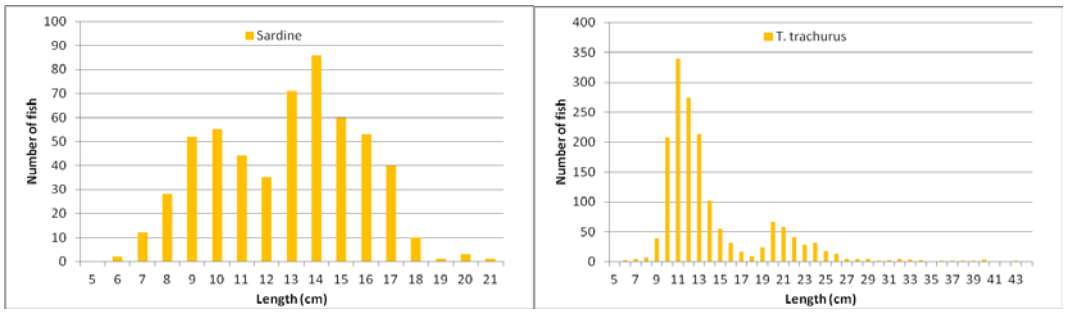


Figure 4.7. Length distribution of sardine and *T. trachurus* between Cap Juby and Tanger

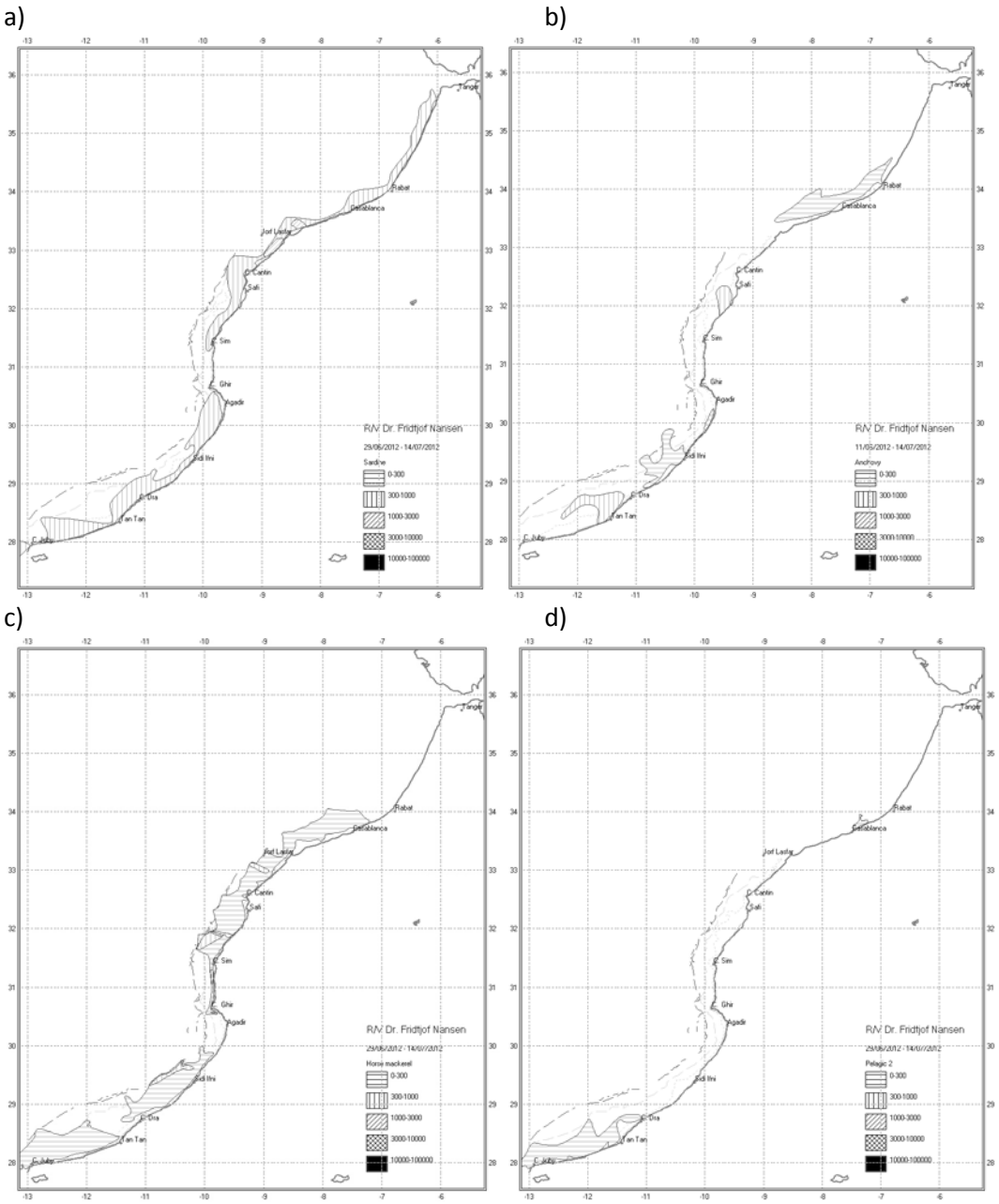


Figure 4.8. Distribution of acoustic backscattering of sardine a), anchovy b), horse mackerel c) and mackerel d) from Cap Juby – Casablanca

Table 4.1 S_A values allocated to the different species group per region. Note that mackerel is included as Pel2 species and was found more or less exclusively north of Cape Blanc.

Region		SARD	SARDP	ANSJO	PEL2	HORSE	ODFI	MESFI	PLANK	TOTAL
Conacry - C. Vert	average	679		374	143	775	28	294	2625	2886
Conacry - C. Vert	#	44		9	123	55	100	4	374	374
C. Vert - C. Blanc	average	1729	3657	1134	134	369	78	468	1838	2654
C. Vert - C. Blanc	#	55	12	14	77	51	85	4	236	236
C. Blanc - C. Juby	average	1242	1807	6913	178	188	34	1764	1307	2413
C. Blanc - C. Juby	#	27	43	23	157	193	83	22	340	340
C. Juby – Casabla.	average		954	197	57	237	198	567	621	1236
C. Juby – Casabla.	#		123	68	41	174	72	18	315	319
Casaban. - Tanger	average		109	53		66	2093	489	725	1121
Casablan. - Tanger	#		13	6		7	6	3	41	41
Total	average	1258	1258	1600	146	290	113	1050	1596	2264
Number of obser.	#	126	191	120	398	480	346	51	1306	1310

5. SWEPT AREA ABUNDANCE AND DISTRIBUTION

The trawl survey covered the shelf and slope from 20 m to 500 m bottom depth. Catch rates are presented per region and depth strata for main groups (Demersal, Pelagic, Sharks, Shrimps, Cephalopods and other species) and the subdivision demersal groups (Croakers, Groupers, Grunts, Seabream, Snappers, Hake and others) in Table 5.1-5.13. The group of other species are considered non-commercial and comprises all species not defined within any of the previously mentioned groups. Four depth strata were defined prior to the survey, 0 -50 m depth (inner shelf), 50 - 100 m depth (outer shelf), 100 - 200 m depth (upper slope) and 200 – 500 m depth (lower slope), in admission some trawls were taken in deep water at depths >500 m. The trawl positions are mapped in Figures 1.1-1.5, station information and catch by species are presented in Annex I.

Catch rates and biomass indexes are presented per four main regions 1. Conakry – Cap Vert, 2. Cap Vert-Cap Blanc, 3. Cap Blanc – Cap Juby, 4. Cap Juby – Casablanca and 5. Casablanca – Tanger.

5.1. Analyses of catch rates

Conakry – Cap Vert

A total of 81 valid trawl stations were analysed between Conakry – Cap Vert, of these 18 stations were between 0 -50 m depth, 20 between 50 - 100 m depth, 16 between 100 - 200 m depth and 17 between 200 – 500 m. Table 5.1 shows the catch rates of main groups, while table 7 shows catch rate for the main demersal species groups.

Main groups

The average catch rate in the depth region between 0 - 50 m was 626 kg/h (Table 5.1a). The “other” group was the most dominant with 399 kg/h. The pelagic group gave catches of 127 kg/h, while demersals showed an average catch of 90 kg/h. The groups of cephalopods had catches of 10 kg/h.

Between 50-100 m on the outer shelf the catch rates decreased to 503 kg/h (Table 5.1b). The most abundant group was the pelagic species with 248 kg/h. Demersal species contributed with 81 kg/h, while cephalopods had catch rates of 14 kg/h. The group of “other” species contributed 158 kg/h. Catches of sharks (1.3 kg/h) and shrimps 0.1 kg/h were low.

At the upper slope between 100 – 200 m depth total catches (872 kg/h) increased compared to further inshore (Table 5.1c). Catch rates increased in all groups except the pelagic and shrimp category. The “other” category had the highest catch rates with 458 kg/h, pelagic species contributed with 243 kg/h, demersal species with 113 kg/h, cephalopods 43 kg/h and sharks 16 kg/h. No shrimps were caught.

Trawls on the lower slope (200 - 500 m) gave an average catch rate of 380 kg/h (Table 5.1d). The group of other species (246 kg/h), demersal species (70 kg/h), the cephalopods (24 kg/h) and Pelagic species (15 kg/h) showed decreasing catch rates, while sharks (18 kg/h) and shrimps (7 kg/h) showed increasing catches.

In deep waters, beyond 500 m the catch rates decreased to 256 kg/h (Table 5.1e). The most abundant group was the group of “other” species with 126 kg/h. The shrimps had catch rates of 42 kg/h while demersal species had a catch rate of 40 kg/h, cephalopods gave 25 kg/h and sharks 20 kg/h. Pelagic species, most probably accidental surface catches gave 2 kg/h.

Demersal groups

Table 5.2 shows catch rate for the main commercially important demersal species groups. The most abundant species group in the depth region between 0 - 50 m was seabreams with 49 kg/h (Table 5.2a). A few grunts were caught (7 kg/h) while the other demersal groups were of little importance within this depth region.

On the outer shelf between 50-100 m the seabreams still dominated the catch with 26 kg/h (Table 5.2b), but grunts (15 kg/h), croackers (14 kg/h) and groupers (7 kg/h) became increasingly more important in the catches.

Further off the coast, on the upper slope between 100 – 200 m depth, croakers increased in importance to 61 kg/h (Table 5.2c), while catches of seabreams were relatively stable at 28 kg/h. Hake became important in this depth region with 12 kg/h. Groupers and grunts gave low catch rates (0.1 kg/h).

Trawls on the lower slope (200 - 500 m) gave an average catch rate of Hake of 67 kg/h while some very few croakers (0.1 kg/h) were found (Table 5.2d).

In deep waters, beyond 500 m the catch rates of hake decreased to 11 kg/h. No other commercially important species were caught.

Table 5.1. Catch rates (kg/hour), mean values, standard dev. And percentage of main groups caught in valid swept area bottom trawl hauls. Conacry – Cap Vert: a) 20–50 m, b): 50-100 m, c): 100-200 m d): 200-500 m

a)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
3	47	33.4	166.2	629.8	0	0	800.1	1629.5
4	27	8.6	145.5	84.6	0	0	102.7	341.5
18	45	0.1	0	2.4	0	0	1.5	4
27	28.5	8.1	91.8	178.4	0	0	5.8	284.1
28	34.5	24.1	147.4	84	0	0	399.3	654.7
33	48.5	2.9	4.6	1.2	0	0	87.7	96.4
36	48.5	14.6	0.4	9.8	0	0	12.7	37.4
49	41.5	0.6	20.6	56.5	0	0	32.8	110.5
50	39	6.1	0.5	67.2	0	0	11.4	85.1
54	30.5	0	3.3	236.3	0	0	157.8	397.5
63	34	35.9	486	192.3	0	0	74.8	789
64	19.5	15.1	124.1	210.2	2.1	0	89.2	440.7
65	30	18.1	4.5	18.8	0	0	323.8	365.2
69	36	0.2	29.8	34	0	0	2894.8	2958.7
70	25	7.4	157.9	375.4	0	0	353	893.7
77	31.5	1.5	12.7	40.6	0	0	1556.8	1611.5
81	34	3.8	50	5.8	0	0	45.3	105
82	38	5.1	171.3	55.5	0	0	238.5	470.4
Mean	35.4	10.3	89.8	126.8	0.1	0.0	399.3	626.4
St.dev	8.3	11.2	119.7	161.8	0.5	0.0	730.8	756.9

b)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
2	90.5	1.2	8.6	0.1	0	0	210.3	220.1
8	50.5	1.9	109.4	203.4	22.6	0	21.8	359.1
9	58.5	1.2	191.5	8.6	1.1	0	94.5	296.9
15	54	1.4	38.8	0	0	0	21.3	61.4
19	57.5	1.8	0	0	0	0	2.6	4.4
26	61	1.3	0.2	0.1	0	0	51.6	53.2
32	60.5	1.4	27.6	1.4	0	0	649.2	679.6
37	63.5	2.2	0.1	1.7	3	0	64.4	71.5
43	53	4.9	0.1	11.3	0	0	82.4	98.6
48	63.5	6.5	1	37.8	0	0	85.5	130.7
51	73.5	0	76.2	52.1	0	0	154.9	283.2
55	53	18.3	28.2	117.6	0	0	123.8	287.9
56	74.5	2	269.1	623.8	0	0	73.1	968
62	69	8.7	216.3	856.5	0	0	19.4	1100.9
67	98	211.7	76.5	180.5	0	0	1079.3	1548
68	57.5	6.3	2.1	194.5	0	0	47.4	250.4
71	52	0	126.8	177.9	0	0	105.7	410.4
76	51	8.8	204.8	616.6	0	0	134.7	964.8
83	86.5	8	10.1	91.4	0	0	27.5	137.1
89	57.5	0	222.5	1792.3	0	1.2	113.3	2129.3
Mean	64.3	14.4	80.5	248.4	1.3	0.1	158.1	502.8
St.dev	13.8	46.7	92.0	438.4	5.1	0.3	256.6	568.2

c)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
10	111	0	49.9	0	0	0	258.5	308.4
14	120	23.5	8.7	0	0	0	965.4	997.6
20	118	50.5	0	0	8.1	0	420.6	479.1
24	187.5	2.5	2.9	0	16.2	0	264.1	285.7
31	164	4.4	7.2	13.4	113.4	0	308.5	446.8
38	146	46.8	9.4	79.9	37.2	0	707.8	881.1
44	109	52.9	5.7	16.4	26.7	0	315.7	417.3
47	174.5	49.4	83.9	0	3.6	0	626.6	763.5
52	112	3.3	217.2	33.4	22.5	0	1046.1	1322.6
57	105	4.5	87.7	3386.2	0	0	225.4	3703.7
61	107.5	33.2	111.5	295	0	0	86.5	526.1
75	109.5	47.6	818.7	3.2	8.2	0	1510	2387.7
80	110	58.9	3.9	47.9	0	0	45.3	156
84	158.5	232	46.2	0.8	0	0	52.3	331.4
88	151.5	24.6	125.7	2.3	13.2	0	366	531.7
90	103	47.9	228.4	12.8	0	0	125.2	414.3
Mean	130.4	42.6	112.9	243.2	15.6	0.0	457.8	872.1
St.dev	28.3	54.8	202.2	841.3	28.5	0.0	413.8	930.9

d)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
11	240.5	19.2	0	0	4.2	0	90.5	113.8
13	334	51.1	2.7	0	0.8	0	237.4	291.9
21	218.5	43.4	13.1	0	85	0	405.8	547.3
23	461	6.7	38.2	6.1	25.8	111.8	55.1	243.8
29	493	33.6	28.7	54	39.8	0	109.2	265.3
30	314	80.8	212.8	7.6	0	0	1251.9	1553.1
39	224.5	60	0	44.7	5.8	0	234.3	344.7
42	473	3	17.1	0	1.3	0	65.7	87.1
45	209	36.1	8.4	125.2	5.5	0	293.9	469.1
46	355.5	1.5	40.5	0	0.5	0	118.6	161.1
58	485	0	41.4	0.2	30.2	10.9	112.6	195.3
60	283.5	11.7	117.8	7.3	27.7	0	61.2	225.7
66	471.5	2.6	28.7	2.5	37.1	0	347.9	418.8
72	374	2.4	320.6	3.7	15.9	0	133.9	476.5
74	482	0	38.1	2.5	9.2	0	155	204.8
85	213	33.6	259.9	2.6	16.3	0	489.5	801.9
87	282	13.3	19.1	0	2.1	0	16.9	51.3
Mean	347.9	23.5	69.8	15.1	18.1	7.2	245.8	379.5
St.dev	109.9	24.5	98.6	32.5	21.9	27.1	291.9	357.3

e)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
12	523	165.2	7.9	7.7	78.7	205.2	102.9	567.6
22	509	46	0.2	3.7	71.5	157.8	89.1	368.3
40	511	32.5	56.6	0	6.4	58.9	170	324.5
41	971.5	0	1.5	0	8	0	104.3	113.8
53	734	0	26.4	0	17.7	0	71.7	115.8
59	824.5	0	35.7	0	1.3	0	134.7	171.7
73	759	0	103.7	0	1.9	0	198	303.6
78	769	1.9	58.4	0	1.3	0	83.8	145.3
79	515	0	56.2	9.9	11.1	0	260.7	337.9
86	688	0.8	56.9	0	5.7	0	43.6	106.9
Mean	680.4	24.6	40.4	2.1	20.4	42.2	125.9	255.5
St.dev	160.8	52.1	32.5	3.7	29.3	76.5	66.0	150.9

Table 5.2. Catch rates (kg/hour) by demersal groups caught in valid swept area bottom trawl hauls. Conacry – Cap Vert : a) 20–50 m, b): 50-100 m, c): 100-200 m d): 200-500 m

a)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
3	47	0	0	0	0	140.6	14.4	1474.6	1629.5
4	27	0	0	0	0	145.5	0	196	341.5
18	45	0	0	0	0	0	0	4	4
27	28.5	0	0.4	0	0	91.4	0	192.3	284.1
28	34.5	0	0.5	4.3	0	142.6	0	507.4	654.7
33	48.5	0	0.4	2.7	0	1.4	0	91.8	96.4
36	48.5	0	0.4	0	0	0	0	37	37.4
49	41.5	0	1.8	0	0	18.7	0	89.9	110.5
50	39	0	0	0	0	0.5	0	84.7	85.1
54	30.5	2.2	0.9	0	0	0	0	394.4	397.5
63	34	0.1	0	0	0	0.1	0	788.8	789
64	19.5	0	0	3.6	0	102.5	0	334.6	440.7
65	30	0	0	0	0	3	0	362.2	365.2
69	36	0	0	1.7	0	22.2	0	2934.8	2958.7
70	25	0	26.7	2.7	0	110.2	0	754	893.7
77	31.5	0	0	8.5	0	4.2	0	1598.9	1611.5
81	34	0	0	18	0	29.8	0	57.1	105
82	38	0	2.9	86.9	0	60.6	0	320.1	470.4
Mean	35.4	0.1	1.9	7.1	0.0	48.5	0.8	567.9	626.4
St.dev	8.3	0.5	6.2	20.4	0.0	57.1	3.4	751.1	756.9

b)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
2	90.5	0	7.9	0	0	0.7	0	211.6	220.1
8	50.5	0	0.5	0	0	109	0	249.6	359.1
9	58.5	0	70.1	0	0	95.8	12.3	118.6	296.9
15	54	0	0	0	0	38.8	0	22.7	61.4
19	57.5	0	0	0	0	0	0	4.4	4.4
26	61	0	0	0	0	0.2	0	53	53.2
32	60.5	0	26.8	0	0	0.8	0	652	679.6
37	63.5	0	0	0	0	0.1	0	71.4	71.5
43	53	0	0	0	0	0.1	0	98.5	98.6
48	63.5	0	0	0	0	1	0	129.8	130.7
51	73.5	2.8	4	0	0	69.5	0	207	283.2
55	53	0	1.6	0	0	5.3	0	281	287.9
56	74.5	93.4	0	0	0	1.1	0	873.4	968
62	69	125.2	33.5	0	0	0.2	0	942.1	1100.9
67	98	37.4	0	0	0	32.1	0	1478.5	1548
68	57.5	0	0	0	0	2.1	0	248.3	250.4
71	52	11.3	1.2	34.6	0	79.7	0	283.6	410.4
76	51	0	0	100.9	0	31.3	0	832.6	964.8
83	86.5	0	0	0	0.4	5.4	0	131.3	137.1
89	57.5	8.4	1.1	158.2	0	51.4	0	1910.3	2129.3
Mean	64.3	13.9	7.3	14.7	0.0	26.2	0.6	440.0	502.8
St.dev	13.8	34.1	17.4	41.1	0.1	36.1	2.8	521.6	568.2

c)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
10	111	0	0	0	0	11	0	297.4	308.4
14	120	0	0	0	0	0	0	997.6	997.6
20	118	0	0	0	0	0	0	479.1	479.1
24	187.5	0	0	0	1.9	0	0	283.8	285.7
31	164	0	0	0	0	0	0	446.8	446.8
38	146	4	0	0	0.1	3.2	0	873.8	881.1
44	109	0	2.3	0	0	3.4	0	411.6	417.3
47	174.5	9.6	0	0	0	69.9	0	684	763.5
52	112	151.8	1.8	0	0	37.1	0	1131.9	1322.6
57	105	68.4	1.3	0	0	16.6	0	3617.5	3703.7
61	107.5	35.8	12.2	0	0	28.6	0	449.4	526.1
75	109.5	659.9	0	0	28.1	123.9	0	1575.8	2387.7
80	110	0	1.9	0	2	0	0	152	156
84	158.5	0	0	0	46.2	0	0	285.1	331.4
88	151.5	1.9	0	0	120.6	0	0	409.2	531.7
90	103	40.1	0	18.8	0	159.6	0	195.8	414.3
Mean	130.4	60.7	1.2	1.2	12.4	28.3	0.0	768.2	872.1
St.dev	28.3	164.8	3.0	4.7	31.6	48.6	0.0	853.1	930.9

d)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
11	240.5	0	0	0	0	0	0	113.8	113.8
13	334	0	0	0	2.7	0	0	289.2	291.9
21	218.5	0	0	0	13.1	0	0	534.2	547.3
23	461	0	0	0	38.2	0	0	205.6	243.8
29	493	0	0	0	28.7	0	0	236.6	265.3
30	314	0	0	0	212.8	0	0	1340.3	1553.1
39	224.5	0	0	0	0	0	0	344.7	344.7
42	473	0	0	0	17.1	0	0	70	87.1
45	209	1.7	0	0	6.8	0	0	460.7	469.1
46	355.5	0	0	0	40.5	0	0	120.7	161.1
58	485	0	0	0	29.5	0	0	165.8	195.3
60	283.5	0	0	0	112.9	0	0	112.9	225.7
66	471.5	0	0	0	22.9	0	0	395.9	418.8
72	374	0	0	0	320.6	0	0	155.9	476.5
74	482	0	0	0	23.8	0	0	181	204.8
85	213	0	0	0	253.7	0.4	0	547.9	801.9
87	282	0	0	0	17.6	0	0	33.8	51.3
Mean	347.9	0.1	0.0	0.0	67.1	0.0	0.0	312.3	379.5
St.dev	109.9	0.4	0.0	0.0	98.5	0.1	0.0	308.7	357.3

Cap Vert-Cap Blanc

A total of 68 valid swept area trawls were made on altogether 20 transects between Cap Vert and Cap Blanc. Of these 15 trawls were made on the inner shelf, 17 on the outer shelf, 15 on the upper slope, 12 on the deep slope and 9 trawls in deep water. Catch rates increased considerably in this area compared to the shelf between Conacry and Cap Vert (Table 5.3-5.4).

Main groups

The total average catch between 20 - 50 m depth were 909 kg/h (Table 5.3a). Demersal species were the most dominant with average catches of 403 kg/h followed by pelagic species with catches of 157 kg/h. Among the pelagic species *Trachurus trecae, Sardinella maderensis* and *Trachurus trachurus* dominated. Sharks and cephalopods were considerably less important in the catches with 18 kg/h and 16 kg/h respectively, while < 1kg/h of shrimps were caught. The “Other” group had an average catch of 314 kg/h. This group contained a highly diverse group of species. The most dominant being Jellyfish and *Pseudupeneus prayensis*.

At the outer shelf at depths between 50 - 100 m the average catch increased to 1259 kg/h Table 5.3b). Pelagic species was the most dominant with 820 kg/h. Demersal species had average catch rates of 113 kg/h. Cephalopods increased in abundance from the shallow area and had average catches of 61 kg/h. The commercially very important *Octopus vulgaris* followed by the *Todaropsis eblanae* dominated the catch of this group. Shrimps became somewhat more important with an average catch of 7 kg/h while sharks had average catches of 3.5 kg/h. The group of “Other” species gave an average catch of 254 kg/h. *Pterothrissus belloci* was the most abundant.

The catch on the upper slope increased further to 1630 kg/h (Table 5.3c). Demersal species gave catches of 190 kg/h, while pelagic species, mainly *Trachurus trecae* had average catches of 162 kg/h. Cephalopods had catch rates of 175 kg/h. The dominant cephalopods in the depth region were *Todaropsis eblanae.* Sharks had catch rates of 4 kg/h. No shrimps were caught. The “Other” species

was the most dominant with 1099 kg/h. The most common species in this group was *Synagrops microlepis* and *Chlorophthalmus atlanticus*.

At the lower slope the average catch was 662 kg/h (Table 5.3d). Demersal species gave a catch rate of 73 kg/h while shrimps showed an average catch of 33 kg/h. The most dominant shrimp species were *Nematocarcinus africanus*. Sharks and Cephalopods (*Todaropsis eblanae*) had similar catch rates of 21 kg/h while pelagic species were unimportant in the catches with 4 kg/h. The "Other" group gave 510 kg/h. In this group *Helicolenus dactylopterus* and *Pontinus accraensis* were the most important.

In deep water the average catch was 377 kg/h (Table 5.3e). Shrimps was the most abundant commercial group with 67 kg/h. In this group it was the *Nematocarcinus africanus* who dominated. Sharks showed similar catch rates to the shrimps with 65 kg/h, the species *Scymnodon ringens* was the most common. Demersal species gave average catches of 16 kg/h while Cephalopods had catch rates of 6 kg/h and pelagic species <1 kg/h. The group of other species showed average catch rates of 222 kg/h. The most common species in this group were *Hoplostethus cadenati* and *Laemonema laureysi*.

Demersal groups

Relatively good catches of demersal species were made on the inner shelf. An average of 248 kg/h of seabreams were caught (Table 5.4a), with *Pagellus bellottii, Diplodus bellottii* and *Pagrus* caeruleostictus as the most dominant species. Grunts yielded average catches of 116 kg/h, of these *Plectorhinchus mediterraneus* dominated. Croakers, mainly *Pteroscion peli,* gave average catch rates of 30 kg/h. Groupers gave average catches of 7 kg/h while Hake showed average catch rates of 2.5 kg/h.

On the outer shelf Hake, mainly *Merluccius polli,* dominated with catch rates of 94 kg/h (Table 5.4b). Seabreams had an average catch rate of 13 kg/h while croakers and groupers gave average catches of 5 kg/h and 0.5 kg/h.

At the upper slope Hake, *Merluccius polli* and to a lesser extent *M. senegalensis,* dominated the catches with 174 kg/h (Table 5.4c). Seabreams had catch rates of 11 kg/h while groupers and croakers showed average catch rates of 3 kg/h and 2 kg/h respectively.

Only hake was caught among the commercially important species on the deep slope (Table 5.4d). The catch rate was 73 kg/h. Both *Merluccius polli* and *M. senegalensis* were present in the catches.

In deep water there were also only hake (*Merluccius polli*) caught. The catch rate was 16 kg/h.

Table 5.3. Catch rates (kg/hour) by main groups caught in valid swept area bottom trawl hauls. Cap Vert- Cap Blanc a) 20–50 m, b) 50-100 m, c) 100-200 m, d) 200-500 m, e) >500 m

a)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
105	28	0	438.4	912.8	0	0	996.2	2347.4
106	44	1.5	12.7	185.8	0	12.8	43.6	256.5
112	31	37.9	663.2	386.6	0	0	660.6	1748.2
113	40	1.6	4.3	103.7	0	0.3	9.6	119.4
120	43	0.6	0.8	11.8	0	0	10.4	23.6
121	32.5	63.8	11.8	58	0	0	71.7	205.3
128	27.5	19	516.1	8.5	0	0	962.1	1505.7
134	33.5	35.3	3.7	191.3	0	0	1168.6	1398.9
140	20.5	3.6	8.4	0	0	0	8.1	20
145	31.5	10.9	11.8	7	0	0	46	75.8
146	26.5	0	981.1	29.7	76.8	0	217.8	1305.5
150	39	0	57.6	185.8	0	0	365.3	608.7
152	32	16.2	117.2	164.3	169	0	54.3	521
160	31.5	13.1	2431.7	13.3	21.9	0	72.5	2552.5
161	38	35.3	783.3	96.8	2.7	0	29.1	947.2
Mean	33.2	15.9	402.8	157.0	18.0	0.9	314.4	909.0
St.dev	6.5	19.1	653.1	234.6	46.3	3.3	417.2	857.0

b)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
91	96	31.5	126.1	2012.9	36.3	0	254.2	2461
98	51.5	29.3	63	177.7	0	0	84.3	354.4
104	83.5	169.2	4.6	481.8	0	0	14.6	670.2
107	75.5	15.9	151.1	650.8	0	36	511.2	1365.1
111	54	4.8	15.2	189.3	0	0.1	24.5	233.8
114	72.5	6.9	808.3	459.9	0	36.6	1271.5	2583.3
119	70.5	1	227.9	23.4	0	1.1	351.4	604.8
122	51	5.5	1.8	159.3	0	1.2	31	198.8
127	51.5	74.4	133.2	146.5	0	0	68.4	422.6
133	51.5	122.5	0	2427	0	0	40.3	2589.8
138	93	178.8	14.3	700.9	0	0	41.6	935.6
141	51.5	11.3	0.3	246.8	0	0	55.5	313.9
147	72	0.1	8.4	159.7	0	0.8	51.9	220.9
149	70.5	66.3	245.2	87.8	6.8	0	438.1	844.1
153	50.5	12.3	0	4438.6	0	0	60.8	4511.7
159	79	304.2	96	1343.5	12.9	0	822.2	2578.8
162	81	0	27.6	235	2.9	39.8	202.4	507.8
Mean	67.9	60.8	113.1	820.1	3.5	6.8	254.3	1258.6
St.dev	15.7	85.8	196.7	1162.9	9.1	14.7	344.8	1239.5

c)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
92	162.5	3.7	208.1	0	42.3	0	2491.1	2745.2
99	109	5.5	0.5	12.2	0	0	8.8	26.9
103	138.5	1977.5	3.2	1.4	3	0	439.8	2425
110	103	18.7	556.1	61.1	1	0	1581.4	2218.3
118	117.5	430	335.3	468.8	2.6	0	3007	4243.7
123	192	16	83.3	0	0	0	1115.8	1215
125	185.5	20.8	51.3	139.2	0.5	0	2186.7	2398.5
126	101	63.3	55.3	261.9	0	0	580.1	960.7
129	186	2.8	307	6.9	0	0	968	1284.6
132	101.5	3.8	157.5	12.8	1	0	2071	2246
137	180.5	0	573.8	16.3	0	0	1168	1758.2
142	103	34.5	69.6	1004.5	0	0	414.4	1523
148	106.5	24.3	74.5	38.4	0	0	89.6	226.7
154	110	8.1	293.7	384.8	0	0	235.6	922.2
158	106.5	15.7	73.9	25.5	4.8	0	133.9	253.8
Mean	133.5	175.0	189.5	162.3	3.7	0.0	1099.4	1629.9
St.dev	36.6	510.1	186.9	277.3	10.8	0.0	964.3	1125.2

d)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
93	413.5	12.9	77.9	1.4	0.4	0	73.5	166.1
102	233.5	11.8	92.9	0	0	0	345.1	449.8
109	425.5	40	42.3	11.5	91.3	205	503.9	894
115	279.5	26.9	38.4	13.5	20	0	529.1	627.9
117	322	0	45.5	5.4	18.8	0	2196.1	2265.7
124	367.5	34.7	14.3	2	2.1	0	187.9	241
130	352	3.8	78.8	0	7.4	29.5	184.4	303.9
131	343.5	31.2	205.8	2.2	11.8	0	783.8	1034.8
136	496.5	0	36.8	0	10.3	0	366	413.1
143	303	21.6	86.4	0	5.9	0	387.2	501.1
155	281	45.6	113.5	14.8	63.7	144.6	288	670.2
157	358.5	21.6	44.2	0	24.6	13.3	275.8	379.5
Mean	348.0	20.8	73.1	4.2	21.4	32.7	510.1	662.3
St.dev	72.5	15.4	50.8	5.7	28.0	68.2	562.9	566.5

e)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
94	797	0	10.8	0	50.9	0	169.5	231.2
95	605	0	0.8	0	16.9	256.1	604.1	877.9
96	504.5	48.1	60.8	0	3.3	0	136.6	248.8
100	504.5	1	10	4	17.9	0	152.6	185.5
101	829	0	4.3	0	36.6	0	107.4	148.2
116	588	0	13.3	0	77.7	314.5	260	665.5
135	729.5	0	0	1.2	154.2	35	354	544.4
144	742	1.9	0	0	221.2	0	144.4	367.5
156	515	0	45.1	0.6	4.7	0	71.2	121.6
Mean	646.1	5.7	16.1	0.6	64.8	67.3	222.2	376.7
St.dev	129.8	15.9	21.8	1.3	75.4	125.0	166.4	263.2

Table 5.4. Catch rates (kg/hour) by demersal groups caught in valid swept area bottom trawl hauls. Cap Vert- Cap Blanc: a) 20–50 m, b): 50-100 m, c): 100-200 m d): 200-500 m

a)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
105	28	430.6	0	0	0	7.9	0	1909	2347.4
106	44	2.5	0	0	0.3	10	0	243.8	256.5
112	31	13.2	0	0	0	650	0	1085.1	1748.2
113	40	0	0	2.2	0	2.1	0	115.1	119.4
120	43	0	0	0	0.8	0	0	22.8	23.6
121	32.5	0	0	0	0	11.8	0	193.5	205.3
128	27.5	0	30.7	445.4	0	40.1	0	989.5	1505.7
134	33.5	0	0	0	0	3.7	0	1395.2	1398.9
140	20.5	0	0	1.9	0	6.5	0	11.6	20
145	31.5	0	0	0	0	11.8	0	63.9	75.8
146	26.5	0	56.6	502.9	0	421.7	0	324.4	1305.5
150	39	2.4	0.8	0	35.8	18.6	0	551.1	608.7
152	32	0	7.1	31.7	0	78.4	0	403.8	521
160	31.5	0	4.5	757.4	0	1669.8	0	120.8	2552.5
161	38	0	0	0	0	783.3	0	164	947.2
Mean	33.2	29.9	6.6	116.1	2.5	247.7	0.0	506.2	909.0
St.dev	6.5	110.9	15.9	242.6	9.2	469.8	0.0	575.2	857.0

b)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
91	96	0	0	0	4.6	121.5	0	2334.9	2461
98	51.5	5.5	5.2	0	0	52.4	0	291.3	354.4
104	83.5	0	0	0	4.3	0.3	0	665.5	670.2
107	75.5	4.5	0	0	135.5	10.5	0.7	1214	1365.1
111	54	1.7	0	0	1.3	12.2	0	218.7	233.8
114	72.5	1	0	0	807.3	0	0	1774.9	2583.3
119	70.5	0	0	0	227.9	0	0	376.9	604.8
122	51	0	0	0	1.8	0.1	0	197	198.8
127	51.5	0	0	0	133.2	0	0	289.4	422.6
133	51.5	0	0	0	0	0	0	2589.8	2589.8
138	93	0	0	0	6.4	7.9	0	921.3	935.6
141	51.5	0	0	0	0	0.3	0	313.6	313.9
147	72	0	0.5	0	6.2	1.8	0	212.5	220.9
149	70.5	46.1	1.1	0	183.2	14.7	0	598.9	844.1
153	50.5	0	0	0	0	0	0	4511.7	4511.7
159	79	28.7	2	0	65.3	0	0	2482.8	2578.8
162	81	0	0	0	26.9	0.7	0	480.1	507.8
Mean	67.9	5.1	0.5	0.0	94.3	13.1	0.0	1145.5	1258.6
St.dev	15.7	12.6	1.3	0.0	198.0	30.8	0.2	1209.8	1239.5

c)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
92	162.5	0	0	0	204.2	3.9	0	2537.1	2745.2
99	109	0	0	0	0.3	0.2	0	26.4	26.9
103	138.5	0	0	0	3.2	0	0	2421.7	2425
110	103	0.7	0	0	554.5	1	0	1662.2	2218.3
118	117.5	0	0	0	335.3	0	0	3908.4	4243.7
123	192	0	0	0	79.6	3.6	0	1131.8	1215
125	185.5	6.7	0	0	38.9	5.7	0	2347.2	2398.5
126	101	0	0.2	0	55.2	0	0	905.3	960.7
129	186	0.9	0	0	288	18.1	0	977.6	1284.6
132	101.5	0	1.6	0	152.9	3	0	2088.6	2246
137	180.5	0	0	0	554.8	19	0	1184.4	1758.2
142	103	0	1.9	0	34.8	32.9	0	1453.4	1523
148	106.5	27.9	12.6	0	20.1	13.8	0	152.2	226.7
154	110	0	8.9	0	284.8	0	0	628.4	922.2
158	106.5	0	14.7	0	0	59.2	0	179.9	253.8
Mean	133.5	2.4	2.7	0.0	173.8	10.7	0.0	1440.3	1629.9
St.dev	36.6	7.3	5.0	0.0	192.1	16.5	0.0	1072.9	1125.2

d)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
93	413.5	0	0	0	77.9	0	0	88.2	166.1
102	233.5	0	0	0	92.9	0	0	356.8	449.8
109	425.5	0	0	0	42.3	0	0	851.8	894
115	279.5	0	0	0	38.4	0	0	589.5	627.9
117	322	0	0	0	45.5	0	0	2220.2	2265.7
124	367.5	0	0	0	14.3	0	0	226.7	241
130	352	0	0	0	78.8	0	0	225.2	303.9
131	343.5	0	0	0	205.8	0	0	829	1034.8
136	496.5	0	0	0	36.8	0	0	376.3	413.1
143	303	0	0	0	86.4	0	0	414.8	501.1
155	281	0	0	0	113.5	0	0	556.7	670.2
157	358.5	0	0	0	44.2	0	0	335.3	379.5
Mean	348.0	0.0	0.0	0.0	73.1	0.0	0.0	589.2	662.3
St.dev	72.5	0.0	0.0	0.0	50.8	0.0	0.0	563.8	566.5

Cap Blanc – Cap Juby

A total of 65 valid trawl stations were analysed in this area, of these 12 stations were between 0 -50 m depth, 18 between 50 - 100 m depth, 21 between 100 - 200 m depth and 14 between 200 – 500 m. Table 5.5 shows the catch rates of main groups, while Table 5.6 shows catch rate for the main demersal species groups.

Main groups

The average catch rate in the depth region between 0 -50 m was 721 kg/h (Table 5.5a). The demersal group was the most dominant with average catch rates of 340 kg/h, this was followed by the pelagic group with average catch rates of 277 kg/h. The “other” group had average catch rates of 92 kg/h. The groups of cephalopods had average catches of 10 kg/h, while shrimps and sharks showed only small catches.

Between 50-100 m the catch rates decreased to 437 kg/h (Table 5.5b). The most abundant group was the pelagic group with 56.3 % of the total (246 kg/h). The demersal group had average catch rates of 94 kg/h.

The mean catch rates doubled at the upper slope with catch rates of 1063 kg/h (Table 5.5c). The pelagic category still showed 40 % of the total catches but the size of the catches varied a lot.

Bottom trawls on the lower slope gave an average catch rate of 851 kg/h (Table 5.5d). The group “other” dominated with mean catch rates of 679 kg/h, while demersal, pelagic and sharks constituted 8, 10 and 1 % of the mean total catch, respectively. Shrimps and cephalopods represented only 0.6 and 1.1 % of the mean total catch.

Demersal groups

Table 5.6 shows catch rate for the main demersal species groups. The group “other” dominated among the demersal species on the inner shelf. No demersal species were found in high abundance on the outer shelf, upper slope or lover slope, although some seabream was found on the inner shelf (34.1%). The average catch rate for the different depth intervals from the inner shelf and to deeper water was 721, 437, 1063 and 851 kg/h respectively.

Table 5.5. Catch rates (kg/hour) by main groups caught in valid swept area bottom trawl hauls. Cap Blanc-Cap Juby: a) 20–50 m, b): 50-100 m, c): 100-200 and d): 200-500 m

a)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
166	32.5	0.7	2196.1	585.4		1.1	174.3	2957.5
167	43	5.6	791.9	111.1	19.3		32.7	960.6
171	28.5	14.2	102.1	172.9		0.2	115.8	405.1
176	31.5	50.9	712.5	188.4			161.9	1113.6
177	41		41				38.7	79.7
184	32	4.6	32.3	78.4			5.4	120.6
190	31	3.4		312.4			7.4	323.3
191	46.5	1.6	77.5	45.6			46.9	171.6
201	30.5		72.6	149.9			6.2	228.7
224	30.5	8.6	2.2	657.1			10.6	678.6
225	32	1.5	45.9	927.4			491.3	1466
228	47	29.5	4.1	92.3			14.9	140.8
Mean	35.5	10	339.8	276.7	1.6	0.1	92.2	720.5
Std dev		15.3	646.5	290.8	5.6	0.3	139.7	835.6
%Catch		1.4	47.2	38.4	0.2	0.0	12.8	100.0

b)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
165	62	22.2	16.9	2123.1	5		109.3	2276.6
168	67.5		16.8	34.2			43.4	94.4
172	59	13.5	35.6	696.8	2.5		37.2	785.7
175	77.5	47.2	19.2	27.8	2.1		37.1	133.5
178	61	11.3	3		6.1		33.1	53.5
183	92	11.3	197.4	596.4			50.2	855.3
189	72.5	2.2	0.7	0.2	1.1		13	17.2
192	69	4	8.9	3.8	1.3		23.7	41.8
194	73.5	0.9		0.3			8.8	10
200	75.5	0.6	23.8	295.7			51.9	372
202	68	4.2	9.7	215.2			15.7	244.8
207	75		86.2	178.6			45.5	310.3
208	89		52.6	1.1			5.2	58.9
216	77	10.6	679.4	42.6	3		39.8	775.4
217	58.5	7.2	10.3	16.7			2.9	37.2
220	95	6.6	296.1	161.1			18.2	482
221	70	2.9	25.1	39.4			30.8	98.2
226	94.5	5.2	204.1	1.1			1010.7	1221
Mean	74.2	8.3	93.7	246.3	1.2		87.6	437.1
Std dev		11.4	169.1	511.9	1.9		231.7	582
%Catch		1.9	21.4	56.3	0.3		20.0	100.0

c)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
164	107	0.7	4.2	533.2	4.3		39.4	581.7
169	130	10.5	3.3	2.2	0.9		146	162.9
173	113	2.2	1.2	58.7	1.4		77.3	140.7
174	112.5	0.5	11.2	74			97.4	183.1
179	105	1.3	60.6	175.8	5.2		51.2	294
182	110		89.1	19.3	1.7		26.1	136.2
185	124		18.7	100.3	2.8		22.7	144.5
188	113.5		3.9	0.9			34.3	39
193	109.5		10.6	2.2			3.3	16.1
196	189	1	124.6	125.3			1041.8	1292.6
199	107.5	6.6	259.9	89.9			27.1	383.5
203	139.5		417.3	2537.9			5484.5	8439.7
206	155.5		120.3	106			102.5	328.8
209	161	1.1	258.1	109.8	9.1		90.1	468.1
212	177	7	50.2	60.2			34.3	151.7
213	122.5						3	3
215	114	5.9	10.2	1.1			19.6	36.9
218	111		53.8	202.5			27.4	283.8
222	105	3.1	60.8	33	0.3		44.9	142.1
223	104	5.6	116.3	5044.9			1491.1	6658
227	109.5		324.1	9.6			2107.7	2441.4
Mean	124.8	2.2	95.2	442.2	1.2		522.5	1063.2
Std dev		3.1	120	1187.7	2.4		1268.2	2242.7
%Catch		0.2	9.0	41.6	0.1		49.1	100.0

d)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
163	311.5		321.8		62.2		7079.9	7463.8
170	328		27	3.1	42.2		590.4	662.7
180	346.5	0.9	5.3	0.4	8.3		203.8	218.7
181	240		2.2	5.6	12.9		188	208.7
186	337	3.1	14.1	8.5	26.1		317.3	369.1
187	276.5	15.1	16.4	1.6	1.1		507.6	541.7
197	379.5	14.9	26.2	12.8	2.1	50.8	161.4	268.3
198	206	3.7	85.4	37.8			51	177.8
204	245	5.6	80	941.3			64.1	1090.9
205	265.5	10.5	51.5	30.9			24.4	117.3
210	348.5	33.2	101.2	47		23.5	61.3	266.1
211	355.5	40.3	40.5	2.2		1.5	15.1	99.6
214	227.5	0.2	25.4	57.2			76.1	158.9
219	335	8	102.9	1			164.4	276.3
Mean	300.1	9.7	64.3	82.1	11.1	5.4	678.9	851.4
Std dev		12.7	81.8	248	19.3	14.5	1850.7	1921.7
%Catch		1.1	7.6	9.6	1.3	0.6	79.7	100.0

Table 5.6. Catch rates (kg/hour) by demersal groups caught in valid swept area bottom trawl hauls. Cap Blanc-Cap Juby: a) 20–50 m, b): 50-100 m, c): 100-200 m d): 200-500 m

a)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
166	32.5	2.3			1.7	2192.1		761.4	2957.5
167	43	265.5		291.5		234.8		168.7	960.6
171	28.5	6.3		5.9	7.7	82.2		303	405.1
176	31.5			515.2		197.3		401.1	1113.6
177	41	4		23.8		13.2		38.7	79.7
184	32					32.3		88.3	120.6
190	31					0		323.3	323.3
191	46.5			2.4		75.1		94.1	171.6
201	30.5					72.6		156.1	228.7
224	30.5				0.6	1.4		676.6	678.6
225	32				3.4	42.3		1420.3	1466
228	47					4.1		136.7	140.8
Mean	35.5	23.2		69.9	1.1	245.6		380.7	720.5
Std dev		76.3		163	2.3	617.6		400.3	835.6
%Catch		3.2		9.7	0.2	34.1		52.8	100.0

b)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
165	62		13.4			3.6		2259.6	2276.6
168	67.5				1.3	15.5		77.6	94.4
172	59					35.6		750.1	785.7
175	77.5		5.6			13.6		114.3	133.5
178	61		0			3		50.4	53.5
183	92		22.4			175		657.9	855.3
189	72.5					0.7		16.5	17.2
192	69					8.9		32.9	41.8
194	73.5					0		10	10
200	75.5					23.8		348.2	372
202	68					9.7		235.1	244.8
207	75	27.2	0.7			58.3		224.1	310.3
208	89					52.6		6.3	58.9
216	77	2.6	0.2			676.6		96	775.4
217	58.5					9.9		27.3	37.2
220	95					293.9		188.2	482
221	70				6.5	18.6		73.1	98.2
226	94.5		0.3		3.4	199.9		1017.4	1221
Mean	74.2	1.7	2.4		0.6	88.8		343.6	437.1
Std dev		6.4	6		1.7	168.3		559	582
%Catch		0.4	0.5		0.1	20.3		78.6	100.0

c)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
164	107		0.8		1.3	2.1		577.5	581.7
169	130				0.9	2.4		159.6	162.9
173	113		0.2		0.7	0.3		139.5	140.7
174	112.5	2.8	1.9			6.5		171.9	183.1
179	105		0.7			59.8		233.5	294
182	110	8.5	0.1			77.8		49.8	136.2
185	124					18.7		125.8	144.5
188	113.5					3.9		35.2	39
193	109.5					10.6		5.5	16.1
196	189		0.2			123.5		1168.9	1292.6
199	107.5					257.3		126.2	383.5
203	139.5					387.7		8052.1	8439.7
206	155.5		1.4			116.1		211.3	328.8
209	161		5.1			253		210.1	468.1
212	177		0.3			46.6		104.8	151.7
213	122.5							3	3
215	114					10.2		26.6	36.9
218	111					51		232.8	283.8
222	105				0.4	60.4		81.3	142.1
223	104					116.3		6541.6	6658
227	109.5	0.6				323.5		2117.2	2441.4
Mean	124.8	0.6	0.5		0.2	91.8		970.2	1063.2
Std dev		1.9	1.2		0.4	116		2172.2	2242.7
%Catch		0.1			0.0	8.6		91.3	100.0

d)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
163	311.5				321.8			7142.1	7463.8
170	328				27			635.7	662.7
180	346.5				5.3			213.4	218.7
181	240							208.7	208.7
186	337				2.2	4		363	369.1
187	276.5				6	8.4		527.4	541.7
197	379.5				1.9	18.8		247.6	268.3
198	206					42.8		135	177.8
204	245					70.6		1020.3	1090.9
205	265.5				1.7	36.2		79.4	117.3
210	348.5					48.5		217.6	266.1
211	355.5					29.7		69.9	99.6
214	227.5					25.4		133.5	158.9
219	335				3.8	43.5		229	276.3
Mean	300.1				26.4	23.4		801.6	851.4
Std dev					85.3	22.6		1843.2	1921.7
%Catch					3.1	2.7		94.2	100.0

Cap Juby- Casablanca

A total of 55 valid trawl stations were analysed in this area, of these 13 stations were between 0 -50 m depth, 20 between 50 - 100 m depth, 15 between 100 - 200 m depth and 7 between 200 – 500 m. Table 5.7 shows the catch rates of main groups, while Table 5.8 shows catch rate for the main demersal species groups. The bottom in this area was very uneven and it was difficult to find areas suitable for bottom trawling. Especially at the lower slope this reduced the number of trawl hauls conducted.

Main groups

The average catch rate in the depth region between 0 -50 m was 1753 kg/h (Table 5.7a). The pelagic group was the most dominant with average catch rates of 1680 kg/h. However, one very rich catch of *T. trachurus* constituted 73% of the total catch in this region. The demersal group had average catch rates of 30 kg/h. The group of cephalopods showed only small catches (0.3 %). Only a few shrimps and sharks were caught.

Between 50-100 m the catch rates decreased to 570 kg/h (Table 5.7b). The most abundant group was the pelagic group with 90.8 % of the total (518 kg/h). The demersal group had average catch rates of 25 kg/h.

The mean catch rates increased at the upper slope with catch rates of 950.1 kg/h (Table 5.7c). The dominating group was now “other” (with 67.4 % of the catches and 640 kg/h), while the pelagic group followed (with 282 kg/h and 30%).

Bottom trawls on the lower slope gave an average catch rate of 106 kg/h (Table 5.7d). The groups pelagic and “other” dominated with mean catch rates of 49 kg/h and 26 kg/h. The demersal group had average catches of 19 kg/h. Shrimps represented 11% of the catches, while both sharks and cephalopods only corresponded to 0.1 % of the catches.

Demersal groups

Table 5.8 shows catch rate for the main demersal species groups. The group “other” dominated among the demersal species on the inner shelf (> 98% in all depth intervals). No demersal species were found in high abundance on the outer shelf, upper slope or lover slope, although some seabream and hake could be found on the upper and lower slope. The average catch rate for the different depth intervals from the inner shelf and to deeper water was 1753, 570, 950 and 106 kg/h, respectively.

Table 5.7. Catch rates (kg/hour) by main groups caught in valid swept area bottom trawl hauls. Cap Juby-Casablanca. : a) 20–50 m, b): 50-100 m, c): 100-200 and d): 200-500 m

a)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
229	40.5		28.1	246.5			5.2	279.8
235	49	10.4	6.7	1033.1			21.9	1072
240	40	1.2	0.3	10.8			43	55.3
241	37		4.4	747.1			4.2	755.8
243	37.5		171.6	382.2			47.9	601.7
244	49.5	7.5	46.9	603			2.2	659.6
256	47.5	10		16401.4			73.1	16484.6
257	34.5		32.1	595.7			17.9	645.7
260	44	8	19.8	407.8			43.9	479.5
261	37	22.3	0.6	98.2			9.5	130.6
266	45	5.4	14.6	22.5		5.3	182.1	229.9
277	47		47.1	640.9	35		3.2	726.2
278	39	6.1	11	651.8				668.9
Mean	42.1	5.5	29.5	1680.1	2.7	0.4	34.9	1753.0
Std dev		6.5	45.8	4433.5	9.7	1.5	49.7	4435.5
%Catch		0.3	1.7	95.8	0.2		2.0	100.0

b)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
230	71		11.1	159.1			5.7	175.9
234	57.5	6.3	80.8	286.5			36.5	410.1
236	90	12.9	16.8	1065.5			14	1109.2
239	74			140.6			53	193.5
242	63		22.5	275.6			0.6	298.7
245	86	6.4	10.1	315.3			26.3	358.1
246	93	3.6	49.9	94.5		7.9	52.8	208.8
248	76.5	0.9	9.1	274.1			49.1	333.2
251	89.5		8.5	61.7			57.6	127.9
252	94	0.6	4.1	28		19.7	23.4	75.8
255	62.5	9.6	9.9	4476.4			1.7	4497.6
258	56	1.2	23.8	1577.1			3.4	1605.4
262	81		11	841.8			8.8	861.6
265	51		9.2	22.7			17.7	49.7
267	81		69.4	24.7			80.3	174.5
270	96.5		60.4	363.3			14.5	438.2
271	98		22.2	14		1.6	4.5	42.3
276	79.5		32.8	32			0.9	65.7
279	90	4.2	24.9	179.5			8.5	217.2
284	87.5	6.2	23.1	119.2			10.1	158.5
Mean	78.9	2.6	25	517.6		1.5	23.5	570.1
Std dev		3.8	22.7	1015.2		4.7	23.4	1005.6
%Catch		0.5	4.4	90.8		0.3	4.1	100.0

c)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
231	108		73.6	2662.6			7762.3	10498.5
233	124	5.7	20.5	7.5			104.2	137.9
237	132	2.9	0.4	0.1			145.4	148.8
249	168	5.3	29.7	412.9			137.9	585.9
250	133	6.6	8.3	94.2			4.7	113.8
253	141	10.8	1.8	64.3			22.2	99.2
254	102	5.2	11.8	5.4		7.1	9.2	38.8
259	108	10.7	59.7	28.5			25.2	124
263	129.5		43.5	130.7			8	182.2
264	144.5		32.9	33.2			22.8	89
269	196.5		15.6	2			188.5	206.1
272	158.5		6.4	5.7			150.5	162.5
275	108.5	8.5	16.5	48.6			861.2	934.7
280	143.5		16.4	97.7		8.3	80.6	203
283	164		6.7	636	1.2		82.7	726.6
Mean	137.4	3.7	22.9	282	0.1	1	640.4	950.1
Std dev		4.1	21.5	682.2	0.3	2.7	1981.5	2654.6
%Catch		0.4	2.4	29.7	0.0	0.1	67.4	100.0

d)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
232	350		11	8.3		4.7	59.6	83.6
238	331.5		98.3	14.6		59.4	31.6	203.9
268	409.5		4.3	20.1		17.7	2	44.1
273	210.5			4.5			60.4	64.9
274	357		17.6	256.9			8.1	282.5
281	480		0.1	12.3	0.9		21.3	34.7
282	269	0.4		25.7		2	1.9	30
Mean	343.9	0.1	18.8	48.9	0.1	12	26.4	106.2
Std dev		0.2	35.7	92	0.4	21.8	25.3	98
%Catch		0.1	17.7	46.0	0.1	11.3	24.9	100.0

Table 5.8. Catch rates (kg/hour) by demersal groups caught in valid swept area bottom trawl hauls. Juby-Casablanca: a) 20–50 m, b): 50-100 m, c): 100-200 m d): 200-500 m

a)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
229	40.5				0.2	27.9		251.7	279.8
235	49				0.6	6.1		1065.3	1072
240	40					0.3		55	55.3
241	37				3.3	1.2		751.3	755.8
243	37.5			92.4	0.5	78.8		430.1	601.7
244	49.5				0.7	46.2		612.8	659.6
256	47.5							16484.6	16484.6
257	34.5				30.5	1.6		613.6	645.7
260	44					19.8		459.7	479.5
261	37					0.6		130	130.6
266	45				13.8	0.9		215.3	229.9
277	47				1.4	45.6		679.2	726.2
278	39				3.7	7.3		657.9	668.9
Mean	42.1			7.1	4.2	18.2		1723.6	1753.0
Std dev				25.6	8.7	24.8		4444.0	4435.5
%Catch				0.4	0.2	1.0		98.3	100.0

b)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
230	71				0.8	10.2		164.8	175.9
234	57.5	3.7	6.1	3.7		67.2		329.3	410.1
236	90		0.1		4.5	12.2		1092.4	1109.2
239	74							193.5	193.5
242	63				0.1	22.4		276.2	298.7
245	86				4.5	5.5		348	358.1
246	93	1.4			10.3	38.3		158.8	208.8
248	76.5				0	9.1		324.1	333.2
251	89.5				8.5			119.4	127.9
252	94		0.5		3.6			71.7	75.8
255	62.5				9.9			4487.7	4497.6
258	56				23.8			1581.6	1605.4
262	81				8.9	2.1		850.6	861.6
265	51				8.6	0.6		40.4	49.7
267	81	4.2			5.8	59.3		105.1	174.5
270	96.5				35.7	24.7		377.8	438.2
271	98	0.7			19.7	1.9		20	42.3
276	79.5				29.8	3		32.9	65.7
279	90				23	1.9		192.3	217.2
284	87.5				17.9	5.2		135.4	158.5
Mean	78.9	0.5	0.3	0.2	10.8	13.2		545.1	570.1
Std dev		1.2	1.4	0.8	10.7	19.9		1009.1	1005.6
%Catch		0.1	0.1	0.0	1.9	2.3		95.6	100.0

c)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
231	108					73.6		10425	10498.5
233	124					20.5		117.5	137.9
237	132					0.4		148.5	148.8
249	168				20.9	8.8		556.2	585.9
250	133				7.5	0.8		105.5	113.8
253	141				1.8			97.4	99.2
254	102				11.8			26.9	38.8
259	108				26.1	33.5		64.3	124
263	129.5				36	7.5		138.7	182.2
264	144.5				25.7	7.2		56.1	89
269	196.5				13.7	1.9		190.5	206.1
272	158.5				1.7	4.6		156.1	162.5
275	108.5				10.7	5.8		918.2	934.7
280	143.5				15.7	0.7		186.6	203
283	164		0.4		6.4	0		719.9	726.6
Mean	137.4		0		11.9	11		927.2	950.1
Std dev			0.1		11.2	19.6		2640.8	2654.6
%Catch					1.3	1.2		97.6	100.0

d)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
232	350				9.4	1.6		72.6	83.6
238	331.5				97.8	0.5		105.5	203.9
268	409.5				4.3			39.8	44.1
273	210.5							64.9	64.9
274	357				17.6			265	282.5
281	480				0.1			34.5	34.7
282	269							30	30
Mean	343.9				18.5	0.3		87.5	106.2
Std dev					35.6	0.6		82.6	98
%Catch					17.42	0.28		82.39	100.00

Casablanca-Tanger

A total of 25 valid trawl stations were analysed in this area, of these 3 stations were between 0 -50 m depth, 6 between 50 - 100 m depth, 6 between 100 - 200 m depth, 6 between 200 – 500 m and 4 >500 m. Table 5.9 shows the catch rates of main groups, while Table 5.10 shows catch rate for the main demersal species groups.

Main groups

The average catch rate in the depth region between 0 -50 m was 283 kg/h (Table 5.9a), but there were only three valid hauls in this area ranging from 51 to 656 kg/h. The “Other” group was the most dominant with average catch rates of 171 kg/h. The pelagic and demersal groups had average catch rates of 58 and 41 kg/h, respectively.

Between 50-100 m the catch rates were in the same range and average catch rate was 269 kg/h (Table 5.9b). The most abundant group was the pelagic group with 234 kg/h. The demersal group had average catch rates of 25 kg/h.

The mean catch rates decreased at the upper slope with catch rates of 111 kg/h (Table 5.9c). The dominating groups were pelagic (37 kg/h), demersal (36 kg/h) and "other" (29 kg/h).

Bottom trawls deeper than 200 m gave relatively poor catches with average catch rates of 59 kg/h. The most important groups in the lower slope (Table 5.9d) were pelagic (11 kg/h), demersal (10 kg/h) and "Other" (15 kg/h). In the deeper region (Table 5.9e) one rich catch of sharks dominated (mean catch of 49 kg/h) and "other" were second most important with 29 kg/h.

Demersal groups

Table 5.10 shows catch rate for the main demersal species groups. The group "other" dominated among the demersal species in all depth regions, but also hakes were present in varying degrees in all hauls. The average catch rate of hake for the different depth intervals from the inner shelf and to deeper water was 35, 24, 35, 10 and 2 kg/h, respectively.

Table 5.9. Catch rates (kg/hour) by main groups caught in valid swept area bottom trawl hauls. Cap Casablanca - Tanger.: a) 20–50 m, b) 50-100 m, c) 100-200, d) 200-500 m and e) deeper than 500 m

a)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
293	32.5	33.0	74.7	168.6			380.1	656.4
301	45.5		25.4	5.0			110.7	141.2
309	50.0		21.6			6.4	22.9	50.9
Mean	42.7	11.0	40.6	57.9		2.1	171.2	282.8
Std dev		19.1	29.6	95.9		3.7	186.2	326.7
%Catch		3.9	14.4	20.5		0.7	60.5	100.0

b)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
285	84.0	1.6	48.4	52.6			2.1	104.6
292	87.0		28.1	243.6			5.8	277.4
294	64.0		21.6	0.3			9.6	31.5
299	89.0		11.4	1105.4			2.3	1119.2
303	76.5		23.7	0.3		4.5	12.4	40.8
308	81.5	9.4	13.7	2.4			14.8	40.2
Mean	80.3	1.8	24.5	234.1		0.7	7.8	269.0
Std dev		3.8	13.3	437.1		1.8	5.3	426.8
%Catch		0.7	9.1	87.0		0.3	2.9	100.0

c)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
286	109.5		94.5	59.7			13.1	167.3
291	181.0		49.7	3.4			128.4	181.4
295	101.0		30.7	0.7		12.9	10.4	54.7
298	190.0	0.8	15.5	123.5		10.1	4.4	154.3
304	120.5	4.3	7.2	29.4		10.4	5.9	57.2
307	134.0	22.1	16.2	5.1			8.6	52.0
Mean	139.3	4.5	35.6	37.0		5.6	28.5	111.2
Std dev		8.8	32.5	48.0		6.2	49.1	62.5
%Catch		4.0	32.0	33.3		5.0	25.6	100.0

d)

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
287	262.5	1.0	0.3	4.5		2.1	12.1	19.9
290	348.5		34.8	1.7		8.6	24.2	69.3
296	207.5	0.4	4.5	6.5		9.3	7.7	28.4
297	240.5		3.1	35.0		18.8	7.0	63.9
306	397.5	1.4	12.5	8.2	0.7	12.3	26.4	61.4
311	292.0		6.9	8.1	0.2	0.0	10.5	25.6
Mean	291.4	0.5	10.3	10.7	0.2	8.5	14.6	44.8
Std dev		0.6	12.7	12.2	0.3	6.8	8.5	22.3
%Catch		1.1	23.0	23.9	0.4	19.0	32.6	100.0

e

Station	Gear depth	Cephalopods	Demersal	Pelagic	Sharks	Shrimps	Other	Total
288	580.0		2.6	2.0	2.9		25.3	32.7
289	507.0	1.6	1.6	0.3			27.1	30.6
305	759.5				191.7		53.7	245.5
312	572.0		1.6	1.4	2.7	1.3	9.0	16.1
Mean	604.6	0.4	1.5	0.9	49.3	0.3	28.8	81.2
Std dev		0.8	1.1	0.9	94.9	0.6	18.5	109.7
%Catch		0.5	1.8	1.1	60.7	0.4	35.5	100.0

Table 5.10. Catch rates (kg/hour) by demersal groups caught in valid swept area bottom trawl hauls. Casablanca - Tanger: a) 20–50 m, b): 50-100 m, c): 100-200 m, d): 200-500 m and e): deeper than 500

a)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabreams	Snappers	Other	Total
293	32.5				74.7			581.7	656.4
301	45.5				9.6	15.8		115.8	141.2
309	50.0				21.6			29.2	50.9
Mean	42.7				35.3	5.3		242.2	282.8
Std dev					34.6	9.1		297.2	326.7
%Catch					12.5	1.9		85.6	100.0

b)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
285	84.0				46.0	2.3		56.3	104.6
292	87.0				28.1			249.4	277.4
294	64.0				21.6			9.9	31.5
299	89.0				11.4			1107.7	1119.2
303	76.5				23.7			17.2	40.8
308	81.5				13.7			26.6	40.2
Mean	80.3				24.1	0.4		244.5	269.0
Std dev					12.4	1.0		432.4	426.8
%Catch					9.0	0.1		90.9	100.0

c)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
286	109.5				94.5			72.8	167.3
291	181.0				49.7			131.8	181.4
295	101.0				30.7			24.0	54.7
298	190.0	1.8			13.7			138.8	154.3
304	120.5				7.2			50.0	57.2
307	134.0		0.2		16.0			35.8	52.0
Mean	139.3	0.3			35.3			75.5	111.2
Std dev		0.7	0.1		32.8			49.1	62.5
%Catch		0.3			31.7			67.9	100.0

d)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
287	262.5				0.3			19.6	19.9
290	348.5				34.8			34.5	69.3
296	207.5				4.5			23.9	28.4
297	240.5				3.1			60.8	63.9
306	397.5				12.4			48.9	61.4
311	292.0				6.9			18.8	25.6
Mean	291.4				10.3			34.4	44.8
Std dev					12.7			17.2	22.3
%Catch					23.0			76.8	100.0

e)

Station	Gear depth	Croakers	Groupers	Grunts	Hake	Seabream	Snappers	Other	Total
288	580.0				2.6			30.1	32.7
289	507.0				1.6			29.0	30.6
305	759.5							245.5	245.5
312	572.0				1.6			14.5	16.1
Mean	604.6				1.5			79.8	81.2
Std dev					1.1			110.7	109.7
%Catch					1.8			98.3	100.0

5.2. Biomass index

The Biomass index of demersal and pelagic species (based on demersal trawl data) varied regionally and had generally high coefficients of variation (cv; Table 5.11). Due to the high degree of uncertainty, indexes are not very precise*, i.e*. reliable, and should be treated as such. Also swept area abundance estimates of pelagic species (Table 5.12) only gives an indication of the proportion of fish available to the bottom trawl close to the bottom.

The total biomass index of demersal species was 211 000 tons. The region with the highest abundance of demersal species was between Cape Blanc and Cape Juby (109 000 tons). Seabreams and grunts dominated in this area, and the index was about twice as high as in the region between C. Vert –C. Blanc where the index was 56 000 tons. Seabreams and grunts were still very important here but the hake *M. polli* increased considerably in importance. Further south between Conakry – C. Vert the index decreased to 39 000 tons. Seabreams was the most important group in this region.
The estimate for the region C. Juby – Casablanca was the lowest of all (7 600 t), with seabreams making up most of the biomass.

Table 5.11. Shelf (20 – 200 m) biomass index of selected demersal fish species and families. Co-efficient of variation (CV) is shown in parentheses.

Species	Conakry – C. Vert		C. Vert – C. Blanc		C. Blanc – C. Juby		C. Juby - Casablanca		Total
M.senegalensis	127	(2.7)	6652	(0.5)	422	(0.7)	108	(1.3)	7308
M.polli	684	(2.3)	12041	(0.6)					12725
Snappers	439	(1.1)	3	(1.7)					443
Groupers	1874	(0.7)	779	(0.8)	651	(0.8)	48	(1.3)	3352
Grunts	5236	(0.7)	10095	(0.9)	15739	(1.1)	491	(2.2)	31560
Croakers	5833	(1.4)	2840	(1.2)	5875	(1.4)	87	(0.7)	14635
Seabreams	24329	(0.3)	23798	(0.7)	86395	(0.8)	6847	(0.6)	141368
Demersal	**38522**	**(0.3)**	**56208**	**(0.5)**	**109082**	**(0.7)**	**7580**	**(0.6)**	**211392**

* The demersal biomass index includes the Nansis codes SPADE, SPADI, SPALI, SPAPA, SPAPR, SPASP, PODP, SCI, SER, LUT, MERME02, and MERME03

Table 5.12. Shelf (20 – 200 m) biomass index of selected pelagic fish species. Co-efficient of variation (CV) is shown in parentheses.

Species	Conakry – C. Vert		C. Vert – C. Blanc		C. Blanc – C. Juby		C. Juby – Casablanca		Total
D. rhonchus	18706	(0.5)	2514	(1.0)	1033	(1.5)			22253
T. treace	38787	(0.8)	44928	(0.5)	44676	(1.0)			128391
T. trachurus	11	(3.1)	16392	(0.9)	42846	(0.4)	182614	(1.1)	241863
S. aurita	4195	(0.9)	104	(0.7)	1146	(1.6)			5445
S. maderensis	19	(0.8)	2447	(1.6)					2466
E. encrasicolus	3671	(3.1)	13405	(1.3)	10121	(0.9)	8657	(1.0)	35854
S. pilchardus			923	(1.6)	20514	(0.9)	17956	(1.0)	39393
S. japonicus	763	(0.7)	1143	(1.0)	22439	(1.2)	13969	(0.6)	38314
Pelagic	**99494**	**(0.6)**	**89055**	**(0.4)**	**159261**	**(0.5)**	**231738**	**(0.9)**	**579549**

* The pelagic estimate includes the Nansis codes ENG, CLU, CAR, SCM, SPH, and TRI.

The index of pelagic fish gave a total of 580 000 tons. The highest abundance was measured between Cap Juby – Casablanca with 232 000 tons followed by 159 000 tons between Cap Blanc – Cap Juby. Further south between Cap Vert –Cap Blanc 89 000 tons was estimated while 99 000 tons was found between Conakry – Cap Vert. The most abundant pelagic fish in the trawl catches was *T.trachurus* followed by *T.treace* with total indexes of 241 000 and 128 000 respectively. This is not surprising as at least adult horse mackerel is bottom attached during the day. *T.trachurus* was most common in the region between Cap Juby and Casablanca while *T. trecae* who has a more southern distribution was found only south of Cap Juby with relatively equal abundance index in each of the three southernmost regions.

Table 5.13. Shelf (20 – 200 m) biomass index of selected other pelagic and demersal species and families. Co-efficient of variation (CV) is shown in parentheses.

Species	Conakry – C. Vert		C. Vert – C. Blanc		C. Blanc – C. Juby		C. Juby – Casablanca		Total
Shrimps	8	(2.1)	572	(0.9)	26	(1.3)	531	(0.6)	1137
Cephalopods	9003	(0.5)	16995	(0.9)	4534	(0.4)	1368	(0.4)	31899
O. vulgaris	717	(0.7)	2361	(1.1)	1217	(0.8)	529	(0.5)	4823
Sharks	1189	(1.3)	1961	(0.8)	787	(0.8)	191	(2.2)	4127
Rays	7375	(0.9)	1672	(0.5)	6757	(0.8)	655	(0.7)	16459

* The biomass index includes the Nansis codes SHR (shrimps), SQU (cephalopods), SHA (sharks), and RAY (rays).

Estimates for some common non-fish species/groups like cephalopods (squids and octopus, including *O. vulgaris*) and elasmobranches (sharks and rays) are shown in Table 5.13. Cephalopods were the most common group, with particularly high abundance between Cap Vert- Cap Blanc, and in the area between Conacry and Cap Vert. Rays were also relatively abundant, especially between Cap Blanc – Cap Juby. Sharks had its highest abundance between Cap Vert – Cap Blanc. Relatively little shrimps were observed but this is to be expected as the analyse only went to 200 m depth.

5.3. Fish biodiversity

Biodiversity is the variety of living organisms in all their forms and defined in terms of genetic diversity, species diversity and ecosystem diversity and the interrelations between genes, species and ecosystems. The scope of this chapter is more modest as we will to try to highlight the main trends. Nevertheless it is important to note that since this is a regional survey, information on

transboundary species is of importance. We therefore, encourage the different parts involved in the CCLME project to undertake a more exhaustive work.

This year's survey along the North West coast of Africa covered the region from Guinea-Conakry to Tanger in Morocco, with a total of 312 fishing stations. A total of 444 telesost species, belonging to 129 teleost fish families were recorded; for the cartilaginous species the catches showed: 32 shark species belonging to 11 different families, 20 ray species from 5 families and 2 species of chimaeras from two different families. It is important to notice that in the analysis, all sharks and chimaeras are treated as a group while rays and skates in another group.

For analyses purposes, the coast was divided in five sub-regions: Conakry to Cap Vert, Cap Vert to Cap Blanc, Cap Blanc to Cap Juby, Cap Juby to Casablanca and Casablanca to Tanger. The area has been divided in four depth ranges: 20-50 m, 50-100 m, 100-200 m and 200-500 m.

Table 5.14 shows the total number of fishing stations worked out, the total catch weight (in Kg), the mean catch weight per trawl (in Kg/30 min of trawling), the total number of individuals caught, the mean number of individuals per trawl (number/30 min of trawling) and the total number of species caught by sampled region, while Figure 5.1 shows the relation between these values. Here it can be observed a decrease in species richness with latitude as we move northwards, from tropical to temperate waters. The mean catch weight and mean number of individuals caught is lowest in both ends of the surveyed area with a maximum between Cap Juby and Casablanca. Be aware that although figures in the most northern area (Casablanca-Tanger) seem high, it is due to the small number of fishing stations.

Table 5.14. Number of fishing stations, total catch weight (kg), mean catch weight by station (kg/ 30 minutes of trawling), total number of individuals (number), mean number by station (number/30 min of trawling) and number of species caught in the five sampled regions, from South to North.

REGION	Number of fishing stations	Total weight (kg)	Mean catch (Kg/30 m)	Total number of individuals	Mean number of individuals (number/30 m)	Number of species
Conakry-C.Vert	90	17805.9	11.7	968082.1	579.5	347
C. Vert-C. Blanc	72	30235.9	28.67	1770501.9	1989.6	272
C. Blanc-C. Juby	66	22364.2	25.25	1083305	1235.8	158
C. Juby-Casablanca	56	18158.1	44.7	1562249.4	4565.7	109
Casablanca-Tanger	28	2795.9	21.93	149501.8	997.1	95

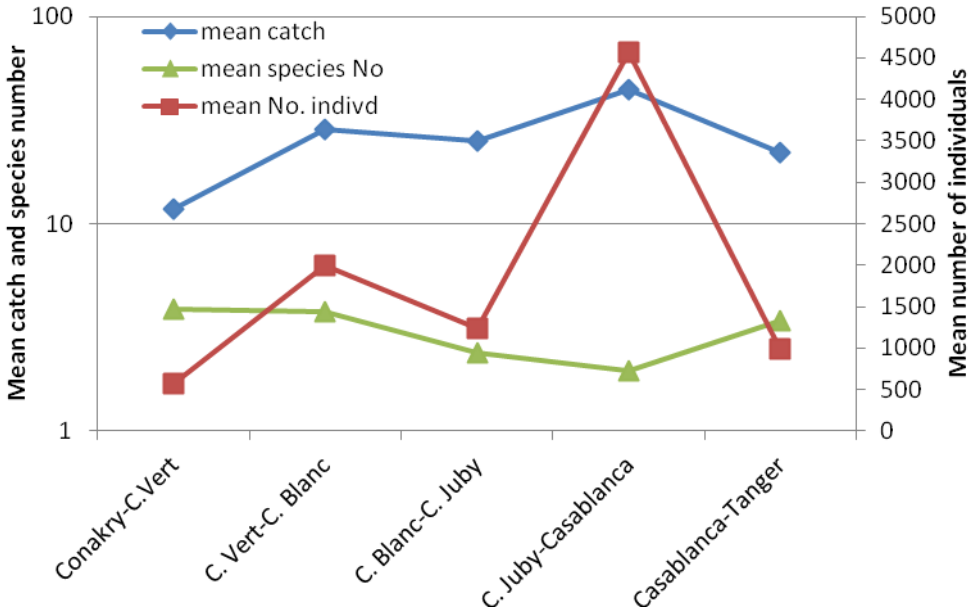


Figure 5.1**.** Mean catch weight (kg per 30 min towing time), mean number of species (per trawl station) and mean number of individuals (number per 30 min towing time) in the different regions.

The average number of species caught in the trawls by depth strata (Figure 5.2) varies with the geographical regions, but in all the highest values are found between 200 and 500 m. The depth interval deeper than 500 m is not included because the number of stations was too low to be considered as representative. In the region between Casablanca and Tanger, the number of trawl stations worked out was also low, though the results for the region should be interpreted with care.

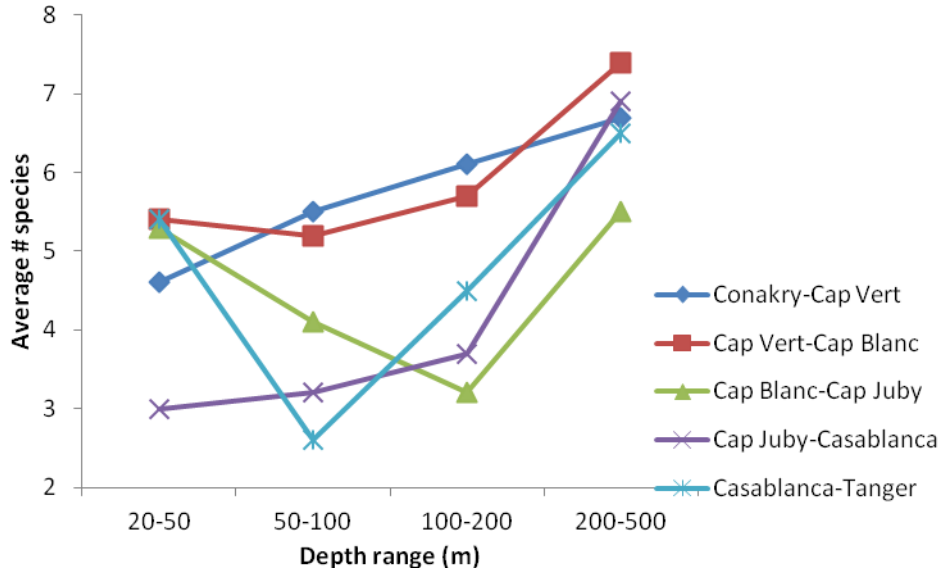


Figure 5.2. Average number of species by depth strata in the five geographical regions.

The most important families are described under the swept area chapter for every geographical region. Appendix I gives a list of all trawl stations, but it must be remembered that some of the records need to be validated due to identification uncertainity and that the taxonomic status of some species is still unclear.

Since there are variations in how frequent a species is caught, its number and weight, we've decided to borrow the concept of relative importance. The term "importance" is here defined as the number, weight and frequency of occurrence of a family in a region. We then, have used the index of relative importance (IRI) which accounts for percentage by number (N), weight (W) and frequency of occurrence (F):

$$IRI = \%F \times (\%N + \%W)$$

For the porpose of this analysis we have used families as unit group for the bony fish whereas for cartilaginous fish, sharks and chimaeras are grouped in one unit while skates and rays in another.

Table 5.15 shows the index of relative importance (in percentage) for those families present in at least 25% of all trawls (pelagic and demersal) by geographical region, and Figure 5.3 represents these index for the most important families.

In all regions carangids is the dominant family and whithin it, horse mackerel was the dominant both in numbers, weigth and frequency of occurrence. The species of horse mackerel changed as we moved northwards: between Conakry and Cap Vert, the Cunene horse mackerel, *Trachurus trecae*, was the only horse mackerel species found. Between Cap Vert and Cap Blanc, though *T. trecae* is still dominant, the presence of Atlantic horse mackerel, *T. trachurus* is quite important. Between Cap Blanc and Cap Juby, the Atlantic horse mackerel increases its importance and it is now the most abundant, while Cunene horse mackerel starts loosing importance. In this region two other horse mackerels were registered: the blue jack mackerel, *T. picturatus* and the Mediterranean horse mackerel, *T. mediterraneus*. Between Cap Juby and Casablanca the Cunene horse mackerel disappeared and was replaced by the Atlantic horse mackerel. *T. mediterraneus* was found in only one station while the blue jack horse mackerel was relatively frequent. Finally, in the northernmost region, between Casablanca and Tanger, the Atlantic horse mackerel was by far the more frequent one. In very few stations the blue jack horse mackerel was also present.

In the southernmost region we found other carangis species, mainly the false scad, *Decapterus rhonchus* and round scad, *D. punctatus*, and as we move north these species loose importance to finally dissapear in the two northern regions.

A similar situtation was found with the species belonging to the Clupeidae family. Between Conakry and Cap Vert the dominant species was the round sardinella, *Sardinella aurita*, though Madeiran sardinella, *S. maderensis* was also found. West African ilisha, *Ilisha africana,* was caught in one station. Between Cap Vert and Cap Blanc, *S. aurita* was still dominant but *S. maderensis*, the European pilchard, *Sardina pilchardus,* and *I. africana* were also present. Between Cap Blanc and Cap Juby, *S. aurita* although present was neither the most frequent nor the most abundant species, instead it was *S. pilchardus*. Between Cap Juby and Casablanca the only species caught was *S. pilchardus*, as it was in the most northern region, between Casablanca and Tanger.

As for the hakes, it was the Benguela hake, *Merluccius polli,* the dominant one with some presence of the Senegalese hake, *M. senegalensis,* in the southernmost region. Between Cap Vert and Cap Blanc, *M. polli* was still dominant but the presence of *M. senegalensis* increases. From this region and to the north, *M. polli* dissapears and it is substituted by the European hake, *M. merluccius*; its frequency of occurrence increases as we move northwards and it is the only species caught in the northernmost region. The frequency of occurrence of *M. senegalensis* decreases northward and dissapears completly from the catches in the northern region.

Within the Scombridae, the chub mackerel, *Scomber japonicus* is the dominant one through out the entire surveyed area and in most regions almost the only one species of the family present.

As for the Scorpaenidae the species composition is quite similar in all regions, whith the presence of several species of the *Scorpaena* genus. In the two southernmost regions the dominant species were the spotted-fin rockfish, *Scorpaena stephanica* and the Ghanean rockfish, *Pontinus accraensis*. From Cap Blanc though, the Ghanean rockfish dissappears, and the Jacobever, *Helicolenus dactylopterus*, together with the red scorpionfish, *S. scrofa,* are the dominant species.

While the white grouper, *Epinephelus aeneus*, from the Serranidae, was the dominant species in the southern region, it looses importance until it dissappears in the northern regions. On the other hand, the comber, *Serranus cabrilla,* goes from being seldom in the south to be the only Serranidae species caught in the north, though in few stations and number.

Seabreams (Sparidae) is a big and varied group. Between Conakry and Cap Vert, the red panadora, *Pagellus bellottii* is dominant, followed by the bluespotted seabream, *Pargus caeruleosticus*, the Angola dentex, *Dentex angolensis*, the bogue, *Boops boops*, the Canary dentex, *D. canariensis*, the large-eye dentex, *D. macrophthalmus* and the Congo dentex, *D. congoensis*. Between Cap Vert and Cap Blanc, *P.caeruleosticus* was caught more frequently than *P. bellottii*; *B. boops* becomes less frequent and *D. congoensis* seems to be replaced by the Marocco dentex, *D. maroccanus*. Between Cap Blanc and Cap Juby, *B. boops* is still present. Among the dentex, *D. maroccans* and *D. macrophthalmus* are the dominat species; the pink dentex, and *D. gibbosus*, appears in the catches. Together with *P. bellotti* we found the axillary seabream, *P. acarne.* Both the common pandora, *P. erythinus*, and *P.caeruleosticus* became less frequent, while the black seabream, *Spondyliosoma cantharus,* was frequently caught. Between Cap Juby and Casablanca the only dentex caught were *D. angolensis, D. macrophthalmus* and *D. maroccanus*. *B. boops* and *S. cantharus* still appeared in the catches. *P. acarne* was frequently caught, while *P. africanus* and *P. auriga* were first caught in this region. Two members of the *Diplodus* genus also appear in this region, *Diplodus bellottii* and *D. vulgaris*. Finally, in the region between Casablanca and Tanger few stations had seabreams, none was dominant and the species caught were *B. boops*, *D. bellottii, D. vulgaris, D. sargus, P. acarne* and *S. cantharus*.

Table 5.15. Index of relative importance (IRI, in percentage) for the most important families and groups for the five geographical regions surveyed.

Family/Region	Conakry-C.Vert	C.Vert-C.Blanc	C.Blanc-C.Juby	C.Juby-Casablanca	Casablanca-Tanger
Acropomatidae		4.40			
Bothidae	0.25	0.11	0.12	0.04	0.05
Caproidae				0.14	
Carangidae	60.39	42.02	36.17	79.00	50.56
Cepolidae					0.01
Chlorophthalmidae	4.39	8.41			
Citharidae			0.06	0.07	0.09
Clupeidae	1.35	0.64	1.74	4.82	
Congridae	0.15	0.10	0.15	0.03	0.52
Engraulididae				2.55	0.85
Fistulariidae	0.41				
Gadidae				0.06	0.83
Gobiidae		4.41		0.21	10.04
Macrorhamphosidae			28.61	5.74	
Macrouridae	0.73	0.64	0.03		0.20
Merlucciidae	2.57	9.21	0.95	1.09	23.57
Moridae	0.92	0.27			
Mullidae	0.93			0.04	
Myctophidae					4.73
Ophidiidae	0.62	0.62	0.03		
Ophichthidae		0.18			
Pomadasyidae	3.41	1.04			
Rays	1.34	0.32	1.04	0.04	
Sciaenidae		0.21			
Scombridae	0.20	0.21	4.59	4.03	2.34
Scorpaenidae	2.31	13.01	2.03	0.03	0.54
Serranidae	0.33	0.14	0.04		
Sharks	1.74	1.18	0.22		1.18
Soleidae	0.05	0.08	0.26	0.03	
Sparidae	8.18	6.18	20.04	1.11	
Synodontidae	0.63				
Tetraodontidae	0.48		0.48		
Trachinidae				0.17	
Triglidae	0.89		0.42	0.05	
Trachichthyidae		0.64			0.30
Trichiuridae	7.58	0.72		0.63	4.14
Zeidae	0.16	5.05	3.02	0.14	0.06

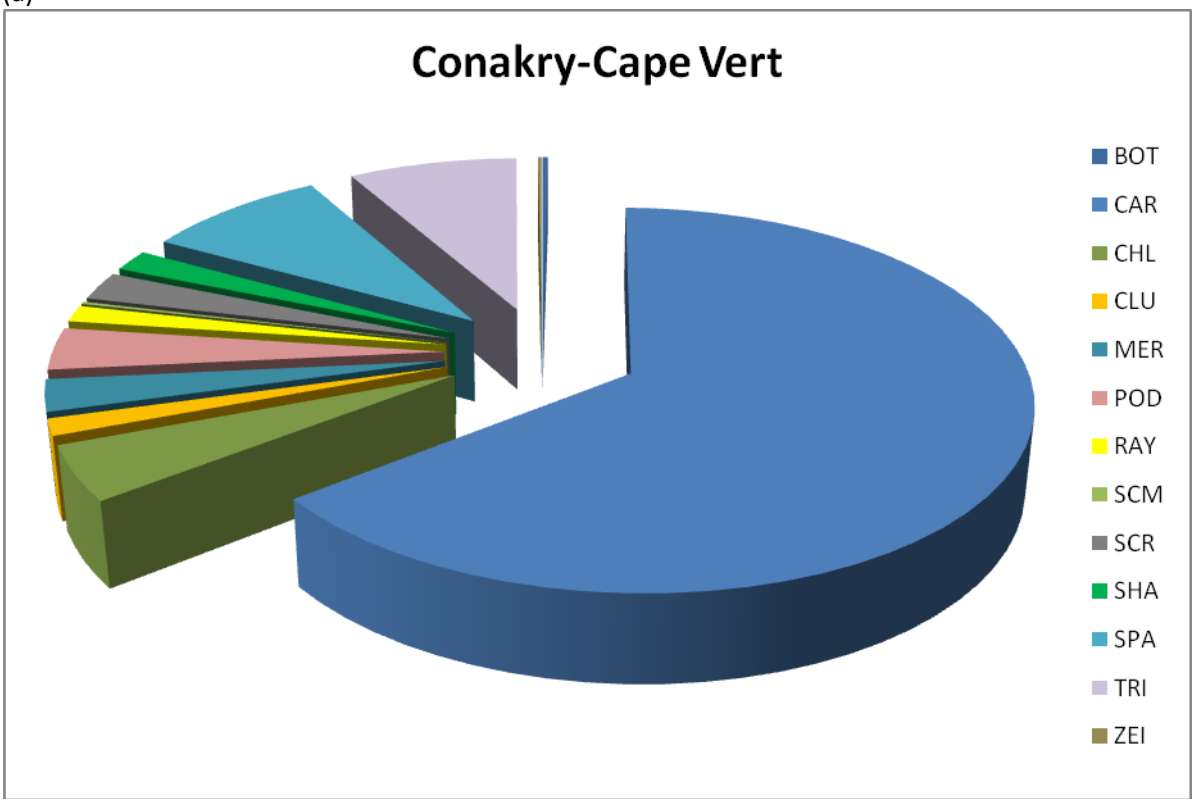
Hairtails (Trichiuridae) were important in the catches. Some species have a deeper distributional range than others and this is reflected in the catches. The largehead hairtail, *Trichiurus lepturus* was found throughout the surveyed area, whereas the slender frostfish, *Benthodesmus tenuis* was caught up to Cap Blanc, being then replaced by a more temperate species, the silver scabbardfish, *Lepidopus caudatus*.

The Zeidae family was represented by two species found along the entire surveyed area: the John dory, *Zeus faber* and the silver John dory, *Zenopsis conchifer*. *Z. faber* was the dominant species.

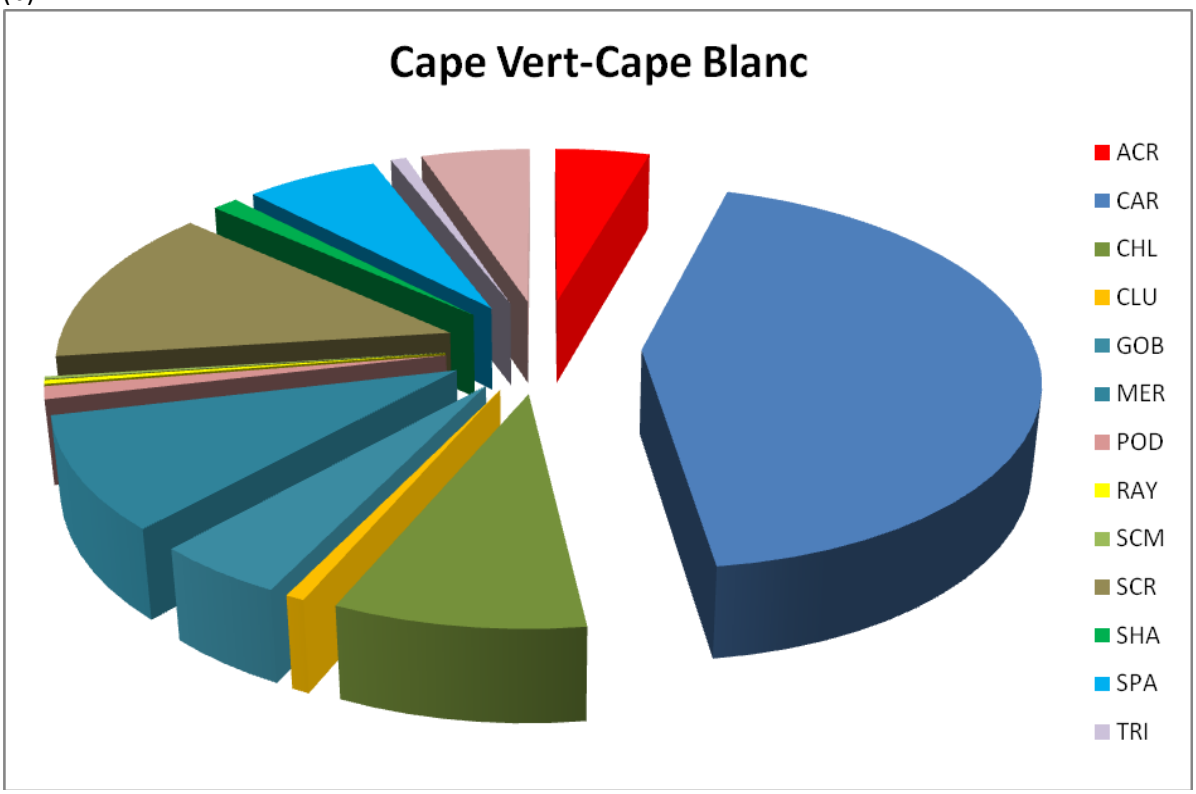
Sharks are treated not by families but as a group. They were not a target group during this survey and the gear used is not suitable to catch them, therefore results concerning sharks should be taken only as an indication. Nevertheless we've seen a big change in the composition and frequency of occurrence throughout the area. In the southern regions (up to Cap Blanc), though they were never abundant, they were not infrequent guests in the catches, with the presence of several species. The most abundant were the African sawtail catshark, *Galeus polli*, tha smoothhound shark, *Mustelus mustelus*, the nursehound, *Scyliorhinus stellaris* and the gulper shark, *Centrophorus granulosus*. From Cap Blanc and north, the diversity of shraks caught diminishes. *M. mustelus* was the only species found in all regions.

Rays and skates are also treated as a group. Within this group it can also be observed a less diverse species composition as we move northwards. Up to Casablanca the most common species is the twineye skate, *Raja miraletus*, while the marbled electric ray, *Torpedo marmorata,* is the only species found in all geographical areas.

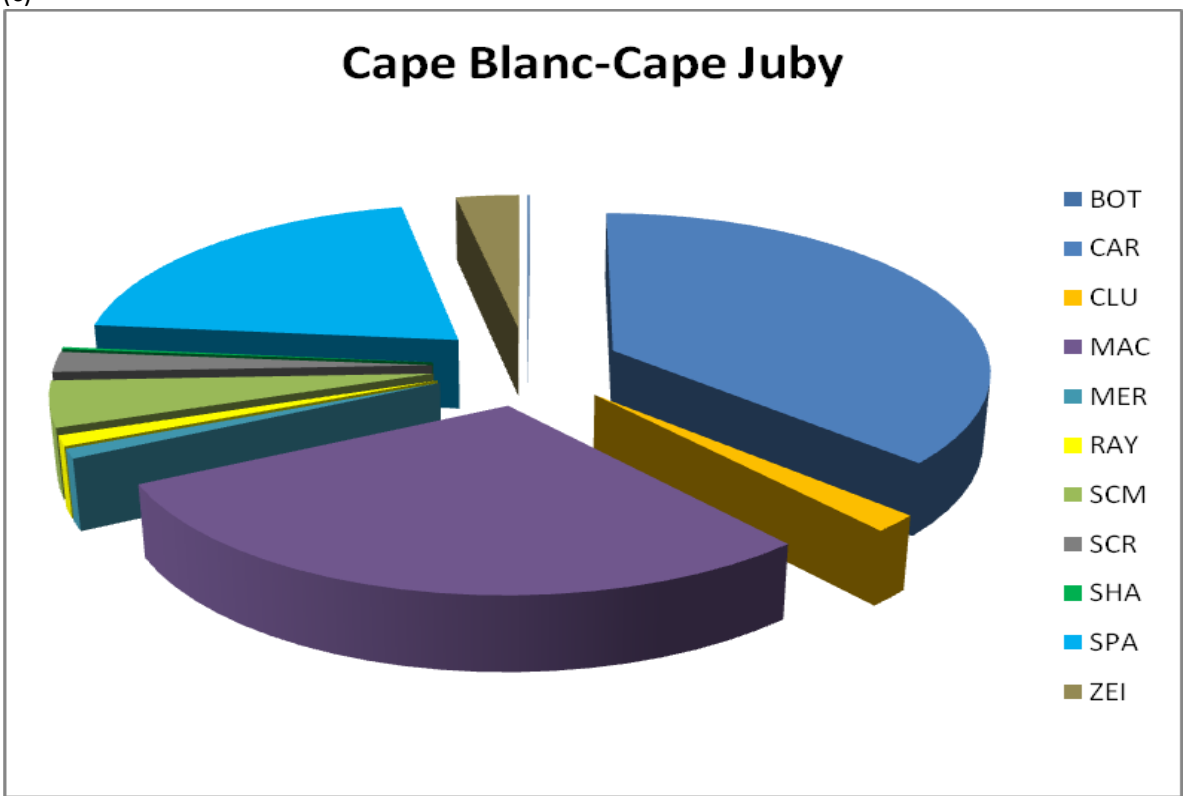
(a)


Conakry-Cape Vert
BOT
CAR
CHL
CLU
MER
POD
RAY
SCM
SCR
SHA
SPA
TRI
ZEI

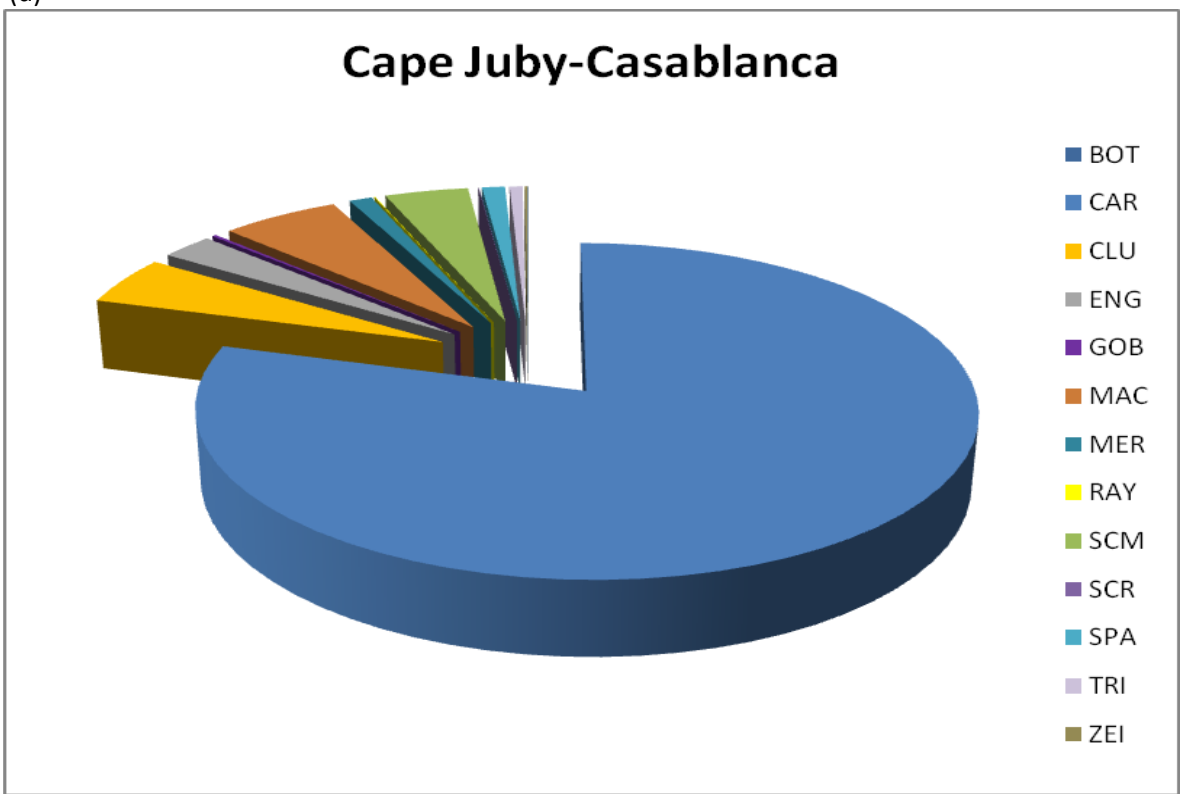
(b)


Cape Vert-Cape Blanc
ACR
CAR
CHL
CLU
GOB
MER
POD
RAY
SCM
SCR
SHA
SPA
TRI

(c)


Cape Blanc-Cape Juby
BOT
CAR
CLU
MAC
MER
RAY
SCM
SCR
SHA
SPA
ZEI

(d)


Cape Juby-Casablanca
BOT
CAR
CLU
ENG
GOB
MAC
MER
RAY
SCM
SCR
SPA
TRI
ZEI

(e)

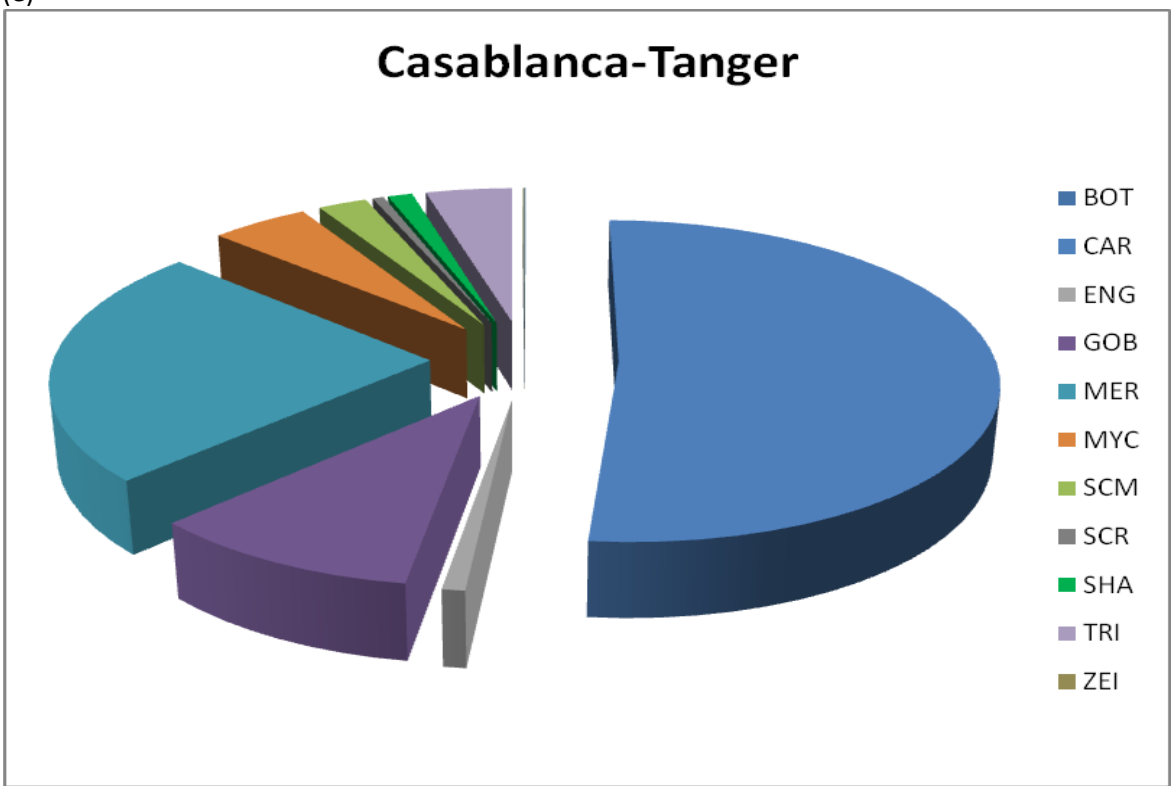


Figure 5.3. Representation of the index of importance, in percentage (%IRI) for the most important families or groups within each geographical region: (a) Conakry – Cap Vert, (b) Cap Vert- Cap Blanc, (c) Cap Blanc – Cap Juby, (d) Cap Juby – Casablanca and (e) Casablanca – Tanger. The corresponding values are to be found in Table 5.15. Families are: ACR: Acropomatidae, BOT: Bothidae, CAR: Carangidae, CHL: Chlorophthalmidae, CLU: Clupeidae, ENG: Engraulididae, GOB: Gobiidae, MAC: Macrouridae, MER: Merlucciidae, MYC: Myctophidae; POD: Pomadasyidae, RAY: Rays, SCM: Scombridae, SCR: Scorpaenidae, SHA: Sharks, SPA: Sparidae, TRI: Trichiuridae, ZEI: Zeidae.

It is important to mention that though a more exhaustive analysis should be done, we could see differences in the fish species composition between the southern region (from Conakry to Cape Blanc) and the northern region (from Cape Blanc to Tanger); the first one is characterized by more tropical species, while in the second the predominance is of species of temperate waters. It is also noticeable that change in fauna composition is more obvious in shallower waters than in deeper ones, since this later normally have wider distributional areas.

Finally we can say that it is obvious that the different fish species are not evenly distributed along the northwest African coast, having their highest abundances in those areas where the environmental conditions suit their preferences. The different water masses, *i.e*. coastal water, Atlantic water, and the frontal zones between these water masses, together with bottom type, temperature, depth and food availability, are important factors determining the distribution and abundance of the different fish species. Species with the same environmental preferences will co-occur in limited geographical areas and form fish assemblages, with their characteristic species composition.

5.4. Sharks

A total of 32 different shark species, belonging to 11 different families, were caught during the present survey. As the survey progressed northwards, from tropical to temperate waters, the number of species recorded in the bottom trawls diminished and the species composition varied.

Between Guinea and up to Cape Juby, 165 individuals, belonging to 9 different species, were length measured, whereas between Agadir and Tanger all specimens caught (a total of 48 individuals from 6 different species) were length measured, weighted and sexed. In this last region and in addition, stomach content was analyzed on board and maturity was assessed using both internal and external characters. General results are presented in the table bellow (Table 5.16). Maturity is based on Stehmann's scale (1987) but adapted to fit all species in one single table.

The only species found in almost all regions of the surveyed area was the smoothhound shark, *Mustelus mustelus*, which was found in the southern and central regions. We've plotted the average total length for each region (Fig. 1) and found a tendency to find largest individuals in the south. The values were the following: in the most southern region, between Guinea and Cape Vert, the average total length was 97.5 cm (*n* = 26), in the central distributional region, between Cape Vert and Cape Blanc, 69.5 cm (*n* = 49) while in the most northern distributional region, between Cape Blanc and Cape Juby, 75.5 cm (*n* = 6). Although is a known fact that fish at higher latitudes have shorter growing seasons which could constrain their size, more analyses should be done to discard other possible factors (*e.g*. depth, maturity).

Table 5.16. Number of specimens by species (No.) examined between Agadir and Tanger (Morocco), including average depth (m), sex (F: females; M: males), maturity stage (according to Stehmann[1], 1987), max and min total length (cm) and stomach content.

			Sex			Length (cm)		
Species	Average depth	No.	F	M	Maturity	Min	Max	Stomach content
D. calcea	759	6			2	92	117	empty
D. profundorum	738	9	5	4	1,2, 3	55	95	Myctophidae, Sepiolidae
G. melastomus	676	9	7	2	1,4,5	35	65	*A. africana*, not identified fish
S. canicula	260	8	7	1	1	17	51	Crustacean, Myctophidae, *M. norvegicus, M. rutllandi*
S. ringens	759	14	10	4	1,6	34	111	empty
H. vitulus	572	2	1	1	1	74	103	*L. caudatus*

(1)Stehmann, M. (1987).Quick and dirty tabulation of stomach contents and maturity stages for skates (Rajidae), squaloids and other ovoviviparous species of sharks. AES Newsl. 1987 (3): 5-9; modified and improved during EU-FAIR Deep-water Fisheries (1999).

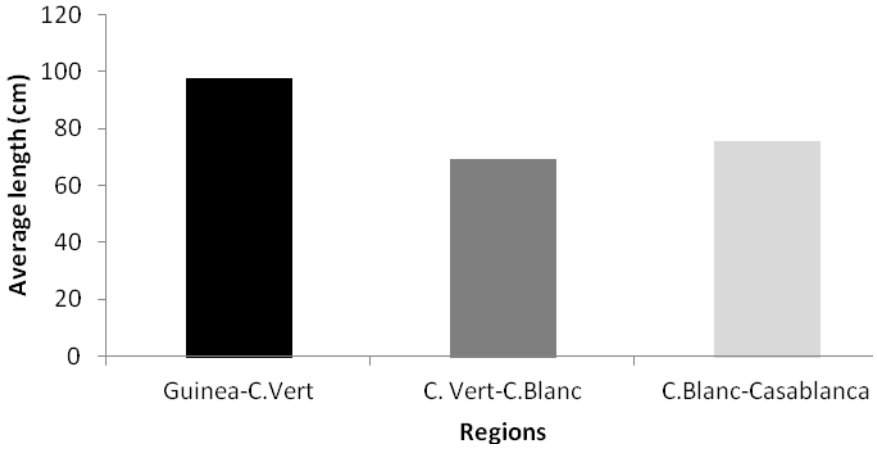


Figure 5.4. Average total length of *Mustelus mustelus* between Guinea and Casablanca, by regions. Values are: Guinea-Cape Vert, 97.5 cm (*n* = 26), Cape Vert-Cape Blanc, 69.5 cm (*n* = 49) and Cape Blanc-Casablanca, 75.5 cm (*n* = 6).

5.5. Zoobenthos

The reporting on the benthic invertebrates collected from the trawl catches are attached to this report as an annex.

5.6. Soft sediment sampling of macrofauna

Invertebrates in the sediments were sampled using a Sneli Sledge (Sneli, 1998) and a 0.1 m^2 van Veen grab. This sampling procedure is designed for biodiversity studies of the sediment in-fauna. Three stations were sampled (at 30 m, 100 m and 500 m depth) along each environmental transect, which represented every third transect. The transects that were not defined as "environmental" only comprised acoustic surveillance, demersal trawling and in a few cases also pelagic trawling. For a thorough description of the study design – the reader is referred to chapter 2.

The study area covered the shelf from Conakry to Tanger, including the EEZs of Guinea, Guinea-Bissau, Senegal, Gambia, Mauritania and Morocco.

The Sneli sledge was used for stations at 30 m and 100 m depth, while the van Veen grab was only used at stations at 500 m depth. However, at stations where the Sneli sledge could not be used, either due to rough weather conditions or non-adequate bottom characteristics, the van Veen grab was tried. When a grab or sledge sampling failed, or the sample quantity was insufficient, a second sampling was always attempted. Minimum and maximum sampling depths were 27 – 112 m and 29 – 611 m for the sledge and grab, respectively.

The washing and sieving procedures were the same for grab and sledge samplings. The entire sediment samples obtained from the grab were sieved. Samples obtained from the sledge were sub-sampled in cases where the total amounts of sediments or invertebrates were too large to be sieved. The sampling procedure aimed to obtain as many invertebrates and in the most optimal condition as possible, from each sample. Therefore, when conditions permitted, the animals were picked out and fixed in 95% ethanol before the sieving process of the 5 mm sieve. The sediment was washed using 3 sieves (5 mm, 1 mm and 0.5 mm). If it was possible to pick all the invertebrates off the 5 mm sieve, these were preserved in 95% ethanol (labelled as 5 mm PIC). Further, if the sediment had a great

amount of invertebrates, a sub-sample was preserved in 8% borax pre-buffered formaldehyde (labelled as 5 mm). If after the washing process, many crustaceans and/or polychaetes were observed in the 1 mm and 0.5 mm sieves, these were separated into LIGHT-fractions (fixed in 95% ethanol and labelled as 1 mm LIGHT or 0.5 mm LIGHT) and heavy fraction (fixed in formalin, 1 mm or 0.5 mm). The Light fraction was obtained by transferring some sediment to a bucket, filling it with water with high pressure, waiting for the sediment to settle while the animals stayed afloat, and subsequently passing the floating organisms through a smaller sieve.

The ethanol from the samples was changed within 24 hours to ensure the preservation process.

All samples were transferred to the University of Bergen where they will be sorted and identified and the results will be presented in a separate report.

Table 5.17. Number of environmental transects, sledge and grab stations by area and country.

Areas	Number of environmental transects	Number of sledge stations	Number of grab stations
Conakry - Cape Vert	**7**	**12**	**10**
Guinea	2	3	4
Guinea-Bissau	2	4	2
Gambia	1	2	1
Senegal	2	3	3
Cape Vert - Cape Blanc	**6**	**7**	**11**
Senegal	1	-	3
Mauritania	5	7	8
Cape Blanc - Cape Juby	**9**	**17**	**9**
Morocco	9	17	9
Cape Juby - Casablanca	**8**	**12**	**12**
Morocco	8	12	12
Casablanca - Tanger	**2**	**4**	**3**
Morocco	2	4	3
TOTAL	**32**	**52**	**45**

5.7. Seabirds

A report on the seabird observations made during the survey will be presented to the CCLME separately by the consultant.

5.8. Cetaceans

The *R/V Fridtjof Nansen* was used as a platform-of-opportunity for data collection on marine mammal species composition, seasonality, presence/absence in relation to bathymetry, and phenotypes. The many sampling stations precluded abundance estimation. From 09 May-22 July 2012, sighting effort was maintained for a total duration of 31,153 min (519h, 13min), or a mean daily effort of 546.54 min (SD=150.1; range, 30-722; median= 586) over 57 effective at-sea effort days. Either one or two observers were present on the ship on each of four legs and covered a total distance of 6,278 km. The study area covered continental shelf and slope waters ranging from Conakry, Guinea, to Tanger, northern Morocco, with two deep-water transits to and from Las Palmas de Gran Canarias.

A total of 105 sightings of cetaceans were registered, 99 unique records and 6 re sightings, in EEZ waters off Guinea (n=22), Guinea-Bissau (n=21), Senegal (n=9), The Gambia (n=4), Mauritania (n=1), Western Sahara (n=11), Morocco (n=35) and offshore (n=2). About half of sightings (51.5%) could be

positively identified to species, most supported by photos, while for another 9% 'probable' identification was applicable. The high rate (39.5%) of unidentified records is due to a combination of the passing-mode cruise protocol not allowing closing on distant sightings, insufficient observers (mode, 1) and the lack of high-powered binoculars.

The three most frequently observed species (% groups, including 'probable' records) were short-beaked common dolphin *Delphinus delphis* (37.4%), common bottlenose dolphin *Tursiops truncatus* (13.1%) and rorquals *Balaenoptera* spp. (12.1%, presumably mostly Bryde's whales, doubtful sei). Others include confirmed Bryde's whale *B. brydei* (3%), Risso's dolphin *Grampus griseus* (3%), rough-toothed dolphin *Steno bredanensis* (3%) and Atlantic spotted dolphin *Stenella frontalis* (3%). Single sightings were registered for short-finned pilot whale *Globicephala macrorhynchus*, striped dolphin *Stenella coeruleoalba* and an unidentified beaked whale (Ziphiidae).

The absence of records of Atlantic humpback dolphin *Sousa teuszii*, despite full coverage of continental shelf waters in five known range states is the first firm evidence that habitat is not merely 'neritic' but circalittoral, i.e. is restricted to a narrow stretch of shallowest (<20m) inshore waters. The contrast between 22 groups of humpback whale documented in Oct-Nov 2011 versus none in this survey further supports a seasonality consistent with a population immigrating from the Southern Hemisphere. The question whether NE Atlantic stock humpback whales also occupies the NW African shelf remained unanswered. The lack of sightings of Clymene dolphin, pantropical spotted dolphin and Fraser's dolphin is explained by the poor coverage of oceanic habitat. Harbour porpoises *P. phocoena* would not have been detected north of Cap Vert due to adverse weather conditions (mainly sea state 3-7 Beaufort), and although conditions were good-moderate south of Cap Vert, their southern distribution limit is near the peninsula.

The single morphotype observed of common dolphin was highly similar to the Mediterranean *D. delphis.* It was both the most frequently sighted species and the one that schooled with the largest group sizes (range 30-350 individuals). Off-effort observations recorded short-beaked common dolphins foraging around the vessel on four different nights. Thus, in 2011-2012 surveys, *D. delphis* showed, by far, the highest abundance of any cetacean, irrespective of season. Moreover, many of unidentified small delphinids (22.2% of sightings) were also thought to be common dolphins. This contrasts with a single striped dolphin sighting (20 specimens) off Morocco in July 2012. The large-bodied and heavily spotted coastal form of *S. frontalis* as well as the smallish, slender and almost unspotted oceanic form were observed, respectively off Guinea/Guinea-Bissau and in offshore waters. Five baleen plates of a sei whale *B. borealis* were collected from a bottom trawl haul, but no live sei whales could be confirmed.
Surprisingly, in contrast with many other regions, no cetaceans with coetaneous diseases were observed or photographed.
A full report of the cetacean sampling will be submitted to CCLME separately.

5.9. Genetics

A number of genetic samples were taken during the survey. Report on genetic analyses on the collected samples will be presented to the CCLME separately.

6. SUMMARY AND CONCLUSIONS

Environmental data

The physical environmental data that has been presented in this report will be further analysed and compared with available historic data from the same region, and the CCLME survey performed during 20 October – 21 december 2011, to show any possible spatial, seasonal or other temporal trends. Laboratory analyses from this survey still needs to be conducted in order to present the data on nutrients and biological data on taxonomy, plankton biomass and production.

Acoustic observations

No acoustic abundance estimate was made from the survey as the coverage was considered not to give the nessesary resolution to varent abundance calculations. However, average s_A values of the main pelagic species, fish size distribution and horizontal distribution maps of these species have been provided. Based on the acoustic observations it was the region between Cape Blanc to Cape Juby that had the highest density of pelagic fish, followed by the region between Cape vert to cape Blanc and between Conacry and Cape Vert. The northern regions had lowest pelagic fish density. Sardine and anchovy were the most abundant species in the region followed by the sardinella species and horse mackerel species.

Swept area survey

The total biomass estimate of commercially important demersal species was 211 000 tons, compared with 355 000 tons in 2011. However most of the decline can be atributted to the reduction of grunts in the estimates done between 2011 and 2012. All other species groups show similar levels of abundance. The region with the highest abundance of demersal species, in 2012, was the one between Cape Blanc and Cape Juby (109 000 tons). in 2011 the estimate for this region was 195 000 tons.

Seabreams was the most abundant species group with a total of 141 000 tons. This is slightly lower but similar to what was found in 2011. The distribution within the region was also similar.

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ANNEX I RECORDS OF FISHING STATIONS

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 1
DATE :10/05/2012 GEAR TYPE: PT NO: 1 POSITION:Lat N 8°38.23
start stop duration Lon W 14°28.47
TIME :03:34:23 04:04:55 30.5 (min) Purpose : 1
LOG : 4581.66 4583.33 1.7 Region : 2200
FDEPTH: 35 35 Gear cond.: 0
BDEPTH: 82 113 Validity : 0
Towing dir: 0° Wire out : 80 m Speed : 3.3 kn
Sorted : 41 Total catch: 41.09 Catch/hour: 80.78

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Ariomma bondi	52.10	2416	64.49	1
Saurida brasiliensis	17.50	2440	21.66	
Synagrops bellus	6.49	826	8.03	
Illex coindetii	2.75	407	3.41	
Scomber japonicus	1.16	22	1.44	2
Caranx crysos	0.79	2	0.97	
Selene dorsalis, juvenile	0.00	2	0.00	
Total	80.78		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 2
DATE :10/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 8°58.26
start stop duration Lon W 14°38.17
TIME :09:52:09 10:22:13 30.1 (min) Purpose : 3
LOG : 4624.76 4626.31 1.6 Region : 2200
FDEPTH: 87 94 Gear cond.: 0
BDEPTH: 87 94 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 53 Total catch: 110.33 Catch/hour: 220.15

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachinus armatus	119.08	287	54.09	
Antigonia capros	82.13	5475	37.31	
Epinephelus aeneus	7.90	2	3.59	3
Priacanthus arenatus	3.11	84	1.41	
Trigloporus lastoviza	2.04	28	0.92	
Chelidonichthys gabonensis	1.52	16	0.69	
Sepia hieredda	1.20	2	0.54	
Scorpaena stephanica	0.92	8	0.42	
Dentex macrophthalmus	0.68	4	0.31	
Sphoeroides pachgaster	0.58	4	0.26	
Fistularia petimba	0.38	2	0.17	
Citharichthys stampfilii	0.36	12	0.16	
Lepidotrigla carolae	0.16	4	0.07	
Trichiurus lepturus	0.06	2	0.03	
Illex coindetii	0.04	4	0.02	
Total	220.15		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 3
DATE :10/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°16.42
start stop duration Lon W 14°18.64
TIME :13:53:59 14:13:59 20.0 (min) Purpose : 3
LOG : 4656.84 4657.85 1.0 Region : 2200
FDEPTH: 45 49 Gear cond.: 0
BDEPTH: 45 49 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.0 kn
Sorted : 162 Total catch: 543.18 Catch/hour: 1629.54

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Galeoides decadactylus	555.00	0	34.06	
Chloroscombrus chrysurus	270.00	0	16.57	
Dasyatis centroura	180.00	3	11.05	
Decapterus rhonchus	132.30	828	8.12	4
Sardinella aurita	124.50	0	7.64	
Pagrus caeruleostictus	105.90	0	6.50	
Decapterus punctatus	64.80	0	3.98	
Pagellus bellottii	34.65	0	2.13	
Raja miraletus	26.25	75	1.61	
Caranx crysos	24.00	60	1.47	
Sepia hieredda	18.30	30	1.12	
Pseudupeneus prayensis	15.90	240	0.98	5
Octopus vulgaris	15.15	15	0.93	
Lutjanus goreensis	14.37	3	0.88	6
Brachydeuterus auritus	11.25	120	0.69	
Lagocephalus laevigatus	7.95	30	0.49	
Selar crumenophthalmus	7.50	30	0.46	
Trachinus armatus	7.35	420	0.45	
Aluterus monoceros	6.72	3	0.41	
Scomber japonicus	3.45	0	0.21	
Sphyraena sphyraena	3.30	15	0.20	
Trachinocephalus myops	0.90	15	0.06	
Total	1629.54		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 4
DATE :10/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°27.84
start stop duration Lon W 14°3.51
TIME :17:08:37 17:38:02 29.4 (min) Purpose : 3
LOG : 4684.02 4685.64 1.6 Region : 2200
FDEPTH: 28 26 Gear cond.: 0
BDEPTH: 28 26 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.3 kn
Sorted : 39 Total catch: 167.44 Catch/hour: 341.48

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Pagellus bellottii	107.27	1056	31.41	7
Pagrus caeruleostictus	38.24	530	11.20	12
Chloroscombrus chrysurus	37.53	398	10.99	13
Pseudupeneus prayensis	36.30	363	10.63	11
Decapterus punctatus	21.03	610	6.16	10
Decapterus rhonchus	17.31	53	5.07	14
Aluterus heudelotii	14.66	35	4.29	
Rhinobatos rhinobatos	14.13	18	4.14	
Lethrinus atlanticus	12.73	35	3.73	8
Sardinella aurita	8.75	220	2.56	9
Sepia hieredda	8.65	61	2.53	
Lagocephalus laevigatus	8.22	61	2.41	
Ephippion guttifer	7.06	8	2.07	
Priacanthus arenatus	4.67	18	1.37	
Syacium micrurum	4.32	18	1.27	
Nicholsina usta	0.61	8	0.18	
Total	341.48		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 5
DATE :10/05/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 9°38.78
start stop duration Lon W 14°9.66
TIME :20:06:27 20:36:10 29.7 (min) Purpose : 3
LOG : 4704.71 4706.36 1.7 Region : 2200
FDEPTH: 10 10 Gear cond.: 0
BDEPTH: 24 23 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.3 kn
Sorted : 65 Total catch: 129.87 Catch/hour: 262.18

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	162.48	4284	61.97	21
Sardinella aurita	46.84	7805	17.86	15
Sardinella maderensis	21.40	1256	8.16	16
Sphyraena guachancho	15.95	97	6.08	19
Decapterus rhonchus	3.47	16	1.32	17
Galeoides decadactylus	2.46	36	0.94	18
Pseudupeneus prayensis	2.34	125	0.89	20
Penaeus notialis	2.30	81	0.88	
Eucinostomus melanopterus	2.14	20	0.82	
Chloroscombrus chrysurus	1.62	28	0.62	22
Penaeus kerathurus	0.85	36	0.32	
Sepia hieredda	0.20	32	0.08	
Paraconger notialis	0.12	4	0.05	
Metapenaeopsis miersi	0.02	12	0.01	
Total	262.18		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 6
DATE :10/05/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 9°30.81
start stop duration Lon W 14°30.24
TIME :23:26:28 23:31:56 5.5 (min) Purpose : 3
LOG : 4732.16 4732.45 0.3 Region : 2200
FDEPTH: 10 10 Gear cond.: 0
BDEPTH: 35 34 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.2 kn
Sorted : 63 Total catch: 189.24 Catch/hour: 2075.76

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sardinella sp.	1957.29	16607	94.29	23
Chloroscombrus chrysurus	67.46	1053	3.25	26
Sphyraena guachancho	22.05	66	1.06	24
Brachydeuterus auritus	19.74	66	0.95	25
Decapterus rhonchus	9.21	132	0.44	27
Total	2075.76		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 7
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°24.80
start stop duration Lon W 14°36.60
TIME :02:04:36 02:30:12 25.6 (min) Purpose : 2
LOG : 4747.33 4748.50 1.2 Region : 2200
FDEPTH: 47 53 Gear cond.: 0
BDEPTH: 47 53 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.7 kn
Sorted : 16 Total catch: 16.36 Catch/hour: 38.34

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Rhinobatos rhinobatos	5.79	9	15.10	
Decapterus punctatus	5.70	195	14.85	
Octopus vulgaris	4.88	5	12.71	
Trachinus armatus	4.71	56	12.29	
Sepia hieredda	3.21	5	8.37	
Bothus podas	2.74	59	7.15	
Priacanthus arenatus	2.65	12	6.91	31
Decapterus rhonchus	2.16	9	5.62	30
Trachinocephalus myops	1.73	5	4.52	
Pagellus bellottii	1.36	16	3.55	29
Paraconger notialis	1.17	5	3.06	
Lagocephalus laevigatus	0.89	2	2.32	
Dicologoglossa cuneata	0.56	9	1.47	
Callechelys leucoptera	0.47	2	1.22	
Pseudupeneus prayensis	0.33	5	0.86	28
Lepidotrigla sp., juvenile	0.00	2	0.00	
Apogon affinus, juvenile	0.00	9	0.00	
Chloroscombrus chrysurus, juvenile	0.00	30	0.00	
GOBIIDAE, juvenile	0.00	5	0.00	
Ophidion lozanoi, juvenile	0.00	94	0.00	
Grammoplites gruveli, juvenile	0.00	2	0.00	
Serranus sanctaehelenae, juvenile	0.00	2	0.00	
Sphoeroides sp., juvenile	0.00	9	0.00	
APOGONIDAE, juvenile	0.00	5	0.00	
Total	38.34		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 8
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°24.77
start stop duration Lon W 14°36.71
TIME :06:43:10 07:09:01 25.9 (min) Purpose : 3
LOG : 4760.47 4761.95 1.5 Region : 2200
FDEPTH: 46 55 Gear cond.: 0
BDEPTH: 46 55 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.4 kn
Sorted : 155 Total catch: 154.76 Catch/hour: 359.07

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Decapterus punctatus	79.47	2357	22.13	39
Pagrus caeruleostictus	71.37	193	19.88	33
Chloroscombrus chrysurus	53.41	582	14.87	37
Decapterus rhonchus	51.23	246	14.27	34
Pagellus bellottii	37.59	244	10.47	32
Mustelus mustelus	22.55	7	6.28	38
Sardinella aurita	12.99	462	3.62	36
Pseudupeneus prayensis	7.29	49	2.03	35
Raja miraletus	3.62	9	1.01	
Caranx crysos	3.04	5	0.85	
Sphyraena guachancho	2.95	7	0.82	
Priacanthus arenatus	2.41	5	0.67	
Paraconger notialis	2.13	7	0.59	
Diodon holocanthus	1.88	5	0.52	
Sepia hieredda	1.88	2	0.52	
Fistularia tabacaria	1.67	14	0.47	
Trachinocephalus myops	0.63	2	0.17	
Uranoscopus polli	0.58	5	0.16	
Bothus podas	0.53	14	0.15	
Epinephelus costae	0.49	2	0.14	
Lagocephalus laevigatus	0.44	2	0.12	
Sardinella maderensis	0.35	2	0.10	
Dicologoglossa hexophthalma	0.21	2	0.06	
Dactylopterus volitans	0.21	5	0.06	
Chaetodon hoefleri	0.16	2	0.05	
Total	359.07		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 9
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°10.32
start stop duration Lon W 14°54.75
TIME :10:40:08 11:10:37 30.5 (min) Purpose : 3
LOG : 4794.01 4795.73 1.7 Region : 2200
FDEPTH: 60 57 Gear cond.: 0
BDEPTH: 60 57 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 3.4 kn
Sorted : 151 Total catch: 150.85 Catch/hour: 296.85

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chromis cadenati	57.70	531	19.44	
Pagellus bellottii	51.79	279	17.45	42
Pagrus caeruleostictus	42.53	126	14.33	41
Mycteroperca rubra	30.03	4	10.12	
Epinephelus aeneus	23.34	18	7.86	43
Epinephelus goreensis	16.77	2	5.65	
Pseudupeneus prayensis	16.49	116	5.56	40
Boops boops	13.20	126	4.45	
Lutjanus goreensis	12.28	6	4.14	
Sparisoma rubripinne	11.18	4	3.77	
Decapterus punctatus	5.41	0	1.82	
Raja miraletus	3.13	12	1.05	
Seriola rivoliana	2.85	4	0.96	
Dentex canariensis	1.52	2	0.51	
Coris julis	1.50	10	0.50	
Sepia hieredda	1.22	16	0.41	
Rhinobatos rhinobatos	1.12	2	0.38	
Mustelus mustelus	1.06	4	0.36	
Chromis chromis	0.96	8	0.32	
Xyrichtys novacula	0.81	16	0.27	
Torpedo marmorata	0.61	2	0.21	
Trachinocephalus myops	0.47	4	0.16	
Decapterus rhonchus	0.33	2	0.11	
Fistularia tabacaria	0.31	2	0.11	
Bothus podas	0.24	4	0.08	
Total	296.85		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 10
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°2.82
start stop duration Lon W 15°0.78
TIME :13:28:20 13:59:03 30.7 (min) Purpose : 3
LOG : 4813.35 4814.83 1.5 Region : 2200
FDEPTH: 111 111 Gear cond.: 0
BDEPTH: 111 111 Validity : 0
Towing dir: 0° Wire out : 275 m Speed : 2.9 kn
Sorted : 53 Total catch: 157.92 Catch/hour: 308.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	90.70	2143	29.41	44
Anthias anthias	80.39	1564	26.06	
Antigonia capros	60.35	1180	19.57	
Dentex congoensis	38.91	322	12.61	
Dentex angolensis	11.02	35	3.57	45
Raja miraletus	8.85	29	2.87	
Spicara alta	5.51	76	1.79	
Scorpaena stephanica	4.86	23	1.58	
Fistularia petimba	2.81	12	0.91	
Priacanthus arenatus	1.82	6	0.59	
Zenopsis conchifer	1.58	6	0.51	
Dactylopterus volitans	0.88	6	0.28	
Chaetodon marcellae	0.53	6	0.17	
Aulopus cadenati	0.23	6	0.08	
Callechelys perryae	0.00	2	0.00	
Total	308.44		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 11
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°2.75
start stop duration Lon W 15°6.25
TIME :15:19:15 15:50:29 31.2 (min) Purpose : 3
LOG : 4822.30 4823.82 1.5 Region : 2200
FDEPTH: 240 241 Gear cond.: 0
BDEPTH: 240 241 Validity : 0
Towing dir: 0° Wire out : 600 m Speed : 2.9 kn
Sorted : 0 Total catch: 59.24 Catch/hour: 113.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops bellus	48.57	6244	42.67	
Illex coindetii	14.54	123	12.78	
Antigonia capros	13.99	302	12.29	
Chlorophthalmus atlanticus	10.66	982	9.37	
Raja miraletus	4.51	19	3.97	
Mustelus mustelus	4.19	2	3.68	
Todaropsis eblanae	4.15	44	3.65	
Synagrops microlepis	3.54	113	3.11	
Raja straeleni	2.23	4	1.96	
Scorpaena scrofa	1.94	2	1.70	
Aulopus cadenati	1.33	12	1.16	
Pterothrissus belloci	1.23	12	1.08	
Bembrops greyi	1.21	15	1.06	
Uranoscopus polli	0.50	4	0.44	
Sepia hieredda	0.48	46	0.42	
Torpedo marmorata	0.44	2	0.39	
Pontinus accraensis	0.19	2	0.17	
Syacium micrurum	0.08	12	0.07	
Lagocephalus laevigatus	0.04	2	0.03	
Total	113.81		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 12
DATE :11/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 8°59.13
start stop duration Lon W 15°6.78
TIME :17:21:57 17:53:09 31.2 (min) Purpose : 3
LOG : 4834.73 4836.32 1.6 Region : 2200
FDEPTH: 515 531 Gear cond.: 0
BDEPTH: 515 531 Validity : 0
Towing dir: 0° Wire out : 1250 m Speed : 3.1 kn
Sorted : 49 Total catch: 295.13 Catch/hour: 567.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	205.19	32587	36.15	
Illex coindetii	165.19	1173	29.11	
Centrophorus granulosus	77.12	25	13.59	
Yarrella blackfordi	22.21	1490	3.91	
Photonectes parvimanus	20.77	356	3.66	
Ijimaia loppei	18.81	2	3.31	
Lophiodes kempi	14.90	10	2.63	
Merluccius polli	7.88	19	1.39	
Benthodesmus tenuis	7.69	125	1.36	
Hoplostethus cadenati	7.40	394	1.30	
Chaunax pictus	6.25	29	1.10	
Raja miraletus	4.90	10	0.86	
Laemonema laureysi	3.27	29	0.58	
Bathygadus macrops	2.21	29	0.39	
Centroscymnus owstoni	1.54	19	0.27	
Malacocephalus laevis	1.25	10	0.22	
Parasudis fraser-bruenneri	0.67	58	0.12	
Stomias boa boa	0.29	10	0.05	
Lamprogrammus exutus	0.00	2	0.00	
Chauliodus sloani	0.00	2	0.00	
Diretmoides parini	0.00	2	0.00	
Gadella imberbis	0.00	17	0.00	
MYCTOPHIDAE	0.00	8	0.00	
Xenodermichthys copei	0.00	21	0.00	
Polymetme corythaeola	0.00	10	0.00	
Setarches guentheri	0.00	8	0.00	
Galeus polli	0.00	0	0.00	
Sternoptyx sp.	0.00	2	0.00	
Total	567.56		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 13
DATE :12/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°8.18
start stop duration Lon W 15°26.08
TIME :03:13:16 03:47:36 34.3 (min) Purpose : 3
LOG : 4883.31 4884.94 1.6 Region : 2200
FDEPTH: 339 329 Gear cond.: 0
BDEPTH: 339 329 Validity : 0
Towing dir: 0° Wire out : 850 m Speed : 2.8 kn
Sorted : 50 Total catch: 167.04 Catch/hour: 291.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	174.18	3997	59.66	
Illex coindetii	51.07	572	17.49	
Ijimaia loppei	28.63	7	9.81	
Parasudis fraser-bruenneri	24.85	572	8.51	
Zenion hololepis	5.61	624	1.92	
Merluccius polli	2.73	10	0.93	
Chascanopsetta lugubris	1.31	10	0.45	
Scyliorhinus stellaris	0.79	21	0.27	
Malacocephalus occidentalis	0.68	10	0.23	
Peristedion cataphractum	0.58	31	0.20	
Ijimaia loppei	0.37	16	0.13	
Hymenocephalus italicus	0.37	47	0.13	
Chaunax pictus	0.26	5	0.09	
Dibranchus atlanticus	0.21	10	0.07	
Macroparalepis brevis	0.16	5	0.05	
Chlorophthalmus atlanticus	0.10	10	0.04	
Nezumia aequalis	0.05	5	0.02	
Total	291.94		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 14
DATE :12/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°12.24
start stop duration Lon W 15°24.15
TIME :05:31:57 06:03:09 31.2 (min) Purpose : 3
LOG : 4893.60 4895.20 1.6 Region : 2200
FDEPTH: 115 125 Gear cond.: 0
BDEPTH: 115 125 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.1 kn
Sorted : 61 Total catch: 518.74 Catch/hour: 997.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	814.69	14465	81.67	46
Aulopus cadenati	74.69	671	7.49	
Illex coindetii	23.54	246	2.36	
Scorpaena elongata	19.62	50	1.97	
Spicara alta	14.87	113	1.49	
Antigonia capros	11.44	229	1.15	
Pontinus accraensis	10.13	98	1.02	
Dentex congoensis	8.67	65	0.87	
Dactylopterus volitans	8.65	15	0.87	
Chelidonichthys gabonensis	6.21	48	0.62	
Trigloporus lastoviza	2.62	15	0.26	
Trachinus armatus	1.46	15	0.15	
Priacanthus arenatus	0.98	15	0.10	
Torpedo marmorata	0.00	2	0.00	
Total	997.58		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 15
DATE :12/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°21.16
start stop duration Lon W 15°14.75
TIME :10:24:33 10:55:14 30.7 (min) Purpose : 3
LOG : 4918.60 4920.13 1.5 Region : 2200
FDEPTH: 53 55 Gear cond.: 0
BDEPTH: 53 55 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.0 kn
Sorted : 31 Total catch: 31.41 Catch/hour: 61.43

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	28.83	213	46.93	48
Pagrus caeruleostictus	9.93	35	16.17	47
Diodon holocanthus	7.18	10	11.68	
Lagocephalus laevigatus	2.74	6	4.46	
Balistes capriscus	2.56	2	4.17	50
Aluterus monoceros	2.48	2	4.04	
Sepia hieredda	1.37	22	2.23	
Pseudupeneus prayensis	1.29	10	2.10	49
Raja miraletus	1.23	6	2.01	
Trachinocephalus myops	1.10	6	1.78	
Bothus podas	0.98	14	1.59	
Xyrichtys novacula	0.65	8	1.05	
Chelidonichthys gabonensis	0.23	2	0.38	
Trigloporus lastoviza	0.22	2	0.35	
Priacanthus arenatus	0.18	2	0.29	
Aulopus cadenati	0.18	2	0.29	
OPHICHTHIDAE	0.16	2	0.25	
Bembrops greyi	0.14	2	0.22	
Total	61.43		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 16
DATE :12/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°46.00
start stop duration Lon W 14°46.05
TIME :16:59:16 17:30:08 30.9 (min) Purpose : 3
LOG : 4962.55 4964.18 1.6 Region : 2200
FDEPTH: 34 33 Gear cond.: 8
BDEPTH: 34 33 Validity : 9
Towing dir: 0° Wire out : 130 m Speed : 3.2 kn
Sorted : 12 Total catch: 193.44 Catch/hour: 375.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sepia hieredda	159.84	218	42.51	
Cymbium glans	123.46	31	32.84	
Caranx crysos	36.07	62	9.59	
Stephanolepis hispidus	33.90	31	9.02	
Pagellus bellottii	22.70	155	6.04	
Serranus sanctaehelenae	0.00	2	0.00	
Total	375.98		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 17
DATE :13/05/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 9°47.03
start stop duration Lon W 15°13.84
TIME :01:47:23 02:18:10 30.8 (min) Purpose : 3
LOG : 5027.19 5028.69 1.5 Region : 2200
FDEPTH: 0 Gear cond.: 0
BDEPTH: 35 33 Validity : 0
Towing dir: 0° Wire out : 90 m Speed : 2.9 kn
Sorted : 0 Total catch: 0.60 Catch/hour: 1.17

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	0.76	4	65.00	
Alectis alexandrina	0.41	4	35.00	
Total	1.17		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 18
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°35.59
start stop duration Lon W 15°31.59
TIME :06:48:21 07:19:30 31.2 (min) Purpose : 3
LOG : 5052.27 5053.83 1.6 Region : 2200
FDEPTH: 45 45 Gear cond.: 0
BDEPTH: 45 45 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.0 kn
Sorted : 2 Total catch: 2.10 Catch/hour: 4.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Caranx crysos	1.33	4	32.86	
Sardinella aurita	0.69	8	17.14	
Echeneis naucrates	0.48	2	11.90	
Fistularia tabacaria	0.35	4	8.57	
Pseudupeneus prayensis	0.25	2	6.19	
Selene dorsalis	0.23	2	5.71	
Lagocephalus laevigatus	0.23	4	5.71	
Decapterus punctatus	0.19	2	4.76	
Stephanolepis hispidus	0.15	2	3.81	
Sepiella ornata	0.13	19	3.33	
Total	4.04		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 19
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°28.91
start stop duration Lon W 15°39.74
TIME :08:49:34 09:19:21 29.8 (min) Purpose : 3
LOG : 5066.98 5068.52 1.5 Region : 2200
FDEPTH: 56 59 Gear cond.: 0
BDEPTH: 56 59 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.1 kn
Sorted : 2 Total catch: 2.20 Catch/hour: 4.43

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sepia hieredda	1.79	10	40.45	
Trachinocephalus myops	0.60	2	13.64	
Chelidonichthys gabonensis	0.48	4	10.91	
Pseudupeneus prayensis	0.44	4	10.00	
Bothus podas	0.44	8	10.00	
Fistularia tabacaria	0.36	2	8.18	
Lagocephalus laevigatus	0.20	2	4.55	
Antennarius occidentalis	0.10	2	2.27	
Sepiella ornata	0.00	2	0.00	
Total	4.43		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 20
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°22.38
start stop duration Lon W 15°47.88
TIME :11:21:56 11:52:15 30.3 (min) Purpose : 3
LOG : 5084.48 5086.10 1.6 Region : 2200
FDEPTH: 119 117 Gear cond.: 0
BDEPTH: 119 117 Validity : 0
Towing dir: 0° Wire out : 320 m Speed : 3.2 kn
Sorted : 79 Total catch: 242.10 Catch/hour: 479.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Antigonia capros	336.97	10037	70.33	
Ariomma bondi	62.93	1334	13.14	53
Illex coindetii	50.46	1739	10.53	
Squalus megalops	8.07	6	1.69	52
Scorpaena stephanica	7.30	12	1.52	
Raja miraletus	3.68	18	0.77	
Zeus faber	2.49	12	0.52	51
Citharus linguatula	2.26	36	0.47	
Dactylopterus volitans	1.60	12	0.33	
Fistularia tabacaria	1.48	6	0.31	
Priacanthus arenatus	0.95	12	0.20	
Aulopus cadenati	0.53	6	0.11	
Lepidotrigla carolae	0.36	12	0.07	
Plastic bags	0.00	2	0.00	
Total	479.09		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 21
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°19.21
start stop duration Lon W 15°51.73
TIME :13:41:26 14:11:56 30.5 (min) Purpose : 3
LOG : 5096.40 5097.91 1.5 Region : 2200
FDEPTH: 211 226 Gear cond.: 0
BDEPTH: 211 226 Validity : 0
Towing dir: 0° Wire out : 500 m Speed : 3.0 kn
Sorted : 65 Total catch: 278.21 Catch/hour: 547.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	192.79	7916	35.23	
Chlorophthalmus atlanticus	179.25	5858	32.75	
Squalus megalops	76.64	55	14.00	55
Illex coindetii	27.30	338	4.99	
Aulopus cadenati	19.04	157	3.48	
Merluccius polli	13.14	87	2.40	56
Todaropsis eblanae	11.10	645	2.03	
Mustelus mustelus	8.36	2	1.53	54
Raja straeleni	5.41	6	0.99	
Todaropsis eblanae	4.80	79	0.88	
Zeus faber	3.72	2	0.68	
Uranoscopus sp.	1.81	8	0.33	
Bembrops heterurus	1.65	16	0.30	
Lagocephalus laevigatus	1.57	16	0.29	
Lepidotrigla cadmani	0.55	8	0.10	
Sepia elegans	0.16	24	0.03	
Total	547.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 22
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°14.42
start stop duration Lon W 15°56.93
TIME :16:17:57 16:48:48 30.9 (min) Purpose : 3
LOG : 5110.05 5111.58 1.5 Region : 2200
FDEPTH: 508 510 Gear cond.: 0
BDEPTH: 508 510 Validity : 0
Towing dir: 0° Wire out : 1200 m Speed : 3.0 kn
Sorted : 75 Total catch: 189.37 Catch/hour: 368.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	157.77	43146	42.84	
Centrophorus granulosus	61.07	12	16.58	
Illex coindetii	45.98	319	12.48	
Stomias boa boa	37.42	941	10.16	
Photonectes parvimanus	23.49	560	6.38	
Yarrella blackfordi	10.58	405	2.87	
Squalus megalops	5.41	4	1.47	57
Gadella imberbis	4.51	303	1.23	
Benthodesmus tenuis	3.73	93	1.01	
Chaunax pictus	3.42	8	0.93	
Neoharriotta pinnata	2.76	2	0.75	
Xenodermichthys copei	1.87	132	0.51	
Synagrops bellus	1.56	31	0.42	
Deania profundorum	1.44	2	0.39	
Nemichthys scolopaceus	0.93	124	0.25	
Malacocephalus laevis	0.86	16	0.23	
Etmopterus pusillus	0.84	2	0.23	
Chlorophthalmus atlanticus	0.70	233	0.19	
Parasudis fraser-bruenneri	0.54	31	0.15	
Hoplostethus sp.	0.47	23	0.13	
Setarches guentheri	0.47	16	0.13	
Laemonema laureysi	0.47	23	0.13	
Zenion hololepis	0.39	31	0.11	
Polymetme corythaeola	0.31	8	0.08	
Brama brama	0.31	8	0.08	
Pyramodon caninus	0.23	8	0.06	
Stephanolepis sp.	0.23	8	0.06	
Lamprogrammus exutus	0.23	8	0.06	
Chauliodus sloani	0.16	8	0.04	
MYCTOPHIDAE	0.16	23	0.04	
Total	368.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 23
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°25.08
start stop duration Lon W 16°16.25
TIME :20:34:07 21:04:05 30.0 (min) Purpose : 3
LOG : 5140.03 5141.56 1.5 Region : 2200
FDEPTH: 458 464 Gear cond.: 0
BDEPTH: 458 464 Validity : 0
Towing dir: 0° Wire out : 1170 m Speed : 3.1 kn
Sorted : 29 Total catch: 121.79 Catch/hour: 243.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	111.83	25039	45.87	
Merluccius polli	38.24	98	15.68	
Centrophorus granulosus	25.83	6	10.59	
Bembrops heterurus	15.86	180	6.50	
Yarrella blackfordi	11.47	535	4.70	
Illex coindetii	6.67	54	2.73	
Benthodesmus tenuis	6.13	198	2.51	
Photonectes parvimanus	4.56	114	1.87	
Raja straeleni	4.32	4	1.77	
Lophiodes kempi	3.30	2	1.35	
Malacocephalus laevis	2.52	36	1.03	
Epigonichthys pandionis	1.98	24	0.81	
Hoplostethus mediterraneus	1.98	60	0.81	
Gadella imberbis	1.80	96	0.74	
Chaunax pictus	1.62	66	0.67	
Hymenocephalus italicus	1.26	174	0.52	
Nessorhamphus ingolfianus	1.26	36	0.52	
Laemonema laureysi	0.96	6	0.39	
Nezumia aequalis	0.78	54	0.32	
Xenodermichthys copei	0.54	24	0.22	
Nemichthys scolopaceus	0.42	48	0.17	
Bembrops greyi	0.36	6	0.15	
Polymetme corythaeola	0.12	6	0.05	
Total	243.82		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 24
DATE :13/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°29.31
start stop duration Lon W 16°10.43
TIME :22:44:09 23:14:08 30.0 (min) Purpose : 3
LOG : 5151.40 5152.94 1.5 Region : 2200
FDEPTH: 184 191 Gear cond.: 0
BDEPTH: 184 191 Validity : 0
Towing dir: 0° Wire out : 470 m Speed : 3.1 kn
Sorted : 54 Total catch: 142.75 Catch/hour: 285.69

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	79.65	3158	27.88	
Chlorophthalmus atlanticus	58.54	1231	20.49	
Aulopus cadenati	36.22	380	12.68	
Antigonia capros	26.42	500	9.25	
Myctophidae sp. large	24.22	6973	8.48	
Squalus megalops	16.21	12	5.67	
Scorpaena normani	12.66	280	4.43	
Lepidotrigla cadmani	11.46	190	4.01	
Pontinus accraensis	6.60	65	2.31	
Nessorhamphus ingolfianus	2.95	90	1.03	
Illex coindetii	2.45	70	0.86	
Merluccius polli	1.90	10	0.67	
Peristedion cataphractum	1.85	80	0.65	
Echelus myrus	1.75	5	0.61	
Pterothrissus belloci	0.95	5	0.33	
Dentex sp.	0.85	5	0.30	
Lophius sp., juvenile	0.40	10	0.14	
PARALEPIDIDAE	0.35	15	0.12	
Ophidion lozanoi	0.15	5	0.05	
Synchiropus phaeton	0.05	5	0.02	
Lepidotrigla carolae	0.05	5	0.02	
Bathysolea profundicola	0.00	2	0.00	
Total	285.69		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 25
DATE :14/05/2012 GEAR TYPE: PT NO: 1 POSITION:Lat N 9°34.54
start stop duration Lon W 16°4.61
TIME :01:55:49 02:21:03 25.2 (min) Purpose : 3
LOG : 5163.39 5164.77 1.4 Region : 2200
FDEPTH: 20 25 Gear cond.: 0
BDEPTH: 119 94 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.3 kn
Sorted : 0 Total catch: 1.18 Catch/hour: 2.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Saurida brasiliensis	2.12	226	75.42	
Dactylopterus volitans	0.69	2	24.58	
Bathysolea profundicola	0.00	2	0.00	
Total	2.81		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 26
DATE :14/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°36.72
start stop duration Lon W 15°58.38
TIME :06:50:48 07:21:25 30.6 (min) Purpose : 3
LOG : 5174.17 5175.73 1.6 Region : 2200
FDEPTH: 62 60 Gear cond.: 0
BDEPTH: 62 60 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.1 kn
Sorted : 27 Total catch: 27.16 Catch/hour: 53.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	32.76	22	61.56	
Raja straeleni	3.08	4	5.78	
Ariomma bondi	2.29	29	4.31	
Chelidonichthys gabonensis	2.14	25	4.01	
Torpedo torpedo	1.27	2	2.39	
Raja leopardus	1.25	2	2.36	
Sepia hieredda	1.25	8	2.36	
Lagocephalus laevigatus	1.21	24	2.28	
Bothus podas	1.00	20	1.88	
Acanthurus monroviae	0.94	2	1.77	
Trachinus armatus	0.90	14	1.69	
Scorpaena elongata	0.82	6	1.55	
Microchirus frechkopi	0.55	8	1.03	
Scorpaena notata	0.51	4	0.96	
Peristedion cataphractum	0.49	22	0.92	
Pseudupeneus prayensis	0.47	6	0.88	
Dactylopterus volitans	0.43	2	0.81	
Fistularia petimba	0.41	2	0.77	
Sphoeroides pachgaster	0.37	2	0.70	
Trachinocephalus myops	0.35	2	0.66	
Uranoscopus polli	0.29	2	0.55	
Pagellus bellottii	0.22	4	0.41	
Scomber japonicus	0.10	2	0.18	
Synchiropus phaeton	0.08	6	0.15	
Ophidion lozanoi	0.02	2	0.04	
Total	53.22		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 27
DATE :14/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°3.74
start stop duration Lon W 15°28.50
TIME :11:36:30 11:56:12 19.7 (min) Purpose : 3
LOG : 5217.63 5218.72 1.1 Region : 2200
FDEPTH: 28 29 Gear cond.: 0
BDEPTH: 28 29 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.3 kn
Sorted : 0 Total catch: 93.28 Catch/hour: 284.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	164.47	682	57.89	60
Pagrus caeruleostictus	91.37	981	32.16	62
Decapterus punctatus	13.31	164	4.69	61
Sepia hieredda	8.10	43	2.85	
Dactylopterus volitans	2.19	3	0.77	
Pseudupeneus prayensis	1.61	27	0.57	63
Fistularia tabacaria	0.97	6	0.34	
Trachinus armatus	0.46	9	0.16	
Trachinocephalus myops	0.46	3	0.16	
Serranus sp.	0.43	3	0.15	
Sardinella maderensis	0.40	3	0.14	
Sardinella aurita	0.24	6	0.09	
Synchiropus phaeton	0.09	3	0.03	
Total	284.10		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 28
DATE :14/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°9.79
start stop duration Lon W 15°54.94
TIME :17:18:40 17:49:28 30.8 (min) Purpose : 3
LOG : 5268.60 5270.31 1.7 Region : 2200
FDEPTH: 33 36 Gear cond.: 0
BDEPTH: 33 36 Validity : 0
Towing dir: 0° Wire out : 125 m Speed : 3.3 kn
Sorted : 68 Total catch: 336.09 Catch/hour: 654.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Balistes capriscus	351.82	1198	53.74	64
Pagrus caeruleostictus	111.41	695	17.02	68
Decapterus punctatus	78.10	2795	11.93	67
Pagellus bellottii	31.17	251	4.76	66
Sepia hieredda	24.12	101	3.68	
Pseudupeneus prayensis	16.50	109	2.52	65
Aluterus heudelotii	6.04	42	0.92	
Cymbium glans	6.00	2	0.92	
Rhinobatos rhinobatos	5.96	6	0.91	
Psettodes bennetti	4.69	8	0.72	
Pomadasys rogeri	4.27	8	0.65	
Scorpaena scrofa	3.60	8	0.55	
Fistularia tabacaria	2.84	25	0.43	
Sphyraena sphyraena	2.44	8	0.37	
Decapterus rhonchus	2.01	8	0.31	
Selene dorsalis	1.42	8	0.22	
Eucinostomus melanopterus	0.92	8	0.14	
Priacanthus arenatus	0.92	8	0.14	
Serranus sanctaehelenae	0.33	18	0.05	
Serranus africana	0.18	8	0.03	
Total	654.72		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 29
DATE :15/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°38.18
start stop duration Lon W 16°38.65
TIME :05:56:03 06:26:59 30.9 (min) Purpose : 3
LOG : 5337.89 5339.48 1.6 Region : 2200
FDEPTH: 498 488 Gear cond.: 0
BDEPTH: 498 488 Validity : 0
Towing dir: 0° Wire out : 1250 m Speed : 3.1 kn
Sorted : 19 Total catch: 136.76 Catch/hour: 265.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Benthodesmus tenuis	54.03	1891	20.36	
Centrophorus granulosus	39.81	10	15.00	
Yarrella blackfordi	39.28	3104	14.81	
Illex coindetii	33.56	233	12.65	
Merluccius polli	28.71	78	10.82	69
Setarches guentheri	21.34	824	8.04	
Chaunax pictus	11.25	29	4.24	
Diretmus argenteus	10.86	349	4.09	
Lophius vaillanti	9.91	2	3.74	
Photonectes parvimanus	7.47	184	2.82	
Raja clavata	2.15	2	0.81	
Laemonema laureysi	2.13	10	0.80	
Hymenocephalus italicus	1.55	204	0.58	
Ijimaia loppei	1.07	10	0.40	
Gadella imberbis	0.97	97	0.37	
Nessorhamphus ingolfianus	0.62	2	0.23	
Malacocephalus laevis	0.58	10	0.22	
Total	265.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 30
DATE :15/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 9°59.69
start stop duration Lon W 16°49.68
TIME :11:01:55 11:31:24 29.5 (min) Purpose : 3
LOG : 5376.16 5377.75 1.6 Region : 2100
FDEPTH: 314 314 Gear cond.: 0
BDEPTH: 314 314 Validity : 0
Towing dir: 0° Wire out : 780 m Speed : 3.2 kn
Sorted : 69 Total catch: 762.82 Catch/hour: 1553.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	734.58	222741	47.30	
Synagrops microlepis	230.68	11277	14.85	
Merluccius polli	212.76	1095	13.70	70
Chlorophthalmus atlanticus	210.52	4	13.55	
Illex coindetii	80.85	672	5.21	
PARALEPIDIDAE	45.69	1957	2.94	
Ariomma bondi	14.50	269	0.93	71
Trichiurus lepturus	7.61	291	0.49	
Synagrops bellus	6.94	224	0.45	
Pontinus accraensis	4.26	45	0.27	
Pterothrissus belloci	4.03	22	0.26	
Zenion hololepis	0.67	45	0.04	
Total	1553.08		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 31
DATE :15/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°5.08
start stop duration Lon W 16°35.91
TIME :14:20:18 14:50:48 30.5 (min) Purpose : 3
LOG : 5395.51 5397.04 1.5 Region : 2100
FDEPTH: 168 160 Gear cond.: 0
BDEPTH: 168 160 Validity : 0
Towing dir: 0° Wire out : 420 m Speed : 3.0 kn
Sorted : 53 Total catch: 227.13 Catch/hour: 446.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Antigonia capros	103.87	21639	23.25	
Synagrops microlepis	80.85	4745	18.10	
Mustelus mustelus	76.72	20	17.17	73
Chlorophthalmus atlanticus	56.07	6228	12.55	
Squalus megalops	36.67	31	8.21	72
Ariomma bondi	22.78	781	5.10	75
Scorpaena stephanica	20.66	100	4.62	
Decapterus rhonchus	13.38	12	2.99	74
Dentex congoensis	7.20	47	1.61	76
Pterothrissus belloci	4.66	47	1.04	
Illex coindetii	4.37	83	0.98	
Scorpaena normani	3.60	65	0.81	
Bembrops heterurus	3.19	35	0.71	
Sphoeroides pachgaster	2.79	4	0.63	
Raja miraletus	2.71	8	0.61	
Pontinus accraensis	1.71	12	0.38	
Citharus linguatula	1.59	18	0.36	
Zeus faber	1.51	2	0.34	
Saurida brasiliensis	0.71	83	0.16	
Lepidotrigla cadmani	0.59	6	0.13	
Peristedion cataphractum	0.35	12	0.08	
Lepidotrigla carolae	0.24	12	0.05	
Zenopsis conchifer	0.24	6	0.05	
Monolene microstoma	0.18	12	0.04	
Zeus faber	0.18	6	0.04	
Total	446.81		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 32
DATE :15/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°8.75
start stop duration Lon W 16°29.57
TIME :16:27:20 16:57:33 30.2 (min) Purpose : 3
LOG : 5407.31 5408.84 1.5 Region : 2100
FDEPTH: 62 59 Gear cond.: 0
BDEPTH: 62 59 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 3.0 kn
Sorted : 60 Total catch: 342.28 Catch/hour: 679.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dactylopterus volitans	310.13	1896	45.64	
Ariomma bondi	268.63	6145	39.53	78
Lagocephalus laevigatus	33.08	711	4.87	
Epinephelus aeneus	26.80	2	3.94	77
Fistularia petimba	17.04	99	2.51	
Scorpaena stephanica	7.86	141	1.16	
Chelidonichthys gabonensis	5.24	56	0.77	
Trachinus armatus	3.71	54	0.55	
Raja miraletus	3.49	10	0.51	
Scomber japonicus	1.41	44	0.21	
Pagellus bellottii	0.77	12	0.11	
Todaropsis eblanae	0.75	32	0.11	
Sepia hieredda	0.66	10	0.10	
Plastic bags	0.00	2	0.00	
Total	679.58		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 33
DATE :15/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°14.61
start stop duration Lon W 16°18.33
TIME :19:05:52 19:26:12 20.3 (min) Purpose : 3
LOG : 5425.69 5426.77 1.1 Region : 2100
FDEPTH: 48 49 Gear cond.: 0
BDEPTH: 48 49 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.2 kn
Sorted : 33 Total catch: 32.67 Catch/hour: 96.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Balistes capriscus	56.17	56	58.28	79
Pseudupeneus prayensis	8.17	47	8.48	80
Lagocephalus laevigatus	6.78	35	7.04	
Lepidotrigla carolae	3.10	24	3.21	
Raja miraletus	3.04	6	3.15	
Sepia hieredda	2.74	29	2.85	
Pomadasys rogeri	2.71	3	2.82	
Bothus podas	2.12	35	2.20	
Trachinocephalus myops	1.80	12	1.87	
Dactylopterus volitans	1.77	9	1.84	
Pagrus caeruleostictus	1.24	6	1.29	
Paraconger notialis	1.15	3	1.19	
Trichiurus lepturus	1.12	3	1.16	
Citharus linguatula	0.88	6	0.92	
Uranoscopus polli	0.83	6	0.86	
Fistularia tabacaria	0.65	3	0.67	
Trachinus armatus	0.59	9	0.61	
Dicologoglossa hexophthalma	0.47	6	0.49	
Epinephelus costae	0.44	3	0.46	
Pagellus bellottii	0.21	6	0.21	
Octopus vulgaris	0.21	3	0.21	
Bembrops greyi	0.15	6	0.15	
Sardinella aurita	0.03	9	0.03	
Microchirus boscanion	0.01	3	0.01	
Total	96.38		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 34
DATE :15/05/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 10°24.28
start stop duration Lon W 16°4.20
TIME :21:44:09 22:14:07 30.0 (min) Purpose : 3
LOG : 5444.89 5446.20 1.3 Region : 2100
FDEPTH: 5 5 Gear cond.: 0
BDEPTH: 33 32 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.6 kn
Sorted : 33 Total catch: 164.33 Catch/hour: 328.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	196.00	41812	59.58	85
Sardinella aurita	96.10	2162	29.21	81
Decapterus rhonchus	13.61	781	4.14	83
Sardinella maderensis	9.71	1896	2.95	84
Raja miraletus	4.10	10	1.25	
Sepia hieredda	3.20	70	0.97	
Brachydeuterus auritus	3.00	320	0.91	
Portunus inaequalis	0.90	130	0.27	
Antennarius pardalis	0.70	10	0.21	
Pagellus bellottii	0.70	80	0.21	82
Paraconger notialis	0.50	10	0.15	
Sepiella ornata	0.20	40	0.06	
Scomber japonicus	0.20	30	0.06	
Sepia orbignyana	0.05	10	0.02	
Total	328.98		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 35
DATE :16/05/2012 GEAR TYPE: PT NO: 4 POSITION:Lat N 10°32.20
start stop duration Lon W 16°18.92
TIME :02:11:22 02:41:18 30.0 (min) Purpose : 3
LOG : 5470.80 5472.34 1.5 Region : 2100
FDEPTH: 0 5 Gear cond.: 0
BDEPTH: 33 34 Validity : 0
Towing dir: 0° Wire out : 80 m Speed : 3.1 kn
Sorted : 0 Total catch: 36.67 Catch/hour: 73.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus punctatus	34.66	200	47.18	86
Sardinella aurita	11.54	80	15.71	88
Sardinella maderensis	10.16	80	13.83	87
Brachydeuterus auritus	8.91	86	12.14	90
Chloroscombrus chrysurus	6.95	26	9.46	89
Saurida brasiliensis	0.52	46	0.71	
Scomber japonicus	0.28	4	0.38	91
Sepia hieredda	0.22	16	0.30	
Sepia officinalis	0.16	24	0.22	
Penaeus notialis	0.06	2	0.08	
Total	73.46		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 36
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°28.69
start stop duration Lon W 16°26.23
TIME :07:05:38 07:36:29 30.8 (min) Purpose : 3
LOG : 5484.68 5486.33 1.7 Region : 2100
FDEPTH: 48 49 Gear cond.: 0
BDEPTH: 48 49 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.2 kn
Sorted : 0 Total catch: 19.23 Catch/hour: 37.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	9.59	0	25.64	
Alloteuthis africana	9.59	5035	25.64	
Sepia hieredda	4.96	25	13.26	
J E L L Y F I S H	4.07	10	10.87	
Lagocephalus laevigatus	3.35	19	8.94	
Trachinocephalus myops	3.11	18	8.32	
Paraconger notialis	0.89	2	2.39	
Bembrops greyi	0.72	6	1.92	
Epinephelus costae	0.39	2	1.04	
Xyrichtys novacula	0.23	2	0.62	
Decapterus punctatus	0.16	2	0.42	
Citharus linguatula	0.10	10	0.26	
Zeus faber	0.06	2	0.16	
Bothus podas	0.06	6	0.16	
Sphoeroides marmoratus	0.06	2	0.16	
Antennarius pardalis	0.06	2	0.16	
Decapterus rhonchus	0.02	2	0.05	
Fistularia tabacaria	0.00	2	0.00	
Total	37.41		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 37
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°27.80
start stop duration Lon W 16°35.17
TIME :08:55:10 09:28:17 33.1 (min) Purpose : 3
LOG : 5496.57 5498.32 1.8 Region : 2100
FDEPTH: 63 64 Gear cond.: 0
BDEPTH: 63 64 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 3.2 kn
Sorted : 6 Total catch: 39.45 Catch/hour: 71.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Fistularia tabacaria	40.12	152	56.12	
J E L L Y F I S H	16.93	78	23.68	
Dactylopterus volitans	3.48	13	4.87	
Mustelus mustelus	3.04	2	4.26	
Trichiurus lepturus	1.74	4	2.43	
Balistes capriscus	1.49	2	2.08	
Octopus vulgaris	0.94	2	1.32	
Raja miraletus	0.85	2	1.19	
Lepidotrigla carolae	0.85	7	1.19	
Alloteuthis africana	0.83	654	1.17	
Sepia hieredda	0.42	4	0.58	
Trachinocephalus myops	0.31	4	0.43	
Lagocephalus laevigatus	0.22	2	0.30	
Pagellus bellottii	0.13	2	0.18	
Zeus faber	0.13	5	0.18	
Bothus podas	0.02	2	0.03	
Total	71.49		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 38
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°24.14
start stop duration Lon W 16°42.24
TIME :11:01:04 11:31:10 30.1 (min) Purpose : 3
LOG : 5510.52 5512.06 1.5 Region : 2100
FDEPTH: 144 148 Gear cond.: 0
BDEPTH: 144 148 Validity : 0
Towing dir: 0° Wire out : 390 m Speed : 3.1 kn
Sorted : 68 Total catch: 442.15 Catch/hour: 881.07

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	413.48	25686	46.93	
Lepidotrigla carolae	79.71	30	9.05	
Trichiurus lepturus	79.71	20	9.05	
Saurida brasiliensis	78.11	0	8.87	
Todaropsis eblanae	45.13	1202	5.12	
Scorpaena stephanica	43.94	229	4.99	
Mustelus mustelus	32.88	12	3.73	
Antigonia capros	28.40	355	3.22	
Chlorophthalmus atlanticus	25.31	3836	2.87	
Ariomma bondi	7.37	149	0.84	
Fistularia petimba	5.68	20	0.64	
Citharus linguatula	4.98	50	0.57	
Sphoeroides pachgaster	4.54	4	0.52	
Zeus faber	4.48	60	0.51	
Squatina oculata	4.34	2	0.49	
Sphoeroides pachgaster	3.29	10	0.37	
Dentex angolensis	3.19	20	0.36	
Dactylopterus volitans	2.59	10	0.29	
Zeus faber	2.19	2	0.25	
Dentex congoensis	2.09	10	0.24	
Umbrina canariensis	2.07	2	0.24	
Pentheroscion mbizi	1.91	12	0.22	
Octopus vulgaris	1.67	2	0.19	
Aulopus cadenati	1.59	50	0.18	
Raja miraletus	1.20	2	0.14	
Scorpaena normani	0.60	10	0.07	
Stephanolepis hispidus	0.20	10	0.02	
Trachurus trecae	0.20	20	0.02	
Merluccius polli	0.10	30	0.01	
Pontinus accraensis	0.10	10	0.01	
Total	881.07		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 39
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°15.69
start stop duration Lon W 16°55.28
TIME :14:29:13 15:00:29 31.3 (min) Purpose : 3
LOG : 5532.73 5534.31 1.6 Region : 2100
FDEPTH: 224 225 Gear cond.: 0
BDEPTH: 224 225 Validity : 0
Towing dir: 0° Wire out : 560 m Speed : 3.0 kn
Sorted : 0 Total catch: 179.66 Catch/hour: 344.73

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	195.02	7568	56.57	
Illex coindetii	49.83	579	14.46	
Trichiurus lepturus	44.71	71	12.97	93
Antigonia capros	14.10	1138	4.09	
Todaropsis eblanae	10.14	211	2.94	
Ariomma bondi	9.74	222	2.82	92
Mustelus mustelus	4.62	2	1.34	
Pontinus accraensis	4.43	54	1.29	
Bembrops heterurus	2.48	27	0.72	
Sphoeroides pachgaster	2.24	2	0.65	
Aulopus cadenati	1.95	13	0.56	
Pterothrissus belloci	1.28	7	0.37	
Scyliorhinus stellaris	1.17	2	0.34	
Raja miraletus	0.92	2	0.27	
Scorpaena stephanica	0.74	7	0.21	
Lepidotrigla cadmani	0.40	7	0.12	
Coelorinchus coelorhincus	0.34	7	0.10	
Zenopsis conchifer	0.27	13	0.08	
Peristedion cataphractum	0.20	13	0.06	
Synchiropus phaeton	0.07	7	0.02	
Microstoma sp.	0.07	7	0.02	
Total	344.73		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 40
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°7.41
start stop duration Lon W 17°13.18
TIME :18:33:07 19:04:47 31.7 (min) Purpose : 3
LOG : 5559.97 5561.49 1.5 Region : 2100
FDEPTH: 512 510 Gear cond.: 0
BDEPTH: 512 510 Validity : 0
Towing dir: 0° Wire out : 1250 m Speed : 2.9 kn
Sorted : 29 Total catch: 171.31 Catch/hour: 324.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	58.92	0	18.15	
Laemonema laureysi	47.93	474	14.77	
Synagrops bellus	46.42	1620	14.30	
Lamprogrammus exutus	36.56	123	11.27	
Illex coindetii	32.49	227	10.01	
Lophius vaillanti	27.47	6	8.46	
Merluccius polli	20.08	0	6.19	
Hoplostethus cadenati	16.29	265	5.02	
CONGRIDAE	9.28	66	2.86	
Bathygadus macrops	6.92	76	2.13	
Centrophorus granulosus	6.44	2	1.98	
Nettastoma melanurum	4.45	133	1.37	
Malacocephalus laevis	3.79	85	1.17	
Nezumia aequalis	2.18	171	0.67	
Halosaurus sp.	0.85	76	0.26	
Coloconger cadenati	0.66	9	0.20	
Gadella imberbis	0.66	9	0.20	
Hymenocephalus italicus	0.66	38	0.20	
MYCTOPHIDAE	0.57	142	0.18	
Yarrella blackfordi	0.47	114	0.15	
Scorpaena normani	0.47	9	0.15	
Synchiropus phaeton	0.38	38	0.12	
Coelorinchus coelorhincus	0.28	9	0.09	
Promethichthys prometheus	0.19	9	0.06	
Astronesthes sp.	0.09	9	0.03	
Leptocephalus	0.01	2	0.00	
Total	324.54		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 41
DATE :16/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°20.07
start stop duration Lon W 17°41.03
TIME :23:17:29 23:37:42 20.2 (min) Purpose : 3
LOG : 5595.86 5596.84 1.0 Region : 2100
FDEPTH: 970 973 Gear cond.: 0
BDEPTH: 970 973 Validity : 0
Towing dir: 0° Wire out : 2030 m Speed : 2.9 kn
Sorted : 18 Total catch: 38.34 Catch/hour: 113.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Talismania longifilis	33.65	196	29.58	
Bathyuroconger vicinus	17.21	47	15.13	
Nezumia micronychodon	16.97	154	14.92	
Nezumia duodecim	10.45	190	9.18	
Halosaurus johnsonianus	6.35	255	5.58	
Alepocephalus sp.	5.70	24	5.01	
Hydrolagus mirabilis	4.87	6	4.28	
Yarrella blackfordi	3.38	30	2.97	
Apristurus sp.	3.09	18	2.71	
Coryphaenoides zaniophorus	3.03	18	2.66	
Bathygadus melanobranchus	2.67	24	2.35	
Melanonus gracilis	1.90	24	1.67	
Nezumia africana	1.72	12	1.51	
Lamprogrammus niger	1.19	12	1.04	
Alepocephalus sp.	0.65	30	0.57	
Polyacanthonotus africanus	0.30	6	0.26	
Dicrolene intronigrer	0.30	12	0.26	
Searsia koefoedi	0.18	6	0.16	
Bathysaurus ferox	0.18	36	0.16	
Pseudoscopelus altipinnis	0.00	6	0.00	
Chiasmodon sp.	0.00	12	0.00	
Nansenia oblita	0.00	6	0.00	
Melanonus zugmayeri	0.00	12	0.00	
Cataetyx bruuni	0.00	12	0.00	
MYCTOPHIDAE	0.00	30	0.00	
Rouleina attrita	0.00	12	0.00	
Monomitopus metriostoma	0.00	18	0.00	
Leptoderma macrops	0.00	12	0.00	
Normichthys operosus	0.00	6	0.00	
Serrivomer beanii	0.00	89	0.00	
Bajacalifornia sp.	0.00	12	0.00	
Argyropelecus sp.	0.00	47	0.00	
Sternoptyx sp.	0.00	18	0.00	
STOMIIDAE	0.00	6	0.00	
Chauliodus sloani	0.00	6	0.00	
Malacosteus sp.	0.00	24	0.00	
Stylephorus chordatus	0.00	6	0.00	
Synaphobranchus affinis	0.00	6	0.00	
Bathypteroois sp.	0.00	6	0.00	
Metal waste	0.00	0	0.00	
GONOSTOMATIDAE	0.00	24	0.00	
Bathygadus melanobranchus	0.00	30	0.00	
GONOSTOMATIDAE	0.00	6	0.00	
Symphurus sp.	0.00	6	0.00	
Total	113.77		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 42
DATE :17/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°27.75
start stop duration Lon W 17°22.08
TIME :03:25:14 03:55:06 30.9 (min) Purpose : 3
LOG : 5618.64 5620.68 1.5 Region : 2100
FDEPTH: 483 463 Gear cond.: 0
BDEPTH: 483 463 Validity : 0
Towing dir: 0° Wire out : 1150 m Speed : 2.4 kn
Sorted : 18 Total catch: 44.83 Catch/hour: 87.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Malacocephalus occidentalis	36.83	115	42.28	
Merluccius polli	17.10	58	19.63	
Hoplostethus cadenati	10.25	160	11.77	
Malacocephalus laevis	9.43	63	10.82	
Chaunax pictus	6.61	24	7.59	
Illex coindetii	2.19	10	2.51	
Scyliorhinus stellaris	1.07	15	1.23	
Yarrella blackfordi	0.87	19	1.00	
Todaropsis eblanae	0.83	5	0.95	
Epigonus telescopus	0.58	10	0.67	
Nettastoma melanurum	0.49	10	0.56	
CONGRIDAE	0.49	5	0.56	
Rhinochimaera atlantica	0.24	49	0.28	
Photonectes parvimanus	0.15	49	0.17	
Total	87.12		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 43
DATE :18/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°45.10
start stop duration Lon W 16°42.80
TIME :10:40:31 11:08:21 27.8 (min) Purpose : 3
LOG : 5694.29 5695.80 1.5 Region : 2100
FDEPTH: 52 54 Gear cond.: 0
BDEPTH: 52 54 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.3 kn
Sorted : 46 Total catch: 45.75 Catch/hour: 98.63

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macropipus rugosus	70.72	16972	71.69	
Scomber japonicus	9.12	0	9.25	
J E L L Y F I S H	6.25	0	6.34	
Alloteuthis africana	2.46	1097	2.49	
Sepia hieredda	2.37	19	2.40	
Trachurus trecae	1.85	0	1.88	
Lagocephalus laevigatus	1.36	11	1.38	
Paraconger notialis	1.21	4	1.22	
Chelidonichthys gabonensis	0.86	11	0.87	
Pisodonophis semicinctus	0.63	2	0.63	
Saurida brasiliensis	0.52	34	0.52	
Lepidotrigla carolae	0.41	47	0.42	
Decapterus punctatus	0.24	2	0.24	
Fistularia tabacaria	0.22	13	0.22	
Engraulis encrasicolus	0.19	0	0.20	
Pagellus bellottii	0.13	9	0.13	
Sardinella aurita	0.06	0	0.07	
Sepiella ornata	0.04	2	0.04	
Total	98.63		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 44
DATE :18/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°41.72
start stop duration Lon W 16°48.62
TIME :13:55:38 14:26:11 30.6 (min) Purpose : 3
LOG : 5710.14 5711.64 1.5 Region : 2100
FDEPTH: 111 107 Gear cond.: 0
BDEPTH: 111 107 Validity : 0
Towing dir: 0° Wire out : 275 m Speed : 3.0 kn
Sorted : 65 Total catch: 212.48 Catch/hour: 417.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	263.49	7271	63.14	105
Illex coindetii	28.16	866	6.75	
Scorpaena stephanica	27.81	153	6.66	
Mustelus mustelus	26.71	12	6.40	101
Todaropsis eblanae	24.69	642	5.92	
Trachurus trecae	12.73	1084	3.05	107
Lepidotrigla carolae	9.49	200	2.27	
Zeus faber	5.03	10	1.20	102
Scomber japonicus	3.65	177	0.88	106
Dentex angolensis	3.06	118	0.73	108
Zeus faber	2.47	59	0.59	
Epinephelus aeneus	2.26	2	0.54	104
Fistularia petimba	2.24	8	0.54	
Saurida brasiliensis	1.59	171	0.38	
Raja miraletus	1.36	12	0.32	
Citharus linguatula	1.24	29	0.30	
Arnoglossus imperialis	0.47	77	0.11	
Pagellus bellottii	0.35	47	0.08	
SOLEIDAE	0.29	29	0.07	
Cepola pauciradiatus	0.16	2	0.04	
Spicara alta	0.06	6	0.01	
Total	417.31		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 45
DATE :18/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°35.66
start stop duration Lon W 16°59.52
TIME :16:46:21 17:16:48 30.5 (min) Purpose : 3
LOG : 5729.72 5731.27 1.6 Region : 2100
FDEPTH: 209 209 Gear cond.: 0
BDEPTH: 209 209 Validity : 0
Towing dir: 0° Wire out : 500 m Speed : 3.1 kn
Sorted : 61 Total catch: 238.06 Catch/hour: 469.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	154.17	9724	32.87	
Synagrops microlepis	104.39	8039	22.25	
Trichiurus lepturus	100.49	197	21.42	109
Illex coindetii	28.67	556	6.11	
Trachurus trecae	24.43	28	5.21	111
Aulopus cadenati	7.57	65	1.61	
Todaropsis eblanae	7.45	83	1.59	
Pterothrissus belloci	6.86	65	1.46	
Merluccius polli	6.78	41	1.45	110
Antigonia capros	5.67	757	1.21	
Mustelus mustelus	5.48	2	1.17	113
Sphoeroides pachgaster	3.72	6	0.79	
Pontinus accraensis	3.49	83	0.74	
Scorpaena stephanica	2.42	12	0.52	
Gephyroberyx darwini	2.40	2	0.51	114
Umbrina canariensis	1.66	2	0.35	112
Ariomma bondi	1.66	47	0.35	
Lepidotrigla carolae	0.89	18	0.19	
Zenopsis conchifer	0.41	6	0.09	
Bembrops greyi	0.24	6	0.05	
Trachurus trecae	0.24	18	0.05	
Total	469.08		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 46
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°51.22
start stop duration Lon W 17°21.88
TIME :01:25:36 01:55:26 29.8 (min) Purpose : 3
LOG : 5786.95 5788.51 1.6 Region : 2100
FDEPTH: 361 350 Gear cond.: 0
BDEPTH: 361 350 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 3.1 kn
Sorted : 52 Total catch: 80.12 Catch/hour: 161.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	69.76	1575	43.29	
Merluccius polli	40.49	219	25.13	115
Malacocephalus laevis	13.76	91	8.54	
Gephyroberyx darwini	8.48	6	5.26	
Ijimaia loppei	5.16	3	3.20	
Lophius vaillanti	4.13	3	2.57	
Synagrops microlepis	3.32	30	2.06	
Zenopsis conchifer	3.06	2	1.90	
Pontinus accraensis	1.84	15	1.14	
Gadella imberbis	1.81	39	1.12	
Laemonema laureysi	1.75	57	1.09	
Chascanopsetta lugubris	1.51	9	0.94	
MYCTOPHIDAE	1.12	151	0.69	
C E P H A L O P O D A	1.06	18	0.66	
Peristedion cataphractum	0.69	27	0.43	
Illex coindetii	0.48	3	0.30	
Nezumia aequalis	0.45	24	0.28	
Pterothrissus belloci	0.45	3	0.28	
Parasudis fraser-bruenneri	0.33	3	0.21	
Malacocephalus laevis	0.33	6	0.21	
Scyliorhinus stellaris	0.27	3	0.17	
Oxynotus centrina	0.20	2	0.12	
Cyttopsis rosea	0.18	2	0.11	
CONGRIDAE	0.18	3	0.11	
OGCOCEPHALIDAE	0.18	2	0.11	
Coelorinchus coelorhincus	0.15	3	0.09	
Total	161.14		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 47
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°55.17
start stop duration Lon W 17°12.72
TIME :04:06:43 04:38:15 31.5 (min) Purpose : 3
LOG : 5803.98 5805.59 1.6 Region : 2100
FDEPTH: 173 176 Gear cond.: 0
BDEPTH: 173 176 Validity : 0
Towing dir: 0° Wire out : 450 m Speed : 3.1 kn
Sorted : 56 Total catch: 401.23 Catch/hour: 763.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	209.13	400	27.39	
Scorpaena normani	107.63	3305	14.10	
Scorpaena stephanica	84.19	204	11.03	
Aulopus cadenati	75.00	786	9.82	
Dentex angolensis	69.93	493	9.16	
Antigonia capros	66.34	1587	8.69	
Lepidotrigla carolae	57.68	1896	7.55	
Illex coindetii	49.42	877	6.47	
Umbrina canariensis	9.59	17	1.26	116
Pontinus accraensis	8.39	93	1.10	
Uranoscopus polli	4.80	27	0.63	
Brotula barbata	4.07	6	0.53	
Pterothrissus belloci	3.73	27	0.49	
Squalus megalops	3.63	2	0.48	
Bembrops heterurus	3.33	53	0.44	
Zeus faber	2.91	4	0.38	
Citharichthys sp.	1.60	67	0.21	
Dicologoglossa hexophthalma	0.67	13	0.09	
Dibranchus atlanticus	0.40	27	0.05	
Microchirus boscanion	0.40	27	0.05	
Arnoglossus imperialis	0.40	80	0.05	
Ophidion rochei	0.27	27	0.03	
Synchiropus phaeton	0.03	27	0.00	
Total	763.53		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 48
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 10°56.92
start stop duration Lon W 16°59.25
TIME :06:41:14 07:11:40 30.4 (min) Purpose : 3
LOG : 5820.98 5822.55 1.6 Region : 2100
FDEPTH: 65 62 Gear cond.: 0
BDEPTH: 65 62 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.1 kn
Sorted : 8 Total catch: 66.31 Catch/hour: 130.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	26.11	49	19.97	117
Fistularia tabacaria	25.20	118	19.27	
Dactylopterus volitans	17.09	49	13.07	
Triglaporus lastoviza	11.40	112	8.72	
Decapterus punctatus	10.41	122	7.96	118
Trachinocephalus myops	7.39	47	5.66	
Raja miraletus	6.19	16	4.74	
Illex coindetii	5.46	65	4.18	
Paraconger notialis	3.43	14	2.62	
Pegusa lascaris	3.15	26	2.41	
Gephyroberyx darwini	2.05	2	1.57	
Peristedion cataphractum	1.95	81	1.49	
Pisodonophis semicinctus	1.93	2	1.48	
Priacanthus arenatus	1.72	6	1.31	
Bothus podas	1.20	26	0.92	
Trachurus trecae	1.16	4	0.89	
Sepia hieredda	1.05	6	0.80	
Pagellus bellottii	0.99	4	0.75	
Trachinus armatus	0.85	10	0.65	
Antigonia capros	0.57	22	0.44	
Pseudupeneus prayensis	0.53	4	0.41	
Pontinus accraensis	0.32	14	0.24	
Sphoeroides marmoratus	0.24	6	0.18	
Lagocephalus laevigatus	0.22	2	0.17	
Scomber japonicus	0.10	2	0.08	
Zeus faber	0.02	2	0.02	
Antennarius pardalis	0.02	2	0.02	
Total	130.75		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 49
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°0.99
start stop duration Lon W 16°53.47
TIME :08:20:38 08:50:05 29.5 (min) Purpose : 3
LOG : 5830.63 5832.30 1.7 Region : 2100
FDEPTH: 41 42 Gear cond.: 0
BDEPTH: 41 42 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.4 kn
Sorted : 2 Total catch: 54.25 Catch/hour: 110.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	51.91	192	46.97	121
Pagellus bellottii	18.74	251	16.96	120
Pseudupeneus prayensis	10.17	79	9.20	119
Dactylopterus volitans	5.56	29	5.03	
J E L L Y F I S H	4.83	8	4.37	
Lagocephalus laevigatus	3.99	39	3.61	
Selene dorsalis	3.16	22	2.86	
Raja miraletus	2.06	4	1.86	
Paraconger notialis	1.96	6	1.77	
Epinephelus aeneus	1.83	2	1.66	
Fistularia tabacaria	1.30	16	1.18	
Citharus linguatula	1.16	6	1.05	
Priacanthus arenatus	0.84	2	0.76	
Trichiurus lepturus	0.61	4	0.55	
Sepia hieredda	0.61	4	0.55	
Scomber japonicus	0.55	10	0.50	
Schedophilus ovalis	0.53	2	0.48	
Decapterus punctatus	0.26	4	0.24	
Trachinus armatus	0.20	2	0.18	
Peristedion cataphractum	0.10	4	0.09	
Scorpaena scrofa	0.08	2	0.07	
Sphoeroides marmoratus	0.06	2	0.06	
Echeneis naucrates	0.00	2	0.00	
Total	110.53		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 50
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°14.96
start stop duration Lon W 17°4.35
TIME :12:39:07 13:09:42 30.0 (min) Purpose : 3
LOG : 5864.89 5866.39 1.5 Region : 2100
FDEPTH: 39 39 Gear cond.: 0
BDEPTH: 39 39 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.1 kn
Sorted : 43 Total catch: 42.57 Catch/hour: 85.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	52.00	181	61.08	122
Trachurus trecae	9.36	130	10.99	123
Alloteuthis africana	6.14	1564	7.21	
Lagocephalus laevigatus	4.92	60	5.78	
Seriola rivoliana	2.04	4	2.40	
Echeneis naucrates	1.88	2	2.21	
Scomber japonicus	1.64	34	1.93	124
Dactylopterus volitans	1.34	4	1.57	
Pseudupeneus prayensis	1.30	10	1.53	125
CONGRIDAE	1.00	6	1.17	
Trichiurus lepturus	0.72	2	0.85	
Fistularia petimba	0.50	4	0.59	
Pagellus bellottii	0.46	10	0.54	
Selene dorsalis	0.46	4	0.54	
Decapterus punctatus	0.42	8	0.49	
Sardinella aurita	0.28	2	0.33	
Chloroscombrus chrysurus	0.26	2	0.31	
Mugil bananensis	0.20	2	0.23	
Citharichthys stampflii	0.08	2	0.09	
Grammoplites gruveli	0.04	2	0.05	
Chelidonichthys gabonensis	0.04	2	0.05	
Arnoglossus imperialis	0.04	4	0.05	
Lepidotrigla carolae	0.02	2	0.02	
Total	85.14		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 51
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°13.66
start stop duration Lon W 17°11.31
TIME :14:06:13 14:35:40 29.4 (min) Purpose : 3
LOG : 5874.84 5876.33 1.5 Region : 2100
FDEPTH: 74 73 Gear cond.: 0
BDEPTH: 74 73 Validity : 0
Towing dir: 0° Wire out : 200 m Speed : 3.0 kn
Sorted : 72 Total catch: 138.95 Catch/hour: 283.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chromis cadenati	59.51	552	21.01	
Pagellus bellottii	58.70	263	20.73	128
Decapterus rhonchus	26.49	69	9.36	129
Raja miraletus	18.30	43	6.46	
Selene dorsalis	16.10	132	5.69	127
Priacanthus arenatus	14.96	41	5.28	
Cymbium pepo	13.13	2	4.63	
Pseudupeneus prayensis	11.94	77	4.22	131
Dentex gibbosus	10.76	8	3.80	132
Scorpaena stephanica	9.74	33	3.44	
Fistularia petimba	8.19	41	2.89	
Seriola carpenteri	5.01	8	1.77	
Sphyraena sphyraena	4.48	18	1.58	126
Chelidonichthys gabonensis	4.12	41	1.45	
Dactylopterus volitans	4.12	12	1.45	
Parapristipoma octolineatum	3.91	20	1.38	
Umbrina canariensis	2.77	6	0.98	
Chaetodon hoefleri	2.77	12	0.98	
Epinephelus aeneus	2.65	4	0.94	133
Sphoeroides pachgaster	1.75	4	0.62	
Scorpaena sp.	1.71	16	0.60	
Epinephelus costae	1.32	4	0.47	134
Anthias anthias	0.33	4	0.12	
Arnoglossus imperialis	0.24	37	0.09	
Chaetodon marcellae	0.16	4	0.06	
Total	283.19		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 52
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°8.92
start stop duration Lon W 17°15.54
TIME :15:57:49 16:28:18 30.5 (min) Purpose : 3
LOG : 5884.30 5885.86 1.6 Region : 2100
FDEPTH: 109 115 Gear cond.: 0
BDEPTH: 109 115 Validity : 0
Towing dir: 0° Wire out : 275 m Speed : 3.1 kn
Sorted : 62 Total catch: 671.86 Catch/hour: 1322.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	903.54	142760	68.32	140
Umbrina canariensis	151.77	319	11.48	136
Scorpaena stephanica	92.66	213	7.01	
Antigonia capros	41.46	815	3.13	
Decapterus rhonchus	30.51	61	2.31	135
Dentex congoensis	24.80	248	1.88	143
Dentex angolensis	22.15	124	1.67	142
Squalus megalops	14.65	8	1.11	139
Mustelus mustelus	7.83	4	0.59	138
Dentex macrophthalmus	7.80	18	0.59	
Pagellus bellottii	6.20	53	0.47	
Zeus faber	4.63	10	0.35	
Raja miraletus	2.24	4	0.17	
Illex coindetii	2.13	106	0.16	
Sarda sarda	2.05	2	0.15	137
Epinephelus aeneus	1.81	2	0.14	141
Brotula barbata	1.73	2	0.13	
Octopus vulgaris	1.16	2	0.09	
Pagrus caeruleostictus	0.98	2	0.07	
Pontinus accraensis	0.71	18	0.05	
Scomber japonicus	0.71	106	0.05	
Trachinus pellegrini	0.39	2	0.03	
Arnoglossus imperialis	0.35	35	0.03	
Trachurus trecae	0.18	53	0.01	
Lepidotrigla carolae	0.12	53	0.01	
Total	1322.56		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 53
DATE :19/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°31.09
start stop duration Lon W 17°24.27
TIME :22:00:34 22:20:28 19.9 (min) Purpose : 3
LOG : 5930.46 5931.46 1.0 Region : 2100
FDEPTH: 738 730 Gear cond.: 0
BDEPTH: 738 730 Validity : 0
Towing dir: 0° Wire out : 1770 m Speed : 3.0 kn
Sorted : 4 Total catch: 38.42 Catch/hour: 115.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lamprogrammus exutus	20.38	39	17.60	
Halosaurus sp.	16.55	232	14.29	
Bathyuroconger vicinus	12.30	36	10.62	
Photonectes parvimanus	11.40	51	9.84	
Bathygadus macrops	9.38	154	8.09	
Deania calcea	8.86	63	7.65	
Centrophorus granulosus	8.20	3	7.08	
Merluccius polli	4.91	6	4.24	
Raja sp.	4.82	9	4.16	
Nezumia micronychodon	4.76	93	4.11	
Synaphobranchus affinis	2.89	75	2.50	
Talismania longifilis	2.38	33	2.06	
Cubiceps pauciradiatus	1.72	69	1.48	
Monomitopus metriostoma	1.09	60	0.94	
Nezumia aequalis	1.09	54	0.94	
Bathyuroconger vicinus	0.72	9	0.62	
Nezumia duodecim	0.72	33	0.62	
Etmopterus spinax	0.66	3	0.57	
Yarrella blackfordi	0.63	30	0.55	
Raja clavata	0.60	6	0.52	
Nettastoma melanurum	0.48	3	0.42	
Lophiodes kempi	0.42	6	0.36	
Setarches guentheri	0.39	3	0.34	
Chauliodus sloani	0.33	15	0.29	
Dibranchus atlanticus	0.12	3	0.10	
Total	115.84		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 54
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°37.15
start stop duration Lon W 16°58.94
TIME :08:51:27 09:13:21 21.9 (min) Purpose : 3
LOG : 5973.86 5974.97 1.1 Region : 2100
FDEPTH: 30 31 Gear cond.: 0
BDEPTH: 30 31 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.0 kn
Sorted : 145 Total catch: 145.08 Catch/hour: 397.48

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Stromateus fiatola	153.42	260	38.60	
Cymbium pepo	84.11	16	21.16	
Alectis alexandrina	70.68	101	17.78	
Elops lacerta	32.16	0	8.09	
J E L L Y F I S H	30.14	0	7.58	
Scomberomorus tritor	5.26	11	1.32	
Portunus validus	5.07	8	1.28	
Galeoides decadactylus	3.78	5	0.95	
Caranx senegallus	3.78	16	0.95	
Balistes capriscus	2.41	8	0.61	145
Pseudotolithus brachygnathus	2.22	3	0.56	
Decapterus rhonchus	1.32	3	0.33	
Sphyraena guachancho	1.26	3	0.32	
Epinephelus aeneus	0.88	5	0.22	144
Trichiurus lepturus	0.58	30	0.14	
Brachydeuterus auritus	0.25	8	0.06	
Eucinostomus melanopterus	0.16	25	0.04	
Total	397.48		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 55
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°33.33
start stop duration Lon W 17°9.60
TIME :10:58:01 11:28:52 30.9 (min) Purpose : 3
LOG : 5989.89 5991.47 1.6 Region : 2100
FDEPTH: 52 54 Gear cond.: 0
BDEPTH: 52 54 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.1 kn
Sorted : 0 Total catch: 148.02 Catch/hour: 287.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Galeoides decadactylus	78.57	123	27.29	147
Decapterus rhonchus	71.77	214	24.93	146
Trachurus trecae	22.95	4808	7.97	150
J E L L Y F I S H	21.88	0	7.60	
Brachydeuterus auritus	21.34	461	7.41	
Alloteuthis africana	17.45	74	6.06	
Cymbium pepo	14.88	5	5.17	
Trichiurus lepturus	7.00	58	2.43	
Pagellus bellottii	5.35	801	1.86	
Trachurus trecae	5.25	73	1.82	152
Pseudupeneus prayensis	4.12	39	1.43	151
Sphyraena guachancho	2.72	11	0.95	153
Chloroscombrus chrysurus	2.47	15	0.86	
Sphyraena guachancho	2.26	2	0.78	148
Lesueurigobius sp.	1.59	366	0.55	
Epinephelus aeneus	1.56	5	0.54	
Balistes capriscus	1.30	5	0.45	
Decapterus punctatus	1.30	19	0.45	
Selene dorsalis	0.97	10	0.34	
Sardinella aurita	0.91	97	0.32	149
Octopus vulgaris	0.84	2	0.29	
Citharichthys stampflii	0.78	5	0.27	
Grammoplites gruveli	0.49	5	0.17	
Antennarius pardalis	0.10	5	0.03	
Engraulis encrasicolus	0.04	5	0.01	
Total	287.88		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 56
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°56.51
start stop duration Lon W 17°12.28
TIME :15:05:23 15:18:30 13.1 (min) Purpose : 3
LOG : 6023.36 6023.98 0.6 Region : 2100
FDEPTH: 75 74 Gear cond.: 0
BDEPTH: 75 74 Validity : 0
Towing dir: 0° Wire out : 195 m Speed : 2.8 kn
Sorted : 61 Total catch: 211.66 Catch/hour: 967.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Selene dorsalis	281.71	1614	29.10	154
Trachurus trecae	219.28	78119	22.65	155
Brachydeuterus auritus	174.47	8470	18.02	
Pentheroscion mbizi	85.02	727	8.78	
Stromateus fiatola	82.91	128	8.57	
Decapterus rhonchus	31.37	112	3.24	158
Galeoides decadactylus	28.63	64	2.96	157
Fistularia petimba	19.21	142	1.98	
Lesueurigobius sanzoi	8.64	2076	0.89	
Pisodonophis semicinctus	8.64	110	0.89	
Pseudotolithus senegalensis	8.41	9	0.87	156
Trichiurus lepturus	6.08	32	0.63	
Dicologoglossa cuneata	4.34	32	0.45	
Sphyraena sphyraena	2.42	18	0.25	
Octopus vulgaris	1.97	9	0.20	
GOBIIDAE	1.74	208	0.18	
Citharus linguatula	1.46	46	0.15	
Pagellus bellottii	1.10	160	0.11	
Lepidotrigla carolae	0.18	78	0.02	
Chelidonichthys gabonensis	0.14	18	0.01	
Physiculus sp.	0.14	14	0.01	
Brotula barbata	0.09	14	0.01	
Total	967.96		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 57
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 11°56.24
start stop duration Lon W 17°15.67
TIME :16:41:25 17:12:01 30.6 (min) Purpose : 3
LOG : 6031.90 6033.47 1.6 Region : 2100
FDEPTH: 106 104 Gear cond.: 0
BDEPTH: 106 104 Validity : 0
Towing dir: 0° Wire out : 280 m Speed : 3.1 kn
Sorted : 29 Total catch: 1888.90 Catch/hour: 3703.73

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	2245.88	44394	60.64	159
Trachurus trecae	783.73	51	21.16	160
Trachurus trecae	322.24	65	8.70	163
Synagrops microlepis	221.33	1924	5.98	
Pteroscion peli	68.35	553	1.85	
Sphyraena guachancho	34.31	31	0.93	161
Dentex angolensis	16.59	65	0.45	
Octopus vulgaris	4.55	6	0.12	
Branchiostegus semifasciatus *	2.08	2	0.06	
Syacium micrurum	1.96	31	0.05	
Brotula barbata	1.41	2	0.04	
Epinephelus aeneus	1.31	2	0.04	162
Total	3703.75		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 58
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°3.37
start stop duration Lon W 17°23.63
TIME :20:12:51 20:39:19 26.5 (min) Purpose : 3
LOG : 6051.24 6052.64 1.4 Region : 1300
FDEPTH: 474 496 Gear cond.: 0
BDEPTH: 474 496 Validity : 0
Towing dir: 0° Wire out : 1100 m Speed : 3.2 kn
Sorted : 40 Total catch: 86.14 Catch/hour: 195.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ijimaia loppei	49.19	20	25.19	
Merluccius polli	29.47	88	15.09	165
Lophius vaillanti	27.56	7	14.12	164
Centrophorus granulosus	18.47	7	9.46	
Laemonema laufeysi	12.69	175	6.50	
Lamprogrammus exutus	11.97	52	6.13	
Nematocarcinus africanus	10.88	3652	5.57	
Hoplostethus cadenati	6.73	145	3.45	
Malacocephalus laevis	5.49	48	2.81	
Centrophorus uyato	4.76	16	2.44	
Coelorinchus coelorhincus	3.56	57	1.82	
Deania profundorum	3.06	18	1.57	
Scyliorhinus cervigoni	2.77	2	1.42	
Yarrella blackfordi	1.95	57	1.00	
Bathygadus macrops	1.54	36	0.79	
Galeus polli	1.11	20	0.57	
Echelus myrus	0.88	7	0.45	
Nezumia aequalis	0.84	75	0.43	
Malacocephalus occidentalis	0.41	7	0.21	
Epigonus pandionis	0.39	5	0.20	
Hymenocephalus italicus	0.39	120	0.20	
Nezumia micronychodon	0.34	5	0.17	
Halosaurus ovenii	0.27	29	0.14	
Benthodesmus tenuis	0.20	2	0.10	
Epigonus pandionis	0.14	7	0.07	
Xenodermichthys copei	0.11	2	0.06	
Gadella imberbis	0.09	5	0.05	
Total	195.26		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 59
DATE :20/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°12.09
start stop duration Lon W 17°25.55
TIME :23:27:41 23:51:17 23.6 (min) Purpose : 3
LOG : 6072.17 6073.38 1.2 Region : 1300
FDEPTH: 833 816 Gear cond.: 0
BDEPTH: 833 816 Validity : 0
Towing dir: 0° Wire out : 1720 m Speed : 3.1 kn
Sorted : 45 Total catch: 67.55 Catch/hour: 171.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lamprogrammus exutus	35.69	231	20.79	
Nezumia micronychodon	26.31	356	15.32	
Halosaurus ovenii	25.13	392	14.63	
Trachyrincus scabrus	20.59	127	11.99	
Bathygadus macrops	17.77	1332	10.35	
Xenodermichthys copei	11.48	567	6.68	
Raja sp.	9.61	23	5.60	
Bathyuroconger vicinus	8.81	61	5.13	
Raja montagui	5.42	4	3.15	
Alepocephalus sp.	2.97	23	1.73	
Ebinania costaecanarie	1.56	4	0.91	
Photonectes parvimanus	1.26	38	0.73	
Yarrella blackfordi	1.22	31	0.71	
Talismania sp.	1.03	89	0.60	
Deania calcea	0.95	8	0.56	
Coryphaenoides zaniophorus	0.95	203	0.56	
Lampanyctus sp.	0.61	0	0.36	
Galeus polli	0.34	8	0.20	
Synaphobranchus affinis	0.00	3	0.00	
Bajacalifornia megalops	0.00	5	0.00	
ASTRONESTHIDAE	0.00	3	0.00	
Nansenia sp.	0.00	13	0.00	
CERATIIDAE, juvenile	0.00	38	0.00	
CERATIIDAE	0.00	3	0.00	
Chlorophthalmus atlanticus	0.00	3	0.00	
Promethichthys prometheus	0.00	3	0.00	
Gonostoma elongatum	0.00	3	0.00	
MELANOSTOMIATIDAE	0.00	3	0.00	
MYCTOPHIDAE	0.00	38	0.00	
Nonomitopus metriostoma	0.00	5	0.00	
Polymetme corythaeola	0.00	3	0.00	
Searsia koefoedi	0.00	5	0.00	
SOLEIDAE	0.00	3	0.00	
Sternoptyx sp.	0.00	5	0.00	
Chauliodus sloani	0.00	13	0.00	
Total	171.72		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 60
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°12.37
start stop duration Lon W 17°22.26
TIME :02:57:47 03:14:45 17.0 (min) Purpose : 3
LOG : 6091.10 6091.96 0.9 Region : 1300
FDEPTH: 285 282 Gear cond.: 0
BDEPTH: 285 282 Validity : 0
Towing dir: 0° Wire out : 675 m Speed : 3.0 kn
Sorted : 22 Total catch: 63.84 Catch/hour: 225.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	112.86	841	50.00	
Ijimaia loppei	42.00	4	18.61	
Centrophorus granulosus	27.72	7	12.28	
Todaropsis eblanae	6.86	127	3.04	
Trichiurus lepturus	5.87	71	2.60	
Illex coindetii	4.88	21	2.16	
Psenes pellucidus	4.74	7	2.10	
Brotula barbata	4.24	7	1.88	
Raja sp.	2.40	21	1.07	
Synagrops microlepis	2.19	106	0.97	
Gadella imberbis	1.91	106	0.85	
Pontinus accraensis	1.77	113	0.78	
Lophius vaillanti	1.48	57	0.66	
Trachurus trecae	1.41	4	0.63	
Chlorophthalmus atlanticus	1.27	35	0.56	
Peristedion cataphractum	0.99	14	0.44	
CONGRIDAE	0.71	14	0.31	
Ophidion lozanoi	0.71	21	0.31	
Physiculus cyanostropheis	0.57	14	0.25	
Laemonema laureysi	0.35	28	0.16	
Cubiceps sp.	0.21	28	0.09	
Epigonus pandionis	0.14	21	0.06	
Myctophidae sp. large	0.14	42	0.06	
Parasudis fraser-bruenneri	0.14	14	0.06	
Zenion hololepis	0.07	7	0.03	
Malacocephalus occidentalis	0.07	7	0.03	
Ophidion sp.	0.00	4	0.00	
Xenomystax sp.	0.00	4	0.00	
Physiculus cyanostropheis	0.00	28	0.00	
Physiculus huloti	0.00	4	0.00	
Rhechias bertini	0.00	4	0.00	
Epigonus denticulatus	0.00	4	0.00	
Total	225.72		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 61
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°16.32
start stop duration Lon W 17°21.04
TIME :06:37:28 07:08:03 30.6 (min) Purpose : 3
LOG : 6104.33 6105.82 1.5 Region : 1300
FDEPTH: 108 107 Gear cond.: 0
BDEPTH: 108 107 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 2.9 kn
Sorted : 76 Total catch: 268.16 Catch/hour: 526.15

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	274.69	1731	52.21	166
Brotula barbata	34.75	69	6.60	
Illex coindetii	29.18	934	5.55	
Dentex angolensis	28.10	171	5.34	170
Branchiostegus semifasciatus *	27.68	49	5.26	0
Umbrina canariensis	27.06	96	5.14	167
Priacanthus arenatus	26.86	69	5.11	
Scorpaena stephanica	18.19	20	3.46	
Trachurus trecae	17.38	34	3.30	168
Pentheroscion mbizi	8.79	55	1.67	
Epinephelus aeneus	8.59	7	1.63	169
Saurida brasiliensis	5.49	2011	1.04	
Octopus vulgaris	4.04	4	0.77	
Serranus cabrilla	3.65	22	0.69	
Raja miraletus	3.57	20	0.68	
Ariomma bondi	2.06	96	0.39	
Selene dorsalis	1.79	8	0.34	
Zeus faber	1.37	27	0.26	
Trachurus trecae	1.10	14	0.21	
Dentex canariensis	0.55	6	0.10	
Citharus linguatula	0.49	75	0.09	
Cepola macrophthalma	0.49	14	0.09	
Fistularia tabacaria	0.14	14	0.03	
Thorogobius sp.	0.08	14	0.01	
Lesueurigobius sanzoi	0.06	41	0.01	
Total	526.15		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 62
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°15.88
start stop duration Lon W 17°15.95
TIME :08:17:46 08:47:19 29.6 (min) Purpose : 3
LOG : 6113.35 6114.99 1.6 Region : 1300
FDEPTH: 69 69 Gear cond.: 0
BDEPTH: 69 69 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.3 kn
Sorted : 129 Total catch: 542.21 Catch/hour: 1100.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	701.69	196471	63.74	171
Pentheroscion mbizi	125.16	1364	11.37	173
Decapterus rhonchus	111.33	351	10.11	174
Brachydeuterus auritus	53.10	2057	4.82	
Epinephelus aeneus	33.50	10	3.04	176
Trachurus trecae	15.65	227	1.42	175
Sphyraena guachancho	8.24	28	0.75	
Alloteuthis africana	7.88	0	0.72	
Galeoides decadactylus	7.49	10	0.68	
Chloroscombrus chrysurus	7.21	47	0.65	177
Selene dorsalis	6.36	28	0.58	
Fistularia petimba	5.69	28	0.52	
Scomber japonicus	5.12	455	0.46	172
Raja straeleni	4.75	10	0.43	
Brotula barbata	4.37	10	0.40	
Sepiella ornata	0.85	39	0.08	
Engraulis encrasicolus	0.67	67	0.06	
Trichiurus lepturus	0.57	18	0.05	
Sardinella aurita	0.39	10	0.04	
Citharus linguatula	0.18	57	0.02	
Pagellus bellottii	0.18	28	0.02	
Lesueurigobius sanzoi	0.18	37	0.02	
Lepidotrigla carolae	0.18	28	0.02	
Saurida brasiliensis	0.10	28	0.01	
Fistularia tabacaria	0.10	10	0.01	
Total	1100.93		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 63
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°16.51
start stop duration Lon W 17°8.63
TIME :10:05:50 10:35:53 30.1 (min) Purpose : 3
LOG : 6124.77 6126.37 1.6 Region : 1300
FDEPTH: 34 34 Gear cond.: 0
BDEPTH: 34 34 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.2 kn
Sorted : 65 Total catch: 395.16 Catch/hour: 789.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	479.20	37378	60.73	
Trachurus trecae	89.25	18509	11.31	178
Alectis alexandrina	88.89	132	11.27	182
Alloteuthis africana	35.94	21888	4.56	
J E L L Y F I S H	34.74	0	4.40	
Galeoides decadactylus	25.64	419	3.25	179
Arius parkii	6.59	12	0.84	
Pisodonophis semicinctus	5.99	10	0.76	
Selene dorsalis	5.39	144	0.68	180
Lesueurigobius sanzoi	3.47	21888	0.44	
Decapterus rhonchus	2.64	12	0.33	
Trichiurus lepturus	2.16	84	0.27	181
Pseudupeneus prayensis	2.16	24	0.27	
Chloroscombrus chrysurus	2.04	12	0.26	
Ilisha africana	1.92	60	0.24	
Bembrops greyi	1.56	60	0.20	
Eucinostomus melanopterus	1.20	12	0.15	
Pentheroscion mbizi	0.12	24	0.02	
Pagellus bellottii	0.12	24	0.02	
Total	789.00		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 64
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°30.57
start stop duration Lon W 17°13.02
TIME :13:22:57 13:43:17 20.3 (min) Purpose : 3
LOG : 6152.13 6153.13 1.0 Region : 1300
FDEPTH: 20 19 Gear cond.: 0
BDEPTH: 20 19 Validity : 0
Towing dir: 0° Wire out : 100 m Speed : 3.0 kn
Sorted : 63 Total catch: 149.31 Catch/hour: 440.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	179.29	36475	40.69	184
Pagrus caeruleostictus	68.62	227	15.57	190
JELLYFISH	36.89	94	8.37	
Pseudupeneus prayensis	35.62	449	8.08	188
Pagellus bellottii	33.85	11233	7.68	187
Chloroscombrus chrysurus	15.35	59	3.48	
Alloteuthis africana	15.11	4380	3.43	
Balistes punctatus	12.72	12	2.89	
Brachydeuterus auritus	9.74	304	2.21	
Arius parkii	8.29	12	1.88	
Trachinotus goreensis	5.90	15	1.34	
Sardinella maderensis	5.52	248	1.25	185
Caranx senegallus	3.16	3	0.72	
Rhizoprionodon acutus	2.12	3	0.48	183
Plectorhinchus mediterraneus	1.98	7	0.45	
Acanthurus monroviae	1.89	3	0.43	
Pomadasys incisus	1.62	7	0.37	
Sardinella aurita	0.94	94	0.21	186
Mugil bananensis	0.71	3	0.16	
Fistularia petimba	0.59	3	0.13	
Engraulis encrasicolus	0.59	162	0.13	189
Fistularia tabacaria	0.15	15	0.03	
Total	440.66		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 65
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°34.23
start stop duration Lon W 17°21.66
TIME :16:39:22 17:09:58 30.6 (min) Purpose : 3
LOG : 6168.64 6170.18 1.5 Region : 1300
FDEPTH: 31 29 Gear cond.: 0
BDEPTH: 31 29 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.0 kn
Sorted : 0 Total catch: 186.25 Catch/hour: 365.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	251.65	98	68.91	
Pseudupeneus prayensis	50.20	357	13.74	191
Alectis alexandrina	18.20	8	4.98	193
Sepia hieredda	18.12	14	4.96	
Fistularia tabacaria	5.69	18	1.56	
Stephanolepis hispidus	4.67	6	1.28	
Centracanthus cirrus	3.35	6371	0.92	
Pagrus caeruleostictus	3.04	59	0.83	192
Fistularia petimba	1.96	24	0.54	
Chaetodon hoefleri	1.51	14	0.41	
Balistes capriscus	1.35	6	0.37	
Arius parkii	1.35	2	0.37	
Conger conger	1.16	2	0.32	
Citharichthys stampflii	0.98	4	0.27	
Dactylopterus volitans	0.63	2	0.17	
Raja miraletus	0.39	2	0.11	
Sardinella maderensis	0.31	12	0.09	194
Chloroscombrus chrysurus	0.18	4	0.05	
Scorpaena stephanica	0.16	2	0.04	
Lagocephalus laevigatus	0.14	2	0.04	
Decapterus punctatus	0.06	2	0.02	
Brachydeuterus auritus	0.06	2	0.02	
Sardinella aurita	0.04	2	0.01	
Selene dorsalis	0.02	2	0.01	
Total	365.20		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 66
DATE :21/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°35.83
start stop duration Lon W 17°39.32
TIME :22:05:02 22:35:11 30.2 (min) Purpose : 3
LOG : 6202.54 6204.07 1.5 Region : 1300
FDEPTH: 462 481 Gear cond.: 0
BDEPTH: 462 481 Validity : 0
Towing dir: 0° Wire out : 1150 m Speed : 3.0 kn
Sorted : 0 Total catch: 210.45 Catch/hour: 418.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Laemonema laureysi	123.78	20631	29.56	
Lophius vaillanti	64.12	20	15.31	
Yarrella blackfordi	36.50	1666	8.71	
Centrophorus granulosus	34.71	14	8.29	
Gephyroberyx darwini	25.91	10	6.19	
Merluccius polli	22.93	54	5.47	195
Malacocephalus occidentalis	18.11	147	4.32	
Gephyroberyx darwini	16.16	571	3.86	
Ijimaia loppei	14.17	4	3.38	
Centrolophus niger	10.03	4	2.39	
Helicolenus dactylopterus	9.67	42	2.31	
Lamprogrammus exutus	5.79	6	1.38	
Chaunax pictus	5.01	20	1.20	
Coelorinchus coelorhincus	4.74	125	1.13	
Hymenocephalus italicus	4.32	1546	1.03	
Pterothrissus belloci	2.86	14	0.68	
Illex coindetii	2.59	28	0.62	
Benthodesmus tenuis	2.51	50	0.60	
Nezumia aequalis	2.51	209	0.60	
Epigonus telescopus	2.17	70	0.52	
Photonectes parvimanus	2.09	48	0.50	
Halosaurus ovenii	2.03	167	0.48	
Psenes pellucidus	1.53	6	0.37	
Echelus myrus	1.11	6	0.27	
Etmopterus pusillus	1.07	4	0.26	
Deania calcea	0.90	4	0.21	
CONGRIDAE	0.84	2	0.20	
Galeus polli	0.38	8	0.09	
Bathyuroconger vicinus	0.28	6	0.07	
Total	418.80		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 67
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°53.73
start stop duration Lon W 17°37.94
TIME :07:02:32 07:33:21 30.8 (min) Purpose : 3
LOG : 6244.10 6245.59 1.5 Region : 1300
FDEPTH: 100 96 Gear cond.: 0
BDEPTH: 100 96 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 2.9 kn
Sorted : 0 Total catch: 795.16 Catch/hour: 1548.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ariomma bondi	791.95	21551	51.16	199
Illex coindetii	136.08	3855	8.79	
Trachurus trecae	102.21	1694	6.60	196
Torpedo torpedo	96.37	117	6.23	
Todaropsis eblanae	72.42	2103	4.68	
Sphoeroides pachgaster	53.15	175	3.43	
Trachurus trecae	37.96	5140	2.45	197
Saurida brasiliensis	37.96	2803	2.45	
Umbrina canariensis	37.38	117	2.41	
Scomber japonicus	32.71	584	2.11	198
Uranoscopus polli	26.87	175	1.74	
Citharus linguatula	26.87	2219	1.74	
Scorpaena stephanica	18.69	58	1.21	
Arnoglossus imperialis	15.18	759	0.98	
Dentex canariensis	15.18	467	0.98	
Dentex macrophthalmus	11.10	58	0.72	
Trichiurus lepturus	7.59	175	0.49	
Boops boops	7.01	58	0.45	
Pagellus bellottii	5.84	934	0.38	
Lesueurigobius sanzoi	3.50	818	0.23	
Zeus faber	3.50	117	0.23	
Octopus vulgaris	3.23	2	0.21	
Chelidonichthys gabonensis	2.34	234	0.15	
Pontinus accraensis	1.75	58	0.11	
Spicara alta	0.58	58	0.04	
Blennius normani	0.58	234	0.04	
Total	1548.01		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 68
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°51.88
start stop duration Lon W 17°32.94
TIME :08:59:28 09:31:16 31.8 (min) Purpose : 3
LOG : 6255.50 6257.15 1.7 Region : 1300
FDEPTH: 57 58 Gear cond.: 0
BDEPTH: 57 58 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.1 kn
Sorted : 0 Total catch: 132.69 Catch/hour: 250.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	190.19	570	75.97	200
Fistularia petimba	15.09	151	6.03	
J E L L Y F I S H	8.30	0	3.32	
Scorpaena scrofa	7.51	94	3.00	
Sphoeroides pachgaster	7.13	15	2.85	
Todaropsis eblanae	5.17	143	2.06	
Caranx crysos	3.13	4	1.25	
Dactylopterus volitans	3.02	11	1.21	
Echeneis naucrates	2.75	4	1.10	
Pagellus bellottii	2.08	11	0.83	201
Citharus linguatula	1.25	4	0.50	
Sphyraena guachancho	1.21	4	0.48	
Raja miraletus	0.89	2	0.35	
Sepia hieronis	0.72	8	0.29	
Microchirus boscanion	0.49	4	0.20	
Chelidonichthys gabonensis	0.45	4	0.18	
Lagocephalus laevigatus	0.42	8	0.17	
Alloteuthis africana	0.34	91	0.14	
Illex coindetii	0.11	4	0.05	
Arnoglossus imperialis	0.11	15	0.05	
Total	250.36		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 69
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 12°51.69
start stop duration Lon W 17°17.16
TIME :11:42:44 12:13:14 30.5 (min) Purpose : 3
LOG : 6275.83 6277.44 1.6 Region : 1300
FDEPTH: 36 36 Gear cond.: 0
BDEPTH: 36 36 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.2 kn
Sorted : 0 Total catch: 1504.02 Catch/hour: 2958.73

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	2754.10	0	93.08	
Pseudupeneus prayensis	104.26	962	3.52	202
Fistularia petimba	27.93	0	0.94	
Decapterus rhonchus	24.20	65	0.82	203
Pagrus caeruleostictus	22.23	71	0.75	205
Sphyraena guachancho	9.54	18	0.32	204
Arius parkii	4.70	6	0.16	
Lagocephalus laevigatus	2.62	8	0.09	
Pomadasys incisus	1.67	10	0.06	206
Balistes punctatus	1.61	2	0.05	
Acanthurus monroviae	1.51	2	0.05	
Paraconger notialis	0.85	2	0.03	
Balistes capriscus	0.81	4	0.03	
Boops boops	0.81	153	0.03	
Citharichthys stampflii	0.43	2	0.01	
Parapristipoma octolineatum	0.37	2	0.01	
Dactylopterus volitans	0.31	4	0.01	
Trachurus trecae	0.22	35	0.01	207
Alloteuthis africana	0.18	31	0.01	
Sphoeroides marmoratus	0.18	4	0.01	
Chelidonichthys gabonensis	0.16	8	0.01	
Schedophilus maculatus	0.04	2	0.00	
Total	2958.73		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 70
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°9.49
start stop duration Lon W 17°3.97
TIME :15:24:00 15:43:29 19.5 (min) Purpose : 3
LOG : 6305.24 6306.24 1.0 Region : 1400
FDEPTH: 25 25 Gear cond.: 0
BDEPTH: 25 25 Validity : 0
Towing dir: 0° Wire out : 100 m Speed : 3.1 kn
Sorted : 30 Total catch: 289.66 Catch/hour: 892.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	344.97	166214	38.67	213
J E L L Y F I S H	295.69	0	33.14	
Pagellus bellottii	60.62	11680	6.79	215
Pagrus caeruleostictus	49.59	360	5.56	212
Pseudupeneus prayensis	31.91	277	3.58	210
Epinephelus aeneus	26.74	12	3.00	208
Sardinella aurita	24.15	1848	2.71	214
Boops boops	18.23	6283	2.04	
Balistes punctatus	13.49	15	1.51	
Balistes capriscus	7.76	18	0.87	209
Sepia hieredda	4.19	6	0.47	
Alectis alexandrina	3.48	6	0.39	
Alloteuthis africana	3.20	912	0.36	
Pomadasys incisus	2.74	12	0.31	211
Raja miraletus	1.82	3	0.20	
Scomber japonicus	1.23	25	0.14	
Priacanthus arenatus	1.14	3	0.13	
Decapterus rhonchus	1.11	3	0.12	
Fistularia petimba	0.68	3	0.08	
Decapterus punctatus	0.49	25	0.06	
Schedophilus ovalis	0.31	3	0.03	
Sphoeroides marmoratus	0.18	3	0.02	
Total	893.72		100.17	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 71
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°15.00
start stop duration Lon W 17°17.47
TIME :18:13:39 18:44:04 30.4 (min) Purpose : 3
LOG : 6328.82 6330.36 1.5 Region : 1400
FDEPTH: 52 52 Gear cond.: 0
BDEPTH: 52 52 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 3.0 kn
Sorted : 109 Total catch: 208.08 Catch/hour: 410.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	174.10	1450	42.42	242
J E L L Y F I S H	69.51	0	16.94	
Pagellus bellottii	63.41	527	15.45	241
Pomadasys incisus	33.57	209	8.18	243
Pseudupeneus prayensis	22.72	172	5.54	246
Spondyliosoma cantharus	13.39	69	3.26	245
Umbrina canariensis	11.34	49	2.76	244
Nicholsina usta	4.54	22	1.11	
Scorpaena stephanica	4.26	49	1.04	
Pagrus caeruleostictus	2.86	10	0.70	
Acanthurus monroviae	2.45	4	0.60	
Sphyraena guachancho	1.76	4	0.43	
Sphyraena sphyraena	1.50	4	0.37	
Epinephelus costae	1.22	2	0.30	
Plectorhinchus mediterraneus	1.01	4	0.25	
Chelidonichthys gabonensis	0.81	18	0.20	
Raja miraletus	0.79	2	0.19	
Trigloporus lastoviza	0.59	14	0.14	
Scomber japonicus	0.59	10	0.14	
Total	410.41		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 72
DATE :22/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°15.10
start stop duration Lon W 17°34.68
TIME :21:24:20 21:54:09 29.8 (min) Purpose : 3
LOG : 6352.32 6353.89 1.6 Region : 1400
FDEPTH: 367 381 Gear cond.: 0
BDEPTH: 367 381 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 3.2 kn
Sorted : 74 Total catch: 236.80 Catch/hour: 476.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	315.65	1857	66.25	216
Chlorophthalmus atlanticus	38.39	646	8.06	
Gephyroberyx darwini	24.27	18	5.09	284
Centrophorus granulosus	15.90	4	3.34	
Pontinus accraensis	10.70	121	2.25	
Helicolenus dactylopterus	9.42	16	1.98	
Hoplostethus cadenati	8.69	274	1.82	
Laemonema laureysi	8.05	282	1.69	
Malacocephalus occidentalis	6.12	40	1.28	
Schedophilus pemarco	6.04	24	1.27	
Merluccius senegalensis	4.91	8	1.03	217
Centrolophus niger	3.94	8	0.83	
Trichiurus lepturus	3.54	16	0.74	
Pterothrissus belloci	2.82	16	0.59	
Yarrella blackfordi	2.49	137	0.52	
Gadella imberbis	2.41	129	0.51	
Todaropsis eblanae	2.41	24	0.51	
Coelorinchus coelorhincus	2.25	32	0.47	
Polymetme corythaeola	1.77	24	0.37	
MYCTOPHIDAE	1.29	298	0.27	
Malacocephalus laevis	1.05	16	0.22	
Bembrops greyi	1.05	16	0.22	
Rhechias bertini	0.72	16	0.15	
Lophius vaillanti	0.56	24	0.12	
Dicologoglossa sp.	0.48	8	0.10	
Monolene microstoma	0.48	8	0.10	
Hymenocephalus italicus	0.40	193	0.08	
Synagrops microlepis	0.24	8	0.05	
Epigonus pandionis	0.16	2	0.03	
Benthodesmus tenuis	0.16	24	0.03	
Parasudis fraser-bruenneri	0.08	8	0.02	
Photonectes parvimanus	0.00	2	0.00	
Physiculus cyanostropheis	0.00	2	0.00	
Total	476.46		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 73
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°33.75
start stop duration Lon W 17°32.53
TIME :02:56:34 03:25:40 29.1 (min) Purpose : 3
LOG : 6387.79 6389.27 1.5 Region : 1400
FDEPTH: 748 770 Gear cond.: 0
BDEPTH: 748 770 Validity : 0
Towing dir: 0° Wire out : 1750 m Speed : 3.1 kn
Sorted : 55 Total catch: 147.24 Catch/hour: 303.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	99.79	1425	32.87	
Lamprogrammus exutus	81.55	542	26.86	
Lophius vaillanti	28.14	6	9.27	
Merluccius polli	21.90	35	7.21	218
Trachrinchus trachirinchus	18.87	132	6.21	
Nezumia micronychodon	14.85	394	4.89	
Raja montagui	9.03	6	2.97	
Halosaurus ovenii	8.62	130	2.84	
Raja sp.	4.95	21	1.63	
Bathygadus macrops	2.52	134	0.83	
Dicologoglossa sp.	2.52	47	0.83	
Photonectes parvimanus	1.75	31	0.58	
Etmopterus pusillus	1.30	6	0.43	
Bathyuroconger vicinus	1.24	21	0.41	
Stomias sp.	0.93	10	0.31	
Coloconger cadenati	0.89	6	0.29	
Laemonema laureysi	0.72	6	0.24	
Galeus polli	0.62	10	0.20	
Alepocephalus sp.	0.52	27	0.17	
Bajacalifornia megalops	0.41	21	0.14	
Ebinania costaecanarie	0.41	2	0.14	
Lampanyctus sp.	0.35	27	0.12	
Xenodermichthys copei	0.31	21	0.10	
MYCTOPHIDAE	0.27	52	0.09	
Coryphaenoides zaniophorus	0.21	16	0.07	
CARISTIIDAE	0.21	21	0.07	
Luciobrotula nolfi	0.21	2	0.07	
Cubiceps sp.	0.21	10	0.07	
Nezumia aequalis	0.16	27	0.05	
Eustomias sp.	0.10	10	0.03	
Monomitopus metriostoma	0.06	6	0.02	
Total	303.59		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 74
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°33.58
start stop duration Lon W 17°29.30
TIME :05:37:33 06:04:22 26.8 (min) Purpose : 3
LOG : 6399.04 6400.15 1.1 Region : 1400
FDEPTH: 475 489 Gear cond.: 0
BDEPTH: 475 489 Validity : 0
Towing dir: 0° Wire out : 1160 m Speed : 2.5 kn
Sorted : 22 Total catch: 91.53 Catch/hour: 204.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Laemonema laureysi	34.54	667	16.87	
Hoplostethus cadenati	28.72	633	14.03	
Lophiodes kempi	26.67	4	13.02	
Merluccius polli	23.80	94	11.62	219
Lamprogrammus exutus	14.09	116	6.88	
Echelus myrus	10.11	38	4.94	
Yarrella blackfordi	8.99	407	4.39	
Malacocephalus occidentalis	8.52	94	4.16	
Deania calcea	8.08	103	3.94	
Psenes maculatus	7.67	22	3.75	
Chaunax pictus	5.79	31	2.83	
Photonectes parvimanus	4.63	94	2.26	
Gephyroberyx darwini	4.34	4	2.12	
Gadella imberbis	3.45	197	1.68	
Bathygadus macrops	2.82	47	1.38	
Benthodesmus tenuis	2.51	63	1.22	
MYCTOPHIDAE	2.44	611	1.19	
Halosaurus ovenii	1.19	119	0.58	
Galeus polli	1.10	16	0.54	
Nezumia micronychodon	1.01	22	0.49	
Nezumia aequalis	0.85	87	0.42	
Coelorinchus coelorhincus	0.78	22	0.38	
SOLEIDAE	0.69	16	0.34	
Malacocephalus laevis	0.47	38	0.23	
Snyderidia canina	0.40	16	0.20	
Nezumia duodecim	0.31	47	0.15	
Zenion hololepis	0.16	16	0.08	
Luciobrotula holfi	0.16	7	0.08	
Ebinania costaecanarie	0.16	7	0.08	
Epigonus pandionis	0.16	16	0.08	
Hymenocephalus italicus	0.09	9	0.04	
Ceratias sp.	0.07	7	0.03	
Total	204.77		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 75
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°34.57
start stop duration Lon W 17°25.07
TIME :09:20:23 09:50:08 29.8 (min) Purpose : 3
LOG : 6409.04 6410.61 1.6 Region : 1400
FDEPTH: 109 110 Gear cond.: 0
BDEPTH: 109 110 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.2 kn
Sorted : 73 Total catch: 1183.88 Catch/hour: 2387.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	1228.80	414139	51.46	
Umbrina canariensis	656.99	1581	27.52	226
Spicara alta	150.70	3356	6.31	
Dentex macrophthalmus	59.37	355	2.49	227
Dentex angolensis	35.17	226	1.47	228
Scorpaena scrofa	34.53	129	1.45	
Todaropsis eblanae	33.88	710	1.42	
Spondyliosoma cantharus	29.36	32	1.23	
Antigonia capros	29.04	2130	1.22	
Merluccius senegalensis	28.07	97	1.18	225
Ariomma bondi	21.30	710	0.89	220
Aulopus cadenati	11.29	161	0.47	
Priacanthus arenatus	11.29	32	0.47	
Mustelus mustelus	8.19	2	0.34	222
Illex coindetii	7.10	32	0.30	
Boops boops	6.78	65	0.28	
Octopus vulgaris	6.57	8	0.28	
Chaetodon hoefleri	5.16	32	0.22	
Zeus faber	4.03	2	0.17	223
Pterothrissus belloci	3.87	65	0.16	
Branchiostegus semifasciatus *	3.55	32	0.15	
Pentheroscion mbizi	2.90	32	0.12	
Lepidotrigla cadmani	2.90	32	0.12	
Trachurus trachurus	2.90	32	0.12	
Sphoeroides pachgaster	1.61	65	0.07	
Arnoglossus imperialis	0.65	65	0.03	
Saurida brasiliensis	0.65	32	0.03	
Buglossidium sp.	0.65	32	0.03	
Trachurus trecae	0.32	32	0.01	
Total	2387.66		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 76
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°32.53
start stop duration Lon W 17°13.51
TIME :13:20:01 13:41:47 21.8 (min) Purpose : 3
LOG : 6430.18 6431.33 1.1 Region : 1400
FDEPTH: 51 51 Gear cond.: 0
BDEPTH: 51 51 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.2 kn
Sorted : 94 Total catch: 350.07 Catch/hour: 964.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	528.51	2001	54.78	230
Pomadasys incisus	94.57	609	9.80	232
Boops boops	67.11	507	6.96	
Trachurus trecae	60.69	714	6.29	231
J E L L Y F I S H	60.69	0	6.29	
Pseudupeneus prayensis	37.02	273	3.84	233
Pagellus bellottii	26.90	131	2.79	234
Trachurus trecae	23.57	7345	2.44	235
Chromis cadenati	22.25	192	2.31	
Plectorhinchus mediterraneus	6.34	14	0.66	229
Todaropsis eblanae	5.97	163	0.62	
Parapristipoma octolineatum	5.46	30	0.57	
Acanthurus monroviae	4.58	8	0.47	
Dentex angolensis	3.13	10	0.32	
Scorpaena stephanica	2.33	20	0.24	
Trachinocephalus myops	2.33	10	0.24	
Sepia hieredda	2.22	20	0.23	
Sardinella aurita	2.01	10	0.21	
Chelidonichthys gabonensis	1.62	30	0.17	
Spondyliosoma cantharus	1.27	6	0.13	
Trigloporus lastoviza	1.21	10	0.13	
Raja miraletus	1.05	3	0.11	
Sarda sarda	0.99	3	0.10	
Chaetodon hoefleri	0.88	6	0.09	
Sphyraena sphyraena	0.80	3	0.08	
Alloteuthis africana	0.61	91	0.06	
Grammoplites gruveli	0.40	10	0.04	
Coris julis	0.33	3	0.03	
Plastic bags	0.00	3	0.00	
Total	964.83		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 77
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°33.63
start stop duration Lon W 17°4.68
TIME :14:58:47 15:18:05 19.3 (min) Purpose : 3
LOG : 6440.77 6441.74 1.0 Region : 1400
FDEPTH: 32 31 Gear cond.: 0
BDEPTH: 32 31 Validity : 0
Towing dir: 0° Wire out : 100 m Speed : 3.0 kn
Sorted : 518 Total catch: 518.38 Catch/hour: 1611.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	1554.40	0	96.45	
Decapterus rhonchus	34.20	121	2.12	236
Pomadasys jubelini	8.46	9	0.52	238
Alectis alexandrina	4.23	6	0.26	
Pagellus bellottii	4.20	12	0.26	237
Chloroscombrus chrysurus	2.15	16	0.13	239
Lagocephalus laevigatus	1.80	3	0.11	
Sepia hieredda	1.49	6	0.09	
Fistularia petimba	0.56	3	0.03	
Trachurus trecae	0.06	16	0.00	240
Total	1611.54		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 78
DATE :23/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°55.34
start stop duration Lon W 17°34.08
TIME :21:45:46 22:05:51 20.1 (min) Purpose : 3
LOG : 6491.90 6493.00 1.1 Region : 1300
FDEPTH: 768 770 Gear cond.: 0
BDEPTH: 768 770 Validity : 0
Towing dir: 0° Wire out : 1650 m Speed : 3.3 kn
Sorted : 4 Total catch: 48.64 Catch/hour: 145.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nezumia micronychodon	33.59	526	23.11	
Lamprogrammus exutus	30.12	131	20.72	
Merluccius polli	26.59	0	18.30	
Halosaurus ovenii	13.21	188	9.09	
Bathygadus macrops	8.61	197	5.92	
Bathyuroconger vicinus	7.17	63	4.93	
Bajacalifornia megalops	4.33	93	2.98	
Photonectes parvimanus	3.65	51	2.51	
Psenes pellucidus	2.24	6	1.54	
Nezumia aequalis	1.73	99	1.19	
Luciobrotula nolfi	1.67	3	1.15	
Trachyrincus scabrus	1.34	24	0.93	
Xenodermichthys copei	1.34	45	0.93	
Hoplostethus cadenati	1.31	9	0.90	
Octopoteuthis megaloptera	1.31	21	0.90	
Trachipterus sp.	1.05	3	0.72	
Stomias boa boa	1.02	15	0.70	
Deania sp.	0.72	6	0.49	
Lampanyctus sp.	0.72	78	0.49	
Opisthoteuthis agassizi	0.57	3	0.39	
Galeus polli	0.54	6	0.37	
Raja sp.	0.48	9	0.33	
Dibranchus atlanticus	0.36	6	0.25	
Coryphaenoides zaniophorus	0.33	6	0.23	
Ectreposebastes imus	0.30	3	0.21	
MYCTOPHIDAE	0.27	75	0.19	
Nansenia sp.	0.15	24	0.10	
Synaphobranchus affinis	0.12	3	0.08	
Promethichthys prometheus	0.09	6	0.06	
Ceratias sp.	0.09	3	0.06	
Chauliodus sloani	0.09	6	0.06	
Chiasmodon niger	0.06	3	0.04	
STOMIIDAE	0.06	9	0.04	
STERNOPTYCHIDAE	0.06	51	0.04	
Monomitopus metriostoma	0.06	6	0.04	
Total	145.34		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 79
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°52.28
start stop duration Lon W 17°29.91
TIME :01:34:43 02:04:28 29.8 (min) Purpose : 3
LOG : 6511.54 6513.07 1.5 Region : 1300
FDEPTH: 505 525 Gear cond.: 0
BDEPTH: 505 525 Validity : 0
Towing dir: 0° Wire out : 1250 m Speed : 3.1 kn
Sorted : 24 Total catch: 167.53 Catch/hour: 337.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Laemonema laureysi	56.15	831	16.62	
Hoplostethus cadenati	56.03	1186	16.58	
Lamprogrammus exutus	42.47	278	12.57	
Yarrella blackfordi	40.78	1684	12.07	
Lophius vaillanti	24.40	6	7.22	
CONGRIDAE	23.11	2	6.84	
Psenes pellucidus	20.09	73	5.95	
Merluccius polli	13.71	36	4.06	249
Benthodesmus tenuis	9.92	194	2.94	
Centrophorus granulosus	8.31	2	2.46	
Chaunax pictus	7.74	36	2.29	
Malacocephalus laevis	5.45	61	1.61	
MYCTOPHIDAE	5.45	1369	1.61	
Nezumia aequalis	4.60	605	1.36	
Echelus myrus	3.39	73	1.00	
Galeus polli	2.78	24	0.82	
Photonectes parvimanus	2.66	40	0.79	
Bathygadus macrops	2.54	73	0.75	
Gadella imberbis	2.30	73	0.68	
Hymenocephalus italicus	1.94	206	0.57	
Coloconger cadenati	1.45	12	0.43	
Epigonus sp.	0.73	73	0.21	
Halosaurus ovenii	0.36	24	0.11	
Bathyuroconger vicinus	0.36	24	0.11	
Astronesthes sp.	0.30	12	0.09	
Nemichthys scolopaceus	0.24	12	0.07	
Parasudis fraser-bruenneri	0.24	24	0.07	
Nettastoma sp.	0.24	12	0.07	
CARISTIIDAE	0.12	24	0.04	
Total	337.88		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 80
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°55.57
start stop duration Lon W 17°27.12
TIME :06:39:52 07:10:29 30.6 (min) Purpose : 3
LOG : 6532.29 6533.78 1.5 Region : 1300
FDEPTH: 110 110 Gear cond.: 0
BDEPTH: 110 110 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 2.9 kn
Sorted : 0 Total catch: 79.59 Catch/hour: 155.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Illex coindetii	45.97	613	29.48	
Trachurus trecae	43.66	10	27.99	
Ariomma bondi	14.81	219	9.50	
Todaropsis eblanae	12.66	613	8.12	
Sphoeroides pachgaster	10.86	143	6.96	
Antigonia capros	6.72	778	4.31	
Trichiurus lepturus	4.25	10	2.73	
Arnoglossus imperialis	3.23	421	2.07	
Scorpaena stephanica	2.35	4	1.51	
Merluccius polli	2.00	35	1.28	
Aulopus cadenati	1.88	157	1.21	
Serranus cabrilla	1.65	33	1.06	
Microchirus boscanion	1.51	112	0.97	
Scorpaena scrofa	1.04	43	0.67	
Uranoscopus polli	0.90	12	0.58	
Zeus faber	0.49	6	0.31	
Echelus myrus	0.35	8	0.23	
Paraconger notialis	0.33	2	0.21	
Serranus africana	0.27	8	0.18	
Saurida brasiliensis	0.24	57	0.15	
Cepola macrophthalma	0.24	2	0.15	
Branchiostegus semifasciatus *	0.24	2	0.15	
Sepia elegans	0.24	55	0.15	
Trachinus armatus	0.06	2	0.04	
Hippocampus hippocampus	0.02	2	0.01	
Total	155.96		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 81
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 13°54.64
start stop duration Lon W 17°5.54
TIME :09:41:16 10:11:34 30.3 (min) Purpose : 3
LOG : 6556.45 6557.95 1.5 Region : 1300
FDEPTH: 33 35 Gear cond.: 0
BDEPTH: 33 35 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.0 kn
Sorted : 53 Total catch: 53.01 Catch/hour: 104.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	36.32	0	34.60	
Pagellus bellottii	27.05	178	25.77	255
Pomadasys incisus	17.47	93	16.64	256
Sepia hieredda	3.78	16	3.60	
Pagrus caeruleostictus	2.77	6	2.64	254
Chloroscombrus chrysurus	2.77	22	2.64	252
Fistularia tabacaria	2.63	12	2.51	
Perulibatrachus elminensis	1.92	8	1.83	
Pseudupeneus prayensis	1.78	30	1.70	253
Brachydeuterus auritus	1.68	36	1.60	
Scomber japonicus	1.41	4	1.34	
Fistularia petimba	1.15	10	1.09	
Trachurus trecae	1.11	22	1.06	
Diodon holocanthus	0.67	2	0.64	
Nicholsina usta	0.59	6	0.57	
Pomadasys rogeri	0.57	2	0.55	
Decapterus rhonchus	0.53	2	0.51	
Boops boops	0.50	8	0.47	
Scorpaena scrofa	0.18	2	0.17	
Trigla lyra	0.08	4	0.08	
Total	104.97		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 82
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°15.31
start stop duration Lon W 17°14.03
TIME :14:13:27 14:39:01 25.6 (min) Purpose : 3
LOG : 6594.24 6595.53 1.3 Region : 1300
FDEPTH: 37 39 Gear cond.: 0
BDEPTH: 37 39 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.0 kn
Sorted : 0 Total catch: 200.49 Catch/hour: 470.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	164.25	0	34.91	
Trachurus trecae	47.87	643	10.18	262
Plectorhinchus mediterraneus	45.62	134	9.70	257
Pomadasys incisus	41.25	286	8.77	259
Pseudupeneus prayensis	25.58	214	5.44	260
Pagrus caeruleostictus	22.90	28	4.87	264
Priacanthus arenatus	20.18	70	4.29	
Boops boops	17.36	197	3.69	
Spondyliosoma cantharus	15.25	117	3.24	
Pagellus bellottii	11.36	87	2.41	261
Dentex canariensis	11.08	45	2.35	258
Parapristipoma octolineatum	10.56	59	2.24	
Octopus vulgaris	5.09	2	1.08	
Sardinella aurita	4.22	59	0.90	263
Bodianus speciosus	3.61	2	0.77	
Diplodus sargus *	3.59	9	0.76	
Scomber japonicus	3.40	70	0.72	
Epinephelus aeneus	2.91	2	0.62	265
Acanthurus monroviae	2.42	5	0.51	
Trachinocephalus myops	1.76	5	0.37	
Fistularia petimba	1.71	2	0.36	
Aluterus heudelotii	1.67	2	0.35	
Nicholsina usta	1.64	12	0.35	
Bothus podas	1.64	23	0.35	
Sphoeroides marmoratus	1.06	23	0.22	
Rypticus saponaceus	0.82	12	0.17	
Xyrichtys novacula	0.61	9	0.13	
Holocentrus ascensionis	0.47	2	0.10	
Chaetodon hoefleri	0.38	2	0.08	
Chaetodon robustus	0.19	2	0.04	
Total	470.45		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 83
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°11.39
start stop duration Lon W 17°22.62
TIME :16:22:23 16:52:56 30.6 (min) Purpose : 3
LOG : 6608.63 6610.24 1.6 Region : 1300
FDEPTH: 86 87 Gear cond.: 0
BDEPTH: 86 87 Validity : 0
Towing dir: 0° Wire out : 220 m Speed : 3.2 kn
Sorted : 24 Total catch: 69.80 Catch/hour: 137.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	90.15	28776	65.76	269
Macropipus rugosus	17.56	3663	12.81	
Saurida brasiliensis	5.72	0	4.17	
Octopus vulgaris	4.99	6	3.64	
Boops boops	4.01	35	2.92	
Pagellus bellottii	3.71	18	2.71	266
Illex coindetii	2.18	153	1.59	
Pagellus bellottii	1.71	183	1.25	267
Arnoglossus imperialis	1.00	212	0.73	
Todaropsis eblanae	0.82	35	0.60	
Sphyraena guachancho	0.79	2	0.57	271
Thorogobius sp.	0.65	77	0.47	
Microchirus boscanion	0.65	77	0.47	
Zeus faber	0.59	24	0.43	270
Sphoeroides pachgaster	0.59	6	0.43	
Trachurus trecae	0.43	2	0.32	
Pseudupeneus prayensis	0.31	2	0.23	
Brotula barbata	0.29	6	0.21	
Merluccius polli	0.29	24	0.21	268
Cepola sp.	0.24	6	0.17	
Merluccius senegalensis	0.12	6	0.09	
Lepidotrigla carolae	0.12	47	0.09	
Uranoscopus polli	0.06	6	0.04	
Scomber japonicus	0.06	0	0.04	
Citharus linguatula	0.03	12	0.02	
Blennius normani	0.03	12	0.02	
Total	137.09		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 84
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°14.25
start stop duration Lon W 17°31.56
TIME :18:07:28 18:28:32 21.1 (min) Purpose : 3
LOG : 6619.61 6620.65 1.1 Region : 1300
FDEPTH: 159 158 Gear cond.: 0
BDEPTH: 159 158 Validity : 0
Towing dir: 0° Wire out : 400 m Speed : 3.0 kn
Sorted : 0 Total catch: 116.36 Catch/hour: 331.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Illex coindetii	217.85	1438	65.74	
Synagrops microlepis	44.20	5029	13.34	
Merluccius polli	42.54	288	12.84	273
Todaropsis eblanae	8.37	147	2.53	
Octopus vulgaris	5.75	13	1.74	
Merluccius senegalensis	3.70	13	1.12	272
Uranoscopus polli	1.65	19	0.50	
Echelus myrus	1.65	6	0.50	
Aulopus cadenati	1.54	51	0.46	
Antigonia capros	1.14	90	0.34	
Scomber japonicus	0.83	13	0.25	
Chlorophthalmus atlanticus	0.51	13	0.15	
Pterothrissus belloci	0.51	6	0.15	
Synagrops bellus	0.31	6	0.09	
OPHICHTHIDAE	0.31	6	0.09	
Helicolenus dactylopterus, juvenile	0.31	70	0.09	
Sphoeroides pachgaster	0.17	6	0.05	
Total	331.35		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 85
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°14.55
start stop duration Lon W 17°32.01
TIME :19:18:26 19:48:55 30.5 (min) Purpose : 3
LOG : 6623.35 6624.84 1.5 Region : 1300
FDEPTH: 212 214 Gear cond.: 0
BDEPTH: 212 214 Validity : 0
Towing dir: 0° Wire out : 520 m Speed : 2.9 kn
Sorted : 46 Total catch: 407.39 Catch/hour: 801.95

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	237.93	1785	29.67	276
MYCTOPHIDAE	210.83	56756	26.29	
Chlorophthalmus atlanticus	119.13	1724	14.86	
Bembrops greyi	44.69	402	5.57	
Synagrops microlepis	43.17	1256	5.38	
Aulopus cadenati	34.98	167	4.36	
Todaropsis eblanae	22.91	252	2.86	
Merluccius senegalensis	15.73	67	1.96	275
Pontinus accraensis	11.56	201	1.44	280
Galeus polli	11.04	134	1.38	
Octopus vulgaris	10.69	16	1.33	
Gephyroberyx darwini	8.74	4	1.09	277
Brotula barbata	5.31	6	0.66	
Mustelus mustelus	5.24	2	0.65	274
Synagrops bellus	5.02	118	0.63	
Synchiropus phaeton	4.53	283	0.56	
Ariomma bondi	2.68	51	0.33	
Trachurus trecae	1.34	2	0.17	278
Trachinotus ovatus	1.28	4	0.16	
Zenopsis conchifer	1.18	33	0.15	
Taractichthys longipinnis	1.08	2	0.14	
Lophius vaillanti	0.85	18	0.11	
Chascanopsetta lugubris	0.79	6	0.10	
Ophidion barbatum	0.51	18	0.06	
Dentex macrophthalmus	0.41	2	0.05	279
Symphurus sp.	0.33	51	0.04	
Total	801.95		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 86
DATE :24/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°21.72
start stop duration Lon W 17°36.82
TIME :22:02:17 22:33:07 30.8 (min) Purpose : 3
LOG : 6637.58 6639.10 1.5 Region : 1300
FDEPTH: 684 692 Gear cond.: 0
BDEPTH: 684 692 Validity : 0
Towing dir: 0° Wire out : 0 m Speed : 3.0 kn
Sorted : 0 Total catch: 54.93 Catch/hour: 106.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lamprogrammus exutus	41.65	35	38.96	
Laemonema laureysi	22.15	27	20.72	
Merluccius polli	15.26	25	14.27	281
Hoplostethus cadenati	9.91	138	9.27	
Bathyuroconger vicinus	2.39	66	2.24	
Nezumia micronychodon	2.02	76	1.89	
Galeus polli	1.99	27	1.86	
Torpedo nobiliana	1.95	2	1.82	
Deania calcea	1.79	18	1.67	
Photonectes parvimanus	1.60	23	1.49	
SQUALIDAE	0.95	2	0.89	
Etmopterus pusillus	0.80	4	0.75	
Cubiceps sp.	0.78	18	0.73	
Todaropsis eblanae	0.76	10	0.71	
Synchiropus phaeton	0.54	39	0.51	
Halosaurus ovenii	0.51	18	0.47	
Bembrops heterurus	0.45	4	0.42	
Lampanyctus sp.	0.31	19	0.29	
Coloconger cadenati	0.27	2	0.25	
SCYLIORHINIDAE	0.16	2	0.15	
Gadella imberbis	0.12	6	0.11	
Zenopsis conchifer	0.12	6	0.11	
Xenodermichthys copei	0.08	10	0.07	
Nemichthys scolopaceus	0.06	2	0.05	
MELANOSTOMIATIDAE	0.06	27	0.05	
Trachyrincus scabrus	0.04	6	0.04	
Promethichthys prometheus	0.04	2	0.04	
NOTACANTHIDAE	0.04	2	0.04	
Ceratias sp.	0.02	4	0.02	
Ebinania costaecanarie	0.02	2	0.02	
CARISTIIDAE	0.02	6	0.02	
SOLEIDAE	0.02	2	0.02	
Chaunax pictus	0.02	2	0.02	
Polyipnus sp.	0.02	8	0.02	
STOMIIDAE	0.02	4	0.02	
Total	106.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 87
DATE :25/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°24.66
start stop duration Lon W 17°34.17
TIME :00:22:22 00:52:03 29.7 (min) Purpose : 3
LOG : 6644.74 6646.07 1.3 Region : 1300
FDEPTH: 307 257 Gear cond.: 0
BDEPTH: 307 257 Validity : 0
Towing dir: 0° Wire out : 800 m Speed : 2.7 kn
Sorted : 22 Total catch: 25.40 Catch/hour: 51.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	17.59	113	34.25	282
Illex coindetii	5.52	12	10.75	
Octopus vulgaris	5.32	6	10.35	
Synagrops microlepis	4.31	20	8.39	
Psenes pellucidus	2.55	6	4.96	
Todaropsis eblanae	2.43	12	4.72	
Echelus myrus	2.18	24	4.25	
Etmopterus pusillus	2.14	6	4.17	
Gadella imberbis	1.94	127	3.78	
Malacocephalus laevis	1.33	30	2.60	
Parasudis fraser-bruenneri	1.21	127	2.36	
Ophidion sp.	1.09	79	2.13	
Schedophilus pemarco	0.91	2	1.77	
MYCTOPHIDAE	0.79	188	1.54	
Munida sp. *	0.67	93	1.30	
Zenopsis conchifer	0.42	12	0.83	
Brotula barbata	0.40	10	0.79	
Synchiropus phaeton	0.24	12	0.47	
Symphurus sp.	0.18	30	0.35	
Epigonus sp.	0.12	18	0.24	
Total	51.35		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 88
DATE :25/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°26.03
start stop duration Lon W 17°32.79
TIME :02:03:46 02:34:13 30.5 (min) Purpose : 3
LOG : 6649.52 6651.08 1.6 Region : 1300
FDEPTH: 151 152 Gear cond.: 0
BDEPTH: 151 152 Validity : 0
Towing dir: 0° Wire out : 400 m Speed : 3.1 kn
Sorted : 38 Total catch: 269.40 Catch/hour: 530.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aulopus cadenati	154.48	4236	29.10	
Chlorophthalmus atlanticus	115.47	19724	21.75	
Merluccius polli	113.06	150	21.30	283
Synagrops microlepis	48.77	13269	9.19	
Mustelus mustelus	13.20	2	2.49	
Illex coindetii	12.32	138	2.32	
Todaropsis eblanae	10.74	108	2.02	
Gephyroberyx darwini	8.67	6	1.63	
Raja miraletus	7.82	12	1.47	
Merluccius polli	7.49	623	1.41	
Antigonia capros	6.90	351	1.30	
Raja straeleni	5.93	2	1.12	
Synchiropus phaeton	4.24	276	0.80	
MYCTOPHIDAE	3.05	591	0.58	
Pterothrissus belloci	2.27	10	0.43	
Brotula barbata	1.95	2	0.37	
Umbrina canariensis	1.91	2	0.36	
Pontinus accraensis	1.77	148	0.33	
Arnoglossus imperialis	1.38	59	0.26	
Lepidotrigla carolae	1.28	30	0.24	
Ophidion sp.	1.28	2	0.24	
Trichiurus lepturus	1.20	2	0.23	
Octopus vulgaris	1.12	6	0.21	
Psenes pellucidus	1.06	2	0.20	
Trachurus trecae	1.06	2	0.20	
Hoplunnis sp.	0.99	20	0.19	
Torpedo marmorata	0.57	2	0.11	
Trachipterus sp.	0.53	2	0.10	
Uranoscopus polli	0.49	10	0.09	
Sepia hieredda	0.39	10	0.07	
Bembrops heterurus	0.30	20	0.06	
Capros aper	0.00	6	0.00	
Total	531.70		100.16	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 89
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°29.09
start stop duration Lon W 17°20.20
TIME :08:20:26 08:50:16 29.8 (min) Purpose : 3
LOG : 6759.69 6761.25 1.6 Region : 1300
FDEPTH: 58 57 Gear cond.: 0
BDEPTH: 58 57 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 3.1 kn
Sorted : 147 Total catch: 1058.98 Catch/hour: 2129.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1771.70	23312	83.20	290
Pomadasys incisus	151.31	859	7.11	289
Pseudupeneus prayensis	37.82	334	1.78	291
Pagellus bellottii	30.80	206	1.45	287
J E L L Y F I S H	26.14	0	1.23	
Dentex canariensis	16.39	56	0.77	285
Priacanthus arenatus	11.44	53	0.54	
Scomber japonicus	10.38	123	0.49	294
Dactylopterus volitans	10.38	18	0.49	
Trachurus trecae	9.67	1870	0.45	293
Umbrina canariensis	8.45	32	0.40	286
Plectorhinchus mediterraneus	6.86	23	0.32	292
Dicologoglossa cuneata	5.81	106	0.27	
Arnoglossus imperialis	3.70	352	0.17	
Fistularia tabacaria	3.52	35	0.17	
Boops boops	3.52	35	0.17	
Chaetodon hoefleri	3.18	18	0.15	
Citharus linguatula	3.00	53	0.14	
Grammoplites gruveli	2.29	88	0.11	
Spondyliosoma cantharus	2.11	18	0.10	
Pagrus caeruleostictus	2.05	10	0.10	288
Scorpaena stephanica	1.93	70	0.09	
Uroconger syringinus	1.93	18	0.09	
Lepidotrigla carolae	1.41	246	0.07	
Penaeus notialis	1.21	26	0.06	
Serranus accraensis	1.07	18	0.05	
Sphyraena sphyraena	0.56	2	0.03	
Torpedo torpedo	0.42	2	0.02	
Microchirus boscanion	0.18	35	0.01	
Antennarius pardalis	0.12	2	0.01	
Total	2129.33		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 90
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°26.85
start stop duration Lon W 17°30.04
TIME :10:25:46 10:56:13 30.5 (min) Purpose : 3
LOG : 6773.49 6775.05 1.6 Region : 1300
FDEPTH: 103 103 Gear cond.: 0
BDEPTH: 103 103 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.1 kn
Sorted : 119 Total catch: 210.26 Catch/hour: 414.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex angolensis	159.61	1155	38.52	297
Raja miraletus	76.85	128	18.55	
Umbrina canariensis	40.10	108	9.68	296
Illex coindetii	33.26	1693	8.03	
Plectorhinchus mediterraneus	18.80	12	4.54	300
Sphoeroides pachgaster	11.29	39	2.73	
Todaropsis eblanae	10.74	451	2.59	
Zeus faber	9.77	28	2.36	295
Scomber japonicus	8.47	25	2.05	298
Dentex congoensis	6.31	183	1.52	
Chaetodon hoefleri	5.28	34	1.27	
Lepidotrigla cadmani	4.43	44	1.07	
Trachurus trecae	4.33	163	1.05	299
Octopus vulgaris	3.90	4	0.94	
Boops boops	3.55	30	0.86	
Scorpaena elongata	3.25	5	0.78	
Torpedo marmorata	2.19	2	0.53	
Scorpaena stephanica	2.07	25	0.50	
Branchiostegus semifasciatus *	1.85	2	0.45	
Anthias anthias	1.83	89	0.44	
Sargocentron hastatus	1.77	10	0.43	
Pseudupeneus prayensis	0.85	5	0.20	
Microchirus boscanion	0.75	30	0.18	
Arnoglossus imperialis	0.59	59	0.14	
Spicara alta	0.59	20	0.14	
Echelus myrus	0.55	2	0.13	
Peristedion cataphractum	0.35	5	0.09	
Trigloporus lastoviza	0.35	5	0.09	
Antigonia capros	0.35	15	0.09	
Citharus linguatula	0.26	5	0.06	
Total	414.31		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 91
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°49.10
start stop duration Lon W 17°24.90
TIME :14:26:56 14:49:24 22.5 (min) Purpose : 3
LOG : 6809.14 6810.27 1.1 Region : 1300
FDEPTH: 94 98 Gear cond.: 0
BDEPTH: 94 98 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.0 kn
Sorted : 125 Total catch: 921.65 Catch/hour: 2461.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1171.70	210943	47.61	307
Trachurus trecae	565.55	2884	22.98	306
Decapterus rhonchus	268.68	788	10.92	301
Boops boops	120.69	1274	4.90	
Dentex maroccanus	97.20	2294	3.95	303
Uranoscopus scaber	57.86	115	2.35	
Squatina oculata	36.26	13	1.47	
Todaropsis eblanae	26.17	1111	1.06	
Zeus faber	24.75	555	1.01	302
Pagellus bellottii	24.30	115	0.99	308
Raja miraletus	19.44	3	0.79	
Torpedo torpedo	10.57	16	0.43	
Sphoeroides pachgaster	5.55	24	0.23	
Sardinella maderensis	5.55	23	0.23	304
Merluccius senegalensis	4.65	8	0.19	305
Lepidotrigla cadmani	4.41	45	0.18	
Fowlerichthys senegalensis	4.01	3	0.16	
Illex coindetii	3.93	278	0.16	
Cynoglossus canariensis	3.93	24	0.16	
Scorpaena stephanica	3.02	45	0.12	
Octopus vulgaris	1.42	3	0.06	
Scomber japonicus	0.69	24	0.03	
Engraulis encrasicolus	0.69	24	0.03	
Total	2461.01		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 92
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°52.42
start stop duration Lon W 17°29.61
TIME :16:34:54 17:05:40 30.8 (min) Purpose : 3
LOG : 6819.58 6821.14 1.6 Region : 1300
FDEPTH: 161 164 Gear cond.: 0
BDEPTH: 161 164 Validity : 0
Towing dir: 0° Wire out : 400 m Speed : 3.0 kn
Sorted : 244 Total catch: 1407.83 Catch/hour: 2745.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	1949.95	0	71.03	
Merluccius senegalensis	200.84	533	7.32	310
Antigonia capros	195.00	0	7.10	
Unidentified fish	189.15	0	6.89	
Zenopsis conchifer	109.20	80	3.98	311
Brotula barbata	45.82	39	1.67	312
Squatina oculata	41.34	10	1.51	
Dentex maroccanus	3.90	78	0.14	
Octopus vulgaris	3.74	6	0.14	
Merluccius polli	3.37	27	0.12	313
Emmelichthys nitidus	1.95	39	0.07	
Scyliorhinus cervigoni	0.94	2	0.03	
Total	2745.20		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 93
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°56.33
start stop duration Lon W 17°32.31
TIME :18:38:39 19:08:47 30.1 (min) Purpose : 3
LOG : 6829.18 6830.66 1.5 Region : 1300
FDEPTH: 420 407 Gear cond.: 0
BDEPTH: 420 407 Validity : 0
Towing dir: 0° Wire out : 1000 m Speed : 2.9 kn
Sorted : 70 Total catch: 83.41 Catch/hour: 166.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	64.52	570	38.84	317
Lophius vaillanti	26.49	10	15.95	314
Malacocephalus occidentalis	16.69	100	10.05	
Merluccius senegalensis	13.38	32	8.06	316
Todaropsis eblanae	12.35	131	7.43	
Uroconger syringinus	5.42	104	3.26	
Pterothrissus belloci	5.10	24	3.07	
Gephyroberyx darwini	5.06	2	3.05	315
Malacocephalus laevis	2.27	40	1.37	
MYCTOPHIDAE	2.19	1709	1.32	
Laemonema laureysi	1.95	64	1.17	
Coelorinchus coelorhincus	1.67	68	1.01	
Trachurus trecae	1.35	2	0.82	318
Gadella imberbis	1.17	48	0.71	
Chlorophthalmus atlanticus	1.08	115	0.65	
Psenes pellucidus	0.92	2	0.55	
Buglossidium luteum	0.72	16	0.43	
Synchiropus phaeton	0.64	36	0.38	
Illex coindetii	0.60	4	0.36	
Hymenocephalus italicus	0.60	219	0.36	
Setarches guentheri	0.52	8	0.31	
Pontinus accraensis	0.48	4	0.29	
Galeus polli	0.40	4	0.24	
Trachipterus sp.	0.32	2	0.19	
Epigonus pandionis	0.12	8	0.07	
Parasudis fraser-bruenneri	0.04	4	0.02	
Chaunax pictus	0.04	4	0.02	
Raja clavata, juvenile	0.04	2	0.02	
Total	166.10		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 94
DATE :27/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 14°56.99
start stop duration Lon W 17°39.13
TIME :21:19:57 21:50:32 30.6 (min) Purpose : 3
LOG : 6845.07 6846.56 1.5 Region : 1300
FDEPTH: 797 797 Gear cond.: 0
BDEPTH: 797 797 Validity : 0
Towing dir: 0° Wire out : 1670 m Speed : 2.9 kn
Sorted : 91 Total catch: 117.87 Catch/hour: 231.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Gephyroberyx darwini	78.26	47	33.85	
Deania calcea	26.91	45	11.64	
Deania profundorum	17.18	20	7.43	
Lamprogrammus exutus	12.69	45	5.49	
Nezumia micronychodon	12.65	216	5.47	
Halosaurus ovenii	11.69	159	5.06	
Raja montagui	11.06	27	4.78	
Merluccius polli	10.79	14	4.67	319
Bathygadus macrops	9.87	122	4.27	
Photonectes parvimanus	6.83	92	2.95	
Etmopterus spinax	6.83	12	2.95	
Ijimaia loppei	5.02	2	2.17	
Luciobrotula nolfi	3.69	10	1.59	
Ebinania costaecanarie	3.24	10	1.40	
Xenodermichthys copei	2.41	76	1.04	
Bathyuroconger vicinus	2.18	29	0.94	
Raja alba	2.00	6	0.87	
Bufoceratias wedli	1.47	35	0.64	
J E L L Y F I S H	1.22	3	0.53	
Cryptopsaras couesii	1.16	3	0.50	
Unidentified fish	0.76	33	0.33	
NETTASTOMATIDAE	0.75	6	0.32	
Lampanyctus sp.	0.65	33	0.28	
Nezumia aequalis	0.41	27	0.18	
ALEPOCEPHALIDAE	0.33	6	0.14	
Monomitopus metriostoma	0.24	15	0.10	
Coelorinchus coelorhincus	0.22	3	0.09	
Trachyrincus scabrus	0.22	6	0.09	
Chauliodus sloani	0.22	9	0.09	
STERNOPTYCHIDAE	0.16	27	0.07	
Coryphaenoides zaniophorus	0.12	6	0.05	
Plastic bags	0.00	2	0.00	
Total	231.19		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 95
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°12.00
start stop duration Lon E 17°21.00
TIME :02:31:22 03:01:30 30.1 (min) Purpose : 3
LOG : 6875.34 6876.87 1.5 Region : 1300
FDEPTH: 601 609 Gear cond.: 0
BDEPTH: 601 609 Validity : 0
Towing dir: 0° Wire out : 1500 m Speed : 3.0 kn
Sorted : 57 Total catch: 440.43 Catch/hour: 877.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	391.10	1585	44.55	
Nematocarcinus africanus	256.15	67471	29.18	
Laemonema laureysi	108.04	1268	12.31	
Lophius vaillanti	21.33	10	2.43	
Malacocephalus laevis	12.42	90	1.41	
Guentherus altivela	11.76	2	1.34	
Helicolenus dactylopterus	9.73	90	1.11	
Nezumia micronychodon	9.43	1525	1.07	
Halosaurus ovenii	7.63	375	0.87	
Lampanyctus sp.	7.04	1914	0.80	
Deania profundorum	6.42	6	0.73	
Lamprogrammus exutus	5.38	60	0.61	
Etmopterus pusillus	3.99	8	0.45	
Chaunax pictus	3.89	16	0.44	
Coloconger cadenati	3.75	30	0.43	
CONGRIDAE	3.29	46	0.37	
Deania calcea	3.19	18	0.36	
Echelus pachyrhynchus	2.85	60	0.32	
Centrophorus granulosus	2.75	6	0.31	
Yarrella blackfordi	2.09	90	0.24	
Raja montagui	1.20	16	0.14	
Nezumia aequalis	0.90	90	0.10	
Bathyuroconger vicinus	0.90	76	0.10	
Merluccius polli	0.78	2	0.09	
Galeus polli	0.56	6	0.06	
Trachyrincus scabrus	0.46	46	0.05	
Coelorinchus coelorhincus	0.30	16	0.03	
Xenodermichthys copei	0.16	16	0.02	
Bufoceratias wedli	0.16	30	0.02	
Bathygadus macrops	0.16	46	0.02	
Ebinania costaecanarie	0.16	16	0.02	
Plastic bags	0.00	2	0.00	
Metal waste	0.00	2	0.00	
Total	877.93		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 96
DATE :28/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°30.08
start stop duration Lon W 17°12.60
TIME :19:18:40 19:54:48 36.1 (min) Purpose : 3
LOG : 6967.96 6969.66 1.7 Region : 1300
FDEPTH: 505 504 Gear cond.: 0
BDEPTH: 505 504 Validity : 0
Towing dir: 0° Wire out : 1200 m Speed : 2.8 kn
Sorted : 45 Total catch: 149.86 Catch/hour: 248.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	42.30	1048	17.00	
OCTOPODIDAE	42.00	110	16.88	
Merluccius polli	39.85	425	16.01	320
Pontinus accraensis	37.60	384	15.11	
Aulopus cadenati	25.14	128	10.10	
Merluccius senegalensis	20.25	55	8.14	321
Brotula barbata	6.81	13	2.74	322
Bembrops heterurus	4.43	60	1.78	
Zenopsis conchifer	4.02	2	1.61	
Illex coindetii	3.59	30	1.44	
Scyliorhinus canicula	3.32	6	1.33	
Hoplunnis sp.	2.79	66	1.12	
Todaropsis eblanae	2.49	30	1.00	
Helicolenus dactylopterus	2.36	134	0.95	
Malacocephalus occidentalis	2.13	85	0.85	
Antigonia capros	1.99	45	0.80	
Uranoscopus scaber	1.76	12	0.71	
Peristedion cataphractum	1.58	43	0.63	
Capros aper	1.39	48	0.56	
Dentex macrophthalmus	0.71	6	0.29	
Scorpaena normani	0.48	6	0.19	
MYCTOPHIDAE	0.42	116	0.17	
Arnoglossus imperialis	0.30	6	0.12	
Monolene microstoma	0.30	12	0.12	
Ophidion barbatum	0.23	6	0.09	
Microchirus wittei	0.23	6	0.09	
Synagrops microlepis	0.17	37	0.07	
Symphurus nigrescens	0.17	6	0.07	
Metal waste	0.00	2	0.00	
Total	248.80		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 97
DATE :28/05/2012 GEAR TYPE: BT NO: 0 POSITION:Lat N 15°3.00
start stop duration Lon E 17°8.00
TIME :06:53:11 06:56:03 3.0 (min) Purpose : 3
LOG : 6898.33 6898.46 0.1 Region : 1300
FDEPTH: 99 98 Gear cond.: 9
BDEPTH: 99 98 Validity : 4
Towing dir: 0° Wire out : 250 m Speed : 2.7 kn
Sorted : 10 Total catch: 9.87 Catch/hour: 197.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	85.40	100	43.26	
Octopus vulgaris	27.80	60	14.08	
Torpedo torpedo	16.60	40	8.41	
Todaropsis eblanae	15.80	140	8.00	
Peristedion cataphractum	10.40	400	5.27	
Chlorophthalmus atlanticus	7.20	240	3.65	
Citharus linguatula	6.60	100	3.34	
Alloteuthis africana	4.00	960	2.03	
Pseudupeneus prayensis	3.40	20	1.72	
Illex coindetii	3.20	420	1.62	
Pontinus accraensis	3.20	20	1.62	
Antigonia capros	2.60	40	1.32	
Sphoeroides pachgaster	2.40	20	1.22	
Pterothrissus belloci	2.20	20	1.11	
Lepidotrigla cadmani	2.20	20	1.11	
Trachurus trecae	1.40	160	0.71	
Synchiropus phaeton	1.40	80	0.71	
Zenopsis conchifer	1.00	60	0.51	
Uroconger syringinus	0.40	20	0.20	
Merluccius polli	0.20	20	0.10	
Total	197.40		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 98
DATE :28/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°19.12
start stop duration Lon W 16°55.46
TIME :12:09:26 12:39:44 30.3 (min) Purpose : 3
LOG : 6932.73 6934.18 1.5 Region : 1300
FDEPTH: 53 50 Gear cond.: 0
BDEPTH: 53 50 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 2.9 kn
Sorted : 138 Total catch: 178.95 Catch/hour: 354.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	148.51	412	41.91	323
Pagellus bellottii	48.71	17176	13.75	330
Pseudupeneus prayensis	36.83	285	10.39	326
Raja miraletus	23.68	26	6.68	
Sepia bertheloti	19.01	103	5.36	
Selene dorsalis	11.01	44	3.11	327
Trachurus trecae	9.07	3869	2.56	329
Alloteuthis africana	7.76	2628	2.19	
Grammoplites gruveli	5.94	166	1.68	
Engraulis encrasicolus	5.90	772	1.67	328
Pseudotolithus senegalensis	5.47	8	1.54	324
Epinephelus aeneus	4.44	18	1.25	325
Fowlerichthys senegalensis	3.96	4	1.12	
Pagellus bellottii	3.68	16	1.04	331
Zeus faber	3.33	2	0.94	
Alectis alexandrina	2.46	2	0.69	
Citharus linguatula	1.90	79	0.54	
Scorpaena stephanica	1.58	32	0.45	
Eledone cirrhosa	1.54	8	0.44	
Lesueurigobius sanzoi	1.50	424	0.42	
Uranoscopus scaber	1.31	4	0.37	
Brachydeuterus auritus	1.19	8	0.34	
Thorogobius sp.	0.87	83	0.25	
Trachurus trecae	0.79	4	0.22	332
Octopus defilippi	0.71	4	0.20	
Brotula barbata	0.67	12	0.19	
Serranus cabrilla	0.44	24	0.12	
Torpedo torpedo	0.44	4	0.12	
Chaetodon hoefleri	0.38	2	0.11	
Antennarius pardalis	0.36	8	0.10	
Serranus accraensis	0.32	8	0.09	
Sphoeroides marmoratus	0.24	12	0.07	
Abralia veranyi	0.24	71	0.07	
Dicologoglossa hexophthalma	0.12	8	0.03	
Scorpaena normani	0.00	4	0.00	
Total	354.36		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 99
DATE :28/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°21.96
start stop duration Lon W 17°2.70
TIME :14:16:33 14:47:06 30.6 (min) Purpose : 3
LOG : 6945.20 6946.86 1.7 Region : 1300
FDEPTH: 111 107 Gear cond.: 0
BDEPTH: 111 107 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.3 kn
Sorted : 14 Total catch: 13.70 Catch/hour: 26.91

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	11.67	16	43.36	334
Raja miraletus	6.64	8	24.67	
Todaropsis eblanae	3.46	283	12.85	
Octopus vulgaris	1.28	2	4.74	
Zeus faber	0.73	2	2.70	
Alloteuthis africana	0.51	173	1.90	
Trachurus trecae	0.43	45	1.61	333
Lesueurigobius sp.	0.41	189	1.53	
Merluccius polli	0.29	41	1.09	336
Pseudupeneus prayensis	0.27	2	1.02	
Illex coindetii	0.26	18	0.95	
Boops boops	0.20	2	0.73	
Dentex angolensis	0.18	2	0.66	
Ariomma bondi	0.18	29	0.66	335
Synagrops microlepis	0.14	51	0.51	
Scomber japonicus	0.08	2	0.29	
Saurida brasiliensis	0.08	10	0.29	
Citharus linguatula	0.04	4	0.15	
Sygnatus sp	0.02	2	0.07	
Pontinus kuhlii	0.02	4	0.07	
Sphoeroides pachgaster	0.02	6	0.07	
Synchiropus phaeton	0.02	2	0.07	
Total	26.91		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 100
DATE :28/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°30.08
start stop duration Lon W 17°12.60
TIME :19:18:40 19:54:48 36.1 (min) Purpose : 3
LOG : 6967.96 6969.66 1.7 Region : 1300
FDEPTH: 505 504 Gear cond.: 0
BDEPTH: 505 504 Validity : 0
Towing dir: 0° Wire out : 1200 m Speed : 2.8 kn
Sorted : 16 Total catch: 111.76 Catch/hour: 185.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lophius vaillanti	42.17	20	22.73	338
Laemonema laureysi	21.72	626	11.70	
Lamprogrammus exutus	21.12	266	11.38	
Echelus pachyrhynchus	15.81	365	8.52	
CONGRIDAE	14.21	259	7.66	
Malacocephalus laevis	10.69	120	5.76	
Merluccius polli	9.96	23	5.37	337
Deania profundorum	8.23	133	4.44	
Hoplostethus mediterraneus	7.04	199	3.79	
Nezumia aequalis	4.98	553	2.68	
Scymnodon obscurus	4.28	15	2.31	
Trichiurus lepturus	4.02	5	2.17	
Centrophorus granulosus	3.40	2	1.83	
Photonectes parvimanus	3.05	46	1.65	
Pontinus kuhlii	2.86	219	1.54	
Yarrella blackfordi	2.59	86	1.40	
Centrolophus niger	1.21	2	0.65	
UNIDENTIFIED FISH	1.06	139	0.57	
Illex coindetii	1.00	7	0.54	
Gadella imberbis	1.00	40	0.54	
Hymenocephalus italicus	1.00	106	0.54	
Scyliorhinus cervigoni	0.86	40	0.47	
Deania profundorum	0.51	2	0.28	
Etmopterus pusillus	0.50	2	0.27	
Coloconger cadenati	0.48	2	0.26	
Argyropelecus sp.	0.40	139	0.21	
Bathyuroconger vicinus	0.40	40	0.21	
Ebinania costaecanarie	0.33	33	0.18	
Nezumia micronychodon	0.20	53	0.11	
NOTACANTHIDAE	0.13	7	0.07	
Galeus polli	0.13	7	0.07	
Chaunax pictus	0.07	7	0.04	
Epigonus sp.	0.07	7	0.04	
Xenodermichthys copei	0.07	7	0.04	
Total	185.55		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 101
DATE :28/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°32.69
start stop duration Lon W 17°17.01
TIME :23:53:26 00:21:55 28.5 (min) Purpose : 3
LOG : 6985.67 6987.09 1.4 Region : 1300
FDEPTH: 830 828 Gear cond.: 0
BDEPTH: 830 828 Validity : 0
Towing dir: 0° Wire out : 1800 m Speed : 3.0 kn
Sorted : 47 Total catch: 70.35 Catch/hour: 148.21

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Halosaurus ovenii	31.92	398	21.54	
Deania calcea	19.97	38	13.48	
Bathyuroconger vicinus	12.70	74	8.57	
Lamprogrammus exutus	12.61	29	8.51	
Alepocephalus sp.	12.45	156	8.40	
Etmopterus pusillus	9.06	21	6.11	
Deania profundorum	7.54	8	5.09	
Raja alba	7.27	11	4.90	
Photonectes parvimanus	6.79	137	4.58	
Merluccius polli	4.26	4	2.87	339
Luciobrotula nolfi	4.11	17	2.77	
Stomias boa boa	4.04	137	2.73	
Yarrella blackfordi	2.94	99	1.98	
Hoplostethus cadenati	2.78	17	1.88	
Trachyrincus scabrus	2.65	19	1.79	
GEMPYLIDAE	1.36	4	0.92	
Psenes pellucidus	1.26	4	0.85	
Lampanyctus sp.	1.14	76	0.77	
Lophius vaillanti	0.85	4	0.58	
Raja montagui	0.76	11	0.51	
Xenodermichthys copei	0.66	17	0.45	
Synaphobranchus affinis	0.44	4	0.30	
Monomitopus metriostoma	0.32	25	0.21	
PARALEPIDIDAE	0.13	4	0.09	
Polyipnus sp.	0.09	19	0.06	
Nemichthys scolopaceus	0.09	13	0.06	
Total	148.21		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 102
DATE :29/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°46.92
start stop duration Lon W 17°1.36
TIME :05:10:46 05:41:41 30.9 (min) Purpose : 3
LOG : 7016.07 7017.62 1.6 Region : 1300
FDEPTH: 230 237 Gear cond.: 0
BDEPTH: 230 237 Validity : 0
Towing dir: 0° Wire out : 490 m Speed : 3.0 kn
Sorted : 97 Total catch: 231.78 Catch/hour: 449.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	252.42	4207	56.12	
Merluccius polli	92.95	737	20.67	340
Pontinus accraensis	32.29	528	7.18	
Synagrops microlepis	16.84	722	3.74	
Chascanopsetta lugubris	12.50	85	2.78	
Bembrops heterurus	6.21	101	1.38	
Aulopus cadenati	6.05	31	1.35	
Todaropsis eblanae	5.36	6210	1.19	
Helicolenus dactylopterus	4.97	481	1.10	
Lophius vaillanti	4.81	39	1.07	
OCTOPODIDAE	4.23	14	0.94	
Brotula barbata	4.15	10	0.92	
Zenopsis conchifer	2.10	47	0.47	
Pterothrissus belloci	1.55	8	0.35	
Benthoctopus sp.	1.32	23	0.29	
Ophidion barbatum	0.62	23	0.14	
Abralia veranyi	0.62	140	0.14	
Synchiropus phaeton	0.31	16	0.07	
Myctophidae sp. large	0.23	326	0.05	
SEPIIDAE	0.23	8	0.05	
Total	449.77		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 103
DATE :29/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°46.77
start stop duration Lon W 17°0.16
TIME :06:55:23 07:25:45 30.4 (min) Purpose : 3
LOG : 7022.70 7024.30 1.6 Region : 1300
FDEPTH: 139 138 Gear cond.: 0
BDEPTH: 139 138 Validity : 0
Towing dir: 0° Wire out : 340 m Speed : 3.2 kn
Sorted : 246 Total catch: 1227.44 Catch/hour: 2424.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Todaropsis eblanae	1976.86	22670	81.52	
Brotula barbata	278.45	346	11.48	343
Antigonia capros	66.38	1814	2.74	
Zenopsis conchifer	32.44	18	1.34	342
Zeus faber	27.20	28	1.12	
Pontinus accraensis	18.37	132	0.76	
Sphoeroides pachgaster	11.56	14	0.48	
Aulopus cadenati	5.33	28	0.22	
Merluccius polli	3.24	8	0.13	344
Scyliorhinus cervigoni	2.96	8	0.12	
Trichiurus lepturus	1.44	2	0.06	
Octopus vulgaris	0.67	2	0.03	
Lophiodes kempi	0.06	2	0.00	
Total	2424.97		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 104
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°43.00
start stop duration Lon E 16°53.00
TIME :09:09:49 09:38:31 28.7 (min) Purpose : 3
LOG : 7035.50 7036.98 1.5 Region : 1300
FDEPTH: 83 84 Gear cond.: 0
BDEPTH: 83 84 Validity : 0
Towing dir: 0° Wire out : 240 m Speed : 3.1 kn
Sorted : 34 Total catch: 320.57 Catch/hour: 670.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	326.13	62300	48.66	309
Todaropsis eblanae	165.66	62258	24.72	
Trachurus trecae	133.80	391	19.96	345
Trichiurus lepturus	17.69	21	2.64	347
Sphoeroides pachgaster	6.82	10	1.02	
Merluccius senegalensis	4.01	8	0.60	346
Octopus vulgaris	3.51	8	0.52	
Scomber japonicus	3.22	44	0.48	348
Saurida brasiliensis	2.93	15	0.44	
GOBIIDAE	2.20	1083	0.33	
Zeus faber	1.76	73	0.26	
Sphyraena sphyraena	0.96	2	0.14	
Scorpaena stephanica	0.44	15	0.07	
Uroconger syringinus	0.44	15	0.07	
Merluccius polli	0.33	13	0.05	349
Dentex maroccanus	0.29	15	0.04	
Total	670.18		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 105
DATE :29/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°38.81
start stop duration Lon W 16°43.16
TIME :11:14:26 11:35:30 21.1 (min) Purpose : 3
LOG : 7049.84 7051.12 1.3 Region : 1300
FDEPTH: 28 28 Gear cond.: 0
BDEPTH: 28 28 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.6 kn
Sorted : 158 Total catch: 824.32 Catch/hour: 2347.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Brachydeuterus auritus	710.77	5365	30.28	358
Sardinella maderensis	478.41	40186	20.38	351
Pteroscion peli	273.37	4271	11.65	
Trichiurus lepturus	250.59	501	10.68	
Galeoides decadactylus	235.79	1162	10.04	357
Pseudotolithus senegalensis	157.19	649	6.70	356
Ilisha africana	130.19	1162	5.55	355
Stromateus fiatola	22.21	34	0.95	
Alectis alexandrina	21.87	34	0.93	
Trichiurus lepturus	18.79	991	0.80	
Cynoponticus ferox	18.17	17	0.77	
Pagrus caeruleostictus	7.86	11	0.33	350
Engraulis encrasicolus	6.24	826	0.27	353
Trachurus trecae	5.33	259	0.23	354
Pseudupeneus prayensis	5.13	34	0.22	
Eucinostomus melanopterus	4.10	34	0.17	
Sardinella aurita	1.03	48	0.04	352
Scomber japonicus	0.34	34	0.01	
Total	2347.38		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 106
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 15°58.00
start stop duration Lon E 16°38.00
TIME :16:35:52 17:06:56 31.1 (min) Purpose : 3
LOG : 7088.86 7090.31-7088.9 Region : 1300
FDEPTH: 43 45 Gear cond.: 0
BDEPTH: 43 45 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 2.3 kn
Sorted : 28 Total catch: 132.96 Catch/hour: 256.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trichiurus lepturus	100.13	224	39.04	
Trichiurus lepturus	50.06	71	19.52	
Thorogobius sp.	27.16	16999	10.59	
Decapterus rhonchus	22.50	50	8.77	361
Penaeus notialis	12.85	1204	5.01	
Trachurus trecae	9.22	37	3.60	359
Pagellus bellottii	9.11	39	3.55	363
Pseudupeneus prayensis	8.68	77	3.38	364
Raja miraletus	5.25	8	2.05	
Pseudotolithus senegalensis	2.45	4	0.96	
Sardinella aurita	1.74	4	0.68	360
Sphyraena guachancho	1.02	2	0.40	
Pagrus caeruleostictus	0.91	2	0.35	362
Arius parkii	0.89	2	0.35	
Sepia hieredda	0.77	6	0.30	
Alloteuthis africana	0.75	232	0.29	
Brachydeuterus auritus	0.58	23	0.23	
Chloroscombrus chrysurus	0.55	3	0.21	
Dactylopterus volitans	0.54	2	0.21	
Pterothrissus belloci	0.35	26	0.14	
Ilisha africana	0.26	3	0.10	
Merluccius senegalensis	0.26	20	0.10	365
Trachurus trecae	0.17	143	0.07	367
Engraulis encrasicolus	0.17	26	0.07	366
Zeus faber	0.09	9	0.03	
Brotula barbata	0.03	3	0.01	
Citharus linguatula	0.01	12	0.01	
Dicologoglossa hexophthalma	0.01	3	0.00	
Selene dorsalis	0.00	3	0.00	
Total	256.51		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 107
DATE :29/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°3.57
start stop duration Lon W 16°43.97
TIME :18:25:10 18:55:33 30.4 (min) Purpose : 3
LOG : 7099.02 7100.54 1.5 Region : 1300
FDEPTH: 76 75 Gear cond.: 0
BDEPTH: 76 75 Validity : 0
Towing dir: 0° Wire out : 185 m Speed : 3.0 kn
Sorted : 21 Total catch: 691.20 Catch/hour: 1365.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pterothrissus belloci	465.90	41571	34.13	
Trichiurus lepturus	398.95	798	29.22	
Trachurus trecae	167.00	567	12.23	369
Merluccius polli	98.16	6093	7.19	370
Trichiurus lepturus	84.33	899	6.18	0
Merluccius senegalensis	37.33	1697	2.73	371
Parapenaeus longirostris	35.98	9579	2.64	
Octopus vulgaris	15.92	16	1.17	
Synagrops microlepis	14.24	2101	1.04	
Raja miraletus	14.22	18	1.04	
Dentex angolensis	9.80	65	0.72	368
Zeus faber	8.57	290	0.63	341
Thorogobius sp.	4.42	1659	0.32	
Miracorvina angolensis	3.36	2	0.25	
Brotula barbata	3.04	14	0.22	
Pentheroscion mbizi	1.11	14	0.08	
Citharus linguatula	0.83	69	0.06	
Lutjanus fulgens	0.67	2	0.05	
Pagellus bellottii	0.55	152	0.04	
Trachurus trecae	0.55	152	0.04	
Pagellus bellottii	0.18	2	0.01	
Total	1365.11		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 108
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°5.00
start stop duration Lon E 16°53.00
TIME :20:44:13 21:16:29 32.3 (min) Purpose : 3
LOG : 7113.11 7114.86 1.8 Region : 1300
FDEPTH: 144 156 Gear cond.: 0
BDEPTH: 0 0 Validity : 0
Towing dir: 0° Wire out : 400 m Speed : 3.3 kn
Sorted : 58 Total catch: 140.48 Catch/hour: 260.95

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pontinus accraensis	81.36	797	31.18	
Aulopus cadenati	33.21	251	12.73	
Merluccius senegalensis	33.10	117	12.69	373
Merluccius polli	29.54	415	11.32	372
Antigonia capros	25.86	1410	9.91	
Chlorophthalmus atlanticus	12.87	1410	4.93	
Raja straeleni	7.88	6	3.02	
Brotula barbata	6.63	28	2.54	
Todaropsis eblanae	4.18	50	1.60	
Octopus vulgaris	3.75	7	1.44	
Dentex angolensis	3.33	9	1.27	
OPHIDIIDAE	2.86	4	1.10	
Microchirus wittei	2.79	6	1.07	
OPHICHTHIDAE	2.79	4	1.07	
Trachurus trecae	2.06	6	0.79	
Synagrops microlepis	1.89	61	0.73	
Monolene microstoma	1.84	56	0.70	
Bembrops greyi	1.73	39	0.66	
Echelus myrus	0.89	6	0.34	
Lepidotrigla cadmani	0.89	11	0.34	
Hoplunnis sp.	0.61	17	0.23	
Serranus africana	0.33	6	0.13	
Malacocephalus occidentalis	0.22	6	0.09	
Ophidion barbatum	0.17	17	0.06	
Rhechias bertini	0.11	6	0.04	
Carapus sp.	0.06	6	0.02	
Total	260.95		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 109
DATE :29/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°5.78
start stop duration Lon W 16°58.14
TIME :22:46:46 23:15:23 28.6 (min) Purpose : 3
LOG : 7122.75 7124.33 1.6 Region : 1300
FDEPTH: 419 432 Gear cond.: 0
BDEPTH: 419 432 Validity : 0
Towing dir: 0° Wire out : 1040 m Speed : 3.3 kn
Sorted : 43 Total catch: 426.46 Catch/hour: 894.05

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	213.84	3438	23.92	
Nematocarcinus africanus	205.03	59644	22.93	
Laemonema laureysi	91.40	1426	10.22	
Centrophorus granulosus	49.27	17	5.51	
Merluccius polli	42.26	109	4.73	374
Lophius vaillanti	40.50	10	4.53	
Todaropsis eblanae	40.04	335	4.48	
Deania profundorum	30.52	138	3.41	
Epigonus sp.	26.00	398	2.91	
Yarrella blackfordi	24.53	2138	2.74	
Echelus pachyrhynchus	15.93	210	1.78	
Malacocephalus occidentalis	12.79	42	1.43	
Trachurus trecae	11.53	21	1.29	
Hymenocephalus italicus	10.90	1614	1.22	
Scymnodon obscurus	10.10	19	1.13	
Hoplostethus cadenati	9.01	273	1.01	
Dicologoglossa sp.	9.01	210	1.01	
Schedophilus pemarco	8.81	21	0.98	
MYCTOPHIDAE	7.97	1971	0.89	
Coelorinchus coelorhincus	6.71	294	0.75	
Guentherus altivela	6.52	4	0.73	
Rhechias bertini	5.45	147	0.61	
Chlorophthalmus atlanticus	4.82	189	0.54	
Gephyroberyx darwini	3.44	8	0.38	
Chaunax pictus	2.73	21	0.30	
Nezumia aequalis	1.68	168	0.19	
Scymnodon ringens	1.15	2	0.13	
Psenes pellucidus	0.63	2	0.07	
Physiculus cyanostropheis	0.42	21	0.05	
Malacocephalus laevis	0.42	21	0.05	
Symphurus sp.	0.21	21	0.02	
Galeus polli	0.21	42	0.02	
Ophidion barbatum	0.21	21	0.02	
Total	894.05		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 110
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°22.94
start stop duration Lon W 16°45.79
TIME :08:32:38 09:02:16 29.7 (min) Purpose : 3
LOG : 7164.45 7165.96 1.5 Region : 1200
FDEPTH: 105 101 Gear cond.: 0
BDEPTH: 105 101 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.0 kn
Sorted : 64 Total catch: 1096.22 Catch/hour: 2218.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	612.75	84020	27.62	
Synagrops microlepis	481.62	113039	21.71	
Merluccius polli	377.20	9519	17.00	375
Thorogobius sp.	216.93	81349	9.78	
Chlorophthalmus atlanticus	196.69	21450	8.87	
Merluccius senegalensis	177.27	405	7.99	376
Trachurus trecae	61.11	115	2.75	377
Pterothrissus belloci	22.66	162	1.02	
Brotula barbata	19.43	81	0.88	
Torpedo torpedo	19.43	162	0.88	
Illex coindetii	16.19	81	0.73	
Raja straeleni	6.15	2	0.28	
Zeus faber	5.26	10	0.24	
Octopus vulgaris	2.35	4	0.11	
Scyliorhinus cervigoni	0.97	2	0.04	
Dentex angolensis	0.97	6	0.04	
Miracorvina angolensis	0.69	2	0.03	
Branchiostegus semifasciatus *	0.49	2	0.02	
Sepia elegans	0.16	81	0.01	
Plastic bags	0.00	40	0.00	
Total	2218.32		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 111
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°20.53
start stop duration Lon W 16°38.71
TIME :10:23:36 10:53:56 30.3 (min) Purpose : 3
LOG : 7174.62 7176.16 1.6 Region : 1200
FDEPTH: 54 54 Gear cond.: 0
BDEPTH: 54 54 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.1 kn
Sorted : 23 Total catch: 118.22 Catch/hour: 233.87

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	141.88	24667	60.67	381
Trachurus trecae	35.01	105	14.97	378
Pseudupeneus prayensis	13.45	79	5.75	
Dentex angolensis	11.00	135	4.70	380
Trichiurus lepturus	10.05	40	4.30	
Stromateus fiatola	4.23	6	1.81	
Octopus vulgaris	3.48	4	1.49	
Zeus faber	2.69	18	1.15	
Scomber japonicus	2.33	6	1.00	379
Miracorvina angolensis	1.72	2	0.74	
Raja undulata	1.64	2	0.70	
Merluccius polli	1.27	40	0.54	
Alloteuthis africana	1.27	491	0.54	
Uranoscopus scaber	1.19	2	0.51	
Spondyliosoma cantharus	1.17	6	0.50	
Scorpaena stephanica	1.01	10	0.43	
Pterothrissus belloci	0.24	16	0.10	
Penaeus notialis	0.14	2	0.06	
Illex coindetii	0.08	24	0.03	
Total	233.85		99.99	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 112
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°19.63
start stop duration Lon W 16°36.50
TIME :11:43:56 12:07:03 23.1 (min) Purpose : 3
LOG : 7181.39 7182.52 1.1 Region : 1200
FDEPTH: 31 31 Gear cond.: 0
BDEPTH: 31 31 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.9 kn
Sorted : 101 Total catch: 673.65 Catch/hour: 1748.23

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	637.37	3132	36.46	384
Pseudupeneus prayensis	369.03	3166	21.11	385
Trachurus trecae	292.47	2336	16.73	390
Boops boops	188.93	1471	10.81	389
J E L L Y F I S H	85.64	0	4.90	
Decapterus rhonchus	74.74	189	4.28	386
Alloteuthis africana	26.73	4965	1.53	
Raja miraletus	16.79	17	0.96	
Argyrosomus regius	13.16	17	0.75	387
Loligo vulgaris	11.16	519	0.64	
Chloroscombrus chrysurus	11.16	69	0.64	383
Dentex canariensis	9.34	70	0.53	388
Scomber japonicus	7.01	88	0.40	382
Spondyliosoma cantharus	3.30	17	0.19	
Decapterus punctatus	1.22	17	0.07	
Fistularia petimba	0.18	17	0.01	
Total	1748.23		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 113
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°40.05
start stop duration Lon W 16°34.25
TIME :17:00:33 17:30:52 30.3 (min) Purpose : 3
LOG : 7214.67 7216.25 1.6 Region : 1200
FDEPTH: 41 39 Gear cond.: 0
BDEPTH: 41 39 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.1 kn
Sorted : 19 Total catch: 60.34 Catch/hour: 119.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Decapterus rhonchus	89.09	173	74.61	391
Trachurus trecae	6.83	85	5.72	392
Raja undulata	5.40	6	4.52	
Uranoscopus sp.	4.06	4	3.40	
Scomber japonicus	3.86	12	3.23	393
Trichiurus lepturus	2.67	2	2.24	
Pomadasys jubelini	2.18	0	1.82	
Pagellus bellottii	2.10	14	1.76	395
Sardinella aurita	1.29	28	1.08	394
Alloteuthis africana	1.25	0	1.04	
Loligo vulgaris	0.34	85	0.28	
Penaeus notialis	0.26	8	0.22	
Zeus faber	0.10	10	0.08	
Fistularia tabacaria	0.00	0	0.00	
Total	119.41		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 114
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°41.40
start stop duration Lon E 16°40.50
TIME :18:48:51 19:19:21 30.5 (min) Purpose : 3
LOG : 7226.39 7228.02 1.6 Region : 1200
FDEPTH: 75 70 Gear cond.: 0
BDEPTH: 75 70 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.2 kn
Sorted : 46 Total catch: 1313.16 Catch/hour: 2583.27

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	807.34	1066	31.25	
Pterothrissus belloci	569.63	37975	22.05	
Synagrops microlepis	545.70	74951	21.12	
Trachurus trecae	429.44	1894	16.62	396
Thorogobius sp.	133.06	34910	5.15	
Parapenaeus longirostris	36.59	10989	1.42	
Trichiurus lepturus	29.90	43	1.16	
Citharus linguatula	8.97	1271	0.35	
Raja miraletus	4.66	4	0.18	
Cepola macrophthalma	4.49	75	0.17	
Zeus faber	2.99	150	0.12	
Illex coindetii	2.99	75	0.12	
Octopus vulgaris	2.50	2	0.10	
Torpedo torpedo	2.01	4	0.08	
Todaropsis eblanae	1.46	523	0.06	
Miracorvina angolensis	0.98	2	0.04	
Sardinella aurita	0.55	2	0.02	
Total	2583.27		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 115
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°42.20
start stop duration Lon W 16°47.93
TIME :20:41:54 21:11:17 29.4 (min) Purpose : 3
LOG : 7236.48 7237.92 1.4 Region : 1200
FDEPTH: 276 283 Gear cond.: 0
BDEPTH: 276 283 Validity : 0
Towing dir: 0° Wire out : 720 m Speed : 3.0 kn
Sorted : 158 Total catch: 307.58 Catch/hour: 627.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	262.74	2352	41.84	
Zenopsis conchifer	67.37	43	10.73	398
Palinurus mauritanicus	33.68	51	5.36	397
Bembrops heterurus	31.85	378	5.07	
Brotula barbata	31.03	24	4.94	399
Malacocephalus occidentalis	30.50	194	4.86	
Merluccius senegalensis	24.50	51	3.90	402
Todaropsis eblanae	22.46	312	3.58	
Gephyroberyx darwini	19.68	112	3.13	400
Guentherus altivela	17.35	2	2.76	
Merluccius polli	13.88	82	2.21	401
Galeus polli	13.47	67	2.15	
Laemonema laureysi	11.39	249	1.81	
Lophiodes kempi	8.17	18	1.30	
Centrophorus granulosus	6.57	4	1.05	
Trichiurus lepturus	4.82	10	0.77	
Trachurus trecae	3.57	18	0.57	
Trachinotus ovatus	3.31	10	0.53	
Chlorophthalmus atlanticus	2.76	47	0.44	
Octopus vulgaris	2.57	10	0.41	
SOLEIDAE	2.57	55	0.41	
Echelus myrus	2.04	4	0.33	
MYCTOPHIDAE	2.04	543	0.33	
Trachurus trachurus	1.84	10	0.29	
Todarodes sagittatus	1.84	10	0.29	
Ophidion barbatum	1.74	84	0.28	
Peristedion cataphractum	1.39	29	0.22	
Chaceon maritae	0.86	2	0.14	
Echelus myrus	0.82	18	0.13	
Coelorinchus coelorhincus	0.47	10	0.07	
Rhechias bertini	0.29	10	0.05	
Chlorophthalmus fraser	0.18	10	0.03	
Gadella imberbis	0.18	10	0.03	
Total	627.93		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 116
DATE :30/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°43.81
start stop duration Lon W 16°52.56
TIME :23:45:08 00:13:49 28.7 (min) Purpose : 3
LOG : 7254.38 7255.82 1.4 Region : 1200
FDEPTH: 584 592 Gear cond.: 0
BDEPTH: 584 592 Validity : 0
Towing dir: 0° Wire out : 1415 m Speed : 3.0 kn
Sorted : 34 Total catch: 318.20 Catch/hour: 665.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nematocarcinus africanus	307.42	88128	46.20	
Rhechias bertini	45.38	381	6.82	
Lophius vaillanti	43.50	19	6.54	
Hoplostethus cadenati	39.11	176	5.88	
Scymnodon ringens	37.43	33	5.63	
Helicolenus dactylopterus	33.23	454	4.99	
Laemonema laureysi	33.08	717	4.97	
Chaceon maritae	18.15	44	2.73	
Deania calcea	17.36	27	2.61	
Centrophorus granulosus	13.80	4	2.07	
Merluccius polli	13.26	19	1.99	403
Nezumia micronychodon	11.71	820	1.76	
Scymnodon obscurus	7.95	17	1.19	
Bathygadus macrops	7.76	234	1.17	
Aristeus varidens	7.03	454	1.06	
Bathyuroconger vicinus	6.73	190	1.01	
Yarrella blackfordi	6.59	205	0.99	
Halosaurus ovenii	6.59	395	0.99	
Echelus pachyrhynchus	2.05	44	0.31	
Bufoceratias wedli	1.90	59	0.29	
Lamprogrammus exutus	1.46	88	0.22	
Galeus polli	1.17	13	0.18	
Ebinania costaecanarie	0.88	29	0.13	
Epigonus sp.	0.88	44	0.13	
Coloconger cadenati	0.59	15	0.09	
Xenodermichthys copei	0.44	15	0.07	
Total	665.46		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 117
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°5.87
start stop duration Lon W 16°46.91
TIME :04:13:44 04:44:11 30.5 (min) Purpose : 3
LOG : 7285.32 7287.01 1.7 Region : 1200
FDEPTH: 327 317 Gear cond.: 0
BDEPTH: 327 317 Validity : 0
Towing dir: 0° Wire out : 800 m Speed : 3.3 kn
Sorted : 61 Total catch: 1150.62 Catch/hour: 2265.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	1361.79	6378	60.10	
Chlorophthalmus atlanticus	316.17	3781	13.95	
Pontinus accraensis	122.28	1099	5.40	
Gephyroberyx darwini	103.50	213	4.57	
Hoplostethus cadenati	82.94	1524	3.66	
Malacocephalus occidentalis	47.14	354	2.08	
Merluccius senegalensis	45.53	47	2.01	404
Epigonus telescopus	28.00	177	1.24	
Brotula barbata	26.50	39	1.17	
Scorpaena sp.	26.23	35	1.16	
Laemonema laureysi	20.20	390	0.89	
Guentherus altivela	15.75	2	0.70	
Lophius vaillanti	14.89	35	0.66	
Echelus myrus	9.22	1170	0.41	
Centrophorus granulosus	8.51	2	0.38	
Bembrops heterurus	8.15	106	0.36	
Scymnodon obscurus	5.67	35	0.25	
Trachurus trecae	5.36	10	0.24	405
Coelorinchus coelorhincus	4.96	106	0.22	
Galeus polli	4.61	35	0.20	
Lophiodes kempi	3.03	2	0.13	
TRIGLIDAE	2.84	35	0.13	
Synaptura sp.	2.13	71	0.09	
Physiculus cyanostropheis	0.35	35	0.02	
Total	2265.74		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 118
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°2.70
start stop duration Lon W 16°43.71
TIME :06:49:19 07:14:46 25.4 (min) Purpose : 3
LOG : 7292.23 7293.60 1.4 Region : 1200
FDEPTH: 118 117 Gear cond.: 0
BDEPTH: 118 117 Validity : 0
Towing dir: 0° Wire out : 290 m Speed : 3.2 kn
Sorted : 144 Total catch: 860.64 Catch/hour: 2029.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	2179.25	479434	107.36	
Chlorophthalmus atlanticus	753.40	189649	37.12	
Todaropsis eblanae	415.09	6325	20.45	
Merluccius senegalensis	268.87	736	13.25	407
Trachurus trecae	165.09	1186	8.13	408
Trachurus trecae	140.09	1557	6.90	410
Scomber japonicus	138.02	311	6.80	411
Merluccius polli	66.42	1038	3.27	406
Helicolenus dactylopterus	30.09	12708	1.48	
Trichiurus lepturus	17.26	24	0.85	
Brotula barbata	10.19	9	0.50	
Zeus faber	8.96	9	0.44	
Zeus faber	8.68	9	0.43	409
Scomber japonicus	8.30	6325	0.41	
Zenopsis conchifer	8.11	5	0.40	
Octopus vulgaris	5.94	5	0.29	
Todarodes sagittatus	4.81	5	0.24	
Echelus myrus	4.43	14	0.22	
Sepia elegans	4.15	104	0.20	
Fowlerichthys senegalensis	2.74	5	0.13	
Scyliorhinus stellaris	2.64	5	0.13	
Torpedo torpedo	1.18	5	0.06	
Total	4243.73		209.07	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 119
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°58.16
start stop duration Lon W 16°32.53
TIME :09:00:58 09:34:41 33.7 (min) Purpose : 3
LOG : 7306.57 7308.25 1.7 Region : 1200
FDEPTH: 70 71 Gear cond.: 0
BDEPTH: 70 71 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.0 kn
Sorted : 29 Total catch: 339.91 Catch/hour: 604.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	227.94	22347	37.69	414
Pterothrissus belloci	224.20	249	37.07	
GOBIIDAE	96.41	38562	15.94	
Synagrops microlepis	30.43	3811	5.03	
Trachurus trecae	18.47	101	3.05	412
Trachurus trecae	2.37	498	0.39	
Trichiurus lepturus	1.55	5	0.26	
Penaeus notialis	1.07	32	0.18	
Todaropsis eblanae	1.00	75	0.16	
Scomber japonicus	0.52	2	0.09	413
Trachurus trachurus	0.50	50	0.08	
Zeus faber	0.39	18	0.06	
Total	604.82		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 120
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 16°58.65
start stop duration Lon W 16°28.18
TIME :10:50:00 11:20:07 30.1 (min) Purpose : 3
LOG : 7317.18 7318.84 1.7 Region : 1200
FDEPTH: 44 42 Gear cond.: 0
BDEPTH: 44 42 Validity : 0
Towing dir: 0° Wire out : 135 m Speed : 3.3 kn
Sorted : 12 Total catch: 11.83 Catch/hour: 23.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	5.34	388	22.65	415
Trachurus trachurus	3.98	604	16.91	416
Scorpaena stephanica	2.91	32	12.34	
Decapterus rhonchus	2.47	4	10.48	
Thorogobius sp.	2.39	590	10.14	
Uranoscopus scaber	1.75	0	7.44	
Arnoglossus imperialis	0.84	106	3.55	
Zeus faber	0.64	10	2.70	
Grammoplites gruveli	0.60	6	2.54	
Todaropsis eblanae	0.40	4	1.69	
Merluccius polli	0.40	10	1.69	
Synagrops microlepis	0.38	4	1.61	
Lepidotrigla carolae	0.38	2	1.61	
Merluccius senegalensis	0.38	2	1.61	
Saurida brasiliensis	0.36	2	1.52	
Monochirus hispidus	0.20	2	0.85	
Sepia orbignyana	0.16	10	0.68	
Total	23.57		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 121
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°15.39
start stop duration Lon W 16°17.94
TIME :14:47:02 15:16:56 29.9 (min) Purpose : 3
LOG : 7347.89 7349.40 1.5 Region : 1200
FDEPTH: 35 30 Gear cond.: 0
BDEPTH: 35 30 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.0 kn
Sorted : 49 Total catch: 102.31 Catch/hour: 205.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Loligo vulgaris	53.58	2735	26.10	
Pseudupeneus prayensis	35.12	239	17.10	424
Trachurus trecae	24.93	1944	12.14	420
Raja miraletus	21.47	38	10.46	
Decapterus rhonchus	17.26	40	8.41	418
Alloteuthis africana	10.23	2221	4.98	
Scomber japonicus	8.23	114	4.01	422
Pagellus bellottii	8.03	445	3.91	423
J E L L Y F I S H	4.98	4	2.42	
Sardinella aurita	4.52	96	2.20	421
Pagrus caeruleostictus	3.81	5	1.86	425
Zeus faber	3.57	10	1.74	419
Trachurus trachurus	2.16	10	1.05	417
Torpedo torpedo	1.81	6	0.88	
Schedophilus pemarco	1.30	6	0.64	
Fistularia petimba	1.20	20	0.59	
Syacium micrurum	1.20	6	0.59	
Chelidonichthys gabonensis	1.00	10	0.49	
Selene dorsalis	0.90	30	0.44	
Total	205.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 122
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°13.33
start stop duration Lon W 16°21.83
TIME :17:43:36 18:14:14 30.6 (min) Purpose : 3
LOG : 7358.42 7359.88 1.5 Region : 1200
FDEPTH: 51 51 Gear cond.: 0
BDEPTH: 51 51 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 2.9 kn
Sorted : 30 Total catch: 101.45 Catch/hour: 198.79

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	140.73	25331	70.79	431
Thorogobius sp.	16.40	8953	8.25	
Trachurus trecae	15.64	2596	7.87	427
Octopus vulgaris	5.49	10	2.76	
Uranoscopus cadenati	4.78	10	2.41	
Raja miraletus	4.19	8	2.11	
Trachurus trecae	2.70	16	1.36	429
Merluccius senegalensis	1.59	123	0.80	426
Penaeus notialis	1.21	49	0.61	
Arius parkii	1.14	2	0.57	
Zeus faber	1.00	71	0.50	
Pseudupeneus prayensis	0.78	4	0.39	
Chlorophthalmus atlanticus	0.59	76	0.30	
Arnoglossus imperialis	0.41	129	0.21	
Bembrops heterurus	0.35	2	0.18	
Citharus linguatula	0.29	6	0.15	
Grammoplites gruveli	0.29	6	0.15	
Torpedo torpedo	0.29	6	0.15	
Cepola macrophthalma	0.24	6	0.12	
Sardinella aurita	0.24	6	0.12	430
Solea sp.	0.20	2	0.10	
Merluccius polli	0.18	12	0.09	428
Pagellus bellottii	0.06	6	0.03	
Total	198.79		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 123
DATE :31/05/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°18.74
start stop duration Lon W 16°39.17
TIME :21:59:15 22:31:39 32.4 (min) Purpose : 3
LOG : 7381.48 7383.27 1.8 Region : 1200
FDEPTH: 191 193 Gear cond.: 0
BDEPTH: 191 193 Validity : 0
Towing dir: 0° Wire out : 490 m Speed : 3.3 kn
Sorted : 64 Total catch: 656.11 Catch/hour: 1215.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	807.98	23531	66.50	
Helicolenus dactylopterus	132.89	5281	10.94	
Pontinus accraensis	111.37	2746	9.17	
Merluccius polli	65.80	585	5.42	436
Bembrops heterurus	17.25	278	1.42	
Merluccius senegalensis	13.84	21	1.14	434
Gephyroberyx darwini	10.48	4	0.86	432
Synagrops microlepis	8.94	256	0.74	
Todaropsis eblanae	7.88	85	0.65	
Zenopsis conchifer	5.59	4	0.46	437
OPHICHTHIDAE	4.85	7	0.40	
Octopus vulgaris	4.70	6	0.39	
Ophidion barbatum	4.26	256	0.35	
Capros aper	3.62	404	0.30	
Dentex macrophthalmus	3.62	43	0.30	433
Illex coindetii	3.41	22	0.28	
Zenopsis conchifer	2.77	64	0.23	435
Coelorinchus coelorhincus	1.49	20	0.12	
Epigonus sp.	1.28	319	0.11	
Synchiropus phaeton	1.06	107	0.09	
MYCTOPHIDAE	1.06	320	0.09	
Monolene microstoma	0.85	43	0.07	
Total	1215.01		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 124
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°38.00
start stop duration Lon W 16°38.00
TIME :06:44:22 07:15:10 31.0 (min) Purpose : 3
LOG : 7428.21 7429.72 1.5 Region : 1200
FDEPTH: 369 366 Gear cond.: 0
BDEPTH: 369 366 Validity : 0
Towing dir: 0° Wire out : 930 m Speed : 2.9 kn
Sorted : 14 Total catch: 124.51 Catch/hour: 240.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Laemonema laureysi	55.78	681	23.15	
Helicolenus dactylopterus	36.83	1107	15.28	
Todaropsis eblanae	31.51	234	13.08	
Malacocephalus occidentalis	27.04	213	11.22	
OPHICHTHIDAE	21.45	106	8.90	
Pontinus accraensis	15.97	468	6.63	
Merluccius polli	13.63	99	5.65	438
Lophius vaillanti	7.43	2	3.08	439
Gephyroberyx darwini	7.24	21	3.00	
Chlorophthalmus atlanticus	3.41	128	1.41	
Todarodes sagittatus	3.19	2	1.33	
Buglossidium luteum	3.19	85	1.33	
Galeus polli	2.13	21	0.88	
Trachurus trecae	1.95	4	0.81	440
Yarrella blackfordi	1.92	213	0.80	
Zenopsis conchifer	1.92	43	0.80	
Hoplostethus cadenati	1.92	511	0.80	
Echelus pachyrhynchus	1.28	21	0.53	
Gadella imberbis	0.85	43	0.35	
Merluccius senegalensis	0.66	2	0.27	
Synchiropus phaeton	0.64	21	0.27	
Raja sp., juvenile	0.43	21	0.18	
Hymenocephalus italicus	0.43	64	0.18	
Epigonus sp.	0.21	21	0.09	
Total	240.99		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 125
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°37.00
start stop duration Lon W 16°32.00
TIME :08:57:33 09:28:44 31.2 (min) Purpose : 3
LOG : 7439.72 7441.30 1.6 Region : 1200
FDEPTH: 185 186 Gear cond.: 0
BDEPTH: 185 186 Validity : 0
Towing dir: 0° Wire out : 490 m Speed : 3.0 kn
Sorted : 135 Total catch: 1247.22 Catch/hour: 2398.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	1248.08	41588	52.04	
Helicolenus dactylopterus	538.15	4929	22.44	
Pterothrissus belloci	203.08	2581	8.47	
Trachurus trecae	139.19	381	5.80	445
Pontinus accraensis	106.62	804	4.45	
Bembrops heterurus	50.77	529	2.12	
Merluccius polli	33.46	288	1.40	444
Synagrops microlepis	14.17	402	0.59	
Brotula barbata	11.42	21	0.48	
Todaropsis eblanae	8.88	6685	0.37	
Aulopus cadenati	7.62	42	0.32	
Illex coindetii	6.77	42	0.28	
Dentex angolensis	5.71	21	0.24	
Merluccius senegalensis	5.46	6	0.23	443
Octopus vulgaris	5.19	8	0.22	
Umbrina canariensis	4.69	4	0.20	441
Zenopsis conchifer	2.54	63	0.11	
Lepidotrigla cadmani	2.54	21	0.11	
Miracorvina angolensis	1.96	4	0.08	442
Coelorinchus coelorhincus	1.48	21	0.06	
Scyliorhinus cervigoni	0.50	2	0.02	
Synchiropus phaeton	0.21	21	0.01	
Total	2398.50		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 126
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°35.70
start stop duration Lon W 16°23.93
TIME :11:11:34 11:41:05 29.5 (min) Purpose : 3
LOG : 7453.66 7455.18 1.5 Region : 1200
FDEPTH: 101 101 Gear cond.: 0
BDEPTH: 101 101 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.1 kn
Sorted : 117 Total catch: 472.65 Catch/hour: 960.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	502.03	78329	52.26	
Trichiurus lepturus	123.98	274	12.91	449
Trachurus trecae	122.36	317	12.74	446
Thorogobius sp.	54.88	14835	5.71	
Todaropsis eblanae	53.05	1171	5.52	
Merluccius polli	36.59	687	3.81	448
Merluccius senegalensis	18.58	53	1.93	450
Trachurus trecae	15.55	242	1.62	447
Pontinus accraensis	8.94	37	0.93	
Helicolenus dactylopterus	8.78	2451	0.91	
Loligo vulgaris	4.39	348	0.46	
Illex coindetii	4.07	18	0.42	
Zeus faber	3.90	6	0.41	451
Octopus defilippi	1.81	4	0.19	
Scorpaena stephanica	0.73	2	0.08	
Echelus myrus	0.37	2	0.04	
Cepola macrophthalma	0.26	2	0.03	
Zenopsis conchifer	0.22	2	0.02	
Serranus cabrilla	0.18	2	0.02	
Total	960.67		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 127
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°35.88
start stop duration Lon W 16°14.44
TIME :13:29:07 13:59:39 30.5 (min) Purpose : 3
LOG : 7469.45 7471.03 1.6 Region : 1200
FDEPTH: 53 50 Gear cond.: 0
BDEPTH: 53 50 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.1 kn
Sorted : 38 Total catch: 215.04 Catch/hour: 422.61

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	133.25	9313	31.53	454
Trachurus trecae	114.30	8058	27.05	453
Todaropsis eblanae	43.24	2252	10.23	
Thorogobius sp.	37.85	13879	8.96	
Trachurus trachurus	28.30	5306	6.70	452
Loligo vulgaris	19.85	1875	4.70	
Uranoscopus polli	9.43	12	2.23	
Illex coindetii	8.06	366	1.91	
Saurida brasiliensis	4.13	307	0.98	
Trichiurus lepturus	3.93	14	0.93	
Scorpaena stephanica	3.66	35	0.86	
Zeus faber	3.54	224	0.84	
Octopus vulgaris	3.30	12	0.78	
Microchirus boscanion	2.59	189	0.61	
Citharus linguatula	2.48	106	0.59	
Pseudupeneus prayensis	2.12	12	0.50	
Arnoglossus imperialis	1.42	118	0.33	
Ophidion barbatum	1.06	12	0.25	
Monochirus hispidus	0.12	12	0.03	
Total	422.61		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 128
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°58.00
start stop duration Lon W 16°13.00
TIME :17:48:11 18:20:03 31.9 (min) Purpose : 3
LOG : 7504.82 7506.40 1.6 Region : 1200
FDEPTH: 25 30 Gear cond.: 0
BDEPTH: 25 30 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.0 kn
Sorted : 101 Total catch: 800.51 Catch/hour: 1505.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	940.44	0	62.46	
Plectorhinchus mediterraneus	445.39	502	29.58	455
Pagellus bellottii	40.06	284	2.66	457
Epinephelus aeneus	30.66	2	2.04	456
Loligo vulgaris	17.30	1354	1.15	
Pseudupeneus prayensis	5.72	41	0.38	460
Halobatrachus didactylus	5.59	19	0.37	
Scomber japonicus	5.23	85	0.35	459
Boops boops	3.95	62	0.26	
Aris parkii	3.20	8	0.21	
Trachurus trecae	2.67	62	0.18	458
Zeus faber	1.92	6	0.13	462
Todaropsis eblanae	1.69	56	0.11	
Dactylopterus volitans	1.09	2	0.07	
Sardinella aurita	0.30	9	0.02	461
Trachurus trachurus	0.26	2	0.02	
Fistularia petimba	0.19	8	0.01	
Total	1505.66		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 129
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°57.00
start stop duration Lon W 16°29.00
TIME :20:40:18 21:10:17 30.0 (min) Purpose : 3
LOG : 7524.89 7526.28 1.5 Region : 1200
FDEPTH: 185 187 Gear cond.: 0
BDEPTH: 185 187 Validity : 0
Towing dir: 0° Wire out : 480 m Speed : 3.1 kn
Sorted : 73 Total catch: 642.31 Catch/hour: 1284.61

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	577.20	20824	44.93	
Merluccius polli	228.76	1748	17.81	468
Pontinus accraensis	147.06	2280	11.45	
Helicolenus dactylopterus	100.70	18354	7.84	
Pterothrissus belloci	87.40	608	6.80	
Merluccius senegalensis	55.60	106	4.33	463
Brotula barbata	18.52	12	1.44	
Dentex angolensis	17.72	40	1.38	464
Ophidion barbatum	12.16	380	0.95	
Branchiostegus semifasciatus *	7.60	38	0.59	
Sardinella aurita	5.40	16	0.42	465
Merluccius polli	3.60	14	0.28	467
Bembrops heterurus	3.42	38	0.27	
Antigonia capros	3.42	266	0.27	
Octopus vulgaris	2.80	8	0.22	
Microchirus wittei	2.28	38	0.18	
Lophiodes kempi	2.28	38	0.18	
Torpedo marmorata	1.92	2	0.15	
Malacocephalus occidentalis	1.90	152	0.15	
Trachurus trachurus	1.50	6	0.12	466
Synagrops microlepis	1.14	38	0.09	
Umbrina canariensis	0.88	2	0.07	
Syacium micrurum	0.76	38	0.06	
Dentex macrophthalmus	0.40	2	0.03	
Synchiropus phaeton	0.19	0	0.01	
Total	1284.61		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 130
DATE :01/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 17°57.42
start stop duration Lon W 16°34.80
TIME :23:35:41 00:05:38 30.0 (min) Purpose : 3
LOG : 7537.35 7538.98 1.6 Region : 1200
FDEPTH: 349 355 Gear cond.: 0
BDEPTH: 349 355 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 3.3 kn
Sorted : 83 Total catch: 151.71 Catch/hour: 303.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	95.96	1683	31.57	
Merluccius polli	68.67	216	22.60	470
Plesionika carinata	25.40	10946	8.36	
Echelus pachyrhynchus	20.03	112	6.59	
Psenes pellucidus	15.63	22	5.14	
Zenopsis conchifer	14.30	6	4.71	
Merluccius senegalensis	10.10	4	3.32	469
Laemonema laureysi	10.02	208	3.30	
Centrophorus granulosus	7.17	4	2.36	
Raja montagui	6.33	2	2.08	
Chlorophthalmus atlanticus	4.41	128	1.45	
Lophius vaillanti	3.15	2	1.03	
Plesionika acanthurus	2.52	801	0.83	
Dicologoglossa sp.	2.48	48	0.82	
Illex coindetii	2.24	8	0.74	
Malacocephalus occidentalis	2.20	56	0.73	
Pontinus accraensis	1.68	24	0.55	
Nematocarcinus africanus	1.60	601	0.53	
Epigonus sp.	1.52	184	0.50	
Todaropsis eblanae	1.52	8	0.50	
Yarrella blackfordi	1.20	136	0.40	
Rhechias bertini	1.20	24	0.40	
Raja montagui, juvenile	0.80	16	0.26	
MYCTOPHIDAE	0.72	385	0.24	
Hoplostethus cadenati	0.64	24	0.21	
Physiculus cyanostropheis	0.32	8	0.11	
Ophidion barbatum	0.32	16	0.11	
Melanocetus johnsonii	0.32	8	0.11	
Nezumia micronychodon	0.32	120	0.11	
Lestidiops jayakari	0.24	8	0.08	
Polymetme corythaeola	0.24	8	0.08	
Galeus polli	0.24	40	0.08	
Coelorinchus coelorhincus	0.16	8	0.05	
Nezumia aequalis	0.16	8	0.05	
Synchiropus phaeton	0.08	40	0.03	
Total	303.93		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 131
DATE :02/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°21.00
start stop duration Lon W 16°37.00
TIME :08:27:38 08:57:38 30.0 (min) Purpose : 3
LOG : 7585.88 7587.40 1.5 Region : 1200
FDEPTH: 345 342 Gear cond.: 0
BDEPTH: 345 342 Validity : 0
Towing dir: 0° Wire out : 870 m Speed : 3.0 kn
Sorted : 64 Total catch: 517.42 Catch/hour: 1034.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pontinus accraensis	699.20	17180	67.57	
Merluccius polli	179.60	126	17.36	474
Todarodes sagittatus	31.20	80	3.01	
Coloconger cadenati	17.80	180	1.72	
Merluccius senegalensis	16.48	32	1.59	471
Laemonema laureysi	16.00	320	1.55	
Gephyroberyx darwini	10.60	20	1.02	
Merluccius polli	9.72	16	0.94	472
Galeus polli	8.60	120	0.83	
Epigonus sp.	6.60	200	0.64	
Raja montagui	6.24	2	0.60	
Peristedion cataphractum	5.20	20	0.50	
Hoplostethus mediterraneus	4.80	420	0.46	
Lophius vaillanti	4.68	2	0.45	
Dicologoglossa sp.	4.00	20	0.39	
Squalus megalops	3.24	2	0.31	
Trachurus trachurus	2.24	4	0.22	473
Gadella imberbis	2.20	80	0.21	
Echelus pachyrhynchus	2.04	12	0.20	
Malacocephalus laevis	1.40	20	0.14	
Coelorinchus coelorhincus	0.80	20	0.08	
Polymetme corythaeola	0.60	60	0.06	
Ophidion barbatum	0.40	60	0.04	
Chlorophthalmus atlanticus	0.40	2	0.04	
Pterothrissus belloci	0.40	20	0.04	
Yarrella blackfordi	0.40	40	0.04	
Total	1034.84		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 132
DATE :02/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°16.53
start stop duration Lon W 16°27.84
TIME :11:36:25 12:03:55 27.5 (min) Purpose : 3
LOG : 7600.93 7602.19 1.3 Region : 1200
FDEPTH: 103 100 Gear cond.: 0
BDEPTH: 103 100 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 2.7 kn
Sorted : 127 Total catch: 1029.53 Catch/hour: 2246.25

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Synagrops microlepis	1924.36	423709	85.67	
Merluccius senegalensis	137.24	314	6.11	475
Chlorophthalmus atlanticus	66.00	6327	2.94	
Brotula barbata	37.64	164	1.68	
Zeus faber	21.95	44	0.98	477
Helicolenus dactylopterus	19.09	6000	0.85	
Merluccius polli	15.62	135	0.70	476
Trachurus trecae	12.09	63	0.54	479
Todaropsis eblanae	3.82	55	0.17	
Dentex angolensis	2.97	20	0.13	478
Serranus cabrilla	1.64	55	0.07	
Raja montagui	1.13	2	0.05	
Scyliorhinus canicula	1.00	2	0.04	
Scomber japonicus	0.68	2	0.03	
Torpedo marmorata	0.68	2	0.03	
Branchiostegus semifasciatus *	0.13	2	0.01	
Total	2246.03		99.99	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 133
DATE :02/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°17.88
start stop duration Lon W 16°19.04
TIME :14:43:00 15:02:01 19.0 (min) Purpose : 3
LOG : 7614.93 7615.82 0.9 Region : 1200
FDEPTH: 51 52 Gear cond.: 0
BDEPTH: 51 52 Validity : 0
Towing dir: 0° Wire out : 175 m Speed : 2.8 kn
Sorted : 13 Total catch: 820.55 Catch/hour: 2589.85

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1490.69	357765	57.56	480
Trachurus trachurus	929.51	238337	35.89	481
Loligo vulgaris	113.62	9544	4.39	
Thorogobius sp.	38.51	6136	1.49	
Todaropsis eblanae	6.82	682	0.26	
Scomber japonicus	6.82	227	0.26	482
Octopus vulgaris	2.05	3	0.08	
Cepola macrophthalma	1.83	28	0.07	
Total	2589.85		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 134
DATE :02/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°17.31
start stop duration Lon W 16°16.54
TIME :18:21:42 18:42:21 20.7 (min) Purpose : 3
LOG : 7624.81 7625.76 1.0 Region : 1200
FDEPTH: 35 32 Gear cond.: 0
BDEPTH: 35 32 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.8 kn
Sorted : 4 Total catch: 481.46 Catch/hour: 1398.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	1162.23	0	83.08	
Trachurus trecae	94.37	11372	6.75	484
Trachurus trachurus	85.08	23579	6.08	485
Loligo vulgaris	35.33	3115	2.53	
Scomber japonicus	9.30	186	0.66	483
Halobatrachus didactylus	6.04	325	0.43	
Pagellus bellottii	3.72	325	0.27	487
Sardinella aurita	2.32	93	0.17	486
Engraulis encrasicolus	0.23	46	0.02	
Zeus faber	0.23	46	0.02	
Thorogobius sp.	0.05	46	0.00	
Fishing gears	0.00	6	0.00	
Total	1398.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 135
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°36.00
start stop duration Lon W 16°47.17
TIME :01:08:53 01:39:29 30.6 (min) Purpose : 3
LOG : 7679.76 7681.20 1.4 Region : 1200
FDEPTH: 711 748 Gear cond.: 0
BDEPTH: 711 748 Validity : 0
Towing dir: 0° Wire out : 1750 m Speed : 2.8 kn
Sorted : 114 Total catch: 277.65 Catch/hour: 544.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scymnodon ringens	98.82	71	18.15	
Trachyrincus scabrus	85.92	1757	15.78	
Nezumia micronychodon	67.65	2073	12.43	
Deania profundorum	55.37	63	10.17	
Alepocephalus rostratus	35.82	549	6.58	
Hoplostethus cadenati	30.06	178	5.52	
Lithodes sp.	26.90	41	4.94	
Yarrella blackfordi	26.08	769	4.79	
Rhechias bertini	25.39	165	4.66	
Glyphus marsupialis	21.10	29	3.88	
Laemonema laureysi	16.47	206	3.03	
Halosaurus ovenii	8.51	288	1.56	
Lophius vaillanti	8.43	12	1.55	
Psathyrocaris fragilis	7.00	1400	1.29	
Trachyscorpia cristulata	5.61	8	1.03	
Xenodermichthys copei	5.49	40	1.01	
Chaunax pictus	4.94	14	0.91	
Aristeus varidens	3.66	1400	0.67	
Nematocarcinus africanus	3.27	906	0.60	
Coloconger cadenati	1.96	10	0.36	
Bathyuroconger vicinus	1.65	41	0.30	
Bathygadus macrops	1.24	14	0.23	
Aphanopus carbo	1.22	2	0.22	
Chaceon maritae	0.99	2	0.18	
Pterycombus brama	0.51	2	0.09	
Paralomis africana	0.34	2	0.06	
Total	544.41		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 136
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°37.79
start stop duration Lon W 16°44.34
TIME :03:59:14 04:20:07 20.9 (min) Purpose : 3
LOG : 7690.32 7691.13 0.8 Region : 1200
FDEPTH: 492 501 Gear cond.: 0
BDEPTH: 492 501 Validity : 0
Towing dir: 0° Wire out : 1200 m Speed : 2.3 kn
Sorted : 34 Total catch: 143.83 Catch/hour: 413.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Laemonema laureysi	64.34	1235	15.57	
Helicolenus dactylopterus	55.72	1063	13.49	
Hoplostethus cadenati	48.83	1436	11.82	
Echelus pachyrhynchus	41.36	574	10.01	
Merluccius polli	36.76	118	8.90	488
Nezumia micronychodon	31.31	2815	7.58	
Lophius vaillanti	20.68	17	5.01	
Coloconger cadenati	16.08	29	3.89	
Rhechias bertini	15.80	345	3.82	
Trachyrincus scabrus	15.51	316	3.75	
Xenodermichthys copei	14.94	1206	3.62	
Deania profundorum	10.34	57	2.50	
Yarrella blackfordi	7.47	230	1.81	
Coelorinchus coelorhincus	6.89	316	1.67	
Dicologoglossa sp.	6.61	144	1.60	
Ebinania costaecanarie	6.03	86	1.46	
Halosaurus ovenii	5.74	345	1.39	
Raja montagui	3.53	3	0.86	
Chlorophthalmus atlanticus	2.87	86	0.70	
Trachipterus trachypterus	2.30	3	0.56	
Total	413.11		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 137
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°38.34
start stop duration Lon W 16°36.57
TIME :06:26:14 06:56:51 30.6 (min) Purpose : 3
LOG : 7701.48 7703.08 1.6 Region : 1200
FDEPTH: 180 181 Gear cond.: 0
BDEPTH: 180 181 Validity : 0
Towing dir: 0° Wire out : 450 m Speed : 3.1 kn
Sorted : 95 Total catch: 897.27 Catch/hour: 1758.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	564.34	20285	32.10	
Helicolenus dactylopterus	451.47	3794	25.68	0
Merluccius polli	387.98	2775	22.07	494
Merluccius senegalensis	138.58	329	7.88	491
Pontinus accraensis	72.11	627	4.10	
Merluccius senegalensis	28.26	29	1.61	489
Brotula barbata	19.60	8	1.11	
Dentex angolensis	18.58	59	1.06	493
Brotula barbata	15.68	63	0.89	
Trachurus trecae	14.42	63	0.82	
Helicolenus dactylopterus	14.11	3386	0.80	
Uranoscopus cadenati	7.84	16	0.45	
Aulopus cadenati	4.39	31	0.25	
Malacocephalus occidentalis	4.08	31	0.23	
OPHICHTHIDAE	3.49	6	0.20	
Pterothrissus belloci	2.82	31	0.16	
Echelus pachyrhynchus	2.51	63	0.14	
Trachurus trecae	1.92	2	0.11	490
Lophiodes kempi	1.86	2	0.11	
Synchiropus phaeton	1.57	63	0.09	
Coelorinchus coelorhincus	1.25	31	0.07	
Malacocephalus laevis	0.94	63	0.05	
Dentex macrophthalmus	0.43	4	0.02	492
Total	1758.20		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 138
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°38.93
start stop duration Lon W 16°30.16
TIME :08:21:00 08:51:12 30.2 (min) Purpose : 3
LOG : 7712.59 7714.14 1.6 Region : 1200
FDEPTH: 91 95 Gear cond.: 0
BDEPTH: 91 95 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.1 kn
Sorted : 50 Total catch: 470.90 Catch/hour: 935.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	700.93	10323	74.92	498
Todaropsis eblanae	165.93	6723	17.74	
Zeus faber	36.24	64	3.87	495
Illex coindetii	11.80	322	1.26	
Dentex angolensis	7.87	50	0.84	496
Merluccius polli	6.40	16	0.68	497
Branchiostegus semifasciatus *	4.77	6	0.51	
Alloteuthis africana	1.07	72	0.11	
Cepola macrophthalma	0.56	8	0.06	
Total	935.56		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 139
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°36.93
start stop duration Lon W 16°18.54
TIME :10:50:33 11:04:17 13.7 (min) Purpose : 3
LOG : 7731.04 7731.77 0.7 Region : 1200
FDEPTH: 30 30 Gear cond.: 0
BDEPTH: 30 30 Validity : 4
Towing dir: 0° Wire out : 120 m Speed : 3.2 kn
Sorted : 3 Total catch: 7.02 Catch/hour: 30.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudupeneus prayensis	9.35	70	30.48	501
Zeus faber	5.38	4	17.52	
Todaropsis eblanae	4.46	162	14.53	
Dentex canariensis	3.19	13	10.40	500
Aspitrigla obscura	2.14	13	6.98	
Pagrus caeruleostictus	1.44	4	4.70	499
Trachinocephalus myops	1.40	4	4.56	
Rypticus saponaceus	0.66	9	2.14	
Scorpaena stephanica	0.61	4	1.99	
Serranus scriba	0.57	9	1.85	
Antennarius pardalis	0.52	4	1.71	
Xyrichtys novacula	0.48	4	1.57	
Sphoeroides marmoratus	0.44	4	1.42	
Ophidion barbatum	0.04	4	0.14	
Total	30.68		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 140
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°0.16
start stop duration Lon W 16°23.64
TIME :14:03:05 14:23:42 20.6 (min) Purpose : 3
LOG : 7756.91 7758.02 1.1 Region : 1200
FDEPTH: 21 20 Gear cond.: 0
BDEPTH: 21 20 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.2 kn
Sorted : 7 Total catch: 6.88 Catch/hour: 20.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Aluterus heudelotii	5.12	6	25.58	
Dentex canariensis	4.48	38	22.38	502
Sepia officinalis	2.68	3	13.37	
Pagellus bellottii	2.01	58	10.03	503
Plectorhinchus mediterraneus	1.89	3	9.45	
Zeus faber	1.63	3	8.14	
Syacium micrurum	0.76	3	3.78	
Todaropsis eblanae	0.70	26	3.49	
Pseudupeneus prayensis	0.38	6	1.89	
Xyrichtys novacula	0.20	3	1.02	
Loligo vulgaris	0.17	17	0.87	
Total	20.03		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 141
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°57.13
start stop duration Lon W 16°30.50
TIME :15:57:10 16:35:32 38.4 (min) Purpose : 3
LOG : 7769.53 7771.49 2.0 Region : 1200
FDEPTH: 51 52 Gear cond.: 0
BDEPTH: 51 52 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 3.1 kn
Sorted : 33 Total catch: 200.73 Catch/hour: 313.89

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	230.91	21415	73.53	504
Thorogobius sp.	49.10	4321	15.64	
Octopus vulgaris	11.29	5	3.60	
Trachurus trachurus	9.07	921	2.89	505
Zeus faber	5.94	9	1.89	
Scomber japonicus	4.22	56	1.35	506
Trachurus trecae	2.66	14	0.85	
Pagellus bellottii	0.30	3	0.09	
Cepola macrophthalma	0.25	2	0.08	
Sphoeroides marmoratus	0.25	2	0.08	
Total	313.89		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 142
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°55.60
start stop duration Lon W 16°39.84
TIME :18:15:11 18:45:16 30.1 (min) Purpose : 3
LOG : 7783.46 7784.92 1.5 Region : 1200
FDEPTH: 104 102 Gear cond.: 0
BDEPTH: 104 102 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 2.9 kn
Sorted : 60 Total catch: 763.55 Catch/hour: 1523.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1000.53	16229	65.69	511
J E L L Y F I S H	230.36	0	15.72	
Synagrops microlepis	136.44	30878	8.96	
Merluccius senegalensis	34.81	90	2.29	507
Dentex maroccanus	26.33	287	1.73	512
Todaropsis eblanae	21.06	239	1.38	
Zeus faber	14.16	20	0.93	509
Zenopsis conchifer	11.01	335	0.72	
Helicolenus dactylopterus	8.14	3112	0.53	
Octopus vulgaris	7.72	14	0.51	
Dentex angolensis	6.56	52	0.43	510
Illex coindetii	5.74	144	0.38	
Microchirus boscanion	4.79	479	0.31	
Trichiurus lepturus	3.99	30	0.26	508
Serranus africana	1.44	48	0.09	
Serranus scriba	0.48	48	0.03	
Chlorophthalmus atlanticus	0.48	96	0.03	
Total	1523.04		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 143
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°53.88
start stop duration Lon W 16°47.22
TIME :20:30:40 21:00:59 30.3 (min) Purpose : 3
LOG : 7797.96 7799.50 1.6 Region : 1200
FDEPTH: 301 305 Gear cond.: 0
BDEPTH: 301 305 Validity : 0
Towing dir: 0° Wire out : 760 m Speed : 3.1 kn
Sorted : 30 Total catch: 253.23 Catch/hour: 501.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	218.47	5953	43.60	
Merluccius polli	59.68	222	11.91	515
Chlorophthalmus atlanticus	32.14	649	6.41	
JELLYFISH	31.66	63	6.32	
Malacocephalus occidentalis	18.21	79	3.63	
Pontinus accraensis	15.51	174	3.10	
Merluccius senegalensis	15.04	63	3.00	
OPHICHTHIDAE	14.25	32	2.84	
Lophius vaillanti	11.83	2	2.36	
Merluccius senegalensis	11.64	30	2.32	513
Todarodes sagittatus	11.08	32	2.21	
Echelus pachyrhynchus	10.45	79	2.09	
Todaropsis eblanae	9.66	111	1.93	
Laemonema laureysi	7.12	348	1.42	
Scorpaena elongata	7.12	12	1.42	
Galeus polli	5.96	95	1.17	
Ophidion barbatum	4.75	206	0.95	
Echelus myrus	4.27	14	0.85	
Gephyroberyx darwini	2.22	4	0.44	
Coelorinchus coelorhincus	1.74	47	0.35	
Zenopsis conchifer	1.62	4	0.32	
Erythrocles monodi	1.60	2	0.32	
MYCTOPHIDAE	1.58	475	0.32	
Epigonus sp.	1.58	16	0.32	
Brotula barbata	0.95	2	0.19	
Todarodes sagittatus	0.91	2	0.18	
Lestidiops sp.	0.16	16	0.03	
Total	501.11		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 144
DATE :03/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 18°53.28
start stop duration Lon W 16°54.40
TIME :23:11:29 23:43:31 32.0 (min) Purpose : 3
LOG : 7811.56 7813.15 1.6 Region : 1200
FDEPTH: 739 745 Gear cond.: 0
BDEPTH: 739 745 Validity : 0
Towing dir: 0° Wire out : 1720 m Speed : 3.0 kn
Sorted : 153 Total catch: 196.17 Catch/hour: 367.47

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Centrophorus squamosus	93.85	41	25.54	
Deania profundorum	57.13	69	15.55	
Alepocephalus rostratus	33.27	219	9.05	
Nezumia micronychodon	31.47	1276	8.56	
Centrophorus squamosus	24.16	13	6.58	
Rhechias bertini	21.54	174	5.86	
Hoplostethus cadenati	18.92	73	5.15	
Dalatias licha	14.61	11	3.98	
Centroscymnus crypthacanthus	14.35	4	3.90	
Ijimaia loppei	11.05	2	3.01	
Scymnodon ringens	8.62	2	2.34	
Lophius budegassa	8.24	2	2.24	
Deania calcea	7.76	7	2.11	
Laemonema laureysi	5.68	67	1.54	
Trachyrincus scabrus	3.15	202	0.86	
Yarrella blackfordi	2.81	112	0.76	
Alepocephalus sp.	2.59	0	0.70	
Bathyuroconger vicinus	2.02	56	0.55	
Moroteuthis robsoni	1.87	2	0.51	
Halosaurus ovenii	1.57	62	0.43	
Centroscymnus crepidater	0.67	2	0.18	
Xenodermichthys copei	0.34	11	0.09	
Photonectes parvimanus	0.34	6	0.09	
CARISTIIDAE	0.32	2	0.09	
Notacanthus bonaparte	0.28	6	0.08	
Stomias boa boa	0.28	6	0.08	
Notacanthus bonaparte	0.24	4	0.07	
Melanonus zugmayeri	0.22	6	0.06	
Melanocetus johnsonii	0.11	11	0.03	
Total	367.47		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 145
DATE :08/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°18.37
start stop duration Lon W 16°44.81
TIME :12:41:03 13:11:04 30.0 (min) Purpose : 3
LOG : 8048.86 8050.52 1.7 Region : 1200
FDEPTH: 30 33 Gear cond.: 0
BDEPTH: 30 33 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.3 kn
Sorted : 0 Total catch: 37.90 Catch/hour: 75.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pseudupeneus prayensis	26.06	198	34.40	518
Loligo vulgaris	10.19	650	13.46	
Zeus faber	7.51	14	9.92	525
Pagellus bellottii	6.64	76	8.76	517
Scomber japonicus	5.02	86	6.62	520
Scorpaena notata	3.62	36	4.78	
Dentex canariensis	3.18	16	4.19	521
Syacium micrurum	2.42	12	3.19	
Uranoscopus scaber	2.40	4	3.17	
Pagrus caeruleostictus	2.02	4	2.66	519
Trachurus trachurus	1.54	674	2.03	526
Arnoglossus imperialis	1.12	168	1.48	
Fistularia petimba	0.78	20	1.03	
Sepia bertheloti	0.66	2	0.87	
Gobidae sp. 'bars'	0.50	88	0.66	
Chilomycterus spinosus mauret.	0.44	2	0.58	
Grammoplites gruveli	0.40	16	0.53	
Aspitrigla obscura	0.32	14	0.42	
Nicholsina usta	0.24	2	0.32	
Sardina pilchardus	0.22	36	0.29	522
Sphoeroides marmoratus	0.14	6	0.18	
Engraulis encrasicolus	0.12	36	0.16	524
Sardinella aurita	0.08	8	0.11	523
Sphoeroides pachgaster	0.08	2	0.11	
Alloteuthis africana	0.04	8	0.05	
Antennarius pardalis	0.02	2	0.03	
Selene dorsalis	0.01	2	0.01	
Total	75.76		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 146
DATE :08/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°37.29
start stop duration Lon W 16°52.83
TIME :16:57:22 17:27:49 30.5 (min) Purpose : 3
LOG : 8076.75 8078.39 1.7 Region : 1200
FDEPTH: 26 27 Gear cond.: 0
BDEPTH: 26 27 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.2 kn
Sorted : 0 Total catch: 662.55 Catch/hour: 1305.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pomadasys incisus	502.86	2914	38.52	531
Pagellus bellottii	278.29	1943	21.32	528
Brachydeuterus auritus	138.29	8313	10.59	
Pagrus caeruleostictus	128.57	142	9.85	527
Mustelus mustelus	76.85	22	5.89	529
Raja miraletus	61.14	85	4.68	
Epinephelus aeneus	56.57	85	4.33	530
Trachurus trachurus	22.29	1600	1.71	
Pseudupeneus prayensis	9.71	57	0.74	
Diplodus bellottii	9.71	114	0.74	
Spondyliosoma cantharus	5.14	28	0.39	
Decapterus rhonchus	4.00	28	0.31	
Rhinobatos rhinobatos	2.96	2	0.23	
Dasyatis pastinaca	2.96	2	0.23	
Sardinella aurita	2.86	28	0.22	
Zeus faber	2.76	2	0.21	
Sardina pilchardus	0.57	28	0.04	
Total	1305.52		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 147
DATE :08/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°36.96
start stop duration Lon W 16°57.11
TIME :18:18:55 18:49:13 30.3 (min) Purpose : 3
LOG : 8083.25 8084.78 1.5 Region : 1200
FDEPTH: 72 72 Gear cond.: 0
BDEPTH: 72 72 Validity : 0
Towing dir: 0° Wire out : 175 m Speed : 3.0 kn
Sorted : 0 Total catch: 111.56 Catch/hour: 220.91

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	103.01	2602	46.63	535
Trachurus trachurus	40.51	3160	18.34	
Zeus faber	28.79	69	13.03	532
Trichiurus lepturus	16.16	250	7.31	
Raja miraletus	7.13	12	3.23	
Merluccius polli	6.18	18	2.80	533
Antigonia capros	4.99	1747	2.26	
Brotula barbata	3.09	12	1.40	
Scorpaena scrofa	2.50	53	1.13	
Pagellus bellottii	1.78	53	0.81	
GOBIIDAE	1.43	226	0.65	
Brachydeuterus auritus	1.31	416	0.59	
Brachydeuterus auritus	1.19	6	0.54	
Penaeus notialis	0.83	24	0.38	534
Syacium micrurum	0.71	89	0.32	
Pterothrissus belloci	0.65	6	0.30	
Serranus cabrilla	0.48	137	0.22	
Illex coindetii	0.06	6	0.03	
Cepola macrophthalma	0.06	6	0.03	
Zenopsis conchifer	0.06	6	0.03	
Total	220.91		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 148
DATE :08/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°32.45
start stop duration Lon W 17°0.42
TIME :19:50:33 20:20:49 30.3 (min) Purpose : 3
LOG : 8090.60 8092.10 1.5 Region : 1200
FDEPTH: 108 105 Gear cond.: 0
BDEPTH: 108 105 Validity : 0
Towing dir: 0° Wire out : 265 m Speed : 3.0 kn
Sorted : 0 Total catch: 114.42 Catch/hour: 226.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	44.40	56	19.58	536
Trachurus trecae	32.51	254	14.33	
Umbrina canariensis	27.91	71	12.31	
Merluccius polli	20.14	24	8.88	
Loligo vulgaris	16.65	50	7.34	
Scorpaena scrofa	16.17	40	7.13	
Serranus cabrilla	12.65	6264	5.58	
Brotula barbata	9.04	16	3.99	
Octopus vulgaris	7.61	26	3.36	
Dentex maroccanus	7.29	24	3.22	
Brachydeuterus auritus	6.98	1189	3.08	
Pontinus kuhlii	5.07	71	2.24	
Dentex macrophthalmus	3.49	32	1.54	
Pagellus bellottii	3.01	2	1.33	
Pterothrissus belloci	2.85	24	1.26	
Lagocephalus laevigatus	2.70	24	1.19	
Sardina pilchardus	2.38	135	1.05	
Trachurus trachurus	2.06	16	0.91	
Scomber japonicus	1.43	16	0.63	
Erythrocles monodi	1.03	8	0.45	
Syacium micrurum	0.87	214	0.38	
Laemonema laureysi	0.48	16	0.21	
Total	226.72		99.97	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 149
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°50.37
start stop duration Lon W 17°13.38
TIME :00:31:27 01:02:30 31.1 (min) Purpose : 3
LOG : 8126.03 8127.51 1.5 Region : 1200
FDEPTH: 72 69 Gear cond.: 0
BDEPTH: 72 69 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 2.9 kn
Sorted : 0 Total catch: 436.94 Catch/hour: 844.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	209.59	406	24.83	537
Merluccius senegalensis	156.59	446	18.55	543
Pterothrissus belloci	101.15	3164	11.98	
Engraulis encrasicolus	73.97	5950	8.76	539
Octopus vulgaris	66.26	95	7.85	
Umbrina canariensis	46.11	311	5.46	538
Schedophilus pemarco	32.45	95	3.84	
Merluccius polli	26.64	270	3.16	542
Arnoglossus imperialis	25.02	2596	2.96	
Dentex maroccanus	14.74	284	1.75	541
Coloconger sp.	14.33	676	1.70	
Trachurus trachurus	13.66	311	1.62	540
Synagrops microlepis	12.03	1785	1.43	
Solea vulgaris	10.82	68	1.28	
Scorpaena elongata	9.06	14	1.07	
Pontinus kuhlii	7.57	1650	0.90	
Scorpaena notata	7.03	257	0.83	
Squalus megalops	6.76	14	0.80	
Lepidotrigla cadmani	4.19	122	0.50	
Capros aper	2.30	1082	0.27	
Serranus cabrilla	1.08	14	0.13	
Citharus linguatula	0.68	27	0.08	
Sphoeroides marmoratus	0.68	14	0.08	
Gobidae sp. 'bars'	0.41	27	0.05	
Nettastoma melanurum	0.41	41	0.05	
Brotula barbata	0.41	27	0.05	
Trichiurus lepturus	0.14	27	0.02	
Total	844.06		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 150
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 19°49.96
start stop duration Lon W 17°11.93
TIME :01:43:51 02:14:19 30.5 (min) Purpose : 3
LOG : 8129.15 8130.71 1.6 Region : 1200
FDEPTH: 40 38 Gear cond.: 0
BDEPTH: 40 38 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.1 kn
Sorted : 0 Total catch: 309.12 Catch/hour: 608.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	165.11	4275	27.13	550
Zeus faber	138.23	282	22.71	544
Pontinus kuhlii	92.41	31717	15.18	
GOBIIDAE	88.32	20198	14.51	
Merluccius senegalensis	35.84	486	5.89	548
Arnoglossus imperialis	22.02	2713	3.62	
Chloroscombrus chrysurus	14.08	102	2.31	
Sphoeroides marmoratus	8.96	154	1.47	
Pagrus caeruleostictus	8.86	10	1.46	547
Coloconger sp.	7.94	666	1.30	
Dentex canariensis	6.91	26	1.14	546
Engraulis encrasicolus	6.66	563	1.09	551
Dentex maroccanus	2.82	282	0.46	549
Argyrosomus regius	2.36	2	0.39	545
Citharus linguatula	2.30	102	0.38	
Conger conger	1.54	26	0.25	
Capros aper	1.28	896	0.21	
Serranus cabrilla	0.77	77	0.13	
Synagrops microlepis	0.51	128	0.08	
Microchirus boscanion	0.51	102	0.08	
Saurida brasiliensis	0.51	26	0.08	
Lepidotrigla cadmani	0.51	77	0.08	
Grammoplites gruveli	0.26	26	0.04	
Total	608.70		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 151
DATE :09/06/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 20°2.46
start stop duration Lon W 17°9.20
TIME :04:26:52 04:37:08 10.3 (min) Purpose : 1
LOG : 8149.25 8149.28 0.0 Region : 1200
FDEPTH: 20 20 Gear cond.: 0
BDEPTH: 23 23 Validity : 0
Towing dir: 0° Wire out : 100 m Speed : 0.1 kn
Sorted : 0 Total catch: 739.02 Catch/hour: 4317.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	1308.43	6298	30.30	554
Pomadasys incisus	980.68	5077	22.71	556
Pagrus caeruleostictus	483.27	1542	11.19	553
Brachydeuterus auritus	254.49	2956	5.89	
Pomadasys jubelini	233.92	321	5.42	
Arius parkii	218.50	514	5.06	
Sardinella maderensis	194.08	1028	4.50	557
Mustelus mustelus	151.90	93	3.52	552
Diplodus bellottii	128.53	1093	2.98	555
Stromateus fiatola	116.96	129	2.71	
Plectorhinchus mediterraneus	91.26	129	2.11	
Pseudotolithus senegalensis	69.41	129	1.61	
Cynoglossus monodi	32.13	64	0.74	
Decapterus rhonchus	21.85	129	0.51	
Diplodus sargus capensis	19.28	64	0.45	
Chloroscombrus chrysurus	9.00	64	0.21	
Sphoeroides spengleri	3.86	64	0.09	
Total	4317.55		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 152
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°8.20
start stop duration Lon W 17°22.62
TIME :10:10:25 10:40:52 30.5 (min) Purpose : 3
LOG : 8174.05 8175.83 1.8 Region : 1200
FDEPTH: 32 32 Gear cond.: 0
BDEPTH: 32 32 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.5 kn
Sorted : 0 Total catch: 264.40 Catch/hour: 520.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Mustelus mustelus	168.99	136	32.44	559
Alectis alexandrina	112.43	106	21.58	
Pagellus bellottii	76.61	621	14.70	558
Trachurus trecae	36.65	638	7.03	560
Cymbium marmoratum	28.02	4	5.38	
Plectorhinchus mediterraneus	18.80	18	3.61	
Loligo vulgaris	13.30	30	2.55	
Pomadasys incisus	12.95	35	2.48	563
Raja miraletus	8.08	14	1.55	
Sardinella maderensis	7.21	53	1.38	562
Epinephelus aeneus	7.09	4	1.36	
Pseudupeneus prayensis	4.37	18	0.84	561
Dasyatis centroura	4.18	2	0.80	
Decapterus rhonchus	4.02	12	0.77	
Citharus linguatula	3.07	12	0.59	
Sepia officinalis	2.88	2	0.55	
Chloroscombrus chrysurus	2.84	12	0.54	564
Arius parkii	2.72	6	0.52	
Balistes capriscus	2.64	2	0.51	
Dentex canariensis	1.77	6	0.34	
Cymbium cymbium	1.18	2	0.23	
Trachurus trachurus	1.18	148	0.23	
Total	520.99		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 153
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°6.86
start stop duration Lon W 17°31.10
TIME :13:12:14 13:32:16 20.0 (min) Purpose : 3
LOG : 8187.94 8189.14 1.2 Region : 1200
FDEPTH: 50 51 Gear cond.: 0
BDEPTH: 50 51 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.6 kn
Sorted : 0 Total catch: 1506.15 Catch/hour: 4511.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	2549.66	334919	56.51	568
Trachurus trachurus	1677.66	40284	37.18	566
Sardina pilchardus	210.01	15475	4.65	567
Zeus faber	43.43	66	0.96	565
GOBIIDAE	17.19	1474	0.38	
Loligo vulgaris	12.28	246	0.27	
Sardinella aurita	1.23	123	0.03	
Cepola macrophthalma	0.21	3	0.00	
Total	4511.68		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 154
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°6.94
start stop duration Lon W 17°35.88
TIME :15:50:58 16:21:24 30.4 (min) Purpose : 3
LOG : 8197.17 8198.79 1.6 Region : 1200
FDEPTH: 110 110 Gear cond.: 0
BDEPTH: 110 110 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.2 kn
Sorted : 0 Total catch: 467.84 Catch/hour: 922.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	283.84	4289	30.78	569
Merluccius senegalensis	237.79	1482	25.79	571
Synagrops microlepis	131.20	36079	14.23	
Engraulis encrasicolus	99.66	11353	10.81	570
Pontinus kuhlii	67.17	32830	7.28	
Merluccius polli	46.99	662	5.10	572
Scorpaena notata	22.39	189	2.43	
Octopus vulgaris	8.08	8	0.88	
Serranus cabrilla	7.57	63	0.82	
Raja alba	4.12	2	0.45	
Zeus faber	4.10	32	0.44	
Citharus linguatula	2.52	284	0.27	
Microchirus boscanion	2.21	189	0.24	
Chlorophthalmus atlanticus	1.89	536	0.21	
Epinephelus caninus	1.36	2	0.15	
Sardina pilchardus	0.63	32	0.07	
Lepidopus caudatus	0.63	32	0.07	
Total	922.16		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 155
DATE :09/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°5.57
start stop duration Lon W 17°38.87
TIME :17:20:46 17:50:45 30.0 (min) Purpose : 3
LOG : 8202.81 8204.22 1.4 Region : 1200
FDEPTH: 283 279 Gear cond.: 0
BDEPTH: 283 279 Validity : 0
Towing dir: 0° Wire out : 700 m Speed : 2.8 kn
Sorted : 0 Total catch: 334.87 Catch/hour: 670.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	113.48	738	16.93	
Parapenaeus longirostris	63.04	901	9.41	
Galeus melastomus	57.04	368	8.51	
Plesionika carinata	56.92	10159	8.49	
Zenopsis conchifer	56.16	118	8.38	573
Hoplostethus cf tenebricus	50.97	1945	7.61	
Todarodes sp.	44.31	108	6.61	
Munida sp.	28.82	3602	4.30	
Plesionika heterocarpus	24.68	5602	3.68	
Lophius sp.	22.33	576	3.33	
Chlorophthalmus atlanticus	16.57	558	2.47	
Schedophilus pemarco	16.57	36	2.47	
Pontinus kuhlii	16.39	450	2.45	
Trachurus trecae	14.77	198	2.20	
Gephyroberyx darwini	13.29	18	1.98	
Ophisurus serpens	12.41	20	1.85	
Lophius vaillanti	10.25	2	1.53	
Pterothrissus belloci	9.73	36	1.45	
Synagrops microlepis	9.37	342	1.40	
Guentherus altivela	8.25	4	1.23	
Ophidion barbatum	7.38	396	1.10	
Echelus myrus	5.00	34	0.75	
Dalatias licha	3.64	6	0.54	
Centrophorus uyato	3.00	2	0.45	
Malacocephalus laevis	2.34	18	0.35	
Raja straeleni	1.98	18	0.30	
Octopus salutii	1.32	2	0.20	
Epigonus telescopus	0.18	18	0.03	
Total	670.19		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 156
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°25.32
start stop duration Lon W 17°47.76
TIME :02:59:58 03:30:02 30.1 (min) Purpose : 3
LOG : 8246.40 8247.95 1.6 Region : 1200
FDEPTH: 517 513 Gear cond.: 0
BDEPTH: 517 513 Validity : 0
Towing dir: 0° Wire out : 1050 m Speed : 3.1 kn
Sorted : 0 Total catch: 60.94 Catch/hour: 121.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius polli	45.09	122	37.09	574
Nezumia sp.	16.58	826	13.64	
Echelus myrus	13.29	215	10.93	
Lophius vaillanti	11.67	12	9.60	
Helicolenus dactylopterus	7.30	299	6.01	
Yarrella blackfordi	6.05	162	4.97	
Galeus polli	4.67	66	3.84	
Hoplostethus cadenati	3.71	150	3.05	
Bathysolea profundicola	2.75	102	2.26	
Ebinania sp	2.15	18	1.77	
MYCTOPHIDAE	1.74	748	1.43	
Malacocephalus occidentalis	1.08	6	0.89	
Hoplostethus mediterraneus	1.02	60	0.84	
Coelorinchus coelorhincus	0.96	48	0.79	
Halosaurus ovenii	0.78	60	0.64	
Scomber japonicus	0.60	6	0.49	
GONOSTOMATIDAE	0.48	48	0.39	
Epigonus telescopus	0.42	30	0.34	
Lampanyctus sp.	0.36	30	0.30	
Stomias boa boa	0.24	12	0.20	
Ophidion barbatum	0.18	6	0.15	
Argyropelecus aculeatus	0.12	12	0.10	
PARALEPIDIDAE	0.06	6	0.05	
Hymenocephalus italicus	0.06	6	0.05	
Xenodermichthys copei	0.06	6	0.05	
Trachyscorpia cristulata	0.06	6	0.05	
Argyropelecus affinis	0.06	6	0.05	
Polyipnus polli	0.06	6	0.05	
Total	121.60		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 157
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°24.53
start stop duration Lon W 17°43.64
TIME :05:47:11 06:17:26 30.3 (min) Purpose : 3
LOG : 8259.19 8260.87 1.7 Region : 1200
FDEPTH: 359 358 Gear cond.: 0
BDEPTH: 359 358 Validity : 0
Towing dir: 0° Wire out : 860 m Speed : 3.3 kn
Sorted : 0 Total catch: 191.35 Catch/hour: 379.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pontinus kuhlii	83.50	1289	22.00	
Coelorinchus coelorhincus	79.34	6	20.90	
Hoplostethus cf tenebricus	46.21	1349	12.18	
Merluccius polli	44.23	169	11.65	
Galeus melastomus	21.02	198	5.54	
Todarodes sagittatus	20.43	79	5.38	
Hoplostethus mediterraneus	16.66	1557	4.39	
Echelus myrus	15.87	188	4.18	
Laemonema laureysi	14.38	664	3.79	
Parapenaeus longirostris	13.29	1140	3.50	
Guentherus altivela	8.09	8	2.13	
Lophius vaillanti	4.96	79	1.31	
Dalatias licha	2.30	2	0.61	
Nezumia aequalis	2.18	89	0.57	
Paramola cuvieri	1.46	2	0.39	
Scyliorhinus canicula	1.31	2	0.34	
Todaropsis eblanae	1.19	10	0.31	
Epigonus telescopus	1.09	20	0.29	
Synagrops microlepis	0.99	129	0.26	
Schedophilus huttoni	0.91	2	0.24	
Chlorophthalmus atlanticus	0.10	10	0.03	
Total	379.53		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 158
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°24.31
start stop duration Lon W 17°40.36
TIME :07:46:12 08:16:23 30.2 (min) Purpose : 3
LOG : 8269.75 8271.23 1.5 Region : 1200
FDEPTH: 108 105 Gear cond.: 0
BDEPTH: 108 105 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 2.9 kn
Sorted : 0 Total catch: 127.65 Catch/hour: 253.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	69.66	72	27.45	575
Dentex maroccanus	48.35	660	19.05	580
Zenopsis conchifer	34.43	80	13.57	578
Trachurus trecae	19.96	111	7.87	
Serranus cabrilla	14.71	111	5.80	
Octopus vulgaris	12.72	12	5.01	
Dentex macrophthalmus	10.82	135	4.26	579
Antigonia capros	7.95	461	3.13	
Galeus polli	4.77	191	1.88	
Munida sp.	4.06	2537	1.60	
Pontinus kuhlii	3.90	1646	1.54	
Raja straeleni	3.24	2	1.28	
Chlorophthalmus atlanticus	3.02	485	1.19	
Todarodes sagittatus	3.02	8	1.19	
Scomber japonicus	2.94	16	1.16	577
Trachurus trachurus	2.62	24	1.03	576
Sphoeroides pachgaster	1.83	8	0.72	
MENIDAE	1.83	2	0.72	
PORIFERA (Sponges)	1.51	8	0.60	
Scorpaena stephanica	1.03	8	0.41	
Schedophilus pemarco	0.68	2	0.27	
Capros aper	0.40	56	0.16	
Syacium micrurum	0.32	64	0.13	
Total	253.78		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 159
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°25.25
start stop duration Lon W 17°35.47
TIME :09:31:24 10:01:44 30.3 (min) Purpose : 3
LOG : 8278.94 8280.49 1.6 Region : 1200
FDEPTH: 80 78 Gear cond.: 0
BDEPTH: 80 78 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 0 Total catch: 1303.57 Catch/hour: 2578.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1177.69	32380	45.67	
Pontinus kuhlii	336.85	30617	13.06	
Octopus vulgaris	304.21	326	11.80	
Zeus faber	276.14	457	10.71	581
GOBIIDAE	154.72	12926	6.00	
Engraulis encrasicolus	116.20	8748	4.51	
Merluccius polli	65.28	522	2.53	
Scomber japonicus	45.70	522	1.77	
Umbrina canariensis	28.72	65	1.11	
Synagrops microlepis	27.42	2742	1.06	
Scyliorhinus canicula	12.94	22	0.50	
Raja straeleni	8.74	6	0.34	
Cepola macrophthalma	7.18	196	0.28	
Capros aper	7.18	2611	0.28	
Sardina pilchardus	3.92	131	0.15	
Saurida brasiliensis	3.92	522	0.15	
Serranus cabrilla	1.96	65	0.08	
Total	2578.77		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 160
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°25.96
start stop duration Lon W 17°12.14
TIME :12:53:47 13:24:56 31.2 (min) Purpose : 3
LOG : 8304.83 8306.42 1.6 Region : 1200
FDEPTH: 31 32 Gear cond.: 0
BDEPTH: 31 32 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.1 kn
Sorted : 0 Total catch: 1325.16 Catch/hour: 2552.47

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	923.50	6170	36.18	585
Plectorhinchus mediterraneus	728.86	1400	28.56	590
Diplodus bellottii	575.63	5755	22.55	584
Dentex canariensis	88.62	331	3.47	592
Pseudupeneus prayensis	53.01	248	2.08	589
Pagrus caeruleostictus	49.70	83	1.95	593
Pomadasys incisus	28.57	123	1.12	588
Mustelus mustelus	21.88	12	0.86	582
Diplodus sargus capensis	19.88	42	0.78	591
Raja undulata	12.64	8	0.50	
Spondyliosoma cantharus	12.42	83	0.49	
Loligo vulgaris	11.09	31	0.43	
Decapterus rhonchus	8.70	123	0.34	586
Gymnura altavela	5.78	2	0.23	
Trachurus trachurus	4.56	83	0.18	587
Epinephelus aeneus	4.47	6	0.18	583
Sepia officinalis	2.04	2	0.08	
Halobatrachus didactylus *	1.12	2	0.04	
Total	2552.47		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 161
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°44.05
start stop duration Lon W 17°11.61
TIME :16:22:14 16:52:32 30.3 (min) Purpose : 3
LOG : 8334.07 8335.51 1.4 Region : 1200
FDEPTH: 38 38 Gear cond.: 0
BDEPTH: 38 38 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 2.9 kn
Sorted : 0 Total catch: 478.36 Catch/hour: 947.25

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Diplodus bellottii	389.11	4366	41.08	
Pagellus bellottii	245.94	2614	25.96	595
Pagrus caeruleostictus	71.88	119	7.59	594
Trachurus trecae	65.05	1218	6.87	
Dentex canariensis	52.87	267	5.58	
Trachurus trachurus	31.78	2228	3.36	
Sepia officinalis	24.06	30	2.54	
Diplodus sargus capensis	23.47	59	2.48	
Raja undulata	17.19	12	1.81	
Loligo vulgaris	11.29	59	1.19	
Dasyatis centroura	8.75	2	0.92	
Mustelus mustelus	2.65	2	0.28	
Raja miraletus	2.02	4	0.21	
Antennarius striatus	1.19	30	0.13	
Total	947.25		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 162
DATE :10/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 20°44.16
start stop duration Lon W 17°33.37
TIME :19:40:49 20:11:06 30.3 (min) Purpose : 3
LOG : 8359.59 8361.12 1.5 Region : 1200
FDEPTH: 81 81 Gear cond.: 0
BDEPTH: 81 81 Validity : 0
Towing dir: 0° Wire out : 210 m Speed : 3.0 kn
Sorted : 0 Total catch: 256.25 Catch/hour: 507.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	223.99	5546	44.11	
Gobidae sp. 'bars'	47.97	6670	9.45	
PORTUNIDAE	46.01	2087	9.06	
Plesionika heterocarpus	39.77	33135	7.83	
Merluccius polli	26.93	482	5.30	
Capros aper	24.25	2943	4.78	
Zeus faber	23.62	42	4.65	596
Citharus linguatula	18.37	1159	3.62	
Pontinus kuhlii	11.77	2140	2.32	
Ophidion barbatum	10.17	285	2.00	
Engraulis encrasicolus	7.49	535	1.48	
Microchirus boscanion	5.89	838	1.16	
Synagrops microlepis	4.10	250	0.81	
Trachurus trachurus	3.57	54	0.70	
Scyliorhinus canicula	2.93	6	0.58	
Syacium micrurum	2.50	268	0.49	
Raja miraletus	1.86	2	0.37	
Gobius sp	1.78	54	0.35	
Scorpaena scrofa	1.61	36	0.32	
Trachinus draco	1.03	14	0.20	
Squilla mantis	0.87	20	0.17	
Dentex maroccanus	0.71	18	0.14	
Uranoscopus cadenati	0.40	2	0.08	
Symphurus nigrescens	0.18	36	0.04	
Total	507.76		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 163
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°1.85
start stop duration Lon W 17°37.59
TIME :03:56:05 04:26:07 30.0 (min) Purpose : 3
LOG : 8411.20 8412.82 1.6 Region : 1100
FDEPTH: 309 314 Gear cond.: 0
BDEPTH: 309 314 Validity : 0
Towing dir: 0° Wire out : 740 m Speed : 3.2 kn
Sorted : 0 Total catch: 3735.66 Catch/hour: 7463.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus mediterraneus	5357.76	81171	71.78	
Pontinus kuhlii	897.02	14382	12.02	
Raja straeleni	480.20	244	6.43	
Merluccius senegalensis	321.76	1341	4.31	
Trigla lyra	97.50	488	1.31	
Schedophilus pemarco	90.19	244	1.21	
Zenopsis conchifer	70.69	122	0.95	
Galeus melastomus	62.16	366	0.83	
Coelorinchus coelorhincus	49.97	609	0.67	
Lophius vaillanti	17.98	4	0.24	
Palinurus mauritanicus	16.18	10	0.22	
Microchirus boscanion	1.70	366	0.02	
Symphurus sp.	0.72	122	0.01	
Total	7463.84		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 164
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°2.36
start stop duration Lon W 17°32.00
TIME :08:45:39 09:15:42 30.0 (min) Purpose : 3
LOG : 8429.72 8431.21 1.5 Region : 1100
FDEPTH: 106 108 Gear cond.: 0
BDEPTH: 106 108 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.0 kn
Sorted : 0 Total catch: 291.23 Catch/hour: 581.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	533.17	12781	91.66	598
Zeus faber	36.75	54	6.32	597
Scyliorhinus canicula	4.27	8	0.73	
Dentex maroccanus	2.14	12	0.37	
Lagocephalus laevigatus	1.58	8	0.27	
Merluccius senegalensis	1.28	4	0.22	
Serranus cabrilla	0.78	6	0.13	
Octopus vulgaris	0.68	2	0.12	
Microchirus boscanion	0.54	90	0.09	
Scorpaena scrofa	0.32	4	0.05	
Arnoglossus imperialis	0.18	18	0.03	
Total	581.68		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 165
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°0.59
start stop duration Lon W 17°19.61
TIME :11:53:22 12:13:35 20.2 (min) Purpose : 3
LOG : 8451.61 8452.56 1.0 Region : 1100
FDEPTH: 62 62 Gear cond.: 0
BDEPTH: 62 62 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 2.8 kn
Sorted : 0 Total catch: 767.20 Catch/hour: 2276.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	1837.39	57685	80.71	600
Trachurus trachurus	249.26	21899	10.95	601
Zeus faber	100.89	160	4.43	599
Sardina pilchardus	32.05	267	1.41	604
Loligo vulgaris	22.20	172	0.97	603
Epinephelus aeneus	13.35	3	0.59	
GOBIIDAE	5.34	801	0.23	
Scyliorhinus canicula	4.96	9	0.22	
Scomber japonicus	4.45	178	0.20	602
Dentex maroccanus	3.56	178	0.16	
Saurida brasiliensis	1.78	267	0.08	
Microchirus boscanion	0.89	89	0.04	
Ophisurus serpens	0.45	3	0.02	
Total	2276.56		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 166
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°2.91
start stop duration Lon W 17°6.06
TIME :15:44:16 16:14:35 30.3 (min) Purpose : 3
LOG : 8470.00 8471.42 1.4 Region : 1100
FDEPTH: 32 33 Gear cond.: 0
BDEPTH: 32 33 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.8 kn
Sorted : 0 Total catch: 1494.53 Catch/hour: 2957.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Diplodus bellottii	2160.95	25377	73.07	610
Engraulis encrasicolus	264.85	63277	8.96	612
Trachurus trecae	260.42	4322	8.81	609
Gymnura altavela	126.33	111	4.27	
Decapterus rhonchus	48.76	332	1.65	613
Diplodus sargus capensis	23.23	63	0.79	608
Citharus linguatula	21.06	554	0.71	
Raja miraletus	9.97	20	0.34	
Dentex canariensis	6.33	20	0.21	605
Sardina pilchardus	5.54	554	0.19	611
Raja undulata	5.15	2	0.17	
Dasyatis margarita	4.95	2	0.17	
Trachinotus ovatus	3.74	6	0.13	
Umbrina canariensis	2.26	6	0.08	
GOBIIDAE	2.22	1108	0.07	
Zeus faber	1.70	2	0.06	
Merluccius senegalensis	1.70	10	0.06	606
Dentex gibbosus	1.60	6	0.05	607
Raja microocellata	1.27	2	0.04	
Trachurus trachurus	1.11	111	0.04	
Penaeus notialis	1.06	16	0.04	
Torpedo torpedo	1.03	2	0.03	
Campogramma glaycos	0.93	2	0.03	
Sepia officinalis	0.73	2	0.02	
Solea senegalensis	0.61	2	0.02	
Total	2957.51		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 167
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°22.21
start stop duration Lon W 17°6.12
TIME :20:07:48 20:38:23 30.6 (min) Purpose : 3
LOG : 8498.98 8500.46 1.5 Region : 1100
FDEPTH: 44 42 Gear cond.: 0
BDEPTH: 44 42 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 2.9 kn
Sorted : 0 Total catch: 489.58 Catch/hour: 960.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pomadasys incisus	291.52	1334	30.35	619
Umbrina canariensis	265.51	1501	27.64	614
Diplodus bellottii	130.75	1234	13.61	618
Pagellus bellottii	85.39	467	8.89	615
Engraulis encrasicolus	75.05	8572	7.81	
Trachurus trecae	30.69	600	3.19	616
Raja miraletus	23.94	43	2.49	
Mustelus mustelus	19.33	12	2.01	617
Diplodus puntazzo	18.68	33	1.94	
Loligo vulgaris	5.61	71	0.58	
Trachurus trachurus	5.34	67	0.56	
Citharus linguatula	3.67	100	0.38	
Uranoscopus cadenati	2.43	2	0.25	
Conger conger	2.35	2	0.25	
Syacium micrurum	0.33	33	0.03	
Total	960.59		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 168
DATE :11/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°21.49
start stop duration Lon W 17°18.35
TIME :22:45:20 23:15:48 30.5 (min) Purpose : 3
LOG : 8517.11 8518.49 1.4 Region : 1100
FDEPTH: 68 67 Gear cond.: 0
BDEPTH: 68 67 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 2.7 kn
Sorted : 0 Total catch: 47.94 Catch/hour: 94.43

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	26.00	33	27.53	620
Trachurus trachurus	25.59	1873	27.10	624
Pagellus bellottii	15.36	65	16.27	626
Arnoglossus imperialis	9.63	875	10.20	
Trachurus trecae	7.68	207	8.14	621
Microchirus boscanion	5.61	774	5.94	
Merluccius senegalensis	1.30	6	1.38	623
Raja miraletus	1.18	22	1.25	
Sardina pilchardus	0.65	18	0.69	622
Citharus linguatula	0.35	12	0.38	
Trachinus vipera	0.30	6	0.31	
Engraulis encrasicolus	0.24	24	0.25	625
Dentex maroccanus	0.18	12	0.19	
Ophidion barbatum	0.12	6	0.13	
Saurida brasiliensis	0.12	18	0.13	
Capros aper	0.12	35	0.13	
Total	94.43		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 169
DATE :12/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°23.83
start stop duration Lon W 17°27.76
TIME :01:47:01 02:17:12 30.2 (min) Purpose : 3
LOG : 8534.37 8535.89 1.5 Region : 1100
FDEPTH: 126 134 Gear cond.: 0
BDEPTH: 126 134 Validity : 0
Towing dir: 0° Wire out : 320 m Speed : 3.0 kn
Sorted : 0 Total catch: 81.94 Catch/hour: 162.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	100.80	141	61.87	627
Helicolenus dactylopterus	25.13	10052	15.43	
Octopus vulgaris	7.08	16	4.34	
Todarodes sagittatus	3.38	18	2.07	
Ophidion barbatum	3.34	159	2.05	
Microchirus boscanion	3.26	557	2.00	
Raja alba	3.22	2	1.98	
Scorpaena elongata	3.10	10	1.90	
Dentex macrophthalmus	2.39	14	1.46	628
Zenopsis conchifer	1.99	24	1.22	
Macrorhamphosus scolopax	1.99	445	1.22	
Sphoeroides pachgaster	1.59	8	0.98	
Trachurus trachurus	1.43	72	0.88	
Capros aper	1.19	231	0.73	
Scyliorhinus canicula	0.91	2	0.56	
Merluccius senegalensis	0.91	2	0.56	629
Trachurus trecae	0.80	16	0.49	
Synagrops microlepis	0.32	16	0.20	
Chlorophthalmus agassizi	0.08	8	0.05	
Total	162.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 170
DATE :12/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°24.24
start stop duration Lon W 17°30.43
TIME :03:41:24 04:11:31 30.1 (min) Purpose : 3
LOG : 8542.03 8543.49 1.5 Region : 1100
FDEPTH: 326 330 Gear cond.: 0
BDEPTH: 326 330 Validity : 0
Towing dir: 0° Wire out : 820 m Speed : 2.9 kn
Sorted : 0 Total catch: 332.70 Catch/hour: 662.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	394.42	7315	59.51	
Epigonus telescopus	139.36	3992	21.03	
Galeus melastomus	40.16	263	6.06	
Merluccius senegalensis	27.01	42	4.08	630
Malacocephalus occidentalis	21.75	478	3.29	
Synagrops microlepis	20.80	454	3.14	
Coelorinchus coelorhincus	10.28	191	1.55	
Trachurus trecae	3.11	72	0.47	
Macrorhamphosus scolopax	2.15	430	0.32	
Scyliorhinus canicula	2.03	4	0.31	
Myctophidae sp. large	0.96	287	0.14	
Chlorophthalmus atlanticus	0.72	24	0.11	
Total	662.75		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 171
DATE :13/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 21°58.98
start stop duration Lon W 16°56.37
TIME :08:15:41 08:46:50 31.2 (min) Purpose : 3
LOG : 8632.34 8633.91 1.6 Region : 1100
FDEPTH: 29 28 Gear cond.: 0
BDEPTH: 29 28 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.0 kn
Sorted : 0 Total catch: 210.33 Catch/hour: 405.13

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	144.15	37152	35.58	637
Diplodus bellottii	42.38	354	10.46	636
Arius parkii	41.61	92	10.27	
Dentex canariensis	19.42	46	4.79	633
Pagrus caeruleostictus	17.50	31	4.32	634
Raja miraletus	16.68	29	4.12	
Campogramma glaycos	14.95	54	3.69	632
Sardina pilchardus	11.33	3051	2.80	638
Loligo vulgaris	11.02	13	2.72	
Gymnura altavela	10.17	4	2.51	
Stromateus fiatola	10.02	15	2.47	
Dasyatis margarita	9.90	4	2.44	
Pomatomus saltatrix	9.55	54	2.36	631
Merluccius senegalensis	7.70	618	1.90	
Cymbium marmoratum	7.59	2	1.87	
Pomadasys incisus	5.86	85	1.45	
Argyrosomus regius	5.47	8	1.35	
Zenopsis conchifer	3.22	8	0.79	
Sepia officinalis	3.14	8	0.77	
Diplodus sargus *	2.93	8	0.72	
Solea senegalensis	2.70	8	0.67	
Citharus linguatula	2.23	39	0.55	
Trachurus trecae	1.68	23	0.41	635
Halobatrachus didactylus *	1.08	4	0.27	
Umbrina canariensis	0.85	8	0.21	
Trachurus trachurus	0.77	15	0.19	
Batrachoides didactylus *	0.50	2	0.12	
Solea vulgaris	0.46	8	0.11	
Penaeus notialis	0.21	2	0.05	
GOBIIDAE	0.08	23	0.02	
Total	405.13		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 172
DATE :13/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°1.90
start stop duration Lon W 17°12.83
TIME :11:11:18 11:41:56 30.6 (min) Purpose : 3
LOG : 8653.22 8654.72 1.5 Region : 1100
FDEPTH: 61 57 Gear cond.: 0
BDEPTH: 61 57 Validity : 0
Towing dir: 0° Wire out : 170 m Speed : 2.9 kn
Sorted : 0 Total catch: 401.09 Catch/hour: 785.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	308.13	8813	39.22	642
Scomber japonicus	229.27	4676	29.18	640
Trachurus trachurus	159.45	8985	20.29	643
Pagellus bellottii	28.66	323	3.65	641
Zeus faber	24.09	24	3.07	639
Loligo vulgaris	13.52	47	1.72	645
Dasyatis centroura	9.40	4	1.20	
Spondyliosoma cantharus	6.46	22	0.82	
Raja miraletus	3.72	6	0.47	
Scyliorhinus canicula	2.55	4	0.32	
Dentex maroccanus	0.43	22	0.05	644
Total	785.68		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 173
DATE :13/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°6.28
start stop duration Lon W 17°23.56
TIME :15:22:27 15:53:28 31.0 (min) Purpose : 3
LOG : 8671.96 8673.47 1.5 Region : 1100
FDEPTH: 113 113 Gear cond.: 0
BDEPTH: 113 113 Validity : 0
Towing dir: 0° Wire out : 280 m Speed : 2.9 kn
Sorted : 0 Total catch: 72.76 Catch/hour: 140.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	48.82	805	34.69	647
Zeus faber	32.38	29	23.01	646
Macropipus rugosus	14.76	781	10.49	
Sphoeroides pachgaster	14.58	97	10.36	
Trachurus trecae	9.86	151	7.01	648
Uranoscopus scaber	5.15	8	3.66	
Capros aper	3.79	248	2.69	
Microchirus boscanion	3.13	468	2.23	
Zenopsis conchifer	1.66	4	1.18	
Illex coindetii	1.43	4	1.02	
Scyliorhinus canicula	1.35	6	0.96	
Arius parkii	1.06	2	0.76	
Todarodes sagittatus	0.81	2	0.58	
Merluccius senegalensis	0.74	2	0.52	649
Scorpaena elongata	0.39	23	0.27	
Chelidonichthys obscurus	0.31	2	0.22	
Dentex macrophthalmus	0.27	4	0.19	
Serranus cabrilla	0.19	4	0.14	
Arnoglossus imperialis	0.04	12	0.03	
Total	140.74		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 174
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°22.87
start stop duration Lon W 17°16.45
TIME :00:49:00 01:19:01 30.0 (min) Purpose : 3
LOG : 8720.07 8721.59 1.5 Region : 1100
FDEPTH: 113 112 Gear cond.: 0
BDEPTH: 113 112 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.1 kn
Sorted : 0 Total catch: 91.59 Catch/hour: 183.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	73.99	923	40.42	653
MYCTOPHIDAE	68.59	23025	37.47	
Schedophilus pemarco	7.00	20	3.82	
Ophidion barbatum	6.12	288	3.34	
Dentex macrophthalmus	4.32	60	2.36	652
Zeus faber	3.48	4	1.90	650
Synagrops microlepis	3.24	132	1.77	
Umbrina canariensis	2.80	0	1.53	
Microchirus boscanion	2.40	396	1.31	
Serranus cabrilla	1.92	36	1.05	
Conger conger	1.60	10	0.87	
Arnoglossus imperialis	1.44	156	0.79	
Dentex angolensis	1.44	12	0.79	
Maurolicus muelleri	1.20	240	0.66	
Uranoscopus scaber	1.16	4	0.63	
Pagellus acarne	0.72	2	0.39	651
Scorpaena elongata	0.60	24	0.33	
Ophisurus serpens	0.60	2	0.33	
Todarodes sagittatus	0.46	2	0.25	
Total	183.06		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 175
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°20.42
start stop duration Lon W 17°8.99
TIME :02:39:50 03:09:51 30.0 (min) Purpose : 3
LOG : 8730.58 8732.06 1.5 Region : 1100
FDEPTH: 79 76 Gear cond.: 0
BDEPTH: 79 76 Validity : 0
Towing dir: 0° Wire out : 200 m Speed : 2.9 kn
Sorted : 0 Total catch: 66.79 Catch/hour: 133.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Octopus vulgaris	46.37	70	34.74	
Trachurus trachurus	15.51	472	11.62	656
Trachurus trecae	12.31	136	9.22	655
Zeus faber	10.59	10	7.94	654
Pagellus erythrinus	7.99	16	5.99	658
Ophidion barbatum	6.16	320	4.61	
Arnoglossus imperialis	5.68	504	4.25	
Serranus cabrilla	5.60	216	4.19	
Pagellus bellottii	4.08	16	3.05	
GOBIIDAE	3.28	600	2.46	
Citharus linguatula	3.20	112	2.40	
Microchirus boscanion	2.16	392	1.62	
Scyliorhinus canicula	2.14	4	1.60	
Dentex maroccanus	1.50	64	1.12	657
Scorpaena notata	1.44	80	1.08	
Conger conger	0.96	16	0.72	
Trachinus draco	0.96	8	0.72	
Todarodes sagittatus	0.86	2	0.64	
Saurida brasiliensis	0.64	72	0.48	
Microchirus ocellatus	0.48	8	0.36	
Helicolenus dactylopterus	0.40	40	0.30	
Macrorhamphosus scolopax	0.40	120	0.30	
Cepola macrophthalma	0.32	8	0.24	
Cynoglossus canariensis	0.24	24	0.18	
Nettastoma melanurum	0.24	8	0.18	
Total	133.49		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 176
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°16.68
start stop duration Lon W 16°46.91
TIME :05:44:55 06:15:09 30.2 (min) Purpose : 3
LOG : 8753.21 8754.76 1.6 Region : 1100
FDEPTH: 31 32 Gear cond.: 0
BDEPTH: 31 32 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.1 kn
Sorted : 0 Total catch: 561.06 Catch/hour: 1113.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pomadasys incisus	515.17	3223	46.26	662
Trachurus trecae	169.78	1334	15.25	660
Pagellus bellottii	162.83	1362	14.62	659
Cymbium marmoratum	62.76	14	5.64	
Raja microocellata	28.54	12	2.56	
Loligo vulgaris	28.38	97	2.55	
Dentex canariensis	25.84	56	2.32	661
Loligo vulgaris, juvenile	20.28	973	1.82	
Halobatrachus didactylus *	20.01	56	1.80	
Raja miraletus	17.27	20	1.55	
Aspitrigla obscura	9.73	28	0.87	
Engraulis encrasicolus	9.45	1084	0.85	
Scomber japonicus	9.17	28	0.82	
Dentex gibbosus	8.61	28	0.77	
Dasyatis marmorata	8.38	2	0.75	
Zeus faber	4.84	4	0.43	
Dasyatis centroura	4.25	2	0.38	
Citharus linguatula	3.06	83	0.27	
Pythonichthys microphthalmus	2.78	28	0.25	
Sepia officinalis	1.03	2	0.09	
Octopus vulgaris	0.99	2	0.09	
Arnoglossus imperialis	0.28	28	0.02	
Sepia orbignyana	0.16	2	0.01	
Total	1113.58		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 177
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°34.96
start stop duration Lon W 16°35.77
TIME :11:08:43 11:38:50 30.1 (min) Purpose : 3
LOG : 8796.90 8798.69 1.8 Region : 1100
FDEPTH: 41 41 Gear cond.: 0
BDEPTH: 41 41 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.6 kn
Sorted : 0 Total catch: 40.01 Catch/hour: 79.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pomadasys incisus	23.82	100	29.89	669
Zeus faber	16.18	12	20.29	663
Raja undulata	12.51	4	15.70	
Raja miraletus	7.21	10	9.05	
Pagellus bellottii	6.47	36	8.12	665
Argyrosomus regius	3.98	2	5.00	664
Dentex canariensis	2.77	8	3.47	668
Dentex gibbosus	2.75	6	3.45	666
Sarpa salpa	1.75	2	2.20	
Aspitrigla obscura	0.90	6	1.12	
Spondyllosoma cantharus	0.84	2	1.05	
Diplodus bellottii	0.36	2	0.45	667
Dicologoglossa cuneata	0.10	2	0.12	
Citharus linguatula	0.06	2	0.07	
Total	79.70		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 178
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°38.64
start stop duration Lon W 17°0.41
TIME :14:44:24 15:14:29 30.1 (min) Purpose : 3
LOG : 8827.25 8828.67 1.4 Region : 1100
FDEPTH: 62 60 Gear cond.: 0
BDEPTH: 62 60 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 2.8 kn
Sorted : 0 Total catch: 26.81 Catch/hour: 53.48

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	25.93	30	48.49	670
Octopus vulgaris	9.18	2	17.16	
Scyliorhinus canicula	6.06	12	11.34	
Spondyllosoma cantharus	2.57	10	4.81	
Sphoeroides pachgaster	2.23	4	4.18	
Loligo vulgaris	2.07	4	3.88	671
Raja miraletus	1.44	6	2.69	
Aspitrigla obscura	1.42	10	2.65	
Uranoscopus scaber	1.42	2	2.65	
Pagellus bellottii	0.46	2	0.86	672
Arnoglossus imperialis	0.30	16	0.56	
Citharus linguatula	0.16	4	0.30	
Trachinus draco	0.16	2	0.30	
Microchirus boscanion	0.08	10	0.15	
Total	53.48		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 179
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°41.01
start stop duration Lon W 17°10.55
TIME :16:52:46 17:22:49 30.1 (min) Purpose : 3
LOG : 8841.41 8842.89 1.5 Region : 1100
FDEPTH: 106 104 Gear cond.: 0
BDEPTH: 106 104 Validity : 0
Towing dir: 0° Wire out : 278 m Speed : 3.0 kn
Sorted : 0 Total catch: 147.26 Catch/hour: 294.03

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	151.55	3983	51.54	674
Dentex macrophthalmus	58.10	889	19.76	678
Trachurus trecae	18.27	399	6.21	677
Zeus faber	17.49	24	5.95	673
Sphoeroides pachgaster	14.58	46	4.96	
Uranoscopus scaber	9.94	12	3.38	
Scomber japonicus	5.99	130	2.04	676
Scyliorhinus canicula	5.15	12	1.75	675
Microchirus boscanion	4.89	699	1.66	
Illex coindetii	1.30	4	0.44	
Chelidonichthys obscurus	1.20	10	0.41	
Pagellus erythrinus	0.96	2	0.33	
Zenopsis conchifer	0.94	8	0.32	
Citharus linguatula	0.90	30	0.31	
Spondyliosoma cantharus	0.76	2	0.26	
Serranus cabrilla	0.74	8	0.25	
Capros aper	0.50	160	0.17	
Arnoglossus laterna	0.30	20	0.10	
Scorpaena scrofa	0.20	10	0.07	
Cepola macrophthalma	0.16	2	0.05	
Arnoglossus imperialis	0.10	20	0.03	
Macrorhamphosus scolopax	0.02	4	0.01	
Total	294.03		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 180
DATE :14/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°41.60
start stop duration Lon W 17°12.46
TIME :18:42:14 19:12:36 30.4 (min) Purpose : 3
LOG : 8848.90 8850.48 1.6 Region : 1100
FDEPTH: 347 346 Gear cond.: 0
BDEPTH: 347 346 Validity : 0
Towing dir: 0° Wire out : 810 m Speed : 3.1 kn
Sorted : 0 Total catch: 110.69 Catch/hour: 218.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	131.46	1950	60.11	
Zenopsis conchifer	46.03	89	21.05	679
Galeus polli	6.99	77	3.20	
Merluccius senegalensis	5.27	10	2.41	680
Paramola cuvieri	5.04	2	2.30	
MYCTOPHIDAE	4.15	1037	1.90	
Bathysolea profundicola	2.81	71	1.28	
Chlorophthalmus agassizi	2.37	6	1.08	
Coelorinchus coelorhincus	2.25	47	1.03	
Hoplostethus mediterraneus	2.25	154	1.03	
Helicolenus dactylopterus, juvenile	1.78	338	0.81	
Panulirus regius	1.38	4	0.63	
Scyliorhinus canicula	1.32	10	0.61	
Todarodes sagittatus	0.95	2	0.43	
Epigonus telescopus	0.89	65	0.41	
Hoplostethus atlanticus	0.89	178	0.41	
Malacocephalus occidentalis	0.83	18	0.38	
Laemonema laureysi	0.41	18	0.19	
Lepidopus caudatus	0.36	18	0.16	
Cyttopsis rosea	0.36	6	0.16	
Nezumia aequalis	0.30	36	0.14	
Chlorophthalmus agassizi	0.18	6	0.08	
Gadella maraldi	0.18	12	0.08	
Citharus linguatula	0.12	6	0.05	
Microchirus boscanion	0.07	12	0.03	
Panulirus regius, juvenile	0.04	2	0.02	
Total	218.67		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 181
DATE :15/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°0.92
start stop duration Lon W 17°5.86
TIME :02:29:14 02:59:54 30.7 (min) Purpose : 3
LOG : 8883.83 8885.34 1.5 Region : 1100
FDEPTH: 245 235 Gear cond.: 0
BDEPTH: 245 235 Validity : 0
Towing dir: 0° Wire out : 650 m Speed : 3.0 kn
Sorted : 0 Total catch: 106.70 Catch/hour: 208.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Gnathophis mystax	78.41	1632	37.56	
Hoplostethus mediterraneus	68.08	5446	32.61	
Gephyroberyx darwini	15.89	112	7.61	
Malacocephalus occidentalis	7.04	176	3.37	
Lepidopus caudatus	5.63	47	2.70	
Galeus melastomus	5.34	59	2.56	
MYCTOPHIDAE	4.34	669	2.08	
Etmopterus spinax	3.80	110	1.82	
Scyliorhinus canicula	3.05	35	1.46	
Chlorophthalmus agassizi	2.46	117	1.18	
Merluccius merluccius	2.25	6	1.08	681
Zenopsis conchifer	2.13	6	1.02	
Scorpaena elongata	1.90	27	0.91	
Cyttopsis rosea	1.76	59	0.84	
Gadella maraldi	1.29	70	0.62	
Polymetme corythaeola	1.17	82	0.56	
Helicolenus dactylopterus	1.06	176	0.51	
Capros aper	0.82	106	0.39	
Squalus blainvillei	0.68	2	0.33	
Palinurus mauritanicus	0.59	2	0.28	
Schedophilus ovalis	0.51	2	0.24	
Solea vulgaris	0.23	2	0.11	
Epigonus telescopus	0.12	12	0.06	
Maurolicus muelleri	0.12	59	0.06	
Peristedion cataphractum	0.06	2	0.03	
Total	208.74		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 182
DATE :15/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°59.48
start stop duration Lon W 17°3.98
TIME :04:31:47 05:02:00 30.2 (min) Purpose : 3
LOG : 8892.20 8893.72 1.5 Region : 1100
FDEPTH: 110 110 Gear cond.: 0
BDEPTH: 110 110 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.0 kn
Sorted : 0 Total catch: 68.60 Catch/hour: 136.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex maroccanus	77.83	842	57.14	682
Trachurus trachurus	19.30	290	14.17	684
Zeus faber	13.78	16	10.12	
Umbrina canariensis	8.54	28	6.27	683
Lagocephalus laevigatus	4.09	12	3.00	
Echelus myrus	2.98	52	2.19	
Merluccius merluccius	2.68	2	1.97	
Scyliorhinus canicula	1.71	6	1.25	
Torpedo marmorata	1.49	2	1.09	
Ophidion barbatum	1.07	56	0.79	
Chelidonichthys gabonensis	1.07	52	0.79	
Arnoglossus laterna	0.53	99	0.39	
Arnoglossus imperialis	0.48	71	0.35	
Bathysolea profundicola	0.32	4	0.23	
Microchirus boscanion	0.28	32	0.20	
Serranus cabrilla	0.06	2	0.04	
Total	136.20		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 183
DATE :15/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°2.10
start stop duration Lon W 17°1.90
TIME :07:41:17 08:11:40 30.4 (min) Purpose : 3
LOG : 8899.63 8901.22 1.6 Region : 1100
FDEPTH: 90 94 Gear cond.: 0
BDEPTH: 90 94 Validity : 0
Towing dir: 0° Wire out : 260 m Speed : 3.2 kn
Sorted : 0 Total catch: 433.08 Catch/hour: 855.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	590.60	18221	69.05	687
Dentex maroccanus	130.23	1493	15.23	686
Zeus faber	25.44	32	2.97	
Pagellus acarne	24.88	111	2.91	685
Serranus cabrilla	22.40	304	2.62	
Spondyliosoma cantharus	19.91	55	2.33	
Sphoeroides pachgaster	15.84	24	1.85	
Illex coindetii	11.34	28	1.33	
Uranoscopus polli	8.59	8	1.00	
Scomber japonicus	5.81	83	0.68	
Raja miraletus	0.30	2	0.03	
Total	855.33		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 184
DATE :15/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 22°50.39
start stop duration Lon W 16°28.41
TIME :12:40:22 13:10:24 30.0 (min) Purpose : 3
LOG : 8937.59 8939.18 1.6 Region : 1100
FDEPTH: 33 31 Gear cond.: 0
BDEPTH: 33 31 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.2 kn
Sorted : 0 Total catch: 60.38 Catch/hour: 120.63

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardinella aurita	63.44	609	52.59	688
Diplodus bellottii	30.17	240	25.01	690
Trachurus trecae	5.04	30	4.18	694
Sepia officinalis	4.58	6	3.79	695
Campogramma glaycos	3.90	8	3.23	689
Scomber japonicus	3.50	10	2.90	693
Decapterus rhonchus	2.50	20	2.07	692
Raja miraletus	2.10	2	1.74	
Dicologoglossa cuneata	1.60	26	1.33	
Dentex canariensis	1.40	4	1.16	691
Halobatrachus didactylus *	1.06	2	0.88	
Pagellus bellottii	0.74	4	0.61	696
Chelidonichthys obscurus	0.32	2	0.27	
Citharus linguatula	0.30	4	0.25	
Total	120.63		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 185
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°21.02
start stop duration Lon W 16°59.35
TIME :00:19:16 00:49:15 30.0 (min) Purpose : 3
LOG : 9017.88 9019.44 1.6 Region : 1100
FDEPTH: 126 122 Gear cond.: 0
BDEPTH: 126 122 Validity : 0
Towing dir: 0° Wire out : 320 m Speed : 3.1 kn
Sorted : 0 Total catch: 72.20 Catch/hour: 144.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	94.56	252	65.44	
Dentex macrophthalmus	18.35	336	12.70	700
MYCTOPHIDAE	8.69	2522	6.01	
Trachurus trachurus	5.74	42	3.98	699
Zeus faber	4.46	4	3.09	697
Ophidion barbatum	3.36	210	2.33	
Scyliorhinus canicula	2.84	8	1.97	
Chelidonichthys obscurus	2.10	14	1.45	
Lepidotrigla cadmani	1.68	112	1.16	
Raja naevus	1.62	2	1.12	
Torpedo marmorata	0.46	2	0.32	
Pagellus acarne	0.34	2	0.24	698
Arnoglossus imperialis	0.14	28	0.10	
Maurolicus muelleri	0.14	98	0.10	
Total	144.50		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 186
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°21.67
start stop duration Lon W 17°1.88
TIME :02:22:20 02:52:23 30.1 (min) Purpose : 3
LOG : 9026.92 9028.62 1.7 Region : 1100
FDEPTH: 340 334 Gear cond.: 0
BDEPTH: 340 334 Validity : 0
Towing dir: 0° Wire out : 880 m Speed : 3.4 kn
Sorted : 0 Total catch: 184.85 Catch/hour: 369.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	134.42	1114	36.42	703
Hoplostethus mediterraneus	77.87	3534	21.10	
J E L L Y F I S H	59.30	5535	16.07	
Galeus melastomus	19.41	132	5.26	
Zenopsis conchifer	13.06	20	3.54	701
Lepidopus caudatus	8.47	26	2.29	
Merluccius merluccius	7.99	28	2.16	702
Etmopterus spinax	6.71	168	1.82	
Malacocephalus occidentalis	5.63	120	1.53	
Scorpaena elongata	5.27	12	1.43	
Chlorophthalmus agassizi	4.79	216	1.30	
Chaunax pictus	4.43	36	1.20	
Conger conger	4.01	2	1.09	
Dentex macrophthalmus	3.95	12	1.07	704
Illex coindetii	3.09	8	0.84	
Merluccius senegalensis	2.16	6	0.58	705
Coelorinchus coelorhincus	2.16	60	0.58	
Gnathopis mystax	2.04	60	0.55	
Synagrops microlepis	1.20	24	0.32	
Gadella imberbis	1.08	24	0.29	
Bathysolea profundicola	0.90	18	0.24	
Capros aper	0.60	24	0.16	
Palinurus mauritanicus	0.44	2	0.12	
Macrorhamphosus scolopax	0.12	12	0.03	
Total	369.08		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 187
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°47.05
start stop duration Lon W 16°50.94
TIME :09:54:39 10:24:46 30.1 (min) Purpose : 3
LOG : 9066.26 9067.69 1.4 Region : 1100
FDEPTH: 268 285 Gear cond.: 0
BDEPTH: 268 285 Validity : 0
Towing dir: 0° Wire out : 650 m Speed : 2.8 kn
Sorted : 0 Total catch: 271.96 Catch/hour: 541.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zenopsis conchifer	416.93	1329	76.96	711
MYCTOPHIDAE	49.02	19610	9.05	
Sphoeroides pachgaster	15.14	32	2.79	
Illex coindetii	11.63	32	2.15	
Capros aper	11.23	412	2.07	
Cyttopsis rosea	8.25	161	1.52	
Dentex macrophthalmus	8.01	48	1.48	706
Merluccius senegalensis	5.96	24	1.10	710
Sepia orbignyana	3.44	92	0.63	
Chlorophthalmus agassizi	2.98	229	0.55	
Ophisurus serpens	2.07	4	0.38	
Merluccius merluccius	2.06	92	0.38	709
Lepidopus caudatus	1.55	6	0.29	
Scyliorhinus stellaris	1.04	2	0.19	
Helicolenus dactylopterus	0.88	8	0.16	708
Macrorhamphosus scolopax	0.69	46	0.13	
Raja miraletus	0.44	6	0.08	
Dentex maroccanus	0.36	2	0.07	707
Scyliorhinus canicula	0.08	2	0.01	
Total	541.74		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 188
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°47.34
start stop duration Lon W 16°48.81
TIME :11:49:14 12:19:13 30.0 (min) Purpose : 3
LOG : 9073.75 9075.42 1.7 Region : 1100
FDEPTH: 112 115 Gear cond.: 0
BDEPTH: 112 115 Validity : 0
Towing dir: 0° Wire out : 320 m Speed : 3.4 kn
Sorted : 0 Total catch: 19.51 Catch/hour: 39.05

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphoeroides pachgaster	13.33	16	34.14	
Zeus faber	10.81	10	27.68	712
Zenopsis conchifer	6.34	12	16.25	713
Pagellus erythrinus	2.58	6	6.61	714
Phycis phycis	2.40	2	6.15	
Dentex gibbosus	1.30	2	3.33	715
Anthias anthias	1.26	52	3.23	
Trachurus trachurus	0.76	22	1.95	716
Scomber japonicus	0.14	4	0.36	717
J E L L Y F I S H	0.08	8	0.21	
Microchirus boscanion	0.02	2	0.05	
Arnoglossus rueppelli	0.02	2	0.05	
Total	39.05		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 189
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°43.38
start stop duration Lon W 16°45.42
TIME :14:05:14 14:35:32 30.3 (min) Purpose : 3
LOG : 9086.58 9088.16 1.6 Region : 1100
FDEPTH: 73 72 Gear cond.: 0
BDEPTH: 73 72 Validity : 0
Towing dir: 0° Wire out : 210 m Speed : 3.1 kn
Sorted : 0 Total catch: 8.68 Catch/hour: 17.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	6.22	6	36.18	718
Sphoeroides pachgaster	5.27	8	30.65	
Illex coindetii	2.18	6	12.67	
Chelidonichthys obscurus	1.49	16	8.64	
Scyliorhinus canicula	1.15	2	6.68	
Spondyliosoma cantharus	0.55	2	3.23	
Trachurus trachurus	0.20	8	1.15	720
Dentex maroccanus	0.14	2	0.81	719
Total	17.19		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 190
DATE :16/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°31.35
start stop duration Lon W 16°15.63
TIME :19:22:40 19:53:14 30.6 (min) Purpose : 3
LOG : 9127.86 9129.36 1.5 Region : 1100
FDEPTH: 31 31 Gear cond.: 0
BDEPTH: 31 31 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.9 kn
Sorted : 0 Total catch: 164.71 Catch/hour: 323.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scomber japonicus	222.85	3339	68.93	721
Trachurus trachurus	81.61	3929	25.24	722
Sardina pilchardus	7.97	96	2.46	
Trachinus araneus	3.85	69	1.19	
Loligo vulgaris	3.43	14	1.06	
Zeus faber	2.75	2	0.85	
Chelidonichthys obscurus	0.41	27	0.13	
Microchirus variegatus	0.27	27	0.08	
Monochirus hispidus	0.14	14	0.04	
Total	323.28		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 191
DATE :17/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°52.17
start stop duration Lon W 16°17.00
TIME :03:20:01 03:50:01 30.0 (min) Purpose : 3
LOG : 9178.15 9179.62 1.5 Region : 1100
FDEPTH: 47 46 Gear cond.: 0
BDEPTH: 47 46 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.9 kn
Sorted : 0 Total catch: 85.77 Catch/hour: 171.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus bellottii	67.34	522	39.24	732
Trachurus trachurus	39.01	738	22.74	723
Chelidonichthys obscurus	27.37	336	15.95	
Conger conger	14.20	4	8.28	
Scomber japonicus	4.38	108	2.55	729
Pagellus erythrinus	3.48	12	2.03	727
Trachinus draco	3.24	54	1.89	
Pomadasys incisus	2.40	12	1.40	726
Trachurus trecae	2.22	18	1.29	728
Pagrus caeruleostictus	2.04	6	1.19	724
Pagellus acarne	1.44	6	0.84	725
Zeus faber	1.38	2	0.80	730
Sepia officinalis	1.26	6	0.73	
Spondyliosoma cantharus	0.78	6	0.45	
Solea vulgaris	0.48	4	0.28	
Loligo vulgaris	0.38	2	0.22	731
Ophidion barbatum	0.12	6	0.07	
Microchirus boscanion	0.06	6	0.03	
Total	171.60		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 192
DATE :17/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 23°59.20
start stop duration Lon W 16°31.65
TIME :06:16:37 06:47:10 30.6 (min) Purpose : 3
LOG : 9198.43 9199.95 1.5 Region : 1100
FDEPTH: 68 70 Gear cond.: 0
BDEPTH: 68 70 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.0 kn
Sorted : 0 Total catch: 21.29 Catch/hour: 41.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphoeroides pachgaster	9.43	8	22.55	
Zeus faber	8.96	10	21.42	734
Pagellus erythrinus	5.64	39	13.48	
Loligo vulgaris	4.03	8	9.63	
Uranoscopus cadenati	3.73	2	8.92	
Trachurus picturatus	3.08	90	7.37	733
Dentex maroccanus	2.87	37	6.86	
Chelidonichthys obscurus	1.57	22	3.76	
Scyliorhinus canicula	1.34	2	3.19	
Trachurus trachurus	0.75	16	1.78	
Spondyliosoma cantharus	0.37	2	0.89	
Trachinus araneus	0.04	2	0.09	
Microchirus boscanion	0.02	4	0.05	
Total	41.81		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 193
DATE :17/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°5.58
start stop duration Lon W 16°43.38
TIME :10:06:12 10:36:21 30.2 (min) Purpose : 3
LOG : 9217.15 9218.78 1.6 Region : 1100
FDEPTH: 111 108 Gear cond.: 0
BDEPTH: 111 108 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.3 kn
Sorted : 0 Total catch: 8.11 Catch/hour: 16.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	10.47	3664	64.86	737
Trachurus trachurus	2.21	76	13.69	736
Sphoeroides pachgaster	1.59	4	9.86	
Zeus faber	1.33	2	8.26	735
Chelidonichthys obscurus	0.36	4	2.22	
Dentex maroccanus	0.14	2	0.86	738
Capros aper	0.02	4	0.12	
Microchirus boscanion	0.02	2	0.12	
Total	16.14		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 194
DATE :17/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°19.98
start stop duration Lon W 16°21.87
TIME :18:42:37 19:12:49 30.2 (min) Purpose : 3
LOG : 9272.23 9273.71 1.5 Region : 1100
FDEPTH: 73 74 Gear cond.: 0
BDEPTH: 73 74 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 2.9 kn
Sorted : 0 Total catch: 5.02 Catch/hour: 9.97

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	6.56	4	65.74	
Chelidonichthys obscurus	2.15	24	21.51	
Illex coindetii	0.87	2	8.76	
Scomber japonicus	0.28	2	2.79	
Trachinus araneus	0.12	2	1.20	
Total	9.97		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 195
DATE :18/06/2012 GEAR TYPE: PT NO: 7 POSITION:Lat N 24°22.77
start stop duration Lon W 15°38.44
TIME :02:24:19 02:38:34 14.3 (min) Purpose : 3
LOG : 9341.66 9342.50 0.8 Region : 1100
FDEPTH: 0 20 Gear cond.: 0
BDEPTH: 28 28 Validity : 0
Towing dir: 0° Wire out : 90 m Speed : 3.6 kn
Sorted : 0 Total catch: 29.66 Catch/hour: 124.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scomber japonicus	80.51	888	64.46	744
Sardina pilchardus	18.44	349	14.77	739
Trachurus trachurus	12.63	366	10.11	745
Zeus faber	7.33	4	5.87	743
Sardinella aurita	4.00	122	3.20	742
Trachinus draco	1.31	13	1.05	
Pagellus acarne	0.55	21	0.44	740
Engraulis encrasicolus	0.13	8	0.10	741
Total	124.88		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 196
DATE :18/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°42.29
start stop duration Lon W 16°19.44
TIME :07:15:47 07:46:22 30.6 (min) Purpose : 3
LOG : 9386.50 9388.02 1.5 Region : 1100
FDEPTH: 189 189 Gear cond.: 0
BDEPTH: 189 189 Validity : 0
Towing dir: 0° Wire out : 480 m Speed : 3.0 kn
Sorted : 0 Total catch: 659.03 Catch/hour: 1292.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus scolopax	874.32	91057	67.64	
Trachurus trachurus	125.22	1648	9.69	748
Macrorhamphosus gracilis	105.45	10435	8.16	
Dentex macrophthalmus	91.17	1538	7.05	747
Zenopsis conchifer	40.09	384	3.10	
Dentex maroccanus	31.30	714	2.42	746
Sphoeroides pachgaster	11.14	6	0.86	
Zeus faber	10.20	22	0.79	
Pagellus acarne	1.06	4	0.08	
Illex coindetii	0.98	2	0.08	
Merluccius merluccius	0.90	2	0.07	
Arnoglossus imperialis	0.55	55	0.04	
Serranus cabrilla	0.22	2	0.02	
Lepidopus caudatus	0.04	2	0.00	
Total	1292.64		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 197
DATE :18/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°45.13
start stop duration Lon W 16°24.35
TIME :09:59:02 10:29:08 30.1 (min) Purpose : 3
LOG : 9399.58 9401.10 1.5 Region : 1100
FDEPTH: 380 379 Gear cond.: 0
BDEPTH: 380 379 Validity : 0
Towing dir: 0° Wire out : 840 m Speed : 3.0 kn
Sorted : 0 Total catch: 134.70 Catch/hour: 268.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zenopsis conchifer	54.30	38	20.24	749
MYCTOPHIDAE	47.41	22918	17.67	
Parapenaeopsis atlantica	39.14	6524	14.59	
Dentex macrophthalmus	18.82	84	7.02	750
Helicolenus dactylopterus	17.98	223	6.70	753
Illex coindetii	12.95	34	4.83	
Lepidopus caudatus	12.83	60	4.78	
Schedophilus ovalis	10.36	40	3.86	
Hoplostethus mediterraneus	9.16	1265	3.41	
Parapenaeus longirostris	6.37	727	2.38	
Macrorhamphosus scolopax	6.37	677	2.38	
Merluccius merluccius	5.50	50	2.05	752
Setarches guentheri	4.48	528	1.67	
Plesionika ensis	3.98	1096	1.48	0
Abralia veranyi	1.99	388	0.74	
Scyliorhinus canicula	1.93	14	0.72	
Merluccius senegalensis	1.91	6	0.71	751
Cytopsis rosea	1.89	50	0.71	
Echelus myrus	1.49	16	0.56	
Macrorhamphosus gracilis	1.49	209	0.56	
Plesionika martia	1.29	458	0.48	
Polymetme corythaeola	1.20	169	0.45	
Bathysolea profundicola	1.00	20	0.37	
Chaunax pictus	0.85	4	0.32	
Synagrops microlepis	0.60	20	0.22	
Coelorinchus coelorhincus	0.60	219	0.22	
Raja miraletus	0.50	4	0.19	
Palinurus mauritanicus	0.49	2	0.18	
Epigonus constanciae	0.40	60	0.15	
Chlorophthalmus agassizi	0.40	40	0.15	
Grammicolepis brachiusculus	0.25	4	0.09	
Galeus polli	0.18	2	0.07	
Maurolicus muelleri	0.10	80	0.04	
Zenion sp.	0.10	20	0.04	
Total	268.33		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 198
DATE :18/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°1.62
start stop duration Lon W 16°10.72
TIME :16:32:56 17:02:49 29.9 (min) Purpose : 3
LOG : 9438.32 9439.89 1.6 Region : 1100
FDEPTH: 209 203 Gear cond.: 0
BDEPTH: 209 203 Validity : 0
Towing dir: 0° Wire out : 520 m Speed : 3.1 kn
Sorted : 0 Total catch: 88.55 Catch/hour: 177.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	42.61	104	23.96	758
Lepidopus caudatus	34.82	153	19.58	
Dentex macrophthalmus	31.49	295	17.71	756
Macrorhamphosus scolopax	21.97	900	12.35	
Zeus faber	21.81	22	12.26	757
Dentex maroccanus	11.33	90	6.37	755
Illex coindetii	3.65	10	2.06	
Trachurus trachurus	2.93	20	1.65	754
Conger conger	2.31	2	1.30	
Capros aper	1.67	40	0.94	
Sphoeroides pachgaster	1.51	4	0.85	
Mullus surmuletus	0.92	2	0.52	
Macrorhamphosus gracilis	0.22	30	0.12	
Zenopsis conchifer	0.20	2	0.11	
Raja miraletus	0.20	2	0.11	
Arnoglossus imperialis	0.10	10	0.06	
Arnoglossus laterna	0.06	12	0.03	
Citharus linguatula	0.02	2	0.01	
Total	177.81		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 199
DATE :18/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°0.60
start stop duration Lon W 16°10.00
TIME :19:47:37 20:17:51 30.2 (min) Purpose : 3
LOG : 9448.34 9449.94 1.6 Region : 1100
FDEPTH: 109 106 Gear cond.: 0
BDEPTH: 109 106 Validity : 0
Towing dir: 0° Wire out : 280 m Speed : 3.2 kn
Sorted : 0 Total catch: 193.22 Catch/hour: 383.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	250.64	7461	65.36	759
Trachurus picturatus	80.03	2292	20.87	761
Sphoeroides pachgaster	13.14	10	3.43	
Scomber japonicus	7.78	264	2.03	760
Dentex maroccanus	6.67	167	1.74	
Illex coindetii	6.63	16	1.73	
Chelidonichthys obscurus	6.39	83	1.67	
Zeus faber	3.97	4	1.04	
Macrorhamphosus scolopax	3.06	139	0.80	
Merluccius merluccius	2.58	6	0.67	
Trachurus trachurus	2.08	42	0.54	
Raja miraletus	0.26	2	0.07	
Microchirus boscanion	0.14	14	0.04	
Arnoglossus imperialis	0.14	14	0.04	
Total	383.50		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 200
DATE :18/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°55.90
start stop duration Lon W 16°1.16
TIME :21:59:48 22:30:03 30.3 (min) Purpose : 3
LOG : 9463.11 9464.64 1.5 Region : 1100
FDEPTH: 75 76 Gear cond.: 0
BDEPTH: 75 76 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.0 kn
Sorted : 0 Total catch: 187.54 Catch/hour: 371.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	280.86	13317	75.50	763
Chelidonichthys obscurus	21.66	262	5.82	
Trachinus draco	15.23	298	4.10	
Pagellus erythrinus	13.80	119	3.71	762
Trachurus picturatus	11.07	357	2.98	765
Spondyliosoma cantharus	10.00	48	2.69	
Trachinus radiatus	8.57	36	2.30	
Boops boops	4.28	71	1.15	
Scomber japonicus	3.81	48	1.02	764
Gnathophis mystax	1.23	8	0.33	
Echelus myrus	0.91	2	0.25	
Illex coindetii	0.56	2	0.15	
Total	371.98		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 201
DATE :19/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 24°39.60
start stop duration Lon W 15°20.57
TIME :04:10:29 04:40:38 30.2 (min) Purpose : 3
LOG : 9509.24 9511.03 1.8 Region : 1100
FDEPTH: 31 30 Gear cond.: 0
BDEPTH: 31 30 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.6 kn
Sorted : 0 Total catch: 114.91 Catch/hour: 228.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	103.50	1128	45.26	766
Spondyliosoma cantharus	49.03	334	21.44	
Scomber japonicus	44.86	452	19.62	767
Pagellus erythrinus	23.54	98	10.30	768
Chelidonichthys obscurus	3.62	62	1.58	
Trachinus araneus	1.95	14	0.85	
Scomber scombrus	0.98	6	0.43	
Sardina pilchardus	0.56	6	0.24	
Monochirus hispidus	0.42	56	0.18	
Scorpaena scrofa	0.14	6	0.06	
Solea senegalensis	0.07	6	0.03	
Total	228.67		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 202
DATE :19/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°6.37
start stop duration Lon W 15°27.20
TIME :12:11:14 12:41:35 30.4 (min) Purpose : 3
LOG : 9583.19 9584.83 1.7 Region : 1100
FDEPTH: 68 68 Gear cond.: 0
BDEPTH: 68 68 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.3 kn
Sorted : 0 Total catch: 123.82 Catch/hour: 244.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	109.92	1020	44.90	769
Sardina pilchardus	73.54	704	30.04	771
Scomber japonicus	27.52	174	11.24	770
Boops boops	13.76	174	5.62	
Trachurus trecae	4.27	16	1.74	772
Loligo vulgaris	4.15	12	1.70	776
Spondyliosoma cantharus	3.60	20	1.47	
Pagellus bellottii	3.50	14	1.43	775
Pagellus erythrinus	2.63	12	1.07	774
Zeus faber	1.56	2	0.64	773
Chelidonichthys obscurus	0.34	2	0.14	
Total	244.78		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 203
DATE :19/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°17.59
start stop duration Lon W 15°53.35
TIME :16:00:03 16:24:22 24.3 (min) Purpose : 3
LOG : 9614.11 9615.35 1.2 Region : 1100
FDEPTH: 140 139 Gear cond.: 0
BDEPTH: 140 139 Validity : 0
Towing dir: 0° Wire out : 350 m Speed : 3.1 kn
Sorted : 0 Total catch: 3420.91 Catch/hour: 8439.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus gracilis	4420.36	566734	52.38	
Scomber japonicus	1710.59	31174	20.27	778
Macrorhamphosus scolopax	775.36	29576	9.19	
Trachurus picturatus	675.44	19984	8.00	780
Dentex macrophthalmus	387.68	12390	4.59	781
Raja miraletus	207.83	799	2.46	
Trachurus trachurus	131.89	7594	1.56	
Chelidonichthys obscurus	63.95	400	0.76	
Merluccius merluccius	29.61	84	0.35	779
Lepidopus caudatus	19.98	400	0.24	
Zeus faber	15.47	17	0.18	777
Sphoeroides pachgaster	1.58	2	0.02	
Total	8439.75		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 204
DATE :19/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°19.15
start stop duration Lon W 16°3.98
TIME :18:14:29 18:44:48 30.3 (min) Purpose : 3
LOG : 9628.40 9630.04 1.6 Region : 1100
FDEPTH: 242 248 Gear cond.: 0
BDEPTH: 242 248 Validity : 0
Towing dir: 0° Wire out : 590 m Speed : 3.2 kn
Sorted : 0 Total catch: 551.29 Catch/hour: 1090.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	570.99	6026	52.34	785
Scomber japonicus	325.80	3491	29.86	782
Dentex macrophthalmus	70.65	790	6.48	783
Trachurus picturatus	44.47	997	4.08	784
Zenopsis conchifer, juvenile	38.23	416	3.50	
Zenopsis conchifer	17.81	16	1.63	
Merluccius merluccius	8.94	18	0.82	786
Illex coindetii	5.58	18	0.51	
Ophisurus serpens	4.47	2	0.41	
Sphoeroides pachgaster	1.64	2	0.15	
Schedophilus ovalis	1.52	4	0.14	
Antigonia capros	0.42	42	0.04	
Merluccius merluccius, juvenile	0.42	125	0.04	
Total	1090.94		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 205
DATE :19/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°35.41
start stop duration Lon W 15°47.66
TIME :22:41:52 23:11:55 30.1 (min) Purpose : 3
LOG : 9661.99 9663.57 1.6 Region : 1100
FDEPTH: 264 267 Gear cond.: 0
BDEPTH: 264 267 Validity : 0
Towing dir: 0° Wire out : 630 m Speed : 3.2 kn
Sorted : 0 Total catch: 58.73 Catch/hour: 117.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	27.67	355	23.60	787
Dentex macrophthalmus	20.37	192	17.37	794
Dentex maroccanus	15.85	88	13.52	793
Merluccius merluccius	13.58	108	11.58	792
Illex coindetii	10.54	28	8.99	
Chlorophthalmus agassizi	9.90	990	8.45	
Gnathophis mystax	5.27	128	4.50	
Zenopsis conchifer	4.39	28	3.75	788
Trachurus picturatus	2.20	48	1.87	791
Merluccius senegalensis	1.66	6	1.41	795
J E L L Y F I S H	1.12	52	0.95	
Scomber japonicus	1.00	8	0.85	790
Raja miraletus	0.88	2	0.75	
Mullus surmuletus	0.70	2	0.60	789
Schedophilus ovalis	0.64	2	0.54	
Macrorhamphosus scolopax	0.52	20	0.44	
Sphoeroides pachgaster	0.30	2	0.26	
Capros aper	0.20	40	0.17	
Arnoglossus thori	0.20	8	0.17	
Microchirus boscanion	0.08	8	0.07	
Helicolenus dactylopterus	0.08	12	0.07	
MYCTOPHIDAE	0.08	16	0.07	
Maurolicus muelleri	0.04	32	0.03	
Total	117.26		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 206
DATE :20/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°31.47
start stop duration Lon W 15°40.26
TIME :00:47:45 01:17:48 30.1 (min) Purpose : 3
LOG : 9674.03 9675.69 1.7 Region : 1100
FDEPTH: 157 154 Gear cond.: 0
BDEPTH: 157 154 Validity : 0
Towing dir: 0° Wire out : 420 m Speed : 3.3 kn
Sorted : 0 Total catch: 164.67 Catch/hour: 328.79

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	106.02	5092	32.25	799
Dentex macrophthalmus	83.26	1957	25.32	801
Macrorhamphosus scolopax	38.94	5990	11.84	
Dentex maroccanus	29.55	559	8.99	802
Chelidonichthys obscurus	21.56	180	6.56	
Gnathophis mystax	13.58	419	4.13	
Zeus faber	10.62	16	3.23	796
Sphoeroides pachgaster	3.89	2	1.18	
Macrorhamphosus gracilis	3.79	599	1.15	
Raja miraletus	3.69	6	1.12	
Pagellus acarne	3.27	12	1.00	798
Lepidotrigla cadmani	3.00	120	0.91	
Merluccius merluccius	2.80	10	0.85	797
Mullus surmuletus	1.82	8	0.55	800
Serranus cabrilla	1.40	20	0.43	
Anthias anthias	1.20	60	0.36	
Citharus linguatula	0.20	20	0.06	
Arnoglossus imperialis	0.20	40	0.06	
Total	328.79		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 207
DATE :20/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°19.17
start stop duration Lon W 15°13.90
TIME :04:46:02 05:16:17 30.3 (min) Purpose : 3
LOG : 9704.98 9706.64 1.7 Region : 1100
FDEPTH: 76 74 Gear cond.: 0
BDEPTH: 76 74 Validity : 0
Towing dir: 0° Wire out : 200 m Speed : 3.3 kn
Sorted : 0 Total catch: 156.45 Catch/hour: 310.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	150.51	2971	48.50	803
Pagellus erythrinus	39.01	666	12.57	
Boops boops	29.99	722	9.66	804
Argyrosomus regius	27.21	2	8.77	
Sardina pilchardus	20.55	208	6.62	
Pagellus acarne	15.97	69	5.15	805
Echelus myrus	5.69	42	1.83	
Trachurus trecae	4.17	28	1.34	
Scomber japonicus	3.33	14	1.07	
Diplodus sargus *	3.19	14	1.03	
Macrorhamphosus scolopax	2.50	361	0.81	
Chelidonichthys obscurus	1.94	28	0.63	
Trachinus armatus	1.94	28	0.63	
Ophidion barbatum	1.39	42	0.45	
Physis physis	0.83	14	0.27	
Serranus cabrilla	0.69	14	0.22	
Scorpaena stephanica	0.28	14	0.09	
Macrorhamphosus gracilis	0.28	42	0.09	
GOBIIDAE	0.14	56	0.04	
Microchirus ocellatus	0.14	14	0.04	
Pagellus erythrinus, juvenile	0.14	111	0.04	
Arnoglossus laterna	0.14	14	0.04	
Arnoglossus thori	0.14	14	0.04	
Microchirus boscanion	0.14	14	0.04	
Total	310.31		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 208
DATE :20/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°33.88
start stop duration Lon W 15°0.40
TIME :12:37:38 13:07:40 30.0 (min) Purpose : 3
LOG : 9765.22 9766.83 1.6 Region : 1100
FDEPTH: 89 89 Gear cond.: 0
BDEPTH: 89 89 Validity : 0
Towing dir: 0° Wire out : 240 m Speed : 3.2 kn
Sorted : 0 Total catch: 29.49 Catch/hour: 58.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus erythrinus	41.48	278	70.40	806
Pagellus bellottii	5.63	0	9.56	807
Chelidonichthys obscurus	4.94	60	8.38	
Dentex gibbosus	4.56	2	7.73	809
Trachurus trachurus	1.10	14	1.87	808
Spondyliosoma cantharus	0.88	6	1.49	
Boops boops	0.22	4	0.37	810
Microchirus boscanion	0.06	6	0.10	
Dentex maroccanus	0.04	4	0.07	811
Arnoglossus thori	0.02	2	0.03	
Total	58.92		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 209
DATE :20/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°42.60
start stop duration Lon W 15°11.71
TIME :16:21:14 16:51:19 30.1 (min) Purpose : 3
LOG : 9786.28 9787.80 1.5 Region : 1100
FDEPTH: 162 160 Gear cond.: 0
BDEPTH: 162 160 Validity : 0
Towing dir: 0° Wire out : 400 m Speed : 3.0 kn
Sorted : 0 Total catch: 234.68 Catch/hour: 468.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex maroccanus	227.09	8467	48.51	813
Trachurus trachurus	69.12	2334	14.76	815
Macrorhamphosus scolopax	41.13	8811	8.79	
Sphoeroides pachgaster	38.66	44	8.26	
Scomber japonicus	37.84	1211	8.08	814
Dentex macrophthalmus	25.87	343	5.53	812
Heptranchias perlo	9.14	2	1.95	
Serranus cabrilla	5.09	90	1.09	
Trachurus picturatus	2.83	90	0.61	
Raja miraletus	2.71	8	0.58	
Mullus surmuletus	2.07	12	0.44	
Chelidonichthys obscurus	1.76	18	0.37	
Zeus faber	1.56	4	0.33	
Zenopsis conchifer	1.50	14	0.32	
Illex coindetii	1.06	4	0.23	
Anthias anthias	0.56	14	0.12	
Citharus linguatula	0.14	14	0.03	
Total	468.11		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 210
DATE :20/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°49.50
start stop duration Lon W 15°28.13
TIME :19:40:18 20:10:45 30.4 (min) Purpose : 3
LOG : 9807.72 9809.33 1.6 Region : 1100
FDEPTH: 352 345 Gear cond.: 0
BDEPTH: 352 345 Validity : 0
Towing dir: 0° Wire out : 840 m Speed : 3.2 kn
Sorted : 0 Total catch: 135.00 Catch/hour: 266.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	48.49	367	18.22	818
Trachurus trachurus	46.95	426	17.64	817
Merluccius merluccius	43.19	35	16.23	816
Illex coindetii	33.17	154	12.47	
Zenopsis conchifer	28.58	26	10.74	
Penaeopsis serrata	19.57	5842	7.36	
Chlorophthalmus agassizi	17.98	899	6.76	
Merluccius merluccius, juvenile	9.52	2040	3.58	
Parapenaeus longirostris	3.90	704	1.47	
Schedophilus ovalis	3.07	12	1.16	
Ruvettus pretiosus	2.48	2	0.93	
Cyttopsis rosea	2.13	35	0.80	
Capros aper	1.71	83	0.64	
Helicolenus dactylopterus	1.48	30	0.56	
Sphoeroides pachgaster	1.06	2	0.40	
Macrorhamphosus scolopax	0.71	95	0.27	
Raja miraletus	0.49	2	0.19	
Malacocephalus laevis	0.41	6	0.16	
Synagrops microlepis	0.41	65	0.16	
Arnoglossus rueppelli	0.30	24	0.11	
Synchiropus phaeton	0.24	30	0.09	
Peristedion cataphractum	0.18	30	0.07	
Scorpaena stephanica, juvenile	0.06	53	0.02	
Total	266.10		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 211
DATE :21/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°2.98
start stop duration Lon W 15°11.26
TIME :04:35:55 05:06:09 30.2 (min) Purpose : 3
LOG : 9865.55 9867.04 1.5 Region : 1100
FDEPTH: 348 363 Gear cond.: 0
BDEPTH: 348 363 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 2.9 kn
Sorted : 0 Total catch: 50.18 Catch/hour: 99.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Illex coindetii	40.25	133	40.41	
Dentex macrophthalmus	29.65	224	29.77	819
Merluccius merluccius	10.40	8	10.44	821
Chlorophthalmus agassizi	8.53	639	8.57	
Echelus myrus	2.04	32	2.05	
Zenopsis conchifer	1.71	20	1.71	
Scomber japonicus	1.65	22	1.65	820
Penaeopsis serrata	1.23	333	1.24	
Schedophilus ovalis	1.13	4	1.14	
Mullus surmuletus	1.05	2	1.06	
Trachurus picturatus	0.52	12	0.52	
Merluccius merluccius, juvenile	0.50	12	0.50	
Chlorotocus crassicornis	0.26	286	0.26	
Hymenocephalus italicus	0.22	2	0.22	
Arnoglossus thori	0.20	14	0.20	
Capros aper	0.12	12	0.12	
Lophius budegassa	0.10	2	0.10	
Synchiropus phaeton	0.04	4	0.04	
GOBIIDAE	0.00	2	0.00	
Macrorhamphosus scolopax	0.00	2	0.00	
Total	99.60		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 212
DATE :21/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 25°58.13
start stop duration Lon W 15°4.25
TIME :07:35:57 08:06:52 30.9 (min) Purpose : 3
LOG : 9880.05 9881.57 1.5 Region : 1100
FDEPTH: 178 176 Gear cond.: 0
BDEPTH: 178 176 Validity : 0
Towing dir: 0° Wire out : 430 m Speed : 3.0 kn
Sorted : 0 Total catch: 78.16 Catch/hour: 151.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	36.33	1758	23.95	826
Dentex macrophthalmus	30.62	320	20.19	822
Sphoeroides pachgaster	25.81	43	17.02	
Trachurus picturatus	23.87	978	15.74	825
Dentex maroccanus	15.95	501	10.52	823
Illex coindetii	6.97	23	4.59	
Anthias anthias	4.13	122	2.73	
Merluccius merluccius	3.38	2	2.23	824
Zeus faber	1.71	2	1.13	
Zenopsis conchifer	1.46	175	0.96	
Chelidonichthys obscurus	0.87	12	0.58	
Serranus cabrilla	0.29	4	0.19	
Synchiropus phaeton	0.17	6	0.12	
Macrorhamphosus scolopax	0.06	6	0.04	
Arnoglossus imperialis	0.06	12	0.04	
Total	151.67		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 213
DATE :21/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°13.06
start stop duration Lon W 14°42.69
TIME :14:24:14 14:54:28 30.2 (min) Purpose : 3
LOG : 9940.08 9941.63 1.6 Region : 1100
FDEPTH: 119 126 Gear cond.: 0
BDEPTH: 119 126 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.1 kn
Sorted : 0 Total catch: 1.52 Catch/hour: 3.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sphoeroides pachgaster	3.00	4	99.34	
Alloteuthis subulata	0.02	4	0.66	
Total	3.02		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 214
DATE :21/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°12.81
start stop duration Lon W 14°49.18
TIME :16:11:20 16:41:27 30.1 (min) Purpose : 3
LOG : 9949.91 9951.51 1.6 Region : 1100
FDEPTH: 226 229 Gear cond.: 0
BDEPTH: 226 229 Validity : 0
Towing dir: 0° Wire out : 550 m Speed : 3.2 kn
Sorted : 0 Total catch: 79.77 Catch/hour: 158.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Zeus faber	54.66	48	34.40	827
Scomber japonicus	47.63	1526	29.97	828
Sphoeroides pachgaster	20.48	12	12.89	
Dentex macrophthalmus	14.18	167	8.93	
Dentex maroccanus	11.20	193	7.05	
Trachurus picturatus	9.58	384	6.03	829
Macrorhamphosus scolopax	0.60	110	0.38	
Zenopsis conchifer	0.24	4	0.15	
Illex coindetii	0.18	2	0.11	
Centracanthus cirrus	0.16	2	0.10	
Total	158.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 215
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°26.76
start stop duration Lon W 14°28.01
TIME :00:29:46 00:50:47 21.0 (min) Purpose : 3
LOG : 9997.85 9998.85 1.0 Region : 1100
FDEPTH: 116 112 Gear cond.: 0
BDEPTH: 116 112 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 2.9 kn
Sorted : 0 Total catch: 12.92 Catch/hour: 36.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Gnathophis mystax	6.34	254	17.18	
Illex coindetii	5.91	17	16.02	
J E L L Y F I S H	5.85	365	15.87	
Dentex macrophthalmus	4.97	60	13.47	830
Dentex maroccanus	3.48	97	9.44	831
Microchirus boscanion	2.23	405	6.04	
Glossanodon leioglossus	1.77	354	4.80	
Ophidion barbatum	1.48	71	4.02	
Pagellus acarne	1.20	6	3.25	832
MYCTOPHIDAE	1.20	265	3.25	
Spondyliosoma cantharus	0.60	3	1.63	
Trachurus mediterraneus	0.57	3	1.55	
Trachurus picturatus	0.31	6	0.85	834
Trachinus pellegrini	0.29	9	0.77	
Trachurus trachurus	0.26	3	0.70	833
Arnoglossus imperialis	0.23	37	0.62	
Scorpaena notata	0.14	3	0.39	
Maurolicus muelleri	0.06	11	0.15	
Total	36.88		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 216
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°27.12
start stop duration Lon W 14°25.01
TIME :04:01:34 04:31:36 30.0 (min) Purpose : 3
LOG : 10.74 12.30 1.6 Region : 1100
FDEPTH: 76 78 Gear cond.: 0
BDEPTH: 76 78 Validity : 0
Towing dir: 0° Wire out : 210 m Speed : 3.1 kn
Sorted : 0 Total catch: 388.11 Catch/hour: 775.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex maroccanus	390.21	4735	50.32	835
Dentex angolensis	244.56	2697	31.54	836
Trachurus trachurus	41.96	1618	5.41	837
Pagellus acarne	30.27	120	3.90	841
Uranoscopus scaber	17.90	10	2.31	
Loligo vulgaris	10.63	26	1.37	839
Zeus faber	8.59	8	1.11	
Dasyatis margarita	6.07	2	0.78	
Pagellus erythrinus	5.03	16	0.65	843
Diplodus vulgaris	3.60	12	0.46	
Scyliorhinus canicula	3.00	4	0.39	
Dentex gibbosus	2.90	6	0.37	842
Umbrina canariensis	2.64	8	0.34	840
Pomatomus saltatrix	2.62	2	0.34	
Mullus surmuletus	2.26	8	0.29	838
Conger conger	1.32	2	0.17	
Solea vulgaris	0.72	6	0.09	
Sardinella aurita	0.62	2	0.08	
Serranus cabrilla	0.20	2	0.03	
Trachinus draco	0.20	2	0.03	
Belone belone gracilis	0.12	2	0.02	
Trachinus vipera	0.04	2	0.01	
Total	775.44		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 217
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°35.92
start stop duration Lon W 14°6.24
TIME :10:03:59 10:34:57 31.0 (min) Purpose : 3
LOG : 53.34 54.90 1.6 Region : 1100
FDEPTH: 59 58 Gear cond.: 0
BDEPTH: 59 58 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.0 kn
Sorted : 0 Total catch: 19.20 Catch/hour: 37.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	10.50	364	28.23	851
Octopus vulgaris	7.25	2	19.48	
Sardina pilchardus	5.27	475	14.17	844
Pagellus erythrinus	4.53	33	12.19	850
Spondyliosoma cantharus	2.52	17	6.77	
Chelidonichthys obscurus	2.21	37	5.94	
Pagellus bellottii	1.59	12	4.27	849
Diplodus vulgaris	0.99	6	2.66	847
Scomber scombrus	0.72	8	1.93	
Boops boops	0.41	6	1.09	846
Merluccius merluccius	0.39	2	1.04	848
Dentex gibbosus	0.27	2	0.73	
Scomber japonicus	0.25	4	0.68	845
Solea vulgaris	0.17	2	0.47	
Microchirus boscanion	0.08	15	0.21	
Arnoglossus thori	0.04	10	0.10	
Dentex maroccanus	0.02	2	0.05	
Total	37.20		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 218
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°40.37
start stop duration Lon W 14°9.69
TIME :11:45:33 12:15:48 30.3 (min) Purpose : 3
LOG : 62.14 63.74 1.6 Region : 1100
FDEPTH: 111 111 Gear cond.: 0
BDEPTH: 111 111 Validity : 0
Towing dir: 0° Wire out : 300 m Speed : 3.2 kn
Sorted : 0 Total catch: 143.07 Catch/hour: 283.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	104.33	2880	36.77	857
Trachurus picturatus	63.07	2102	22.23	856
Dentex maroccanus	22.61	228	7.97	859
Scomber scombrus	21.82	238	7.69	
Dentex macrophthalmus	21.72	327	7.65	858
Zeus faber	14.56	18	5.13	852
Scomber japonicus	13.29	307	4.68	855
Sphoeroides pachgaster	8.21	20	2.89	
Pagellus erythrinus	5.45	18	1.92	854
Microchirus boscanion	2.98	496	1.05	
Merluccius merluccius	2.88	2	1.01	853
Spondyliosoma cantharus	1.17	6	0.41	
Zenopsis conchifer	0.40	10	0.14	
Cepola pauciradiatus	0.40	10	0.14	
Arnoglossus thori	0.40	60	0.14	
Capros aper	0.30	89	0.10	
Centracanthus cirrus	0.20	30	0.07	
Total	283.78		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 219
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°42.24
start stop duration Lon W 14°10.34
TIME :13:13:43 13:43:46 30.1 (min) Purpose : 3
LOG : 67.24 68.81 1.6 Region : 1100
FDEPTH: 312 358 Gear cond.: 0
BDEPTH: 312 358 Validity : 0
Towing dir: 0° Wire out : 840 m Speed : 3.1 kn
Sorted : 0 Total catch: 138.39 Catch/hour: 276.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	124.19	35481	44.95	
Merluccius merluccius	55.67	82	20.15	861
Dentex macrophthalmus	43.53	180	15.75	863
Zenopsis conchifer	37.82	10	13.69	862
Illex coindetii	7.99	22	2.89	
Merluccius senegalensis	3.75	8	1.36	860
Schedophilus ovalis	1.24	6	0.45	
Lepidopus caudatus	1.00	40	0.36	
Helicolenus dactylopterus	0.40	40	0.14	
Microchirus boscanion	0.20	40	0.07	
Maurolicus muelleri	0.20	80	0.07	
Chlorophthalmus agassizi	0.20	20	0.07	
Chaunax pictus	0.14	2	0.05	
Total	276.32		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 220
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 26°51.96
start stop duration Lon W 13°47.19
TIME :18:38:33 19:08:51 30.3 (min) Purpose : 3
LOG : 113.40 114.98 1.6 Region : 1100
FDEPTH: 96 94 Gear cond.: 0
BDEPTH: 96 94 Validity : 0
Towing dir: 0° Wire out : 240 m Speed : 3.1 kn
Sorted : 0 Total catch: 243.42 Catch/hour: 482.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	159.05	5133	33.00	
Dentex maroccanus	157.47	1679	32.67	864
Dentex angolensis	51.80	349	10.75	865
Dentex macrophthalmus	44.67	523	9.27	869
Pagellus acarne	22.34	111	4.63	867
Pagellus erythrinus	17.58	79	3.65	
Boops boops	6.65	174	1.38	
Mullus surmuletus	6.50	48	1.35	868
Illex coindetii	5.35	10	1.11	
Merluccius merluccius	2.26	2	0.47	866
Sphoeroides pachgaster	2.26	6	0.47	
Scomber japonicus	2.06	63	0.43	
Zeus faber	1.54	4	0.32	
Loligo vulgaris	1.23	4	0.25	
Chelidonichthys obscurus	1.11	16	0.23	
Centracanthus cirrus	0.16	16	0.03	
Total	482.02		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 221
DATE :22/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°3.81
start stop duration Lon W 13°33.76
TIME :23:25:43 23:55:43 30.0 (min) Purpose : 3
LOG : 151.99 153.52 1.5 Region : 1100
FDEPTH: 70 70 Gear cond.: 0
BDEPTH: 70 70 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.1 kn
Sorted : 0 Total catch: 49.08 Catch/hour: 98.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	36.88	1604	37.57	871
Pagellus acarne	12.88	44	13.12	870
GOBIIDAE	9.52	2380	9.70	
Merluccius senegalensis	6.52	32	6.64	873
Chelidonichthys obscurus	6.44	152	6.56	
Spondyliosoma cantharus	3.24	20	3.30	
Arnoglossus imperialis	3.08	576	3.14	
Citharus linguatula	3.08	308	3.14	
Octopus vulgaris	2.92	4	2.97	
Solea vulgaris	2.50	44	2.55	
Conger conger	2.40	24	2.44	
Microchirus boscanion	1.72	288	1.75	
Scomber japonicus	1.56	24	1.59	878
Dentex maroccanus	1.04	72	1.06	872
Pagellus bellottii	0.84	8	0.86	877
Torpedo marmorata	0.72	2	0.73	
Diplodus vulgaris	0.58	2	0.59	876
Sardina pilchardus	0.52	0	0.53	879
Capros aper	0.48	112	0.49	
Zenopsis conchifer	0.44	2	0.45	874
Scomber scombrus	0.40	4	0.41	
Zeus faber	0.16	2	0.16	875
Ophidion barbatum	0.16	8	0.16	
Lepidotrigla cadmani	0.08	12	0.08	
Total	98.16		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 222
DATE :23/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°6.32
start stop duration Lon W 13°40.20
TIME :01:14:17 01:44:19 30.0 (min) Purpose : 3
LOG : 161.55 163.10 1.6 Region : 1100
FDEPTH: 106 104 Gear cond.: 0
BDEPTH: 106 104 Validity : 0
Towing dir: 0° Wire out : 280 m Speed : 3.1 kn
Sorted : 0 Total catch: 71.13 Catch/hour: 142.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	32.01	845	22.52	881
Dentex maroccanus	25.17	462	17.71	888
Dentex macrophthalmus	13.07	174	9.19	887
Macrorhamphosus scolopax	12.59	941	8.86	
Dentex angolensis	12.59	198	8.86	889
MYCTOPHIDAE	8.21	2188	5.78	
Spondyliosoma cantharus	6.11	30	4.30	
Macrorhamphosus gracilis	5.39	480	3.80	
Gnathophis mystax	5.03	96	3.54	
Illex coindetii	3.10	6	2.18	
Arnoglossus imperialis	2.46	408	1.73	
Pagellus acarne	2.10	12	1.48	884
Schedophilus ovalis	1.68	6	1.18	
Ophidion barbatum	1.68	84	1.18	
Citharus linguatula	1.56	66	1.10	
Zenopsis conchifer	1.48	16	1.04	886
Dentex gibbosus	1.36	2	0.96	885
Zeus faber	1.32	12	0.93	880
Sphoeroides pachgaster	1.10	4	0.77	
Microchirus boscanion	0.96	138	0.67	
Scomber scombrus	0.60	6	0.42	
Mullus surmuletus	0.56	4	0.39	882
Capros aper	0.48	102	0.34	
Merluccius senegalensis	0.38	2	0.27	883
Scyliorhinus canicula	0.30	2	0.21	
Lepidopus caudatus	0.30	6	0.21	
Trachinus pellegrini	0.18	6	0.13	
Trachurus picturatus	0.12	6	0.08	
Glossanodon leioglossus	0.12	18	0.08	
Maurolicus muelleri	0.12	60	0.08	
Total	142.12		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 223
DATE :28/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°23.53
start stop duration Lon W 13°39.01
TIME :10:07:17 10:28:08 20.9 (min) Purpose : 3
LOG : 457.50 458.54 1.1 Region : 1100
FDEPTH: 103 105 Gear cond.: 0
BDEPTH: 103 105 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.0 kn
Sorted : 0 Total catch: 2313.64 Catch/hour: 6657.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus picturatus	3127.02	125079	46.97	890
Scomber japonicus	1917.87	73885	28.81	891
Macrorhamphosus gracilis	912.95	165954	13.71	
Sphoeroides pachgaster	255.63	947	3.84	
Macrorhamphosus scolopax	213.70	22858	3.21	
Boops boops	85.21	947	1.28	896
Pagellus acarne	50.04	271	0.75	895
Dentex macrophthalmus	43.28	1217	0.65	894
Dentex maroccanus	22.99	406	0.35	893
Zenopsis conchifer	14.88	135	0.22	
Zeus faber	7.42	3	0.11	892
Octopus vulgaris	5.61	3	0.08	
Microchirus boscanion	1.35	135	0.02	
Total	6657.96		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 224
DATE :28/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°19.16
start stop duration Lon W 13°25.60
TIME :12:25:52 12:55:56 30.1 (min) Purpose : 3
LOG : 474.40 475.96 1.6 Region : 1100
FDEPTH: 31 30 Gear cond.: 0
BDEPTH: 31 30 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.1 kn
Sorted : 0 Total catch: 340.08 Catch/hour: 678.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardina pilchardus	576.26	35804	84.92	897
Trachurus trachurus	69.24	6708	10.20	898
Scomber scombrus	9.98	80	1.47	
Chelidonichthys obscurus	7.78	80	1.15	
Loligo vulgaris	4.33	68	0.64	905
Octopus vulgaris	4.31	6	0.64	
Scorpaena notata	1.40	20	0.21	
Scomber japonicus	0.88	2	0.13	903
Pagellus acarne	0.80	100	0.12	901
Engraulis encrasicolus	0.80	60	0.12	902
Dentex gibbosus	0.62	2	0.09	904
Merluccius senegalensis	0.58	4	0.09	899
Citharus linguatula	0.40	20	0.06	
Arnoglossus thori	0.40	40	0.06	
Microchirus boscanion	0.20	20	0.03	
GOBIIDAE	0.20	60	0.03	
Merluccius merluccius	0.18	2	0.03	900
Dicologoglossa cuneata	0.12	4	0.02	
Callionymus lyra	0.12	2	0.02	
Total	678.58		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 225
DATE :28/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°37.13
start stop duration Lon W 13°16.17
TIME :15:34:10 16:04:44 30.6 (min) Purpose : 3
LOG : 496.77 498.45 1.7 Region : 1100
FDEPTH: 32 32 Gear cond.: 0
BDEPTH: 32 32 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.3 kn
Sorted : 0 Total catch: 747.18 Catch/hour: 1466.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	488.20	51	33.30	
Sardina pilchardus	433.62	25073	29.58	909
Trachurus trachurus	403.01	47749	27.49	
Scomber scombrus	59.43	332	4.05	
Diplodus bellottii	42.34	816	2.89	907
Engraulis encrasicolus	20.41	1862	1.39	908
Trachurus trecae	10.97	26	0.75	910
Merluccius senegalensis	3.36	29	0.23	906
GOBIIDAE	1.79	638	0.12	
Loligo vulgaris	1.45	20	0.10	911
Dicologoglossa cuneata	0.77	26	0.05	
Citharus linguatula	0.26	51	0.02	
Merluccius merluccius	0.18	2	0.01	
Trachinus draco	0.16	2	0.01	
Conger conger	0.10	2	0.01	
Total	1466.02		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 226
DATE :28/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°41.66
start stop duration Lon W 13°24.28
TIME :17:29:55 18:00:21 30.4 (min) Purpose : 3
LOG : 508.27 509.83 1.6 Region : 1100
FDEPTH: 97 92 Gear cond.: 0
BDEPTH: 97 92 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.1 kn
Sorted : 0 Total catch: 619.24 Catch/hour: 1220.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus gracilis	750.64	150128	61.48	
Macrorhamphosus scolopax	240.63	36095	19.71	
Pagellus acarne	79.86	373	6.54	914
Dentex macrophthalmus	58.56	586	4.80	912
Dentex maroccanus	24.49	426	2.01	916
Spondyliosoma cantharus	23.42	106	1.92	
Scorpaena scrofa	15.44	53	1.26	
Diplodus vulgaris	10.12	53	0.83	
Octopus vulgaris	5.17	2	0.42	
Merluccius senegalensis	3.37	18	0.28	915
Lithognathus mormyrus	2.07	2	0.17	
Raja miraletus	2.03	2	0.17	
Pagellus erythrinus	1.40	4	0.11	
Arnoglossus imperialis	1.06	373	0.09	
Trachurus trachurus	1.06	53	0.09	
Merluccius merluccius	0.53	2	0.04	913
Citharus linguatula	0.53	160	0.04	
Zeus faber	0.34	4	0.03	
Serranus cabrilla	0.26	4	0.02	
Total	1220.98		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 227
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°0.84
start stop duration Lon W 13°17.40
TIME :01:56:35 02:16:47 20.2 (min) Purpose : 3
LOG : 551.78 552.86 1.1 Region : 1100
FDEPTH: 110 109 Gear cond.: 0
BDEPTH: 110 109 Validity : 0
Towing dir: 0° Wire out : 280 m Speed : 3.2 kn
Sorted : 0 Total catch: 822.74 Catch/hour: 2441.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus gracilis	2061.13	315228	84.43	
Dentex macrophthalmus	214.30	1228	8.78	917
Dentex angolensis	84.63	546	3.47	919
Dentex maroccanus	24.57	273	1.01	918
Macrorhamphosus scolopax	23.20	2866	0.95	
Trachurus trachurus	9.55	409	0.39	922
Ophidion barbatum	8.19	546	0.34	
Lepidotrigla cadmani	5.46	273	0.22	
Gnathopis mystax	2.73	136	0.11	
Mullus surmuletus	1.57	9	0.06	921
Zeus faber	1.54	6	0.06	920
Citharus linguatula	1.36	136	0.06	
Centracanthus cirrus	1.36	136	0.06	
Sphoeroides pachgaster	0.92	3	0.04	
Umbrina canariensis	0.62	3	0.03	923
Scorpaena notata	0.21	3	0.01	
Total	2441.36		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 228
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 27°55.95
start stop duration Lon W 13°4.89
TIME :05:27:17 05:57:36 30.3 (min) Purpose : 3
LOG : 569.80 571.55 1.8 Region : 1100
FDEPTH: 47 47 Gear cond.: 0
BDEPTH: 47 47 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.5 kn
Sorted : 0 Total catch: 71.14 Catch/hour: 140.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	77.97	6679	55.38	924
Loligo vulgaris	12.63	49	8.97	929
Sardina pilchardus	8.63	129	6.13	926
Alloteuthis africana	8.55	693	6.07	
Sepia orbignyana	6.43	53	4.57	
GOBIIDAE	6.08	3042	4.32	
Scomber scombrus	5.68	42	4.03	925
Chelidonichthys obscurus	5.01	57	3.56	
Pagellus acarne	2.93	8	2.08	927
Octopus vulgaris	1.60	2	1.14	
Echelus myrus	1.54	18	1.10	
Microchirus sp.	0.93	24	0.66	
Torpedo marmorata	0.67	4	0.48	
Pagellus erythrinus	0.59	6	0.42	928
Spondyliosoma cantharus	0.57	18	0.41	
Citharus linguatula	0.53	30	0.38	
Loligo vulgaris, juvenile	0.30	129	0.21	
Chelidonichthys gabonensis	0.08	2	0.06	
Ophidion barbatum	0.06	2	0.04	
Total	140.78		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 229
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°1.85
start stop duration Lon W 12°41.57
TIME :09:59:04 10:29:31 30.5 (min) Purpose : 3
LOG : 599.03 600.81 1.8 Region : 1100
FDEPTH: 39 42 Gear cond.: 0
BDEPTH: 39 42 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.5 kn
Sorted : 0 Total catch: 142.02 Catch/hour: 279.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	112.08	7176	40.05	931
Sardina pilchardus	90.92	6739	32.49	932
Scomber japonicus	43.51	343	15.55	930
Spondyliosoma cantharus	27.90	189	9.97	
J E L L Y F I S H	3.07	177	1.10	
GOBIIDAE	1.42	177	0.51	
Dicologoglossa cuneata	0.59	12	0.21	
Merluccius merluccius	0.24	12	0.08	
Microchirus boscanion	0.12	12	0.04	
Total	279.84		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 230
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°9.36
start stop duration Lon W 12°48.14
TIME :11:58:38 12:29:08 30.5 (min) Purpose : 3
LOG : 611.42 612.97 1.6 Region : 1100
FDEPTH: 71 71 Gear cond.: 0
BDEPTH: 71 71 Validity : 0
Towing dir: 0° Wire out : 190 m Speed : 3.0 kn
Sorted : 0 Total catch: 89.44 Catch/hour: 175.89

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	154.97	5589	88.10	938
Spondyliosoma cantharus	5.01	28	2.85	
Scomber japonicus	3.17	98	1.80	935
Pagellus bellottii	2.85	12	1.62	934
Zeus faber	2.67	14	1.52	933
Pagellus erythrinus	2.08	14	1.19	937
Citharus linguatula	1.38	39	0.78	
Trachurus picturatus	0.98	29	0.56	
Merluccius merluccius	0.85	4	0.48	936
Echelus myrus	0.83	2	0.47	
Chelidonichthys obscurus	0.51	8	0.29	
Arnoglossus imperialis	0.20	29	0.11	
Dentex maroccanus	0.16	6	0.09	
Dentex angolensis	0.14	2	0.08	
Microchirus boscanion	0.10	20	0.06	
Total	175.89		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 231
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°19.78
start stop duration Lon W 13°0.02
TIME :14:38:41 15:09:16 30.6 (min) Purpose : 3
LOG : 629.44 630.99 1.6 Region : 1100
FDEPTH: 108 108 Gear cond.: 0
BDEPTH: 108 108 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.1 kn
Sorted : 0 Total catch: 5352.50 Catch/hour: 10498.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus gracilis	7345.54	1204805	69.97	
Trachurus trachurus	2098.73	172605	19.99	941
Macrorhamphosus scolopax	343.25	45603	3.27	
Scomber japonicus	343.25	16672	3.27	939
Trachurus picturatus	220.66	12749	2.10	940
Dentex angolensis	73.55	981	0.70	942
Centracanthus cirrus	73.55	6375	0.70	943
Total	10498.53		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 232
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°39.44
start stop duration Lon W 12°51.80
TIME :18:31:55 19:02:47 30.9 (min) Purpose : 3
LOG : 654.61 656.37 1.8 Region : 1100
FDEPTH: 347 353 Gear cond.: 0
BDEPTH: 347 353 Validity : 0
Towing dir: 0° Wire out : 800 m Speed : 3.4 kn
Sorted : 0 Total catch: 43.01 Catch/hour: 83.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
MYCTOPHIDAE	45.97	15320	54.99	
Merluccius merluccius	9.37	76	11.21	
Trachurus trachurus	8.16	72	9.77	944
Zenopsis conchifer	7.31	10	8.74	945
Zenion leptolepis	3.50	272	4.19	
Parapenaeus longirostris	3.30	480	3.95	
Dentex macrophthalmus	1.63	10	1.95	
Plesionika ensis	1.26	593	1.51	
Schedophilus ovalis	0.99	4	1.19	
Chlorophthalmus atlanticus	0.53	58	0.64	
Capros aper	0.53	49	0.64	
Coelorinchus coelorhincus	0.29	4	0.35	
Cyttopsis rosea	0.19	14	0.23	
Plesionika heterocarpus	0.15	286	0.17	
Lepidopus caudatus	0.15	10	0.17	
Synagrops microlepis	0.10	19	0.12	
Helicolenus dactylopterus, juvenile	0.10	33	0.12	
GONOSTOMATIDAE	0.05	4	0.06	
Total	83.59		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 233
DATE :29/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°31.23
start stop duration Lon W 12°48.46
TIME :20:47:08 21:17:44 30.6 (min) Purpose : 3
LOG : 668.30 669.83 1.5 Region : 1100
FDEPTH: 124 124 Gear cond.: 0
BDEPTH: 124 124 Validity : 0
Towing dir: 0° Wire out : 320 m Speed : 3.0 kn
Sorted : 0 Total catch: 70.35 Catch/hour: 137.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus scolopax	48.47	5588	35.14	
Macrorhamphosus gracilis	15.88	1176	11.51	
Dentex maroccanus	14.47	235	10.49	948
Zeus faber	13.29	14	9.64	
Illex coindetii	5.73	24	4.15	
Mullus surmuletus	5.06	24	3.67	947
Trachurus trachurus	4.59	212	3.33	946
Scorpaena angolensis	4.27	4	3.10	
Raja miraletus	4.20	14	3.04	
Dentex macrophthalmus	3.53	59	2.56	949
Chelidonichthys obscurus	3.29	182	2.39	
Centracanthus cirrus	3.18	229	2.30	
Trachurus picturatus	2.94	12	2.13	
Ophidion barbatum	2.00	129	1.45	
Arnoglossus imperialis	1.24	176	0.90	
Zenopsis conchifer	1.06	4	0.77	
Pagellus acarne	1.06	6	0.77	
Dentex angolensis	0.80	6	0.58	
Citharus linguatula	0.71	59	0.51	
Anthias anthias	0.65	6	0.47	
Pagellus erythrinus	0.59	4	0.43	
Trachinus pellegrini	0.53	12	0.38	
Microchirus frechkopi	0.24	6	0.17	
Microchirus boscanion	0.18	41	0.13	
Total	137.94		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 234
DATE :30/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°14.74
start stop duration Lon W 12°32.20
TIME :00:01:39 00:21:40 20.0 (min) Purpose : 3
LOG : 692.27 693.35 1.1 Region : 1100
FDEPTH: 59 56 Gear cond.: 0
BDEPTH: 59 56 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.2 kn
Sorted : 0 Total catch: 136.85 Catch/hour: 410.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	266.73	15345	65.03	950
Diplodus vulgaris	32.97	210	8.04	955
Scomber japonicus	15.58	539	3.80	951
Pagellus acarne	13.64	135	3.32	958
Dentex maroccanus	9.89	75	2.41	961
Trigloporus lastoviza	6.44	150	1.57	
Scorpaena notata	6.14	195	1.50	
Trachinus draco	6.14	465	1.50	
Serranus cabrilla	6.14	105	1.50	
Spondyliosoma cantharus	4.50	45	1.10	
Sardina pilchardus	4.20	135	1.02	956
Mullus surmuletus	3.96	18	0.96	953
Solea vulgaris	3.90	48	0.95	
Pomadasys incisus	3.75	45	0.91	
Umbrina canariensis	3.75	15	0.91	954
Dentex angolensis	2.70	30	0.66	960
Pagellus bellottii	2.25	45	0.55	962
Zeus faber	2.22	15	0.54	952
Illex coindetii	2.19	12	0.53	
Arnoglossus imperialis	2.10	285	0.51	
Citharus linguatula	1.95	75	0.47	
Sepia orbignyana	1.53	12	0.37	
Loligo vulgaris	1.38	6	0.34	
Pagellus erythrinus	1.23	3	0.30	957
Octopus vulgaris	1.23	3	0.30	
Boops boops	0.90	15	0.22	959
Microchirus boscanion	0.75	105	0.18	
Trisopterus luscus	0.66	6	0.16	
Uranoscopus scaber	0.60	15	0.15	
Ophidion barbatum	0.45	15	0.11	
Conger conger	0.30	15	0.07	
Total	410.14		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 235
DATE :30/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°16.98
start stop duration Lon W 12°4.92
TIME :06:11:39 06:42:15 30.6 (min) Purpose : 3
LOG : 738.67 740.32 1.7 Region : 1100
FDEPTH: 48 50 Gear cond.: 0
BDEPTH: 48 50 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.2 kn
Sorted : 0 Total catch: 546.74 Catch/hour: 1072.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scomber japonicus	518.82	8647	48.40	963
Trachurus trachurus	424.94	21600	39.64	964
Sardina pilchardus	89.29	1800	8.33	965
Trachinus draco	21.18	600	1.98	
Octopus vulgaris	8.08	2	0.75	
Pagellus acarne	3.65	12	0.34	966
Spondyliosoma cantharus	2.35	12	0.22	
Loligo vulgaris	1.20	22	0.11	
Sepia officinalis	1.08	2	0.10	
Merluccius senegalensis	0.61	2	0.06	
Arnoglossus imperialis	0.35	71	0.03	
Ophidion barbatum	0.35	35	0.03	
Pagellus erythrinus	0.14	2	0.01	
Total	1072.04		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 236
DATE :30/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°28.10
start stop duration Lon W 12°13.50
TIME :08:32:52 09:03:10 30.3 (min) Purpose : 3
LOG : 753.52 755.04 1.5 Region : 1100
FDEPTH: 91 89 Gear cond.: 0
BDEPTH: 91 89 Validity : 0
Towing dir: 0° Wire out : 225 m Speed : 3.0 kn
Sorted : 0 Total catch: 560.13 Catch/hour: 1109.17

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	715.60	48798	64.52	967
Trachurus trachurus	291.96	17871	26.32	972
Scomber japonicus	57.94	1947	5.22	
Octopus vulgaris	7.37	4	0.66	
Zeus faber	6.89	36	0.62	
Dentex macrophthalmus	6.36	61	0.57	970
Merluccius merluccius	4.48	30	0.40	973
Sepia officinalis	4.20	6	0.38	
Citharus linguatula	3.39	263	0.31	
Dentex maroccanus	2.20	24	0.20	968
Dentex angolensis	1.56	8	0.14	969
Raja miraletus	1.50	12	0.14	
Spondyliosoma cantharus	1.43	6	0.13	
Loligo vulgaris	1.35	6	0.12	
Zenopsis conchifer	1.03	6	0.09	
Microchirus boscanion	0.75	188	0.07	
Pagellus erythrinus	0.67	2	0.06	971
Arnoglossus imperialis	0.38	75	0.03	
Serranus cabrilla	0.10	2	0.01	
Callionymus maculatus	0.02	2	0.00	
Total	1109.17		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 237
DATE :30/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°43.29
start stop duration Lon W 12°30.32
TIME :13:58:06 14:29:16 31.2 (min) Purpose : 3
LOG : 784.44 786.04 1.6 Region : 1100
FDEPTH: 132 132 Gear cond.: 0
BDEPTH: 132 132 Validity : 0
Towing dir: 0° Wire out : 340 m Speed : 3.1 kn
Sorted : 0 Total catch: 77.32 Catch/hour: 148.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus gracilis	126.89	36250	85.26	
Sphoeroides pachgaster	6.74	4	4.53	
Citharus linguatula	2.93	262	1.97	
Microchirus boscanion	2.93	647	1.97	
Macrorhamphosus scolopax	2.77	462	1.86	
Illex coindetii	2.62	8	1.76	
Arnoglossus imperialis	1.39	185	0.93	
Zeus faber	1.35	4	0.91	974
Dentex maroccanus	0.38	13	0.26	975
Lepidotrigla cadmani	0.31	31	0.21	
Loligo vulgaris	0.27	2	0.18	
Trachinus pellegrini	0.15	15	0.10	
Trachurus picturatus	0.12	6	0.08	976
Total	148.84		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 238
DATE :30/06/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°48.31
start stop duration Lon W 12°32.12
TIME :15:50:24 16:21:22 31.0 (min) Purpose : 3
LOG : 791.74 793.35 1.6 Region : 1100
FDEPTH: 338 325 Gear cond.: 0
BDEPTH: 338 325 Validity : 0
Towing dir: 0° Wire out : 800 m Speed : 3.1 kn
Sorted : 0 Total catch: 105.24 Catch/hour: 203.89

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	97.80	821	47.97	977
Penaeopsis serrata	36.89	9222	18.09	
Plesionika heterocarpus	16.74	992	8.21	
Zenopsis conchifer	12.32	8	6.04	
Trachurus trachurus	10.00	136	4.90	978
Macrorhamphosus gracilis	5.97	1209	2.93	
Parapenaeus longirostris	5.73	1589	2.81	
Chlorophthalmus atlanticus	5.19	480	2.55	
Lepidopus caudatus	4.49	101	2.20	
Zenion leptolepis	1.86	101	0.91	
Capros aper	1.32	209	0.65	
Helicolenus dactylopterus	1.24	31	0.61	
Zeus faber	1.16	6	0.57	
Schedophilus ovalis	0.81	4	0.40	
Dentex macrophthalmus	0.54	15	0.27	
Raja miraletus	0.50	2	0.25	
Macrorhamphosus scolopax	0.39	85	0.19	
Synchiropus phaeton	0.23	15	0.11	
Peristedion cataphractum	0.15	39	0.08	
Citharus linguatula	0.15	23	0.08	
Helicolenus dactylopterus, juvenile	0.08	15	0.04	
Synagrops microlepis	0.08	8	0.04	
Arnoglossus imperialis	0.08	15	0.04	
Maurolicus muelleri	0.08	62	0.04	
Trachurus picturatus	0.08	2	0.04	
Total	203.89		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 239
DATE :01/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°36.65
start stop duration Lon W 11°57.72
TIME :00:27:35 00:57:56 30.4 (min) Purpose : 3
LOG : 843.67 845.20 1.5 Region : 1100
FDEPTH: 75 73 Gear cond.: 0
BDEPTH: 75 73 Validity : 0
Towing dir: 0° Wire out : 210 m Speed : 3.0 kn
Sorted : 0 Total catch: 97.90 Catch/hour: 193.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	100.82	6554	52.09	980
Engraulis encrasicolus	37.84	2270	19.55	979
Trachinus draco	24.20	605	12.50	
Trachinus pellegrini	10.32	427	5.33	
Arnoglossus thori	5.46	676	2.82	
Microchirus boscanion	3.32	415	1.72	
Scomber japonicus	1.90	47	0.98	981
Chelidonichthys obscurus	1.78	36	0.92	
Uranoscopus scaber	1.66	12	0.86	
J E L L Y F I S H	1.54	83	0.80	
Torpedo marmorata	1.46	4	0.76	
Citharus linguatula	0.95	24	0.49	
Gnathophis mystax	0.91	14	0.47	
Solea vulgaris	0.47	8	0.25	
Lepidotrigla cadmani	0.24	12	0.12	
Ophidion barbatum	0.24	12	0.12	
Raja miraletus	0.24	2	0.12	
Peristedion cataphractum	0.12	12	0.06	
Microchirus ocellatus	0.08	4	0.04	
Total	193.54		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 240
DATE :01/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°19.43
start stop duration Lon W 11°40.38
TIME :03:51:28 04:11:53 20.4 (min) Purpose : 3
LOG : 869.04 870.11 1.1 Region : 1100
FDEPTH: 40 40 Gear cond.: 0
BDEPTH: 40 40 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.1 kn
Sorted : 0 Total catch: 18.82 Catch/hour: 55.30

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachinus draco	32.14	423	58.13	
Maja squinado	5.94	3	10.73	
Trachurus trachurus	4.08	250	7.39	982
Scomber japonicus	3.29	38	5.95	983
Engraulis encrasicolus	2.73	235	4.94	985
Dicologoglossa cuneata	1.94	71	3.51	
Octopus vulgaris	1.20	3	2.18	
Chelidonichthys obscurus	0.82	35	1.49	
Sardina pilchardus	0.65	21	1.17	984
GOBIIDAE	0.59	141	1.06	
Callionymus sp.	0.59	15	1.06	
Torpedo marmorata	0.35	3	0.64	
Arnoglossus imperialis	0.29	32	0.53	
Microchirus boscanion	0.29	3	0.53	
Diplodus bellottii	0.29	6	0.53	
Ophidion barbatum	0.06	3	0.11	
Peristedion cataphractum	0.03	3	0.05	
Total	55.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 241
DATE :01/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°31.23
start stop duration Lon W 11°25.20
TIME :07:42:54 08:18:48 35.9 (min) Purpose : 3
LOG : 901.16 903.14 2.0 Region : 1100
FDEPTH: 37 37 Gear cond.: 0
BDEPTH: 37 37 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 3.3 kn
Sorted : 0 Total catch: 452.20 Catch/hour: 755.77

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sardina pilchardus	552.67	19046	73.13	989
Engraulis encrasicolus	122.14	9219	16.16	988
Scomber japonicus	29.48	304	3.90	987
Scomber scombrus	28.08	187	3.72	
Trachurus trachurus	14.74	515	1.95	986
Trachinus draco	4.21	23	0.56	
Merluccius senegalensis	3.28	23	0.43	
Diplodus vulgaris	1.17	23	0.15	
Total	755.77		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 242
DATE :01/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°47.37
start stop duration Lon W 11°4.65
TIME :12:54:00 13:14:06 20.1 (min) Purpose : 3
LOG : 940.18 941.20 1.0 Region : 1100
FDEPTH: 61 65 Gear cond.: 0
BDEPTH: 61 65 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.0 kn
Sorted : 0 Total catch: 100.07 Catch/hour: 298.72

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Scomber japonicus	238.06	16663	79.69	996
Sardina pilchardus	24.18	881	8.09	991
Pagellus acarne	21.64	60	7.24	990
Trachurus trachurus	11.94	761	4.00	992
Trachurus mediterraneus	1.25	3	0.42	
Spondyliosoma cantharus	0.66	3	0.22	
Conger conger	0.42	3	0.14	
Zeus faber	0.18	6	0.06	993
Pagellus bellottii	0.15	3	0.05	994
Engraulis encrasicolus	0.15	30	0.05	
Merluccius merluccius	0.09	9	0.03	995
Total	298.72		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 243
DATE :01/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°48.52
start stop duration Lon W 10°59.68
TIME :13:52:13 14:22:56 30.7 (min) Purpose : 3
LOG : 945.52 947.23 1.7 Region : 1100
FDEPTH: 38 37 Gear cond.: 0
BDEPTH: 38 37 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.3 kn
Sorted : 0 Total catch: 308.07 Catch/hour: 601.70

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Sardina pilchardus	174.80	6113	29.05	
Engraulis encrasicolus	131.84	11957	21.91	
Pomadasys incisus	92.38	1662	15.35	
Diplodus bellottii	75.00	1666	12.46	
Trachurus trachurus	53.32	3398	8.86	
J E L L Y F I S H	41.99	4	6.98	
Scomber japonicus	14.45	1016	2.40	
Scomber scombrus	7.81	59	1.30	
Trachinus draco	5.86	39	0.97	
Pagellus acarne	3.32	234	0.55	
Merluccius senegalensis	0.49	2	0.08	
Diplodus vulgaris	0.43	2	0.07	
Total	601.70		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 244
DATE :03/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 28°58.94
start stop duration Lon W 10°41.84
TIME :12:33:24 13:03:25 30.0 (min) Purpose : 3
LOG : 1258.59 1260.16 1.6 Region : 1100
FDEPTH: 50 49 Gear cond.: 0
BDEPTH: 50 49 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 3.1 kn
Sorted : 0 Total catch: 330.03 Catch/hour: 659.63

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trachurus	358.36	34571	54.33	997
Engraulis encrasicolus	165.33	14840	25.06	998
Sardina pilchardus	76.95	3188	11.67	1002
Diplodus bellottii	46.17	660	7.00	999
Loligo vulgaris	5.74	12	0.87	1000
Scomber japonicus	2.38	16	0.36	1001
Loligo vulgaris, juvenile	1.21	110	0.18	
Chelidonichthys obscurus	0.86	12	0.13	
Cepola macrophthalma	0.58	10	0.09	
Merluccius senegalensis	0.44	2	0.07	
Conger conger	0.42	4	0.06	
Zeus faber	0.36	4	0.05	
Alloteuthis subulata	0.31	176	0.05	
Octopus vulgaris	0.27	2	0.04	
Merluccius merluccius	0.26	2	0.04	
Total	659.63		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 245
DATE :03/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°7.05
start stop duration Lon W 10°48.22
TIME :14:35:25 15:05:51 30.4 (min) Purpose : 3
LOG : 1271.69 1273.26 1.6 Region : 1100
FDEPTH: 87 85 Gear cond.: 0
BDEPTH: 87 85 Validity : 0
Towing dir: 0° Wire out : 220 m Speed : 3.1 kn
Sorted : 0 Total catch: 181.61 Catch/hour: 358.09

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trachurus	300.49	14090	83.92	1007
Zeus faber	20.11	24	5.62	
Scomber japonicus	9.35	154	2.61	1006
Raja montagui	5.84	4	1.63	
Sardina pilchardus	5.44	142	1.52	1004
Octopus vulgaris	4.81	6	1.34	
Merluccius merluccius	4.52	18	1.26	1005
Pagellus acarne	2.76	12	0.77	1003
Diplodus vulgaris	1.20	2	0.34	
Alloteuthis subulata	1.05	379	0.29	
Dentex angolensis	0.93	4	0.26	
Dentex macrophthalmus	0.65	4	0.18	
Loligo vulgaris	0.53	106	0.15	
Boops boops	0.37	2	0.10	
Alloteuthis africana	0.05	12	0.01	
Total	358.10		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 246
DATE :03/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°22.84
start stop duration Lon W 10°33.86
TIME :19:56:29 20:26:55 30.4 (min) Purpose : 3
LOG : 1317.54 1319.19 1.6 Region : 1100
FDEPTH: 94 92 Gear cond.: 0
BDEPTH: 94 92 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.2 kn
Sorted : 0 Total catch: 105.87 Catch/hour: 208.76

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trachurus	94.09	1010	45.07	1008
Pagellus acarne	31.71	95	15.19	1009
Chelidonichthys obscurus	22.48	733	10.77	
Citharus linguatula	11.83	623	5.67	
Merluccius merluccius	10.25	599	4.91	
Solenocera membranacea	7.93	4354	3.80	
Ophidion barbatum	6.23	205	2.98	
Diplodus vulgaris	4.10	16	1.96	
Octopus vulgaris	3.59	2	1.72	
Scorpaena scrofa	2.37	39	1.13	
Dentex macrophthalmus	1.89	24	0.91	
Mullus surmuletus	1.81	16	0.87	
Chelidonichthys lucerna	1.58	8	0.76	
Umbrina canariensis	1.42	8	0.68	
Arnoglossus imperialis	1.18	87	0.57	
Sphoeroides pachgaster	1.10	8	0.53	
Zenopsis conchifer	1.03	8	0.49	
Trisopterus luscus	0.99	2	0.47	
Helicolenus dactylopterus	0.87	8	0.42	
Dentex angolensis	0.55	8	0.26	
Trichiurus lepturus	0.41	2	0.20	
Zeus faber	0.39	16	0.19	
Callionymus maculatus	0.32	87	0.15	
Trachinus draco	0.24	16	0.11	
Capros aper	0.24	47	0.11	
GOBIIDAE	0.16	39	0.08	
Total	208.76		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 247
DATE :03/07/2012 GEAR TYPE: PT NO: 4 POSITION:Lat N 29°18.42
start stop duration Lon W 10°27.78
TIME :21:45:25 22:15:11 29.8 (min) Purpose : 3
LOG : 1327.98 1330.14 2.2 Region : 1100
FDEPTH: 10 20 Gear cond.: 0
BDEPTH: 48 47 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 4.3 kn
Sorted : 0 Total catch: 77.45 Catch/hour: 156.10

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	143.50	11210	91.93	1012
Scomber japonicus	7.10	111	4.55	1010
Trachurus trachurus	3.53	212	2.26	1011
Sardina pilchardus	1.97	44	1.26	
Total	156.10		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 248
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°36.06
start stop duration Lon W 10°13.93
TIME :03:17:48 03:47:53 30.1 (min) Purpose : 3
LOG : 1368.08 1369.68 1.6 Region : 1100
FDEPTH: 75 78 Gear cond.: 0
BDEPTH: 75 78 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.2 kn
Sorted : 0 Total catch: 167.09 Catch/hour: 333.18

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Scomber japonicus	163.67	4570	49.12	
Trachurus trachurus	84.47	3517	25.35	
Trachinus viperа	48.45	383	14.54	
Engraulis encrasicolus	25.36	993	7.61	
Pagellus acarne	9.09	48	2.73	
Sardina pilchardus	0.60	24	0.18	
Chelidonichthys obscurus	0.60	14	0.18	
Octopus vulgaris	0.52	2	0.16	
Illex coindetii	0.42	2	0.13	
Total	333.18		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 249
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°42.33
start stop duration Lon W 10°23.09
TIME :07:25:06 07:55:38 30.5 (min) Purpose : 3
LOG : 1386.41 1388.06 1.7 Region : 1100
FDEPTH: 169 167 Gear cond.: 0
BDEPTH: 169 167 Validity : 0
Towing dir: 0° Wire out : 420 m Speed : 3.3 kn
Sorted : 0 Total catch: 298.13 Catch/hour: 585.90

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Trachurus trachurus	353.04	6615	60.26	1013
Macrorhamphosus scolopax	72.87	18218	12.44	
Scomber japonicus	55.01	1044	9.39	1015
Sphoeroides pachgaster	23.98	16	4.09	
Merluccius merluccius	18.67	59	3.19	
J E L L Y F I S H	16.63	1663	2.84	
Zeus faber	9.94	6	1.70	
Dentex macrophthalmus	8.84	159	1.51	1014
Capros aper	6.72	1804	1.15	
Boops boops	4.95	35	0.85	
Trachurus picturatus	4.42	88	0.75	
Octopus vulgaris	3.03	4	0.52	
Zenopsis conchifer	2.83	35	0.48	
Illex coindetii	2.29	8	0.39	
Merluccius senegalensis	2.20	6	0.38	
Trichiurus lepturus	0.47	2	0.08	
Total	585.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 250
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°56.43
start stop duration Lon W 10°0.69
TIME :15:43:30 16:13:56 30.4 (min) Purpose : 3
LOG : 1437.14 1438.72 1.6 Region : 1100
FDEPTH: 131 135 Gear cond.: 0
BDEPTH: 131 135 Validity : 0
Towing dir: 0° Wire out : 330 m Speed : 3.1 kn
Sorted : 0 Total catch: 57.71 Catch/hour: 113.79

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	70.51	314	61.96	1016
Lepidopus caudatus	23.19	741	20.38	
Merluccius merluccius	7.06	67	6.20	1017
Octopus vulgaris	5.17	4	4.54	
Sphoeroides pachgaster	2.27	4	1.99	
Loligo vulgaris	0.99	2	0.87	
Dentex maroccanus	0.79	16	0.69	
Trigla lyra	0.61	2	0.54	
Citharus linguatula	0.59	28	0.52	
Scomber japonicus	0.49	8	0.43	
Conger conger	0.49	4	0.43	
Merluccius merluccius	0.47	53	0.42	1018
Illex coindetii	0.43	2	0.38	
Callionymus maculatus	0.39	12	0.35	
Zeus faber	0.34	4	0.29	
Total	113.79		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 251
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 29°51.17
start stop duration Lon W 9°56.93
TIME :17:42:41 18:13:01 30.3 (min) Purpose : 3
LOG : 1449.21 1450.83 1.6 Region : 1100
FDEPTH: 92 87 Gear cond.: 0
BDEPTH: 92 87 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.2 kn
Sorted : 0 Total catch: 64.62 Catch/hour: 127.87

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	59.13	2725	46.24	1020
Macrorhamphosus scolopax	56.81	13108	44.43	
Merluccius merluccius	8.51	61	6.65	1019
Trichiurus lepturus	2.43	18	1.90	
Raja miraletus	0.65	2	0.51	
Scomber japonicus	0.18	2	0.14	
Arnoglossus imperialis	0.09	8	0.07	
Cepola macrophthalma	0.06	2	0.05	
Total	127.87		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 252
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 30°8.86
start stop duration Lon W 9°47.11
TIME :21:47:39 22:18:40 31.0 (min) Purpose : 3
LOG : 1480.42 1482.04 1.6 Region : 1100
FDEPTH: 94 94 Gear cond.: 0
BDEPTH: 94 94 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 0 Total catch: 39.20 Catch/hour: 75.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	24.64	832	32.50	
Parapenaeus longirostris	19.73	4110	26.02	
Citharus linguatula	8.51	135	11.23	
Torpedo marmorata	5.42	8	7.14	
GOBIIDAE	5.11	1702	6.74	
Merluccius merluccius	3.64	128	4.80	
Trachurus trachurus	3.33	89	4.39	
Ophidion barbatum	1.97	43	2.60	
Conger conger	1.59	23	2.09	
Chelidonichthys obscurus	0.62	4	0.82	
Eledone sp.	0.57	2	0.76	
Serranus cabrilla	0.50	4	0.66	
Arnoglossus imperialis	0.12	19	0.15	
Capros aper	0.08	27	0.10	
Total	75.82		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 253
DATE :04/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 30°9.34
start stop duration Lon W 9°55.68
TIME :23:47:05 00:17:18 30.2 (min) Purpose : 3
LOG : 1492.13 1493.66 1.5 Region : 1100
FDEPTH: 140 142 Gear cond.: 0
BDEPTH: 140 142 Validity : 0
Towing dir: 0° Wire out : 390 m Speed : 3.0 kn
Sorted : 0 Total catch: 49.96 Catch/hour: 99.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	64.33	1827	64.85	
Octopus vulgaris	10.52	6	10.61	
Citharus linguatula	7.94	477	8.01	
Macrorhamphosus scolopax	5.60	1509	5.64	
Ophidion barbatum	3.22	135	3.24	
Argentina sphyraena	1.79	278	1.80	
Merluccius merluccius	1.79	171	1.80	
Capros aper	1.47	357	1.48	
Conger conger	0.79	24	0.80	
Scorpaena sp.	0.36	4	0.36	
Chelidonichthys obscurus	0.36	4	0.36	
Chelidonichthys cuculus	0.36	24	0.36	
Microchirus variegatus	0.32	36	0.32	
Illex coindetii	0.32	16	0.32	
Serranus cabrilla	0.04	4	0.04	
Total	99.19		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 254
DATE :05/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 30°34.85
start stop duration Lon W 9°58.42
TIME :09:17:26 09:47:58 30.5 (min) Purpose : 3
LOG : 1538.74 1540.31 1.6 Region : 1100
FDEPTH: 101 103 Gear cond.: 0
BDEPTH: 101 103 Validity : 0
Towing dir: 0° Wire out : 260 m Speed : 3.1 kn
Sorted : 0 Total catch: 19.72 Catch/hour: 38.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	11.81	320	30.48	1022
GOBIIDAE	4.54	1362	11.71	
Trachurus trachurus	3.69	22	9.53	1021
Plesionika heterocarpus	3.62	3288	9.33	
Parapenaeus longirostris	3.52	651	9.08	
Octopus vulgaris	2.69	2	6.95	
Macrorhamphosus gracilis	2.57	702	6.64	
Lepidopus caudatus	1.73	88	4.46	
Illex coindetii	1.20	4	3.09	
Loligo vulgaris	0.75	4	1.93	
Citharus linguatula	0.55	16	1.42	
Conger conger	0.53	12	1.37	
Eledone sp.	0.53	4	1.37	
Aphia minuta	0.35	354	0.91	
Scorpaena laevis	0.24	4	0.61	
Scorpaena scrofa	0.24	6	0.61	
Arnoglossus imperialis	0.12	18	0.30	
Capros aper	0.06	18	0.15	
Ophidion barbatum	0.02	2	0.05	
Total	38.76		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 255
DATE :05/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 30°33.72
start stop duration Lon W 9°50.34
TIME :10:44:10 11:08:53 24.7 (min) Purpose : 3
LOG : 1546.99 1548.35 1.4 Region : 1100
FDEPTH: 62 63 Gear cond.: 0
BDEPTH: 62 63 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.3 kn
Sorted : 0 Total catch: 1853.03 Catch/hour: 4497.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	4263.20	272796	94.79	1023
Lepidopus caudatus	212.55	7799	4.73	
Merluccius merluccius	9.93	61	0.22	1024
Loligo vulgaris	4.81	32	0.11	
Octopus vulgaris	4.81	5	0.11	
Chelidonichthys obscurus	0.73	5	0.02	
Scorpaena scrofa	0.73	12	0.02	
Scomber japonicus	0.61	2	0.01	
Zeus faber	0.29	2	0.01	
Total	4497.65		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 256
DATE :05/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 30°34.03
start stop duration Lon W 9°48.25
TIME :13:21:35 13:31:37 10.1 (min) Purpose : 3
LOG : 1560.06 1560.58 0.5 Region : 1100
FDEPTH: 48 47 Gear cond.: 0
BDEPTH: 48 47 Validity : 0
Towing dir: 0° Wire out : 140 m Speed : 3.1 kn
Sorted : 0 Total catch: 2761.16 Catch/hour: 16484.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	16393.79	1538746	99.45	1025
Trisopterus luscus	46.81	293	0.28	
J E L L Y F I S H	13.16	1319	0.08	
Boops boops	13.16	149	0.08	
Loligo vulgaris	10.03	12	0.06	
Scomber japonicus	7.31	442	0.04	
Sardina pilchardus	0.29	149	0.00	
Total	16484.56		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 257
DATE :06/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 31°37.41
start stop duration Lon W 9°45.44
TIME :09:08:50 09:39:10 30.3 (min) Purpose : 3
LOG : 1636.92 1638.69 1.8 Region : 1100
FDEPTH: 33 36 Gear cond.: 0
BDEPTH: 33 36 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.5 kn
Sorted : 0 Total catch: 326.41 Catch/hour: 645.71

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	306.39	13132	47.45	1027
Sardina pilchardus	126.65	7594	19.61	1028
Scomber japonicus	82.15	849	12.72	1026
Engraulis encrasicolus	45.91	4918	7.11	
Campogramma glaycos	34.60	380	5.36	1031
Merluccius merluccius	17.95	162	2.78	1030
Merluccius senegalensis	12.51	206	1.94	1029
Cymbium marmoratum	8.23	2	1.27	
Aphia minuta	6.31	6311	0.98	
GOBIIDAE	3.26	815	0.51	
Spondyliosoma cantharus	1.63	10	0.25	
Trisopterus luscus	0.11	10	0.02	
Total	645.71		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 258
DATE :06/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 31°36.35
start stop duration Lon W 9°50.47
TIME :10:54:52 11:17:21 22.5 (min) Purpose : 3
LOG : 1646.81 1648.00 1.2 Region : 1100
FDEPTH: 57 55 Gear cond.: 0
BDEPTH: 57 55 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.2 kn
Sorted : 0 Total catch: 601.76 Catch/hour: 1605.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardina pilchardus	1557.49	211102	97.02	1033
Merluccius merluccius	23.80	141	1.48	1032
Trachurus trachurus	12.89	448	0.80	
Scomber japonicus	4.48	61	0.28	
GOBIIDAE	3.36	728	0.21	
Engraulis encrasicolus	2.24	224	0.14	
Eledone sp.	1.15	3	0.07	
Total	1605.41		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 259
DATE :06/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 31°37.29
start stop duration Lon W 9°58.77
TIME :14:29:32 14:59:36 30.1 (min) Purpose : 3
LOG : 1662.72 1664.24 1.5 Region : 1100
FDEPTH: 106 110 Gear cond.: 0
BDEPTH: 106 110 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.0 kn
Sorted : 0 Total catch: 62.15 Catch/hour: 124.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus acarne	33.52	80	27.03	1036
Merluccius merluccius	26.14	275	21.08	1034
Trachurus trachurus	25.14	190	20.27	1035
Torpedo torpedo	15.56	6	12.55	
Alloteuthis subulata	10.68	377	8.61	
Lepidopus caudatus	3.35	100	2.70	
Conger conger	2.79	2	2.25	
Psettodes belcheri	2.51	2	2.03	
Macrorhamphosus scolopax	1.54	319	1.24	
GOBIIDAE	0.54	142	0.43	
Citharus linguatula	0.50	18	0.40	
Zeus faber	0.48	4	0.39	
Trisopterus luscus	0.42	2	0.34	
Scorpaena scrofa	0.30	4	0.24	
Holothuria sp.	0.28	2	0.22	
Raja miraletus	0.26	4	0.21	
Total	124.01		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 260
DATE :06/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 31°52.92
start stop duration Lon W 9°42.38
TIME :23:42:05 00:02:24 20.3 (min) Purpose : 3
LOG : 1721.21 1722.19 1.0 Region : 1100
FDEPTH: 44 44 Gear cond.: 0
BDEPTH: 44 44 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 2.9 kn
Sorted : 0 Total catch: 162.31 Catch/hour: 479.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	391.43	20355	81.63	1037
Raja montagui	22.16	15	4.62	
Pagellus acarne	19.79	89	4.13	
Trachinus draco	14.77	399	3.08	
Scomber japonicus	9.31	133	1.94	
Sardina pilchardus	6.79	340	1.42	
Sepia officinalis	5.61	30	1.17	
Pegusa lascaris	3.10	15	0.65	
Loligo vulgaris	2.36	44	0.49	
Uranoscopus scaber	1.80	3	0.38	
Mullus surmuletus	0.74	15	0.15	
Citharus linguatula	0.59	15	0.12	
Holothuria sp.	0.44	15	0.09	
Engraulis encrasicolus	0.30	59	0.06	
Trisopterus luscus	0.30	59	0.06	
Total	479.50		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 261
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°9.75
start stop duration Lon W 9°20.49
TIME :03:44:30 04:15:20 30.8 (min) Purpose : 3
LOG : 1754.54 1756.10 1.6 Region : 1100
FDEPTH: 37 37 Gear cond.: 0
BDEPTH: 37 37 Validity : 0
Towing dir: 0° Wire out : 120 m Speed : 3.0 kn
Sorted : 0 Total catch: 67.09 Catch/hour: 130.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	68.12	3717	52.17	1039
Scomber japonicus	23.69	224	18.15	1038
Liocranchia sp.	17.42	3250	13.34	
Engraulis encrasicolus	6.37	341	4.88	
Cymbium marmoratum	6.33	23	4.84	
Octopus vulgaris	4.85	10	3.71	
Trisopterus luscus	1.12	62	0.86	
Chelidonichthys obscurus	0.73	4	0.56	
Trachinus draco	0.68	14	0.52	
Spondyliosoma cantharus	0.58	19	0.45	
Callionymus lyra	0.49	14	0.37	
GOBIIDAE	0.19	121	0.15	
Total	130.57		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 262
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°14.01
start stop duration Lon W 9°39.74
TIME :06:28:54 06:59:13 30.3 (min) Purpose : 3
LOG : 1775.29 1776.89 1.6 Region : 1100
FDEPTH: 79 83 Gear cond.: 0
BDEPTH: 79 83 Validity : 0
Towing dir: 0° Wire out : 220 m Speed : 3.2 kn
Sorted : 0 Total catch: 435.39 Catch/hour: 861.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	675.59	24073	78.41	1040
Scomber japonicus	151.09	2879	17.54	1042
Trachurus picturatus	15.14	653	1.76	
Merluccius merluccius	8.92	65	1.04	1044
Zeus faber	5.74	2	0.67	
Boops boops	2.75	32	0.32	1043
Pagellus acarne	2.08	12	0.24	1041
Mullus surmuletus	0.28	2	0.03	
Total	861.59		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 263
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°13.52
start stop duration Lon W 9°46.98
TIME :08:34:00 09:04:17 30.3 (min) Purpose : 3
LOG : 1788.48 1790.14 1.7 Region : 1100
FDEPTH: 130 129 Gear cond.: 0
BDEPTH: 130 129 Validity : 0
Towing dir: 0° Wire out : 330 m Speed : 3.3 kn
Sorted : 0 Total catch: 91.97 Catch/hour: 182.24

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	100.62	1353	55.21	1047
Merluccius merluccius	36.02	174	19.77	1045
Trachurus picturatus	28.85	672	15.83	1046
Pagellus acarne	7.49	36	4.11	1049
Macrorhamphosus scolopax	6.32	1304	3.47	
Scomber japonicus	1.25	22	0.69	1048
Sphoeroides pachgaster	0.73	2	0.40	
Macrorhamphosus gracilis	0.69	13	0.38	
Mullus surmuletus	0.26	2	0.14	
Total	182.24		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 264
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°32.97
start stop duration Lon W 9°37.82
TIME :16:12:20 16:32:50 20.5 (min) Purpose : 3
LOG : 1830.00 1831.18 1.2 Region : 1100
FDEPTH: 148 141 Gear cond.: 0
BDEPTH: 148 141 Validity : 0
Towing dir: 0° Wire out : 350 m Speed : 3.5 kn
Sorted : 0 Total catch: 30.40 Catch/hour: 88.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	24.88	269	27.96	1057
Trachurus picturatus	23.65	281	26.58	1051
Macrorhamphosus scolopax	10.65	887	11.97	
Mullus surmuletus	8.78	1	9.87	
Trachurus trachurus	8.17	79	9.18	1055
Pagellus acarne	6.23	41	7.01	1052
Scomber japonicus	1.43	15	1.61	1054
Chelidonichthys obscurus	1.32	29	1.48	
Dentex maroccanus	0.94	15	1.05	1056
Centracanthus cirrus	0.94	12	1.05	
Merluccius senegalensis	0.85	3	0.95	1050
Sphoeroides pachgaster	0.59	3	0.66	
Capros aper	0.29	97	0.33	
Boops boops	0.26	3	0.30	1053
Total	88.98		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 269
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°8.89
start stop duration Lon W 9°14.70
TIME :09:46:13 10:16:20 30.1 (min) Purpose : 3
LOG : 1944.59 1946.21 1.6 Region : 1100
FDEPTH: 194 199 Gear cond.: 0
BDEPTH: 194 199 Validity : 0
Towing dir: 0° Wire out : 500 m Speed : 3.2 kn
Sorted : 0 Total catch: 103.48 Catch/hour: 206.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus scolopax	69.72	12948	33.82	
Capros aper	47.41	4582	23.00	
Argentina sphyraena	44.82	11952	21.74	
Sphoeroides pachgaster	17.73	20	8.60	
Merluccius merluccius	13.67	159	6.63	1072
Zeus faber	2.81	4	1.36	
Mullus surmuletus	2.79	18	1.35	
Trachurus trachurus	2.03	6	0.99	
Pagellus acarne	1.93	4	0.94	1073
Zenopsis conchifer	1.63	6	0.79	
Macrorhamphosus gracilis	1.59	608	0.77	
Total	206.14		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 265
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°29.35
start stop duration Lon W 9°20.00
TIME :20:01:36 20:27:10 25.6 (min) Purpose : 3
LOG : 1850.88 1852.25 1.4 Region : 1100
FDEPTH: 51 51 Gear cond.: 0
BDEPTH: 51 51 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.2 kn
Sorted : 0 Total catch: 21.17 Catch/hour: 49.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardina pilchardus	12.62	253	25.41	1061
Merluccius merluccius	8.61	115	17.34	1058
Trachurus picturatus	6.36	66	12.80	1059
Trisopterus luscus	5.56	232	11.20	
Conger conger	3.00	54	6.05	
Callionymus maculatus	2.35	68	4.72	
GOBIIDAE	2.25	676	4.53	
Lepidopus caudatus	2.16	75	4.35	
Dicologoglossa cuneata	1.67	31	3.35	
Trachinus draco	1.06	14	2.13	
Solea senegalensis	0.94	9	1.89	
Engraulis encrasicolus	0.87	45	1.75	1060
Trachurus trachurus	0.68	42	1.37	
Citharus linguatula	0.68	14	1.37	
Spondyliosoma cantharus	0.63	9	1.28	
Microchirus variegatus	0.12	7	0.24	
Zeus faber	0.07	2	0.14	
Arnoglossus laterna	0.05	5	0.09	
Plastic bags	0.00	5	0.00	
Total	49.68		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 266
DATE :07/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°29.59
start stop duration Lon W 9°17.84
TIME :22:22:22 22:43:03 20.7 (min) Purpose : 3
LOG : 1860.42 1861.48 1.1 Region : 1100
FDEPTH: 44 46 Gear cond.: 0
BDEPTH: 44 46 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.1 kn
Sorted : 0 Total catch: 79.24 Catch/hour: 229.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Liocarcinus sp	122.21	24441	53.15	
Trachinus draco	55.71	754	24.23	
Merluccius merluccius	13.75	342	5.98	1065
Lepidopus caudatus	6.85	232	2.98	
Trachurus trachurus	6.50	180	2.83	1064
Octopus vulgaris	5.40	12	2.35	
SOLENOCERIDAE	5.28	2489	2.30	
Sardina pilchardus	4.82	128	2.09	1063
Engraulis encrasicolus	4.29	250	1.87	1062
CONGER SP	1.80	12	0.78	
Ophidion barbatum	1.68	46	0.73	
Spondyliosoma cantharus	0.87	17	0.38	
Trisopterus luscus	0.46	23	0.20	
Callionymus lyra	0.29	29	0.13	
Total	229.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 267
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°47.18
start stop duration Lon W 9°6.85
TIME :01:50:38 02:20:43 30.1 (min) Purpose : 3
LOG : 1887.30 1888.89 1.6 Region : 1100
FDEPTH: 82 80 Gear cond.: 0
BDEPTH: 82 80 Validity : 0
Towing dir: 0° Wire out : 220 m Speed : 3.2 kn
Sorted : 0 Total catch: 87.46 Catch/hour: 174.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pagellus acarne	53.14	199	30.46	1067
Trisopterus luscus	39.89	479	22.87	
Trachurus trachurus	24.73	475	14.18	1066
Trachinus draco	11.45	203	6.56	
Scorpaena notata	6.14	112	3.52	
Merluccius merluccius	5.82	120	3.34	1068
Dicologoglossa cuneata	5.35	66	3.06	
Citharus linguatula	4.75	108	2.72	
Umbrina cirrosa	4.23	12	2.42	
Uranoscopus scaber	4.11	8	2.36	
CONGER SP	3.67	2	2.10	
Diplodus bellottii	3.11	12	1.78	
Spondyliosoma cantharus	3.07	12	1.76	
Mullus surmuletus	2.71	16	1.55	
Homarus grammarus	1.60	2	0.91	
Zeus faber	0.68	16	0.39	
Total	174.45		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 268
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°7.46
start stop duration Lon W 9°20.16
TIME :07:51:45 08:22:36 30.9 (min) Purpose : 3
LOG : 1935.59 1937.00 1.4 Region : 1100
FDEPTH: 398 421 Gear cond.: 0
BDEPTH: 398 421 Validity : 0
Towing dir: 0° Wire out : 750 m Speed : 2.7 kn
Sorted : 0 Total catch: 22.69 Catch/hour: 44.13

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Parapenaeus longirostris	17.70	1830	40.11	
Lepidopus caudatus	15.36	23	34.82	
Merluccius merluccius	4.32	76	9.78	1070
Trachurus trachurus	2.49	27	5.64	1071
Trachurus picturatus	2.29	4	5.20	1069
Trisopterus minutus	0.99	220	2.25	
Micromesistius poutassou	0.35	6	0.79	
Callionymus maculatus	0.10	41	0.22	
MYCTOPHIDAE	0.10	272	0.22	
Pontinus kuhlii, juvenile	0.10	25	0.22	
Trachinus draco	0.08	2	0.18	
Cyttopsis rosea	0.08	6	0.18	
Hymenocephalus italicus	0.08	41	0.18	
Synchiropus phaeton	0.04	23	0.09	
Chlorophthalmus atlanticus	0.04	6	0.09	
Hoplostethus sp.	0.02	4	0.04	
Plastic bags	0.00	2	0.00	
Total	44.13		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 270
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 32°59.40
start stop duration Lon W 8°55.94
TIME :12:57:35 13:27:49 30.2 (min) Purpose : 3
LOG : 1966.87 1968.51 1.6 Region : 1100
FDEPTH: 97 96 Gear cond.: 0
BDEPTH: 97 96 Validity : 0
Towing dir: 0° Wire out : 260 m Speed : 3.3 kn
Sorted : 0 Total catch: 220.77 Catch/hour: 438.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	326.46	6280	74.50	1074
Merluccius merluccius	35.73	699	8.15	1075
Scomber japonicus	30.01	286	6.85	1077
Pagellus acarne	24.69	64	5.63	1076
Zeus faber	7.64	4	1.74	
Engraulis encrasicolus	6.59	278	1.50	
GOBIIDAE	3.41	1508	0.78	
Chelidonichthys obscurus	1.75	8	0.40	
Conger conger	1.67	32	0.38	
Lepidopus caudatus	0.24	8	0.05	
Total	438.18		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 271
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°16.42
start stop duration Lon W 8°40.97
TIME :18:05:17 18:36:33 31.3 (min) Purpose : 3
LOG : 2003.20 2004.82 1.6 Region : 1100
FDEPTH: 96 100 Gear cond.: 0
BDEPTH: 96 100 Validity : 0
Towing dir: 0° Wire out : 250 m Speed : 3.1 kn
Sorted : 0 Total catch: 22.04 Catch/hour: 42.29

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	17.19	79	40.66	1078
Trachurus trachurus	12.24	656	28.95	
Merluccius merluccius	2.49	107	5.90	1079
Conger conger	1.92	8	4.54	
Pagellus acarne	1.88	4	4.45	
Parapenaeus longirostris	1.61	269	3.80	
Aphia minuta	1.59	729	3.77	
Lepidopus caudatus	1.30	19	3.09	
Umbrina canariensis	0.67	2	1.59	
GOBIIDAE	0.61	272	1.45	
Trachurus picturatus	0.42	6	1.00	
Citharus linguatula	0.33	15	0.77	
Arnoglossus laterna	0.02	10	0.05	
Total	42.29		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 272
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°20.97
start stop duration Lon W 8°54.85
TIME :21:44:18 22:14:11 29.9 (min) Purpose : 3
LOG : 2021.93 2023.55 1.6 Region : 1100
FDEPTH: 158 159 Gear cond.: 0
BDEPTH: 158 159 Validity : 0
Towing dir: 0° Wire out : 380 m Speed : 3.3 kn
Sorted : 0 Total catch: 80.93 Catch/hour: 162.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Centracanthus cirrus	100.60	1783	61.91	
Macrorhamphosus scolopax	24.34	1159	14.98	
Conger conger	11.75	343	7.23	
Trachurus trachurus	4.88	48	3.00	
Pagellus acarne	4.64	18	2.85	
Sphoeroides pachgaster	4.38	4	2.69	
Mullus surmuletus	2.89	30	1.78	
Merluccius merluccius	1.75	8	1.08	
Chelidonichthys cuculus	1.69	84	1.04	
Arnoglossus imperialis	1.51	157	0.93	
Trachinus draco	0.90	30	0.56	
Capros aper	0.90	96	0.56	
Citharus linguatula	0.78	88	0.48	
Lepidopus caudatus	0.78	4	0.48	
Macrorhamphosus gracilis	0.60	205	0.37	
Microchirus boscanion	0.12	18	0.07	
Total	162.51		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 273
DATE :08/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°23.83
start stop duration Lon W 8°57.15
TIME :23:47:12 00:17:13 30.0 (min) Purpose : 3
LOG : 2032.96 2034.49 1.5 Region : 1100
FDEPTH: 211 210 Gear cond.: 0
BDEPTH: 211 210 Validity : 0
Towing dir: 0° Wire out : 560 m Speed : 3.0 kn
Sorted : 0 Total catch: 32.46 Catch/hour: 64.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Capros aper	22.78	899	35.12	
Lophius budegassa	8.95	2	13.80	
Macrorhamphosus scolopax	7.55	7195	11.65	
Mullus surmuletus	5.40	36	8.32	
Macrorhamphosus gracilis	4.56	1139	7.02	
Trachurus trachurus	4.50	42	6.93	
Helicolenus dactylopterus	3.96	36	6.10	
Raja miraletus	2.72	12	4.19	
Chelidonichthys cuculus	2.34	66	3.60	
Raja asterias	1.00	2	1.54	
Citharus linguatula	0.90	36	1.39	
Argentina sphyraena	0.24	78	0.37	
Total	64.90		100.03	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 274
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°38.38
start stop duration Lon W 8°42.10
TIME :05:57:11 06:27:32 30.4 (min) Purpose : 3
LOG : 2069.74 2071.31 1.6 Region : 1100
FDEPTH: 355 359 Gear cond.: 0
BDEPTH: 355 359 Validity : 0
Towing dir: 0° Wire out : 700 m Speed : 3.1 kn
Sorted : 0 Total catch: 142.92 Catch/hour: 282.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	252.89	967	89.50	
Merluccius merluccius	14.31	2222	5.07	1083
Macrorhamphosus scolopax	4.41	348	1.56	
Merluccius merluccius	3.24	36	1.15	1080
Trachurus picturatus	2.61	6	0.92	1082
Argentina sphyraena	1.56	117	0.55	
Conger conger	1.44	2	0.51	
Trachurus trachurus	1.42	4	0.50	1081
Mullus surmuletus	0.38	2	0.13	
Capros aper	0.18	53	0.06	
Synchiropus phaeton	0.02	4	0.01	
Trisopterus minutus	0.02	4	0.01	
Peristedion cataphractum	0.02	2	0.01	
Pontinus kuhlii	0.02	12	0.01	
Arnoglossus imperialis	0.02	2	0.01	
Metal waste	0.00	0	0.00	
Total	282.54		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 275
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°31.67
start stop duration Lon W 8°30.56
TIME :08:22:15 08:50:18 28.1 (min) Purpose : 3
LOG : 2086.04 2087.44 1.4 Region : 1100
FDEPTH: 108 109 Gear cond.: 0
BDEPTH: 108 109 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.0 kn
Sorted : 0 Total catch: 436.95 Catch/hour: 934.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus scolopax	805.86	47076	86.22	
Macrorhamphosus gracilis	39.98	2336	4.28	
Trachurus trachurus	27.85	359	2.98	1086
Lepidopus caudatus	16.21	41	1.73	
Merluccius merluccius	10.67	81	1.14	1085
Octopus vulgaris	8.47	4	0.91	
Zeus faber	5.90	6	0.63	
Pagellus acarne	5.80	17	0.62	1084
Sardina pilchardus	4.49	90	0.48	
Boops boops	4.49	45	0.48	
Mullus surmuletus	2.05	11	0.22	
Raja asterias	1.56	2	0.17	
Ophidion barbatum	0.45	45	0.05	
GOBIIDAE	0.45	180	0.05	
Zenopsis conchifer	0.41	2	0.04	
Total	934.65		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 276
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°30.14
start stop duration Lon W 8°27.88
TIME :09:33:05 10:03:00 29.9 (min) Purpose : 3
LOG : 2091.53 2093.05 1.5 Region : 1100
FDEPTH: 79 80 Gear cond.: 0
BDEPTH: 79 80 Validity : 0
Towing dir: 0° Wire out : 200 m Speed : 3.0 kn
Sorted : 0 Total catch: 32.75 Catch/hour: 65.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	29.81	678	45.37	1088
Engraulis encrasicolus	14.92	828	22.72	1089
Lepidopus caudatus	12.80	16	19.48	
Trachurus trachurus	4.23	44	6.44	1087
Spondyliosoma cantharus	2.19	8	3.33	
Pagellus acarne	0.84	2	1.28	
GOBIIDAE	0.30	140	0.46	
Mullus surmuletus	0.24	2	0.37	
Citharus linguatula	0.24	6	0.37	
Zeus faber	0.06	18	0.09	
Scomber japonicus	0.04	2	0.06	
Cepola macrophthalma	0.02	2	0.03	
Total	65.70		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 277
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°27.50
start stop duration Lon W 8°24.49
TIME :10:50:24 11:21:03 30.6 (min) Purpose : 3
LOG : 2098.08 2099.75 1.7 Region : 1100
FDEPTH: 47 47 Gear cond.: 0
BDEPTH: 47 47 Validity : 0
Towing dir: 0° Wire out : 160 m Speed : 3.3 kn
Sorted : 0 Total catch: 370.87 Catch/hour: 726.25

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	377.15	24556	51.93	1091
Sardina pilchardus	166.61	6249	22.94	1093
Scomber japonicus	95.29	834	13.12	1090
CARCHARHINIDAE	35.01	2	4.82	
Pagellus acarne	33.25	270	4.58	1092
Spondyliosoma cantharus	9.99	82	1.38	
Zeus faber	3.23	2	0.44	
Diplodus sargus *	2.39	4	0.33	
Engraulis encrasicolus	1.88	106	0.26	
Merluccius merluccius	1.45	22	0.20	
Total	726.25		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 278
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°33.55
start stop duration Lon W 7°56.74
TIME :14:28:43 14:42:26 13.7 (min) Purpose : 3
LOG : 2128.35 2129.16 0.8 Region : 1100
FDEPTH: 39 39 Gear cond.: 0
BDEPTH: 39 39 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.5 kn
Sorted : 0 Total catch: 152.96 Catch/hour: 668.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	388.12	23952	58.02	1095
Scomber japonicus	181.05	2711	27.07	1094
Sardina pilchardus	82.65	3520	12.36	1096
Sepia officinalis	6.08	22	0.91	
Spondyliosoma cantharus	4.81	35	0.72	
Merluccius merluccius	3.72	13	0.56	
Diplodus vulgaris	1.75	13	0.26	
Diplodus bellottii	0.77	13	0.11	
Total	668.94		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 279
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°38.28
start stop duration Lon W 8°2.44
TIME :15:58:53 16:29:25 30.5 (min) Purpose : 3
LOG : 2137.18 2138.77 1.6 Region : 1100
FDEPTH: 89 91 Gear cond.: 0
BDEPTH: 89 91 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 0 Total catch: 110.52 Catch/hour: 217.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	163.65	4196	75.34	1097
Merluccius merluccius	18.59	214	8.56	1101
Engraulis encrasicolus	13.11	635	6.04	1098
Boops boops	7.33	63	3.37	1099
Merluccius merluccius	4.44	377	2.04	1102
Octopus vulgaris	4.25	4	1.95	
Scomber japonicus	2.79	33	1.28	1100
Pagellus acarne	1.89	6	0.87	
Zeus faber	0.90	16	0.42	
GOBIIDAE	0.28	65	0.13	
Total	217.22		100.01	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 280
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°47.46
start stop duration Lon W 8°11.48
TIME :18:31:23 19:02:24 31.0 (min) Purpose : 3
LOG : 2153.73 2155.31 1.6 Region : 1100
FDEPTH: 144 143 Gear cond.: 0
BDEPTH: 144 143 Validity : 0
Towing dir: 0° Wire out : 360 m Speed : 3.1 kn
Sorted : 0 Total catch: 104.97 Catch/hour: 203.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	92.07	1389	45.35	1103
Macrorhamphosus scolopax	26.46	1725	13.03	
Merluccius merluccius	15.67	323	7.72	1104
Zeus faber	14.78	25	7.28	
Trisopterus luscus	14.78	151	7.28	
Parapenaeus longirostris	8.32	890	4.10	
Mullus surmuletus	6.05	37	2.98	
Lepidopus caudatus	5.65	108	2.78	
Raja asterias	3.98	2	1.96	
Anthias anthias	3.87	124	1.91	
Conger conger	2.94	19	1.45	
Scorpaena scrofa	1.97	39	0.97	
Chelidonichthys obscurus	1.55	31	0.76	
Capros aper	1.20	236	0.59	
Citharus linguatula	0.97	31	0.48	
Cepola macrophthalma	0.85	66	0.42	
Pontinus kuhlii	0.77	12	0.38	
Pagellus acarne	0.74	2	0.36	
GOBIIDAE	0.27	39	0.13	
Arnoglossus imperialis	0.15	12	0.08	
Total	203.04		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 281
DATE :09/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°55.08
start stop duration Lon W 8°17.04
TIME :21:03:27 21:34:45 31.3 (min) Purpose : 3
LOG : 2168.16 2169.67 1.5 Region : 1100
FDEPTH: 488 472 Gear cond.: 0
BDEPTH: 488 472 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 2.9 kn
Sorted : 0 Total catch: 18.08 Catch/hour: 34.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	8.93	71	25.77	
Helicolenus dactylopterus	8.74	107	25.22	
Polymetme corythaeola	5.71	418	16.48	
Lepidopus caudatus	3.26	4	9.40	
Macrorhamphosus scolopax	2.78	163	8.02	
Scyliorhinus canicula	0.94	13	2.71	
Hoplostethus mediterraneus	0.84	109	2.43	
Coelorinchus coelorhincus	0.69	8	1.99	
Cytopsis rosea	0.63	17	1.83	
Trisopterus minutus	0.48	65	1.38	
Chaunax pictus	0.38	2	1.11	
Micromesistius poutassou	0.29	2	0.83	
Malacocephalus laevis	0.21	2	0.61	
MYCTOPHIDAE	0.17	44	0.50	
Nezumia aequalis	0.15	2	0.44	
Merluccius merluccius	0.13	2	0.39	
Scomber japonicus	0.13	2	0.39	
Conger conger	0.04	6	0.11	
Synchiropus phaeton	0.04	21	0.11	
Argentina sphyraena	0.04	2	0.11	
Arnoglossus imperialis	0.02	2	0.06	
Gadella maraldi	0.02	2	0.06	
Diaphus sp.	0.02	2	0.06	
Total	34.66		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 282
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°1.47
start stop duration Lon W 7°53.63
TIME :03:39:14 04:09:18 30.1 (min) Purpose : 3
LOG : 2201.84 2203.42 1.6 Region : 1100
FDEPTH: 272 266 Gear cond.: 0
BDEPTH: 272 266 Validity : 0
Towing dir: 0° Wire out : 710 m Speed : 3.2 kn
Sorted : 0 Total catch: 15.03 Catch/hour: 29.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scomber japonicus	16.05	289	53.50	1106
Trachurus picturatus	9.68	108	32.28	1105
Parapenaeus longirostris	1.97	226	6.55	
Echelus myrus	1.54	54	5.12	
Illex coindetii	0.40	2	1.34	
Macrorhamphosus scolopax	0.28	14	0.93	
Capros aper	0.08	4	0.27	
Total	29.99		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 283
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°59.38
start stop duration Lon W 7°51.43
TIME :05:28:26 05:59:11 30.8 (min) Purpose : 3
LOG : 2209.86 2211.55 1.7 Region : 1100
FDEPTH: 164 164 Gear cond.: 0
BDEPTH: 164 164 Validity : 0
Towing dir: 0° Wire out : 410 m Speed : 3.3 kn
Sorted : 0 Total catch: 372.38 Catch/hour: 726.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	331.40	10796	45.61	1108
Trachurus picturatus	297.91	13136	41.00	1107
Raja asterias	27.79	12	3.82	
Mullus surmuletus	21.68	150	2.98	1112
Zeus faber	12.57	35	1.73	
Trisopterus luscus	7.34	62	1.01	
Scomber japonicus	6.65	172	0.92	1111
Merluccius merluccius	5.87	21	0.81	1110
Anthias anthias	4.29	21	0.59	
Peristedion cataphractum	3.24	21	0.45	
Synchiropus phaeton	2.15	21	0.30	
Capros aper	1.93	258	0.27	
Chelidonichthys obscurus	1.29	21	0.18	
Scyliorhinus canicula	1.23	4	0.17	
Merluccius merluccius	0.49	37	0.07	1109
Serranus cabrilla	0.35	4	0.05	
Citharus linguatula	0.21	21	0.03	
Arnoglossus imperialis	0.21	21	0.03	
Total	726.60		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 284
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°44.93
start stop duration Lon W 7°39.15
TIME :11:45:29 12:16:46 31.3 (min) Purpose : 3
LOG : 2238.11 2239.75 1.6 Region : 1100
FDEPTH: 87 88 Gear cond.: 0
BDEPTH: 87 88 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 0 Total catch: 82.67 Catch/hour: 158.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	71.33	2082	45.00	1116
Scomber japonicus	31.81	291	20.07	1114
Merluccius merluccius	17.89	322	11.29	1113
Engraulis encrasicolus	16.05	978	10.12	1115
Boops boops	8.17	77	5.15	
Alloteuthis subulata	6.18	1432	3.90	
Pagellus acarne	2.78	12	1.75	
Spondyliosoma cantharus	2.42	6	1.52	
Zeus faber	0.89	15	0.56	
Cepola macrophthalma	0.59	4	0.37	
Cepola macrophthalma	0.23	4	0.15	
GOBIIDAE	0.17	21	0.11	
Total	158.52		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 285
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°52.32
start stop duration Lon W 7°19.46
TIME :16:52:08 17:24:24 32.3 (min) Purpose : 3
LOG : 2274.55 2276.36 1.8 Region : 1100
FDEPTH: 83 85 Gear cond.: 0
BDEPTH: 83 85 Validity : 0
Towing dir: 0° Wire out : 220 m Speed : 3.4 kn
Sorted : 0 Total catch: 56.27 Catch/hour: 104.62

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	46.02	1714	43.98	1119
Lepidopus caudatus	23.99	878	22.93	
Trachurus trachurus	14.92	418	14.26	1117
Scomber japonicus	7.67	56	7.33	
Engraulis encrasicolus	6.00	292	5.73	1118
Pagellus acarne	2.34	7	2.24	
Loligo vulgaris	1.62	4	1.55	
Zeus faber	0.82	2	0.78	
GOBIIDAE	0.42	195	0.40	
Aphia minuta	0.28	515	0.27	
Cepola macrophthalma	0.28	13	0.27	
Arnoglossus imperialis	0.28	13	0.27	
Plastic bags	0.00	6	0.00	
Fishing gears	0.00	4	0.00	
Total	104.62		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 286
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 33°55.32
start stop duration Lon W 7°22.26
TIME :18:49:11 19:19:11 30.0 (min) Purpose : 3
LOG : 2284.09 2285.63 1.5 Region : 1100
FDEPTH: 109 110 Gear cond.: 0
BDEPTH: 109 110 Validity : 0
Towing dir: 0° Wire out : 270 m Speed : 3.1 kn
Sorted : 0 Total catch: 83.70 Catch/hour: 167.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	94.53	3899	56.49	1122
Trachurus trachurus	23.57	216	14.09	1121
Engraulis encrasicolus	20.51	930	12.26	1123
GOBIIDAE	8.76	1248	5.23	
Lepidopus caudatus	8.34	210	4.98	
Scomber japonicus	7.26	102	4.34	1120
Citharus linguatula	2.10	78	1.25	
Conger conger	1.50	24	0.90	
Ophidion barbatum	0.30	6	0.18	
Scorpaena scrofa	0.30	6	0.18	
Aphia minuta	0.06	372	0.04	
Arnoglossus imperialis	0.06	6	0.04	
Cepola macrophthalma	0.06	6	0.04	
Total	167.34		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 287
DATE :10/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°7.71
start stop duration Lon W 7°33.04
TIME :21:51:30 22:22:02 30.5 (min) Purpose : 3
LOG : 2303.26 2304.82 1.6 Region : 1100
FDEPTH: 263 262 Gear cond.: 0
BDEPTH: 263 262 Validity : 0
Towing dir: 0° Wire out : 650 m Speed : 3.1 kn
Sorted : 0 Total catch: 10.13 Catch/hour: 19.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	6.68	743	33.57	
Conger conger	3.95	104	19.85	
Lepidopus caudatus	2.95	22	14.81	
Parapenaeus longirostris	2.06	222	10.38	
Trachurus trachurus	1.43	8	7.21	
Illex coindetii	0.97	4	4.90	
Capros aper	0.73	128	3.65	
MYCTOPHIDAE	0.39	216	1.97	
Merluccius merluccius	0.28	2	1.38	
Zeus faber	0.16	2	0.79	
Scomber japonicus	0.12	2	0.59	
GOBIIDAE	0.06	118	0.30	
Microchirus boscanion	0.04	14	0.20	
Trisopterus minutus	0.04	16	0.20	
Helicolenus dactylopterus	0.02	18	0.10	
Lophius sp.	0.02	2	0.10	
Total	19.90		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 288
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°12.79
start stop duration Lon W 7°35.54
TIME :00:16:24 00:46:33 30.0 (min) Purpose : 3
LOG : 2314.65 2316.17 1.5 Region : 1100
FDEPTH: 573 587 Gear cond.: 0
BDEPTH: 573 587 Validity : 0
Towing dir: 0° Wire out : 1250 m Speed : 8.0 kn
Sorted : 0 Total catch: 16.36 Catch/hour: 32.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus mediterraneus	8.66	280	26.47	
Helicolenus dactylopterus	7.54	28	23.04	
Lampanyctus sp.	3.48	260	10.64	
Galeus melastomus	2.88	20	8.80	
Merluccius merluccius	2.58	4	7.89	
Physis blennoides	2.30	2	7.03	
Lepidopus caudatus	1.98	2	6.05	
MYCTOPHIDAE	0.94	270	2.87	
Micromesistius poutassou	0.72	2	2.20	
J E L L Y F I S H	0.64	52	1.96	
Nezumia aequalis	0.54	26	1.65	
Cyttopsis rosea	0.16	2	0.49	
Hymenocephalus italicus	0.14	26	0.43	
Epigonus telescopus	0.14	2	0.43	
Capros aper	0.02	8	0.06	
Total	32.72		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 289
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°17.23
start stop duration Lon W 7°12.14
TIME :06:25:04 06:56:12 31.1 (min) Purpose : 3
LOG : 2363.68 2365.00 1.3 Region : 1100
FDEPTH: 508 506 Gear cond.: 0
BDEPTH: 508 506 Validity : 0
Towing dir: 0° Wire out : 900 m Speed : 2.5 kn
Sorted : 0 Total catch: 15.89 Catch/hour: 30.63

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pasiphae sp.	19.58	13008	63.94	
Ceratoscopelus sp.	3.37	2856	11.01	
Merluccius merluccius	1.62	4	5.29	
Illex coindetii	1.58	4	5.16	
Lampanyctus sp.	1.56	116	5.10	
Coelorinchus coelorhincus	0.50	42	1.64	
Hoplostethus mediterraneus	0.48	42	1.57	
Chaunax pictus	0.39	2	1.26	
Setarches guentheri	0.39	6	1.26	
Stomias boa boa	0.39	4	1.26	
Lepidopus caudatus	0.31	4	1.01	
Trisopterus minutus	0.19	10	0.63	
Malacocephalus laevis	0.19	31	0.63	
Conger conger	0.08	4	0.25	
Plastic bags	0.00	2	0.00	
Total	30.63		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 290
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°16.03
start stop duration Lon W 7°7.53
TIME :07:55:30 08:26:44 31.2 (min) Purpose : 3
LOG : 2370.05 2371.70 1.6 Region : 1100
FDEPTH: 351 346 Gear cond.: 0
BDEPTH: 351 346 Validity : 0
Towing dir: 0° Wire out : 750 m Speed : 3.2 kn
Sorted : 0 Total catch: 36.07 Catch/hour: 69.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	34.77	39	50.18	
Ceratoscopelus sp.	12.28	3539	17.72	
Parapenaeus longirostris	8.63	828	12.45	
Lampanyctus sp.	4.92	999	7.10	
Trisopterus minutus	3.84	1295	5.54	
Lepidopus caudatus	1.69	4	2.44	
Hoplostethus mediterraneus	1.17	484	1.69	
Helicolenus dactylopterus, juvenile	0.92	96	1.33	
Synchiropus phaeton	0.48	98	0.69	
Cyttopsis rosea	0.38	38	0.55	
Malacocephalus laevis	0.21	44	0.30	
Total	69.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 291
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°13.88
start stop duration Lon W 7°5.99
TIME :09:30:03 10:00:48 30.7 (min) Purpose : 3
LOG : 2376.39 2377.96 1.6 Region : 1100
FDEPTH: 180 182 Gear cond.: 0
BDEPTH: 180 182 Validity : 0
Towing dir: 0° Wire out : 450 m Speed : 3.1 kn
Sorted : 0 Total catch: 92.96 Catch/hour: 181.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Macrorhamphosus scolopax	123.36	33642	67.99	
Merluccius merluccius	49.66	1671	27.37	
Sphoeroides pachgaster	2.89	8	1.59	
Conger conger	1.87	8	1.03	
Lepidopus caudatus	1.48	47	0.82	
Trachurus picturatus	0.94	8	0.52	
Trachurus trachurus	0.94	8	0.52	
Capros aper	0.23	62	0.13	
Argentina sphyraena	0.08	8	0.04	
Total	181.44		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 292
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°6.04
start stop duration Lon W 6°52.24
TIME :12:17:54 12:47:57 30.1 (min) Purpose : 3
LOG : 2396.11 2397.69 1.6 Region : 1100
FDEPTH: 87 87 Gear cond.: 0
BDEPTH: 87 87 Validity : 0
Towing dir: 0° Wire out : 240 m Speed : 3.2 kn
Sorted : 0 Total catch: 138.94 Catch/hour: 277.42

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	221.63	9638	79.89	1125
Merluccius merluccius	28.05	1895	10.11	1124
Scomber japonicus	11.26	126	4.06	1126
Engraulis encrasicolus	10.72	539	3.86	
Aphia minuta	2.88	1837	1.04	
Citharus linguatula	1.74	72	0.63	
GOBIIDAE	0.90	343	0.32	
Conger conger	0.24	6	0.09	
Total	277.42		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 293
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°21.82
start stop duration Lon W 6°38.71
TIME :15:32:27 16:03:45 31.3 (min) Purpose : 3
LOG : 2423.55 2425.34 1.8 Region : 1100
FDEPTH: 31 34 Gear cond.: 0
BDEPTH: 31 34 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 3.4 kn
Sorted : 0 Total catch: 342.43 Catch/hour: 656.42

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Polybius henslowii	379.48	28221	57.81	
Scomber japonicus	93.28	1984	14.21	
Merluccius merluccius	74.70	2657	11.38	
Trachurus trachurus	44.82	2590	6.83	
Loligo vulgaris	33.03	2066	5.03	
Sardina pilchardus	30.46	1294	4.64	
Trachinus draco	0.33	8	0.05	
Zeus faber	0.33	50	0.05	
Total	656.42		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 294
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°25.65
start stop duration Lon W 6°41.82
TIME :19:44:31 20:15:10 30.7 (min) Purpose : 3
LOG : 2437.87 2439.41 1.5 Region : 1100
FDEPTH: 65 63 Gear cond.: 0
BDEPTH: 65 63 Validity : 0
Towing dir: 0° Wire out : 180 m Speed : 3.0 kn
Sorted : 0 Total catch: 16.09 Catch/hour: 31.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	21.60	1479	68.61	
Squilla mantis	3.99	157	12.68	
Aphia minuta	1.86	1188	5.90	
Conger conger	1.10	8	3.48	
Arnoglossus imperialis	0.86	18	2.73	
GOBIIDAE	0.68	184	2.18	
Chelidonichthys obscurus	0.43	4	1.37	
Zeus faber	0.22	8	0.68	
Cepola macrophthalma	0.20	2	0.62	
Trachurus trachurus	0.20	10	0.62	
Trisopterus luscus	0.14	10	0.44	
Scorpaena scrofa	0.08	2	0.25	
Lepidopus caudatus	0.06	2	0.19	
Engraulis encrasicolus	0.04	2	0.12	
Citharus linguatula	0.02	12	0.06	
Capros aper	0.02	8	0.06	
Total	31.49		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 295
DATE :11/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°28.88
start stop duration Lon W 6°45.85
TIME :22:38:06 23:08:58 30.9 (min) Purpose : 3
LOG : 2448.51 2450.25 1.7 Region : 1100
FDEPTH: 101 101 Gear cond.: 0
BDEPTH: 101 101 Validity : 0
Towing dir: 0° Wire out : 260 m Speed : 3.4 kn
Sorted : 0 Total catch: 28.14 Catch/hour: 54.69

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	30.71	1650	56.15	1127
Parapenaeus longirostris	12.93	661	23.63	
Aphia minuta	3.89	2527	7.11	
Conger conger	3.54	27	6.47	
GOBIIDAE	0.95	1827	1.74	
Squilla mantis	0.87	19	1.60	
Citharus linguatula	0.82	31	1.49	
Campogramma glaycos	0.66	2	1.21	
Trisopterus luscus	0.17	8	0.32	
Lophius budegassa	0.14	2	0.25	
Cepola macrophthalma	0.02	2	0.04	
Total	54.69		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 296
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°30.98
start stop duration Lon W 6°53.20
TIME :00:54:47 01:25:31 30.7 (min) Purpose : 3
LOG : 2463.13 2464.94 1.8 Region : 1100
FDEPTH: 208 207 Gear cond.: 0
BDEPTH: 208 207 Validity : 0
Towing dir: 0° Wire out : 550 m Speed : 3.5 kn
Sorted : 0 Total catch: 14.57 Catch/hour: 28.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Parapenaeus longirostris	9.29	1171	32.67	
Myctophidae sp . silver	6.28	1823	22.10	
Merluccius merluccius	4.51	33	15.85	1128
Trachurus trachurus	3.59	49	12.63	
Trachurus picturatus	1.37	47	4.80	
Conger conger	0.94	2	3.29	
Engraulis encrasicolus	0.84	33	2.95	
Scomber japonicus	0.47	6	1.65	
Illex coindetii	0.45	2	1.58	
Maurolicus muelleri	0.35	390	1.24	
Lepidopus caudatus	0.21	4	0.75	
GOBIIDAE	0.08	29	0.27	
Squilla mantis	0.06	2	0.21	
Total	28.44		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 297
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°53.13
start stop duration Lon W 6°44.08
TIME :09:12:23 09:43:33 31.2 (min) Purpose : 3
LOG : 2514.45 2516.00 1.6 Region : 1100
FDEPTH: 239 242 Gear cond.: 0
BDEPTH: 239 242 Validity : 0
Towing dir: 0° Wire out : 550 m Speed : 3.0 kn
Sorted : 0 Total catch: 33.19 Catch/hour: 63.89

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	28.87	510	45.19	
Parapenaeus longirostris	18.77	2133	29.38	
Trachurus trachurus	6.12	23	9.58	
Merluccius merluccius	3.12	65	4.88	
Myctophidae sp . silver	3.00	4350	4.70	
GOBIIDAE	0.87	1232	1.36	
Pasiphae sp.	0.87	1111	1.36	
Lophius budegassa	0.71	25	1.11	
J E L L Y F I S H	0.52	29	0.81	
Conger conger	0.48	10	0.75	
Trisopterus minutus	0.21	56	0.33	
Ophidion barbatum	0.19	33	0.30	
Helicolenus dactylopterus	0.08	8	0.12	
Lampanyctus sp.	0.08	33	0.12	
Total	63.89		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 298
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°51.98
start stop duration Lon W 6°43.12
TIME :10:57:51 11:28:08 30.3 (min) Purpose : 3
LOG : 2521.77 2523.30 1.5 Region : 1100
FDEPTH: 192 188 Gear cond.: 0
BDEPTH: 192 188 Validity : 0
Towing dir: 0° Wire out : 450 m Speed : 3.1 kn
Sorted : 0 Total catch: 77.84 Catch/hour: 154.29

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	75.80	1796	49.13	
Trachurus trachurus	46.98	218	30.45	1129
Merluccius merluccius	13.68	222	8.86	1130
Parapenaeus longirostris	10.09	1162	6.54	
Myctophidae sp . silver	1.92	1903	1.25	
Umbrina cirrosa	1.82	4	1.18	
GOBIIDAE	0.83	813	0.54	
Lophius budegassa	0.83	28	0.54	
Conger conger	0.79	6	0.51	
Illex coindetii	0.79	4	0.51	
Trachurus picturatus	0.75	12	0.49	
Total	154.29		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 299
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 34°43.07
start stop duration Lon W 6°28.45
TIME :14:11:59 14:43:09 31.2 (min) Purpose : 3
LOG : 2543.81 2545.42 1.6 Region : 1100
FDEPTH: 87 91 Gear cond.: 0
BDEPTH: 87 91 Validity : 0
Towing dir: 0° Wire out : 230 m Speed : 3.1 kn
Sorted : 0 Total catch: 581.40 Catch/hour: 1119.15

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trachurus	1103.62	63677	98.61	1132
Merluccius merluccius	11.43	185	1.02	1131
Scomber japonicus	1.79	52	0.16	
Ophidion barbatum	1.54	283	0.14	
Aphia minuta	0.77	1155	0.07	
Total	1119.15		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 300
DATE :12/07/2012 GEAR TYPE: PT NO: 1 POSITION:Lat N 34°44.24
start stop duration Lon W 6°24.12
TIME :16:18:43 16:37:47 19.1 (min) Purpose : 3
LOG : 2553.34 2554.63 1.3 Region : 1100
FDEPTH: 30 30 Gear cond.: 0
BDEPTH: 48 47 Validity : 0
Towing dir: 0° Wire out : 130 m Speed : 4.0 kn
Sorted : 0 Total catch: 1162.10 Catch/hour: 3656.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardina pilchardus	3635.54	128589	99.43	1133
Scomber japonicus	19.73	311	0.54	
Merluccius merluccius	1.04	50	0.03	
Total	3656.30		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 301
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°3.53
start stop duration Lon W 6°15.22
TIME :19:50:30 20:20:30 30.0 (min) Purpose : 3
LOG : 2579.98 2581.61 1.6 Region : 1100
FDEPTH: 44 47 Gear cond.: 0
BDEPTH: 44 47 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.1 kn
Sorted : 0 Total catch: 70.59 Catch/hour: 141.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
PORTUNIDAE	75.72	5678	53.63	
Trachinus draco	10.60	126	7.51	
Merluccius merluccius	9.64	128	6.83	
Diplodus bellottii	8.28	126	5.86	
Trisopterus minutus	5.96	212	4.22	
Psetta maxima	5.72	2	4.05	
Spondyliosoma cantharus	5.26	36	3.73	
Trachurus trachurus	4.68	192	3.31	
Chelidonichthys obscurus	3.34	116	2.37	
Boops boops	3.00	24	2.12	
Zeus faber	2.00	40	1.42	
Pagellus acarne	1.98	10	1.40	
Arnoglossus imperialis	1.46	158	1.03	
Uranoscopus albesca	1.36	6	0.96	
Callionymus lyra	0.72	14	0.51	
Mullus surmuletus	0.66	4	0.47	
Scomber japonicus	0.36	2	0.25	
Diplodus vulgaris	0.26	4	0.18	
Torpedo marmorata	0.18	2	0.13	
Total	141.18		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 302
DATE :12/07/2012 GEAR TYPE: PT NO: 4 POSITION:Lat N 35°2.10
start stop duration Lon W 6°15.85
TIME :21:00:48 21:35:36 34.8 (min) Purpose : 3
LOG : 2583.19 2585.43 2.2 Region : 1100
FDEPTH: 0 0 Gear cond.: 0
BDEPTH: 48 40 Validity : 0
Towing dir: 0° Wire out : 110 m Speed : 3.9 kn
Sorted : 0 Total catch: 30.95 Catch/hour: 53.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sardina pilchardus	45.62	4921	85.49	
Trachurus trachurus	2.52	126	4.72	1135
Scomber japonicus	2.50	52	4.68	1134
Diplodus sargus *	1.74	3	3.26	
Merluccius merluccius	0.93	14	1.74	
Trachinus draco	0.05	2	0.10	
Total	53.36		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 303
DATE :12/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°2.70
start stop duration Lon W 6°17.76
TIME :22:36:03 23:06:14 30.2 (min) Purpose : 3
LOG : 2590.67 2592.18 1.5 Region : 1100
FDEPTH: 77 76 Gear cond.: 0
BDEPTH: 77 76 Validity : 0
Towing dir: 0° Wire out : 200 m Speed : 3.0 kn
Sorted : 0 Total catch: 20.53 Catch/hour: 40.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	23.65	596	57.96	1136
Aphia minuta	7.61	11527	18.66	
Parapenaeus longirostris	2.58	163	6.33	
Solenocera membranacea	1.89	562	4.63	
Conger conger	1.87	24	4.58	
GOBIIDAE	1.49	298	3.65	
Citharus linguatula	0.91	30	2.24	
Scorpaena scrofa	0.32	8	0.78	
Scomber japonicus	0.28	2	0.68	
Trisopterus luscus	0.14	14	0.34	
Zeus faber	0.06	6	0.15	
Total	40.80		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 304
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°3.07
start stop duration Lon W 6°23.57
TIME :00:22:07 00:52:25 30.3 (min) Purpose : 3
LOG : 2601.24 2602.74 1.5 Region : 1100
FDEPTH: 121 120 Gear cond.: 0
BDEPTH: 121 120 Validity : 0
Towing dir: 0° Wire out : 310 m Speed : 3.0 kn
Sorted : 0 Total catch: 28.90 Catch/hour: 57.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	25.74	792	44.99	
Parapenaeus longirostris	10.42	2139	18.20	
Merluccius merluccius	7.19	115	12.56	1137
Octopus vulgaris	2.65	2	4.64	
Conger conger	2.59	30	4.53	
GOBIIDAE	1.84	832	3.22	
Scomber japonicus	1.70	53	2.98	
Eledone sp.	1.64	10	2.87	
Squilla mantis	1.48	40	2.58	
Trachurus trachurus	0.99	53	1.73	
Engraulis encrasicolus	0.95	46	1.66	
Cepola macrophthalma	0.02	1	0.03	
Total	57.22		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 305
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°33.70
start stop duration Lon W 6°44.11
TIME :08:18:47 08:51:21 32.6 (min) Purpose : 3
LOG : 2667.40 2668.89 1.5 Region : 1100
FDEPTH: 763 756 Gear cond.: 0
BDEPTH: 763 756 Validity : 0
Towing dir: 0° Wire out : 1400 m Speed : 2.7 kn
Sorted : 0 Total catch: 133.24 Catch/hour: 245.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Scymnodon cf ringens	117.27	26	47.78	
Deania calcea	53.46	11	21.78	
Deania profundorum	15.18	15	6.18	
Trachyrincus scabrus	14.74	26	6.00	
Xenodermichthys copei	9.36	322	3.81	
Neomerinthe folgori	6.17	9	2.51	
Malacocephalus occidentalis	6.08	41	2.48	
Galeus melastomus	5.82	9	2.37	
Pontinus kuhlii	3.89	15	1.58	
Halosaurus ovenii	3.81	20	1.55	
Gephyroberyx darwini	3.08	7	1.25	
Laemonema laureysi	2.34	2	0.95	
Hoplostethus mediterraneus	0.85	87	0.35	
Diretmoides parini	0.63	2	0.26	
Schedophilus sp.	0.61	2	0.25	
Melanonus gracilis	0.61	24	0.25	
Notacanthus sexspinis	0.39	15	0.16	
Chauliodus sp.	0.33	7	0.14	
Epigonus telescopus	0.20	7	0.08	
ALEPOCEPHALIDAE	0.17	13	0.07	
Argyropelecus sp.	0.11	20	0.05	
Nemichthys scolopaceus	0.11	6	0.05	
Ophisurus serpens	0.07	11	0.03	
Stomias boa boa	0.06	4	0.02	
Notacanthus bonaparte	0.04	4	0.02	
Gadomus arcuatus	0.04	4	0.02	
Benthodesmus tenuis	0.04	2	0.02	
Nettastoma parviceps	0.02	2	0.01	
Total	245.45		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 306
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°29.88
start stop duration Lon W 6°32.16
TIME :13:38:34 14:09:41 31.1 (min) Purpose : 3
LOG : 2688.50 2690.06 1.6 Region : 1100
FDEPTH: 400 395 Gear cond.: 0
BDEPTH: 400 395 Validity : 0
Towing dir: 0° Wire out : 870 m Speed : 3.0 kn
Sorted : 0 Total catch: 31.84 Catch/hour: 61.39

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Ceratoscopelus sp.	25.64	5591	41.77	
Merluccius merluccius	12.44	87	20.26	1138
Parapenaeus longirostris	12.32	1062	20.07	
Lepidopus caudatus	8.17	4	13.32	
Illex coindetii	1.41	4	2.29	
Galeus melastomus	0.67	4	1.10	
Hoplostethus mediterraneus	0.39	81	0.63	
Trisopterus luscus	0.23	12	0.38	
Argyropelecus aculeatus	0.06	8	0.09	
Ophidion barbatum	0.04	6	0.06	
Serranus cabrilla	0.02	4	0.03	
Total	61.39		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 307
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°27.65
start stop duration Lon W 6°24.59
TIME :15:52:04 16:23:09 31.1 (min) Purpose : 3
LOG : 2700.56 2702.11 1.6 Region : 1100
FDEPTH: 136 132 Gear cond.: 0
BDEPTH: 136 132 Validity : 0
Towing dir: 0° Wire out : 340 m Speed : 3.0 kn
Sorted : 0 Total catch: 26.94 Catch/hour: 51.99

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Octopus vulgaris	22.08	14	42.46	
Merluccius merluccius	16.02	243	30.81	1139
Trachurus trachurus	5.09	241	9.80	
Macrorhamphosus scolopax	3.24	849	6.24	
Zeus faber	2.80	4	5.38	
Mullus surmuletus	1.10	14	2.12	
Scorpaena scrofa	0.96	8	1.86	
Macrorhamphosus gracilis	0.35	79	0.67	
Capros aper	0.19	35	0.37	
Serranus cabrilla	0.15	2	0.30	
Total	51.99		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 308
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°24.01
start stop duration Lon W 6°12.12
TIME :19:30:18 20:00:35 30.3 (min) Purpose : 3
LOG : 2718.02 2719.55 1.5 Region : 1100
FDEPTH: 79 84 Gear cond.: 0
BDEPTH: 79 84 Validity : 0
Towing dir: 0° Wire out : 210 m Speed : 3.1 kn
Sorted : 0 Total catch: 20.31 Catch/hour: 40.24

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	13.67	438	33.97	1140
Octopus vulgaris	9.43	6	23.44	
Scorpaena scrofa	6.40	113	15.90	
Trisopterus luscus	4.24	61	10.54	
Lepidopus caudatus	2.36	99	5.86	
Scorpaena stephanica	1.84	24	4.58	
GOBIIDAE	0.75	192	1.87	
Conger conger	0.71	8	1.77	
Chelidonichthys obscurus	0.40	2	0.98	
Cepola macrophthalma	0.32	28	0.79	
Arnoglossus imperialis	0.10	12	0.25	
Callionymus lyra	0.02	2	0.05	
Plastic bags	0.00	2	0.00	
Total	40.24		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 309
DATE :13/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°25.38
start stop duration Lon W 6°7.23
TIME :22:32:20 22:59:15 26.9 (min) Purpose : 3
LOG : 2728.44 2729.88 1.4 Region : 1100
FDEPTH: 48 52 Gear cond.: 0
BDEPTH: 48 52 Validity : 0
Towing dir: 0° Wire out : 150 m Speed : 3.2 kn
Sorted : 0 Total catch: 22.82 Catch/hour: 50.86

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	21.62	379	42.51	1141
Aphia minuta	6.40	9539	12.58	
Solenocera membranacea	6.35	1589	12.49	
Conger conger	4.77	53	9.38	
Squilla mantis	4.75	176	9.33	
Citharus linguatula	2.05	116	4.03	
Trisopterus luscus	1.67	87	3.29	
Trachinus draco	1.18	4	2.32	
Torpedo marmorata	0.85	2	1.67	
Scorpaena scrofa	0.62	7	1.23	
Mullus barbatus	0.45	2	0.88	
Cepola macrophthalma	0.09	2	0.18	
Chelidonichthys obscurus	0.07	4	0.13	
Total	50.86		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 310
DATE :13/07/2012 GEAR TYPE: PT NO: 4 POSITION:Lat N 35°27.91
start stop duration Lon W 6°6.26
TIME :23:25:45 23:55:43 30.0 (min) Purpose : 3
LOG : 2731.07 2732.87 1.8 Region : 1100
FDEPTH: 0 0 Gear cond.: 0
BDEPTH: 52 52 Validity : 0
Towing dir: 0° Wire out : 100 m Speed : 3.6 kn
Sorted : 0 Total catch: 16.39 Catch/hour: 32.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Engraulis encrasicolus	31.51	885	96.01	
Merluccius merluccius	0.36	6	1.10	
Alloteuthis sp.	0.29	270	0.90	
Squilla mantis	0.22	6	0.66	
Sardina pilchardus	0.14	6	0.43	
PORTUNIDAE	0.10	12	0.30	
Alloteuthis subulata	0.09	26	0.27	
Alloteuthis africana	0.06	6	0.20	
Loligo vulgaris	0.02	4	0.07	
Sepiola atlantica	0.01	6	0.03	
Solenocera membranacea	0.01	2	0.02	
Total	32.82		100.00	

R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 311
DATE :14/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°43.60
start stop duration Lon W 6°16.84
TIME :06:24:08 06:54:52 30.7 (min) Purpose : 3
LOG : 2792.17 2793.86 1.7 Region : 1100
FDEPTH: 290 294 Gear cond.: 0
BDEPTH: 290 294 Validity : 0
Towing dir: 0° Wire out : 650 m Speed : 3.3 kn
Sorted : 0 Total catch: 13.13 Catch/hour: 25.64

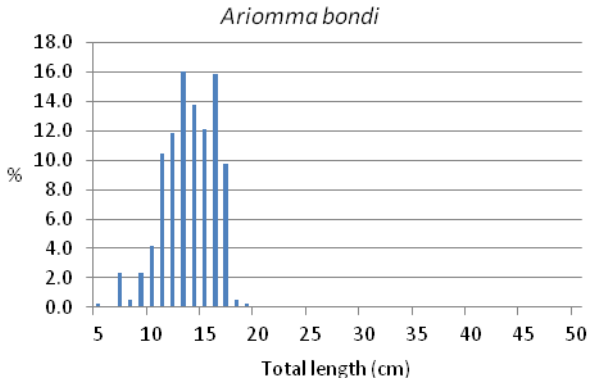
SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius merluccius	6.85	178	26.73	1142
Lepidopus caudatus	6.60	2	25.74	
Torpedo marmorata	6.27	2	24.45	
Conger conger	1.95	10	7.62	
Trachurus trachurus	1.46	41	5.71	1143
Micromesistius poutassou	0.72	35	2.82	
Arnoglossus imperialis	0.45	25	1.75	
Aphia minuta	0.31	269	1.22	
Pontinus kuhlii	0.23	4	0.91	
Scyliorhinus canicula	0.23	14	0.91	
Capros aper	0.16	10	0.61	
Scorpaena scrofa, juvenile	0.14	23	0.53	
Macrorhamphosus scolopax	0.08	10	0.30	
Arnoglossus laterna	0.04	8	0.15	
Citharus linguatula	0.04	4	0.15	
Trisopterus minutus	0.04	4	0.15	
Microchirus boscanion	0.04	4	0.15	
MYCTOPHIDAE	0.02	6	0.08	
Total	25.64		100.00	

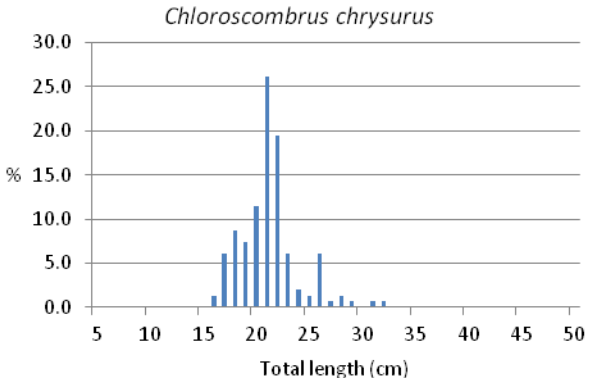
R/V Dr. Fridtjof Nansen SURVEY:2012404 STATION: 312
DATE :14/07/2012 GEAR TYPE: BT NO: 25 POSITION:Lat N 35°15.22
start stop duration Lon W 6°45.08
TIME :16:32:37 17:19:19 46.7 (min) Purpose : 3
LOG : 2855.97 2858.29 2.3 Region : 1100
FDEPTH: 570 574 Gear cond.: 0
BDEPTH: 570 574 Validity : 0
Towing dir: 0° Wire out : 0 m Speed : 3.0 kn
Sorted : 0 Total catch: 19.39 Catch/hour: 24.91

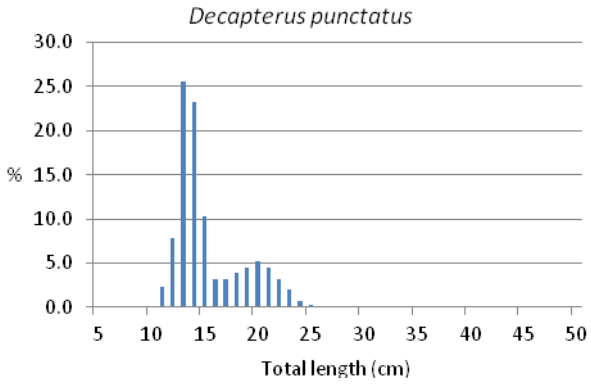
SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hexanchus vitulus	8.84	3	35.48	
Hoplostethus mediterraneus	5.14	105	20.63	
Galeus melastomus	1.85	5	7.43	
Merluccius merluccius	1.63	4	6.55	
Benthodesmus tenuis	1.44	14	5.78	
Deania calcea	0.85	1	3.40	
Plesiopenaeus edwardsianus	0.75	18	2.99	
MYCTOPHIDAE	0.69	179	2.78	
Aristeus antennatus	0.55	17	2.22	
Malacocephalus laevis	0.46	3	1.86	
Micromesistius poutassou	0.44	3	1.75	
Nezumia aequalis	0.37	40	1.50	
Coelorinchus coelorhincus	0.37	55	1.50	
Nephrops norvegicus	0.33	1	1.34	
Helicolenus dactylopterus	0.28	1	1.13	
Xenodermichthys copei	0.26	27	1.03	
Polymetme corythaeola	0.19	8	0.77	
Stomias boa boa	0.09	4	0.36	
Hoplostethus sp.	0.08	193	0.31	
Ceratoscopelus sp.	0.06	12	0.26	
Lophius budegassa	0.05	1	0.21	
Gnathopis mystax	0.04	1	0.15	
Notacanthus bonaparte	0.04	3	0.15	
Phycis blennoides	0.04	14	0.15	
Nemichthys scolopaceus	0.03	6	0.10	
Argyropelecus aculeatus	0.01	1	0.05	
Scorpaena scrofa	0.01	1	0.05	
Argyropelecus aculeatus	0.01	1	0.05	
Total	24.91		100.00	

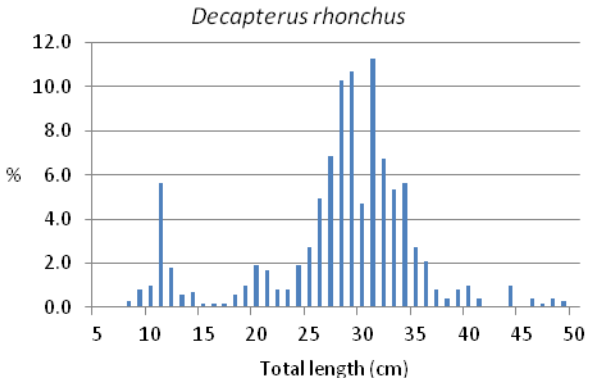
ANNEX II Length distribution

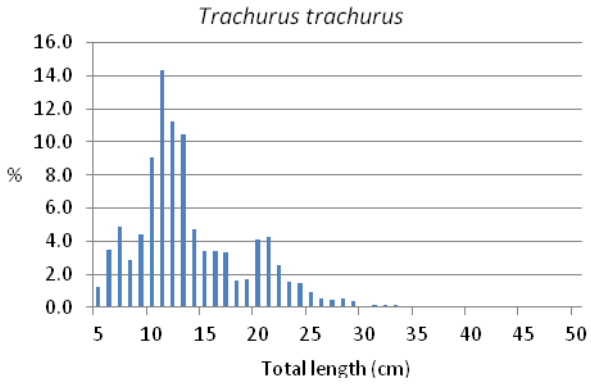
Length freqvencies (simple adding) of the species most freqvently measured (more than 100 individuals) during the survey.

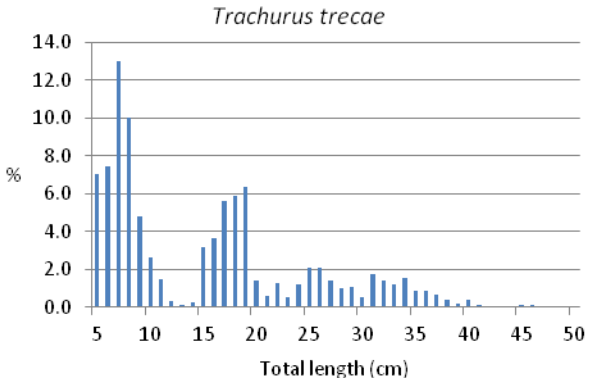




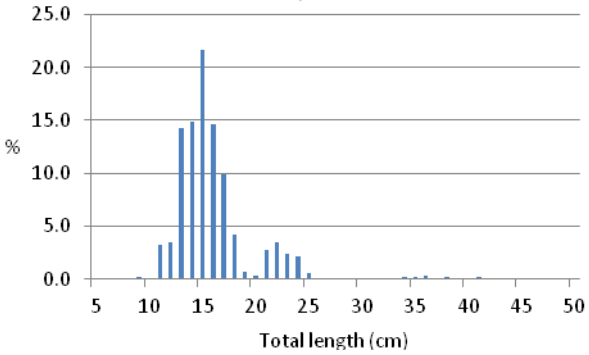




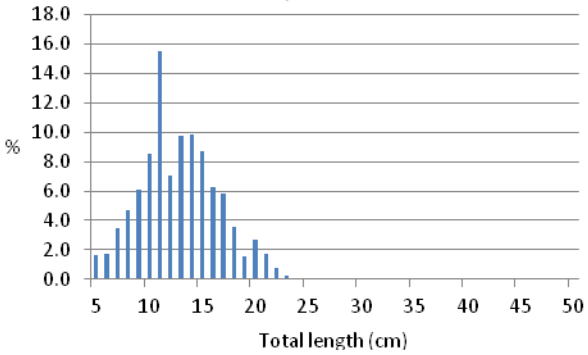




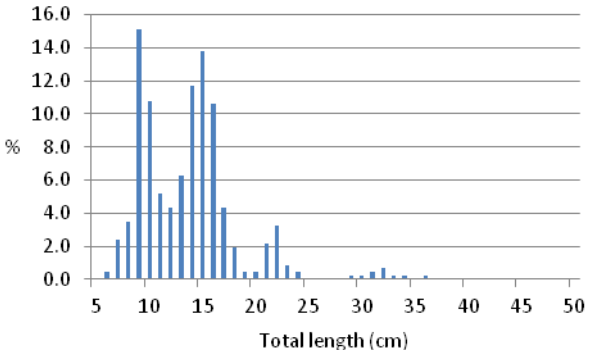
Trachurus picturatus



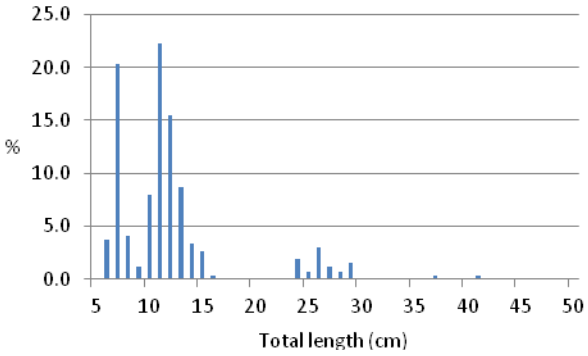
Sardina pilchardus



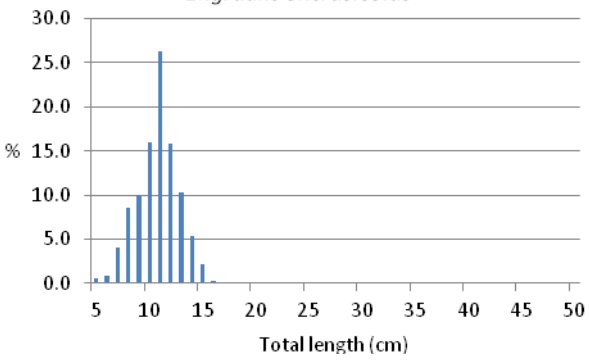
Sardinella aurita



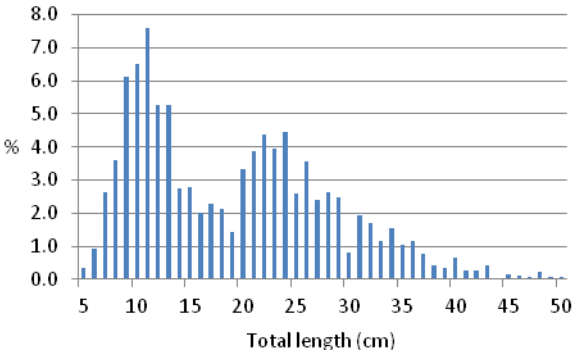
Sardinella maderensis



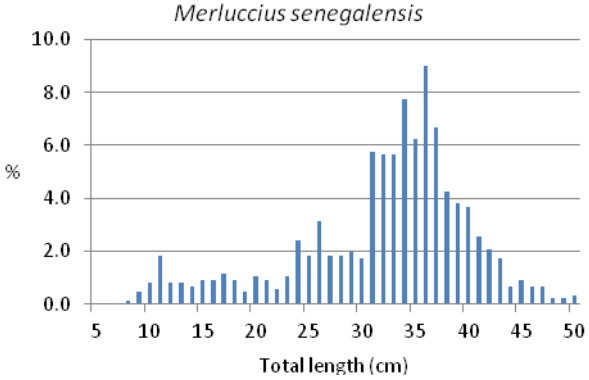
Engraulis encrasicolus



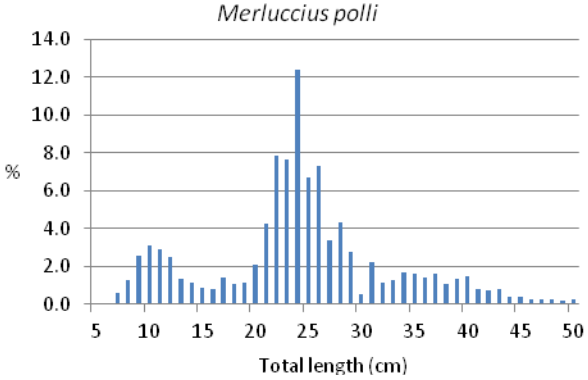
Merluccius merluccius



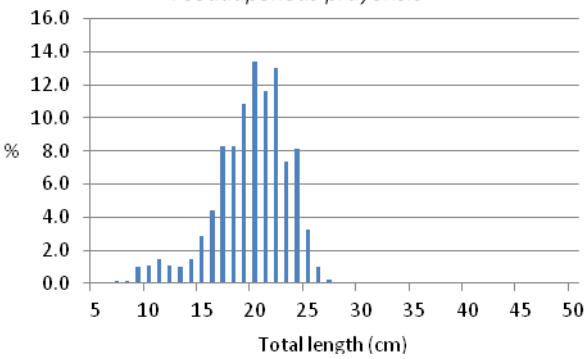
Merluccius senegalensis



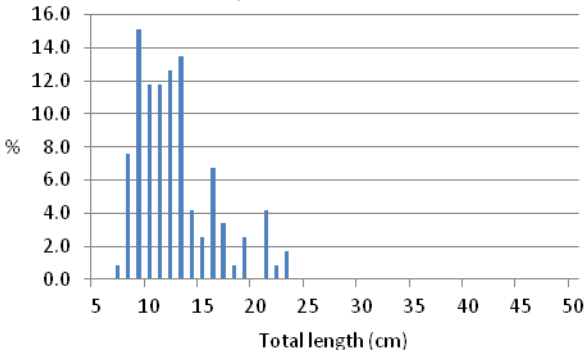
Merluccius polli



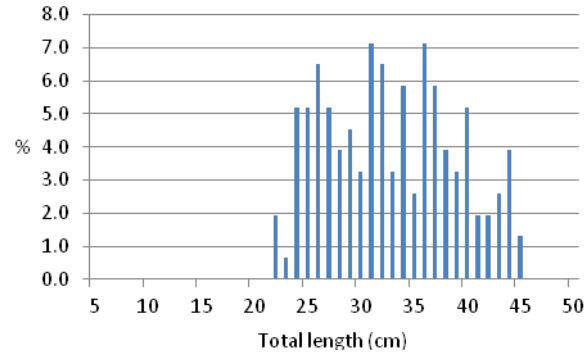
Pseudupeneus prayensis



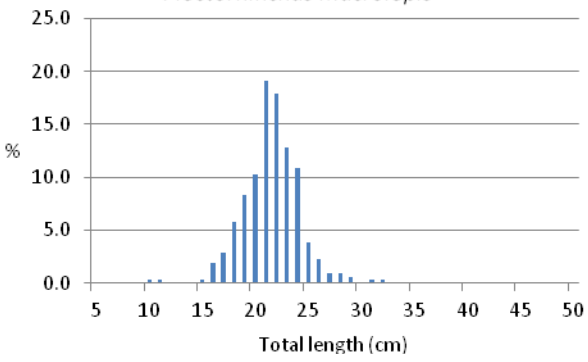
Brachydeuterus auritus



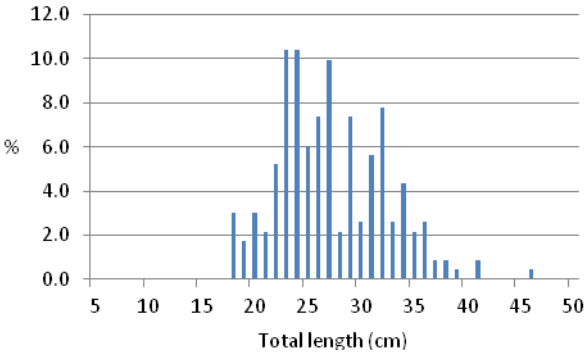
Plectorhinchus mediterraneus



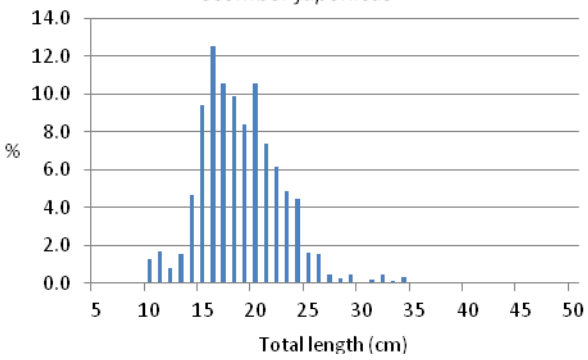
Plectorhinchus macrolepis



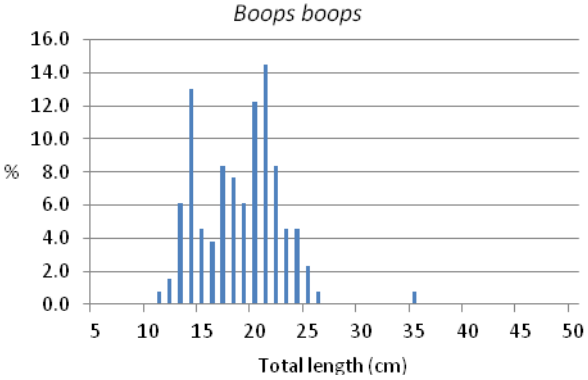
Umbrina canariensis



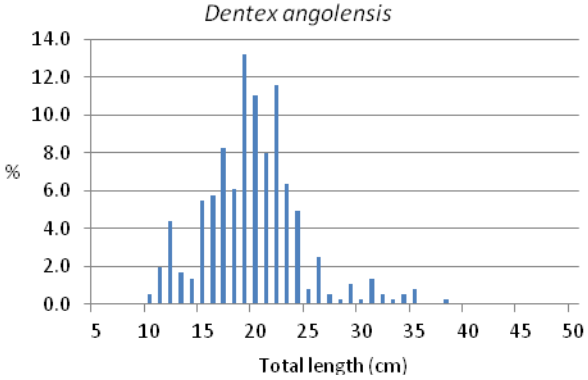
Scomber japonicus

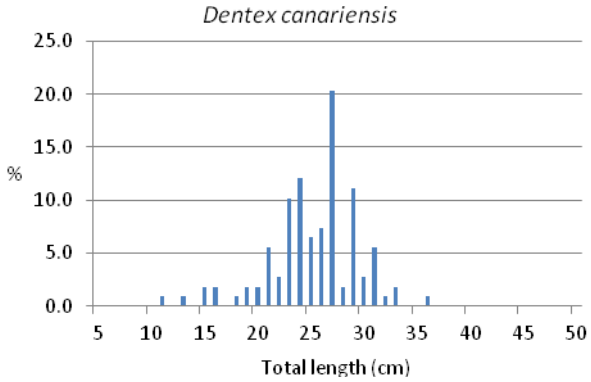


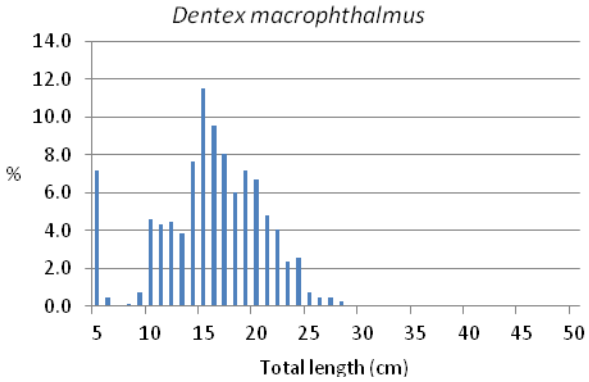
Boops boops

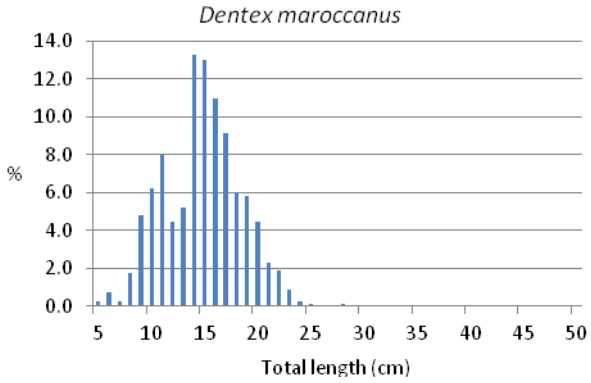


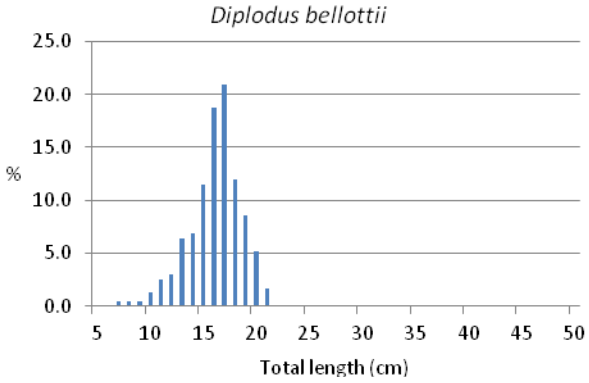
Dentex angolensis

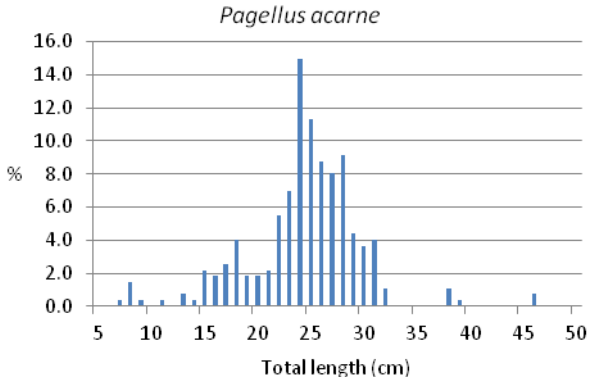


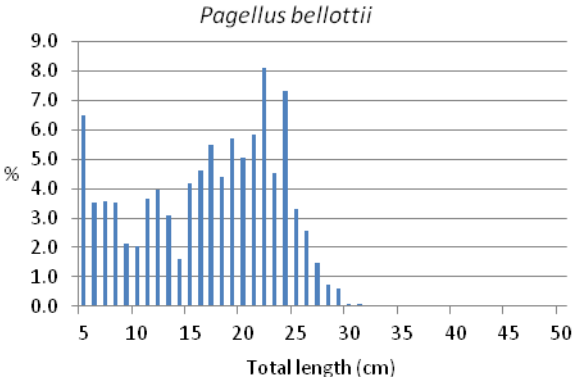

Dentex canariensis
%
Total length (cm)

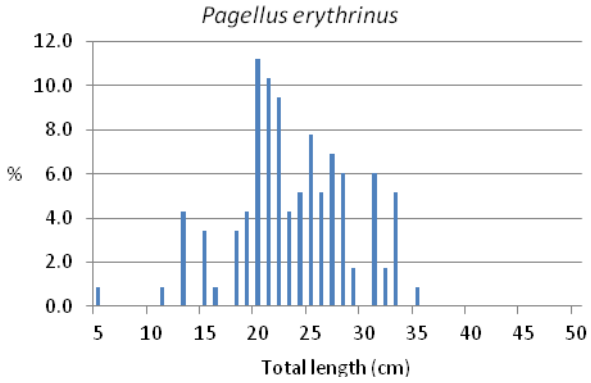

Dentex macrophthalmus
%
Total length (cm)

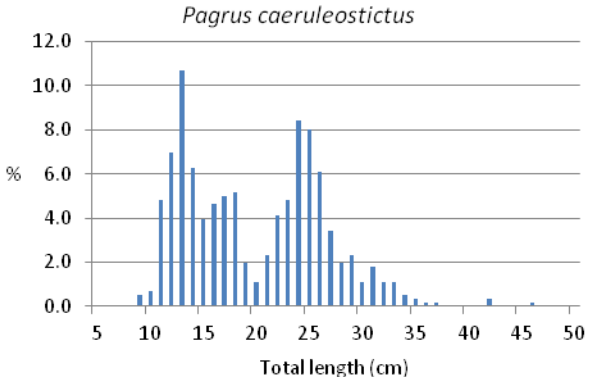

Dentex maroccanus
%
Total length (cm)

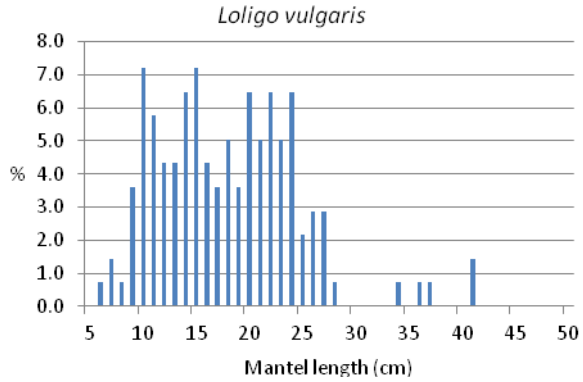

Diplodus bellottii
%
Total length (cm)

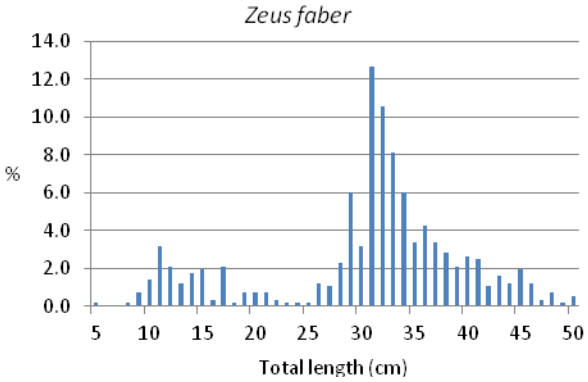

Pagellus acarne
%
Total length (cm)

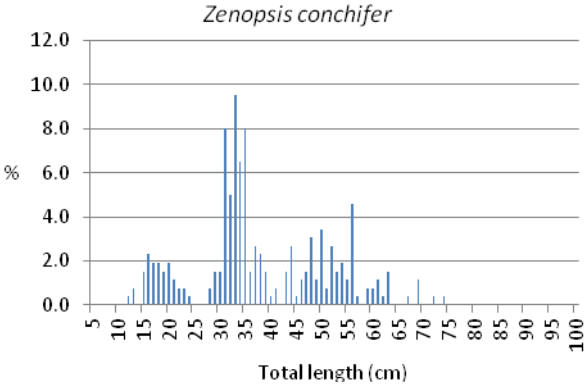

Pagellus bellottii
%
Total length (cm)

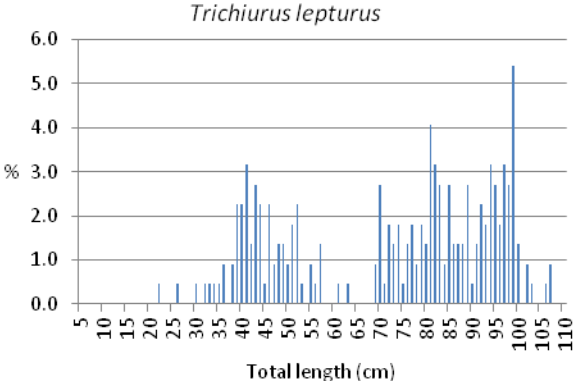

Pagellus erythrinus
%
Total length (cm)


Pagrus caeruleostictus
%
Total length (cm)


Loligo vulgaris
%
Mantel length (cm)


Zeus faber
%
Total length (cm)


Zenopsis conchifer
%
Total length (cm)


Trichiurus lepturus
%
Total length (cm)

ANNEX III. INSTRUMENTS AND FISHING GEAR USED

Echo sounder

The SIMRAD ER60/38 kHz scientific sounder was used during the survey for fish abundance estimation. The LSSS Integrator system was used to scrutinise the acoustic records. The settings of the echo sounders were as follows:

Transceiver-2 menu (ES38B 38 kHz)

Transducer depth	5.50/7.5 m
Absorption coefficient	8.7 dB/km
Pulse length	medium (1,024ms)
Bandwidth	2.43 kHz
Max power	2000 Watt
2-way beam angle	-20,6dB
Gain	25.24 dB
SA correction	-0.46 dB
Angle sensitivity	21.9
3 dB beam width	7.31º along ship
	7.34º athwart ship
Along ship offset	0.10º
Athwart ship offset	0.04º

Bottom detection menu

Minimum level	-45 dB

Fishing gear

The vessel has both “Harstad” and "Åkrahamn" pelagic trawls and a "Gisund super bottom trawl".

The bottom trawl has a headline of 31 m, footrope 47 m and 20 mm mesh size in the cod end with an inner net of 10 mm mesh size (see drawings below). 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 on 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.

The SCANBAS 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 the trawl with a trawl eye that provides information on the trawl opening, the distance of the footrope to the bottom, bottom contact and fish entering the trawl.

ANNEX IV EQUATIONS

Biomass index

The stratified estimator of mean density in the entire area is calculated as (Cochran, 1977)

$$\bar{y}_{st} = \sum_{i=1}^{L} W_i \bar{y}_i \,, \tag{1}$$

where

L is the number of strata,

$W_i = \frac{area_i}{total\ area}$ is the proportion of the i^{th} stratum of the total survey area,

$\bar{y}_i = \frac{\sum_{k=1}^{n_i} y_{i,k}}{n_i}$ is the average density in the i^{th} stratum

$y_{i,k}$ is the density [tonnes/NM^2] by the k^{th} tow in stratum *i*

n_i is the number of tows in the i^{th} stratum.

The total biomass in the area is calculated by

$$B = \bar{y}_{st} \cdot total\ area \tag{2}$$

The estimated variance of the biomass (var(biomass)) was calculated by:

$$\mathrm{var}(biomass) = \left(\sum \frac{W_i^2 s_i^2}{n_i} \right) A^2 \tag{3}$$

where

$s_i^2 = \frac{\sum_{k=1}^{n_i} (y_{i,k} - \bar{y}_i)^2}{n_i - 1}$, and *A* is total area

The standard error (SE) of the stratified mean was calculated as (Cochran 1977):

$$SE = \sqrt{\mathrm{var}(biomass)} \tag{4}$$

The precision for the estimates (CV) was calculated by (Zar 1999[1]):

$$CV = \frac{SE}{biomass} \tag{5}$$

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 is in the interval (see Cochran[2], 1977)

$$biomass \pm t_{(n-1)} SE \tag{6}$$

where *t* is from Students t-table with (n-1) degrees of freedom and $\alpha = 0.025$.

[1] Zar JH, 1999, Biostatistical analysis. Prentice Hall, New Jersey, 4. ed., 663 pp.
[2] Cochran, W.G.1977. Sampling Techniques, 3rd ed. John Wiley and Sons, N.Y. 228 pp.

ANNEX V. SWEPT AREA ANALYSES PER REGION

SWEPT AREA ANALYSIS													
Conacry - CapeVert													
SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES						% inci-	Mean	Mean densities by bottom depth strata t/nm²			
	Lower limits, Kg/nm						dence	dens.				
	>0	10	30	100	300	1000		t/nm²	0-50m	50-100m	100-200m	200-500m
J E L L Y F I S H	8	5	3		2		23.38	2.252	6.9	0.39		
Trachurus trecae	21	6	4	3	1		45.45	2.141	0.922	5.158	2.418	0.053
Trichiurus lepturus	17	2	2		1		28.57	1.191	0.019	0.039	5.321	0.312
Synagrops microlepis	5	5	4	1	1		20.78	1.127			4.239	1.116
Ariomma bondi	10	1	3	2			20.78	1.039		1.811	2.681	0.054
Sardinella sp.					1		1.3	0.799	2.564			
Chlorophthalmus atlanticus	5	4	8				22.08	0.691			0.95	2.237
Decapterus rhonchus	17	6	4	1			36.36	0.654	0.673	1.639	0.09	
Merluccius polli	14	3	5				28.57	0.545			0.342	2.146
Engraulis encrasicolus	4		1	1			7.79	0.48	0.312	0.001	1.839	
Illex coindetii	21	8	2				40.26	0.414		0.247	1.048	0.596
Umbrina canariensis	8	2	1	1			15.58	0.395		0.101	1.773	0.003
Brachydeuterus auritus	9	1	2	1			16.88	0.392	0.907	0.422		
MYCTOPHIDAE	5		1	1			9.09	0.392			0.006	1.77
Antigonia capros	12	4	1	1			23.38	0.35		0.134	1.449	0.066
Galeoides decadactylus	4	2		1			9.09	0.3	0.805	0.189		
Pagellus bellottii	25	7	1				42.86	0.272	0.438	0.509	0.013	
Pagrus caeruleostictus	9	6	2				22.08	0.263	0.682	0.191	0.002	
Pseudupeneus prayensis	22	6	1				37.66	0.202	0.46	0.223	0.002	
Chloroscombrus chrysurus	10	3	1				18.18	0.196	0.55	0.093		
Aulopus cadenati	11	4	1				20.78	0.18			0.728	0.129
Balistes capriscus	7	1		1			11.69	0.167	0.53	0.009		
Dactylopterus volitans	18			1			24.68	0.16	0.016	0.573	0.028	
Scorpaena stephanica	17	2	1				25.97	0.151		0.077	0.625	0.006
Dentex angolensis	7	2	1				12.99	0.149		0.005	0.712	
Sardinella aurita	15	1	2				23.38	0.147	0.451	0.024		
Selene dorsalis	10		1				14.29	0.144	0.014	0.535	0.004	
Pomadasys incisus	4	3	1				10.39	0.144	0.09	0.446		
Todaropsis eblanae	18	3					27.27	0.132		0.145	0.299	0.145
Decapterus punctatus	12	4					20.78	0.124	0.279	0.143		
Stromateus fiatola		1	1				2.6	0.103	0.21	0.146		
Pentheroscion mbizi	4	1	1				7.79	0.094		0.338	0.028	
Mustelus mustelus	12	2					18.18	0.094		0.039	0.343	0.055
Laemonema laureysi	6	1	1				10.39	0.082				0.369
Raja miraletus	26	1					35.06	0.081	0.052	0.064	0.222	0.011
Alectis alexandrinus	4	2					7.79	0.078	0.25			
Dasyatis centroura			1				1.3	0.077	0.248			
Spicara alta	5		1				7.79	0.071		0.001	0.341	
Centrophorus granulosus	4	2					7.79	0.069				0.31
Squalus megalops	4	2					7.79	0.067			0.162	0.152
Lepidotrigla carolae	16	2					23.38	0.066	0.004	0.005	0.304	0.002
Ijimaia loppei	4	3					9.09	0.06				0.272
Epinephelus aeneus	13	1					18.18	0.058	0.044	0.149	0.029	
Saurida brasiliensis	10	2					15.58	0.058	0.003	0.075	0.177	
Chromis cadenati	1	2					3.9	0.057		0.219		
Trachinus armatus	9		1				12.99	0.057	0.012	0.201	0.003	
Scorpaena normani	3		1				5.19	0.053			0.254	
Nematocarcinus africanus	1		1				2.6	0.052				0.235
Cymbium pepo	2	1					3.9	0.048	0.115	0.046		
Fistularia petimba	18						23.38	0.048	0.047	0.11	0.022	
SQUSE1K	27						35.06	0.048	0.131	0.024	0.001	0.001
Lophius vaillanti	6	1					9.09	0.046				0.207

Sphoeroides pachgaster		13	1					18.18	0.046		0.108	0.072	0.012
Priacanthus arenatus		16						20.78	0.044	0.037	0.055	0.088	
Yarrella blackfordi		5	2					9.09	0.044				0.199
Torpedo torpedo		2		1				3.9	0.044		0.169		
Gephyroberyx darwini		8						10.39	0.043		0.003	0.018	0.175
Sphyraena guachancho		10	1					14.29	0.042	0.063	0.031	0.07	
Alloteuthis africana		11	1					15.58	0.041	0.094	0.047		
Dentex congoensis		5	1					7.79	0.038			0.185	
Anthias anthias		2	1					3.9	0.037		0.001	0.179	
Scomber japonicus		20	1					27.27	0.037	0.017	0.098	0.028	
Fistularia tabacaria		18	1					24.68	0.036	0.019	0.114	0.003	
CRAPOB2		1	1					2.6	0.035		0.136		
Plectorhinchus mediterraneus		5	1					7.79	0.034	0.066	0.023	0.038	
Lagocephalus laevigatus		20	1					27.27	0.034	0.053	0.065		0.003
Octopus vulgaris		18						23.38	0.033	0.028	0.02	0.059	0.033
Dentex macrophthalmus		4	1					6.49	0.033		0.02	0.133	0.001
Malacocephalus occidentalis		6	1					9.09	0.032				0.143
Pontinus accraensis		17						22.08	0.03		0.004	0.06	0.073
Pteroscion peli			1					1.3	0.029			0.139	
Benthodesmus tenuis		5	1					7.79	0.028				0.126
Synagrops bellus		3	1					5.19	0.027			0.001	0.121
Hoplostethus cadenati		3	1					5.19	0.026				0.117
Spondyliosoma cantharus		5						6.49	0.026	0.021	0.027	0.058	
Brotula barbata		10	1					14.29	0.026		0.007	0.093	0.02
Merluccius senegalensis		5						6.49	0.022			0.063	0.041
Bembrops greyi		8	1					11.69	0.022	0.003			0.095
Zeus faber		16						20.78	0.021		0.007	0.085	0.007
Sardinella maderensis		7						9.09	0.02	0.065	0.001		
Scorpaena scrofa		6	1					9.09	0.02	0.005	0.012	0.07	0.004
Citharus linguatula		15						19.48	0.02	0.003	0.056	0.022	
Dentex canariensis		5						6.49	0.019	0.015	0.055	0.001	
PARALEPIDIDAE		1	1					2.6	0.018			0.001	0.083
Uranoscopus polli		10						12.99	0.016	0.001	0.048	0.016	0.001
JELLYFISH			1					1.3	0.016	0.052			
Branchiostegus semifasciatus *		5						6.49	0.016			0.075	
Lophiodes kempi		1	1					2.6	0.015				0.07
Pterothrissus belloci		13						16.88	0.015			0.033	0.037
Malacocephalus laevis		8						10.39	0.015				0.068
Lamprogrammus exutus		3						3.9	0.015				0.067
Elops lacerta			1					1.3	0.014	0.044			
Chaunax pictus		6						7.79	0.014				0.062
Caranx crysos		4						5.19	0.013	0.035	0.009		
Parasudis fraser-bruenneri		5						6.49	0.012				0.055
Balistes punctatus		3						3.9	0.012	0.039			
Arnoglossus imperialis		13						16.88	0.012		0.034	0.015	
Mycteroperca rubra		1						1.3	0.012		0.044		
Bembrops heterurus		6						7.79	0.011			0.014	0.039
Chelidonichthys gabonensis		15						19.48	0.011		0.033	0.013	
Lutjanus goreensis		2						2.6	0.011	0.02	0.018		
Raja straeleni		6						7.79	0.011		0.012	0.012	0.024
Myctophidae sp. large		2						2.6	0.01			0.049	
Scorpaena elongata		3						3.9	0.01		0.001	0.047	
Penaeus notialis		3						3.9	0.001	0.003	0.002		
Penaeus kerathurus		1						1.3		0.001			
SHRPE44		1						1.3					
Other fish									0.352	0.336	0.352	0.174	0.541
Sum all species									18.68	18.748	16.132	28.368	12.463
Sum SNAPPERS, JOBFISHES									0.011	0.02	0.018		
Sum GROUPERS, SEABASSES									0.081	0.046	0.224	0.041	
Sum GRUNTS, SWEETLIPS									0.579	1.084	0.899	0.038	
Sum CROAKERS, DRUMS, WEAKF., KOBS									0.523	0.003	0.454	1.94	0.003
Sum PANDORAS, PORGIES, SEABREAMS,									0.807	1.161	0.826	1.107	0.001
Sum SHARKS, CHIMAERAS									0.25	0.003	0.039	0.514	0.6
Sum BATOID FISHES, RAYS									0.226	0.325	0.249	0.239	0.044
Sum CEPHALOPODS									0.669	0.254	0.485	1.407	0.778
Numbers of stations included in analysis, total and by depth strata									77	24	20	16	17

SWEPT AREA ANALYSIS													
Cape Vert - Cape Blanc													
SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES							% inci-	Mean	Mean densities by bottom depth strata t/			
		Lower limits, Kg/nm						dence	dens.				
		>0	10	30	100	300	1000		t/nm²	0-50m	50-100m	100-200m	200-500m
Trachurus trecae		22	5	12	5	5		76.56	6.191	1.709	16.24	4.429	0.097
Synagrops microlepis		14	1	2	3	3		35.94	4.126	0.002	1.109	14.303	0.071
Hoplostethus mediterraneus		2					1	4.69	2.613				12.863
Chlorophthalmus atlanticus		14	2	3	4	1		37.5	2.428		0.001	7.951	1.553
Trachurus trachurus		18	2	5		2		42.19	1.822	0.67	5.369	0.535	0.01
Helicolenus dactylopterus		6	3	5	2	1		26.56	1.752			2.471	5.394
Merluccius polli		18	12	7	3			62.5	1.752	0.001	2.488	2.507	1.899
Diplodus bellottii		1			2	1		6.25	1.711	6.845			
Engraulis encrasicolus		7	1	4		1		20.31	1.535	0.614	4.737	0.184	
Todaropsis eblanae		19	4	2	1	1		42.19	1.497	0.006	0.74	4.608	0.311
J E L L Y F I S H		1	1	1		2		7.81	1.328	4.801		0.48	
Pagellus bellottii		12	3	2	2			29.69	1.184	4.56	0.151	0.006	
Merluccius senegalensis		16	6	7	1			46.87	1.039	0.077	0.392	2.576	1.108
Zeus faber		29	5	4	1			60.94	0.926	0.321	1.435	1.663	
Pterothrissus belloci		9	1	3	2			23.44	0.866		2.464	0.617	0.045
Pontinus kuhlii		6	2	1	2			17.19	0.75	0.188	0.647	0.142	2.383
Pontinus accraensis		6	3	4	1			21.87	0.723			1.025	2.221
Plectorhinchus mediterraneus		2			2			6.25	0.613	2.452			
Trichiurus lepturus		14	1	3	1			29.69	0.572	0.471	1.323	0.299	0.013
Brachydeuterus auritus		3		1	1			7.81	0.379	1.494	0.007	0.014	
Pseudupeneus prayensis		10	3		1			21.87	0.293	1.057	0.101		
Thorogobius sp.		5	4	2				17.19	0.282	0.005	0.504	0.522	
Brotula barbata		14	3	1				28.12	0.273		0.013	0.894	0.155
Decapterus rhonchus		5	3	1				14.06	0.267	0.516	0.49		
Pomadasys incisus		2			1			4.69	0.262	1.048			
Octopus vulgaris		24	1	1				40.62	0.252		0.77	0.129	0.007
Raja straeleni		5			1			9.37	0.247		0.016	0.033	1.154
Zenopsis conchifer		10	5	1				25	0.217			0.397	0.547
Sardinella maderensis		2			1			4.69	0.213	0.84	0.01		
GOBIIDAE		5	1	2				12.5	0.188	0.185	0.503		
Loligo vulgaris		13	2	1				25	0.187	0.342	0.323	0.041	
Laemonema laureysi		8	3					17.19	0.156			0.001	0.765
Antigonia capros		4	1	1				9.37	0.154		0.009	0.569	
Pagrus caeruleostictus		4	2	1				10.94	0.137	0.549			
Scomber japonicus		19	1	1				32.81	0.129	0.082	0.125	0.277	
Mustelus mustelus		2	1	1				6.25	0.125	0.499			
Pteroscion peli				1				1.56	0.118	0.472			
Sardina pilchardus		6	1	1				12.5	0.116	0.014	0.395	0.006	
Dentex maroccanus		9	1	1				17.19	0.109	0.006	0.215	0.176	
Raja miraletus		13	1					21.87	0.102	0.238	0.14	0.012	
Galeoides decadactylus				1				1.56	0.102	0.407			
Unidentified fish				1				1.56	0.097			0.366	
Nematocarcinus africanus		1		1				3.12	0.097				0.477
Dentex canariensis		6	2					12.5	0.09	0.361			
Lophius vaillanti		11	1					18.75	0.087				0.428
Gephyroberyx darwini		8		1				14.06	0.086			0.019	0.4
Malacocephalus occidentalis		8	2					15.62	0.081			0.012	0.384
Parapenaeus longirostris		1	3					6.25	0.078		0.13		0.203
Hoplostethus cadenati		3	2					7.81	0.077				0.379
Caelorinchus coelorhincus		11	2					20.31	0.076			0.008	0.365
Schedophilus pemarco		4	2					9.37	0.076	0.003	0.063	0.001	0.281
Gymnura altavela		1		1				3.12	0.073	0.293			
Galeus melastomus		1	2					4.69	0.072				0.353
Pseudotolithus senegalensis		1		1				3.12	0.071	0.272	0.011		

Alectis alexandrinus		2		1				4.69	0.061	0.238	0.005		
Bembrops heterurus		5	2					10.94	0.06		0.001	0.135	0.118
Epinephelus aeneus		4	2					9.37	0.059	0.195	0.035		
Umbrina canariensis		5	1					9.37	0.059	0.005	0.142	0.066	
Ilisha africana				1				1.56	0.056	0.225			
OPHEC03		6	1					10.94	0.053			0.005	0.254
Hoplostethus cf tenebricus			2					3.12	0.05				0.246
Trigla lyra				1				1.56	0.047				0.233
Plesionika carinata		1	1					3.12	0.044				0.215
Dentex angolensis		11						17.19	0.043		0.052	0.108	
Squatina oculata			2					3.12	0.04		0.066	0.08	
Todarodes sagittatus		6	1					10.94	0.038			0.015	0.169
Diplodus sargus capensis		3						4.69	0.036	0.143			
SHRPA49		1	1					3.12	0.034		0.073		0.067
Centrophorus granulosus		3	1					6.25	0.034				0.167
Illex coindetii		14						21.87	0.034		0.048	0.07	0.007
Uranoscopus scaber		4	1					7.81	0.033	0.008	0.11		
Citharus linguatula		12						18.75	0.033	0.057	0.061	0.005	
Guentherus altivela		5						7.81	0.028				0.138
Aulopus cadenati		4	1					7.81	0.028			0.093	0.015
Arnoglossus imperialis		7						10.94	0.027	0.048	0.052		
Palinurus mauritanicus		1	1					3.12	0.026				0.127
Alloteuthis africana		8						12.5	0.026	0.08	0.019	0.001	
Gobidae sp. 'bars'		2	1					4.69	0.025	0.001	0.089		
Todarodes sp.			1					1.56	0.025				0.121
OPHICHTHIDAE		5						7.81	0.024			0.02	0.092
PORTUNIDAE			1					1.56	0.024		0.084		
Ophidion barbatum		12						18.75	0.022		0.021	0.032	0.04
Raja undulata		5						7.81	0.022	0.085	0.003		
Serranus cabrilla		11						17.19	0.022	0.002	0.007	0.074	
Deania profundorum		2						3.12	0.021				0.104
Echelus myrus		8						12.5	0.021			0.01	0.09
Nezumia micronychodon		1	1					3.12	0.021				0.103
Galeus polli		9						14.06	0.021			0.01	0.09
Capros aper		6						9.37	0.02	0.003	0.062	0.007	
Coloconger cadenati		2						3.12	0.02				0.098
Torpedo torpedo		8						12.5	0.019	0.006	0.024	0.04	
Yarrella blackfordi		5						7.81	0.018				0.09
Munida sp.		1	1					3.12	0.018			0.008	0.079
Epigonus sp.		6						9.37	0.018			0.002	0.085
Sepia officinalis		5						7.81	0.017	0.069			
Scorpaena notata		3						4.69	0.017	0.007	0.014	0.041	
JELLYFISH			1					1.56	0.016				0.079
Chloroscombrus chrysurus		3						4.69	0.014	0.057			
Scyliorhinus canicula		6						9.37	0.014		0.039	0.011	0.003
CONRE03		5						7.81	0.014				0.068
Epigonus telescopus		3						4.69	0.014				0.068
Sphoeroides pachgaster		6						9.37	0.013		0.022	0.025	
Cymbium marmoratum		1						1.56	0.012	0.05			
Lophius sp.		1						1.56	0.012				0.061
Scorpaena sp.		1						1.56	0.012				0.061
Coloconger sp.		2						3.12	0.012	0.016	0.028		
Dicologoglossa sp.		4						6.25	0.012				0.058
Stromateus fiatola		2						3.12	0.012	0.038	0.008		
Spondyliosoma cantharus		4						6.25	0.011	0.042	0.002		
Scorpaena scrofa		4						6.25	0.011		0.008	0.032	
Sepia bertheloti		2						3.12	0.011	0.001	0.037		
Trachyrincus scabrus		1						1.56	0.01				0.051
Sardinella aurita		11						17.19	0.01	0.025	0.003	0.011	
Penaeus notialis		6						9.37	0.002	0.003	0.006		
Plesionika acanthurus		1						1.56	0.001				0.006
Other fish									0.327	0.268	0.29	0.219	0.591
Sum all species									40.676	33.07	42.333	48.39	37.656
Sum SNAPPERS, JOBFISHES											0.001		
Sum GROUPERS, SEABASSES									0.083	0.196	0.043	0.081	
Sum GRUNTS, SWEETLIPS									1.255	4.998	0.007	0.014	
Sum CROAKERS, DRUMS, WEAKF., KOBS									0.261	0.782	0.165	0.071	
Sum PANDORAS, PORGIES, SEABREAMS,									3.332	12.51	0.42	0.326	
Sum SHARKS, CHIMAERAS									0.349	0.499	0.118	0.115	0.788
Sum BATOID FISHES, RAYS									0.49	0.674	0.183	0.099	1.199
Sum CEPHALOPODS									2.094	0.498	1.942	4.875	0.635
Numbers of stations included in analysis, total and by depth strata									64	16	18	17	13

SWEPT AREA ANALYSIS													
Cape Blanc - Cape Juby													
SPECIES NAME	SAMPLE DISTRIB. BY CATCH CLASSES							% inci-	Mean	Mean densities by bottom depth strata t			
		Lower limits, Kg/nm						dence	dens.				
		>0	10	30	100	300	1000		t/nm²	0-50m	50-100m	100-200m	200-500m
Macrorhamphosus gracilis		5		1	1	2	1	15.38	4.103		1.356	11.536	0.004
Hoplostethus mediterraneus		2	2				1	7.69	2.639				12.253
Scomber japonicus		19	3	2	1	2		41.54	2.337	0.785	0.519	5.786	0.83
Trachurus trachurus		20	13	11	3			72.31	2.061	1.998	3.324	1.435	1.431
Trachurus picturatus		9	3		1		1	21.54	2.05		0.026	6.238	0.126
Trachurus trecae		12	1	2	2	1		27.69	1.724	1.369	4.257	0.9	0.008
Diplodus bellottii		2	2	1		1		9.23	1.309	7.088			
Macrorhamphosus scolopax		17	2	2	2			35.38	1.147		0.44	3.122	0.076
Dentex macrophthalmus		15	10	3	1			44.62	0.816		0.185	1.928	0.657
Dentex maroccanus		24	2	3	1			46.15	0.617		1.268	0.763	0.088
Sardina pilchardus		9	2		2			20	0.569	2.731	0.235		
Pontinus kuhlii					1			1.54	0.429				1.992
Pomadasys incisus		3			2			7.69	0.425	2.302			
Zenopsis conchifer		19	6		1			40	0.416	0.009	0.001	0.111	1.757
Helicolenus dactylopterus		9		2	1			18.46	0.36		0.001	0.04	1.61
Zeus faber		35	3	2				61.54	0.328	0.068	0.475	0.456	0.172
Engraulis encrasicolus		4	1	2				10.77	0.273	1.48			
J E L L Y F I S H		3	1		1			7.69	0.259	1.234		0.01	0.128
Sphoeroides pachgaster		25	1	1				41.54	0.245		0.063	0.642	0.094
Raja straeleni					1			1.54	0.23				1.066
Pagellus bellottii		10	2	1				20	0.196	0.891	0.114		
Dentex angolensis		2	2	1				7.69	0.193		0.528	0.146	
Merluccius senegalensis		18			1			29.23	0.193	0.036	0.021	0.005	0.829
MYCTOPHIDAE		6	3	1				15.38	0.159			0.135	0.538
Raja miraletus		19		1				30.77	0.153	0.213	0.016	0.333	0.006
Umbrina canariensis		6		1				10.77	0.15	0.771	0.005	0.019	
Pagellus acarne		14	2					24.62	0.124	0.013	0.332	0.092	
Merluccius merluccius		20	3					35.38	0.123	0.001	0.006	0.069	0.459
Chelidonichthys obscurus		24	1					38.46	0.093	0.121	0.079	0.151	
Illex coindetii		21	2					35.38	0.089		0.036	0.043	0.301
Lepidopus caudatus		9	1	1				16.92	0.088			0.175	0.148
Pagellus erythrinus		15	2					26.15	0.084	0.067	0.244	0.013	
Gymnura altavela		1		1				3.08	0.074	0.403			
Epigonus telescopus		2		1				4.62	0.074				0.345
Loligo vulgaris		15						23.08	0.074	0.235	0.109		
Spondyliosoma cantharus		18	1					29.23	0.063	0.121	0.133	0.013	
Galeus melastomus		2	2					6.15	0.063				0.291
Gnathopis mystax		7	1					12.31	0.059		0.002	0.042	0.206
Octopus vulgaris		10	1					16.92	0.047	0.018	0.134	0.021	
Scomber scombrus		7	1					12.31	0.047	0.193	0.002	0.034	
Schedophilus pemarco		1	1					3.08	0.047			0.011	0.2
Trigla lyra				1				1.54	0.047				0.217
Cymbium marmoratum		1	1					3.08	0.035	0.19			
Coelorinchus coelorhincus		4	1					7.69	0.032				0.147
Sardinella aurita		1	1					3.08	0.031	0.166	0.001		
Dentex canariensis		5						7.69	0.028	0.152			
Decapterus rhonchus		1	1					3.08	0.028	0.151			
Chlorophthalmus agassizi		10						15.38	0.025				0.114
Scyliorhinus canicula		19						29.23	0.024		0.04	0.026	0.02
Citharus linguatula		21						32.31	0.023	0.091	0.014	0.006	
Arius parkii		1	1					3.08	0.022	0.115		0.002	
Parapenaeopsis atlantica			1					1.54	0.02				0.092
Serranus cabrilla		14						21.54	0.02		0.052	0.017	
Microchirus boscanion		28						43.08	0.018	0.001	0.021	0.035	0.005

Malacocephalus occidentalis		4						6.15	0.018				0.084
Uranoscopus scaber		5						7.69	0.018		0.035	0.026	
Argyrosomus regius		3						4.62	0.017	0.024	0.046		
Ophidion barbatum		13						20	0.017		0.015	0.039	
Raja microocellata		2						3.08	0.015	0.081			
Conger conger		9						13.85	0.015	0.047	0.009	0.002	0.014
GOBIIDAE		10						15.38	0.014	0.026	0.034		
Arnoglossus imperialis		19						29.23	0.014	0.001	0.039	0.009	
Synagrops microlepis		6						9.23	0.014			0.006	0.056
Diplodus sargus capensis		1						1.54	0.013	0.069			
Capros aper		15						23.08	0.012		0.001	0.01	0.04
Dentex gibbosus		9						13.85	0.012	0.036	0.013	0.004	
Halobatrachus didactylus *		3						4.62	0.011	0.06			
Dasyatis margarita		3						4.62	0.011	0.042	0.011		
Mustelus mustelus		1						1.54	0.01	0.055			
Trachinus draco		6						9.23	0.01	0.01	0.03		
Schedophilus ovalis		8						12.31	0.01			0.003	0.043
Penaeopsis serrata		2						3.08	0.01				0.047
Campogramma glaycos		3						4.62	0.01	0.054			
Pagrus caeruleostictus		2						3.08	0.01	0.054			
Parapenaeus longirostris		2						3.08	0.005				0.024
Plesionika ensis		1						1.54	0.002				0.009
Penaeus notialis		2						3.08	0.001	0.004			
Plesionika martia		1						1.54	0.001				0.003
Chlorotocus crassicornis		1						1.54					0.001
Other fish									0.243	0.373	0.208	0.132	0.341
Sum all species									25.395	23.952	14.481	34.59	26.87
Sum SNAPPERS, JOBFISHES													
Sum GROUPERS, SEABASSES									0.027		0.079	0.017	
Sum GRUNTS, SWEETLIPS									0.425	2.302			
Sum CROAKERS, DRUMS, WEAKF., KOBS									0.167	0.795	0.051	0.019	
Sum PANDORAS, PORGIES, SEABREAMS,									3.487	8.558	2.855	2.96	0.744
Sum SHARKS, CHIMAERAS									0.111	0.055	0.04	0.041	0.355
Sum BATOID FISHES, RAYS									0.507	0.822	0.046	0.344	1.072
Sum CEPHALOPODS									0.228	0.319	0.281	0.072	0.316
Numbers of stations included in analysis, total and by depth strata									65	12	18	21	14

SWEPT AREA ANALYSIS												
Cape Juby - Casablanca												
SPECIES NAME							% inci-	Mean	Mean densities by bottom depth strata t/nm²			
	Lower limits, Kg/nm						dence	dens.				
	>0	10	30	100	300	1000		t/nm²	0-50m	50-100m	100-200m	200-500m
Trachurus trachurus	23	7	10	9	1	2	94.55	16.715	46.545	10.637	6.689	0.164
Macrorhamphosus gracilis	7	1	1			1	18.18	4.483			16.414	0.049
Sardina pilchardus	10	4	3	1	1		34.55	1.671	3.17	2.528	0.01	
Scomber japonicus	23	6	4	2			63.64	1.218	2.345	1.139	0.881	0.073
Macrorhamphosus scolopax	12	4		2			32.73	0.885		0.089	3.092	0.073
Engraulis encrasicolus	13	2	3	1			34.55	0.768	1.132	1.378		
Lepidopus caudatus	16	1	2				34.55	0.376	0.017	0.386	0.25	1.281
Trachurus picturatus	13		2				27.27	0.35		0.036	1.203	0.068
Merluccius merluccius	37	2	1				72.73	0.319	0.086	0.341	0.365	0.588
Pagellus acarne	21	3					43.64	0.166	0.147	0.261	0.131	
Trachinus draco	12	2					25.45	0.104	0.331	0.07	0.002	
Centracanthus cirrus	2	1	1				7.27	0.102			0.375	
Liocarcinus sp			1				1.82	0.072	0.303			
Diplodus bellottii	3	2					9.09	0.07	0.288	0.005		
Trisopterus luscus	10	2					21.82	0.069	0.121	0.074	0.048	
Zeus faber	26						47.27	0.067	0.009	0.078	0.131	0.005
Pomadasys incisus	1	1					3.64	0.052	0.213	0.006		
Capros aper	14	1					27.27	0.049			0.123	0.117
Dentex angolensis	6	1					12.73	0.048		0.009	0.162	
Octopus vulgaris	17						30.91	0.044	0.048	0.042	0.065	
J E L L Y F I S H	4	1					9.09	0.042	0.136	0.003	0.034	
Parapenaeus longirostris	8						14.55	0.037		0.034	0.026	0.141
Spondyliosoma cantharus	15						27.27	0.037	0.108	0.032		
Mullus surmuletus	16						29.09	0.037	0.002	0.014	0.102	0.027
Sphoeroides pachgaster	8						14.55	0.032		0.002	0.117	
Citharus linguatula	22						40	0.03	0.002	0.054	0.033	0.005
Trachinus vipera		1					1.82	0.028		0.076		
Argentina sphyraena	4	1					9.09	0.027			0.096	0.009
MYCTOPHIDAE	2	1					5.45	0.025				0.193
Diplodus vulgaris	5	1					10.91	0.023	0.008	0.059		
Chelidonichthys obscurus	15						27.27	0.022	0.006	0.044	0.017	
Penaeopsis serrata		1					1.82	0.021				0.168
Scomber scombrus	2						3.64	0.02	0.083			
CARCHARHINIDAE		1					1.82	0.02	0.083			
Raja asterias	4						7.27	0.019			0.068	0.005
Campogramma glaycos	1						1.82	0.018	0.076			
Loligo vulgaris	11						20	0.018	0.051	0.012	0.004	
Conger conger	15						27.27	0.017	0.001	0.014	0.041	0.007
Raja montagui	2						3.64	0.017	0.058	0.009		
Dentex maroccanus	7						12.73	0.017		0.019	0.036	
Zenopsis conchifer	8						14.55	0.016		0.003	0.012	0.087
GOBIIDAE	17						30.91	0.015	0.012	0.025	0.013	
Dentex macrophthalmus	7						12.73	0.014		0.015	0.026	0.009
Plesionika heterocarpus	3						5.45	0.012			0.008	0.077
Merluccius senegalensis	7						12.73	0.011	0.039		0.006	
Alloteuthis subulata	4						7.27	0.011	0.001	0.012	0.023	
Liocranchia sp.	1						1.82	0.01	0.044			
Solenocera membranacea	1						1.82	0.004		0.012		
SOLENOCERIDAE	1						1.82	0.003	0.013			
Plesionika ensis	1						1.82	0.001				0.005
Other fish								0.194	0.137	0.22	0.173	0.269
Sum all species								28.425	55.614	17.739	30.779	3.42
Sum SNAPPERS, JOBFISHES												
Sum GROUPERS, SEABASSES								0.004		0.01	0.001	
Sum GRUNTS, SWEETLIPS								0.052	0.213	0.006		
Sum CROAKERS, DRUMS, WEAKF., KOBS								0.006		0.016		
Sum PANDORAS, PORGIES, SEABREAMS,								0.381	0.557	0.415	0.357	0.009
Sum SHARKS, CHIMAERAS								0.021	0.083		0.002	0.005
Sum BATOID FISHES, RAYS								0.056	0.059	0.024	0.112	0.02
Sum CEPHALOPODS								0.105	0.175	0.082	0.121	0.002
Numbers of stations included in analysis, total and by depth strata								55	13	20	15	7

SWEPT AREA ANALYSIS

Casablanca - Tanger

SPECIES N	SAMPLE DISTRIB. BY CATCH CLASSES						% inci-	Mean	Mean densities by bottom depth stra			
	Lower limits, Kg/nm						dence	dens.				
	>0	10	30	100	300	1000		t/nm²	0-50m	50-100m	100-200n	200-500m
Trachurus trachurus	11	2	1		1		71.43	2.261	0.724	6.155	0.424	0.066
Merluccius merlucci	16	4	1				100	0.788	1.235	0.751	1.142	0.327
Polybius henslowii				1			4.76	0.527	5.53			
Lepidopus caudatus	12	1					61.9	0.289		0.114	0.612	0.265
Macrorhamphosus s	2		1				14.29	0.197			0.689	
Scomber japonicus	9	1					47.62	0.176	1.365	0.093	0.049	0.003
Parapenaeus longirc	9						42.86	0.133		0.012	0.178	0.273
PORTUNIDAE		1					4.76	0.11	1.154			
Engraulis encrasicolu	6						28.57	0.059		0.074	0.117	0.004
Ceratoscopelus sp.	2						9.52	0.059				0.206
Octopus vulgaris	3						14.29	0.054		0.044	0.138	
Loligo vulgaris	2						9.52	0.048	0.481	0.007		
Sardina pilchardus	1						4.76	0.042	0.444			
Conger conger	14						66.67	0.04		0.04	0.055	0.038
Aphia minuta	9						42.86	0.036		0.091	0.02	0.002
GOBIIDAE	12						57.14	0.027		0.02	0.067	0.006
Trachinus draco	3						14.29	0.018	0.166	0.005		
Squilla mantis	5						23.81	0.017		0.04	0.013	
Myctophidae sp . silv	3						14.29	0.016			0.01	0.046
Trisopterus minutus	5						23.81	0.015	0.091			0.022
Scorpaena scrofa	7						33.33	0.014		0.035	0.007	0.001
Solenocera membra	2						9.52	0.012		0.037		
Diplodus bellottii	1						4.76	0.012	0.126			
Citharus linguatula	7						33.33	0.012		0.021	0.015	
J E L L Y F I S H	2						9.52	0.011				0.039
Torpedo marmorata	3						14.29	0.011	0.003	0.004		0.031
Trisopterus luscus	6						28.57	0.01		0.029	0.001	0.001
Other fish								0.102	0.352	0.047	0.087	0.1
Sum all species								5.096	11.671	7.62	3.623	1.431
Sum SNAPPERS, JOBFISHES												
Sum GROUPERS, SEABASSES											0.001	
Sum GRUNTS, SWEETLIPS												
Sum CROAKERS, DRUMS, WEAKF., KOBS								0.003			0.01	
Sum PANDORAS, PORGIES, SEABREAMS,								0.026	0.241	0.01		
Sum SHARKS, CHIMAERAS								0.001				0.005
Sum BATOID FISHES, RAYS								0.011	0.003	0.004		0.031
Sum CEPHALOPODS								0.11	0.481	0.051	0.151	0.015
Numbers of stations included in analysis, total and by depth strata								21	2	7	6	6