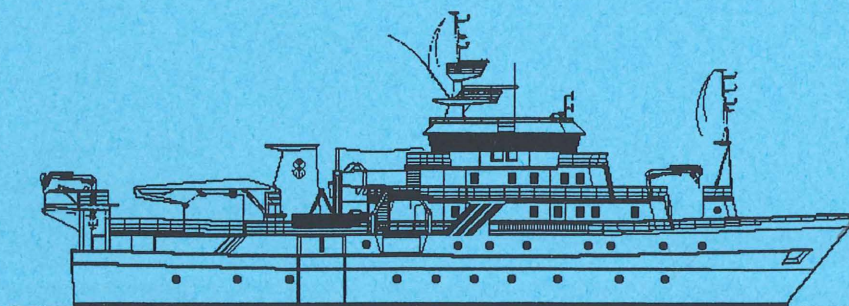


NORAD - FAO/UNDP PROJECT GLO 92/013

CRUISE REPORTS DR. FRIDTJOF NANSEN



SURVEYS OF THE FISH RESOURCES OF NAMIBIA

Cruise Report No 1/97

Surveys of the hake stocks

10 January - 20 February 1997

**Ministry of Fisheries & Marine Resources
Swakopmund
Republic of Namibia**

**Institute of Marine Research
Bergen
Norway**

The surveys with the DR. FRIDTJOF NANSEN are part of a wider development programme in fishery research and management sponsored by the Norwegian Agency for Development Cooperation (NORAD), and co-ordinated in co-operation with the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Development Programme (UNDP). The programme in Namibia is organized and planned under agreements between NORAD, Namibian authorities and the Institute of Marine Research (IMR), Bergen, Norway. Its execution is the responsibility of IMR, in cooperation with the Ministry of Fisheries & Marine Resources of Namibia.

The following surveys were carried out in Namibia:

Survey	1/90	25 January to 19 March 1990
"	2/90	27 May to 20 June 1990
"	3/90	11 September to 6 October 1990
"	1/91	25 January to 23 March 1991
"	2/91	23 October to 16 December 1991
"	1/92	23 April to 21 June 1992
"	2/92	20 October to 16 December 1992
"	1/93	20 January to 19 March 1993
"	2/93	21 April to 25 May 1993
"	1/94	19 January to 21 February 1994*
"	2/94	26 April to 24 June 1994
"	3/94	19 October to 24 November 1994
"	1/95	16 January to 19 February 1995
"	2/95	22 April to 21 June 1995
"	3/95	27 September to 7 October 1995
"	1/96	12 January to 19 February 1996
"	2/96	7 September to 14 October 1996
"	1/97	10 January to 20 February 1997

* First survey with the new R/V 'Dr. Fridtjof Nansen'.

CRUISE REPORTS DR. FRIDTJOF NANSEN

SURVEYS OF THE HAKE STOCKS

Cruise Report No 1/97

**Surveys of the hake stocks
10 January - 21 February 1997**

by

T. Strømme¹, H. Hamukuaya² and I. Huse¹

¹ Institute of Marine Research
P. O. Box 1870 Nordnes
N-5024 Bergen, Norway

² National Information and Marine Research Centre
P.O. Box 912
Swakopmund, Namibia

**Institute of Marine Research
Bergen, 1997**

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CHAPTER 1 INTRODUCTION

1.1 General objectives

Following an offer from NORAD extended through FAO and UNDP, an agreement was reached in Windhoek in January 1990 between the UNDP Resident Representative and Namibian authorities for the execution of a programme of surveys of the fish resources of the Namibian shelf with the R/V DR. FRIDTJOF NANSEN.

The main objectives were agreed as follows:

To describe the distribution, composition and abundance of the most important fish resources. Small pelagic fish, including horse mackerel, pilchard and anchovy would be investigated by the acoustic integration method combined with sampling with mid-water and bottom trawls. A swept area trawl survey programme would be used for the demersal stocks. All catches would be sampled by species, weight and numbers, including biological sampling of the commercially important stocks.

To carry out environmental studies including recording of surface temperature on a continuous basis and hydrographic sampling on a series of fixed profiles.

1.2 Objectives of survey 1/1997

The main objectives were to continue to monitor the abundance, geographic distribution and size composition of the hake stocks within the Namibian EEZ in order to identify trends in hake stock abundance. This information is an important basis for fishery management, and is particularly useful in the effort to achieve the aim set by the 1990 White Paper of rebuilding the depleted hake stocks. As secondary objectives, less abundant, but commercially important species like monk, sole and kingklip will be studied in detail as these species form a natural bycatch of a hake survey in Namibia. As part of the hake research, environmental parameters were continuously recorded in order to improve knowledge on the influence of the environment on the distribution of the hake stocks.

The acoustic system was used to estimate the relative importance of mid-water occurrences of hake and therefore improve the biomass estimate. The survey design for the swept-area trawl programme was based on a semi-random distribution of hauls along regular transects

perpendicular to the coast. The transect distance was normally between 20 and 30 NM. On the slope the stations were laid out to cover the depth ranges of the two hake species. The on-shelf stations were laid out 10 to 15 NM apart until the zero line of hake distribution was found. Information from the acoustic system was also used in this process. Biomass estimates of hake were based on post stratification by depth and density aggregations.

Additional objectives were to carry out comparative fishing with R/V AFRICANA and with two local freezer trawlers ('Katima' and 'Echelar'). The aim of comparative fishing with AFRICANA was to establish conversion factors to facilitate comparison between hake distribution and abundance in South Africa and Namibia. Specific aims of trawl intercalibration with commercial freezer trawlers included: (a) investigate viability of using trawlers in conducting hake biomass surveys (b) compare the catch rates of the research vessel with those of the trawlers (c) involve the fishing industry in the assessment of hake resources.

1.3 Participation

The scientific staff consisted of:

From Namibia:

Liza BURMEISTER (1-20/2), Michael EVENSON (10-31/1), Johnny GAMATHAM (10/1-20/2), Hashali HAMUKUAYA (1-20/2), Antonette HEITA (1-21/2), Sheila HEYMANS (10-21/1), Teophilus KAIRUA (10-31/1), Ekkehard KLINGELHOEFFER (10-31/1), Heinrich LESCH (10-31/1), Heidrun PLARRE (1-20/2), Peter SCHNEIDER (1-20/2), Justina SHIFIDI (10-31/1), Malakia SHIMANDA (10/1-20/2).

From Norway:

Oddgeir ALVHEIM (10/1-20/2), Ingve FJELDSTAD (10/1-20/2), Ingvar HUSE (10/1-5/2), Tore MØRK (10/1-20/2), Tore STRØMME (31/1-20/2), Jan Tore ØVREDAL (31/1-5/2).

1.4 Narrative

The course tracks with the positions of the fishing and hydrographic stations are shown in Figures 1 a-c.

The vessel left Walvis Bay on the afternoon of 10 January and steamed south to commence the work between Lüderitz and Orange River. Trawling shallower than 300 m was preferably carried out during daylight hours, while the deeper stations on the slope were carried out during dark. CTD-stations were taken on almost every trawl station in order to map the environmental conditions in relation to fish distribution. On 13 January the vessel met with AFRICANA for a three day trawl intercalibration exercise. After comparative fishing with AFRICANA the normal survey work commenced from Orange River. On 21 January the ship called at Lüderitz Bay to set ashore Sheila Heymans. On 31 January the ship called at Walvis Bay for crew change, having covered the area south of Walvis Bay.

DR. FRIDTJOF NANSEN departed the port of Walvis Bay for the second leg of the survey on 1 February accompanied by two freezer trawlers, 'Katima' and 'Echelar' for comparative fishing. Comparative fishing started on the morning of 2 February, trawling with 'Katima' in a tandem until 5 February. Meanwhile, 'Echelar' was busy with gear selectivity experiments, and only participated in the comparative fishing for one day. After comparative fishing, DR. FRIDTJOF NANSEN continued the work northwards following the standard grid pattern. The northern border was reached on 15 February and on the way south, four transects that were skipped on the trip north, were filled in. Arrival in Walvis Bay was on 20 February.

The weather conditions were generally rough in the south, with wind forces ranging from 5 to 37 knots (average of 21 knots) but the work continued uninterrupted. On the northern leg the weather conditions were favourable.

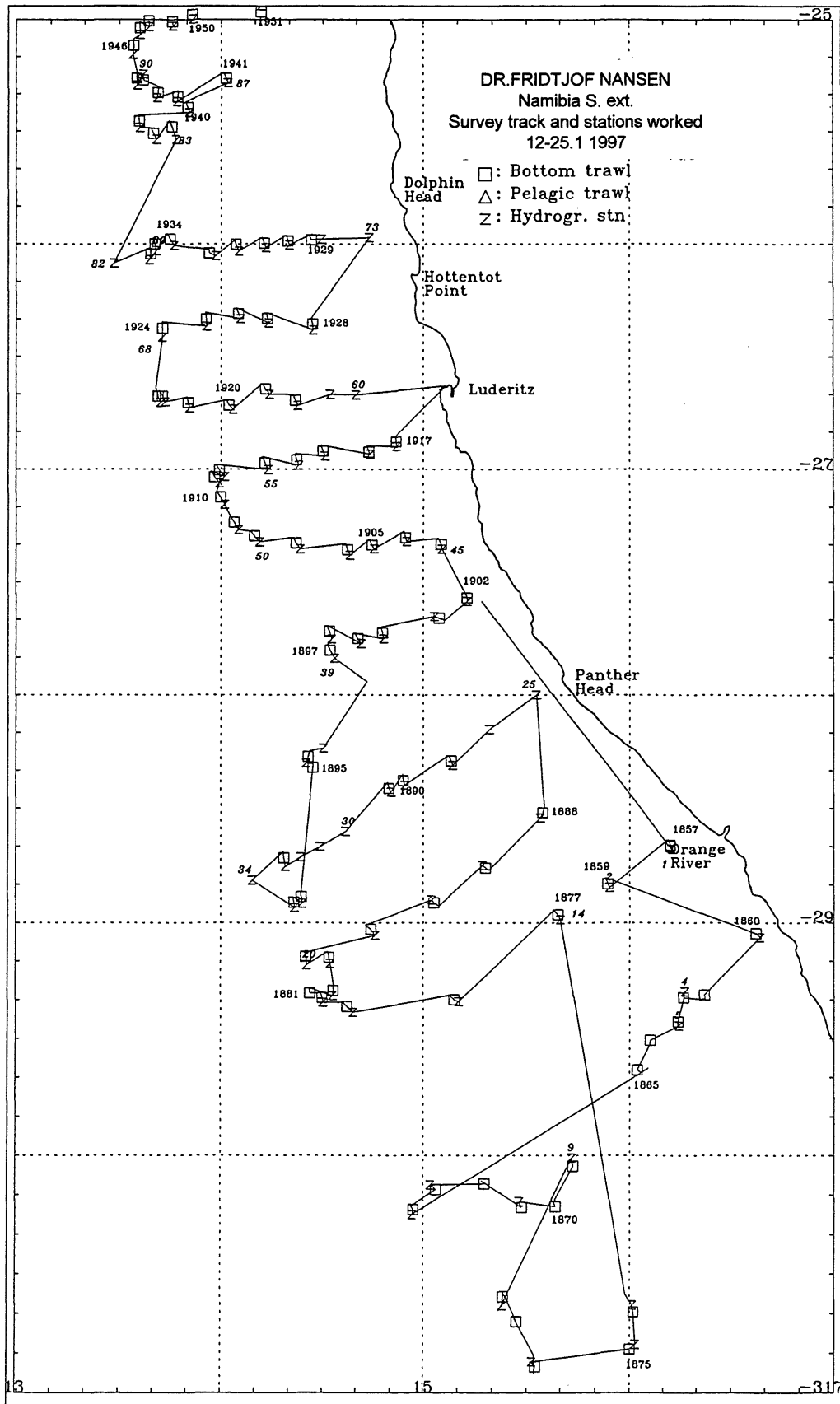


Figure 1a Southern region (Orange River to St. Francis Bay). Course tracks, fishing stations and hydrographic stations.

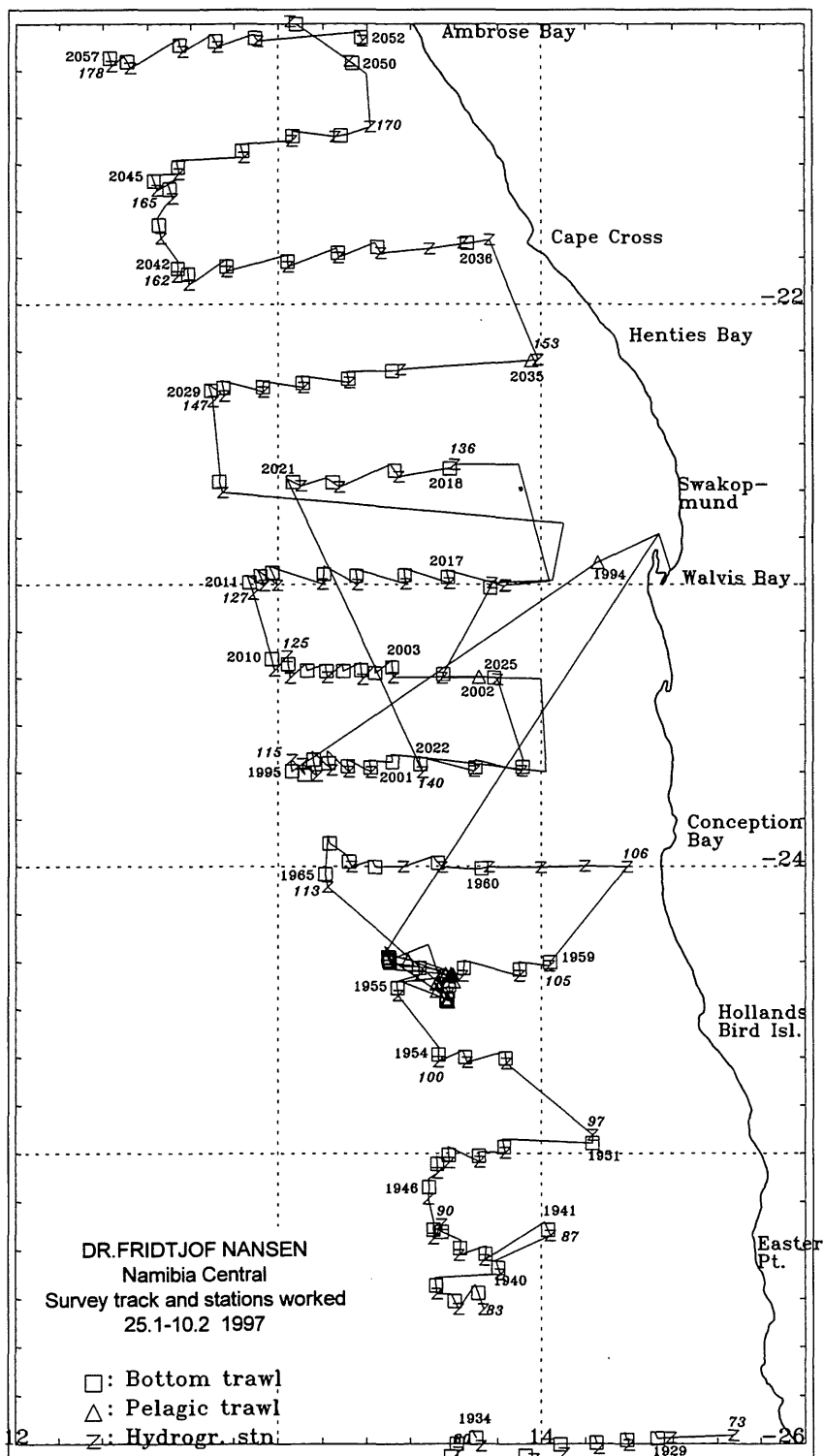


Figure 1b Central region (St. Francis Bay to Ambrose Bay). Course tracks, fishing stations and hydrographic stations.

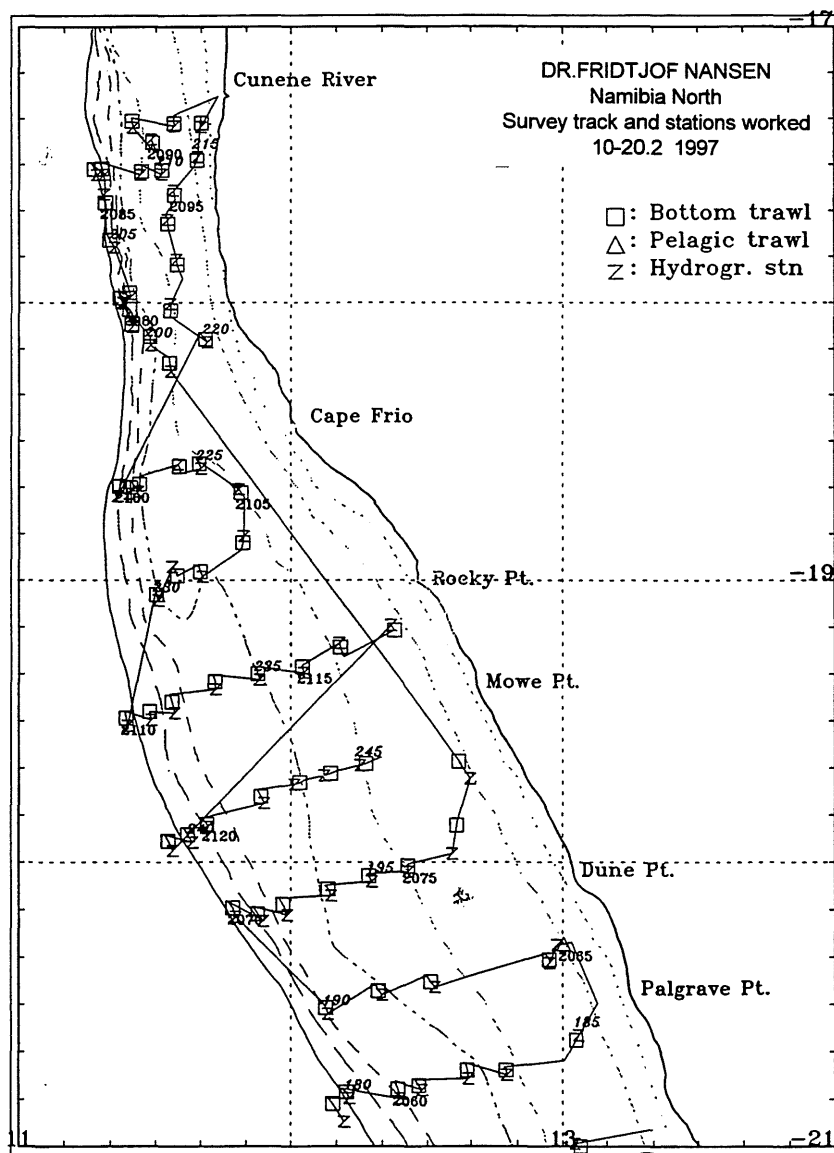


Figure 1c Northern region (Ambrose Bay to Cunene River). Course tracks, fishing stations and hydrographic stations.

CHAPTER 2 HYDROGRAPHY

Strong southerly winds prevailed during the first part of the survey until Walvis Bay, whereafter a calm period occurred. Figure 2 shows the wind conditions along the survey track.

Sea temperatures at 5 m depth were recorded continuously along the cruise track and are shown in Figures 3a-c. Six hydrographic sections were collected at the standard locations and are shown in Figures 4a-c. The surface temperatures showed cooled upwelled waters in much of the southern region and intense upwelling in the Lüderitz area. A relatively weak upwelling was observed in the Cunene area.

Dissolved oxygen (DO) was recorded at all fishing stations (Figures 5a-c), to observe its influence on the hake distribution. In this survey, the bottom water was rich in DO over the whole southern and most of the central region. However, the entire North shelf was covered with oxygen-deficient water masses (≤ 0.5 ml/l). Oxygen may be a prerequisite for successful settlement of the pre-recruit hakes on the bottom. The oceanographic conditions appeared to be favourable and the system active as compared to the events of 1994. Juvenile hake were observed in abundance, covering much of the central region, but these were not quantified.

As during previous surveys, the maps showing DO near the bottom are overlaid with the distribution maps of the Cape hake, Figures 6a-c. They show that only minor fractions of the hake distributions are found in waters of less than 0.25 ml O_2/l , while the fish seem to sustain levels just beyond that limit.

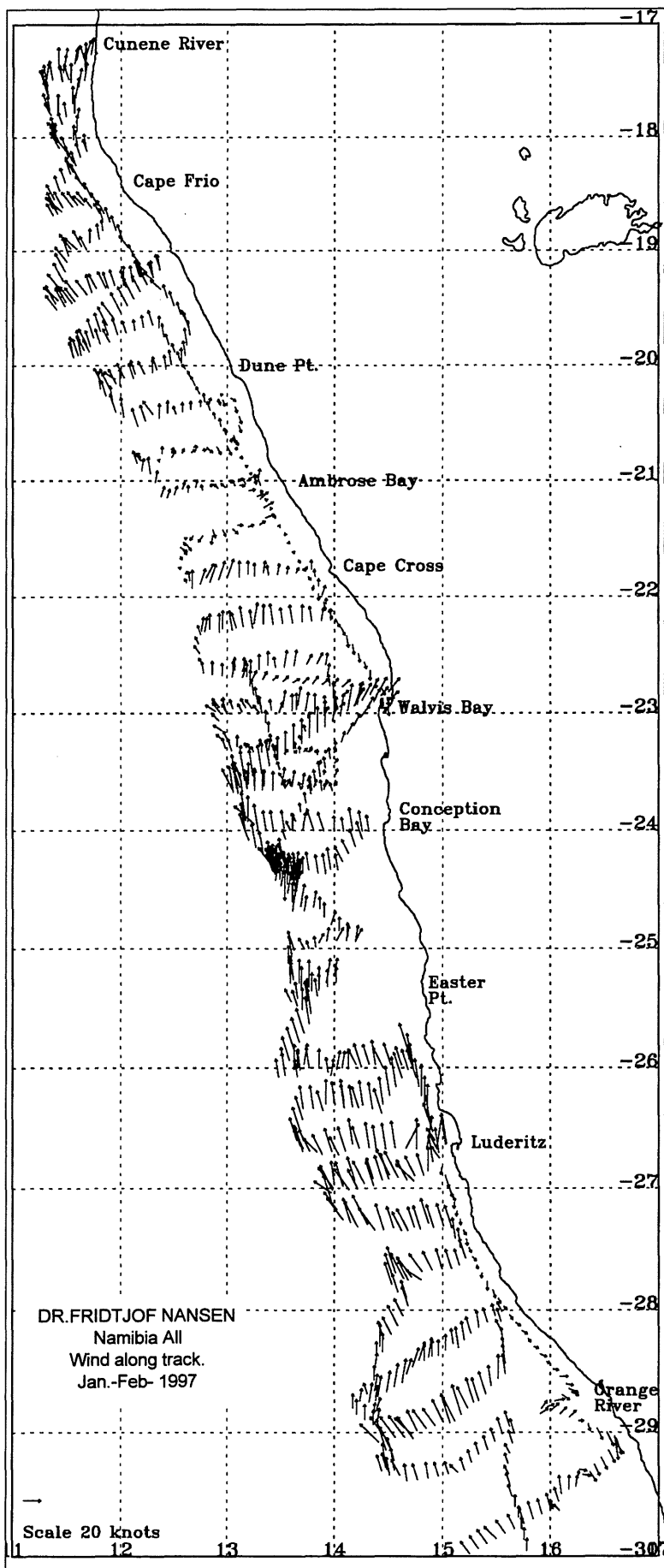


Figure 2 Wind conditions along the survey track.

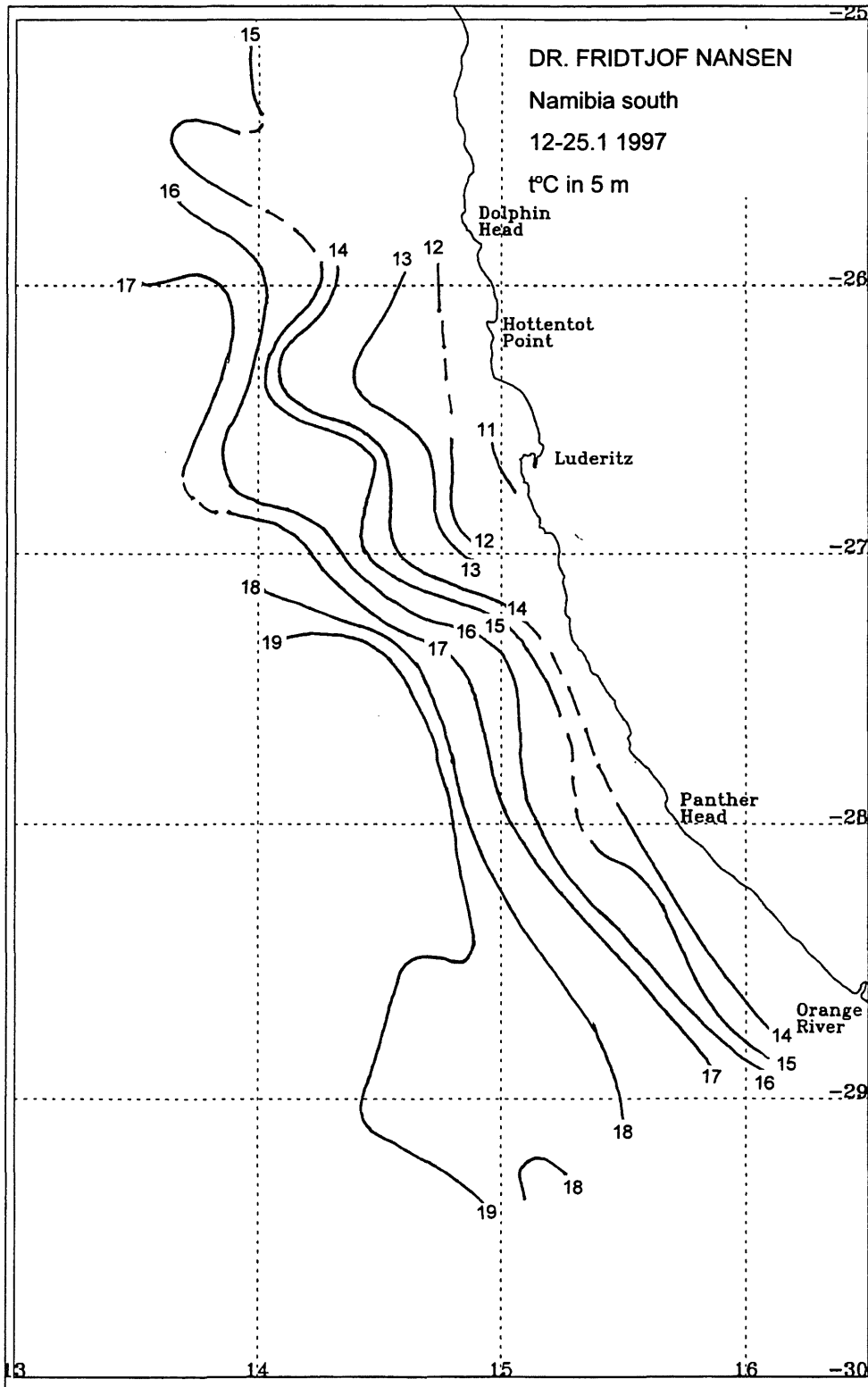


Figure 3a Orange River to St. Francis Bay. Distribution of sea temperature at 5 m depth.

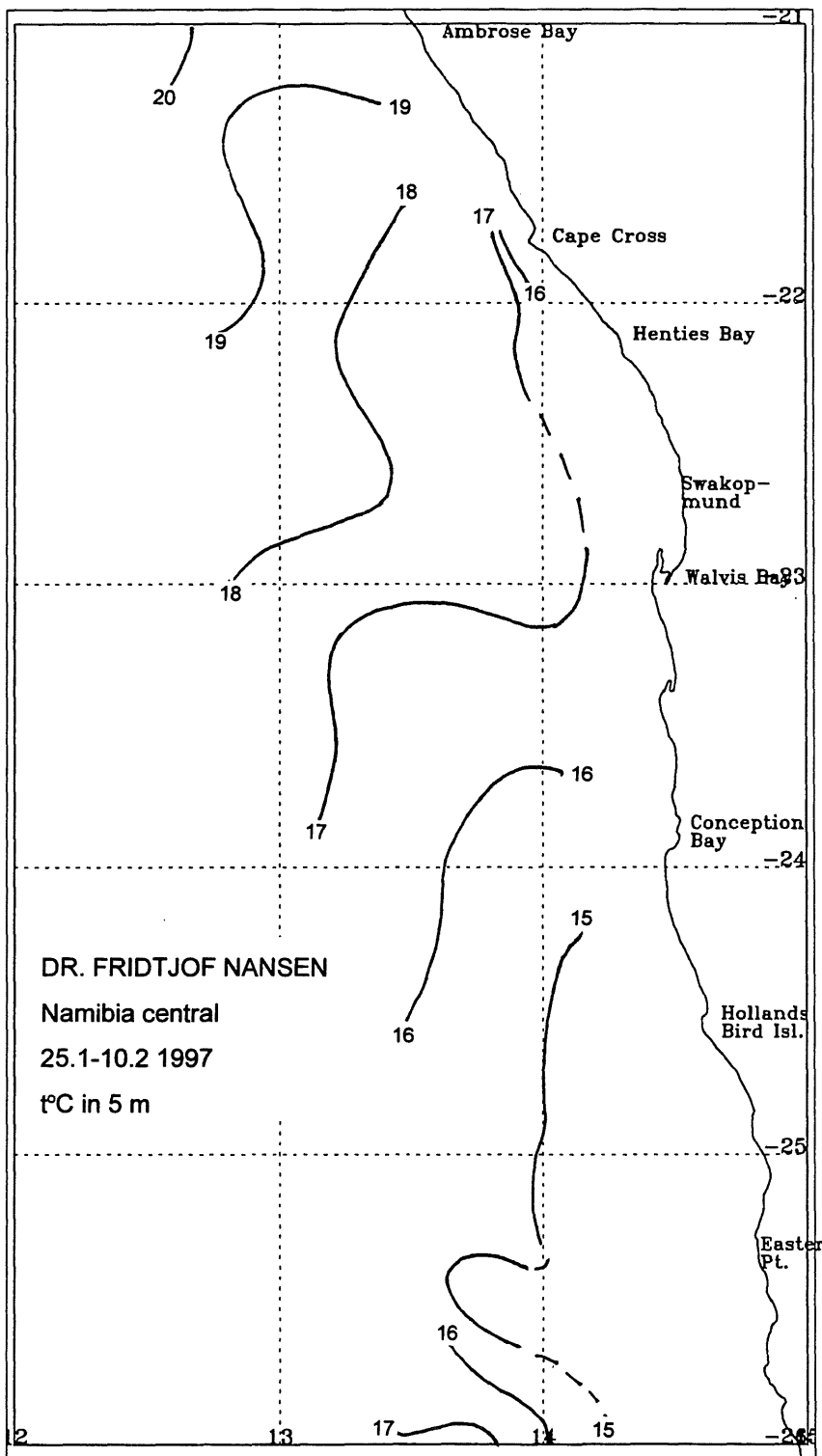


Figure 3b St. Francis Bay to Ambrose Bay. Distribution of sea temperature at 5 m depth.

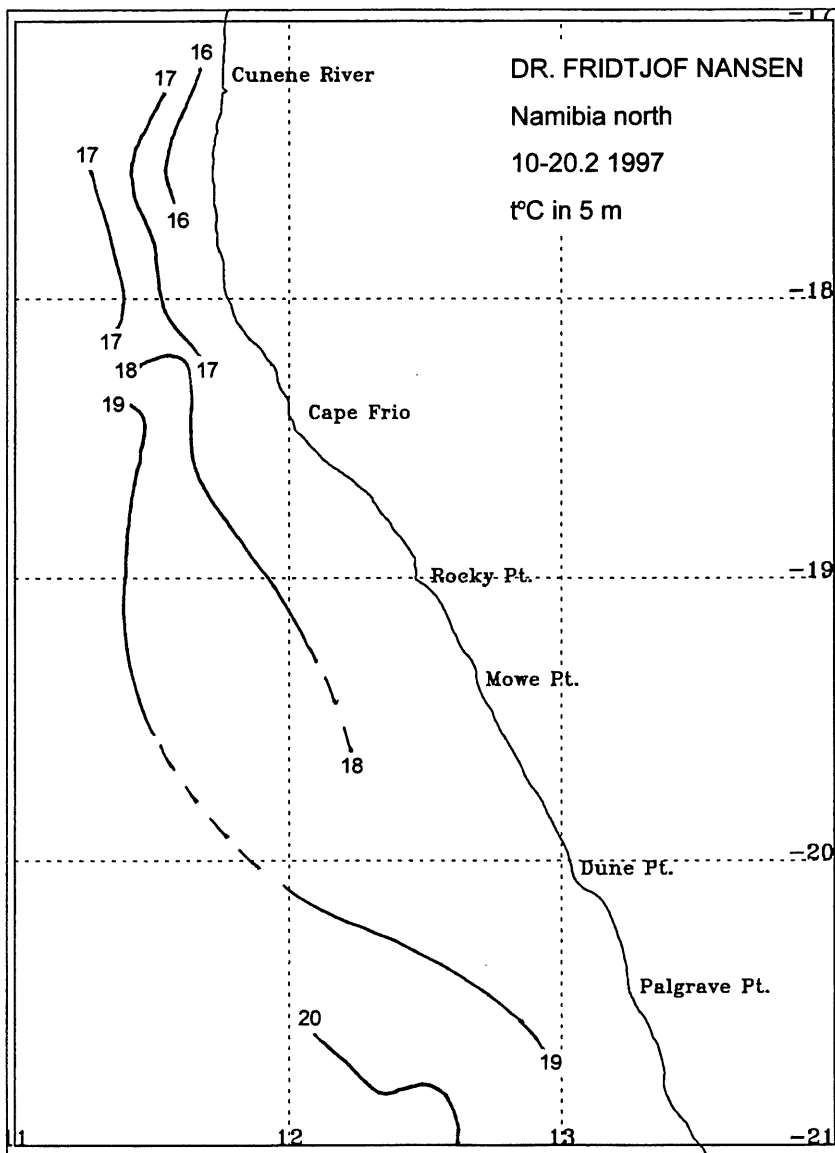
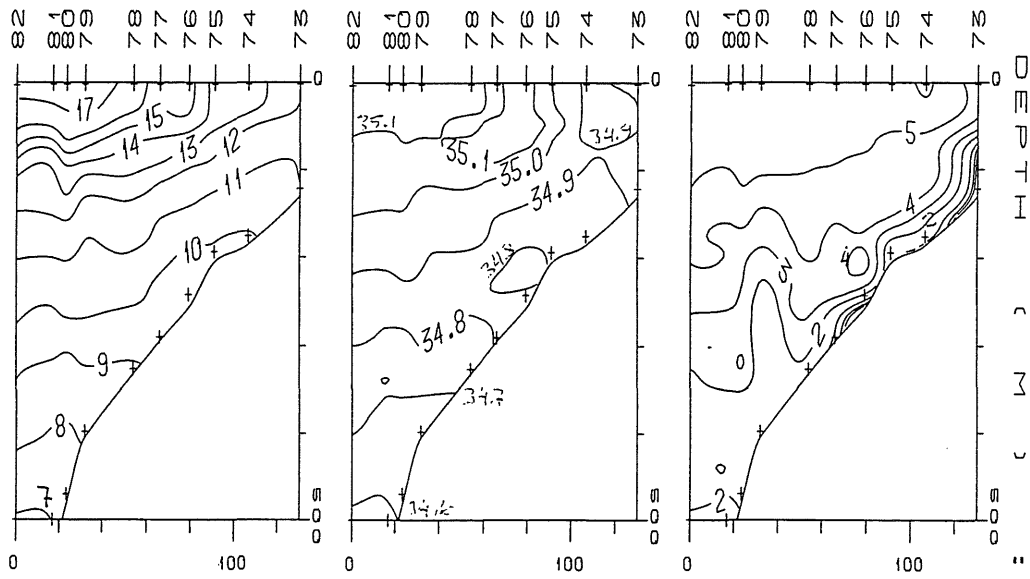
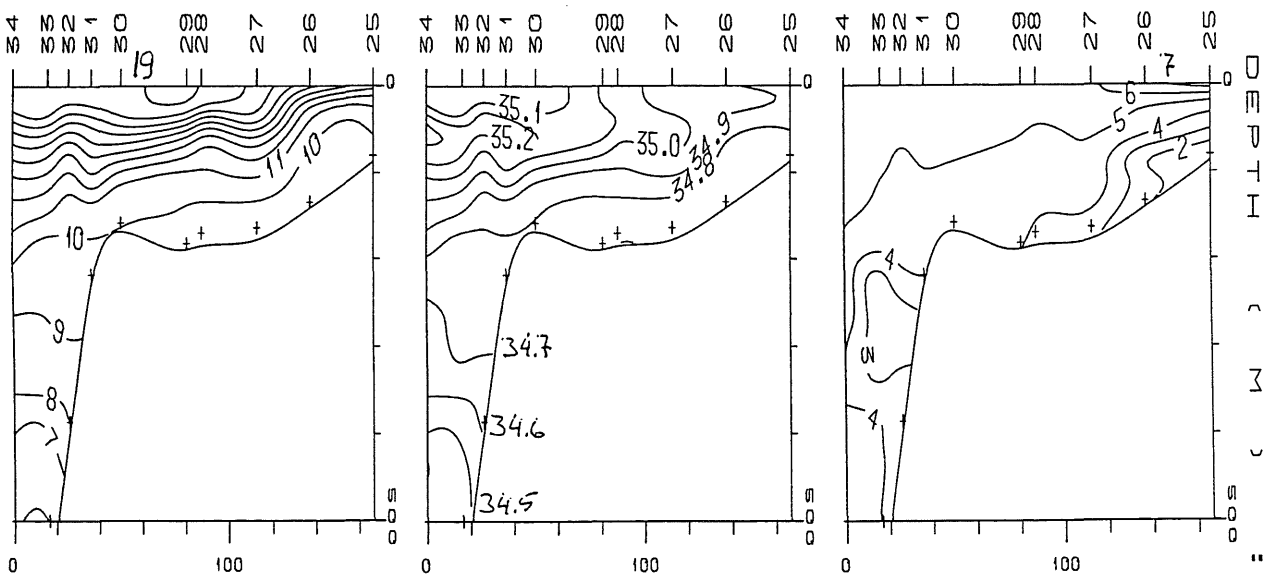


Figure 3c Ambrose Bay to Cunene River. Distribution of sea temperature at 5 m depth.

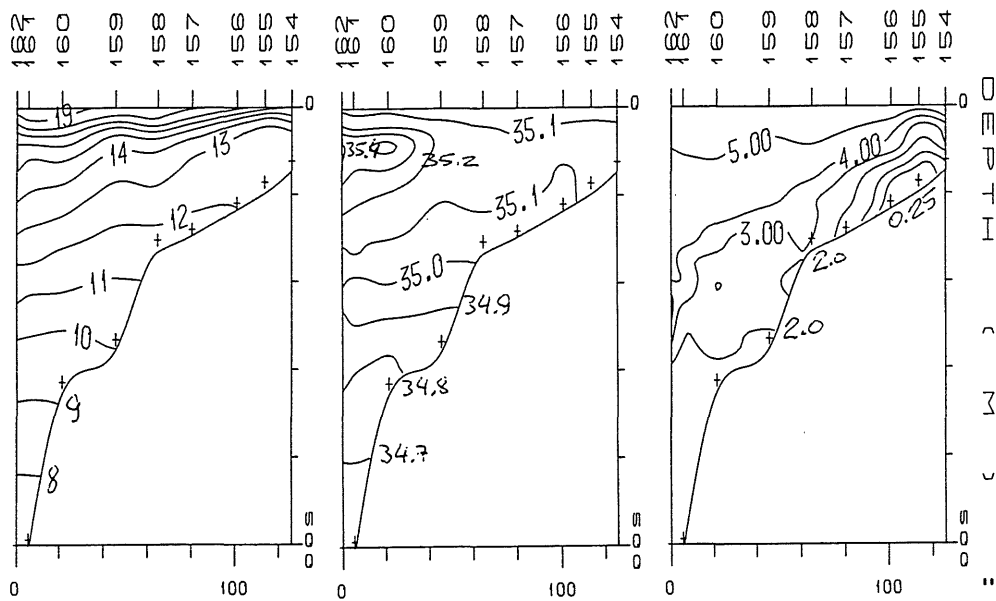


DOLPHIN HEAD 23.1 1997

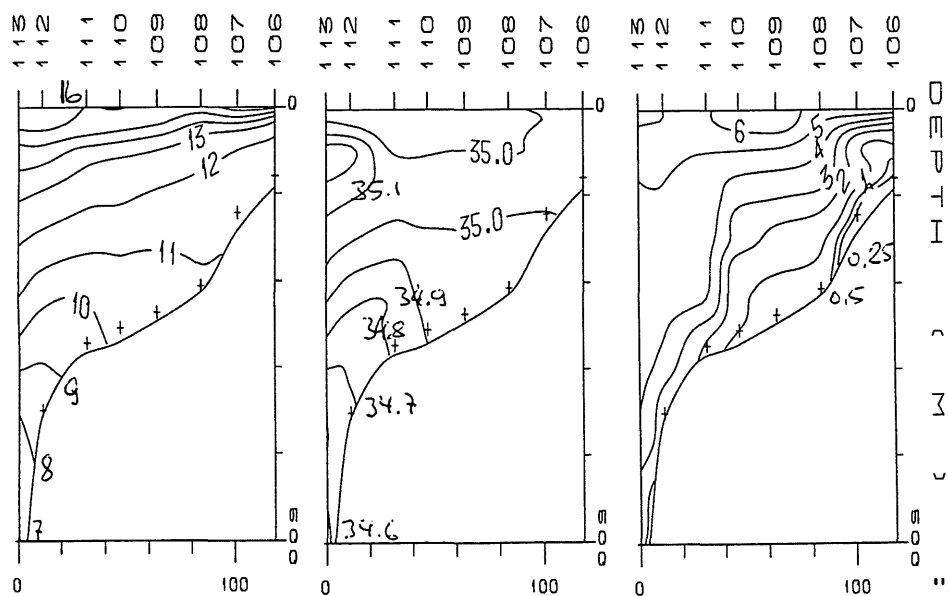


PANTHER HEAD 18.1 1997

Figure 4a Temperature, salinity and oxygen in the standard profiles worked.

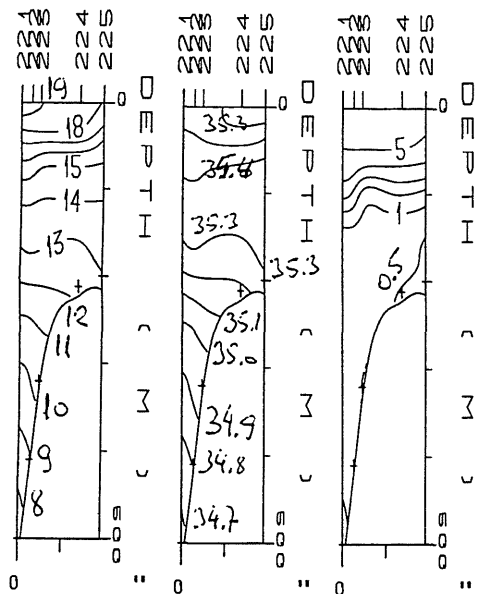


CAPE CROSS 8.2 1997

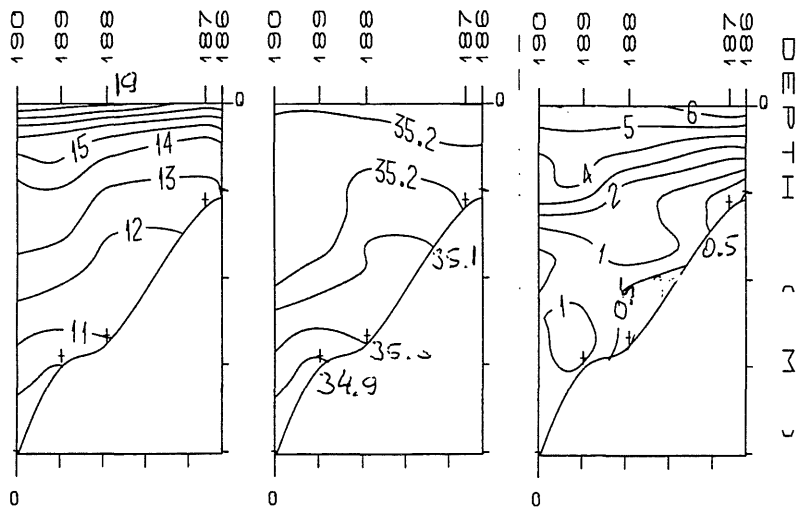


CONCEPTION BAY 26-27.1 1997

Figure 4b Temperature, salinity and oxygen in the standard profiles worked.



CAPE FRIO 16.2 1997



DUNE POINT 12.2 1997

Figure 4c Temperature, salinity and oxygen in the standard profiles worked.

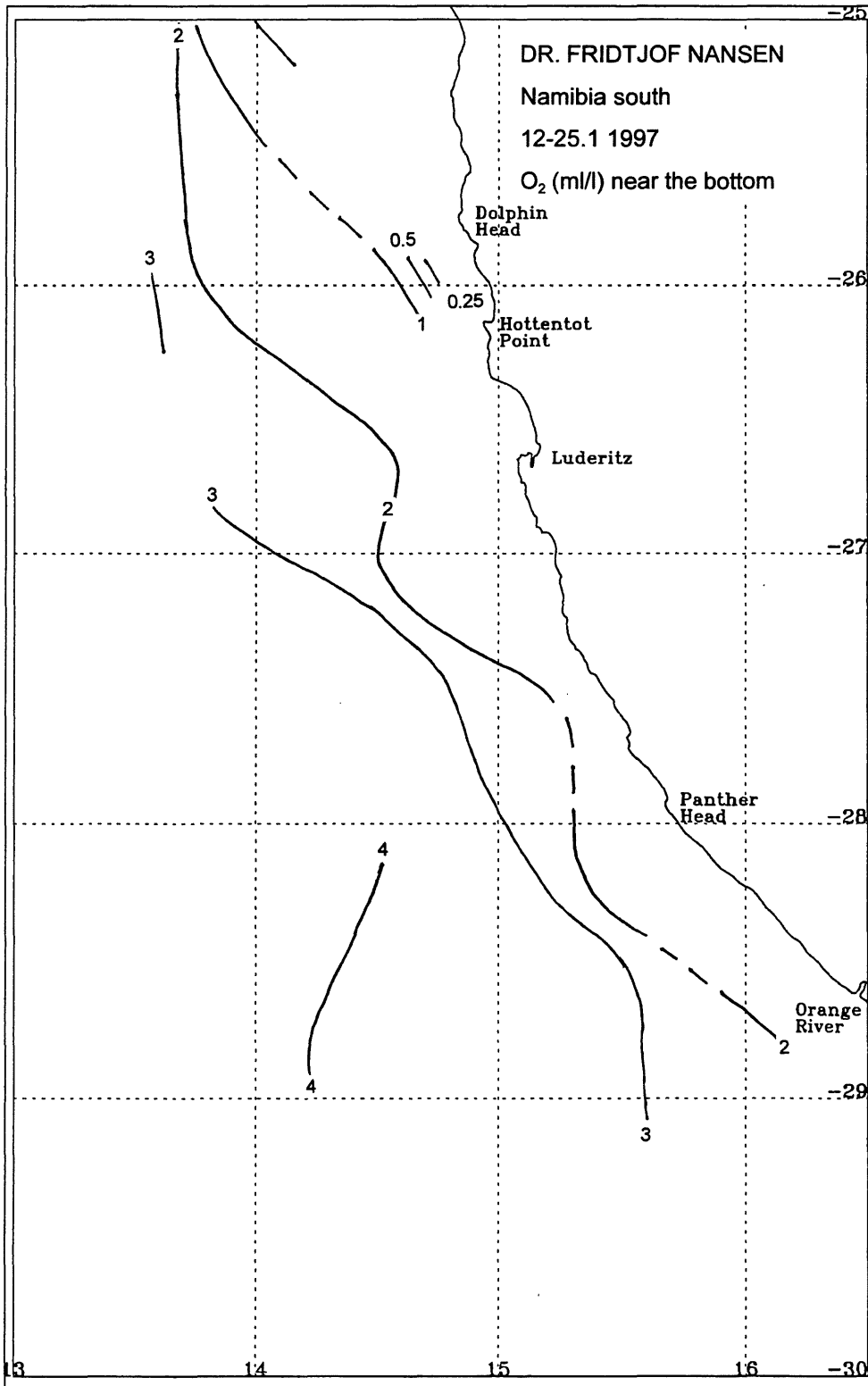


Figure 5a Orange River to St. Francis Bay. Distribution of oxygen (ml/l) near the bottom.

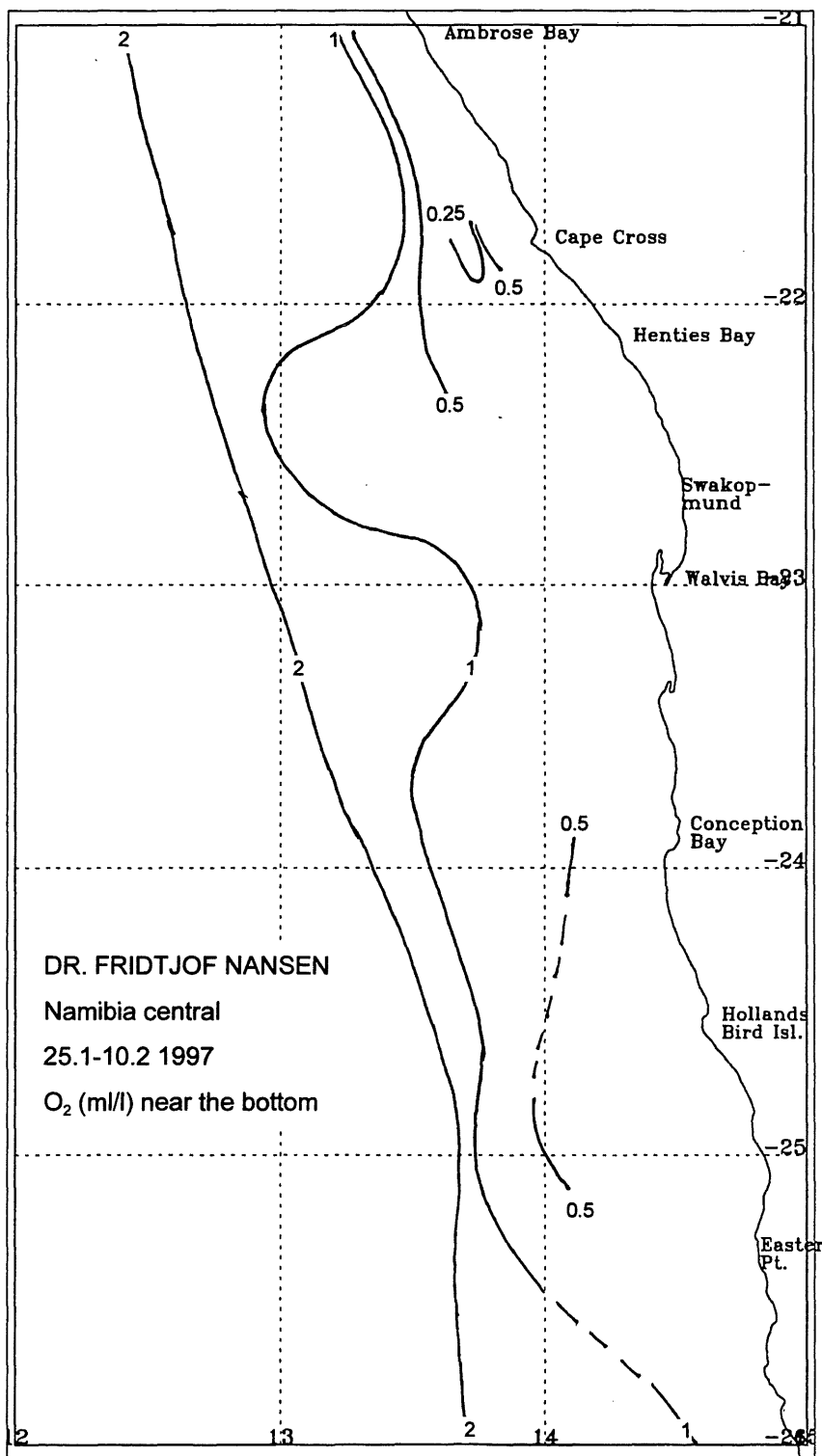


Figure 5b St. Francis Bay to Ambrose Bay. Distribution of oxygen (ml/l) near the bottom.

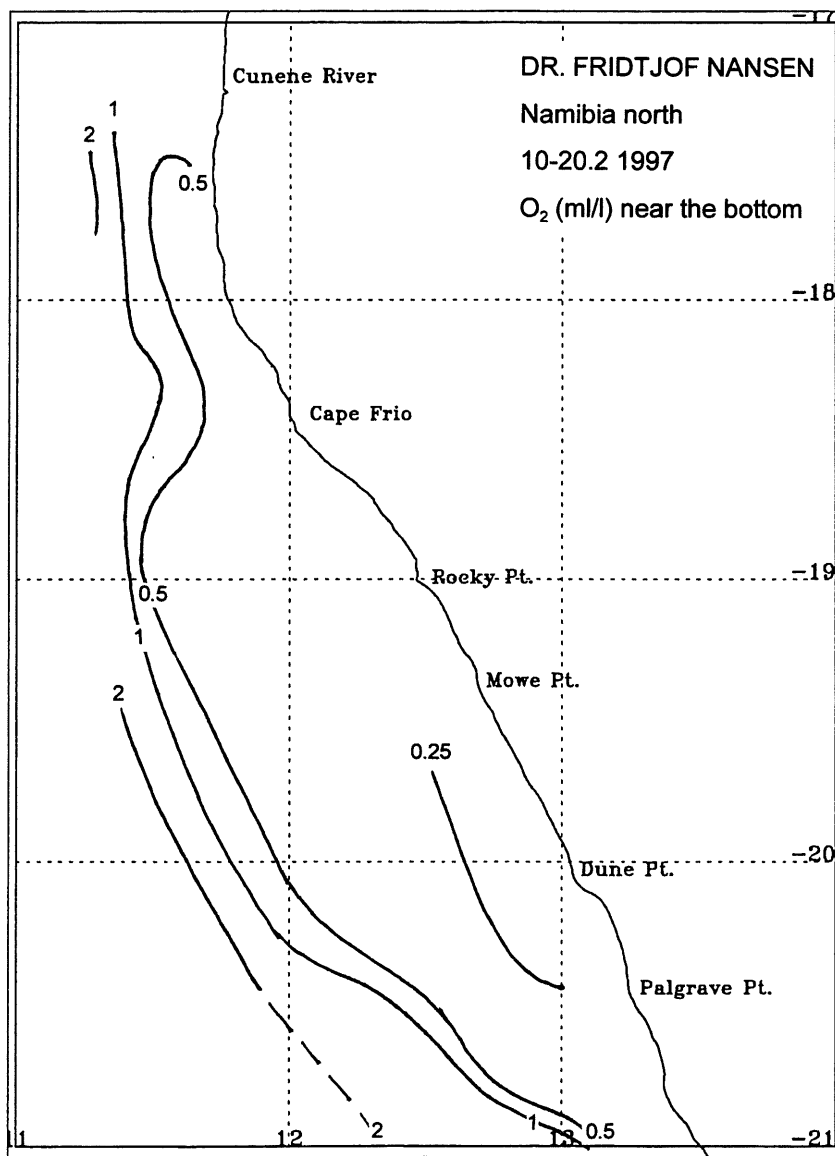


Figure 5c Ambrose Bay to Cunene River. Distribution of oxygen (ml/l) near the bottom.

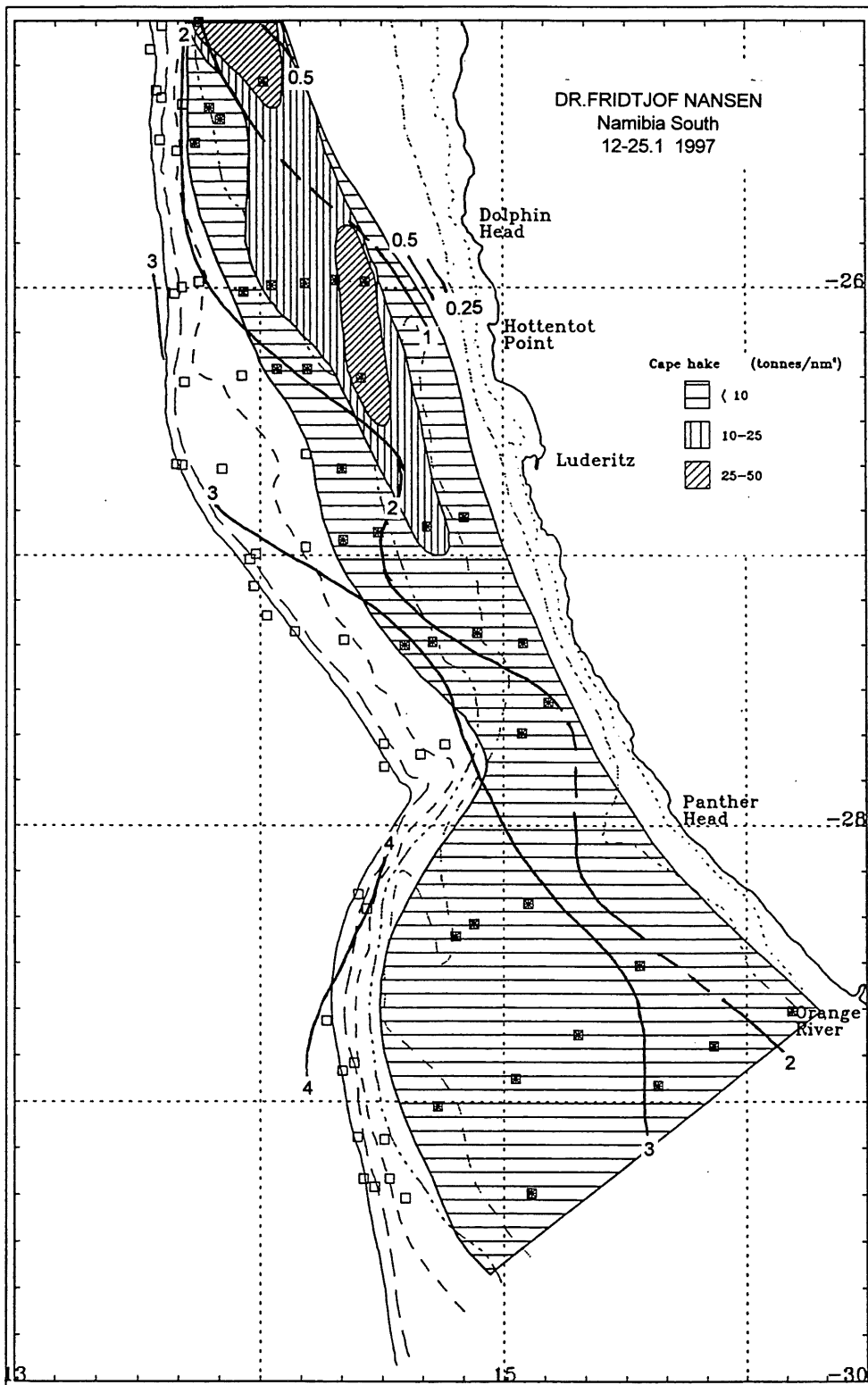


Figure 6a Orange River to St. Francis Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

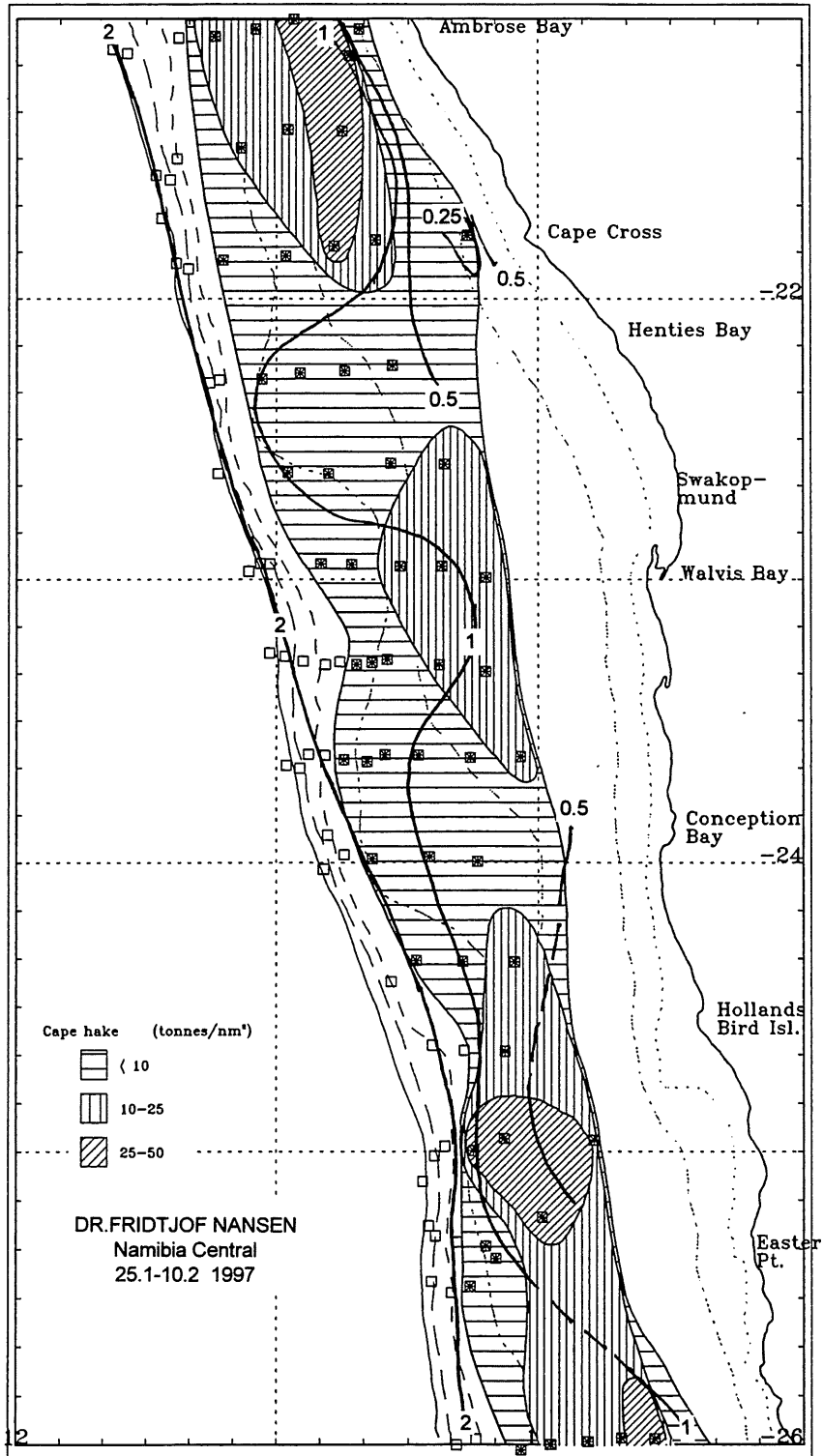


Figure 6b St. Francis Bay to Ambrose Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

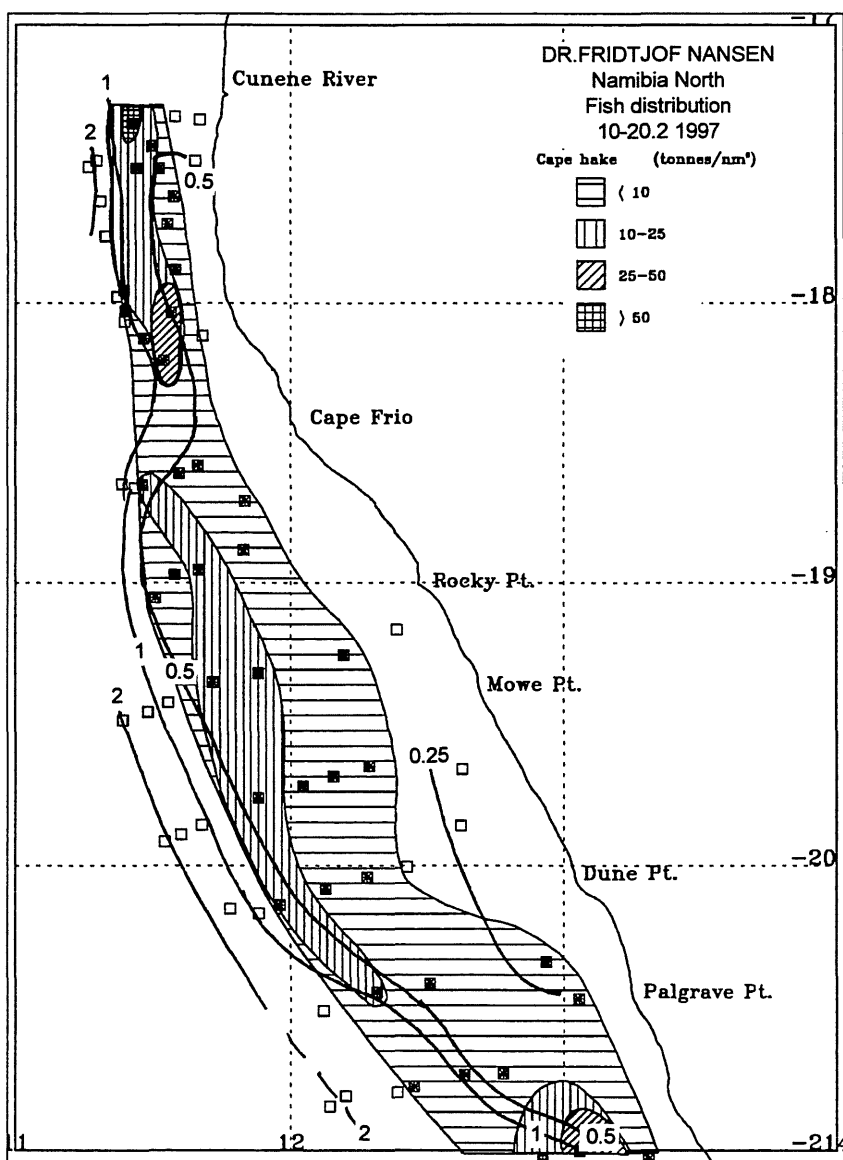


Figure 6c Ambrose Bay to Cunene River. Distribution of Cape hake and oxygen (ml/l) near the bottom.

CHAPTER 3 RESULTS OF THE ACOUSTIC AND TRAWL SURVEY

3.1 Introduction

In the trawl survey programme all catches were sampled for composition in weights and numbers by species. The bottom trawl had a headline of 31 m (float line), a footrope of 47 m, headline height of 5-6 m and a distance between the wings during towing of about 21 m. All trawl hauls were monitored by SCANMAR trawl sensors (trawl depth, headline height and distance between the doors). This technology allows to determine with improved accuracy the actual time the trawl is on the bottom. A constraining rope was attached between the warps, 130 m in front of the doors. This constraining rope keeps the distance between the doors constant irrespective of trawl depth. For conversion of catch rates to fish densities the area between the wings is assumed to be equal to the effective fishing area and the retention factor q is equal to 1. With the new vessel, starting from January 1994, a new trawl gear was introduced with smaller bobbins. This gear is expected to give better bottom contact and higher catch rates for bottom dwelling species like monk and sole. For the hake species the new gear is assumed to have no difference in performance. The trawl doors are Thyborøen 7.9 m², but the net, warp and wire dimensions are as with the former vessel (see Annex IV).

Table 1 Hakes. Frequency of observations of hake in mid-water during trawling. No. of trawl stations with swept area densities and no. of stations with observations of hake above 5 m from bottom with acoustic density estimate (tonnes/nm²).

ORANGE RIVER - ST. FRANCIS BAY	DAY	NIGHT
Trawl		
No. stations	40	36
Mean density	18.5	12.7
Acoustic obs.		
No. stations	15	27
Mean density	0.3	0.4
Average acou. corr.	1 %	3 %
ST. FRANCIS BAY - AMBROSE BAY		
Trawl		
No. stations	54	22
Mean density	14.0	9.5
Acoustic obs.		
No. stations	15	12
Mean density	2.1	2.7
Average acou. corr.	4 %	15 %
AMBROSE BAY - CUNENE RIVER		
Trawl		
No. stations	38	19
Mean density	12.3	12.4
Acoustic obs.		
No. stations	13	13
Mean density	5.8	4.1
Average acou. corr.	18.7 %	23.7 %

The length of a haul over bottom, recorded as distance trawled, was measured by log pulses from the GPS, and checked against the lengths of the traces of the hauls on the GPS plotter system.

The problem of mid-water occurrence of hake and its effect on the swept area assessments has been discussed in earlier cruise reports. As in previous investigations, off-bottom hake in mid-water constituted only a minor problem in the south and in the central area. In the north it made up an average 18% addition to the demersal biomass in the day hauls. In the night hauls the average corrections were 3%, 15% and 23% for south, central and northern region respectively (Table 1).

Fish abundance (in weights and numbers) by length groups or by cohorts are found by combining the total abundance obtained from catch records with the length distributions of the species. Length distributions in fish aggregations are obtained by pooling the length frequencies from trawl stations using the catch rates as a weighting factor, and regional length based estimates are obtained through pooling the length frequencies from these areas with the biomass of the aggregations as a weighting factor.

3.2 Southern region, Orange River to St. Francis Bay

Annex III shows the complete records of the fishing stations. Table 2 shows the catch rates of the main commercial species standardized to kg/hour for the shelf and the slope separately. For the hakes the mean catch rates on the shelf are slightly up (399 to 437 kg/hour), while in the slope they are at the same level (500 kg/hour) as during the previous survey in September 1996. Monk and kingklip show low but improved catch rates on the shelf while there is a considerable increase in the catch rates of kingklip in the slope. The catch rates of monk in the slope remained at a similar level as in October 1996.

Table 2 Southern region. Catch rates in kg/hour by main groups by swept area bottom trawl for the shelf and the slope.

SHELF 100-259 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1857	102	344.8		5.7	80.1		2747.5
1859	155	185.9	4.1	4.1		0.5	155.5
1877	182	342.4	7.5	3.6		4.8	183.1
1878	170	227.6	17.8			14.3	734.1
1885	228	19.6	4.5	64.0			119.1
1886	178	460.0	39.5	5.5		123.3	354.6
1887	163	266.9	9.6	4.6		31.6	105.8
1888	157	884.6		14.9	2.5	81.7	678.7
1889	178	251.4	1.6	2.8		2.5	240.6
1890	186	87.9	7.7	19.7		0.7	117.9
1891	190	153.5	5.0	4.6		1.0	117.7
1901	165	165.5		0.2	4.6	12.0	375.5
1902	134	190.3		0.9	0.5	3.7	64.5
1903	157	230.6		2.3	0.3	6.0	933.8
1904	201	455.2		0.9		7.8	496.8
1916	226	428.5		2.4			56.9
1917	174	325.5					1523.6
1929	194	2158.3	10.0		1.4		473.7
1930	212	642.1	1.1		4.4	0.3	209.8
1931	258	435.3	9.7			4.1	52.2
1941	201	925.0	3.7			4.4	65.1
MEAN		437.2	5.8	6.5	4.5	14.2	467.0

SLOPE 260-700 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1879	338	709.1	19.2	23.9		14.3	528.4
1880	492	254.9	12.3			20.4	102.7
1881	588	88.4				21.1	276.9
1882	377	195.9	7.2	53.5		0.7	116.9
1883	319	36.7		20.9		1.8	104.9
1884	536	91.2		41.3		2.6	148.3
1892	598	47.0				2.7	182.4
1893	547	217.4		19.7		16.8	172.7
1894	432	789.6	23.7	124.1		14.7	285.8
1895	436	133.3		45.3		16.2	102.2
1896	526	94.1	13.0	12.9		4.0	240.8
1897	591	75.0				14.0	301.7
1898	498	22.0		6.2		1.9	42.9
1899	403	427.8	16.5	63.4		22.1	115.8
1900	366	1957.9		14.3		7.4	7.1
1905	299	619.9	7.8	5.4		11.2	267.8
1906	341	1421.1	4.5	8.6			313.4
1907	408	168.9		10.2			127.7
1908	519	140.1				6.5	117.0
1909	630	53.7	6.1			20.6	323.3
1910	594	94.6	20.8			30.7	323.3
1911	498	94.1	8.5	6.3		25.4	289.8
1912	453	65.8	11.8			6.2	111.8
1913	388	119.9	13.7	20.0		31.0	223.5
1914	354	424.2	14.4	37.8		5.1	475.0
1915	314	189.9	12.8	2.0		3.6	91.8
1918	340	554.5	1.3	4.3		12.4	358.2
1919	372	231.4	13.1	3.5		28.6	247.9
1920	409	197.4	8.5	23.9		8.0	362.3
1921	431	141.8	18.4	21.5		2.5	166.5
1922	504	105.1		13.1		22.1	125.8
1923	551	164.0				34.2	189.4
1924	422	1542.9	9.5	18.0		21.7	87.4
1925	380	3452.2	3.7	2.3		31.9	191.9
1926	345	510.7	18.6	23.7			297.6
1927	316	420.8	38.2	22.6			390.0
1928	288	1571.9	13.1	23.2			300.3
1932	293	1078.9	83.5		8.5	10.4	329.5
1933	345	1129.7					182.4
1934	422	710.3	10.1	47.8		2.6	421.9
1935	497	222.4	4.5			5.6	501.0
1936	538	188.7	55.9				354.9
1937	339	781.4	1.5	2.4			108.3
1938	420	270.0	15.6			32.0	510.3
1939	522	108.0	39.7				752.8
1940	282	294.0	28.7	5.9		5.3	164.6
1942	299	131.8	33.8	17.2			251.6
1943	352	714.9	16.1	9.5		2.4	321.0
1944	480	161.9	53.4			24.7	358.9
1945	557	400.0					1474.6
1946	597	91.0				10.7	635.6
1947	513	132.5				6.2	360.8
1948	440	350.5				7.0	235.2
1949	289	2927.2	5.6	1.3		25.0	777.4
MEAN		502.2	12.3	14.0	0.2	11.0	293.6

Figure 7 shows the depth distribution of the two hake species based on the catch rates converted to densities. A comparison with the previous survey shows that the density for the Cape hake has increased by 20% from 9 to 11.7 tonnes/NM² in the 100-250 m depth zone, and doubled from 5.7 to 13.2 tonnes/NM² in the 250-350 m zone. Compared to previous survey, the catch rates for the deep water hake were slightly lower in all depth zones except 350-450 m.

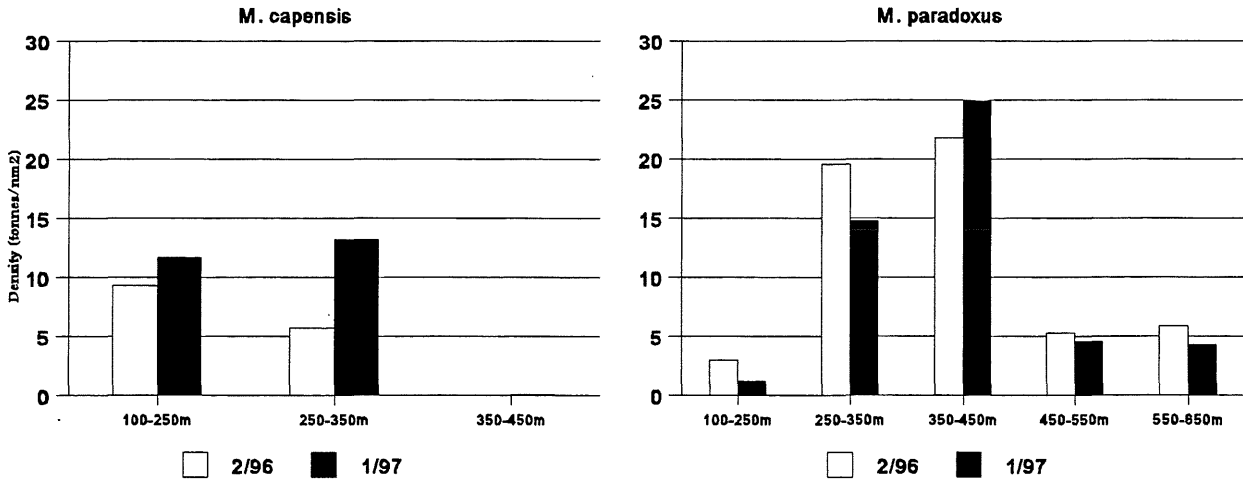


Figure 7. Southern region. Depth distribution of two hake species. Mean densities in tonnes/NM².

The distribution of the two hake species based on plots of densities by fishing stations is shown in Figures 8 and 9. These include the acoustic estimates of fish present above the 5 m bottom channel during trawling as explained above. An area of moderately higher densities (10-25 tonnes/NM²) for deep water hake was detected from Panther Head to Easter Point in which two small patches of highest concentrations were encompassed. During the previous survey, concentration of deep water hake was densest, and the area was much larger than it was now. For Cape hake, higher aggregations were found from Lüderitz to Easter Point. These aggregations were larger and more dense compared to the 96/2 survey.

Year/Survey	Cape hake	Deep water hake
90/1	130	22
90/2	130	25
91/1	113	31
91/2	80	82
92/1	200	145
92/2	160	125
93/1	210	150
93/2	180	115
94/1	200	160
94/2	240	215
94/3	150	121
95/2	145	140
96/1	169	202
96/2	89	167
97/1	121	132

Biomass estimates based on a post-stratification of the densities as shown in Figures 8 and 9, gave 121 000 tonnes for the Cape hake and 132 000 tonnes for the deep water hake (Table 4), an increase of 35% for the Cape hake and a decrease of 20% for deep water hake since the previous survey. The 95% confidence limits give a range of $\pm 25\%$ on the estimate of the Cape hake and $\pm 26\%$ of the deep water hake.

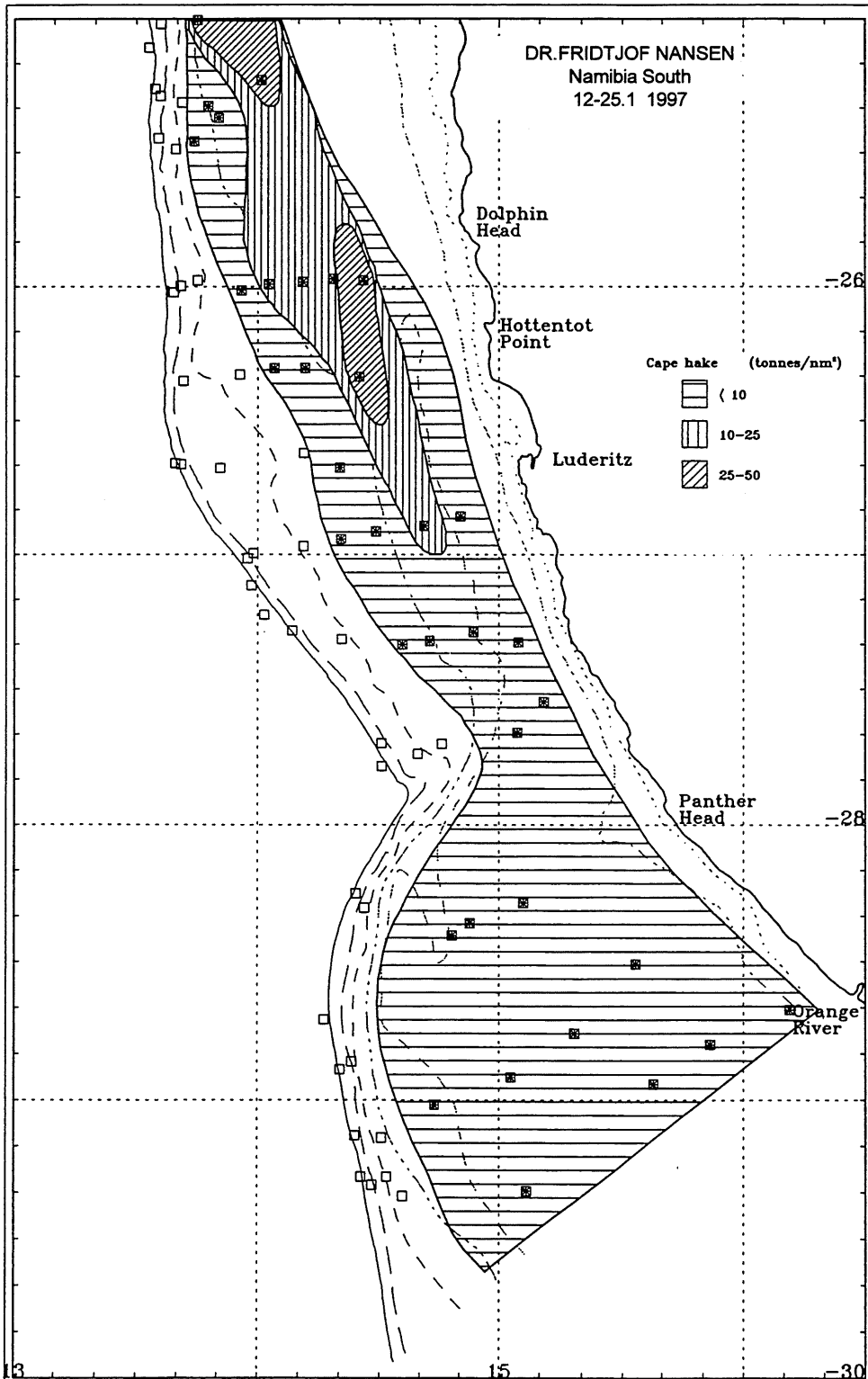


Figure 8 Orange River to Francis Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

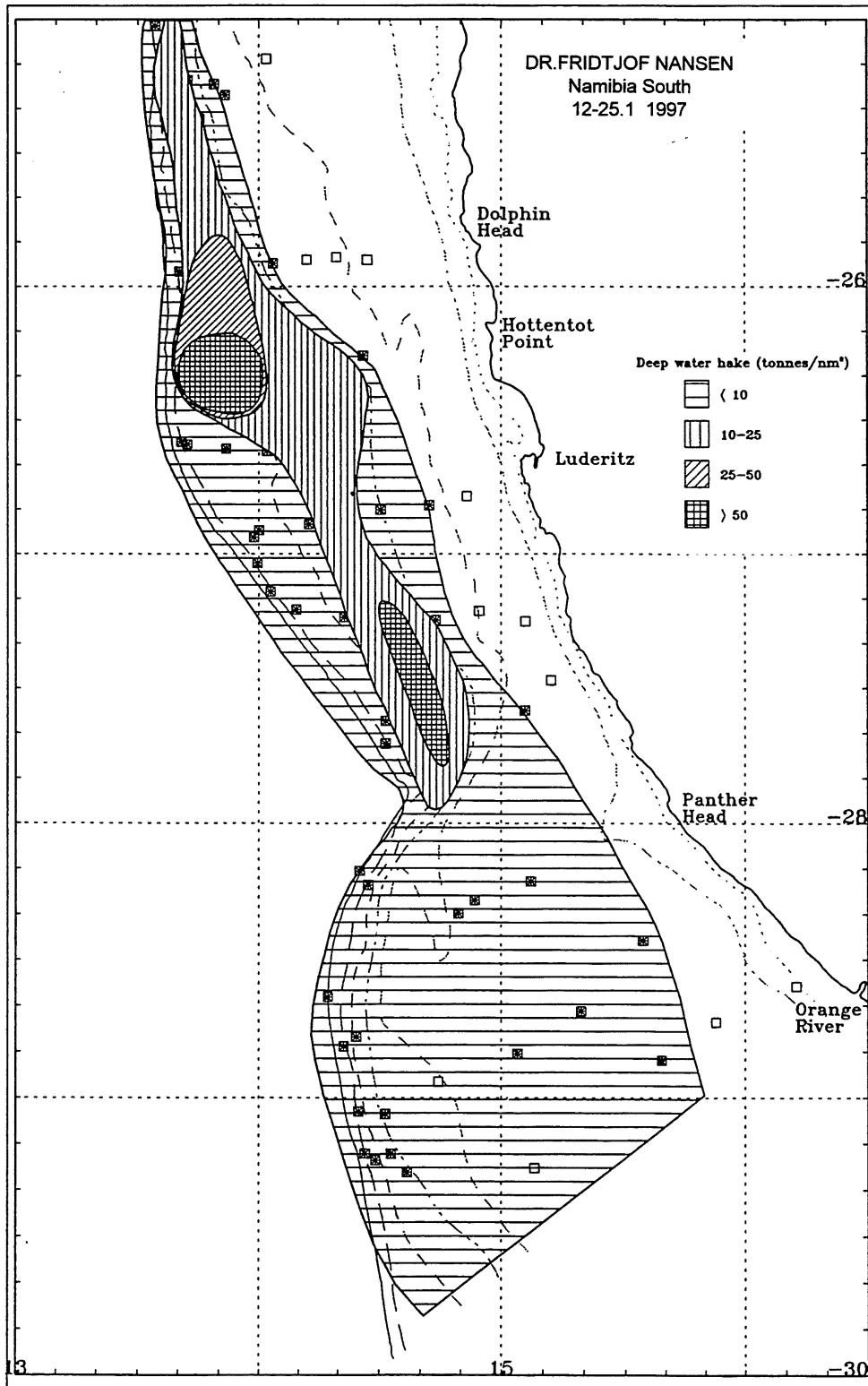


Figure 9 Orange River to St. Francis Bay. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.

The size compositions in biomass and numbers of the Cape hake from pooled samples weighted by catch rates are shown in Figure 10. A length frequency analysis to identify age groups (cohorts) in the stock, was performed in the same way as during the five previous surveys. The results are shown in Table 5.

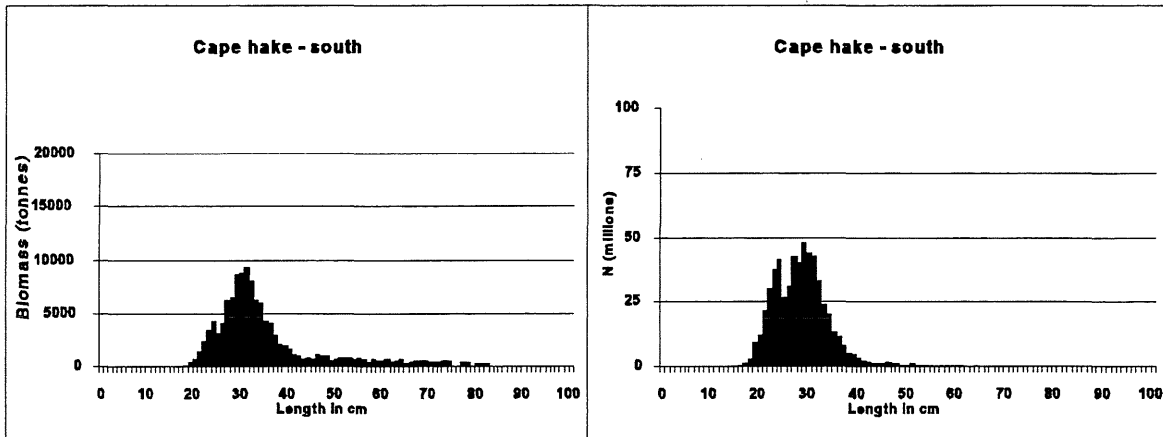


Figure 10 Length composition of Cape hake in biomass and numbers.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	22.7	2.2	0.30	196	15
1994	29.1	2.8	0.53	353	58
1993	35.0	2.8	0.13	85	24
older			0.04	25	24

As seen in Figure 10 the main part of the Cape hake, both in numbers and biomass was made up of a fish cohort with mode at 29 cm, believed to be the 3-yearlings from the 1994 year class. Table 5 shows that this group constituted 50% of the population in numbers and biomass.

The fishable biomass was estimated to 37 000 tonnes and 64 million fish. This represents a recovery from the record low estimate of 14 000 tonnes in September 1996, but is still below the January 1996 figures (51 000 tonnes).

The size composition of the deep water hake is shown in Figure 11 and the results from the cohort slicing in Table 6. The population was composed of a wide size range, from 20 to 70 cm,

and large fish constituted a fairly big share of the biomass. The fishable biomass was estimated to 71 000 tonnes.

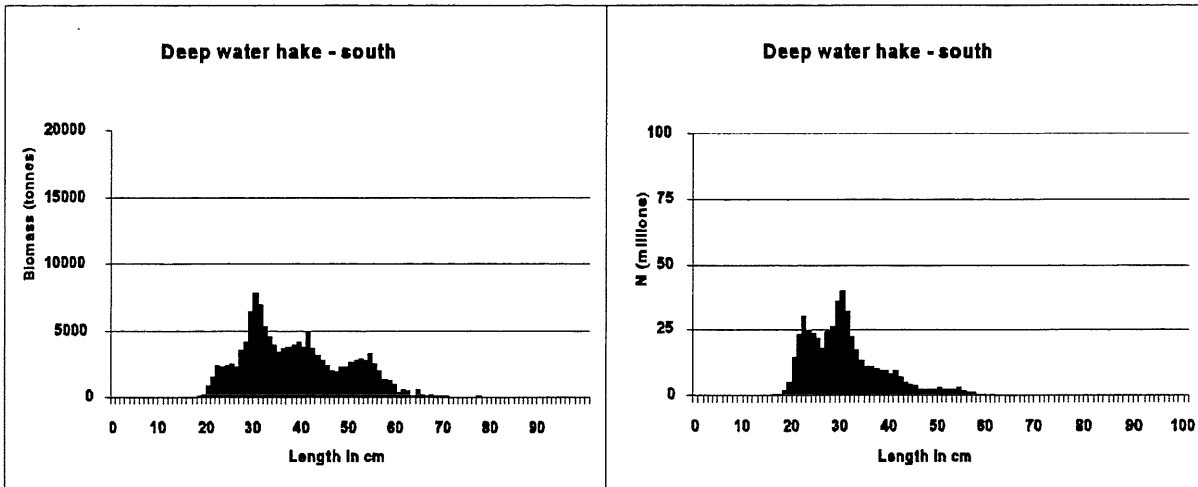


Figure 11 Length composition of deep water hake in biomass and numbers.

Table 6 Southern region. Deep water hake. Estimated age-cohorts from optimized length distributions.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	22.4	2.2	0.28	160	12
1994	29.7	2.8	0.49	274	48
1993	39.5	3.5	0.17	97	40
older			0.06	36	32

3.3 Central region, St. Francis Bay to Ambrose Bay

Table 7 shows the catch composition for the shelf and the slope by main groups. The mean catch rates for both hakes combined had decreased both on the shelf and on the slope since the last survey. The decrease was from 812 to 510 kg/hour on the shelf and from 372 to 304 kg/hour on the slope. The on-shelf catches were mainly consisting of young fish, so called 'non-fishable' biomass. For monks, the catch rates on the shelf were similar to the October survey and they dropped in the slope from 13 to 4 kg/hour.

Table 7 Central region. Catch rates by main groups in swept area bottom trawl hauls, kg/hour.

SHELF 90-259 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1950	214	677.5	0.5				950.2
1951	165	1068.0					132.0
1952	245	609.3	38.1		5.7	2.4	91.7
1958	258	470.8	25.0			7.0	281.8
1960	254	107.2	6.3			1.0	124.7
2001	258	222.7	15.5			16.3	855.0
2016	259	581.6	9.2			11.4	477.6
2017	150	403.6	31.1		4.0	0.0	90.6
2018	135	356.6					96.8
2019	236	86.6	7.6		1.6	2.6	49.2
2022	231	133.8	4.7			7.2	50.5
2023	192	211.1	3.1			18.9	81.0
2024	172	296.9	8.8		0.9	22.1	568.3
2025	161	335.4	9.5		0.3	4.8	222.6
2026	167	886.1	2.9				17136.1
2027	145	482.4	5.9			7.9	111.6
2032	254	369.8	20.4			11.1	156.6
2033	225	82.6	5.7		0.9	7.6	82.8
2034	166	190.3	24.3		6.6	10.6	85.2
2036	94	329.5					13.6
2037	148	514.6	5.9		2.8	1.6	8178.3
2038	166	1165.1	0.5		5.0	25.1	1164.2
2048	186	374.4	16.2		1.5	7.2	72.2
2049	133	1303.2	2.5		10.0	32.1	3747.3
2050	122	1783.6			3.1	2.6	39.7
2051	126	926.6	20.4		6.0	4.6	149.9
2052	104	33.5				0.6	481.7
MEAN		518.6	9.8		1.8	7.6	1314.5

SLOPE 260-700 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1953	372	427.6	11.8	10.5			256.6
1954	403	354.0	16.3	16.4		12.5	452.1
1955	378	48.8		6.4			45.9
1956	335	422.3	9.6	67.6			362.5
1957	319	405.0		10.8		29.1	266.9
1961	269	186.0	0.7			3.6	438.7
1962	303	174.7	0.8	12.4			521.8
1963	363	347.7	1.9	2.3			163.2
1964	451	860.0				8.1	370.5
1965	607	171.5	5.1			13.6	241.4
1995	646	274.3	9.2			49.0	553.7
1996	539	95.7	4.3				297.3
1997	436	370.8				15.3	226.8
1998	390	354.7		3.3		52.3	327.0
1999	329	566.5	2.8	1.9		16.3	188.1
2000	288	346.1	1.9	0.7		22.0	1483.7
2003	277	171.4				13.4	81.0
2004	319	128.4	5.7	7.5		8.3	57.3
2005	350	478.0	4.9	13.8		14.6	208.5
2006	380	141.1		3.2		10.9	338.2
2007	403	326.8	8.3			28.6	215.9
2008	456	437.1	2.6			59.4	321.1
2009	570	114.2					128.4
2010	670	199.0				87.3	256.9
2011	698	264.0				44.6	182.1
2012	600	214.1				30.4	158.2
2013	502	311.8				5.5	227.6
2014	306	155.2	1.9			13.6	645.3
2015	360	677.3	8.4	16.7		27.7	224.4
2020	299	114.7	10.2	3.1		34.2	1633.2
2021	310	170.7	26.4	3.1		35.3	621.3
2028	641	736.4				5.7	218.0
2029	561	98.2				12.2	255.3
2030	426	181.0				20.8	217.4
2031	305	128.3				42.5	769.1
2039	277	220.1	2.0	1.9		20.7	150.0
2040	325	116.7	16.7		1.5	19.7	450.4
2041	511	125.3	5.3			19.4	260.9
2042	600	193.7	10.4			22.3	123.1
2043	693	245.5				9.5	283.5
2044	529	474.3				22.0	296.3
2045	631	160.3				3.3	415.5
2046	427	158.8				5.9	203.0
2047	306	507.4	18.9			19.4	146.5
2053	261	562.5	4.7			0.2	57.7
2054	336	406.8	13.2			51.4	3600.4
2055	384	1019.7	4.2	22.3		9.0	254.0
2056	573	136.7				16.6	481.8
2057	644	142.2	7.9			19.7	404.0
MEAN		304.6	4.4	4.2	0.03	19.5	409.9

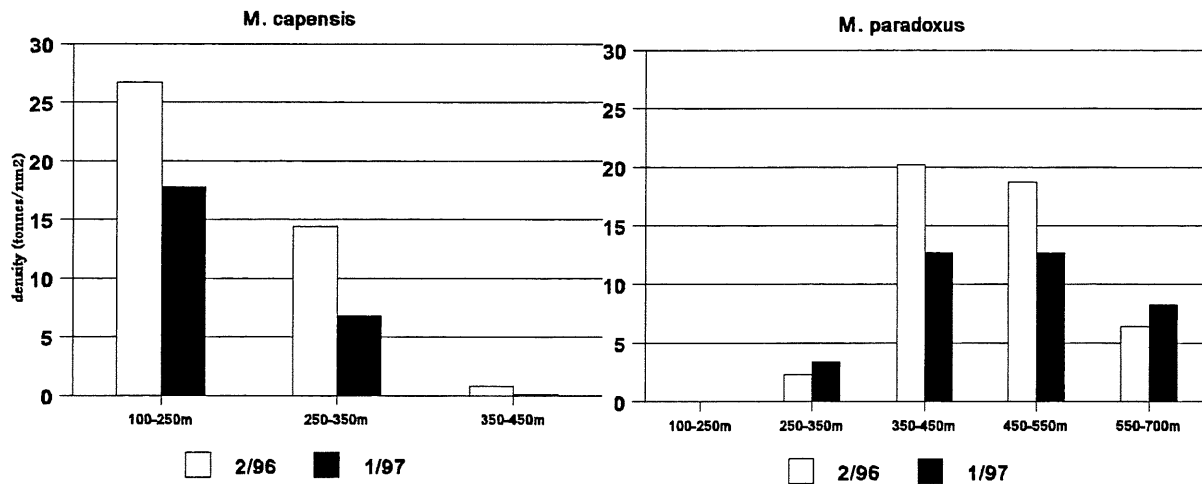


Figure 12 Central region. Depth distribution of two hake species. Mean densities in tonnes/NM².

Figure 12 shows the mean catch rates by depth ranges of the two hake species. The density for the Cape hake had dropped from 26 to 18 tonnes/NM² since the previous survey on the shelf. In the 250-350 m zone, the main habitat of adult Cape hake, the catch rates decreased from 14 to 7 tonnes/MN². The density for the deep water hake had decreased in its main depth zone, the 350-450 m from 20 to 13 tonnes/NM² and from 18 to 13 tonnes/NM² in the 450-550 m depth zone. A slight increase was observed in the 550-700 m depth zone.

Figure 13 shows the distribution of Cape hake over this region. Moderately higher aggregations (10-25 tonnes/NM²) were detected near Easter Point-Hollands Birds Island area, in the vicinity of Walvis Bay and in Cape Cross-Ambrose Bay area. Compared to the previous survey, these aggregations were smaller, the high density areas above 50 tonnes/NM² were lacking, and the densities were generally low in the region. A narrow band of moderately high aggregations for the deep water hake followed almost the whole slope in the region (Figure 14). This general observation is similar to the 2/96 survey.

The biomass estimate of Cape hake for the central region based on post stratification was 112 000 tonnes, a considerable drop from the

Year/Survey	Cape hake	Deep water hake
90/1	180	4
90/2	219	6
91/1	150	6
91/2	302	13
92/1	261	15
92/2	542	15
93/1	280	12
93/2	280	20
94/1	225	30
94/2	160	30
94/3	112	16
95/1	105	40
96/1	145	73
96/2	182	58
97/1	112	46

182 000 tonnes recorded four months earlier (Table 9). The biomass in the central region varies and some of the variation is associated with seasonal migration of adult fish with the summer months November-February as the low season in the 250-450 m depth habitat. The main part of the reduction is, however, associated with a decline in the young fish population on the shelf. The estimate of the deep water hake was 46 000 tonnes, about 20% decrease from October 1996 (Table 9). The 95% confidence limits on the estimates are $\pm 16\%$ on the Cape hake and $\pm 18\%$ on the deep water hake.

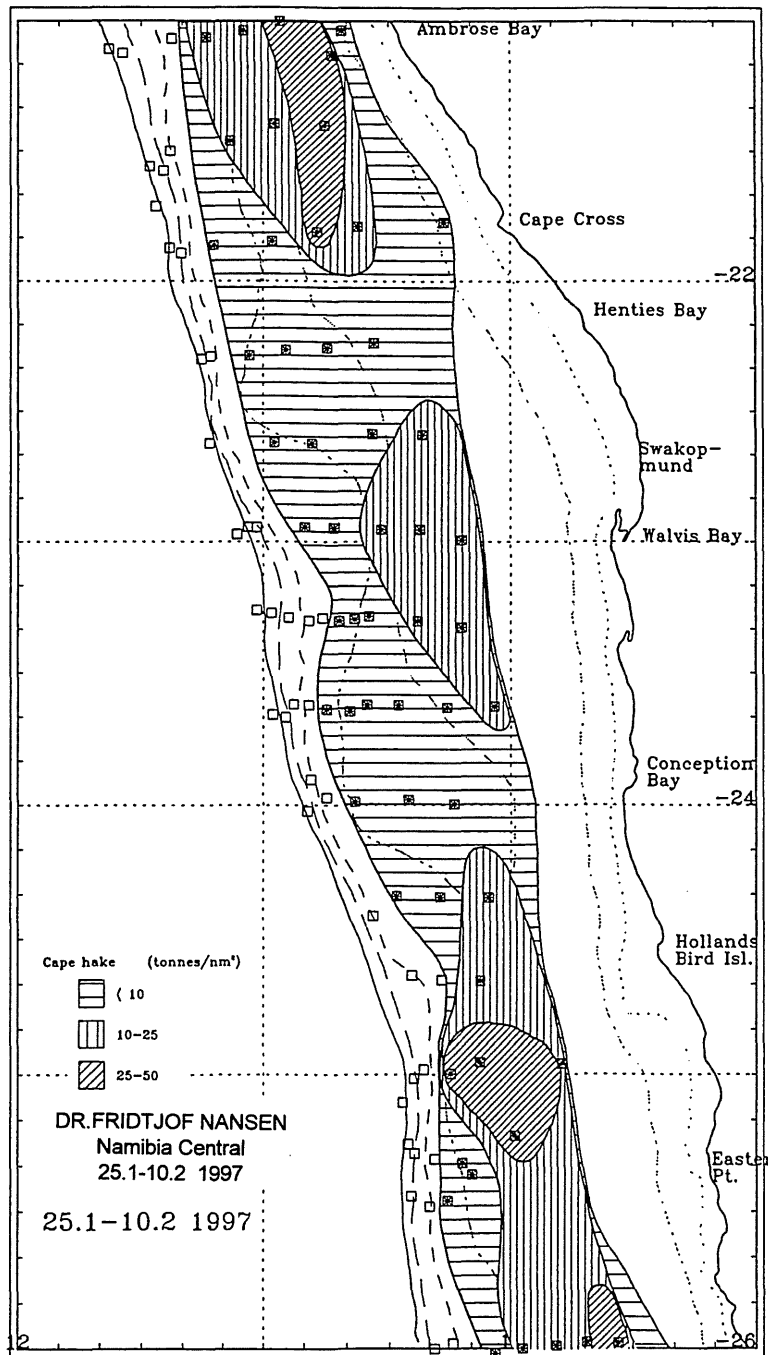


Figure 13 St. Francis Bay to Ambrose Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

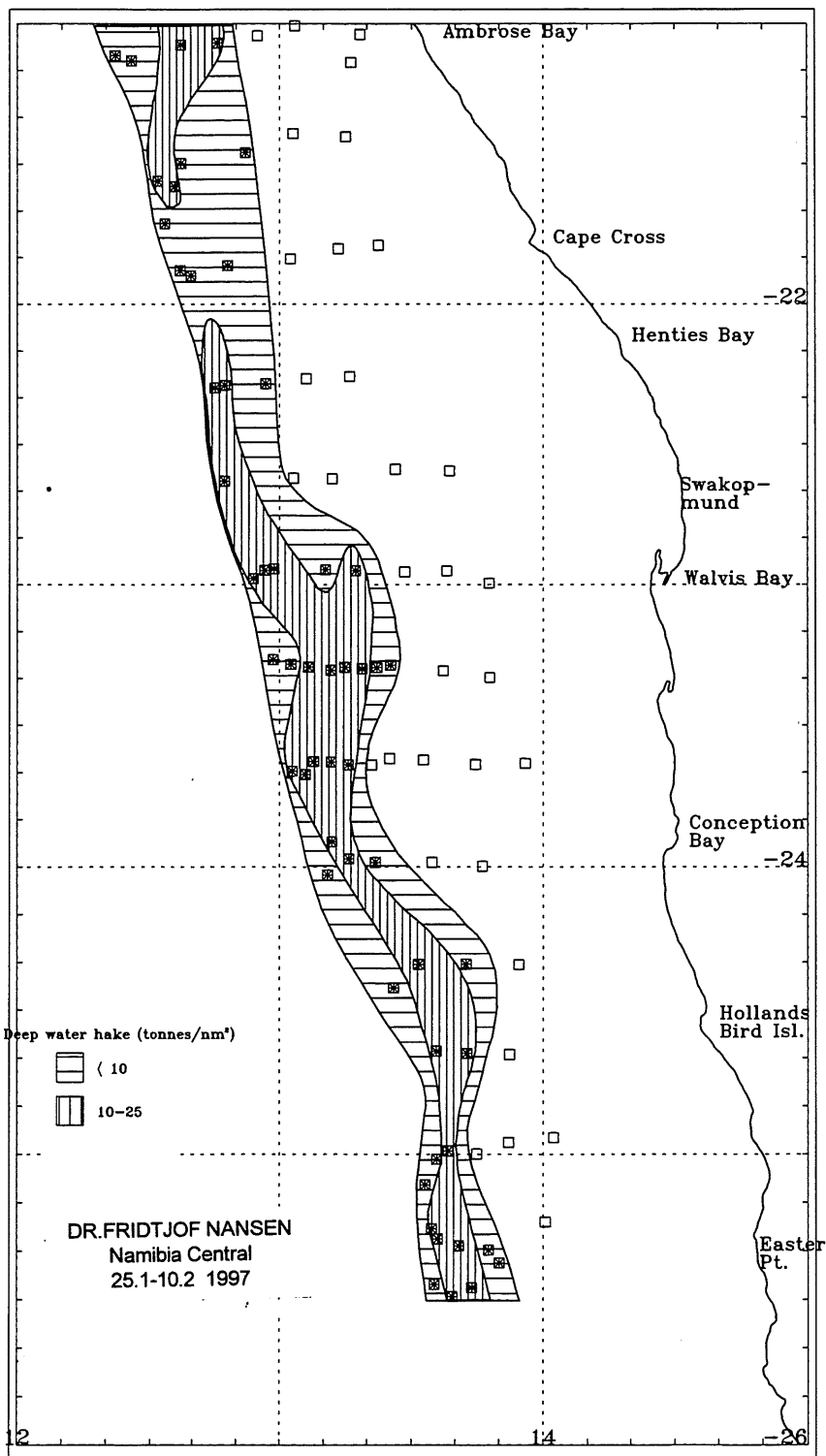


Figure 14 St. Francis Bay to Ambrose Bay. Distribution of deep water hake. Empty squares indicate stations where Cape hake was not caught.

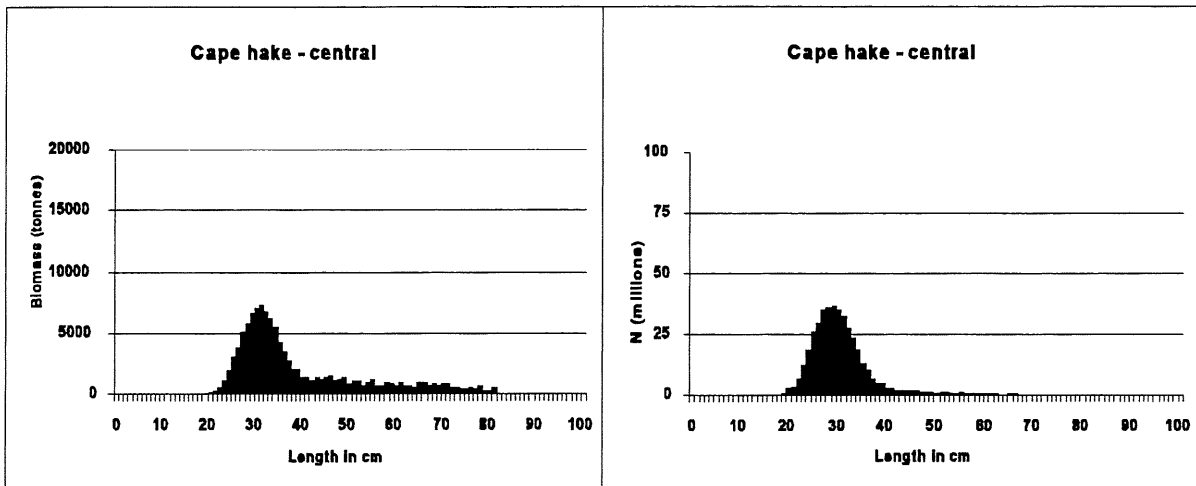


Figure 15 Central region. Length composition of Cape hake in biomass and numbers.

Size composition of Cape hake, in numbers and biomass, based on the pooled length samples is shown in Figure 15, and the results from the analysis are shown in Table 10.

Table 10 Central region. Cape hake. Estimated age-cohorts from optimized length distributions.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	25.2	2.3	0.25	120	13
1994	29.7	2.8	0.53	258	45
1993	35.0	2.8	0.15	69	19
older			0.07	37	35

The 1994 year class, with a modal length around 30 cm, is about to enter the fishery and constitutes the dominating cohort in numbers and biomass. The fishable part of the Cape hake was 46 000 tonnes, a similar figure as was estimated in October 1996.

Size composition and the results from the cohort slicing on the deep water hake is shown in Figure 16 and Table 11 respectively. The regional population consisted mainly of fish from the 1993 and 1992 year classes, i.e. 4 and 5 year old fish. Fishable biomass was estimated to 40 000 tonnes.

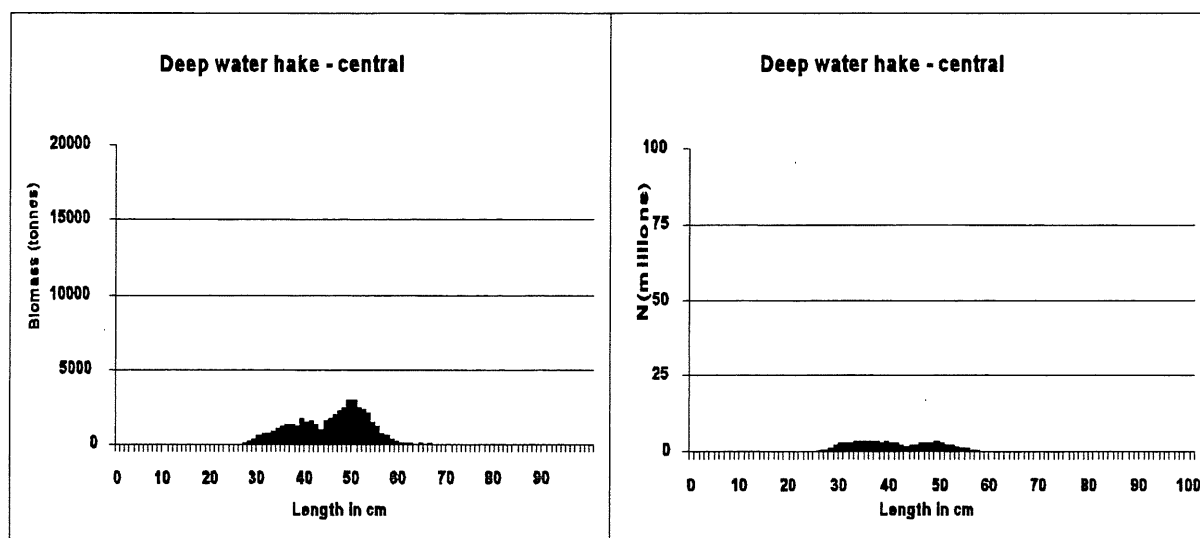


Figure 16 Central region. Length composition of deep water hake in biomass and numbers.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1994	31.3	2.8	0.26	24	5
1993	38.4	3.5	0.37	35	13
1992	48.7	3.5	0.34	32	24
older			0.03	3	4

3.4 Northern region, Ambrose Bay to Cunene River

Table 12 shows the catch rates by main groups for the shelf and slope separately. The mean catch rate for hakes showed a considerable increase in the shelf (from 169 - 310 kg/hour), but this was totally influenced by one big catch (5 060 kg/hour at station 2091), while in the slope the rates were similar to the previous survey (at about 330 kg/hour). The average catch rate for monk in the slope was down from 13 to 5 kg/hour compared to the previous survey, and on the shelf this species was not caught at all. Horse mackerel mean catch rate had dropped by half (from 1 528 to 707 kg/hour) on the shelf compared to the October 1996 survey, but the high figure in October 1996 was due to one extremely high catch (22 tonnes at station 1830).

Table 12 Northern Region. Catch rates by main groups in swept area bottom trawl hauls, kg/hour.

SHELF 50-259 m

ST.NO.	DEP.	Hakes	Monk	Dentex	H.mack	Squids	Other
2063	255	34.6			0.9		39.8
2064	124	19.9					32.2
2066	121	0.1			0.1		2.1
2074	245	4.5					59.7
2075	195				0.0		22.6
2076	122				0.4		34.4
2078	232	726.8		248.8	760.0		757.9
2088	208	264.0		840.5	42.2		2694.3
2089	159	35.7		4533.3	705.1		115.8
2090	171	346.3		1251.8	74.5	5.9	991.7
2091	247	5060.0		188.0	190.4	42.4	1762.0
2092	125			0.2	6149.8		1.4
2093	79				6188.7		
2094	99			0.5	700.0		5.9
2095	139	1.5		10.3	1060.2		16.4
2096	170	11.4			2.3	0.0	7.3
2097	164	7.5			1198.3		54.1
2098	215	534.1		356.0	668.2		1078.7
2099	128				5.7		7.8
2103	227	209.0		1276.0	1663.2		34.0
2104	214	28.9		15.4	397.7		0.9
2105	201	0.7			0.0		4.7
2106	253	7.9			0.0		1.6
2115	258	1268.5			0.4		3.3
2116	182	107.8			0.0		1.2
2117	112				0.0		0.4
2123	257	14.7		0.4	0.0	0.7	2.29
2124	194	14.7			0.2		7.0
MEAN		310.7		311.4	707.4	1.7	276.4

SLOPE 260-700 m

ST.NO.	DEP.	Hakes	Monk	dentex	H. mack	Squids	Other
2058	686	139.3	9.7			8.4	261.1
2059	598	261.8	3.6				413.0
2060	383	1181.4	1.6			5.2	551.1
2061	339	147.3				10.0	238.8
2062	313	847.1	9.0			18.4	259.9
2067	274	51.4		0.7			375.7
2068	304	766.9				16.6	221.9
2069	400	400.1				8.9	49.4
2070	580	240.7	3.5			8.7	322.6
2071	475	363.2	3.0				438.5
2072	370	393.6	8.6	1.3		12.8	203.8
2073	296	9.0					5.0
2079	342	12.1	3.7				1412.1
2080	451	298.1	22.7				1673.1
2081	557	204.7	25.8			18.4	1093.8
2082	498	234.5	25.2			64.1	1463.0
2083	313	390.0	9.2	7.7		77.4	919.4
2084	577	245.6				7.7	405.1
2085	637	91.9			16.2	17.6	335.0
2086	668	55.5			81.0	4.3	574.8
2087	570	109.6			104.4		379.9
2100	528	918.9	3.5			12.5	410.5
2101	421	359.9	6.0			15.0	230.5
2102	324	1088.7		51.2			2282.4
2107	295	207.4	0.3	209.6			177.9
2108	275	232.5		31.2		5.4	214.4
2109	306	174.1	6.2	90.3		0.9	558.6
2110	650	217.9				50.5	313.4
2111	549	187.7	4.8			0.7	284.5
2112	456	221.2	5.2			18.5	338.3
2113	343	518.2			176.4	135.8	85.8
2114	306	320.1		71.1	60.1	5.3	399.7
2118	671	113.4	4.5				247.0
2119	573	120.6	13.2				241.5
2120	474	200.4				5.0	289.5
2121	359	613.6	1.4	3.7	2.1	2.2	77.4
2122	307	202.1			0.0		5.8
MEAN		328.1	4.6	12.6	11.9	14.3	479.8

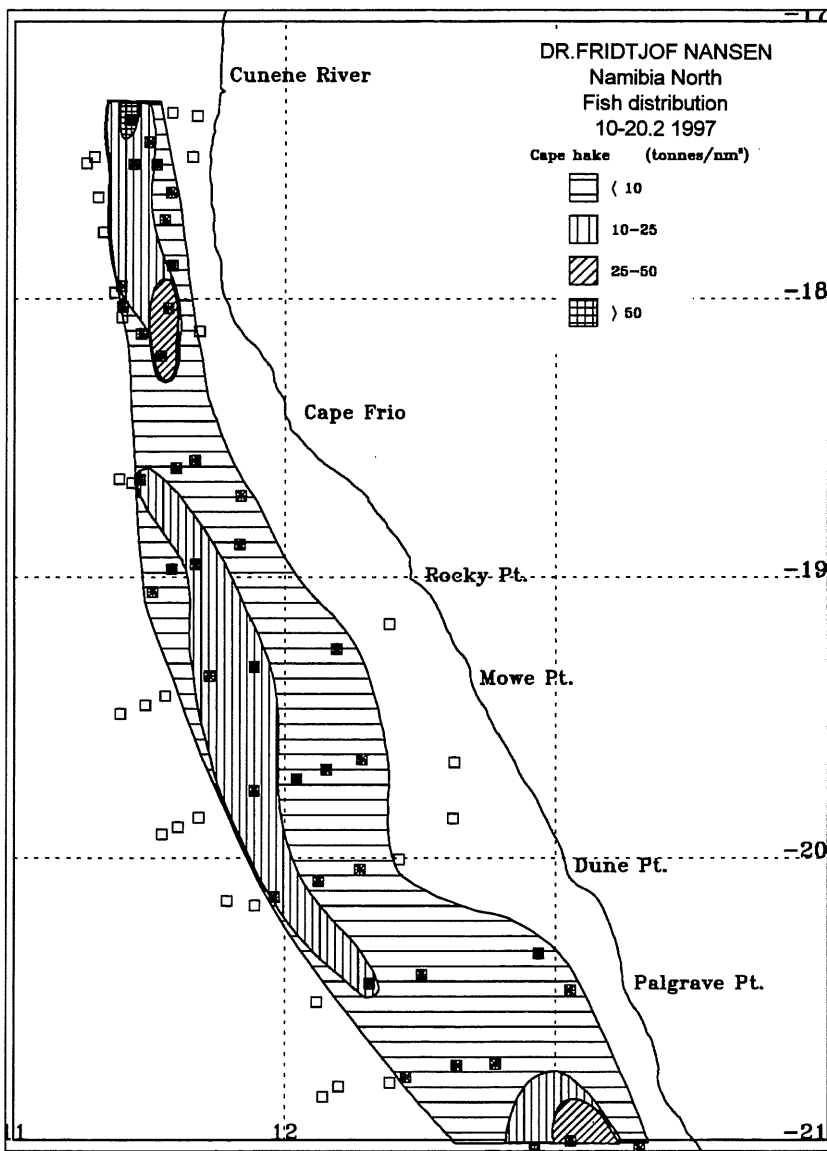


Figure 17 Ambrose Bay to Cunene River. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

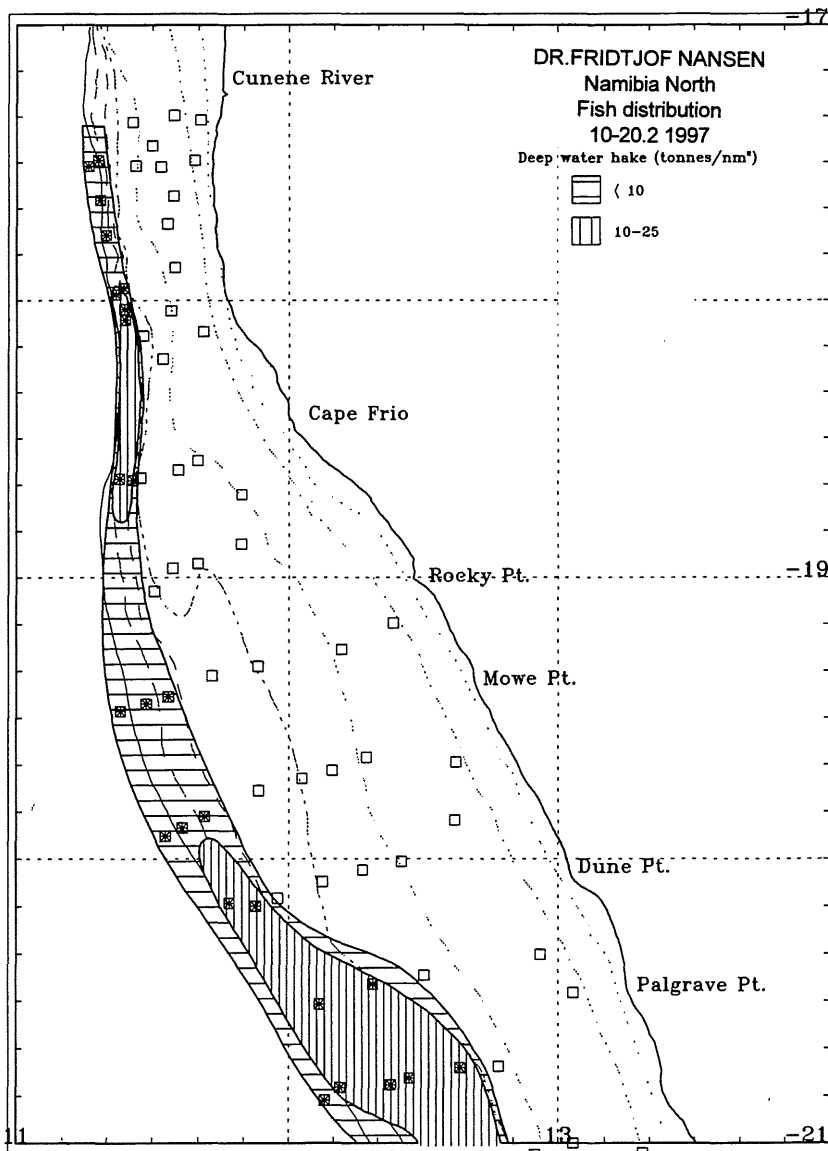


Figure 18 Ambrose Bay to Cunene River. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.

Figure 17 shows the distribution of Cape hake in the northern region by levels of density calculated from the catch rates and with correction for fish in mid-water. Generally the distribution pattern was much the same as during the previous survey, but a rather extensive area with moderate densities (10-25 tonnes/NM²) on the shelf between Cape Frio and Dune Point was now reduced. The deep water hake, Figure 18, had much the same distribution as during the previous survey, perhaps with some increased densities off Cape Frio.

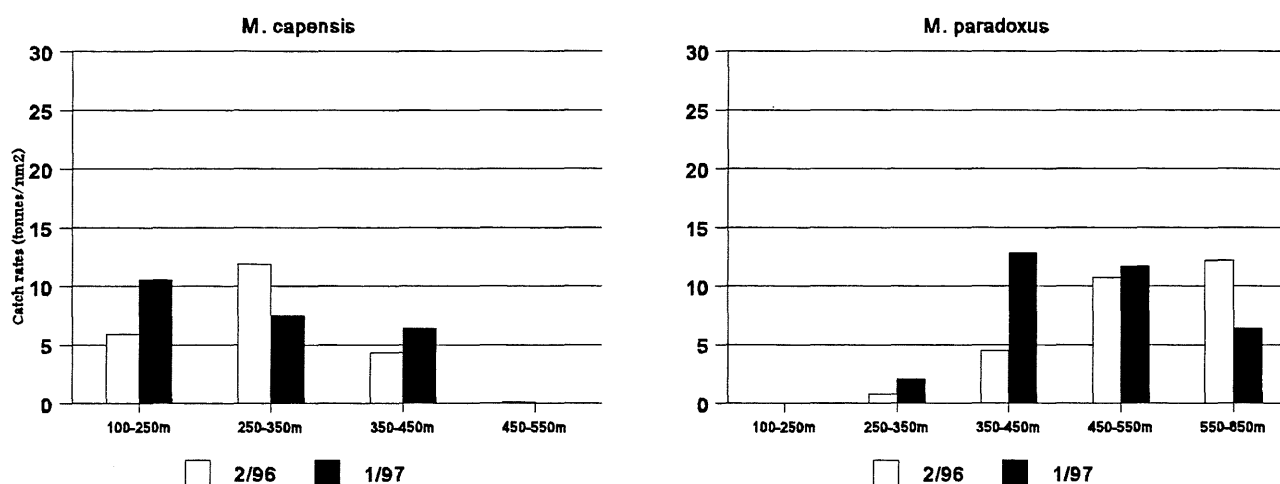


Figure 19 Northern region. Depth distribution of two hake species. Mean densities in tonnes/NM².

The depth distribution of the two hake species based on catch rates converted to densities is shown in Figure 19. Biomass estimates gave a total of 73 000 tonnes of Cape hake and 40 000 tonnes of deep water hake (Table 14). For the Cape hake this represents a decrease of 21 000 tonnes since the last survey. The deep water hake increased from 31 to 40 000 tonnes. The 95% confidence limits on the estimates of the Cape hake was $\pm 66\%$. This was due to very large catch at one single station. Without this station, the confidence limits would be $\pm 22\%$. For deep water hake the confidence limit was $\pm 22\%$.

Table 14 Northern region. Estimates of total biomass by surveys, 1 000 tonnes.		
Year/Survey	Cape hake	Deep water hake
90/1	180	
90/3	105 *	
91/1	200	
91/2	140	2
92/1	185	4
92/2	190	8
93/1	150	4
93/2	110	6
94/1	90	20
94/2	130	14
94/4	87	9
95/2	117	24
96/1	132	31
96/2	94	31
97/1	73	40

* + hake in the mid-water

The size compositions of the two hake species are shown in Annex I. A cohort analysis was done on the two hake species and the results are shown in Tables 15 and 16. The so called 'fishable biomass' of Cape hake in the northern region, representing fish of 36 cm and larger, constituted 95 000 tonnes. This is 20 000 tonnes more than the fishable biomass estimated from the previous survey. The non-fishable biomass was now about 19 000 tonnes.

Figure 20 shows the biomass distribution of Cape hake by length classes. Both Table 15 and Figure 20 show that the biomass was composed mainly of adult fish.

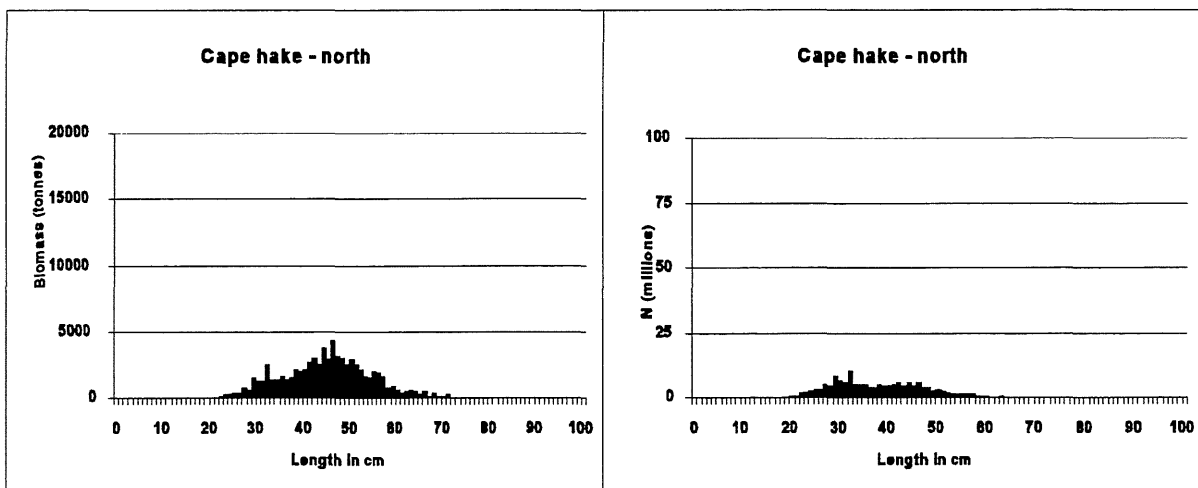


Figure 20 Northern region. Length composition of Cape hake in biomass and numbers.

Table 15 Northern region. Cape hake. Estimated age-cohorts.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	23.5	2.0	0.06	10	1
1994	30.2	3.0	0.35	61	11
1993	39.0	3.8	0.28	49	19
1992	46.0	3.0	0.21	36	23
older			0.10	17	19

The estimated fishable biomass of deep water hake was 37 000 tonnes. Figure 21 shows that the whole biomass of deep water hake was adult fish.

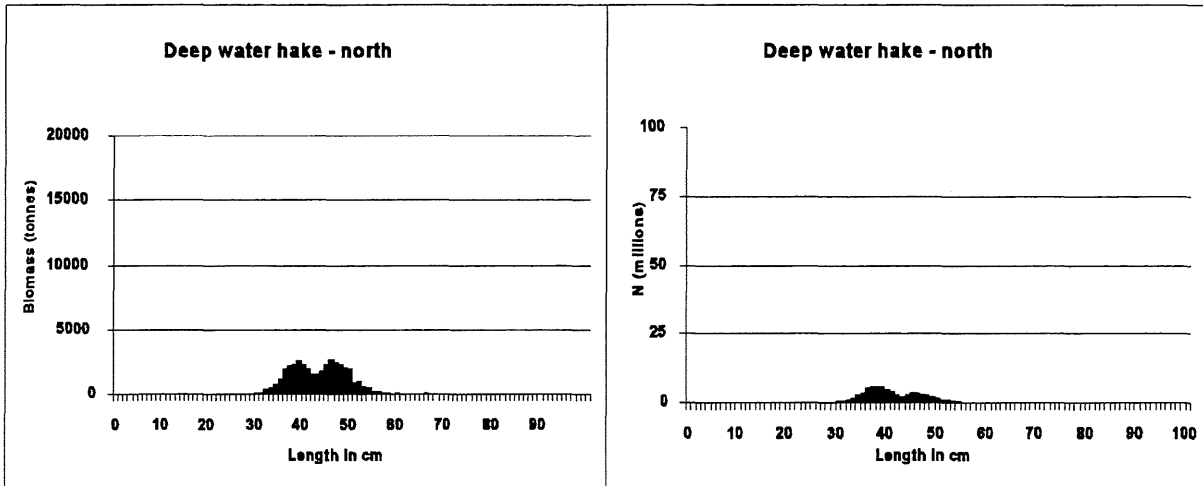


Figure 21 Northern region. Length composition of deep water hake in biomass and numbers.

Table 16 Northern region. Deep water hake. Estimated age-cohorts.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1993	37.2	3.0	0.57	49	16.5
1992	46.3	3.8	0.42	35	23
older			0.01	0.5	0.5

CHAPTER 4 CONSIDERATIONS ON THE SURVEY RESULTS

4.1 Survey effort

The present survey was the 15th in a series started in early 1990, covering the distribution of the hake stocks over the whole Namibian shelf. Figure 22 shows the effort spent in these investigations. This survey was done in 42 days. Of this about one week was spent on intercalibration and special studies on trawl performance.

Hakes may be partly inaccessible to the trawl-net due to vertical migration. However, the use of acoustic assessment techniques and the Bergen Echo Integrator (BEI) post processing system enables the inclusion of the biomass in the overlying water column in the assessment. It is therefore not likely that major off-bottom aggregations of hakes have been missed. The occurrence of hakes in mid-water was more pronounced in the northern region. During the

recent survey the average acoustic corrections during daytime were 1%, 4% and 18% for the south, central and northern regions respectively. The corresponding figures for the night hauls were 3%, 15% and 23%. For logistic reasons a limited number of night hauls were carried out.

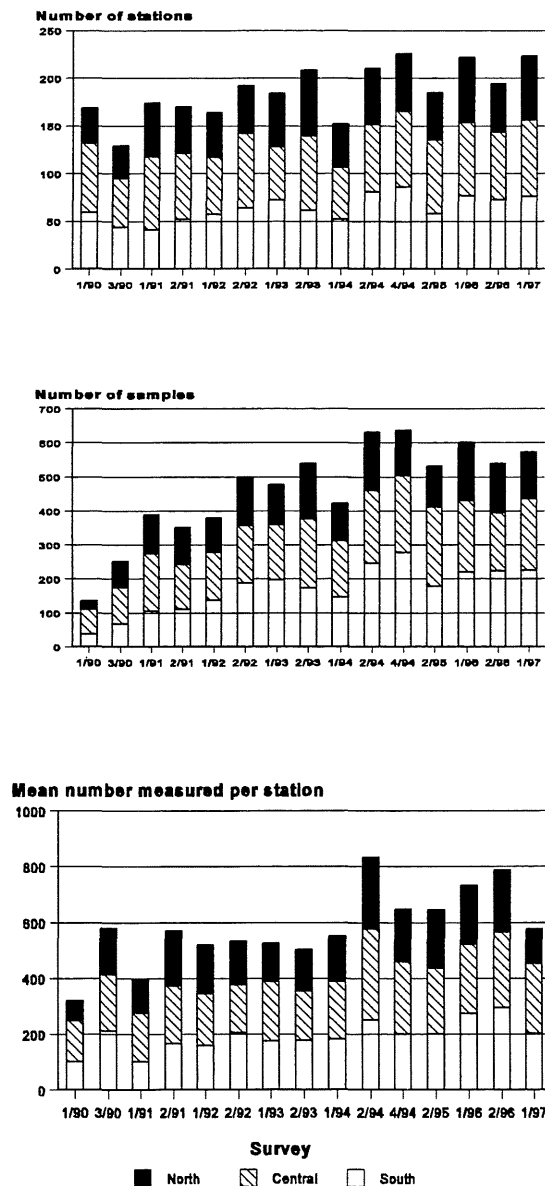


Figure 22 Hake survey effort 1990-97. a) Number of trawl stations by regions; b) Number of length frequency samples by regions; c) Mean number of fish in length sample.

These were usually fished carried out on the peripheries of the fish distributions where the densities are low and the corrections in absolute terms are small.

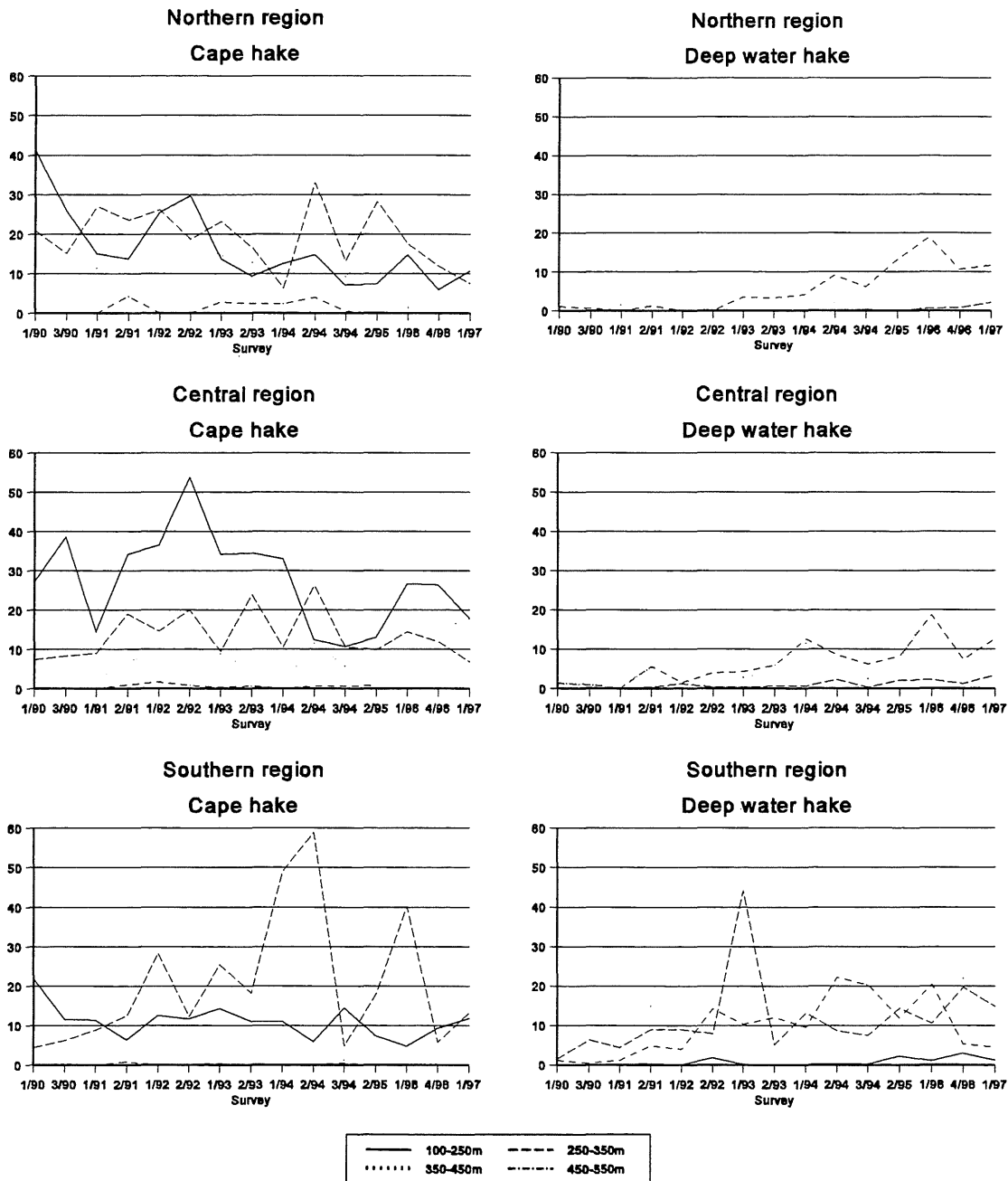


Figure 23 Estimated mean densities in depth strata by surveys. Mean densities in tonnes/NM². Biomass estimates.

4.2 Catch rates

A summary of the estimates of the mean densities (these are linearly correlated with catch rates) of the hakes by depth stratum is shown in Figure 23. The densities in the shallow ranges 100-250 m mainly reflect the strength of the young fish, 2-3 years of age, that inhabit this zone. The hauls in each zone were too few to give statistical valid conclusions, but the Cape hake figures from the last surveys confirm the low catch rates obtained in the two previous surveys. For the deep water hake the catch rates in all depths have been on a slow increasing trend and the figures from the last survey generally followed this trend.

Table 17 Summary of total, fishable and non-fishable biomass estimates for the two hake species by surveys and areas. 1 000 tonnes.

TOTAL BIOMASS															
	Feb-Mar 1990	Sep-Oct 1990	Jan-Feb 1991	Oct-Nov 1991	Apr-May 1992	Oct-Nov 1992	Jan-Feb 1993	Apr-May 1993	Jan-Feb 1994	Apr-May 1994	Oct-Nov 1994	Apr-June 1995	Jan-Feb 1996	Sep-Oct 1996	Jan-Feb 1997
SOUTHERN REGION															
Cape hake	118	142	128	84	203	163	222	179	200	240	150	145	169	89	121
Deep water hake	21	30	34	83	145	125	150	115	160	215	120	140	202	167	132
CENTRAL REGION															
Cape hake	176	202	147	309	265	530	285	279	225	160	110	105	145	182	112
Deep water hake	4	5	6	15	15	17	16	19	30	30	15	40	73	58	46
NORTHERN REGION															
Cape hake	203	116*	195	140	190	199	147	110	92	130	90	120	132	94	74
Deep water hake				2	4	8	4	6	20	15	10	25	31	31	40
TOTAL NAMIBIA															
Cape hake	497	460*	470	533	658	892	654	568	520	530	350	370	446	365	307
Deep water hake	25	35	40	100	164	150	170	140	210	260	145	205	306	256	218
Both	522	485*	503	633	822	1042	824	708	737	790	495	575	752	621	525
FISHABLE BIOMASS															
SOUTHERN REGION															
Cape hake	20	44	54	50	145	69	92	99	112	130	35	62	51	14	36
Deep water hake	16	20	14	42	113	80	123	95	114	164	61	66	113	66	71
CENTRAL REGION															
Cape hake	20	76	67	147	108	180	133	121	50	65	58	54	41	46	46
Deep water hake	4	5	6	6	13	12	13	19	26	22	10	34	56	46	40
NORTHERN REGION															
Cape hake	66	62*	170	134	145	133	106	89	74	102	63	93	88	48	60
Deep water hake	-	-	-	2	4	8	4	6	19	13	8	21	28	27	35
Cape hake	106	182*	291	331	398	382	331	309	240	300	156	209	180	108	142
Deep water hake	20	25*	20	50	130	100	140	120	160	200	79	121	197	139	146
TOTAL FISHABLE	126	207*	311	381	528	482	471	429	400	500	235	330	377	247	288
NON-FISHABLE BIOMASS															
Cape hake	391	278	179	202	250	510	260	259	280	230	193	161	266	257	165
Deep water hake	5	15	20	50	34	50	30	20	50	60	66	84	109	117	72
TOTAL NON-FISHABLE	396	293	199	252	284	560	290	279	330	290	259	245	375	374	236

* Unadjusted underestimate due to fish off the bottom

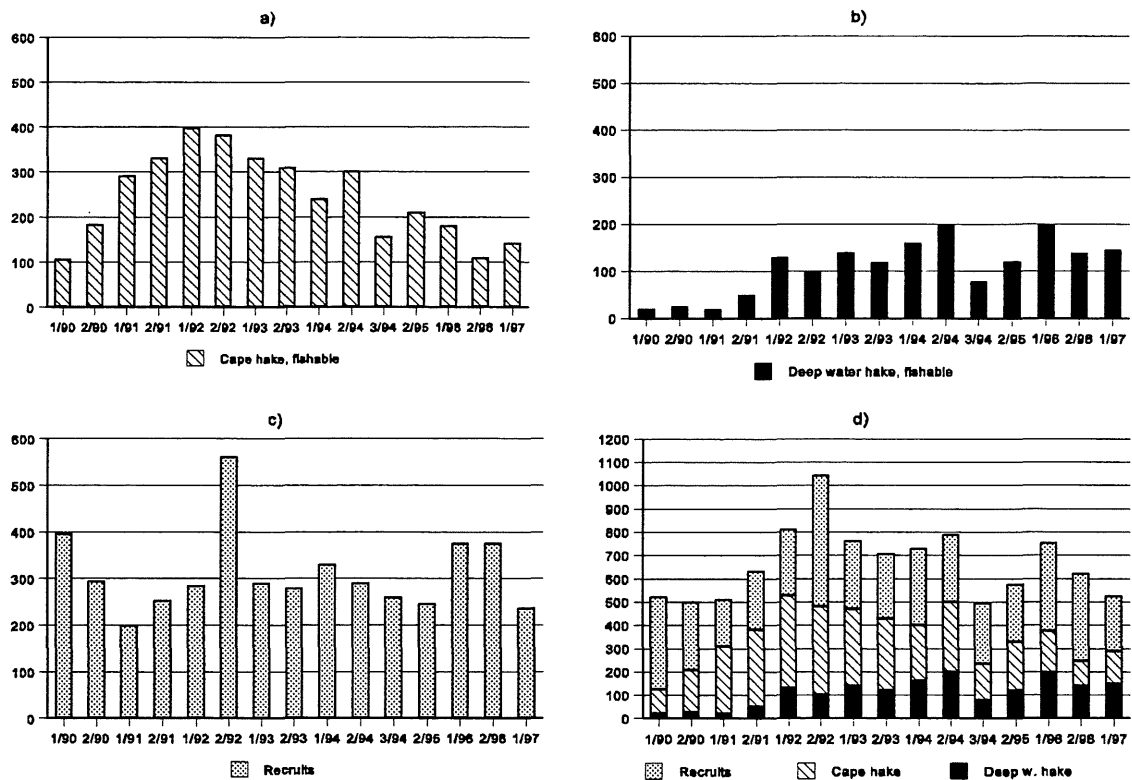


Figure 24 Trends in biomass estimates: a) Cape hake, 'fishable stock', b) deep water hake, 'fishable stock', c) recruits ('non-fishable' biomass) and d) total hake in Namibia. Thousand tonnes.

4.3 Biomass estimates

Table 17 and Figure 24 give the up-to-date summaries of the biomass estimates for the two hake stocks by region and survey since the beginning of the survey programme in 1990.

Figure 24a-d shows the summaries of estimated fishable, nonfishable and total biomass of hake species since 1990. The fishable biomass of Cape hakes grew from about 106 000 tonnes in 1990, reaching a peak of 400 000 tonnes in 1992 and was at 142 000 tonnes in the present survey (Figure 24a). The last survey represents a moderate recovery from the record low level of biomass obtained from the previous survey but still confirms a general low level of fishable Cape hake. The sign of recovery is the relatively strong 1993 year class which during 1996 has fully recruited into the adult biomass. This recruitment has, however, not been enough to compensate for the fishing during the same period as the net production in the adult stock is negative from the beginning of 1996 to the beginning of 1997, - 40 000 tonnes. The estimated

fishable biomass of deep water hakes increased tenfold from 20 000 tonnes in 1990 to about 200 000 tonnes in early 1994 (Figure 24b), has varied since then and was estimated at 146 000 tonnes in this survey. The present fishable biomass of deepwater hakes is close to what was observed in the previous survey. An interesting point is that the adult population of deepwater hake is equal to the Cape hake in abundance (142 000 for Cape hake and 146 000 tonnes for deep water hake). The apparent reduction of deepwater hake since early 1996 could be interpreted positively as a sign that fishing during 1996 has been directed to a greater extent towards the deeper waters, the habitat of this species. In previous reports the deep water hake has been pointed to as a underutilized fish resource in Namibia due to the traditional preference of the fleet to work in shallower waters. It would be interesting to check this hypothesis against the catch composition during 1996 as collected by the observer programme.

The non-fishable biomass, Figure 24c, is about 240 000 tonnes of which 165 000 tonnes is Cape hake (Table 17). This is, relatively speaking, a very low level of young Cape hake, consisting mainly of two year classes, the 1994 and the 1995 year class. A moderate abundance of recruits from the 1994 year class has been observed during the two surveys of 1996 and is now in the 27 to 35 cm length range and has already partially recruited to the fishery. Through the rough method of cohort slicing in the reports this cohort was estimated to 1 700 mill. fish in February 1996, 1 350 mill. in October 1996 and 650 mill. in February 1997. The corresponding biomass figures were 158, 135 and 101 000 tonnes respectively. The fast number reduction of this cohort suggests that it is a main target for the fisheries during 1996 and that it is subject to strong growth overfishing. The 700 mill. fish of this cohort that have disappeared since October would make up 70 000 tonnes in October but would represent about 110 000 tonnes by February if all had survived until then. A comparison with catch data from the fisheries during 1996 would be very useful and could perhaps also be used to tune the trawl biomass index. These catch data are not yet available.

In February 1996, the 3-year cohort, then recruiting to the fishable biomass was estimated to 128 000 tonnes. In February 1997 the same cohort was estimated to 114 000 tonnes, which that is about the same strength as the previous year. If the fishing pressure on the Cape hake is kept constant during 1997 a further reduction of the adult stock is expected.

According to the estimated total hake biomass, the hake resources grew steadily from 522 000 tonnes to a million tonnes between 1990 and late 1992 (Figure 24d). Since early 1993, the resources have been on a declining trend, reduced to a level of about one half million tonnes by October 1994. A slight upward trend was observed in mid 1995 and to early 1996 due to the

incoming 1993 and 1994 year classes. However, the results of the last two surveys fall back into the negative trend of the biomass estimates of the later years and give serious reasons for concern. The total estimate of both hake stocks during the present survey is 525 000 tonnes, which is at the same level as the 1990 estimate of total hake biomass. But in the same period about 200 000 tonnes of Cape hake has been replaced by deep water hake, a stock that is probably shared with South Africa and has its center of distribution and reproductive areas outside Namibia.

4.4 Size composition

Figure 24 shows the estimated size distribution in numbers and biomass for the Cape hake for all three regions combined. The figure shows that the stock was dominated by the three-yearlings with a modal length around 30 cm. For fish above 40 cm the abundance was very low in the southern and central region, most of this fish being concentrated in the relatively small areas in the northern region. One should note the near absence of fish in the 20-25 cm range. This is a very unusual feature for a January-February survey and is further discussed below.

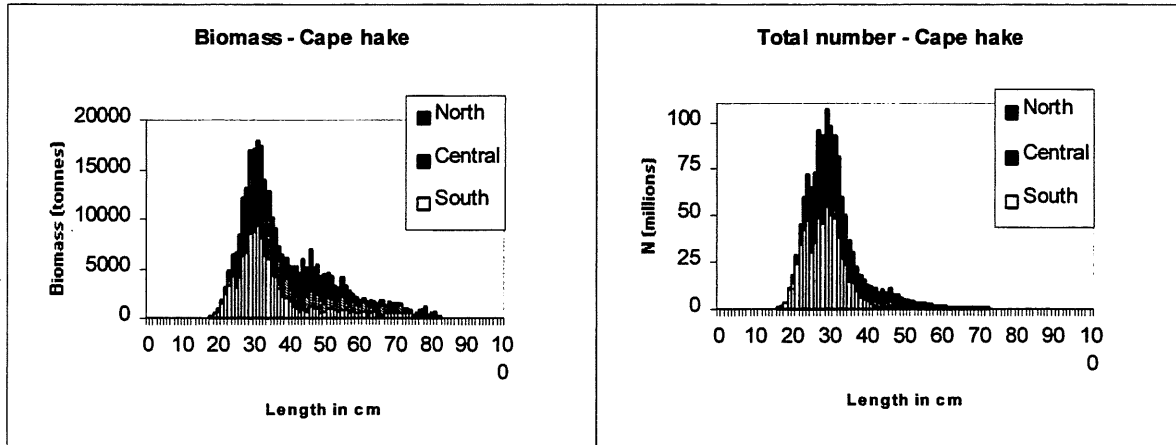


Figure 24 Length composition of Cape hake in biomass and numbers

The size distribution of the deep water hake is shown in Figure 25. In the very south a small area is functioning as a nursery area for young fish, 20-25cm. The low abundance of young fish indicates that most of the recruitment is through immigration from South Africa. The three-yearlings were almost exclusively concentrated in the south, the four-yearlings had about 50% of the biomass in the south while the older fish were more evenly distributed between the three regions. This distribution pattern could be explained by a gradual dispersal of the stock northwards as it grows.

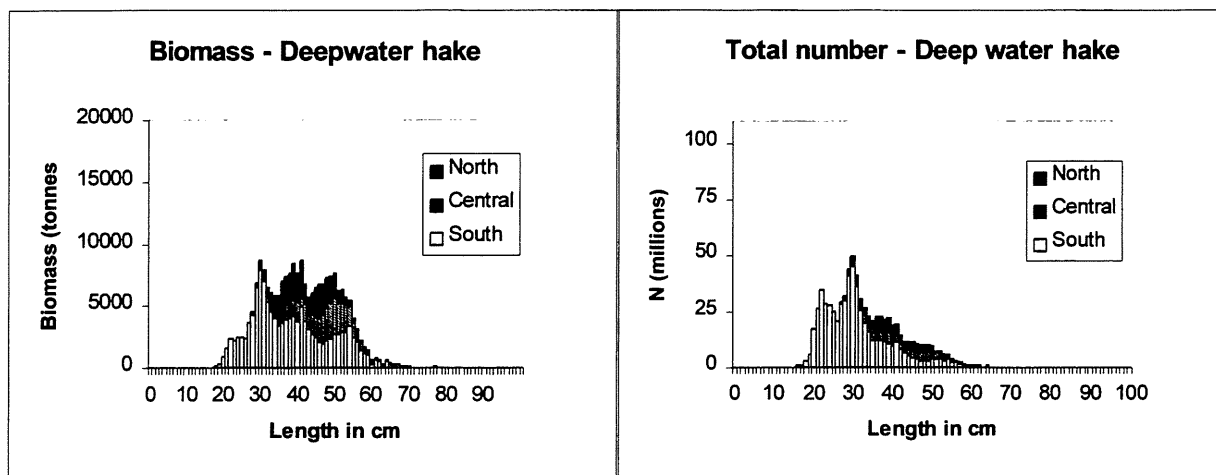


Figure 25 Length composition of deep water hake in biomass and numbers.

4.5 Geographic shift in the fishable biomass

Figure 26 shows the development of the relative share of the fishable biomass of Cape hake in the regions for the last six years. The northern region has been rather stable over the last three years, accounting for about 40% of the adult Cape hake population. A recent increase in the share of fish in the southern region is associated with recruitment of the 1994 year class to the fishable biomass in the south at the same time as the 1993 year class has been reduced by fishing, especially in the central region.

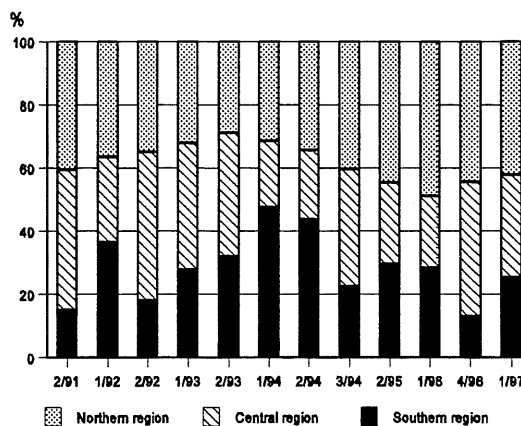


Figure 26 Relative regional share of fishable biomass of Cape hake 1991-97.

4.6 Recruitment potential

Incoming recruits to the stock of Cape hake can be estimated from the numerical abundance of the 1.5-2 year old fish. The young fish settle at the bottom usually in early spring (October-November) which is the first time one may assess and estimate the strength of year classes by trawl surveys. Table 18 shows the recent estimates for the 1995 year class, together with previous observations of the two-yearlings. A 'normal' recruitment level after two years is usually around two billion fish \pm 200 million. The 1995 year class estimated from this survey consisted of about 330 mill. fish, an alarmingly low level which has not been recorded before.

This points indicates a serious reproductive failure for the 1995 year class, which will effect the recruitment to the fishable stock during 1998. For two years ahead there are therefore no signs of improvement in the adult stock of Cape hake and for 1998 a further decline in the adult stock is possible if the present level of harvest persists.

Year class	1988	1989	1990	1991	1991	1991	1992	1992	1993	1993	1994	1994	1995
Southern region	980	100	300	990	670	390	250	2 308	1 730	510	485	672	10
Central region	1 320	170	1 620	3 500	1 230	1 370	1 880	3 017	490	430	1 030	1 313	120
Northern region	10	10	240	440	270	130	70	5	190	80	0	342	200
Total	2 205	515	1 518	4 930	2 170	1 890	2 200	1 235	2 410	1 020	1 515	2 327	330
Survey/Year	1/90	1/91	1/92	2/92	1/93	2/93	1/94	2/94	3/94	1/95	1/96	4/96	1/97

In Table 19 the non-fishable biomass is split by the age classes identified through the cohort analysis. The table shows that a large proportion of the recruits (167 000 tonnes) belongs to the cohort that is now three years, the 1994 year class. These fish have now a mean around 30 cm and are about to recruit to the fishery. As already mentioned the the 2-yearlings of Cape hake are very low in abundance and this is confirmed by the 29 000 tonnes in the table. For comparison, the 1994 year class, now at 114 000 tonnes, was estimated to 130 000 tonnes when it was in its second year, in February 1996.

	1 year	2 year	3 year
Cape hake	-	29	114
Deepwater hake	-	12	53
Total	-	41	167

4.7 Management considerations

The main management policy for hake resources in Namibia is by limiting fishing mortality through the limitation of TAC. This policy recommends a yield of about 20% of the fishable biomass to reserve part of the biomass production to rebuild the resources. This level of fishing mortality is based on the general experience with fish with similar life span and growth rate. The

policy has not been entirely successful, particularly in recent years when the reported catches by far exceeded 20% of the fishable stocks biomass, Figure 27.

Further, as demonstrated, the recruitment level has been low during the last six years. The combined effects of low recruitment and high exploitation rates result in probably a strong reduction of the parent stock of Cape hake. During the last three years, annual catches were about or greater than 30% of the total fishable stock, Figure 27. High numbers of 1994 recruits have started entering the fishable biomass. The sizes of a landed hake from some commercial vessels show alarmingly high proportions of small sized hakes throughout 1996, and this indicates serious growth overfishing in the stock of Cape hake. This implies that the 200 m depth limit is not sufficient as a management option for hake as the fish still is fished before it has taken out its growth potential.

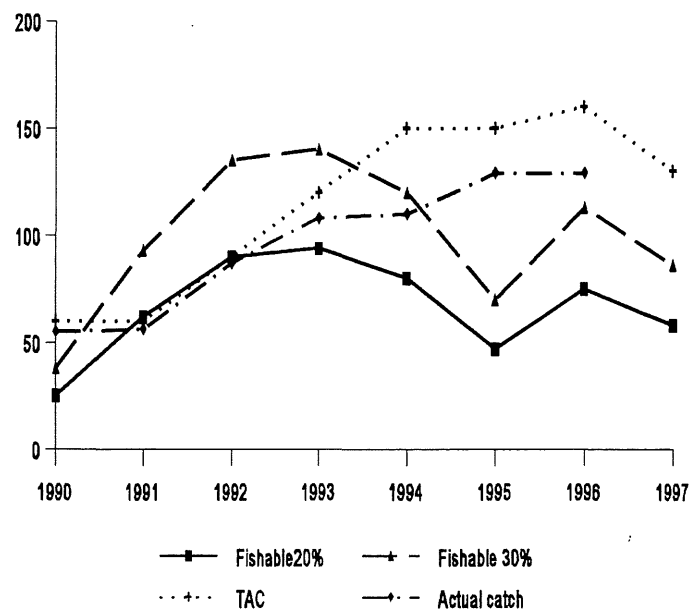


Figure 27 Management TAC, TACs as 20 and 30% fraction of fishable biomass and total catch 1990-97.

The fishable biomass is at present about 50% each of Cape hake and deepwater hake. But there are still reasons to assume that the main part of the fishing is on the more shallow Cape hake which is more accessible to the fishing fleet.

There are signs that the fishing fleet partly has moved to the deep water hake locations, but we have yet no statistical figures to support this.

The main part of the Cape hake of sizes larger than 40 cm is in the last survey located in the northern region (Figure 24), in a fairly limited area where catch rates are expected still to be high. These limited hot spots of the remaining established parent stock are already fished upon and could be diminished alarmingly during 1997. It should be considered if the area north of Cape Frio should be declared a protected area as a safeguard against stock collapse of Cape hake. It is also advisable that the fishery is moved more towards the deep water hake which is in a healthy state in Namibia and is present in all three regions Figure 25.

The general conclusion is that the present harvest level of Cape hake is far beyond the present production in the stock. The harvest pattern does not utilize the growth potential of the individual fish and also puts the reproductive capacity of the stock in jeopardy. The stock of Cape hake is therefore at present subject to both growth and recruitment overfishing.

Strong measures should be taken to reduce the catch. The deep water hake is in a much more healthy condition and would withstand a considerably higher fishing pressure. Management measures that direct the fisheries towards the deep water hake should therefore be implemented.

CHAPTER 5 COMPARATIVE FISHING EXPERIMENT WITH R/V AFRICANA (by Ingvar Huse)

5.1 Introduction

As it is assumed that a partial migration of hake takes place between South African and Namibian waters and there consequently might be a future wish to co-ordinate stock assessment and management, it was agreed to carry out intercalibration exercises in order to facilitate the comparison of data on hake stock abundance from both areas. Such intercalibrations are recommended in the BENEFIT science plan.

5.2 Materials and methods

DR. FRIDTJOF NANSEN arrived at the rendezvousposition south of Orange River at 05:30 h on 13 January. After a planning meeting on board AFRICANA the intercalibration started with parallel hauls 2 cables or more apart. Both vessels were maintaining normal trawling procedures respectively, according to Table 20.

	Tow time	Speed	Door spread	Wingspread	Vertical opening	Strapping*
AFRICANA	20 min.	3.5 knots	~100 m	~27 m	~2 m	No
DR. F. NANSEN	20 min.	3.0 knots	~ 54 m	~ 21 m	~4.6 m	Yes

**Strapping is restriction of door spread through the application of a 10 m long rope of which one end is attached to a mark on the port warp through a snap lock (on 'Nansen' at 130 m in front of the door), and the other end is running free on the other warp with a purse seine ring with a roller which can be opened to be hooked on to the warp.*

AFRICANA was using heavy warps with diameter 32 mm, while DR. FRIDTJOF NANSEN was using lighter 24 mm warps. DR. FRIDTJOF NANSEN generally shot more warp than AFRICANA. The AFRICANA trawl was rigged without a groundgear, with only a heavy groundrope ('sabb'), 57 m long, while DR. FRIDTJOF NANSEN used a 47 m gear with low profile cylinders and rather few discs. AFRICANA did not use lower wing panels. The sweeps used were 50 m, while the DR. FRIDTJOF NANSEN sweeps were 40 m. The AFRICANA

trawl had mesh sizes ranging from 110 mm in the extension peace to 180 mm in the front panels and wings, while the DR. FRIDTJOF NANSEN trawl ranged from 22 to 40 mm. AFRICANA used 25 mm cod end mesh size while DR. FRIDTJOF NANSEN used 22 mm. Scanmar sensors were used on both ships to monitor door spread and vertical opening.

The intercalibration took place in South African waters on the shelf SW of Orange River and lasted for three days. The DR. FRIDTJOF NANSEN followed in the normal survey activity of the AFRICANA and carried out parallel hauls at each trawl station. Trawls were only shot during daylight hours, generally between 07:00 h and 19:00 h. Personnel for intercalibration of fish classification and measurement were not exchanged this year. Altogether, 17 parallel hauls were made at depths between 92 and 473 m. One haul was discarded due to a problem on the DR. FRIDTJOF NANSEN, giving a total of 16 usable pairs of hauls, one haul less than in last year's intercalibration.

All catch figures were corrected for swept area. AFRICANA's swept area was calculated with the following formula:

$$A_A = V * 1852 * T / 60 * S_A$$

where A_A is swept area in m^2 , V is ship speed, T is tow time (bottom time) in minutes and S_A is wing spread in meters. The ship speed was set at 3.5 kn. for all hauls. A wing spread of 27.86 m was used for all hauls, as this was the average wing spread for AFRICANA in the 1995 intercalibration.

DR. FRIDTJOF NANSEN's swept area was calculated with the following formula:

$$A_N = D * 1852 * S_N$$

where A_N is swept area in m^2 , D is towed distance measured from GPS plotter track, and S_N is wing spread. A wing spread of 21 m was used for all hauls, also according to the 1995 intercalibrations. Swept area corrections were made according to following formula:

$$N_A = N * 1000 / A$$

where N_A is the number of fish per 1000 m², N is the number of fish in question, and A is swept area either of AFRICANA or DR. FRIDTJOF NANSEN. Fish weights were corrected in the same manner.

A two tailed Student's t-test for paired samples was used for all comparisons of catch numbers, catch weights and length groups.

5.3 Results and discussion

Experimental set-up and execution

The organisation and execution of the intercalibration went without problems of any kind. As the results will show, however, we probably would wish to have more hauls to sufficiently demonstrate potentially true differences which in the present experiments were only indicated. It is not likely that both ships will find room for more than three days of intercalibration at the same time, but the available time could be utilised better. It should be possible to carry out 7 or 8 hauls per day, giving a total of 21-24 hauls. This would, however, necessitate both ships to have the intercalibration as the sole purpose of these three days.

Swept area

Normally in considering swept area of trawl gear, e.g. in cod assessment, bridle length and door spread are very important parameters. As hake were the target species of this investigation, the herding of these species has to be considered in particular. From experiments carried out on the DR. FRIDTJOF NANSEN in 1995 it seems that the herding efficiency of doors/bridles is far less pronounced for hake than for e.g. cod. Although the 1995 results from the herding experiments were to some degree internally conflicting, the overall impression was that herding of hake by bridles, doors and sand clouds is of little importance. In the hake assessment carried out by the DR. FRIDTJOF NANSEN, a sweeping width of 18.5 m is applied. This is even less than the observed wing spread, based on the assumption that there may be some avoidance over and under the trawl, and hardly any herding by bridles, sand cloud or doors.

In conclusion we have for this intercalibration chosen to adapt a swept width equal to wing spread as herding effect of bridles, doors and sand cloud may be of little importance for hake. In view of the implications of this aspect for trawl based assessment, herding efficiency should,

however, be further elucidated through comprehensive trials at varying water depths and times of day, preferably with two ships using the same trawl nets and varying other parameters like e.g. sweep lengths and bottom contact. In addition, constant monitoring of wing spread or calculated wing spread from door spread could be used to calculate average wing spread, and consequently, correct swept area, for each haul. These data are directly available from the SCANMAR system.

It should be noted that in the comparisons below the computations of the swept area are very decisive for the results, as it is always figures corrected for swept area which are compared. The swept area calculations for 1997 are, however, the same as for 1996, but the computations and comparisons are sensitive for year to year variation. There are e.g. indications that AFRICANA towed slower in 1997 than in 1996, and as the swept area is calculated on the basis of 3.5 knots rather than on the true speed this can easily lead to differences. Such differences are indicated below, and the too large swept area originating from applying a too high towing speed in the computations may well be the reason for this.

Hake

Results for hake are given in Figure 28 and in Annex V, Table 1, 2 and 3.

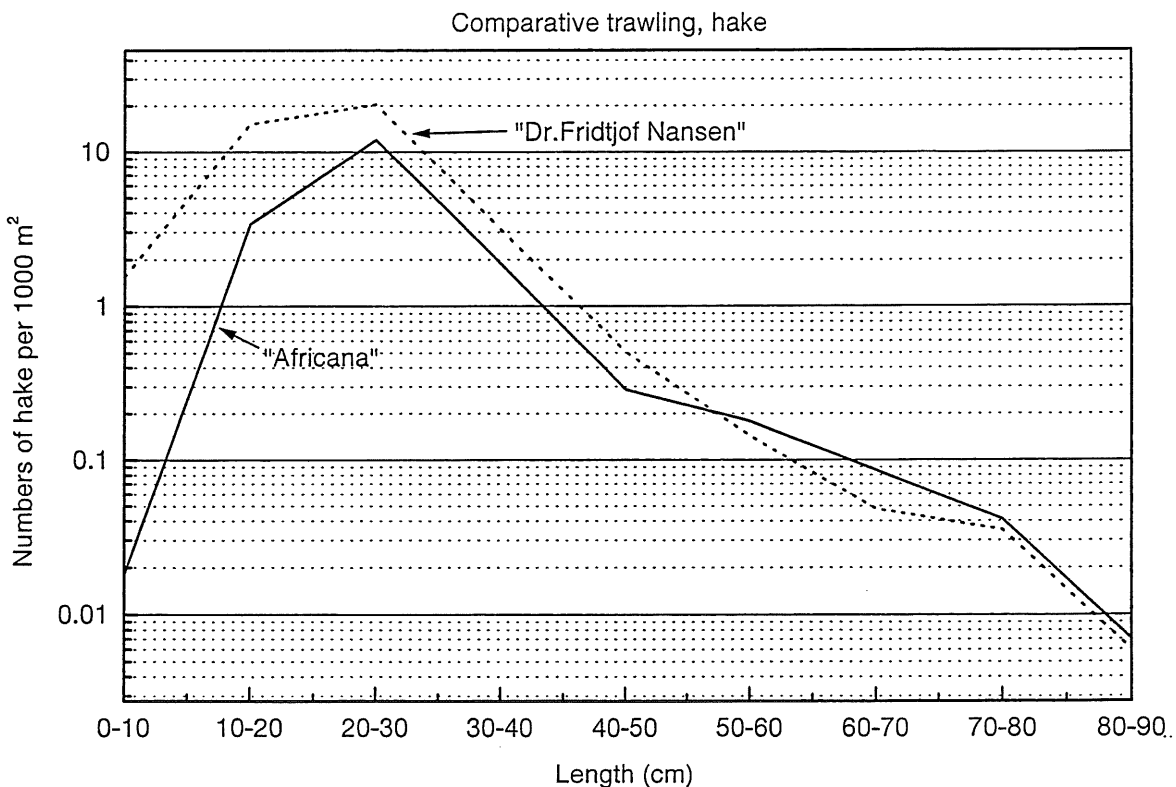


Figure 28 Numbers of hake in each length group for both ships. Logarithmic Y-axis.

DR. FRIDTJOF NANSEN catches were significantly higher than AFRICANA catches for 0-10 cm and 10-20 cm hake (Annex V, Table 2). For the 0-10 cm group this was probably due to mesh selection related to the difference in cod-end mesh size. For the 10-20 cm group the difference is more likely to be related to mesh selection further ahead in the trawl, or to escapement over the low opening AFRICANA trawl. For other length groups there were no significant differences in catches. Generally the picture was the same as in the 1996 intercalibration.

For the hake, DR. FRIDTJOF NANSEN obtained significantly higher mean rates per unit swept area, in numbers than AFRICANA (Annex V, Table 2), but in weight the difference was not significant ($p=0.06$) (Annex V, Table 1). Also in 1996 the DR. FRIDTJOF NANSEN also obtained the highest mean catch rates in numbers and weight, but then none of the differences were significant.

Other species

Catches of monk, gurnard and kingklip are considered good indicators of bottom contact of the two trawls. AFRICANA had higher, but not significantly higher catches of numbers and weights of gurnards (Annex V, Table 4) than DR. FRIDTJOF NANSEN. Monk and kingklip (Annex V, Table 4 and 5) catches were similar. These results are somewhat different from 1996, when AFRICANA had significantly higher catches of bottom contact indicator species than DR. FRIDTJOF NANSEN. The reasons for this is uncertain, but DR. FRIDTJOF NANSEN this year took care to avoid loss of bottom contact by using moderate speed and a high (3.3) warp length/depth ratio.

There were no significant differences in catches of horse mackerel (Annex V, Table 5). DR. FRIDTJOF NANSEN caught somewhat less horse mackerel than AFRICANA which is the opposite of the 1996 results. This probably just shows that the patchiness of the horse mackerel distribution is more decisive for the results than differences in catch efficiency for the two trawls.

Total biomass

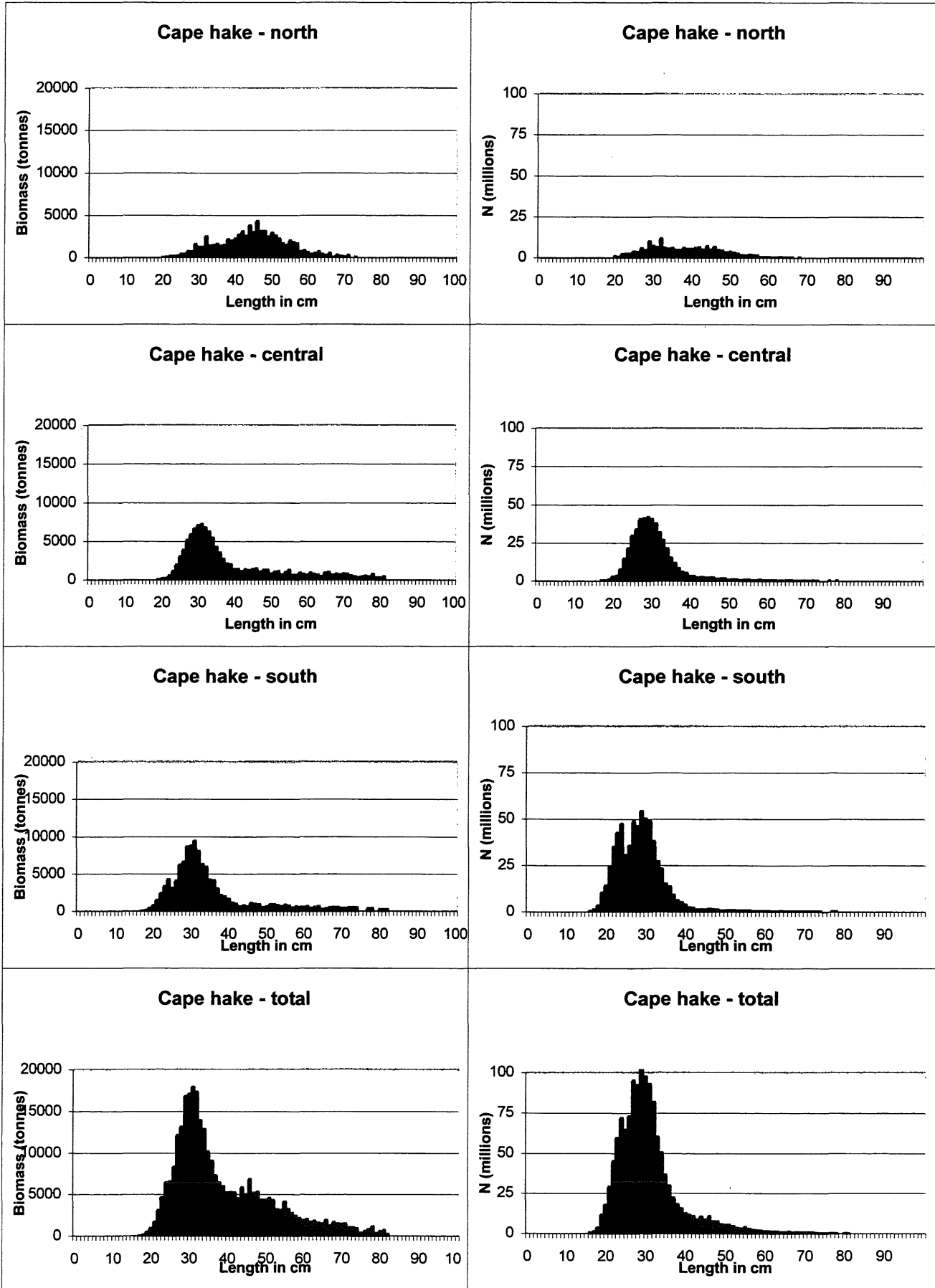
In 1996 AFRICANA had significantly higher average total biomass per haul per unit of swept area than DR. FRIDTJOF NANSEN. This was then assumed to be due to higher catches of large sharks and skates, probably caused by the wider door spread of the AFRICANA. In 1997

there was no significant difference, and DR. FRIDTJOF NANSEN had larger average haul biomass per 1000 m² (7.5) than AFRICANA (6.2) (Annex V, Table 1). This result coincides with a general impression that there is a shift towards higher apparent DR. FRIDTJOF NANSEN catches and lower AFRICANA catches from 1996 to 1997. As mentioned above this may partly be due to lower AFRICANA speed, leading to too high swept areas used in the computations, and partly to a greater emphasis on maintaining a better bottom contact on the DR. FRIDTJOF NANSEN.

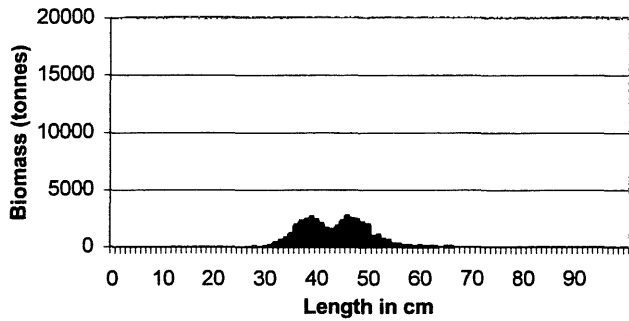
Trawl geometry

The AFRICANA trawl rigging seems to induce a high and unrestricted door spread with a large sweeping angle. This will reduce trawl height, and will also cause variations in trawl parameters and consequently, swept area, with depth. One way of getting around this problem is to use warp restriction (strapping, see above, under Table 17). In the DR. FRIDTJOF NANSEN rigging this is used 130 m in front of the doors, giving a stable door spread of 54 m with 40 m bridles, and a stable height of 4.6 m, regardless of depth/warp length.

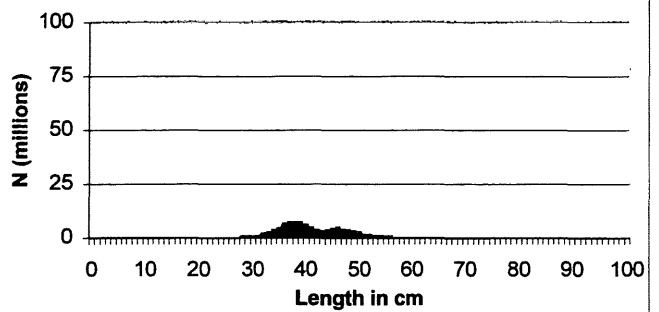
Annex I Sixe composition of main stocks



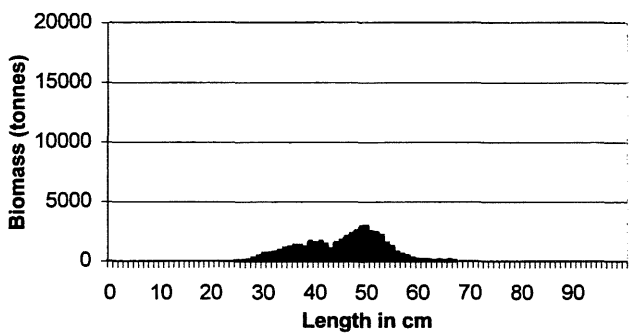
Deep water hake - north



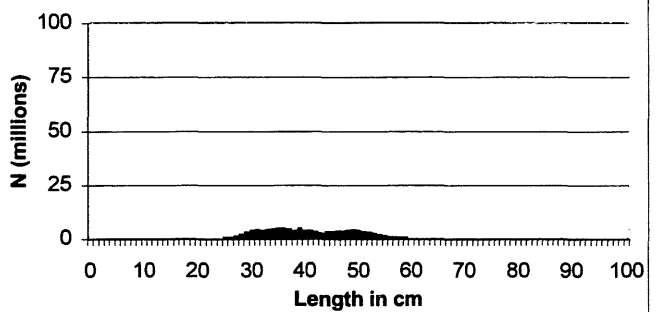
Deep water hake - north



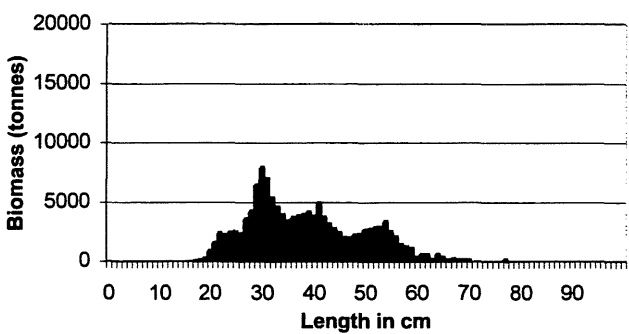
Deep water hake - central



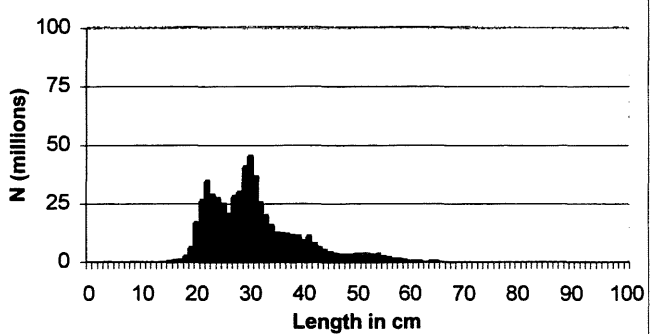
Deep water hake - central



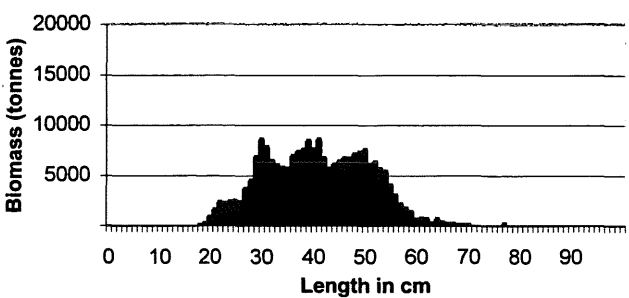
Deep water hake - south



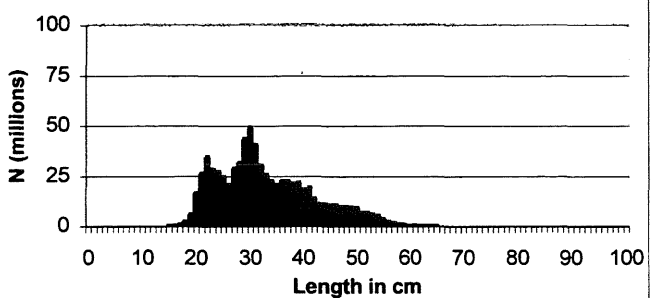
Deep water hake - south



Deep water hake - total



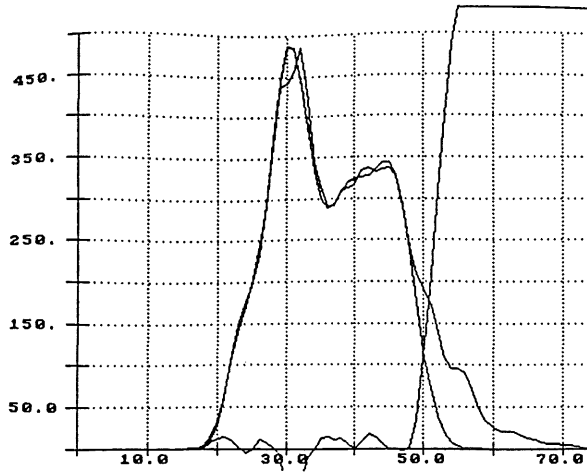
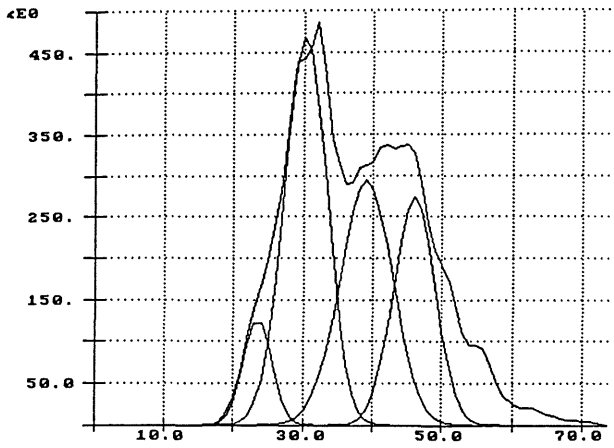
Deep water hake - total



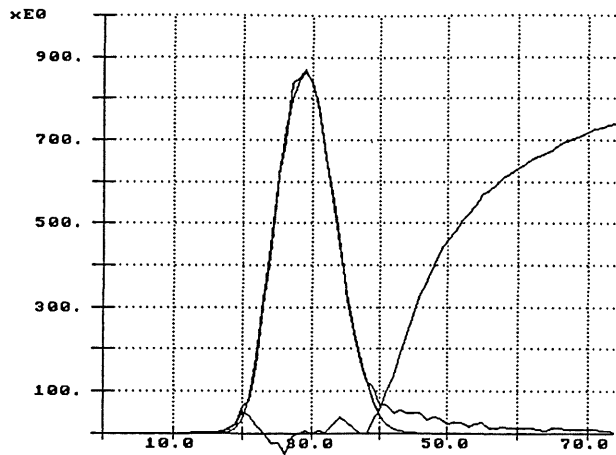
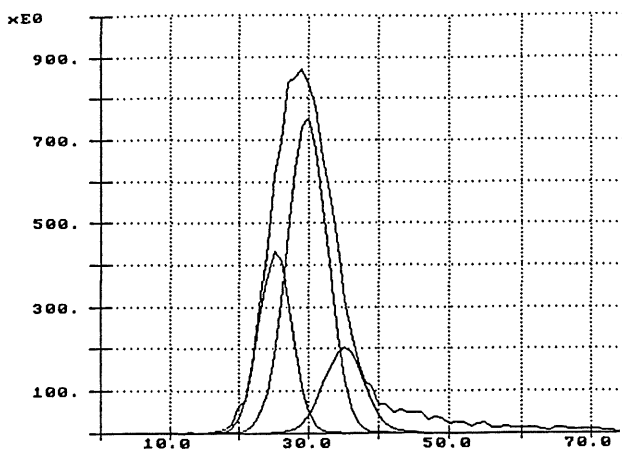
Annex II The size composition of the hake stocks split into length cohorts through optimizing techniques

CAPE HAKE

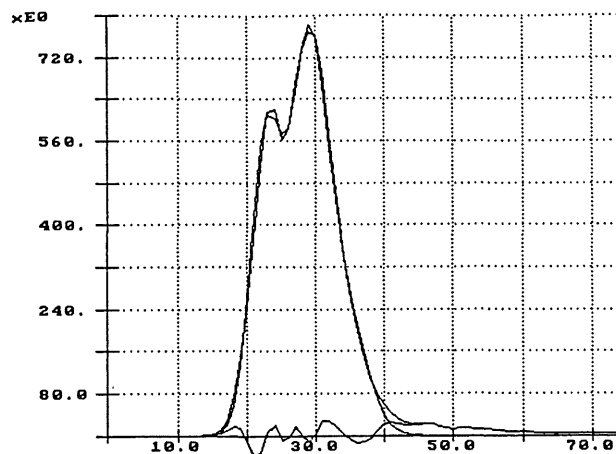
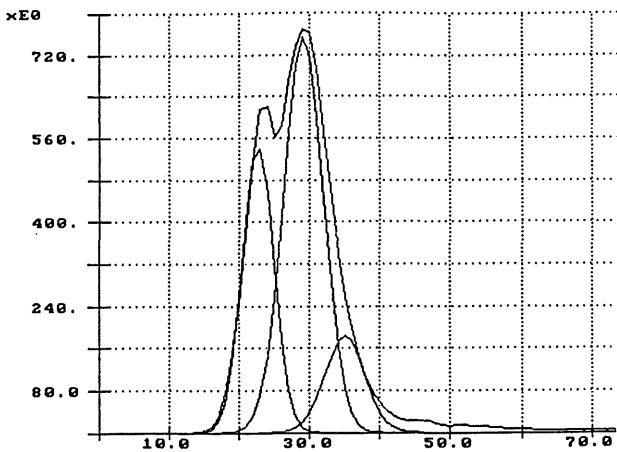
NORTHERN REGION



CENTRAL REGION



SOUTHERN REGION

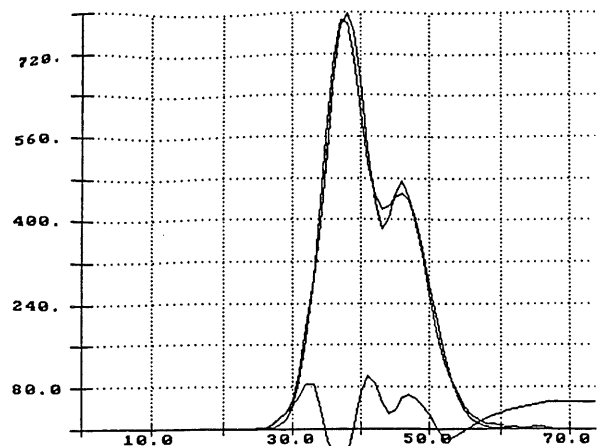
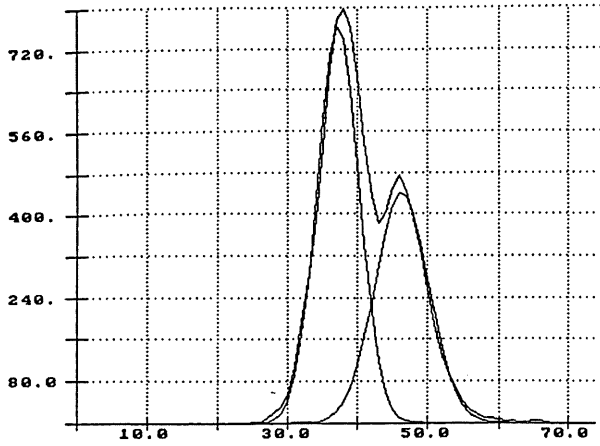


The length frequency distribution with the estimated cohorts.

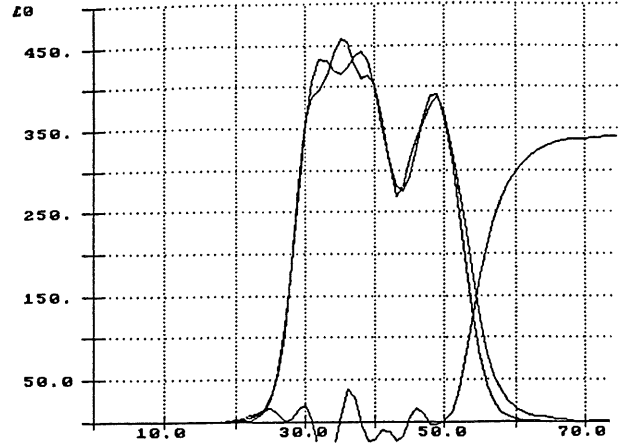
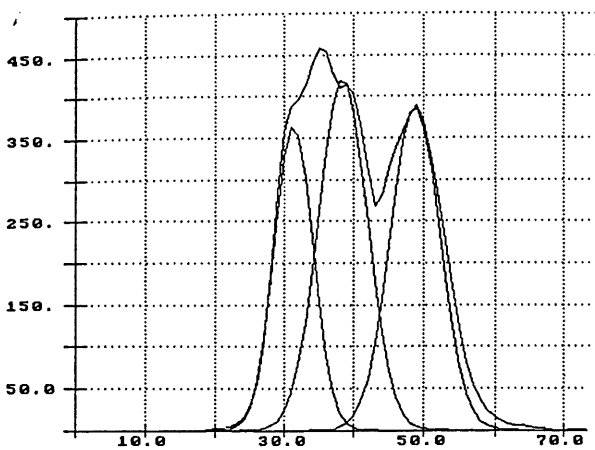
The length frequency distribution with the resultant distribution explained by the estimated cohorts.

DEEP WATER HAKE

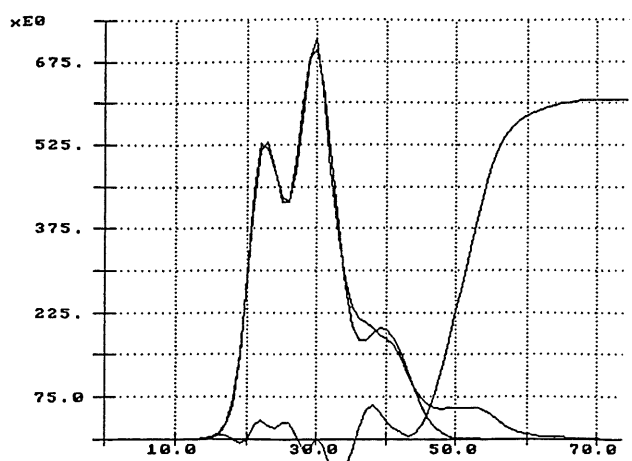
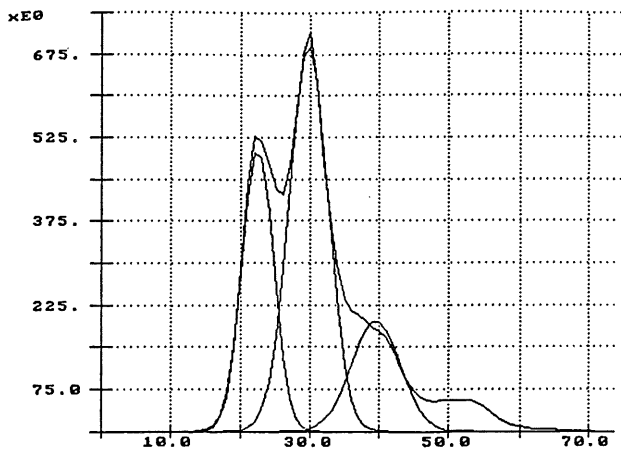
NORTHERN REGION



CENTRAL REGION



SOUTHERN REGION



The length frequency distribution with the estimated cohorts.

The length frequency distribution with the resultant distribution explained by the estimated cohorts.

Annex III Records of fishing stations

PROJECT STATION:1857
 DATE:12/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2840 Long E 1612
 start stop duration Purpose code: 3
 TIME :17:27:01 17:47:00 20 (min) Area code : 1
 LOG :1311.57 1312.57 1.00 GearCond.code:
 FDEPTH: 104 99 Validity code:
 BDEPTH: 104 99
 Towing dir: 335° Wire out: 400 m Speed: 33 kn*10
 Sorted: 90 Kg Total catch: 1060.05 CATCH/HOUR: 3180.15

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Callorhynchus capensis	1883.82	3267	59.24	
Chelidonichthys capensis	619.08	2280	19.47	
Merluccius capensis, juveniles	182.28	19392	5.73	6043
Krill	119.64	199395	3.76	
Merluccius capensis, female	89.61	456	2.82	6042
Austroglossus microlepis	80.13	1062	2.52	
Merluccius capensis, male	72.93	417	2.29	6041
Mustelus palumbes	69.75	75	2.19	
Squilla sp.	30.00	2508	0.94	
Jasus lalandii	19.50	165	0.61	6060
Genypterus capensis	5.70	15	0.18	
Sufflogobius bibarbatatus	5.70	1482	0.18	
Total	3178.14		99.93	

PROJECT STATION:1858
 DATE:12/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2840 Long E 1612
 start stop duration Purpose code: 2
 TIME :18:53:51 19:23:02 29 (min) Area code : 1
 LOG :1317.13 1318.58 1.45 GearCond.code:
 FDEPTH: 101 94 Validity code:
 BDEPTH: 101 94
 Towing dir: 335° Wire out: 400 m Speed: 33 kn*10
 Sorted: 91 Kg Total catch: 672.17 CATCH/HOUR: 1390.70

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chelidonichthys capensis	408.41	1492	29.37	
Callorhynchus capensis	320.07	637	23.02	
Austroglossus microlepis	173.07	1941	12.44	6047
Merluccius capensis, female	169.16	854	12.16	6045
Merluccius capensis, male	128.90	739	9.27	6046
Merluccius capensis, juveniles	61.41	5539	4.42	6044
Hexanchus griseus	36.83	2	2.65	
Mustelus mustelus	21.00	29	1.51	
Squilla sp.	19.99	2052	1.44	
Jasus lalandii	18.83	163	1.35	6061
Genypterus capensis	17.69	6	1.27	6070
Sufflogobius bibarbatatus	13.76	3476	0.99	
Trachurus capensis	1.59	14	0.11	
Krill	0.00			
Total	1390.71		100.00	

PROJECT STATION:1859
 DATE:12/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2850 Long E 1554
 start stop duration Purpose code: 3
 TIME :22:04:46 22:35:23 31 (min) Area code : 1
 LOG :1341.11 1342.55 1.44 GearCond.code:
 FDEPTH: 155 154 Validity code:
 BDEPTH: 155 154
 Towing dir: 341° Wire out: 550 m Speed: 30 kn*10
 Sorted: 146 Kg Total catch: 180.87 CATCH/HOUR: 350.07

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	125.52	869	35.86	6054
Merluccius capensis, male	57.68	387	16.48	6052
Holohalaelurus regani	45.29	310	12.94	
Trachurus capensis	45.19	176	12.91	6053
Sufflogobius bibarbatatus	32.96	3745	9.42	
Callorhynchus capensis	13.34	6	3.81	
Helicolenus dactylopterus	4.88	277	1.39	
Lophius vomerinus	4.08	27	1.17	6051
Genypterus capensis	4.06	41	1.16	6048
Chelidonichthys capensis	3.81	10	1.09	
Merluccius capensis, juveniles	2.73	110	0.78	6050
Cynoglossus capensis	2.52	70	0.72	
Paracallionymus costatus	2.01	106	0.57	
Solenocera africana	1.82	271	0.52	
Squilla acuelata calmani	1.76	226	0.50	
Raja miraletus	0.70	6	0.20	
Sepia australis	0.50	25	0.14	
PORTUNIDAE	0.35	6	0.10	
Zeus capensis	0.25	10	0.07	
Congloporus spinifer	0.19	2	0.05	
Etrumeus whiteheadi	0.15	2	0.04	
Sardinops ocellatus	0.14	2	0.04	6049
Lepidopus caudatus	0.12	2	0.03	
Total	350.05		99.99	

PROJECT STATION:1860
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2903 Long E 1637
 start stop duration Purpose code: 2
 TIME :07:24:00 07:44:00 20 (min) Area code : 1
 LOG :1391.50 1392.50 1.00 GearCond.code:
 FDEPTH: 93 90 Validity code:
 BDEPTH: 93 90
 Towing dir: 130° Wire out: 400 m Speed: 30 kn*10
 Sorted: 227 Kg Total catch: 418.23 CATCH/HOUR: 1254.69

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, juveniles	480.96	2544	38.33	6059
Callorhynchus capensis	324.75	294	25.88	
Chelidonichthys capensis	130.08	393	10.37	
G A S T R O P O D S	71.04	3423	5.66	
Merluccius capensis, juveniles	67.68	6816	5.39	6058
Krill	52.98	88299	4.22	
Sufflogobius bibarbatatus	25.05	4221	2.00	
Jasus lalandii	25.05	213	2.00	6056
Genypterus capensis	21.00	18	1.67	6055
Raja straeleni	18.90	9	1.51	
Austroglossus microlepis	12.81	75	1.02	6057
Mustelus palumbes	12.00	9	0.96	
Squilla sp.	11.40	1035	0.91	
Squalus acanthias	2.40	3	0.19	
Lolligoncula mercatoris	0.48	240	0.04	
Sepia australis	0.18	9	0.01	
GONEPLACIDAE	0.09	9	0.01	
Total	1256.85		100.17	

PROJECT STATION:1861
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2919 Long E 1622
 start stop duration Purpose code: 2
 TIME :10:17:43 10:35:45 18 (min) Area code : 1
 LOG :1414.40 1415.39 0.99 GearCond.code:
 FDEPTH: 147 147 Validity code:
 BDEPTH: 147 147
 Towing dir: 230° Wire out: 470 m Speed: 30 kn*10
 Sorted: 36 Kg Total catch: 35.67 CATCH/HOUR: 118.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	41.83	903	35.18	6063
Merluccius capensis	20.67	83	17.38	6064
Raja pullopectata	14.33	7	12.05	
Sepia australis	13.50	903	11.35	
Sufflogobius bibarbatatus	8.73	2493	7.34	
Raja leopardus	6.40	3	5.38	
Chelidonichthys capensis	4.87	20	4.10	
Todarodes sagittatus	3.53	3	2.97	
Lophius vomerinus	1.87	20	1.57	6062
Squilla acuelata calmani	1.37	227	1.15	
Helicolenus dactylopterus	0.90	77	0.76	
Todaropsis eblanae	0.20	10	0.17	
Etrumeus whiteheadi	0.17	3	0.14	
Zeus capensis	0.17	7	0.14	
Maurollicus muelleri	0.13	190	0.11	
Lampanyctodes hectoris	0.10	30	0.08	
Lolligoncula mercatoris	0.10	37	0.08	
C R A B S	0.03	3	0.03	
Total	118.90		99.98	

PROJECT STATION:1862
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2919 Long E 1616
 start stop duration Purpose code: 2
 TIME :12:06:53 12:27:18 20 (min) Area code : 1
 LOG :1423.35 1424.45 1.10 GearCond.code:
 FDEPTH: 157 158 Validity code:
 BDEPTH: 157 158
 Towing dir: 360° Wire out: 530 m Speed: 30 kn*10
 Sorted: 79 Kg Total catch: 289.62 CATCH/HOUR: 868.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	453.60	10695	52.21	6068
Sepia australis	237.30	19773	27.31	
Merluccius capensis	62.46	243	7.19	6069
Galeorhinus galeus	38.10	3	4.39	
Chelidonichthys capensis	23.52	63	2.71	
Helicolenus dactylopterus	22.89	1890	2.63	
Todaropsis eblanae	7.56	147	0.87	
Sufflogobius bibarbatatus	7.35	1827	0.85	
Lophius vomerinus	5.88	45	0.68	6067
Squilla acuelata calmani	2.31	231	0.27	
Sepiella sp.	1.68	42	0.19	
Paracallionymus costatus	1.47	105	0.17	
Etrumeus whiteheadi	1.47	21	0.17	
Cynoglossus capensis	1.47	21	0.17	
Trachurus capensis	0.93	3	0.11	6065
Genypterus capensis	0.45	3	0.05	6066
CALAPPIDAE	0.42	21	0.05	
Total	868.86		100.02	

PROJECT STATION:1863
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2926 Long E 1614
 start stop duration
 TIME :14:02:59 14:23:02 20 (min) Purpose code: 2
 LOG :1434.19 1435.33 1.14 Area code : 1
 FDEPTH: 164 165 GearCond.code:
 BDEPTH: 164 165 Validity code:
 Towing dir: 180° Wire out: 540 m Speed: 30 kn*10
 Sorted: 63 Kg Total catch: 220.72 CATCH/HOUR: 662.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	328.38	7185	49.59	6073
Sepia australis	175.77	14175	26.54	
Merluccius capensis	89.28	330	13.48	6074
Chelidonichthys capensis	24.24	75	3.66	
Lophius vomerinus	11.82	102	1.79	6072
Helicolenus dactylopterus	9.06	66	1.37	
Todaropsis eblanae	3.96	57	0.60	
Callorhynchus capensis	3.90	3	0.59	
Sufflogobius bibarbatatus	3.57	852	0.54	
Lampanyctodes hectoris	3.00	1059	0.45	
Paracallionymus costatus	2.43	189	0.37	
C R A B S	2.07	114	0.31	
Genypterus capensis	1.77	15	0.27	6071
Trachurus capensis	1.08	3	0.16	6070
Squilla acuelata calmani	0.75	39	0.11	
Cynoglossus capensis	0.54	18	0.08	
Solenocera africana	0.36	39	0.05	
Maurollicus muelleri	0.18	114	0.03	
Total	662.16		99.99	

PROJECT STATION:1864
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2931 Long E 1606
 start stop duration
 TIME :16:07:22 16:27:50 20 (min) Purpose code: 2
 LOG :1445.73 1447.03 1.30 Area code : 1
 FDEPTH: 173 174 GearCond.code:
 BDEPTH: 173 174 Validity code:
 Towing dir: 180° Wire out: 570 m Speed: 32 kn*10
 Sorted: 98 Kg Total catch: 258.20 CATCH/HOUR: 774.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	375.75	5403	48.51	6079
Sepia australis	114.18	10896	14.74	
Galeorhinus galeus	73.50	6	9.49	
Merluccius paradoxus, juvenile	65.79	4368	8.49	6080
Merluccius capensis	65.79	246	8.49	6078
Trachurus capensis	16.20	54	2.09	6077
Helicolenus dactylopterus	11.58	573	1.49	
Lophius vomerinus	8.85	33	1.14	6076
Callorhynchus capensis	8.40	3	1.08	
Paracallionymus costatus	7.53	519	0.97	
Coelorinchus fasciatus	5.73	282	0.74	
Genypterus capensis	5.40	45	0.70	6075
Chelidonichthys capensis	4.95	12	0.64	
Cynoglossus zanzibarensis	3.48	90	0.45	
Lophius vomerinus	1.47	147	0.19	
Holohalaelurus regani	1.35	45	0.17	6081
Todaropsis eblanae	1.08	12	0.14	
Lampanyctodes hectoris	1.02	303	0.13	
Squilla sp.	0.90	33	0.12	
Etrumeus whiteheadi	0.72	12	0.09	
C R A B S	0.45	33	0.06	
Zeus capensis	0.36	12	0.05	
Maurollicus muelleri	0.12	57	0.02	
Total	774.60		99.99	

PROJECT STATION:1865
 DATE:13/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2938 Long E 1602
 start stop duration
 TIME :17:36:19 17:56:04 20 (min) Purpose code: 2
 LOG :1456.73 1458.04 1.31 Area code : 1
 FDEPTH: 186 184 GearCond.code:
 BDEPTH: 186 184 Validity code:
 Towing dir: 140° Wire out: 620 m Speed: 33 kn*10
 Sorted: 149 Kg Total catch: 355.28 CATCH/HOUR: 1065.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	362.67	5124	34.03	6083
Merluccius capensis	107.58	357	10.09	6084
Sepia australis	95.04	7179	8.92	
Helicolenus dactylopterus	87.63	8688	8.22	
Trachurus capensis	86.25	294	8.09	6086
Merluccius capensis	55.65	54	5.22	6087
Holohalaelurus regani	39.33	144	3.69	
Lophius vomerinus	34.80	48	3.27	6085
Merluccius paradoxus, juvenile	32.49	2352	3.05	6082
Raja straeleni	24.00	9	2.25	
Mustelus palumbes	23.40	9	2.20	
Callorhynchus capensis	22.50	9	2.11	
Paracallionymus costatus	20.25	1353	1.90	
Cynoglossus zanzibarensis	15.69	555	1.47	
Chelidonichthys capensis	14.94	30	1.40	
Thyrsites atun	7.20	3	0.68	
Congiopodus spinifer	5.28	72	0.50	
Squalus blainvillei	5.13	15	0.48	
Todaropsis eblanae	5.13	42	0.48	
Raja wallacei	4.35	3	0.41	
Sardinops ocellatus	4.17	45	0.39	6088
Bassanago albescens	2.70	57	0.25	
Sardinops ocellatus	2.58	30	0.24	
Genypterus capensis	2.19	12	0.21	6071
C R A B S	2.01	57	0.19	
Solenocera africana	1.86	15	0.17	
Etrumeus whiteheadi	1.11	15	0.10	6089
Total	1065.93		100.01	

PROJECT STATION:1866
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3014 Long E 1457
 start stop duration
 TIME :04:49:45 05:09:29 20 (min) Purpose code: 2
 LOG :1541.56 1542.62 1.06 Area code : 3
 FDEPTH: 472 474 GearCond.code:
 BDEPTH: 472 474 Validity code:
 Towing dir: 330° Wire out:1400 m Speed: 33 kn*10
 Sorted: 232 Kg Total catch: 231.62 CATCH/HOUR: 694.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	469.35	1251	67.55	6090
Helicolenus dactylopterus	75.45	276	10.86	
Merluccius paradoxus	41.85	12	6.02	6113
Genypterus capensis	19.20	3	2.76	6091
Coelorinchus fasciatus	16.32	201	2.35	
Raja confundens	15.75	18	2.27	
Lepidopus caudatus	12.90	15	1.86	
Lophius vomerinus	11.25	9	1.62	6092
Todarodes sagittatus	10.50	15	1.51	
Hydrolagus mirabilis	6.75	12	0.97	
Bassanago albescens	6.06	33	0.87	
Selachophidium guentheri	1.59	21	0.23	
Coelorinchus matama	1.50	6	0.22	
Malacocephalus laevis	1.38	6	0.20	
PARAPAGURIDAE *	1.29	54	0.19	
Trachyrincus scabrus	0.96	21	0.14	
Hoplostethus mediterraneus	0.51	6	0.07	
Nezumia sp.	0.45	30	0.06	
Photichthys argenteus	0.45	30	0.06	
Todaropsis eblanae	0.33	3	0.05	
Tripterygius gilchristi	0.24	6	0.03	
Paracallionymus costatus	0.18	18	0.03	
Physiculus capensis	0.18	6	0.03	
C R A B S	0.12	12	0.02	
Myxine capensis	0.12	3	0.02	
Epigonus pandionis	0.12	6	0.02	
Stereomastis sp.	0.06	9	0.01	
Total	694.86		100.02	

PROJECT STATION:1867
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3009 Long E 1504
 start stop duration
 TIME :07:17:19 07:37:22 20 (min) Purpose code: 2
 LOG :1555.99 1557.03 1.04 Area code : 1
 FDEPTH: 426 432 GearCond.code:
 BDEPTH: 426 432 Validity code:
 Towing dir: 330° Wire out:1250 m Speed: 33 kn*10
 Sorted: 459 Kg Total catch: 459.37 CATCH/HOUR: 1378.11

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	771.84	2760	56.01	6093
Lepidopus caudatus	234.90	264	17.05	
Coelorinchus fasciatus	78.75	606	5.71	
Merluccius paradoxus	59.31	24	4.30	6114
Helicolenus dactylopterus	55.65	204	4.04	
Bassanago albescens	48.45	102	3.52	
Hydrolagus sp.	29.85	33	2.17	
Lophius vomerinus	22.95	24	1.67	6095
Squalus megalops	12.36	6	0.90	
Genypterus capensis	10.65	6	0.77	6094
Epigonus pandionis	10.17	411	0.74	
Malacocephalus laevis	8.64	9	0.63	
Holohalaelurus regani	6.30	18	0.46	
Scyliorhinus capensis	5.70	6	0.41	
Beryx splendens	5.19	18	0.38	
Selachophidium guentheri	4.95	78	0.36	
Todarodes sagittatus	3.60	6	0.26	
Raja confundens	2.79	6	0.20	
PARAPAGURIDAE *	1.68	96	0.12	
Rossia enigmatica	1.38	75	0.10	
Nezumia sp.	0.90	102	0.07	
Tripterygius gilchristi	0.60	24	0.04	
Hoplostethus mediterraneus	0.48	6	0.03	
Trachyrincus scabrus	0.39	48	0.03	
Photichthys argenteus	0.36	24	0.03	
C R A B S	0.15	18	0.01	
Paracallionymus costatus	0.09	12	0.01	
Stereomastis sp.	0.03	3		
Total	1378.11		100.02	

PROJECT STATION:1868
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3007 Long E 1518
 start stop duration
 TIME :10:03:31 10:25:05 22 (min) Purpose code: 2
 LOG :1574.71 1575.87 1.16 Area code : 1
 FDEPTH: 251 252 GearCond.code:
 BDEPTH: 251 252 Validity code:
 Towing dir: 320° Wire out: 800 m Speed: 33 kn*10
 Sorted: 217 Kg Total catch: 217.37 CATCH/HOUR: 592.83

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Zeus capensis	173.05	537	29.19	
Lepidopus caudatus	95.05	275	16.03	
Merluccius paradoxus	76.09	27	12.84	6099
Merluccius capensis	59.32	27	10.01	6100
Coelorinchus fasciatus	39.95	14	6.74	
Squalus megalops	28.09	303	6.74	
Helicolenus dactylopterus	20.59	19	3.47	
Congiopodus torvus	20.45	188	3.45	
Malacocephalus laevis	12.41	5	2.09	
Thyrsites atun	11.86	95	2.00	
Holohalaelurus regani	10.50	5	1.77	6101
Todaropsis eblanae	9.41	30	1.59	
Raja leopardus	8.97	155	1.51	
Todarodes sagittatus	6.79	3	1.15	
Lophius vomerinus	5.70	8	0.96	
Raja wallacei	3.90	3	0.66	6098
Genypterus capensis	3.27	3	0.55	
Cynoglossus zanzibarensis	3.25	8	0.55	6096
Trachurus capensis	1.72	30	0.29	
Paracallionymus costatus	1.06	3	0.18	6097
Selachophidium guentheri	0.68	76	0.11	
Sepiella sp.	0.33	3	0.06	
Epigonus denticulatus	0.19	5	0.03	
POLYCHAELIDAE	0.16	3	0.03	
Total	592.82		100.01	

PROJECT STATION:1869
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3013 Long E 1529
 start stop duration Purpose code: 2
 TIME :12:20:55 12:41:10 20 (min) Area code : 1
 LOG :1592.43 1593.50 1.07 GearCond.code:
 FDEPTH: 246 243 Validity code:
 BDEPTH: 246 243
 Towing dir: 325° Wire out: 800 m Speed: 33 kn*10

Sorted: 114 Kg Total catch: 617.10 CATCH/HOUR: 1851.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	1360.89	16908	73.51	6105
Coelorrinchus fasciatus	82.95	1455	4.48	
Helicolenus dactylopterus	82.38	1995	4.45	
Galeorhinus galeus	57.15	3	3.09	
Epigonus denticulatus	56.16	1368	3.03	
Merluccius capensis	43.50	30	2.35	6106
Holohalaelurus regani	33.93	114	1.83	
Lophius vomerinus	19.05	24	1.03	6104
Congiopus spinifer	17.88	87	0.97	
Merluccius paradoxus	17.85	21	0.96	6107
Thyrssites atun	17.55	12	0.95	6102
Lepidopus caudatus	12.54	87	0.68	
Genypterus capensis	9.75	15	0.53	6103
Cynoglossus zanzibarensis	9.69	201	0.52	
Zeus capensis	7.41	30	0.40	
Todaropsis eblanae	5.43	144	0.29	
Scyliorhinus capensis	4.86	30	0.26	
Lampanyctodes hectoris	3.15	1626	0.17	
Sepia australis	2.85	228	0.15	
Malacocephalus laevis	2.58	30	0.14	
Maurollicus muelleri	2.01	1311	0.11	
Paracallionymus costatus	1.44	228	0.08	
C R A B S	0.30	57	0.02	
Total	1851.30		100.00	

PROJECT STATION:1872
 DATE:15/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3036 Long E 1523
 start stop duration Purpose code: 2
 TIME :04:29:13 04:49:30 20 (min) Area code : 1
 LOG :1674.62 1675.83 1.21 GearCond.code:
 FDEPTH: 320 317 Validity code:
 BDEPTH: 320 317
 Towing dir: 20° Wire out: 980 m Speed: 31 kn*10

Sorted: 221 Kg Total catch: 808.32 CATCH/HOUR: 2424.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	1304.10	8064	53.78	6124
Zeus capensis	415.80	969	17.15	
Coelorrinchus fasciatus	173.25	2934	7.14	
Merluccius paradoxus	96.45	57	3.98	6122
Lophius vomerinus	95.25	48	3.93	6126
Merluccius capensis	86.85	39	3.58	6123
Genypterus capensis	69.30	36	2.86	6125
Malacocephalus laevis	61.50	63	2.54	
Scyliorhinus capensis	36.96	84	1.52	
Epigonus denticulatus	18.90	153	0.78	
Helicolenus dactylopterus	16.71	90	0.69	
Holohalaelurus regani	11.76	21	0.48	
Squalus mitsukurii	9.90	6	0.41	
Raja confundens	9.66	21	0.40	
Paracallionymus costatus	5.67	108	0.23	
Rossia enigmatica	4.41	210	0.18	
Macrorhamphosus scolopax	2.52	21	0.10	
C R A B S	1.68	357	0.07	
B I V A L V E S	1.05	63	0.04	
Sepia australis	1.05	63	0.04	
Lampanyctodes hectoris	0.84	252	0.03	
Maurollicus muelleri	0.63	315	0.03	
Champsodon capensis	0.42	21	0.02	
Chelidonichthys queketti	0.30	3	0.01	
Total	2424.96		99.99	

PROJECT STATION:1870
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3013 Long E 1539
 start stop duration Purpose code: 2
 TIME :14:39:18 15:00:04 21 (min) Area code : 1
 LOG :1606.05 1607.09 1.04 GearCond.code:
 FDEPTH: 233 230 Validity code:
 BDEPTH: 233 230
 Towing dir: 335° Wire out: 750 m Speed: 30 kn*10

Sorted: 80 Kg Total catch: 202.53 CATCH/HOUR: 578.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	331.14	5383	57.23	6112
Coelorrinchus fasciatus	54.60	1043	9.44	
Helicolenus dactylopterus	52.03	1166	8.99	
Holohalaelurus regani	34.63	137	5.98	
Merluccius capensis	18.29	14	3.16	6111
Sepia australis	14.40	1817	2.49	
Genypterus capensis	13.71	46	2.37	6110
Cynoglossus zanzibarensis	13.37	309	2.31	
Malacocephalus laevis	11.49	129	1.99	
Lophius vomerinus	10.43	17	1.80	6109
Trachurus capensis	6.86	23	1.19	6108
Todaropsis eblanae	4.46	86	0.77	
Merluccius paradoxus	4.43	6	0.77	
Galeus polli	2.49	26	0.43	
Trigla lyra	1.71	9	0.30	
Congiopus spinifer	1.11	9	0.19	
Loligo vulgaris	1.03	9	0.18	
Paracallionymus costatus	0.86	111	0.15	
Bassanago albescens	0.51	17	0.09	
Rossia enigmatica	0.43	17	0.07	
Sepiella sp.	0.26	9	0.04	
Lampanyctodes hectoris	0.26	120	0.04	
Maurollicus muelleri	0.17	77	0.03	
Total	578.67		100.01	

PROJECT STATION:1873
 DATE:15/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3053 Long E 1527
 start stop duration Purpose code: 2
 TIME :06:48:00 07:10:00 22 (min) Area code : 1
 LOG :1689.70 1691.00 1.30 GearCond.code:
 FDEPTH: 340 337 Validity code:
 BDEPTH: 340 337
 Towing dir: 340° Wire out:1020 m Speed: 3 kn*10

Sorted: 117 Kg Total catch: 326.47 CATCH/HOUR: 890.37

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	521.18	2501	58.54	6127
Coelorrinchus fasciatus	114.08	3300	12.81	
Scyliorhinus capensis	87.82	145	9.86	
Zeus capensis	41.05	68	4.61	
Merluccius capensis	26.18	8	2.94	6129
Helicolenus dactylopterus	18.27	82	2.05	
Holohalaelurus regani	13.75	38	1.54	
Squalus mitsukurii	12.95	8	1.45	
Merluccius paradoxus	12.82	8	1.44	6128
Lepidopus caudatus	8.59	11	0.96	
C R A B S	5.92	305	0.66	
Genypterus capensis	4.91	8	0.55	6131
Epigonus denticulatus	4.88	355	0.55	
Brama brama	4.36	3	0.49	
Todaropsis eblanae	3.63	30	0.41	
Malacocephalus laevis	3.25	19	0.37	
Lophius vomerinus	3.14	3	0.35	6130
Paracallionymus costatus	1.53	259	0.17	
Rossia enigmatica	0.76	30	0.09	
Photichthys argenteus	0.49	30	0.06	
Lampanyctodes hectoris	0.38	115	0.04	
Champsodon capensis	0.30	19	0.03	
Squilla sp.	0.11	11	0.01	
Total	890.35		99.98	

PROJECT STATION:1871
 DATE:14/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3003 Long E 1544
 start stop duration Purpose code: 2
 TIME :16:19:31 16:39:44 20 (min) Area code : 1
 LOG :1617.13 1617.99 0.86 GearCond.code:
 FDEPTH: 214 212 Validity code:
 BDEPTH: 214 212
 Towing dir: 330° Wire out: 700 m Speed: 32 kn*10

Sorted: 119 Kg Total catch: 119.43 CATCH/HOUR: 358.29

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	78.30	84	21.85	6115
Merluccius paradoxus	55.20	606	15.41	6116
Helicolenus dactylopterus	42.60	918	11.89	
Lophius vomerinus	32.40	21	9.04	6120
Trachurus capensis	28.95	126	8.08	6118
Coelorrinchus fasciatus	24.00	279	6.70	
Holohalaelurus regani	20.40	81	5.69	
Malacocephalus laevis	16.35	87	4.56	
Sepia australis	12.36	1695	3.45	
Chelidonichthys queketti	7.68	51	2.14	
Merluccius paradoxus, juvenile	5.64	807	1.57	6117
Lepidopus caudatus	5.55	27	1.55	
Cynoglossus zanzibarensis	4.47	111	1.25	
Galeus polli	3.57	3	1.00	
Chelidonichthys capensis	3.00	6	0.84	
Genypterus capensis	2.79	6	0.78	6121
Thyrssites atun	2.70	3	0.75	6119
Emmelichthys nitidus	2.49	24	0.69	
Todaropsis eblanae	1.89	18	0.53	
Zeus capensis	1.77	24	0.49	
Paracallionymus costatus	1.53	201	0.43	
Loligo vulgaris	1.29	3	0.36	
Squalus megalops	1.23	3	0.34	
Strumus whiteheadi	0.75	9	0.21	
Bassanago albescens	0.75	27	0.21	
Congiopus spinifer	0.60	3	0.17	
Squilla sp.	0.03	9	0.01	
Total	358.29		99.99	

PROJECT STATION:1874
 DATE:15/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3053 Long E 1533
 start stop duration Purpose code: 2
 TIME :09:22:51 09:43:12 20 (min) Area code : 1
 LOG :1709.96 1711.17 1.21 GearCond.code:
 FDEPTH: 470 470 Validity code:
 BDEPTH: 470 470
 Towing dir: 325° Wire out:1420 m Speed: 32 kn*10

Sorted: 156 Kg Total catch: 173.07 CATCH/HOUR: 519.21

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Raja confundens	160.80	180	30.97	
Merluccius paradoxus	125.55	123	24.18	6134
Genypterus capensis	97.80	27	18.84	6133
Haceon maritae	70.50	846	13.58	
Lophius vomerinus	34.80	12	6.70	6132
GONOSTOMATIDAE	4.62	270	0.89	
Sebastes capensis	3.66	6	0.70	
Holohalaelurus regani	3.60	12	0.69	
Parapenaeus longirostris	3.18	900	0.61	
Zeus capensis	3.18	6	0.61	
Lithodes ferox	2.76	6	0.53	
Hydrolagus sp.	2.70	6	0.52	
Centroscyllum fabricii	2.22	84	0.43	
Nezumia sp.	0.96	60	0.18	
Notacanthus sexspinis	0.78	18	0.15	
Coelorrinchus fasciatus	0.72	6	0.14	
Coelorrinchus sp.	0.66	78	0.13	
Paracallionymus costatus	0.36	66	0.07	
Myxine capensis	0.36	6	0.07	
Total	519.21		99.99	

PROJECT STATION:1875
DATE:15/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3049 Long E 1601
start stop duration
TIME :13:03:00 13:22:00 19 (min) Purpose code: 2
LOG :1737.50 1738.40 0.90 Area code : 1
FDEPTH: 221 219 GearCond.code:
BDEPTH: 221 219 Validity code:
Towing dir: 18° Wire out: 720 m Speed: 30 kn*10
Sorted: 93 Kg Total catch: 311.45 CATCH/HOUR: 983.53

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Emmelichthys nitidus	630.79	58137	64.14	
Zeus capensis	112.20	411	11.41	
Merluccius capensis	59.84	28	6.08	6137
Chelidonichthys queketti	41.21	221	4.19	
Trachurus capensis	40.26	287	4.09	6135
PARAPAGURIDAE *	36.63	8520	3.72	
Squalus mitsukurii	20.53	47	2.09	
Thyrsites atun	19.89	19	2.02	6136
Mustelus palumbes	6.95	16	0.71	
Helicolenus dactylopterus	6.32	237	0.64	
Cynoglossus zanzibarensis	3.32	32	0.34	
Todaropsis eblanae	3.16	32	0.32	
Chaceon maritae	1.42	16	0.14	
Arnoglossus imperialis	1.11	95	0.11	
Total	983.63		100.00	

PROJECT STATION:1878
DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2920 Long E 1509
start stop duration
TIME :07:26:09 07:56:42 31 (min) Purpose code: 3
LOG :1880.02 1881.86 1.84 Area code : 1
FDEPTH: 167 172 GearCond.code:
BDEPTH: 167 172 Validity code:
Towing dir: 330° Wire out: 600 m Speed: 32 kn*10
Sorted: 234 Kg Total catch: 513.45 CATCH/HOUR: 993.77

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chelidonichthys capensis	222.58	412	22.40	
Squalus megalops	193.08	445	19.43	
Merluccius capensis, female	162.29	165	16.33	6151
Trachurus capensis	72.35	490	7.28	6154
Merluccius capensis, male	65.32	87	6.57	6150
Zeus capensis	59.21	557	5.96	
Lepidopus caudatus	46.16	48	4.64	
Emmelichthys nitidus	31.72	323	3.19	
Chelidonichthys queketti	22.26	389	2.24	
Holohalaelurus regani	21.70	89	2.18	
Raja straeleni	20.03	12	2.02	
Lophius vomerinus	17.81	23	1.79	6153
Mustelus palumbes	15.19	14	1.53	
Thyrsites atun	12.58	4	1.27	6152
Congiopus spinifer	12.02	101	1.21	
Sepia australis	6.35	757	0.64	
Todaropsis eblanae	4.45	68	0.45	
Loligo vulgaris	3.45	23	0.35	
Cynoglossus zanzibarensis	2.01	23	0.20	
Etmopterus whiteheadi	1.66	23	0.17	
Helicolenus dactylopterus	1.22	68	0.12	
Paracallionymus costatus	0.33	23	0.03	
Total	993.77		100.00	

PROJECT STATION:1879
DATE:15/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 3040 Long E 1601
start stop duration
TIME :14:54:34 15:14:52 20 (min) Purpose code: 2
LOG :1747.34 1748.37 1.03 Area code : 1
FDEPTH: 201 205 GearCond.code:
BDEPTH: 201 205 Validity code:
Towing dir: 335° Wire out: 660 m Speed: 33 kn*10
Sorted: 69 Kg Total catch: 167.36 CATCH/HOUR: 502.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Squalus mitsukurii	132.24	180	26.34	
Zeus capensis	123.84	942	24.67	
Merluccius capensis	62.85	48	12.52	6140
Emmelichthys nitidus	31.35	711	6.24	
Mustelus palumbes	30.96	12	6.17	
Trachurus capensis	30.60	222	6.09	6138
Lophius vomerinus	26.70	27	5.32	6139
Todaropsis eblanae	23.88	336	4.76	
Sepia australis	14.19	672	2.83	
Holohalaelurus regani	6.96	27	1.39	
Raja confundens	6.84	12	1.36	
Helicolenus dactylopterus	6.72	825	1.34	
Congiopus spinifer	1.56	12	0.31	
Cynoglossus zanzibarensis	1.29	12	0.26	
Arnoglossus imperialis	1.17	66	0.23	
Paracallionymus costatus	0.66	78	0.13	
Rossia enigmatica	0.27	12	0.05	
Total	502.08		100.01	

PROJECT STATION:1879
DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2922 Long E 1437
start stop duration
TIME :11:06:16 11:37:25 31 (min) Purpose code: 3
LOG :1909.50 1911.23 1.73 Area code : 1
FDEPTH: 330 346 GearCond.code:
BDEPTH: 330 346 Validity code:
Towing dir: 340° Wire out:1100 m Speed: 34 kn*10
Sorted: 232 Kg Total catch: 669.03 CATCH/HOUR: 1294.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	474.37	2359	36.63	6158
Merluccius paradoxus, male	206.88	1386	15.98	6159
Coelorrhinus fasciatus	130.84	1924	10.10	
Holohalaelurus regani	115.05	451	8.88	
Helicolenus dactylopterus	95.71	509	7.39	
Epigonus denticulatus	44.34	968	3.42	
Scyliorhinus capensis	34.16	72	2.64	
Squalus mitsukurii	32.55	39	2.51	
Merluccius paradoxus, female	27.87	14	2.15	6156
Genypterus capensis	23.90	21	1.85	6155
Lophius vomerinus	19.16	10	1.48	6157
Galeus polli	16.51	122	1.28	
Todarodes sagittatus	11.86	25	0.92	
Malacocephalus laevis	10.70	52	0.83	
Brama brama	10.06	6	0.78	
Hoplostethus mediterraneus	8.32	122	0.64	
Cynoglossus zanzibarensis	6.89	155	0.53	
Thyrsites atun	6.10	2	0.47	
Chelidonichthys capensis	5.03	6	0.39	
Lepidopus caudatus	3.93	6	0.30	
Cyttus traversi	3.74	14	0.29	
Paracallionymus costatus	3.35	515	0.26	
Rossia enigmatica	2.46	149	0.19	
Beryx splendens	0.91	6	0.07	
PARAPAGURIDAE *	0.14	14	0.01	
Champsodon capensis	0.06	6		
Total	1294.89		99.99	

PROJECT STATION:1877
DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2858 Long E 1539
start stop duration
TIME :03:06:35 03:36:29 30 (min) Purpose code: 3
LOG :1843.71 1845.21 1.50 Area code : 1
FDEPTH: 182 182 GearCond.code:
BDEPTH: 182 182 Validity code:
Towing dir: 350° Wire out: 600 m Speed: 30 kn*10
Sorted: 91 Kg Total catch: 268.26 CATCH/HOUR: 536.52

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	145.12	1694	27.05	6144
Merluccius capensis, female	82.12	218	15.31	6146
Helicolenus dactylopterus	67.50	2760	12.58	
Merluccius capensis, male	46.12	158	8.60	6147
Holohalaelurus regani	41.26	322	7.69	
Merluccius paradoxus, male	37.76	480	6.29	6145
Paracallionymus costatus	27.46	2326	5.12	
Merluccius paradoxus, juvenile	19.72	750	3.68	6148
Merluccius capensis, female	15.60	18	2.91	6142
Trachurus capensis	14.10	40	2.63	6143
Lophius vomerinus	7.50	34	1.40	6141
Raja straeleni	5.90	2	1.10	
Callorhynchus capensis	5.90	2	1.10	
Zeus capensis	4.96	30	0.92	
Zeus capensis	4.96	30	0.92	
Genypterus capensis	3.60	18	0.67	6149
Cynoglossus capensis	3.52	136	0.66	
Sufflogobius bibarbatu	3.30	616	0.62	
Solenocera africana	3.00	382	0.56	
Sepia australis	2.62	128	0.49	
Todaropsis eblanae	2.18	22	0.41	
Emmelichthys nitidus	0.68	8	0.13	
Bassanago albescens	0.30	16	0.06	
Congiopus spinifer	0.22	8	0.04	
Squilla sp.	0.08	8	0.01	
Total	541.48		100.95	

PROJECT STATION:1880
DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2919 Long E 1430
start stop duration
TIME :13:09:47 13:40:18 31 (min) Purpose code: 3
LOG :1918.77 1920.36 1.59 Area code : 1
FDEPTH: 492 492 GearCond.code:
BDEPTH: 492 492 Validity code:
Towing dir: 240° Wire out:1500 m Speed: 30 kn*10
Sorted: 174 Kg Total catch: 201.64 CATCH/HOUR: 390.27

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	226.74	252	58.10	6162
Merluccius paradoxus, male	28.16	45	7.22	6161
Todarodes sagittatus	18.77	35	4.81	
Bathyraxia smithii	14.81	2	3.79	
Lithodes ferax	14.32	35	3.67	
Raja confundens	13.16	19	3.37	
Lophius vomerinus	12.29	4	3.15	6160
Coelorrhinus braueri	12.15	693	3.11	
Nezumia sp.	7.39	310	1.89	
Malacocephalus laevis	6.12	19	1.57	
Hydrolagus sp.	5.96	8	1.53	
Helicolenus dactylopterus	4.88	27	1.25	
Selachophidium guentheri	3.87	54	0.99	
Bassanago albescens	3.75	12	0.96	
MYCTOPHIDAE	3.33	453	0.85	
Ebinaria costaecanarie	3.21	43	0.82	
Chaceon maritae	2.44	8	0.63	
Rossia enigmatica	1.63	58	0.42	
Centroscyllium fabricii	1.39	66	0.36	
GONOSTOMATIDAE	1.35	93	0.35	
Myxine capensis	1.05	15	0.27	
Epigonus telescopus	0.97	4	0.25	
Notacanthus sexspinis	0.89	15	0.23	
Scopelogadus meadi	0.70	4	0.18	
Coelorrhinus fasciatus	0.66	8	0.17	
Chlorophthalmus atlanticus	0.23	4	0.06	
Paracallionymus costatus	0.04	8	0.01	
Total	390.26		100.01	

PROJECT STATION:1881
 DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2918 Long E 1426
 start stop duration
 TIME :14:50:41 15:20:37 30 (min) Purpose code: 3
 LOG :1926.52 1928.27 1.75 Area code : 1
 FDEPTH: 590 585 GearCond.code:
 BDEPTH: 590 585 Validity code:
 Towing dir: 350° Wire out:1550 m Speed: 32 kn*10

Sorted: 69 Kg Total catch: 193.22 CATCH/HOUR: 386.44

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	148.80	2290	38.51	
Merluccius paradoxus, female	88.40	58	22.88	6163
Nezumia sp.	45.84	1740	11.86	
Selachophidium guentheri	30.72	396	7.95	
Todarodes sagittatus	21.12	36	5.47	
Etmopterus lucifer	11.28	180	2.92	
Raja confundens	9.72	24	2.52	
Photichthys argenteus	9.60	612	2.48	
Plesionika martia	6.60	480	1.71	
Ebinania costaecanarie	5.76	96	1.49	
Malacocephalus laevis	3.24	12	0.84	
C R A B S	3.12	36	0.81	
Notacanthus sexspinis	1.32	24	0.34	
Dirtemus argenteus	0.36	12	0.09	
Shrimps, small, non comm.	0.36	36	0.09	
Stereomastis sp.	0.12	12	0.03	
Raja straeleni	0.08	12	0.02	
Total	386.44		100.01	

PROJECT STATION:1884
 DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2909 Long E 1425
 start stop duration
 TIME :21:55:31 22:15:59 20 (min) Purpose code: 3
 LOG :1957.67 1958.42 0.75 Area code : 1
 FDEPTH: 538 533 GearCond.code:
 BDEPTH: 538 533 Validity code:
 Towing dir: 360° Wire out:1500 m Speed: 21 kn*10

Sorted: 70 Kg Total catch: 94.44 CATCH/HOUR: 283.32

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	91.20	69	32.19	6174
Genypterus capensis	41.25	12	14.56	6173
Coelorinchus braueri	35.10	1233	12.39	
Notacanthus sexspinis	26.94	450	9.51	
Helicolenus dactylopterus	15.96	96	5.63	
Centroscyllum fabricii	15.42	240	5.44	
Nezumia sp.	14.58	774	5.15	
Selachophidium guentheri	7.44	108	2.63	
Plesionika acanthurus	5.28	1368	1.86	
GONOSTOMATIDAE	5.28	330	1.86	
Raja sp.	4.26	6	1.50	
MACROURIDAE	3.96	6	1.40	
Malacocephalus laevis	3.00	12	1.06	
Raja confundens	2.64	6	0.93	
Lithodes ferox	2.37	6	0.84	
Todarodes sagittatus	2.34	6	0.83	
Ebinania costaecanarie	2.10	24	0.74	
Chaceon maritae	1.20	12	0.42	
Nezumia micronychodon	1.02	60	0.36	
Cynoglossus zanzibarensis	0.66	6	0.23	
Nezumia leonis	0.54	6	0.19	
Myxine capensis	0.30	6	0.11	
Histioteuthis reversa	0.24	6	0.08	
Yarella blackfordi	0.12	6	0.04	
Laemonema laureysi	0.12	6	0.04	
Total	283.32		99.99	

PROJECT STATION:1882
 DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2918 Long E 1433
 start stop duration
 TIME :17:07:38 17:37:45 30 (min) Purpose code: 3
 LOG :1936.82 1938.42 1.60 Area code : 1
 FDEPTH: 384 369 GearCond.code:
 BDEPTH: 384 369 Validity code:
 Towing dir: 360° Wire out:1170 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 187.08 CATCH/HOUR: 374.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	128.50	496	34.34	6167
Coelorinchus fasciatus	59.26	726	15.84	
Genypterus capensis	53.50	28	14.30	6164
Merluccius paradoxus, male	37.50	146	10.02	6168
Helicolenus dactylopterus	35.50	140	9.49	
Merluccius paradoxus, female	19.20	16	5.13	6166
Merluccius paradoxus, male	10.70	16	2.86	6165
Holohalaelurus regani	9.00	36	2.41	
Lophius vomerinus	7.20	4	1.92	6169
Malacocephalus laevis	3.60	10	0.96	
Raja confundens	3.30	2	0.88	
Lepidopus caudatus	3.00	4	0.80	
Photichthys argenteus	0.96	66	0.26	
Epigonus denticulatus	0.76	66	0.20	
Rossia enigmatica	0.70	20	0.19	
Nezumia sp.	0.56	56	0.15	
Selachophidium guentheri	0.36	6	0.10	
Cynoglossus zanzibarensis	0.30	6	0.08	
Laemonema laureysi	0.20	10	0.05	
Stereomastis sp.	0.06	16	0.02	
Total	374.16		100.00	

PROJECT STATION:1885
 DATE:17/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2902 Long E 1444
 start stop duration
 TIME :02:17:11 02:47:19 30 (min) Purpose code: 3
 LOG :1985.01 1986.02 1.01 Area code : 1
 FDEPTH: 226 229 GearCond.code:
 BDEPTH: 226 229 Validity code:
 Towing dir: 70° Wire out: 750 m Speed: 2 kn*10

Sorted: 104 Kg Total catch: 103.63 CATCH/HOUR: 207.26

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Genypterus capensis	64.00	48	30.88	6176
Trachurus capensis	61.40	362	29.62	6177
Helicolenus dactylopterus	17.10	116	8.25	
Merluccius capensis, female	16.80	88	8.11	6180
Holohalaelurus regani	13.84	46	6.68	
Zeus capensis	11.80	46	5.69	
Lophius vomerinus	4.50	2	2.17	6175
Congiopodus torvus	3.82	4	1.84	
Sebastes capensis	3.46	4	1.67	
Emmelichthys nitidus	2.84	6	1.37	
Merluccius capensis, male	2.52	36	1.22	6179
Squalus megalops	1.74	4	0.84	
Coelorinchus fasciatus	1.08	16	0.52	
Cynoglossus zanzibarensis	0.84	16	0.41	
Scyliorhinus capensis	0.32	2	0.15	
Paracallionymus costatus	0.32	54	0.15	
Merluccius capensis, juveniles	0.32	28	0.15	6178
Notopogon macrosolen	0.20	2	0.10	
Laemonema laureysi	0.18	4	0.09	
Scomberesox saurus	0.08	2	0.04	
Bathynectes piperitus	0.06	2	0.03	
OPHIDIIDAE	0.04	2	0.02	
Total	207.26		100.00	

PROJECT STATION:1883
 DATE:16/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2909 Long E 1432
 start stop duration
 TIME :19:11:31 19:41:01 30 (min) Purpose code: 3
 LOG :1945.80 1947.21 1.41 Area code : 1
 FDEPTH: 327 311 GearCond.code:
 BDEPTH: 327 311 Validity code:
 Towing dir: 345° Wire out:1100 m Speed: 31 kn*10

Sorted: 82 Kg Total catch: 82.15 CATCH/HOUR: 164.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Cynoglossus zanzibarensis	39.50	420	24.04	
Helicolenus dactylopterus	26.20	110	15.95	
Merluccius paradoxus, female	23.90	96	14.55	6171
Genypterus capensis	20.90	12	12.72	6172
Malacocephalus laevis	13.00	38	7.91	
Merluccius paradoxus, male	12.80	46	7.79	6170
Squalus megalops	6.30	4	3.83	
Coelorinchus fasciatus	5.78	80	3.52	
Holohalaelurus regani	4.38	22	2.67	
Cruriraja parcomaculata	2.74	4	1.67	
Scyliorhinus capensis	2.60	6	1.58	
Epigonus denticulatus	1.36	34	0.83	
Todarodes sagittatus	1.02	2	0.62	
Nezumia sp.	0.86	28	0.52	
Rossia enigmatica	0.74	22	0.45	
C R A B S	0.66	80	0.40	
Paracallionymus costatus	0.62	46	0.38	
Bassanago albescens	0.42	6	0.26	
MYCTOPHIDAE	0.28	54	0.17	
Galeus polli	0.24	2	0.15	
Total	164.30		100.01	

PROJECT STATION:1886
 DATE:17/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2855 Long E 1503
 start stop duration
 TIME :06:05:39 06:36:10 31 (min) Purpose code: 3
 LOG :2009.71 2011.56 1.85 Area code : 1
 FDEPTH: 178 177 GearCond.code:
 BDEPTH: 178 177 Validity code:
 Towing dir: 120° Wire out: 600 m Speed: 31 kn*10

Sorted: 178 Kg Total catch: 512.07 CATCH/HOUR: 991.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	164.32	546	16.58	6191
Sepia australis	113.34	12854	11.44	
Merluccius paradoxus, juvenile	107.77	12919	10.87	6187
Raja alba	77.42	2	7.81	
Merluccius capensis, male	69.68	267	7.03	6190
Merluccius capensis, female	62.81	54	6.34	6182
Helicolenus dactylopterus	47.15	1695	4.76	
Trachurus capensis	44.32	166	4.47	6185
Chelidonichthys queketti	40.65	372	4.10	
Lophius vomerinus	39.48	54	3.98	6184
Holohalaelurus regani	38.09	139	3.84	
Mustelus palumbes	32.75	23	3.30	
Etrumeus whiteheadi	29.73	325	3.00	
Merluccius capensis, male	22.74	17	2.29	6181
Merluccius paradoxus, female	18.93	255	1.91	6189
Emmelichthys nitidus	12.77	23	1.29	
Merluccius paradoxus, male	12.43	197	1.25	6188
Cynoglossus capensis	10.45	209	1.05	
Todaropsis eblanae	9.99	232	1.01	
Chelidonichthys capensis	7.20	23	0.73	
Callorhynchus capensis	7.16	4	0.72	
Genypterus capensis	5.52	10	0.56	6183
Ophisurus serpens	2.79	23	0.28	
Zeus capensis	1.86	70	0.19	
Bassanago albescens	1.86	70	0.19	
Merluccius paradoxus, female	1.32	2	0.13	6186
Congiopodus spinifer	0.23	23	0.02	
Lepidopus caudatus	0.12	23	0.01	
Total	982.88		99.15	

PROJECT STATION:1887
 DATE:17/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2846 Long E 1518
 start stop duration
 TIME :09:24:15 09:52:24 28 (min) Purpose code: 3
 LOG :2031.92 2033.34 1.42 Area code : 1
 FDEPTH: 163 163 GearCond.code:
 BDEPTH: 163 163 Validity code:
 Towing dir: 120° Wire out: 550 m Speed: 28 kn*10

Sorted: 138 Kg Total catch: 195.30 CATCH/HOUR: 418.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	96.84	1236	23.14
Chelidonichthys capensis	48.21	86	11.52
Merluccius capensis, female	45.66	141	10.91
Merluccius capensis, female	38.57	28	9.22
Merluccius paradoxus, male	35.64	555	8.52
Merluccius capensis, male	28.67	92	6.85
Sepia australis	27.06	4920	6.47
Raja confundens	20.64	6	4.93
Merluccius capensis, male	15.54	11	3.71
Lophius vomerinus	9.64	11	2.30
Etrumeus whiteheadi	8.10	92	1.94
Raja straeleni	6.43	6	1.54
Merluccius paradoxus, juvenile	6.02	527	1.44
Genypterus capensis	4.61	11	1.10
Trachurus capensis	4.41	19	1.05
Todaropsis eblanae	4.39	156	1.05
Helicolenus dactylopterus	4.35	199	1.04
Zeus faber	3.28	199	0.78
Holohalaelurus regani	3.06	11	0.73
Chelidonichthys queketti	2.79	28	0.67
Lepidopus caudatus	1.56	28	0.37
Paracallionymus costatus	1.29	150	0.31
Congiopodus spinifer	0.64	11	0.15
OPHICHTHIDAE	0.39	21	0.09
C R A B S	0.28	11	0.07
Bathynectes piperitus	0.21	6	0.05
Cynoglossus zanzibarensis	0.11	6	0.03
Histioteuthis reversa	0.11	17	0.03
Total	418.50	100.01	

PROJECT STATION:1890
 DATE:18/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2823 Long E 1454
 start stop duration
 TIME :22:46:04 23:15:59 30 (min) Purpose code: 3
 LOG :2135.85 2137.21 1.36 Area code : 1
 FDEPTH: 185 186 GearCond.code:
 BDEPTH: 185 186 Validity code:
 Towing dir: 350° Wire out: 600 m Speed: 26 kn*10

Sorted: 117 Kg Total catch: 116.92 CATCH/HOUR: 233.84

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius capensis, female	62.80	108	26.86
Trachurus capensis	39.10	150	16.72
Sufflogobius bibarbatatus	23.20	9280	9.92
Callorhynchus capensis	20.60	8	8.81
Genypterus capensis	18.18	10	7.77
Merluccius capensis, male	10.90	34	4.66
Holohalaelurus regani	10.82	40	4.63
Lophius vomerinus	7.66	12	3.28
Merluccius capensis, female	6.20	2	2.65
Squalus mitsukurii	6.16	14	2.63
Raja straeleni	5.64	4	2.41
Zeus capensis	4.78	130	2.04
Merluccius paradoxus, female	3.90	44	1.67
Emmelichthys nitidus	3.42	6	1.46
Merluccius paradoxus, male	2.08	32	0.89
Merluccius paradoxus, juvenile	2.00	206	0.86
Genypterus capensis	1.52	20	0.65
Solenocera africana	0.94	186	0.40
Mustelus palumbes	0.76	2	0.33
Helicolenus dactylopterus	0.74	24	0.32
Sepia australis	0.66	92	0.28
Cynoglossus zanzibarensis	0.64	26	0.27
CHEILODACTYLIDAE	0.32	2	0.14
Bassanago albescens	0.30	2	0.13
Lepidopus caudatus	0.26	6	0.11
Maurolicus muelleri	0.16	102	0.07
Paracallionymus costatus	0.06	12	0.03
OPHICHTHIDAE	0.04	4	0.02
Total	233.84	100.01	

PROJECT STATION:1888
 DATE:17/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2831 Long E 1535
 start stop duration
 TIME :13:08:05 13:37:16 29 (min) Purpose code: 3
 LOG :2055.98 2057.56 1.58 Area code : 1
 FDEPTH: 159 154 GearCond.code:
 BDEPTH: 159 154 Validity code:
 Towing dir: 20° Wire out: 500 m Speed: 32 kn*10

Sorted: 167 Kg Total catch: 798.60 CATCH/HOUR: 1652.28

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius capensis, female	423.10	1603	25.61
Chelidonichthys capensis	415.86	1614	25.17
Merluccius capensis, male	221.38	952	13.40
Merluccius paradoxus, female	202.76	2307	12.27
Trachurus capensis	73.45	434	4.45
Sepia australis	68.07	9325	4.12
Sufflogobius bibarbatatus	39.52	12747	2.39
Callorhynchus capensis	22.24	21	1.35
Galeorhinus galeus	20.79	2	1.26
Etrumeus whiteheadi	19.45	207	1.18
Thyrissites atun	19.34	12	1.17
Merluccius paradoxus, male	18.72	238	1.13
Raja pullopectata	14.28	2	0.86
Brama brama	13.66	6	0.83
Todaropsis eblanae	13.66	579	0.83
Merluccius paradoxus, juvenile	10.97	910	0.66
Genypterus capensis	10.63	8	0.64
Lepidopus caudatus	10.14	621	0.61
Lepidopus caudatus	10.14	621	0.61
Merluccius capensis, female	7.66	6	0.46
Coelorinchus fasciatus	6.62	124	0.40
Squilla acuelata calmani	6.62	1014	0.40
Genypterus capensis	4.26	27	0.26
Bathynectes piperitus	3.52	124	0.21
Austroglossus microlepis	2.48	4	0.15
Paracallionymus costatus	1.45	166	0.09
Maurolicus muelleri	0.83	476	0.05
Helicolenus dactylopterus	0.62	62	0.04
Laemonema laureysi	0.21	21	0.01
Total	1662.43	100.61	

PROJECT STATION:1891
 DATE:18/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2825 Long E 1450
 start stop duration
 TIME :00:46:00 01:16:00 30 (min) Purpose code: 3
 LOG :2146.00 2147.20 1.20 Area code : 1
 FDEPTH: 190 190 GearCond.code:
 BDEPTH: 190 190 Validity code:
 Towing dir: 350° Wire out: 610 m Speed: 24 kn*10

Sorted: 105 Kg Total catch: 139.53 CATCH/HOUR: 279.06

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius capensis, female	44.30	28	15.87
Merluccius capensis, female	32.70	126	11.72
Trachurus capensis	31.66	120	11.35
Merluccius paradoxus, female	25.06	316	8.98
Merluccius capensis, male	19.06	82	6.83
Holohalaelurus regani	16.36	70	5.86
Emmelichthys nitidus	16.36	28	5.86
Sufflogobius bibarbatatus	13.20	4890	4.73
Merluccius capensis, male	12.30	10	4.41
Merluccius paradoxus, juvenile	10.32	816	3.70
Merluccius paradoxus, male	9.72	144	3.48
Raja caudispinea	8.40	2	3.01
Squalus mitsukurii	8.34	22	2.99
Lepidopus caudatus	8.26	166	2.96
Lophius vomerinus	5.00	12	1.79
Genypterus capensis	4.60	38	1.65
Helicolenus dactylopterus	3.58	258	1.28
Zeus capensis	2.62	16	0.94
Zeus capensis	2.62	16	0.94
Raja straeleni	2.56	4	0.92
Cynoglossus zanzibarensis	2.44	66	0.87
Solenocera africana	1.18	256	0.42
Sepia australis	0.96	78	0.34
Maurolicus muelleri	0.04	30	0.01
Paracallionymus costatus	0.04	22	0.01
Total	281.68	100.92	

PROJECT STATION:1889
 DATE:17/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2817 Long E 1508
 start stop duration
 TIME :19:58:52 20:30:19 31 (min) Purpose code: 3
 LOG :2117.52 2118.96 1.44 Area code : 1
 FDEPTH: 177 179 GearCond.code:
 BDEPTH: 177 179 Validity code:
 Towing dir: 340° Wire out: 600 m Speed: 30 kn*10

Sorted: 89 Kg Total catch: 257.80 CATCH/HOUR: 498.97

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius capensis, female	157.96	428	31.64
Trachurus capensis	136.82	602	27.42
Sufflogobius bibarbatatus	59.67	19688	11.96
Merluccius capensis, male	58.41	174	11.71
Merluccius capensis, female	22.74	14	4.56
Raja pullopectata	16.84	2	3.37
Raja straeleni	8.42	8	1.69
Zeus capensis	8.28	137	1.66
Merluccius paradoxus, male	6.25	79	1.25
Merluccius paradoxus, female	5.73	66	1.15
Chelidonichthys capensis	4.74	14	0.95
Holohalaelurus regani	2.98	21	0.60
Genypterus capensis	2.83	50	0.57
Sepia australis	1.95	312	0.39
Lophius vomerinus	1.63	4	0.33
Cynoglossus zanzibarensis	1.03	21	0.21
Congiopodus spinifer	0.95	8	0.19
Todaropsis eblanae	0.58	29	0.12
Merluccius paradoxus, juvenile	0.37	37	0.07
Maurolicus muelleri	0.37	211	0.07
C R A B S	0.21	21	0.04
Squilla sp.	0.15	15	0.03
Solenocera africana	0.15	21	0.03
Total	498.96	100.01	

PROJECT STATION:1892
 DATE:18/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2843 Long E 1419
 start stop duration
 TIME :07:23:25 07:53:19 30 (min) Purpose code: 3
 LOG :2188.97 2190.51 1.54 Area code : 1
 FDEPTH: 597 598 GearCond.code:
 BDEPTH: 597 598 Validity code:
 Towing dir: 360° Wire out:1650 m Speed: 31 kn*10

Sorted: 72 Kg Total catch: 116.08 CATCH/HOUR: 232.16

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Trachyrincus scabrus	73.80	874	31.79
Merluccius paradoxus, female	47.00	48	20.24
Nezumia sp.	26.10	612	11.24
Hoplostethus atlanticus	22.80	76	9.82
Deania quadrispinosus	15.90	6	6.85
Coelorinchus matama	10.50	36	4.52
Selachophidium guentheri	4.98	54	2.15
Photichthys argenteus	3.84	348	1.65
Bathyrja smithii	3.60	6	1.55
Neocyttus rhomboidalis	2.90	8	1.25
Plesionika sp.	2.88	720	1.24
Todarodes sagittatus	2.74	4	1.18
Notacanthus sexspinis	2.22	48	0.96
Apristurus sp.	1.86	6	0.80
Hoplostethus cadenati	1.86	96	0.80
Raja straeleni	1.80	6	0.78
Etmopterus lucifer	1.38	4	0.59
Raja sp.	1.10	2	0.47
Synphobranchus kaupii	0.84	6	0.36
Barbourisia rufa	0.62	2	0.27
S H R I M P S	0.48	66	0.21
Lepidopus caudatus	0.48	6	0.21
Ebinania costaecanarie	0.46	6	0.20
Raja pullopectata	0.38	2	0.16
Alloctytus verrucosus	0.36	6	0.16
Yarella blackfordi	0.30	12	0.13
Neoscorpelus macrolepidotus	0.30	18	0.13
Nemichthys curvirostris	0.30	6	0.13
Stereomastis sp.	0.18	12	0.08
Melanocetus johnsoni	0.10	2	0.04
Raja confundens	0.10	2	0.04
Total	232.16	100.00	

PROJECT STATION:1893
 DATE:18/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2855 Long E 1421
 start stop duration
 TIME :11:49:45 12:19:30 30 (min) Purpose code: 3
 LOG :2218.16 2219.78 1.62 Area code : 1
 FDEPTH: 546 548 GearCond.code:
 BDEPTH: 546 548 Validity code:
 Towing dir: 360° Wire out:1550 m Speed: 32 kn*10
 Sorted: 188 Kg Total catch: 213.33 CATCH/HOUR: 426.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	209.50	170	49.10	6244
Ruvettus pretiosus	44.40	4	10.41	
Epigonus telescopus	39.40	14	9.23	
Etmopterus brachyurus	21.84	496	5.12	
Genypterus capensis	19.70	4	4.62	6246
Todarodes sagittatus	16.84	28	3.95	
Raja confundens	15.20	36	3.56	
Hydrolagus sp.	9.08	16	2.13	
Merluccius paradoxus, male	7.90	8	1.85	6245
S H R I M P S	7.44	1550	1.74	
Nezumia sp.	5.20	260	1.22	
Raja sp.	4.80	2	1.13	
GONOSTOMATIDAE	4.56	212	1.07	
Coelorinchus braueri	4.28	112	1.00	
MACROURIDAE	4.16	56	0.98	
Deania profundorum	3.88	8	0.91	
Selachophidium guentheri	2.20	24	0.52	
Hoplostethus cadonati	1.88	56	0.44	
Etmopterus pusillus	1.56	4	0.37	
Shrimps, small, non comm.	0.64	164	0.15	
Krill	0.64	116	0.15	
MYCTOPHIDAE	0.60	80	0.14	
Neosopelus macrolepidotus	0.40	24	0.09	
Ebinania costaeacanarie	0.36	8	0.08	
Epigonus denticulatus	0.20	4	0.05	
Total	426.66		100.01	

PROJECT STATION:1896
 DATE:18/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2816 Long E 1426
 start stop duration
 TIME :19:30:00 20:00:00 30 (min) Purpose code: 3
 LOG :2268.30 2269.90 1.60 Area code : 1
 FDEPTH: 511 540 GearCond.code:
 BDEPTH: 511 540 Validity code:
 Towing dir: 80° Wire out:1400 m Speed: 31 kn*10
 Sorted: 182 Kg Total catch: 182.39 CATCH/HOUR: 364.78

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	94.10	78	25.80	6255
Trachyrincus scabrus	73.80	342	20.23	
Alloctytus verrucosus	35.70	508	9.79	
Nezumia sp.	34.50	908	9.46	
Bathyraxia smithii	13.40	2	3.67	
Lophius vomerinus	13.00	2	3.56	6257
Deania quadri-spinosum	12.98	18	3.56	
Etmopterus brachyurus	12.96	210	3.55	
Genypterus capensis	12.90	6	3.54	6256
Raja confundens	11.90	14	3.26	
Selachophidium guentheri	10.44	114	2.86	
Centrophorus squamosus	7.50	2	2.06	
Hydrolagus sp.	7.10	10	1.95	
Yarrella blackfordi	6.18	288	1.69	
Raja doutrei	4.30	2	1.18	
Todarodes sagittatus	3.36	6	0.92	
Notacanthus sexspinis	2.64	54	0.72	
Coelorinchus matamua	2.04	6	0.56	
Raja straeleni	1.70	2	0.47	
Photichthys argenteus	1.62	66	0.44	
Hoplostethus atlanticus	0.98	2	0.27	
Solenocera africana	0.72	126	0.20	
C E P H A L O P O D A	0.60	6	0.16	
Ebinania costaeacanarie	0.36	6	0.10	
Total	364.78		100.00	

PROJECT STATION:1894
 DATE:18/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2853 Long E 1424
 start stop duration
 TIME :13:56:44 14:07:20 11 (min) Purpose code: 3
 LOG :2226.94 2227.51 0.57 Area code : 1
 FDEPTH: 431 433 GearCond.code:
 BDEPTH: 431 433 Validity code:
 Towing dir: 350° Wire out:1400 m Speed: 32 kn*10
 Sorted: 199 Kg Total catch: 226.95 CATCH/HOUR: 1237.91

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	588.00	649	47.50	6248
Merluccius paradoxus, male	201.55	273	16.28	6249
Genypterus capensis	124.09	55	10.02	6250
Coelorinchus fasciatus	108.00	2825	8.72	
Scyliorhinus capensis	76.91	76	6.21	
Helicolenus dactylopterus	64.91	196	5.24	
Lophius vomerinus	23.73	5	1.92	6251
Raja confundens	16.91	22	1.37	
Malacocephalus laevis	12.55	76	1.01	
Rossia enigmatica	9.05	458	0.73	
Todarodes sagittatus	5.35	11	0.43	
GONOSTOMATIDAE	3.49	524	0.28	
Nezumia sp.	0.65	87	0.05	
Notacanthus sexspinis	0.55	11	0.04	
Myxine capensis	0.55	11	0.04	
Lampantodes hectoris	0.44	273	0.04	
Epigonus denticulatus	0.44	11	0.04	
S H R I M P S	0.33	131	0.03	
Small squids	0.33	22	0.03	
Paracallionymus costatus	0.11	22	0.01	
Total	1237.94		99.99	

PROJECT STATION:1897
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2748 Long E 1432
 start stop duration
 TIME :00:58:48 01:29:55 31 (min) Purpose code: 3
 LOG :2305.16 2306.67 1.51 Area code : 1
 FDEPTH: 590 591 GearCond.code:
 BDEPTH: 590 591 Validity code:
 Towing dir: 330° Wire out:1600 m Speed: 30 kn*10
 Sorted: 71 Kg Total catch: 201.87 CATCH/HOUR: 390.72

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Coelorinchus braueri	141.77	1289	36.28	
Merluccius paradoxus, female	73.26	58	18.75	6258
Nezumia sp.	64.26	1461	16.45	
Deania calcea	47.42	29	12.14	
Trachyscorpia capensis	14.13	97	3.62	
Todarodes sagittatus	13.45	19	3.44	
Etmopterus brachyurus	12.48	106	3.19	
Selachophidium guentheri	12.29	145	3.15	
GONOSTOMATIDAE	3.58	165	0.92	
Notacanthus sexspinis	1.94	39	0.50	
Merluccius paradoxus, male	1.78	2	0.46	6259
Ebinania costaeacanarie	1.26	19	0.32	
Neosopelus macrolepidotus	0.87	58	0.22	
Shrimps, small, non comm.	0.58	135	0.15	
Histioteuthis reversa	0.58	10	0.15	
S H R I M P S	0.39	232	0.10	
S H R I M P S	0.39	29	0.10	
MYCTOPHIDAE	0.19	29	0.05	
Raja leopardus	0.10	10	0.03	
Total	390.72		100.02	

PROJECT STATION:1895
 DATE:18/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2819 Long E 1427
 start stop duration
 TIME :17:47:29 18:05:51 18 (min) Purpose code: 3
 LOG :2262.48 2263.38 0.90 Area code : 1
 FDEPTH: 436 435 GearCond.code:
 BDEPTH: 436 435 Validity code:
 Towing dir: 10° Wire out:1250 m Speed: 31 kn*10
 Sorted: 89 Kg Total catch: 89.13 CATCH/HOUR: 297.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	102.17	283	34.39	6252
Genypterus capensis	45.33	17	15.26	6254
Coelorinchus fasciatus	40.83	1617	13.74	
Merluccius paradoxus, male	31.17	127	10.49	6253
Todarodes sagittatus	16.10	27	5.42	
Nezumia sp.	14.67	873	4.94	
Raja confundens	14.17	17	4.77	
Etmopterus lucifer	10.83	700	3.65	
Raja clavata	9.83	3	3.31	
Holohalaelurus regani	3.63	13	1.22	
Hydrolagus sp.	2.57	3	0.87	
Photichthys argenteus	1.90	167	0.64	
Helicolenus dactylopterus	1.20	7	0.40	
Tripterygion glchristi	1.07	20	0.36	
Notacanthus sexspinis	1.00	87	0.34	
S H R I M P S	0.50	27	0.17	
Rossia enigmatica	0.13	3	0.04	
Total	297.10		100.01	

PROJECT STATION:1898
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2743 Long E 1432
 start stop duration
 TIME :03:02:02 03:33:04 31 (min) Purpose code: 3
 LOG :2310.94 2312.46 1.52 Area code : 1
 FDEPTH: 502 493 GearCond.code:
 BDEPTH: 502 493 Validity code:
 Towing dir: 340° Wire out:1400 m Speed: 30 kn*10
 Sorted: 38 Kg Total catch: 37.71 CATCH/HOUR: 72.99

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	20.81	27	28.51	6261
Trachyrincus scabrus	18.68	385	25.59	
Nezumia sp.	9.29	323	12.73	
Genypterus capensis	6.19	2	8.48	6262
Selachophidium guentheri	4.08	56	5.59	
Malacocephalus laevis	3.64	23	4.99	
Raja confundens	2.48	4	3.40	
Todarodes sagittatus	1.80	8	2.47	
Hydrolagus sp.	1.43	2	1.96	
Merluccius paradoxus, male	1.16	2	1.59	6260
Coelorinchus fasciatus	0.93	8	1.27	
Photichthys argenteus	0.83	64	1.14	
Solenocera africana	0.58	106	0.79	
Etmopterus lucifer	0.48	19	0.66	
Notacanthus sexspinis	0.27	12	0.37	
Raja straeleni	0.12	2	0.16	
Bassanago albescens	0.10	2	0.14	
C E P H A L O P O D A	0.10	2	0.14	
Stereomastix sp.	0.02	2	0.03	
Total	72.99		100.01	

PROJECT STATION:1899
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2745
 start stop duration Long E 1440
 TIME :16:00:00 16:30:00 30 (min) Purpose code: 3
 LOG :2326.30 2327.60 1.30 Area code : 1
 FDEPTH: 407 399 GearCond.code:
 BDEPTH: 407 399 Validity code:
 Towing dir: 330° Wire out:1100 m Speed: 30 kn*10

Sorted: 120 Kg Total catch: 322.80 CATCH/HOUR: 645.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	303.30	792	46.98	6267
Merluccius paradoxus, male	117.00	316	18.12	6266
Coelorrinchus fasciatus	91.80	2554	14.22	
Genypterus capensis	63.40	42	9.82	6263
Todarodes sagittatus	21.40	44	3.31	
Lophius vomerinus	16.50	4	2.56	6264
Helicolenus dactylopterus	12.70	60	1.97	
Merluccius paradoxus, female	7.50	2	1.16	6265
Raja confundens	3.44	4	0.53	
MYCTOPHIDAE	2.98	252	0.46	
Shrimps, small, non comm.	2.16	486	0.33	
Todaropsis eblanae	0.72	54	0.11	
Bassanago albescens	0.70	10	0.11	
Malacocephalus laevis	0.64	18	0.10	
Epigonus denticulatus	0.54	82	0.08	
Photichthys argenteus	0.36	18	0.06	
Faracallionymus costatus	0.28	28	0.04	
Stereomastis sp.	0.18	18	0.03	
Total	645.60		99.99	

PROJECT STATION:1903
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2720
 start stop duration Long E 1505
 TIME :15:00:30 15:30:38 30 (min) Purpose code: 3
 LOG :2380.83 2382.31 1.48 Area code : 1
 FDEPTH: 156 157 GearCond.code:
 BDEPTH: 156 157 Validity code:
 Towing dir: 350° Wire out: 500 m Speed: 30 kn*10

Sorted: 127 Kg Total catch: 586.51 CATCH/HOUR: 1173.02

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lampanyctodes hectoris	817.12	129994	69.66	
Merluccius capensis, female	93.24	5204	7.95	6292
Merluccius capensis, juveniles	84.42	504	7.20	6295
Thyrssites atun	67.50	36	5.75	6289
Merluccius capensis, male	52.92	504	4.51	6291
Maurollicus muelleri	25.70	20564	2.19	
Sufflogobius bibarbatatus	17.14	4518	1.46	
Todarodes sagittatus	5.34	8	0.46	
Chelidonichthys capensis	4.72	16	0.40	
Genypterus capensis	2.34	6	0.20	6290
Trachurus capensis	1.04	16	0.09	6293
Sepia australis	0.64	26	0.05	
Lepidopus caudatus	0.38	12	0.03	
Austroglossus microlepis	0.28	2	0.02	6294
Etrumeus whiteheadi	0.24	4	0.02	
Aequorea aequorea	0.00	6300		
Total	1173.02		99.99	

PROJECT STATION:1900
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2744
 start stop duration Long E 1448
 TIME :08:20:52 08:52:46 32 (min) Purpose code: 3
 LOG :2337.80 2339.13 1.33 Area code : 1
 FDEPTH: 369 363 GearCond.code:
 BDEPTH: 369 363 Validity code:
 Towing dir: 80° Wire out:1100 m Speed: 31 kn*10

Sorted: 129 Kg Total catch: 1064.45 CATCH/HOUR: 1995.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1216.98	5143	60.97	6270
Merluccius paradoxus, male	678.75	3364	34.01	6271
Merluccius paradoxus, female	62.25	39	3.12	6272
Genypterus capensis	14.08	15	0.71	6269
Todarodes sagittatus	7.41	15	0.37	
Coelorrinchus fasciatus	2.94	50	0.15	
Raja confundens	2.93	4	0.15	
Helicolenus dactylopterus	1.24	6	0.06	
Genypterus capensis	0.26	4	0.01	6273
Total	1986.74		99.55	

PROJECT STATION:1904
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2718
 start stop duration Long E 1455
 TIME :17:11:16 17:42:45 31 (min) Purpose code: 3
 LOG :2392.14 2393.70 1.56 Area code : 1
 FDEPTH: 200 201 GearCond.code:
 BDEPTH: 200 201 Validity code:
 Towing dir: 360° Wire out: 700 m Speed: 32 kn*10

Sorted: 96 Kg Total catch: 496.36 CATCH/HOUR: 960.70

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lampanyctodes hectoris	391.28	62249	40.73	
Merluccius capensis, juveniles	326.71	24261	34.01	6298
Merluccius capensis, female	95.23	341	9.91	6296
Raja straeleni	67.74	2	7.05	
Merluccius capensis, male	33.29	248	3.47	6297
Chelidonichthys capensis	13.06	39	1.36	
Maurollicus muelleri	12.39	9910	1.29	
Sufflogobius bibarbatatus	8.21	2164	0.85	
Todarodes sagittatus	4.55	8	0.47	
Sepia australis	3.25	186	0.34	
Callorhynchus capensis	1.30	2	0.14	
Trachurus capensis	1.05	15	0.11	6299
Chelidonichthys queketti	0.99	2	0.10	
Genypterus capensis	0.91	2	0.09	6300
Raja pullopectata	0.75	2	0.08	
Aequorea aequorea	0.00	3097		
Total	960.71		100.00	

PROJECT STATION:1901
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2740
 start stop duration Long E 1505
 TIME :11:03:17 11:33:23 30 (min) Purpose code: 3
 LOG :2355.82 2357.64 1.82 Area code : 1
 FDEPTH: 169 161 GearCond.code:
 BDEPTH: 169 161 Validity code:
 Towing dir: 80° Wire out: 540 m Speed: 36 kn*10

Sorted: 135 Kg Total catch: 277.75 CATCH/HOUR: 555.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Etrumeus whiteheadi	109.50	1604	19.71	6281
Galeorhinus galeus	109.10	6	19.64	
Sufflogobius bibarbatatus	85.56	24038	15.40	
Merluccius capensis, female	72.60	294	13.07	6276
Merluccius capensis, juveniles	29.46	2368	5.30	6278
Merluccius capensis, male	27.60	180	4.97	6277
Merluccius paradoxus, female	21.30	270	3.83	6279
Maurollicus muelleri	20.40	14382	3.67	
Chelidonichthys capensis	18.48	54	3.33	
Thyrssites atun	16.90	6	3.04	6282
Callorhynchus capensis	15.60	12	2.81	
Merluccius paradoxus, male	14.52	192	2.61	6280
Helicolenus dactylopterus	9.72	18	1.75	
Todarodes sagittatus	2.30	12	0.41	6274
Austroglossus microlepis	2.30	12	0.41	6274
Small squids	1.38	656	0.25	
Sepia sp.	0.66	66	0.12	
Todaropsis eblanae	0.24	6	0.04	
Genypterus capensis	0.18	2	0.03	6275
Total	557.80		100.39	

PROJECT STATION:1905
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2720
 start stop duration Long E 1445
 TIME :19:30:00 20:00:00 30 (min) Purpose code: 3
 LOG :2405.00 2406.70 1.70 Area code : 1
 FDEPTH: 299 298 GearCond.code:
 BDEPTH: 299 298 Validity code:
 Towing dir: 230° Wire out: 900 m Speed: 31 kn*10

Sorted: 70 Kg Total catch: 456.04 CATCH/HOUR: 912.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	516.32	5012	56.61	6306
Coelorrinchus fasciatus	205.80	5640	22.56	
Merluccius paradoxus, male	68.60	784	7.52	6305
Raja straeleni	32.00	12	3.51	
Helicolenus dactylopterus	18.48	84	2.03	
Merluccius capensis, female	16.30	12	1.79	6302
Merluccius paradoxus, female	14.10	18	1.55	6304
Todarodes sagittatus	11.20	56	1.23	
Galeus polli	9.80	84	1.07	
Lophius vomerinus	7.80	2	0.86	6308
Genypterus capensis	5.40	8	0.59	6307
Merluccius capensis, male	2.60	4	0.29	6301
Merluccius paradoxus, male	2.00	4	0.22	6303
Epigonus denticulatus	1.68	84	0.18	
Total	912.08		100.01	

PROJECT STATION:1902
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2734
 start stop duration Long E 1513
 TIME :12:50:47 13:19:23 29 (min) Purpose code: 3
 LOG :2366.37 2367.77 1.40 Area code : 1
 FDEPTH: 134 133 GearCond.code:
 BDEPTH: 134 133 Validity code:
 Towing dir: 350° Wire out: 400 m Speed: 30 kn*10

Sorted: 35 Kg Total catch: 125.63 CATCH/HOUR: 259.92

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, juveniles	99.72	7978	38.37	6287
Merluccius capensis, female	55.86	381	21.49	6285
Merluccius capensis, male	34.76	339	13.37	6286
Callorhynchus capensis	24.66	17	9.49	
Etrumeus whiteheadi	18.21	66	7.01	6288
Thyrssites atun	8.69	6	3.34	6283
Chelidonichthys capensis	7.28	33	2.80	
Sufflogobius bibarbatatus	5.38	1200	2.07	
Todarodes sagittatus	3.06	8	1.18	
Genypterus capensis	0.91	4	0.35	6284
Austroglossus microlepis	0.48	2	0.18	
Todaropsis eblanae	0.41	17	0.16	
C R A B S	0.25	19	0.10	
Small squids	0.25	166	0.10	
Total	259.92		100.01	

PROJECT STATION:1906
 DATE:19/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2721
 start stop duration Long E 1437
 TIME :21:37:32 22:08:33 31 (min) Purpose code: 3
 LOG :2415.65 2417.19 1.54 Area code : 1
 FDEPTH: 341 340 GearCond.code:
 BDEPTH: 341 340 Validity code:
 Towing dir: 350° Wire out:1050 m Speed: 32 kn*10

Sorted: 119 Kg Total catch: 902.94 CATCH/HOUR: 1747.63

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1052.61	6441	60.23	6315
Merluccius paradoxus, male	349.47	2381	20.00	6314
Coelorrinchus fasciatus	208.68	4922	11.94	
Raja leopardus	87.15	17	4.99	
Helicolenus dactylopterus	14.92	134	0.85	
Merluccius paradoxus, female	12.29	15	0.70	6310
Genypterus capensis	8.61	8	0.49	6313
Merluccius capensis, male	4.76	2	0.27	6309
Lophius vomerinus	4.51	2	0.26	6312
Merluccius paradoxus, male	1.94	2	0.11	6311
MYCTOPHIDAE	1.51	285	0.09	
Squilla aculeata calmani	0.50	50	0.03	
Epigonus denticulatus	0.33	33	0.02	
Bathynectes piperitus	0.33	17	0.02	
Total	1747.61		100.00	

PROJECT STATION:1907
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2720 Long E 1422
 start stop duration
 TIME :00:23:40 00:53:30 30 (min) Purpose code: 3
 LOG :2431.82 2433.18 1.36 Area code : 1
 FDEPTH: 408 407 GearCond.code:
 BDEPTH: 408 407 Validity code:
 Towing dir: 340° Wire out:1220 m Speed: 28 kn*10

Sorted: 115 Kg Total catch: 153.38 CATCH/HOUR: 306.76

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Coelorinchus fasciatus	95.00	1886	30.97
Merluccius paradoxus, female	78.60	350	25.62
Merluccius paradoxus, male	55.60	244	18.12
Merluccius paradoxus, female	34.70	34	11.31
Raja straeleni	20.26	6	6.60
Genypterus capensis	10.20	6	3.33
Helicolenus dactylopterus	8.16	36	2.66
S H R I M P S	2.16	960	0.70
Selachophidium guentheri	0.56	16	0.18
GONOSTOMATIDAE	0.50	46	0.16
Nezumia micronychodon	0.46	60	0.15
MACRORHAMPHOSIDAE	0.30	26	0.10
Epigonus denticulatus	0.20	36	0.07
Laemonema laureysi	0.06	6	0.02
Total	306.76		99.99

PROJECT STATION:1910
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2707 Long E 1400
 start stop duration
 TIME :07:57:27 08:28:41 31 (min) Purpose code: 3
 LOG :2459.40 2460.66 1.26 Area code : 1
 FDEPTH: 591 597 GearCond.code:
 BDEPTH: 591 597 Validity code:
 Towing dir: 340° Wire out:1650 m Speed: 31 kn*10

Sorted: 98 Kg Total catch: 242.49 CATCH/HOUR: 469.34

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Deania quadrispinosum	134.71	70	28.70
Merluccius paradoxus, female	94.55	77	20.15
Nezumia sp.	68.52	15933	14.60
Trachyrincus scabrus	65.73	1295	14.00
Todarodes sagittatus	30.66	58	6.53
Lophius vomerinus	20.81	2	4.43
Raja confundens	12.31	23	2.62
Bathyrja smithii	11.71	2	2.49
Nemichthys curvirostris	6.39	81	1.36
C R A B S	5.81	15	1.24
Notacanthus sexspinis	5.03	105	1.07
Centrophorus sp.	3.48	12	0.74
Selachophidium guentheri	2.32	12	0.49
Solenocera africana	2.21	546	0.47
Hoplostethus cadenati	1.86	105	0.40
Shrimps, small, non comm.	1.05	81	0.22
Photichthys argenteus	0.93	58	0.20
Etmopterus lucifer	0.70	23	0.15
Yarella blackfordi	0.58	23	0.12
Total	469.36		99.98

PROJECT STATION:1908
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2718 Long E 1410
 start stop duration
 TIME :03:03:00 03:33:00 30 (min) Purpose code: 3
 LOG :2445.00 2446.50 1.50 Area code : 1
 FDEPTH: 519 519 GearCond.code:
 BDEPTH: 519 519 Validity code:
 Towing dir: 320° Wire out:1500 m Speed: 30 kn*10

Sorted: 110 Kg Total catch: 131.79 CATCH/HOUR: 263.58

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	140.10	116	53.15
Hydrolagus sp.	24.40	36	9.26
Centroscyllum fabricii	24.00	2	9.11
Trachyrincus scabrus	12.00	736	4.55
Nezumia sp.	10.88	612	4.13
Yarella blackfordi	8.00	4	3.04
Deania quadrispinosum	7.20	2	2.73
Raja straeleni	6.64	40	2.52
Todarodes sagittatus	6.52	12	2.47
Etmopterus lucifer	6.20	36	2.35
Selachophidium guentheri	4.52	72	1.71
Trachipterus jacksonensis	4.00	2	1.52
Coelorinchus fasciatus	2.00	16	0.76
C R A B S	1.88	8	0.71
Malacocephalus laevis	1.44	4	0.55
S H R I M P S	1.40	228	0.53
Notacanthus sexspinis	1.08	32	0.41
Ebinania costaecanarie	1.00	16	0.38
Photichthys argenteus	0.32	16	0.12
Total	263.58		100.00

PROJECT STATION:1911
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2702 Long E 1358
 start stop duration
 TIME :10:10:47 10:41:36 31 (min) Purpose code: 3
 LOG :2466.08 2467.58 1.50 Area code : 1
 FDEPTH: 503 493 GearCond.code:
 BDEPTH: 503 493 Validity code:
 Towing dir: 350° Wire out:1450 m Speed: 30 kn*10

Sorted: 89 Kg Total catch: 219.05 CATCH/HOUR: 423.97

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Deania calcea	131.61	58	31.04
Merluccius paradoxus, female	94.06	83	22.19
Bathyrja smithii	50.81	10	11.98
Coelorinchus fasciatus	29.23	397	6.89
Todarodes sagittatus	22.06	19	5.20
Hydrolagus sp.	16.65	29	3.93
Selachophidium guentheri	13.45	23	3.17
Nezumia sp.	12.39	735	2.92
Lophius vomerinus	8.52	4	2.01
S H R I M P S	8.32	1694	1.96
Notacanthus sexspinis	8.23	184	1.94
Genypterus capensis	6.29	2	1.48
Etmopterus brachyurus	6.00	39	1.42
Coelorinchus braueri	3.87	242	0.91
GONOSTOMATIDAE	2.90	184	0.68
Raja confundens	2.52	10	0.59
OPISTHOTEUTHIDAE	2.42	10	0.57
Ebinania costaecanarie	1.74	39	0.41
Neoscopelus macrolepidotus	0.97	58	0.23
Octopus sp.	0.87	10	0.21
MYCTOPHIDAE	0.77	77	0.18
Yarella blackfordi	0.29	19	0.07
Total	423.97		99.98

PROJECT STATION:1909
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2714 Long E 1404
 start stop duration
 TIME :05:30:00 06:00:00 30 (min) Purpose code: 3
 LOG :2452.50 2453.90 1.40 Area code : 1
 FDEPTH: 631 629 GearCond.code:
 BDEPTH: 631 629 Validity code:
 Towing dir: 360° Wire out:1700 m Speed: 31 kn*10

Sorted: 59 Kg Total catch: 201.85 CATCH/HOUR: 403.70

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Deania quadrispinosum	86.40	60	21.40
Centroscymnus crepidater	67.80	72	16.79
Trachyrincus scabrus	66.00	920	16.35
Nezumia sp.	61.20	1472	15.16
Merluccius paradoxus, female	53.70	38	13.30
Todarodes sagittatus	20.64	36	5.11
Rajascorpa capensis	15.00	84	3.72
Lophius vomerinus	6.10	2	1.51
Selachophidium guentheri	6.00	60	1.49
Notacanthus sexspinis	3.24	120	0.80
Centrophorus sp.	2.88	48	0.71
Ebinania costaecanarie	2.64	36	0.65
Hoplostethus cadenati	2.16	144	0.54
Yarella blackfordi	2.16	108	0.54
Photichthys argenteus	1.44	60	0.36
Shrimps, small, non comm.	1.20	264	0.30
Raja confundens	0.92	2	0.23
Shrimps, small, non comm.	0.84	48	0.21
Raja straeleni	0.84	12	0.21
Hoplostethus atlanticus	0.74	2	0.18
GONOSTOMATIDAE	0.72	24	0.18
Neoscopelus macrolepidotus	0.60	24	0.15
Alloctytus verrucosus	0.36	12	0.09
PARALEPIDIDAE	0.12	12	0.03
Total	403.70		100.01

PROJECT STATION:1912
 DATE:20/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2700 Long E 1360
 start stop duration
 TIME :13:05:57 13:35:52 30 (min) Purpose code: 3
 LOG :2475.86 2477.30 1.44 Area code : 1
 FDEPTH: 455 450 GearCond.code:
 BDEPTH: 455 450 Validity code:
 Towing dir: 350° Wire out:1250 m Speed: 28 kn*10

Sorted: 68 Kg Total catch: 97.84 CATCH/HOUR: 195.68

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	58.10	62	29.69
Coelorinchus fasciatus	47.40	2844	24.22
Raja straeleni	16.20	16	8.28
Helicolenus dactylopterus	16.08	68	8.22
Lophius vomerinus	11.80	4	6.03
Deania calcea	8.40	4	4.29
Merluccius paradoxus, male	7.70	10	3.93
Todarodes sagittatus	6.24	16	3.19
GONOSTOMATIDAE	5.76	332	2.94
Etmopterus brachyurus	4.52	48	2.31
Nezumia sp.	4.52	168	2.31
RAJIDAE	3.00	4	1.53
Selachophidium guentheri	2.20	32	1.12
Notacanthus sexspinis	2.20	52	1.12
Ebinania costaecanarie	0.88	20	0.45
S H R I M P S	0.48	48	0.25
Tripterygius gilchristi	0.12	4	0.06
Diretmus argenteus	0.08	4	0.04
Total	195.68		99.98

PROJECT STATION:1913
DATE:20/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2658 Long E 1413
start stop duration
TIME :18:34:00 19:05:00 31 (min) Purpose code: 3
LOG :2498.80 2500.40 1.60 Area code : 1
FDEPTH: 388 387 GearCond.code:
BDEPTH: 388 387 Validity code:
Towing dir: 350° Wire out:1150 m Speed: 32 kn*10

Sorted: 117 Kg Total catch: 210.45 CATCH/HOUR: 407.32

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Coelorinchus fasciatus	169.41 1382	41.59	
Merluccius paradoxus, female	96.19 257	23.62	6333
Todarodes sagittatus	20.97 52	5.60	
Helicolenus dactylopterus	14.99 132	7.94	
Merluccius paradoxus, male	23.71 74	5.82	6332
Genypterus capensis	20.03 14	4.92	6334
Raja confundens	19.74 19	4.85	
Lophius vomerinus	13.74 4	3.37	6335
Shrimps, small, non comm.	2.94 1057	0.72	
Prionace glauca	2.61 2	0.64	
Selachophidium guentheri	1.66 62	0.41	
Nezumia sp.	1.39 45	0.34	
MYCTOPHIDAE	0.79 288	0.19	
Photichthys argenteus	0.62 35	0.15	
Macroparalepis macrogeneion	0.10 17	0.02	
Total	408.09	100.18	

PROJECT STATION:1914
DATE:20/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2658 Long E 1422
start stop duration
TIME :21:47:00 22:17:31 31 (min) Purpose code: 3
LOG :2513.69 2515.27 1.58 Area code : 1
FDEPTH: 354 354 GearCond.code:
BDEPTH: 354 354 Validity code:
Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: 274 Kg Total catch: 494.19 CATCH/HOUR: 956.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Coelorinchus fasciatus	403.26 10521	42.16	
Merluccius paradoxus, female	309.97 950	32.41	6338
Merluccius paradoxus, male	91.74 277	9.59	6339
Helicolenus dactylopterus	44.42 383	4.64	
Genypterus capensis	37.84 23	3.96	6340
Nezumia sp.	20.90 523	2.19	
Merluccius capensis, female	19.94 12	2.08	6336
Lophius vomerinus	14.42 6	1.51	6341
Todarodes sagittatus	5.05 17	0.53	
S H R I M P S	2.61 1376	0.27	
Merluccius capensis, male	2.52 2	0.26	6337
MYCTOPHIDAE	2.44 662	0.26	
MYCTOPHIDAE	1.22 87	0.13	
Macroparalepis macrogeneion	0.17 17	0.02	
Total	956.50	100.01	

PROJECT STATION:1915
DATE:21/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2655 Long E 1430
start stop duration
TIME :01:20:40 01:50:29 30 (min) Purpose code: 3
LOG :2526.30 2527.72 1.42 Area code : 1
FDEPTH: 312 315 GearCond.code:
BDEPTH: 312 315 Validity code:
Towing dir: 350° Wire out: 930 m Speed: 28 kn*10

Sorted: 126 Kg Total catch: 150.07 CATCH/HOUR: 300.14

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	132.90 558	44.28	6344
Coelorinchus fasciatus	64.80 968	21.59	
Merluccius capensis, female	29.10 32	9.70	6342
Merluccius paradoxus, male	15.90 64	5.30	6345
Lophius vomerinus	12.80 4	4.26	6346
Helicolenus dactylopterus	12.24 76	4.08	
Merluccius capensis, male	12.00 18	4.00	6343
Galeus polli	8.52 84	2.84	
Todarodes sagittatus	3.60 12	1.20	
Nezumia sp.	2.08 120	0.69	
Genypterus capensis	2.04 2	0.68	6347
Epigonus denticulatus	2.04 72	0.68	
Lampanyctodes hectoris	0.80 300	0.27	
Trachurus capensis	0.68 4	0.23	
Squilla acuelata calmani	0.28 12	0.09	
Sufflogobius bibarbus	0.20 64	0.07	
MYCTOPHIDAE	0.16 8	0.05	
Total	300.14	100.01	

PROJECT STATION:1916
DATE: :06:00:00 06:30:00 30 (min) Purpose code: 3
LOG :2546.80 2548.10 1.30 Area code : 1
FDEPTH: 225 227 GearCond.code:
BDEPTH: 225 227 Validity code:
Towing dir: 92° Wire out: 700 m Speed: 32 kn*10

Sorted: 36 Kg Total catch: 243.89 CATCH/HOUR: 487.78

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	251.20 1488	51.50	6351
Merluccius capensis, male	129.60 1058	26.57	6350
Merluccius paradoxus, female	40.00 368	8.20	6354
Lampanyctodes hectoris	23.04 8176	4.72	
Sufflogobius bibarbus	19.84 4048	4.07	
Calloirinchus capensis	5.80 2	1.19	
Merluccius paradoxus, male	5.76 64	1.18	6353
Raja straeleni	2.64 2	0.54	
Trachurus capensis	2.62 12	0.54	6349
Genypterus capensis	2.36 6	0.48	6348
Merluccius capensis, juveniles	1.92 144	0.39	6352
Maurollicus muelleri	1.44 1152	0.30	
Chelidonichthys capensis	1.42 2	0.29	
Lepidopus caudatus	0.14 2	0.03	
Total	487.78	100.00	

PROJECT STATION:1917
DATE:21/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2653 Long E 1452
start stop duration
TIME :09:10:57 09:40:32 30 (min) Purpose code: 3
LOG :2559.74 2561.21 1.47 Area code : 1
FDEPTH: 176 171 GearCond.code:
BDEPTH: 176 171 Validity code:
Towing dir: 360° Wire out: 600 m Speed: 31 kn*10

Sorted: 17 Kg Total catch: 924.55 CATCH/HOUR: 1849.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Sufflogobius bibarbus	818.06 155150	44.24	
Lampanyctodes hectoris	617.20 280546	33.38	
Merluccius capensis, juveniles	144.78 9256	7.83	6357
Merluccius capensis, male	109.44 934	5.92	6356
Chelidonichthys capensis	79.80 206	4.32	
Merluccius capensis, female	71.26 616	3.85	6355
Calloirinchus capensis	7.88 4	0.43	
Trachurus capensis	0.68 12	0.04	6358
Total	1849.10	100.01	

PROJECT STATION:1918
DATE:21/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2642 Long E 1422
start stop duration
TIME :19:07:52 19:37:36 30 (min) Purpose code: 3
LOG :2623.88 2625.34 1.46 Area code : 1
FDEPTH: 340 340 GearCond.code:
BDEPTH: 340 340 Validity code:
Towing dir: 340° Wire out:1100 m Speed: 31 kn*10

Sorted: 200 Kg Total catch: 465.35 CATCH/HOUR: 930.70

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	430.80 960	46.29	6366
Scomber japonicus	191.00 220	20.52	6359
Coelorinchus fasciatus	119.60 2552	12.85	
Merluccius paradoxus, male	66.40 148	7.13	6365
Merluccius capensis, female	30.90 18	3.32	6361
Merluccius paradoxus, female	24.20 20	2.60	6360
Helicolenus dactylopterus	22.96 120	2.47	
Nezumia sp.	16.00 236	1.72	
Todarodes sagittatus	12.40 16	1.33	
MYCTOPHIDAE	5.28 2490	0.57	
Genypterus capensis	4.30 4	0.46	6362
Galeus polli	3.04 24	0.33	
Merluccius capensis, male	2.20 2	0.24	6363
Lophius vomerinus	1.30 2	0.14	6364
Squilla sp.	0.32 8	0.03	
Total	930.70	100.00	

PROJECT STATION:1919
DATE:21/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2639 Long E 1413
start stop duration
TIME :21:14:33 21:44:44 30 (min) Purpose code: 3
LOG :2633.43 2634.85 1.42 Area code : 1
FDEPTH: 371 373 GearCond.code:
BDEPTH: 371 373 Validity code:
Towing dir: 340° Wire out:1150 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 262.24 CATCH/HOUR: 524.48

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	207.00 688	39.47	6367
Coelorinchus fasciatus	129.20 2872	24.63	
Helicolenus dactylopterus	66.40 416	12.66	
Nezumia sp.	44.40 966	8.47	
Todarodes sagittatus	28.56 80	5.45	
Merluccius paradoxus, male	24.40 88	4.65	6368
Lophius vomerinus	13.10 4	2.50	6370
Genypterus capensis	3.50 4	0.67	6369
S H R I M P S	2.80 1208	0.53	
Galeus polli	1.92 16	0.37	
Bathynectes piperitus	1.12 16	0.21	
MYCTOPHIDAE	0.88 472	0.17	
Squilla acuelata calmani	0.40 24	0.08	
Epigonus denticulatus	0.32 8	0.06	
GONOSTOMATIDAE	0.32 16	0.06	
Selachophidium guentheri	0.16 16	0.03	
Total	524.48	100.01	

PROJECT STATION:1920
DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2643 Long E 1402
start stop duration
TIME :00:02:31 00:32:30 30 (min) Purpose code: 3
LOG :2647.49 2649.13 1.64 Area code : 1
FDEPTH: 408 409 GearCond.code:
BDEPTH: 408 409 Validity code:
Towing dir: 340° Wire out:1230 m Speed: 32 kn*10

Sorted: 141 Kg Total catch: 300.05 CATCH/HOUR: 600.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Coelorinchus fasciatus	259.00 7000	43.16	
Merluccius paradoxus, female	148.60 406	24.76	6371
Nezumia sp.	51.52 1008	8.59	
Merluccius paradoxus, male	48.80 142	8.13	6372
Helicolenus dactylopterus	30.38 140	5.06	
Genypterus capensis	23.90 14	3.98	6374
Lampanyctodes hectoris	9.52 3662	1.59	
Lophius vomerinus	8.50 4	1.42	6373
Todarodes sagittatus	7.98 28	1.33	
Selachophidium guentheri	3.92 84	0.65	
S H R I M P S	3.78 1708	0.63	
Trachyrhynchus scabrurus	3.64 56	0.61	
GONOSTOMATIDAE	0.42 28	0.07	
Bathynectes piperitus	0.14 14	0.02	
Total	600.10	100.00	

PROJECT STATION:1921
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2642 Long E 1350
 start stop duration
 TIME :02:48:38 03:18:35 30 (min) Purpose code: 3
 LOG :2661.38 2662.89 1.51 Area code : 1
 FDEPTH: 431 430 GearCond.code:
 BDEPTH: 431 430 Validity code:
 Towing dir: 350° Wire out:1300 m Speed: 30 kn*10

Sorted: 118 Kg Total catch: 175.36 CATCH/HOUR: 350.72

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	122.30	208	34.87	6375
Coelorinchus fasciatus	102.62	1746	29.26	
Helicolenus dactylopterus	35.40	168	10.09	
Genypterus capensis	21.50	12	6.13	6377
Merluccius paradoxus, male	19.50	46	5.56	6376
Lophius vomerinus	18.40	4	5.25	6378
Nezumia sp.	12.16	372	3.47	
Selachophidium guentheri	9.54	118	2.72	
Photichthys argenteus	3.96	42	1.13	
Todarodes sagittatus	2.48	6	0.71	
Galeus polli	1.24	12	0.35	
MYCTOPHIDAE	1.06	210	0.30	
Shrimps, small, non comm.	0.38	142	0.11	
C R A B S	0.18	6	0.05	
Total	350.72		100.00	

PROJECT STATION:1924
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2623 Long E 1343
 start stop duration
 TIME :11:08:05 11:38:47 31 (min) Purpose code: 3
 LOG :2700.11 2701.54 1.43 Area code : 1
 FDEPTH: 422 422 GearCond.code:
 BDEPTH: 422 422 Validity code:
 Towing dir: 360° Wire out:1250 m Speed: 30 kn*10

Sorted: 267 Kg Total catch: 867.72 CATCH/HOUR: 1679.46

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1359.41	3101	80.94	6386
Merluccius paradoxus, male	183.50	439	10.93	6387
Coelorinchus fasciatus	39.91	596	2.38	
Todarodes sagittatus	21.66	72	1.29	
Helicolenus dactylopterus	20.42	112	1.22	
Genypterus capensis	18.00	10	1.07	6384
Nezumia sp.	14.79	668	0.88	
Lophius vomerinus	9.46	2	0.56	6385
MYCTOPHIDAE	4.97	1053	0.30	
Selachophidium guentheri	2.69	39	0.16	
GONOSTOMATIDAE	1.57	157	0.09	
Scopelosaurus meadi	0.91	46	0.05	
S H R I M P S	0.85	261	0.05	
Galeus polli	0.85	6	0.05	
Epigonus denticulatus	0.33	39	0.02	
PARALEPIDIDAE	0.14	6	0.01	
Total	1679.46		100.00	

PROJECT STATION:1922
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2641 Long E 1343
 start stop duration
 TIME :05:17:00 05:47:00 30 (min) Purpose code: 3
 LOG :2671.66 2673.28 1.60 Area code : 1
 FDEPTH: 506 502 GearCond.code:
 BDEPTH: 506 502 Validity code:
 Towing dir: 350° Wire out:1468 m Speed: 31 kn*10

Sorted: 107 Kg Total catch: 133.14 CATCH/HOUR: 266.28

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	97.30	118	36.54	6379
Etmopterus lucifer	27.80	26	10.44	
Todarodes sagittatus	21.70	48	8.15	
Nezumia sp.	15.60	738	5.86	
Coelorinchus fasciatus	15.44	268	5.80	
Genypterus capensis	13.10	2	4.92	6381
ZEIDAE	12.96	1246	4.87	
Helicolenus dactylopterus	12.00	48	4.51	
Selachophidium guentheri	10.52	176	3.95	
Merluccius paradoxus, male	7.80	12	2.93	6380
Raja confundens	6.00	10	2.25	
Krill	5.70	7266	2.14	
Hydrolagus sp.	5.06	12	1.90	
Etmopterus lucifer	4.64	26	1.74	
Raja pullopectata	1.90	2	0.71	
Epigonus telescopus	1.70	20	0.64	
Notacanthus seppinis	1.62	26	0.61	
Trachyrincus scabratus	0.90	30	0.34	
Hoplostethus mediterraneus	0.90	24	0.34	
Shrimps, small, non comm.	0.86	282	0.32	
Photichthys argenteus	0.84	74	0.32	
Tripteryphycis gilchristi	0.60	90	0.23	
STOMIIDAE	0.44	18	0.17	
C E P H A L O P O D A	0.42	30	0.16	
Ebinania costaecanarie	0.32	44	0.12	
Total	266.12		99.96	

PROJECT STATION:1925
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2620 Long E 1356
 start stop duration
 TIME :14:04:00 14:34:00 30 (min) Purpose code: 3
 LOG :2715.60 2717.00 1.40 Area code : 1
 FDEPTH: 382 378 GearCond.code:
 BDEPTH: 382 378 Validity code:
 Towing dir: 350° Wire out:1200 m Speed: 28 kn*10

Sorted: 166 Kg Total catch: 1840.96 CATCH/HOUR: 3681.92

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	3067.96	12708	83.33	6390
Merluccius paradoxus, male	384.20	1740	10.43	6391
Coelorinchus fasciatus	70.52	1176	1.92	
Helicolenus dactylopterus	64.64	632	1.76	
Todarodes sagittatus	31.86	68	0.87	
Deepwater fish mixture	26.66		0.72	
Nezumia sp.	16.50	474	0.45	
Lampantodes hectoris	8.36	1786	0.23	
Lophius vomerinus	3.74	2	0.10	6388
Selachophidium guentheri	3.16	90	0.09	
Genypterus capensis	2.28	2	0.06	6389
S H R I M P S	2.04	792	0.06	
Total	3681.92		100.02	

PROJECT STATION:1926
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2619 Long E 1405
 start stop duration
 TIME :16:37:00 17:07:00 30 (min) Purpose code: 3
 LOG :2728.70 2730.10 1.40 Area code : 1
 FDEPTH: 346 344 GearCond.code:
 BDEPTH: 346 344 Validity code:
 Towing dir: 350° Wire out:1050 m Speed: kn*10

Sorted: 114 Kg Total catch: 425.29 CATCH/HOUR: 850.58

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	422.40	1488	49.66	6398
Coelorinchus fasciatus	233.20	4870	27.42	
Merluccius paradoxus, male	64.80	192	7.62	6397
Helicolenus dactylopterus	35.62	500	4.19	
Genypterus capensis	23.70	24	2.79	6392
Lophius vomerinus	18.64	4	2.19	6395
Merluccius paradoxus, female	18.50	20	2.17	6394
Nezumia sp.	17.56	806	2.06	
Krill	5.76		0.68	
Merluccius capensis, female	3.64	2	0.43	6396
MYCTOPHIDAE	1.64	1020	0.19	
Merluccius paradoxus, male	1.34	2	0.16	6393
Galeus polli	1.16	20	0.14	
C R A B S	1.10	48	0.13	
Selachophidium guentheri	1.06	18	0.12	
Ebinania costaecanarie	0.40	10	0.05	
Squilla sp.	0.10	10	0.01	
Total	850.62		100.01	

PROJECT STATION:1923
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2641 Long E 1341
 start stop duration
 TIME :07:42:00 08:12:00 30 (min) Purpose code: 3
 LOG :2679.90 2681.40 1.50 Area code : 1
 FDEPTH: 552 549 GearCond.code:
 BDEPTH: 552 549 Validity code:
 Towing dir: 335° Wire out:1500 m Speed: 30 kn*10

Sorted: 134 Kg Total catch: 193.81 CATCH/HOUR: 387.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	157.80	148	40.71	6382
Deania quadrispinosum	38.16	22	9.84	
Todarodes sagittatus	31.40	74	8.10	
Nezumia sp.	30.60	1970	7.89	
Deepwater fish mixture	17.08		4.41	
Yarralla blackfordi	17.02	1782	4.39	
Selachophidium guentheri	14.84	182	3.83	
Bathyrhaja smithii	12.60	2	3.25	
Trachyrincus scabratus	10.30	498	2.66	
Shrimps, small, non comm.	7.14	1618	1.84	
Schedophilus huttoni	6.52	8	1.68	
Merluccius paradoxus, male	6.20	10	1.60	6383
Raja confundens	6.00	10	1.55	
Ebinania costaecanarie	5.88	4	1.52	
Centrophorus sp.	5.26	8	1.36	
Hoplostethus mediterraneus	3.72	232	0.96	
Etmopterus lucifer	3.50	28	0.90	
Coelorinchus fasciatus	3.36	28	0.87	
OPISTHOTEUTHIDAE	2.80	14	0.72	
Etmopterus lucifer	2.74	14	0.71	
STOMIIDAE	1.76	84	0.45	
Photichthys argenteus	1.40	120	0.36	
Tripteryphycis gilchristi	0.70	8	0.18	
GONOSTOMATIDAE	0.28	8	0.07	
PARALEPIDIDAE	0.14	8	0.04	
BATHYLACIDAE	0.14	8	0.04	
NEOSCOPELIDAE	0.14	28	0.04	
Trachyscorpia capensis	0.14	2	0.04	
Total	387.62		100.01	

PROJECT STATION:1927
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2620 Long E 1414
 start stop duration
 TIME :19:10:57 19:41:58 31 (min) Purpose code: 3
 LOG :2742.27 2743.78 1.51 Area code : 1
 FDEPTH: 319 312 GearCond.code:
 BDEPTH: 319 312 Validity code:
 Towing dir: 350° Wire out:1000 m Speed: 30 kn*10

Sorted: 143 Kg Total catch: 450.29 CATCH/HOUR: 871.53

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	333.06	1467	38.22	6407
Coelorinchus fasciatus	313.55	6600	35.98	
Lophius vomerinus	38.19	15	4.38	6403
Merluccius paradoxus, male	34.37	166	3.94	6406
Helicolenus dactylopterus	33.45	166	3.84	
Genypterus capensis	22.55	14	2.59	6404
Merluccius capensis, female	21.39	14	2.45	6400
Merluccius paradoxus, female	19.74	21	2.26	6402
Squilla sp.	18.21	1012	2.09	
Raja straeleni	11.61	4	1.33	
Nezumia sp.	10.12	399	1.16	
Merluccius capensis, male	5.52	10	0.63	6405
Merluccius capensis, male	5.23	4	0.60	6399
Merluccius paradoxus, male	1.47	2	0.17	6401
Etrumeus whiteheadi	0.66	10	0.08	
Epigonus denticulatus	0.66	17	0.08	
MYCTOPHIDAE	0.66	345	0.08	
Sufflogobius bibarbatatus	0.46	149	0.05	
Chlorophthalmus punctatus	0.27	10	0.03	
Cynoglossus zanzibarensis	0.27	10	0.03	
Galeus polli	0.10	10	0.01	
Total	871.54		100.00	

PROJECT STATION:1928
 DATE:22/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2621 Long E 1427
 start stop duration
 TIME :22:11:30 22:41:43 30 (min) Purpose code: 3
 LOG :2759.35 2760.68 1.33 Area code : 1
 FDEPTH: 292 283 GearCond.code:
 BDEPTH: 292 283 Validity code:
 Towing dir: 355° Wire out: 900 m Speed: 26 kn*10

Sorted: 222 Kg Total catch: 954.25 CATCH/HOUR: 1908.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	666.22	3172	34.91	6412
Merluccius paradoxus, female	591.30	2254	30.98	6414
Coelorinchus fasciatus	203.86	6888	10.68	
Merluccius capensis, male	151.20	850	7.92	6413
Merluccius capensis, female	135.30	90	7.09	6408
Deepwater fish mixture	51.30		2.69	
Raja straeleni	30.92	14	1.62	
Genypterus capensis	23.20	26	1.22	6411
Merluccius capensis, male	17.90	12	0.94	6409
Lophius vomerinus	13.10	12	0.69	6410
Merluccius paradoxus, male	10.00	82	0.52	6415
Sufflogobius bibarbatatus	8.10	2282	0.42	
Trachurus capensis	2.02	14	0.11	
Lampanyctodes hectoris	1.90	864	0.10	
Squilla acuelata calmani	1.90	122	0.10	
Maurollicus muelleri	0.28	122	0.01	
Total	1908.50		100.00	

PROJECT STATION:1932
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2600 Long E 1404
 start stop duration
 TIME :10:46:42 11:09:32 23 (min) Purpose code: 3
 LOG :2831.82 2832.95 1.13 Area code : 1
 FDEPTH: 293 293 GearCond.code: 9
 BDEPTH: 293 293 Validity code:
 Towing dir: 350° Wire out: 950 m Speed: 24 kn*10

Sorted: 179 Kg Total catch: 579.14 CATCH/HOUR: 1510.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	659.35	2465	43.64	6440
Merluccius capensis, male	301.30	1448	19.94	6441
Sufflogobius bibarbatatus	198.65	30472	13.15	
Merluccius capensis, female	94.04	63	6.22	6435
Lophius vomerinus	83.48	60	5.53	6439
Coelorinchus fasciatus	72.39	1370	4.79	
Lampanyctodes hectoris	23.35	8463	1.55	
Merluccius paradoxus, female	19.83	65	1.31	6442
Trachurus capensis	14.35	37	0.95	6437
Maurollicus muelleri	11.74	7826	0.78	
Todarodes sagittatus	10.43	26	0.69	
Austroglossus microlepis	8.48	13	0.56	6438
Squilla acuelata calmani	4.83	235	0.32	
Merluccius capensis, male	4.41	3	0.29	6436
Galeus polli	2.87	52	0.19	
Lepidopus caudatus	1.30	26	0.09	
Total	1510.80		100.00	

PROJECT STATION:1929
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2559 Long E 1427
 start stop duration
 TIME :03:52:34 04:16:23 24 (min) Purpose code: 3
 LOG :2802.70 2803.82 1.12 Area code : 1
 FDEPTH: 194 194 GearCond.code:
 BDEPTH: 194 194 Validity code:
 Towing dir: 350° Wire out: 600 m Speed: 31 kn*10

Sorted: 98 Kg Total catch: 1057.64 CATCH/HOUR: 2644.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	1138.50	9323	43.06	6419
Merluccius capensis, female	969.38	6930	36.66	6420
Sufflogobius bibarbatatus	305.25	55405	11.54	
Callorhynchus capensis	85.25	43	3.22	
Chelidonichthys capensis	53.75	135	2.03	
Merluccius capensis, juveniles	33.83	2710	1.28	6421
MYCTOPHIDAE	26.40	11385	1.00	
Merluccius capensis, female	16.63	15	0.63	6418
Lophius vomerinus	10.00	3	0.38	6417
Raja straeleni	3.00	3	0.11	
Austroglossus microlepis	1.35	8	0.05	6416
Total	2643.34		99.96	

PROJECT STATION:1933
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2602 Long E 1356
 start stop duration
 TIME :14:18:00 14:30:00 12 (min) Purpose code: 3
 LOG :2846.80 2847.30 0.50 Area code : 1
 FDEPTH: 345 344 GearCond.code: 9
 BDEPTH: 345 344 Validity code:
 Towing dir: 360° Wire out:1050 m Speed: 30 kn*10

Sorted: 262 Kg Total catch: 262.41 CATCH/HOUR: 1312.05

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	915.75	3185	69.80	6445
Lampanyctodes hectoris	115.85	37745	8.83	
Merluccius paradoxus, male	105.50	350	8.04	6446
Merluccius capensis, female	104.00	80	7.93	6443
Coelorinchus fasciatus	28.25	600	2.15	
Maurollicus muelleri	13.65	7705	1.04	
Nezumia sp.	13.10	360	1.00	
Symbolophorus boops	6.80	680	0.52	
Merluccius capensis, male	4.40	5	0.34	6444
C R A B S	2.80	200	0.21	
Galeus polli	1.10	15	0.08	
Squilla acuelata calmani	0.75	55	0.06	
Chlorophthalmus atlanticus	0.10	5	0.01	
Total	1312.05		100.01	

PROJECT STATION:1930
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2559 Long E 1420
 start stop duration
 TIME :06:17:36 06:48:17 31 (min) Purpose code: 3
 LOG :2811.04 2812.39 1.35 Area code : 1
 FDEPTH: 206 218 GearCond.code:
 BDEPTH: 206 218 Validity code:
 Towing dir: 350° Wire out: 700 m Speed: 31 kn*10

Sorted: 96 Kg Total catch: 443.11 CATCH/HOUR: 857.63

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	308.90	1761	36.02	6422
Merluccius capensis, male	234.39	1788	27.33	6428
Lampanyctodes hectoris	96.19	37539	11.22	
Sufflogobius bibarbatatus	89.42	14599	10.43	
Merluccius capensis, juveniles	54.46	4825	6.35	6427
Merluccius capensis, female	44.32	48	5.17	6423
Chelidonichthys capensis	14.03	23	1.64	
Callorhynchus capensis	9.68	4	1.13	
Austroglossus microlepis	4.43	8	0.52	6424
Lophius vomerinus	1.12	2	0.13	6425
Trachurus capensis	0.43	8	0.05	6426
Todarodes sagittatus	0.25	2	0.03	
Total	857.62		100.02	

PROJECT STATION:1934
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2559 Long E 1345
 start stop duration
 TIME :16:30:33 17:01:13 31 (min) Purpose code: 3
 LOG :2858.17 2859.54 1.37 Area code : 1
 FDEPTH: 418 426 GearCond.code:
 BDEPTH: 418 426 Validity code:
 Towing dir: 335° Wire out:1200 m Speed: 31 kn*10

Sorted: 336 Kg Total catch: 613.22 CATCH/HOUR: 1186.88

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	616.45	1117	51.94	6447
Raja confundens	224.71	128	18.93	
Merluccius paradoxus, male	93.85	161	7.91	6448
Coelorinchus fasciatus	81.02	286	6.83	
Nezumia sp.	59.13	418	4.98	
Genypterus capensis	47.81	19	4.03	6450
Helicolenus dactylopterus	38.61	114	3.25	
Lophius vomerinus	10.06	4	0.85	6449
Krill	8.65		0.73	
Epigonus denticulatus	2.71	408	0.23	
Todarodes sagittatus	2.57	25	0.22	
Yarella blackfordi *	2.42	296	0.20	
Selachophidium guentheri	2.07	25	0.17	
Notacanthus sexspinis	1.26	25	0.11	
Hoplostethus mediterraneus	0.60	70	0.05	
STOMIIDAE	0.15	41	0.01	
MYCTOPHIDAE	0.15	85	0.01	
SPHYRAENIDAE	0.10	10	0.01	
NEMICHTHYIDAE	0.10	10	0.01	
C R A B S	0.10	10	0.01	
Ebinania costaecanarie	0.10	6	0.01	
Photichthys argenteus	0.06	6	0.01	
Total	1186.88		100.50	

PROJECT STATION:1931
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2600 Long E 1413
 start stop duration
 TIME :08:27:20 08:57:01 30 (min) Purpose code: 3
 LOG :2820.65 2822.09 1.44 Area code : 1
 FDEPTH: 258 257 GearCond.code:
 BDEPTH: 258 257 Validity code:
 Towing dir: 350° Wire out: 800 m Speed: 30 kn*10

Sorted: 108 Kg Total catch: 250.68 CATCH/HOUR: 501.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	269.50	1162	53.75	6434
Merluccius capensis, male	79.70	46	15.90	6430
Merluccius capensis, female	73.50	350	14.66	6433
Sufflogobius bibarbatatus	36.76	5568	7.33	
Lophius vomerinus	9.70	6	1.93	6431
Merluccius capensis, male	7.50	8	1.50	6429
Merluccius capensis, juveniles	5.12	378	1.02	6432
Chelidonichthys capensis	4.42	14	0.88	
Squilla acuelata calmani	4.14	190	0.83	
Todarodes sagittatus	2.94	12	0.59	
Lampanyctodes hectoris	2.74	2740	0.55	
Coelorinchus fasciatus	2.18	28	0.43	
Scomber japonicus	1.96	4	0.39	
Todaropsis eblanae	1.20	8	0.24	
Total	501.36		100.00	

PROJECT STATION:1935
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2560 Long E 1341
 start stop duration
 TIME :18:44:46 19:15:21 31 (min) Purpose code: 3
 LOG :2867.87 2869.44 1.57 Area code : 1
 FDEPTH: 493 501 GearCond.code:
 BDEPTH: 493 501 Validity code:
 Towing dir: 5° Wire out:1400 m Speed: 31 kn*10
 Sorted: 167 Kg Total catch: 378.92 CATCH/HOUR: 733.39

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	212.52	213	28.98	6452
Selachophidium guentheri	130.12	2400	17.74	
Nezumia sp.	121.94	3929	16.63	
Trachyrincus scabrus	108.87	1090	14.84	
Hoplostethus cadenati	41.28	2458	5.63	
Raja confundens	36.87	25	5.03	
Yarrella blackfordi	18.64	3554	2.54	
Coelorinchus fasciatus	11.15	105	1.52	
Merluccius paradoxus, male	9.87	14	1.35	6451
Etmopterus lucifer	8.54	52	1.16	
Bathyraja smithii	5.71	2	0.78	
Todarodes sagittatus	5.57	52	0.76	
Lophius vomerinus	4.45	2	0.61	6453
Notacanthus sexspinis	4.35	122	0.59	
Photichthys argenteus	2.61	209	0.36	
Shrimps, small, non comm.	2.44	784	0.33	
Lithodes ferox	2.36	2	0.32	
Ebinania costaecanarie	2.26	70	0.31	
GONOSTOMATIDAE	1.39	122	0.19	
Myxine capensis	1.39	17	0.19	
Careproctus grisellea	0.35	17	0.05	
Psychrolutes macrocephalus	0.35	17	0.05	
Neoscolepis macrolepidotus	0.35	35	0.05	
Total	733.38		100.01	

PROJECT STATION:1938
 DATE:24/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2531 Long E 1340
 start stop duration
 TIME :07:09:31 07:39:19 30 (min) Purpose code: 3
 LOG :2940.44 2941.70 1.26 Area code : 1
 FDEPTH: 411 428 GearCond.code:
 BDEPTH: 411 428 Validity code:
 Towing dir: 350° Wire out:1200 m Speed: 31 kn*10
 Sorted: 184 Kg Total catch: 413.92 CATCH/HOUR: 827.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	247.00	438	29.84	6460
Hoplostethus cadenati	154.50	6728	18.66	
Ebinania costaecanarie	100.50	5454	12.14	
Raja confundens	75.70	50	9.14	
Nezumia sp.	72.60	270	8.77	
Todarodes sagittatus	31.96	46	3.86	
Coelorinchus fasciatus	26.40	450	3.19	
Merluccius paradoxus, male	23.00	48	2.78	6459
Bathyracoconger vicinus	15.60	16	1.88	
Lophius vomerinus	15.60	6	1.88	6458
Helicolenus dactylopterus	14.56	226	1.76	
Deepwater fish mixture	12.16		1.47	
Bathyraja smithii	7.60	2	0.92	
Galeus polli	7.06	76	0.85	
Selachophidium guentheri	5.40	390	0.65	
Notacanthus sexspinis	5.40	240	0.65	
C R A B S	3.76	90	0.45	
Yarrella blackfordi	3.16	256	0.38	
Photichthys argenteus	2.26	226	0.27	
MYCTOPHIDAE	1.66	780	0.20	
Shrimps, small, non comm.	0.90	270	0.11	
Epigonus denticulatus	0.90	60	0.11	
NEMICHTHYIDAE	0.16	16	0.02	
Total	827.84		99.98	

PROJECT STATION:1936
 DATE:23/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2603 Long E 1339
 start stop duration
 TIME :21:08:10 21:38:26 30 (min) Purpose code: 3
 LOG :2878.79 2880.38 1.59 Area code : 1
 FDEPTH: 533 542 GearCond.code:
 BDEPTH: 533 542 Validity code:
 Towing dir: 5° Wire out:1500 m Speed: 31 kn*10
 Sorted: 148 Kg Total catch: 299.75 CATCH/HOUR: 599.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	182.50	182	30.44	6454
Hoplostethus cadenati	76.58	4704	12.77	
Etmopterus brachyurus	71.96	406	12.00	
Trachyrincus scabrus	58.38	336	9.74	
Lophius vomerinus	55.90	6	9.32	6456
Nezumia sp.	40.18	980	6.70	
Raja confundens	36.54	28	6.10	
Selachophidium guentheri	21.14	280	3.53	
Notacanthus sexspinis	13.86	224	2.31	
Yarrella blackfordi	12.88	1106	2.15	
Coelorinchus fasciatus	9.80	84	1.63	
Merluccius paradoxus, male	6.20	8	1.03	6455
Galeus polli	5.60	28	0.93	
MYCTOPHIDAE	4.48	574	0.75	
Shrimps, small, non comm.	1.96	532	0.33	
GONOSTOMATIDAE	0.84	70	0.14	
STOMIIDAE	0.70	28	0.12	
Total	599.50		99.99	

PROJECT STATION:1939
 DATE:24/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2527 Long E 1336
 start stop duration
 TIME :09:03:37 09:33:52 30 (min) Purpose code: 3
 LOG :2946.48 2947.86 1.38 Area code : 1
 FDEPTH: 519 525 GearCond.code:
 BDEPTH: 519 525 Validity code:
 Towing dir: 5° Wire out:1450 m Speed: 30 kn*10
 Sorted: 107 Kg Total catch: 450.26 CATCH/HOUR: 900.52

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Nezumia sp.	283.40	5088	31.47	
Trachyrincus scabrus	209.30	858	23.24	
Selachophidium guentheri	120.90	2548	13.43	
Merluccius paradoxus, female	105.20	96	11.68	6461
Deania calcea	55.64	26	6.18	
Lophius vomerinus	39.70	8	4.41	6463
Raja confundens	25.22	26	2.80	
Schedophilus huttoni	17.68	26	1.96	
Lithodes ferox	8.70	14	0.97	
Epigonus telescopus	7.54	130	0.84	
Galeus polli	6.50	52	0.72	
Hoplostethus cadenati	5.98	260	0.66	
Yarrella blackfordi	4.68	260	0.52	
Notacanthus sexspinis	4.16	156	0.46	
Merluccius paradoxus, male	2.80	4	0.31	6462
Ebinania costaecanarie	2.08	26	0.23	
Bathyracoconger vicinus	0.52	26	0.06	
GONOSTOMATIDAE	0.52	52	0.06	
Total	900.52		100.00	

PROJECT STATION:1937
 DATE:24/ 1/97 GEAR TYPE: BT No:3 POSITION:Lat S 2529 Long E 1345
 start stop duration
 TIME :04:20:00 04:50:00 30 (min) Purpose code: 3
 LOG :2930.40 2931.70 1.30 Area code : 1
 FDEPTH: 338 340 GearCond.code:
 BDEPTH: 338 340 Validity code:
 Towing dir: 350° Wire out:1000 m Speed: 31 kn*10
 Sorted: 138 Kg Total catch: 447.00 CATCH/HOUR: 894.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	677.68	2124	75.80	6464
Merluccius capensis, female	57.80	26	6.47	6460
Helicolenus dactylopterus	47.74	396	5.34	
Deepwater fish mixture	26.74		2.99	
Merluccius paradoxus, male	25.80	78	2.89	6463
Merluccius paradoxus, female	15.90	10	1.78	6461
Coelorinchus fasciatus	11.78	326	1.32	
Nezumia sp.	9.04	464	1.01	
Torpedo nobiliana	6.40	2	0.72	
Merluccius capensis, male	4.24	8	0.47	6462
Schedophilus huttoni	4.00	2	0.45	
Gerypteris capensis	2.40	2	0.27	6457
Lophius vomerinus	1.52	2	0.17	6458
Epigonus denticulatus	1.12	52	0.13	
Galeus polli	0.68	8	0.08	
Squilla acuelata calmani	0.60	44	0.07	
C R A B S	0.18	8	0.02	
Total	893.62		99.98	

PROJECT STATION:1940
 DATE:24/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2524 Long E 1350
 start stop duration
 TIME :13:05:57 13:36:07 30 (min) Purpose code: 3
 LOG :2967.31 2968.91 1.60 Area code : 1
 FDEPTH: 280 283 GearCond.code:
 BDEPTH: 280 283 Validity code:
 Towing dir: 350° Wire out: 900 m Speed: 32 kn*10
 Sorted: 193 Kg Total catch: 249.27 CATCH/HOUR: 498.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	197.70	114	39.66	6464
Sufflogobius bibarbatatus	80.64	10776	16.18	
Merluccius capensis, female	37.20	106	7.46	6466
Lophius vomerinus	28.70	24	5.76	6470
Coelorinchus fasciatus	27.90	870	5.60	
Merluccius paradoxus, female	26.50	134	5.32	6468
Merluccius capensis, male	21.50	52	4.31	6467
Galeus polli	18.18	186	3.65	
Lampantodes hectoris	13.62	5372	2.73	
Squilla acuelata calmani	13.44	804	2.70	
Merluccius capensis, male	10.40	8	2.09	6465
Gerypteris capensis	5.90	6	1.18	6471
Todarodes sagittatus	5.30	16	1.06	
Raja confundens	5.22	18	1.05	
Maurolicus muelleri	2.94	1470	0.59	
Helicolenus dactylopterus	1.74	12	0.35	
Lepidopus caudatus	0.90	12	0.18	
Merluccius paradoxus, male	0.70	4	0.14	6469
Bathynectes piperitus	0.06	6	0.01	
Total	498.54		100.02	

PROJECT STATION:1941
 DATE:24/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2516
 start stop duration Long E 1401
 TIME :15:53:00 16:23:00 30 (min) Purpose code: 3
 LOG :2984.60 2986.30 1.70 Area code : 1
 FDEPTH: 202 200 GearCond.code:
 BDEPTH: 202 200 Validity code:
 Towing dir: 350° Wire out: 600 m Speed: 31 kn*10

Sorted: 130 Kg Total catch: 499.06 CATCH/HOUR: 998.12

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	499.78	3064	50.07	6475
Merluccius capensis, female	352.46	1632	35.31	6476
Merluccius capensis, female	44.90	34	4.50	6474
Merluccius capensis, male	27.40	26	2.75	6473
Sufflogobius bibarbatatus	21.20	6016	2.12	
Coelorinchus coelorhinc. polli	17.38	478	1.74	
MYCTOPHIDAE	16.00	8828	1.60	
Raja confundens	5.50	2	0.55	
Todarodes sagittatus	4.36	6	0.44	
Lophius vomerinus	3.68	4	0.37	6472
Chelidonichthys capensis	2.82	4	0.28	
Lepidopus caudatus	2.22	32	0.22	
Merluccius capensis, juveniles	0.42	22	0.04	6477
Total	998.12		99.99	

PROJECT STATION:1944
 DATE:24/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2516
 start stop duration Long E 1337
 TIME :23:23:57 23:54:05 30 (min) Purpose code: 3
 LOG :3021.33 3022.78 1.45 Area code : 1
 FDEPTH: 477 482 GearCond.code:
 BDEPTH: 477 482 Validity code:
 Towing dir: 355° Wire out:1350 m Speed: 30 kn*10

Sorted: 140 Kg Total catch: 299.47 CATCH/HOUR: 598.94

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	159.60	150	26.65	6489
Nezumia sp.	120.00	6924	20.04	
Hoplostethus cadenati	66.24	2722	11.06	
Lophius vomerinus	53.40	4	8.92	6491
Raja confundens	40.32	24	6.73	
Selachophidium guentheri	39.96	960	6.67	
Symbolophorus boops	22.44	2040	3.75	
Todarodes sagittatus	19.08	48	3.19	
Notacanthus sexspinis	18.96	612	3.17	
Yarella blackfordi	15.60	504	2.60	
Trachyrincus scabrus	7.20	60	1.20	
Raja straeleni	6.72	12	1.12	
Galeus polli	6.00	72	1.00	
Helicolenus dactylopterus	6.00	36	1.00	
OPISTHOTEUTHIDAE	5.64	12	0.94	
Epigonus denticulatus	3.72	132	0.62	
Merluccius paradoxus, male	2.30	2	0.38	6490
Shrimps, small, non comm.	2.16	1080	0.36	
Ebinania costaeacanarie	1.68	36	0.28	
Epigonus telescopus	0.96	12	0.16	
GONOSTOMATIDAE	0.72	60	0.12	
Neosopelus macrolepidotus	0.24	12	0.04	
Total	598.94		100.00	

PROJECT STATION:1942
 DATE:24/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2521
 start stop duration Long E 1347
 TIME :18:49:13 19:20:32 31 (min) Purpose code: 3
 LOG :3002.76 3004.43 1.67 Area code : 1
 FDEPTH: 302 295 GearCond.code:
 BDEPTH: 302 295 Validity code:
 Towing dir: 5° Wire out: 900 m Speed: 31 kn*10

Sorted: 127 Kg Total catch: 224.45 CATCH/HOUR: 434.42

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	87.87	631	20.23	
Coelorinchus fasciatus	63.10	2251	14.53	
Merluccius capensis, female	61.94	72	14.26	6481
Merluccius paradoxus, female	54.39	190	12.52	6483
Squilla acuelata calmani	48.00	1945	11.05	
Deepwater fish mixture	45.83		10.55	
Lophius vomerinus	33.77	8	7.77	6479
Genypterus capensis	17.23	17	3.97	6478
Merluccius capensis, male	10.94	12	2.52	6480
Merluccius paradoxus, male	4.55	12	1.05	6482
Galeus polli	2.86	31	0.66	
Nezumia sp.	2.09	139	0.48	
Chlorophthalmus atlanticus	1.08	62	0.25	
Epigonus denticulatus	0.77	39	0.18	
Total	434.42		100.02	

PROJECT STATION:1945
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2516
 start stop duration Long E 1335
 TIME :01:47:49 02:17:19 30 (min) Purpose code: 3
 LOG :3029.78 3031.24 1.46 Area code : 1
 FDEPTH: 557 557 GearCond.code:
 BDEPTH: 557 557 Validity code:
 Towing dir: 360° Wire out:1550 m Speed: 28 kn*10

Sorted: 235 Kg Total catch: 937.31 CATCH/HOUR: 1874.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Hoplostethus cadenati	516.60	20664	27.56	
Merluccius paradoxus, female	398.40	352	21.25	6492
Deania calcea	271.74	168	14.50	
Nezumia sp.	257.04	3486	13.71	
Selachophidium guentheri	108.36	1596	5.78	
Raja confundens	99.54	84	5.31	
Raja straeleni	66.78	42	3.56	
Notacanthus sexspinis	47.46	1176	2.53	
Epigonus telescopus	44.10	420	2.35	
Deania profundorum	28.98	42	1.55	
Trachyrincus scabrus	13.44	84	0.72	
MYCTOPHIDAE	10.08	1512	0.54	
Yarella blackfordi	9.66	420	0.52	
Merluccius paradoxus, male	1.60	2	0.09	6493
GONOSTOMATIDAE	0.84	42	0.04	
Total	1874.62		100.01	

PROJECT STATION:1943
 DATE:24/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2520
 start stop duration Long E 1341
 TIME :21:08:20 21:38:22 30 (min) Purpose code: 3
 LOG :3013.07 3014.70 1.63 Area code : 1
 FDEPTH: 357 347 GearCond.code:
 BDEPTH: 357 347 Validity code:
 Towing dir: 5° Wire out:1050 m Speed: 31 kn*10

Sorted: 216 Kg Total catch: 531.95 CATCH/HOUR: 1063.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	657.56	1782	61.81	6487
Hoplostethus cadenati	83.00	2730	7.80	
Helicolenus dactylopterus	56.66	352	5.33	
Nezumia sp.	49.48	2090	4.65	
Deepwater fish mixture	32.46		3.05	
Merluccius paradoxus, male	31.92	86	3.00	6488
Coelorinchus fasciatus	29.52	702	2.77	
Squilla acuelata calmani	26.06	1166	2.45	
Merluccius paradoxus, female	25.40	16	2.39	6484
Notacanthus sexspinis	18.04	472	1.70	
Lophius vomerinus	16.10	4	1.51	6485
Symbolophorus boops	9.64	904	0.91	
Genypterus capensis	9.50	6	0.89	6486
Galeus polli	7.18	102	0.67	
Epigonus denticulatus	2.92	74	0.27	
Etmopterus pusillus	2.66	6	0.25	
OPISTHOTEUTHIDAE	2.44	10	0.23	
Selachophidium guentheri	1.12	96	0.11	
Brama brama	0.78	2	0.07	
Ebinania costaeacanarie	0.70	10	0.07	
Shrimps, small, non comm.	0.48	144	0.05	
GONOSTOMATIDAE	0.22	10	0.02	
Chlorophthalmus atlanticus	0.06	6	0.01	
Total	1063.90		100.01	

PROJECT STATION:1946
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2507
 start stop duration Long E 1334
 TIME :04:06:00 04:36:00 30 (min) Purpose code: 3
 LOG :3038.30 3039.80 1.50 Area code : 1
 FDEPTH: 597 597 GearCond.code:
 BDEPTH: 597 597 Validity code:
 Towing dir: 360° Wire out:1650 m Speed: 30 kn*10

Sorted: 104 Kg Total catch: 367.62 CATCH/HOUR: 735.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Deania profundorum	206.26	110	28.05	
Nezumia sp.	134.76		18.33	
Merluccius paradoxus, female	91.00	78	12.38	6494
Raja confundens	74.26	100	10.10	
Selachophidium guentheri	65.46		8.90	
Centroscymnus crepidater	64.36	56	8.75	
Hoplostethus cadenati	34.44	3080	4.68	
Malacocephalus laevis	22.88	88	3.11	
Todarodes sagittatus	10.68	22	1.45	
Yarella blackfordi	9.36	1122	1.27	
Galeus polli	8.92	78	1.21	
Notacanthus sexspinis	7.60	198	1.03	
Alloctytus verrucosus	1.76	22	0.24	
Alloctytus verrucosus	1.76	22	0.24	
Photichthys argenteus	1.66	100	0.23	
Shrimps, small, non comm.	1.22	220	0.17	
Symbolophorus boops	0.56	12	0.08	
Neosopelus macrolepidotus	0.34	34	0.05	
Total	737.28		100.27	

PROJECT STATION:1947
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2502 Long E 1336
 start stop duration
 TIME :06:25:46 06:56:37 31 (min) Purpose code: 3
 LOG :3044.53 3045.91 1.38 Area code : 1
 FDEPTH: 513 512 GearCond.code:
 BDEPTH: 513 512 Validity code:
 Towing dir: 360° Wire out:1500 m Speed: 30 kn*10
 Sorted: 128 Kg Total catch: 258.06 CATCH/HOUR: 499.47

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius paradoxus, female	132.48	124	26.52	6495
Nezumia sp.	109.74	1618	21.97	
Selachophidium guentheri	101.61	1639	20.34	
Raja confundens	36.39	60	7.23	
Notacanthus sexspinis	24.85	766	4.98	
Ebinania costaecanarie	23.11	35	4.63	
Raja straeleni	11.13	12	2.23	
Galeus polli	10.92	151	2.29	
Epigonus telescopus	9.75	70	1.95	
Bassanago albescens	7.43	12	1.49	
Etmopterus brachyurus	6.62	12	1.33	
Moroteuthis rosoni	5.81	2	1.16	
Bathyraja smithii	4.65	4	0.93	
Epigonus denticulatus	4.18	151	0.84	
Schedophilus huttoni	3.48	4	0.70	
Lithodes ferox	3.10	4	0.62	
Yarrella blackfordi	2.09	314	0.42	
Photichthys argenteus	1.74	105	0.35	
Todarodes sagittatus	0.39	10	0.08	
Total	499.47	100.02		

PROJECT STATION:1948
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2500 Long E 1339
 start stop duration
 TIME :08:30:39 09:00:08 29 (min) Purpose code: 3
 LOG :3051.46 3052.93 1.47 Area code : 1
 FDEPTH: 439 441 GearCond.code:
 BDEPTH: 439 441 Validity code:
 Towing dir: 360° Wire out:1200 m Speed: 30 kn*10
 Sorted: 240 Kg Total catch: 286.47 CATCH/HOUR: 592.70

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius paradoxus, female	323.90	335	54.65	6497
Krill	66.21		11.17	
Raja confundens	46.14	33	7.78	
Galeus polli	40.10	503	6.77	
Merluccius paradoxus, male	26.59	33	4.49	6496
Nezumia sp.	16.66	720	2.81	
Bathyraja smithii	14.07	17	2.37	
Selachophidium guentheri	12.17	579	2.05	
Ebinania costaecanarie	8.65	83	1.46	
Centrophorus granulosus	7.34	2	1.24	
Todarodes sagittatus	7.03	17	1.19	
Helicolenus dactylopterus	6.58	58	1.11	
Neoharriotta pinnata	4.34	4	0.73	
Schedophilus huttoni	4.03	2	0.68	
Notacanthus sexspinis	3.62	130	0.61	
Epigonus denticulatus	2.54	114	0.43	
GONOSTOMATIDAE	1.24	124	0.21	
Symbolophorus boops	0.72	52	0.12	
Coelorinchus fasciatus	0.72	10	0.12	
S H R I M P S	0.10	17	0.02	
Total	592.75	100.01		

PROJECT STATION:1949
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2501 Long E 1346
 start stop duration
 TIME :10:46:20 11:02:36 16 (min) Purpose code: 3
 LOG :3062.56 3063.33 0.77 Area code : 1
 FDEPTH: 286 292 GearCond.code: 9
 BDEPTH: 286 292 Validity code:
 Towing dir: 5° Wire out: 850 m Speed: 25 kn*10
 Sorted: 237 Kg Total catch: 996.40 CATCH/HOUR: 3736.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius capensis, female	2159.03	6266	57.78	6502
Merluccius capensis, male	628.50	1740	16.82	6503
Krill	343.05		9.18	
Helicolenus dactylopterus	311.55	2831	6.34	
Merluccius capensis, female	100.88	71	2.70	6498
Merluccius capensis, male	38.81	26	1.04	6499
Squilla aculeata calmani	36.60	1759	0.98	
Sufflogobius bibarbatatus	35.33	5130	0.95	
Coelorinchus fasciatus	32.59	923	0.87	
Todarodes sagittatus	25.01	38	0.67	
Lampanyctodes hectoris	8.51	4001	0.23	
Galeus polli	7.05	90	0.19	
Lophius vomerinus	5.59	4	0.15	6500
Lepidopus caudatus	1.80	19	0.05	
Genypterus capensis	1.31	4	0.04	6501
Maurollicus muelleri	0.90	1530	0.02	
Total	3736.51	100.01		

PROJECT STATION:1950
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2459 Long E 1352
 start stop duration
 TIME :12:33:24 13:03:35 30 (min) Purpose code: 3
 LOG :3071.72 3073.16 1.44 Area code : 2
 FDEPTH: 210 218 GearCond.code:
 BDEPTH: 210 218 Validity code:
 Towing dir: 360° Wire out: 650 m Speed: 30 kn*10
 Sorted: 163 Kg Total catch: 814.09 CATCH/HOUR: 1628.18

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Trachurus capensis	916.50	4206	56.29	6508
Merluccius capensis, female	487.00	2570	29.91	6505
Merluccius capensis, male	190.00	1140	11.67	6506
Sufflogobius bibarbatatus	29.00	3412	1.78	
Coelorinchus fasciatus	4.70	110	0.29	
Merluccius capensis, juveniles	0.50	30	0.03	6507
Lophius vomerinus	0.48	2	0.03	6504
Total	1628.18	100.00		

PROJECT STATION:1951
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2458 Long E 1412
 start stop duration
 TIME :15:48:00 16:18:00 30 (min) Purpose code: 3
 LOG :3096.10 3097.70 1.60 Area code : 2
 FDEPTH: 165 164 GearCond.code:
 BDEPTH: 165 164 Validity code:
 Towing dir: 360° Wire out: 550 m Speed: 30 kn*10
 Sorted: 82 Kg Total catch: 600.00 CATCH/HOUR: 1200.00

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius capensis, female	720.00	3324	60.00	6510
Merluccius capensis, male	324.00	2038	27.00	6509
Sufflogobius bibarbatatus	132.00	23178	11.00	
Merluccius capensis, juveniles	24.00	708	2.00	6511
Chrysaora sp.	0.00	364		
Total	1200.00	100.00		

PROJECT STATION:1952
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2440 Long E 1352
 start stop duration
 TIME :19:39:00 20:09:00 30 (min) Purpose code: 3
 LOG :3122.80 3124.30 1.50 Area code : 2
 FDEPTH: 242 247 GearCond.code:
 BDEPTH: 242 247 Validity code:
 Towing dir: 360° Wire out: 800 m Speed: 30 kn*10
 Sorted: 89 Kg Total catch: 373.62 CATCH/HOUR: 747.24

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius capensis, female	388.06	1560	51.93	6518
Merluccius capensis, male	198.26	990	26.53	6517
Sufflogobius bibarbatatus	59.80	4244	8.00	
Lophius vomerinus	38.10	46	5.10	6512
Merluccius capensis, female	18.10	20	2.42	6516
Deepwater fish mixture	16.26		2.18	
Coelorinchus fasciatus	9.62	300	1.29	
Austroglossus microlepis	5.70	14	0.76	6514
Merluccius capensis, male	4.90	4	0.66	6515
Brama brama	3.52	2	0.47	
Todarodes sagittatus	2.42	4	0.32	
Trachurus capensis	1.98	12	0.26	6513
Squilla sp.	0.52	14	0.07	
Total	747.24	99.99		

PROJECT STATION:1953
 DATE:25/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2440 Long E 1342
 start stop duration
 TIME :21:51:55 22:20:57 29 (min) Purpose code: 3
 LOG :3134.79 3136.40 1.61 Area code : 2
 FDEPTH: 371 373 GearCond.code:
 BDEPTH: 371 373 Validity code:
 Towing dir: 340° Wire out:1150 m Speed: 32 kn*10
 Sorted: 259 Kg Total catch: 341.41 CATCH/HOUR: 706.37

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius paradoxus, female	396.41	792	56.12	6519
Helicolenus dactylopterus	79.86	1316	11.31	
Nezumia sp.	52.55	2816	7.44	
Coelorinchus fasciatus	36.50	761	5.17	
Merluccius paradoxus, male	31.14	66	4.41	6520
Squilla aculeata calmani	30.87	1684	4.37	
Centrolophus niger	24.52	2	3.47	
Lophius vomerinus	11.79	6	1.67	6521
Genypterus capensis	10.45	6	1.48	6522
Symbolophorus boops	8.36	1492	1.18	
Notacanthus sexspinis	8.03	240	1.14	
S H R I M P S	4.72	1415	0.67	
Brama brama	3.48	2	0.49	
Lampanyctodes hectoris	2.23	1548	0.32	
Bathynectes piperitus	2.15	91	0.30	
Galeus polli	1.99	58	0.28	
Ebinania costaecanarie	0.83	50	0.12	
Selachophidium guentheri	0.33	25	0.05	
Maurollicus muelleri	0.17	166	0.02	
Total	706.38	100.01		

PROJECT STATION:1954
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2439 Long E 1336
 start stop duration
 TIME :00:03:24 00:33:12 30 (min) Purpose code: 3
 LOG :3144.99 3146.50 1.51 Area code : 2
 FDEPTH: 406 399 GearCond.code:
 BDEPTH: 406 399 Validity code:
 Towing dir: 360° Wire out:1250 m Speed: 30 kn*10
 Sorted: 229 Kg Total catch: 425.64 CATCH/HOUR: 851.28

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight numbers				
Merluccius paradoxus, female	337.80	502	39.68	6523
Nezumia sp.	170.30	3334	20.01	
Helicolenus dactylopterus	91.00	638	10.69	
Selachophidium guentheri	73.20	1990	8.60	
Raja confundens	28.22	14	3.32	
Coelorinchus fasciatus	25.36	390	2.98	
Bassanago albescens	20.16	26	2.37	
Genypterus capensis	16.40	10	1.93	6526
Lophius vomerinus	16.30	10	1.91	6525
Merluccius paradoxus, male	16.20	28	1.90	6524
Schedophilus huttoni	16.12	14	1.89	
Todarodes sagittatus	12.48	14	1.47	
Symbolophorus boops	10.80	1560	1.27	
Notacanthus sexspinis	5.08	118	0.60	
S H R I M P S	3.64	1184	0.43	
Ebinania costaecanarie	3.38	40	0.40	
Galeus polli	1.82	14	0.21	
Trachyrincus scabrus	1.44	26	0.17	
Bathynectes piperitus	1.18	52	0.14	
Epigonus denticulatus	0.40	14	0.05	
Total	851.28	100.02		

PROJECT STATION:1955
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2426 Long E 1327
 start stop duration
 TIME :03:02:14 03:32:16 30 (min) Purpose code: 3
 LOG :3162.90 3164.40 1.50 Area code : 2
 FDEPTH: 380 376 GearCond.code:
 BDEPTH: 380 376 Validity code:
 Towing dir: 350° Wire out:1200 m Speed: 30 kn*10

Sorted: 50 Kg Total catch: 50.55 CATCH/HOUR: 101.10

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	48.82 52	48.29	6527
Coelorinchus fasciatus	18.36 962	18.16	
Nezumia sp.	16.50 820	16.32	
Genypterus capensis	6.36 2	6.29	6528
Raja confundens	4.90 2	4.85	
Helicolenus dactylopterus	2.92 20	2.89	
Selachophidium guentheri	1.68 70	1.66	
Shrimps, small, non comm.	0.82 220	0.81	
Epigonus denticulatus	0.48 34	0.47	
Ebinania costaecanarie	0.08 12	0.08	
Chlorophthalmus atlanticus	0.06 2	0.06	
Trachyrincus scabrus	0.06 2	0.06	
Symbolophorus boops	0.04 6	0.04	
Maurolicus muelleri	0.02 128	0.02	
Total	101.10	100.00	

PROJECT STATION:1956
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2421 Long E 1332
 start stop duration
 TIME :05:01:17 05:30:30 29 (min) Purpose code: 3
 LOG :3170.55 3171.97 1.42 Area code : 2
 FDEPTH: 337 333 GearCond.code:
 BDEPTH: 337 333 Validity code:
 Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: 200 Kg Total catch: 416.61 CATCH/HOUR: 861.95

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	224.13 1533	26.00	6535
Helicolenus dactylopterus	176.07 1628	20.43	
Merluccius paradoxus, female	128.48 108	14.91	6532
Genypterus capensis	67.55 27	7.84	6529
Coelorinchus sp.	51.39 505	5.96	
Merluccius paradoxus, male	41.88 124	4.86	6534
Nezumia sp.	35.21 693	4.08	
Centrolophus niger	34.76 14	4.03	
Epigonus denticulatus	32.36 1142	3.75	
Merluccius capensis, female	24.41 10	2.83	6530
Schedophilus huttoni	21.72 10	2.52	
Lophius vomerinus	9.62 10	1.12	6533
MELANOCEIIDAE	6.00 2816	0.70	
Merluccius paradoxus, male	3.41 4	0.40	6531
Selachophidium guentheri	3.33 172	0.39	
Shrimps, small, non comm.	1.24 304	0.14	
C R A B S	0.37 10	0.04	
Total	861.93	100.00	

PROJECT STATION:1957
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2421 Long E 1342
 start stop duration
 TIME :07:35:30 08:04:36 29 (min) Purpose code: 3
 LOG :3183.30 3184.64 1.34 Area code : 2
 FDEPTH: 322 316 GearCond.code:
 BDEPTH: 322 316 Validity code:
 Towing dir: 350° Wire out:1000 m Speed: 30 kn*10

Sorted: 211 Kg Total catch: 343.99 CATCH/HOUR: 711.70

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	220.66 912	31.00	6541
Merluccius capensis, female	118.03 77	16.58	6537
Helicolenus dactylopterus	72.00 3652	10.12	
Trachurus capensis	71.90 275	10.10	6543
Schedophilus huttoni	38.90 19	5.47	
Merluccius capensis, female	29.17 43	4.10	6539
Todarodes sagittatus	29.07 35	4.08	
Deepwater fish mixture	28.30	3.98	
Coelorinchus fasciatus	17.81 401	2.50	
Merluccius capensis, male	17.79 10	2.50	6536
Merluccius paradoxus, male	16.45 74	2.31	6540
Krill	12.41 14	1.74	
Centrolophus niger	12.31 4	1.73	
Nezumia sp.	10.99 459	1.54	
Genypterus capensis	10.76 8	1.51	6542
Merluccius capensis, male	2.92 6	0.41	6538
Lepidopus caudatus	0.93 12	0.13	
Squilla acuelata calmani	0.81 56	0.11	
Galeus polli	0.19 6	0.03	
Chlorophthalmus atlanticus	0.19 12	0.03	
Epigonus denticulatus	0.12 6	0.02	
Total	711.71	99.99	

PROJECT STATION:1958
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2422 Long E 1355
 start stop duration
 TIME :10:13:33 10:43:34 30 (min) Purpose code: 3
 LOG :3198.37 3199.79 1.42 Area code : 2
 FDEPTH: 256 259 GearCond.code:
 BDEPTH: 256 259 Validity code:
 Towing dir: 360° Wire out: 800 m Speed: 28 kn*10

Sorted: 112 Kg Total catch: 392.34 CATCH/HOUR: 784.68

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius capensis, female	304.00 1184	38.74	6546
Sufflogobius bibarbatatus	237.68 17968	30.29	
Merluccius capensis, male	156.00 768	19.88	6547
Krill	39.12 4	4.99	
Lophius vomerinus	25.00 84	3.19	6545
Merluccius capensis, female	10.80 4	1.38	6544
Todarodes sagittatus	7.04 16	0.90	
Lampanyctodes hectortis	2.80 1680	0.36	
Coelorinchus fasciatus	2.24 72	0.29	
Total	784.68	100.02	

PROJECT STATION:1959
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420 Long E 1402
 start stop duration
 TIME :12:10:00 12:10:00 (min) Purpose code: 3
 LOG :3208.32 3208.32 Area code : 2
 FDEPTH: 179 179 GearCond.code: 9
 BDEPTH: 179 179 Validity code: 9
 Towing dir: 360° Wire out: 550 m Speed: kn*10

Sorted: 24 Kg Total catch: 47.20 CATCH/HOUR: 2832.00

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius capensis	2832.00 14520	100.00	6548
Chrysaora sp.	0.00 162000		
Total	2832.00	100.00	

PROJECT STATION:1960
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2400 Long E 1346
 start stop duration
 TIME :19:14:41 19:43:32 29 (min) Purpose code: 3
 LOG :3264.91 3266.23 1.32 Area code : 2
 FDEPTH: 251 256 GearCond.code:
 BDEPTH: 251 256 Validity code:
 Towing dir: 250° Wire out: 800 m Speed: 31 kn*10

Sorted: 67 Kg Total catch: 115.64 CATCH/HOUR: 239.26

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Sufflogobius bibarbatatus	90.10 9108	37.66	
Merluccius capensis, female	67.86 335	28.36	6550
Merluccius capensis, male	39.35 228	16.45	6549
Coelorinchus fasciatus	12.62 393	5.27	
Helicolenus dactylopterus	10.76 1479	4.50	
Squilla acuelata calmani	9.10 466	3.80	
Lophius vomerinus	6.27 21	2.62	6551
Todaropsis eblanae	1.03 21	0.43	
Solenocera africana	0.93 228	0.39	
Chlorophthalmus atlanticus	0.52 103	0.22	
Trachurus capensis	0.50 2	0.21	6552
C R A B S	0.21 10	0.09	
Total	239.25	100.00	

PROJECT STATION:1961
 DATE:26/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2359 Long E 1336
 start stop duration
 TIME :21:13:07 21:42:48 30 (min) Purpose code: 3
 LOG :3273.41 3274.94 1.53 Area code : 2
 FDEPTH: 269 268 GearCond.code:
 BDEPTH: 269 268 Validity code:
 Towing dir: 360° Wire out: 850 m Speed: 31 kn*10

Sorted: 126 Kg Total catch: 314.48 CATCH/HOUR: 628.96

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Trachurus capensis	337.50 1240	53.66	6555
Merluccius capensis, female	103.50 540	16.46	6553
Merluccius capensis, male	82.50 450	13.12	6554
Chlorophthalmus atlanticus	31.36 2052	4.99	
Sufflogobius bibarbatatus	26.76 4956	4.25	
Coelorinchus fasciatus	20.00 610	3.18	
Helicolenus dactylopterus	16.76 2394	2.66	
Todarodes sagittatus	2.86 6	0.45	
Solenocera africana	2.60 726	0.41	
Galeus polli	1.90 66	0.30	
Squilla acuelata calmani	1.30 66	0.21	
Lophius vomerinus	0.72 6	0.11	6556
Todaropsis eblanae	0.70 16	0.11	
Lepidopus caudatus	0.50 6	0.08	
Total	628.96	99.99	

PROJECT STATION:1962
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2400 Long E 1322
 start stop duration
 TIME :23:53:18 00:23:35 30 (min) Purpose code: 3
 LOG :3287.74 3289.28 1.54 Area code : 2
 FDEPTH: 302 304 GearCond.code:
 BDEPTH: 302 304 Validity code:
 Towing dir: 355° Wire out: 900 m Speed: 30 kn*10

Sorted: 127 Kg Total catch: 354.85 CATCH/HOUR: 709.70

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	388.80 17292	54.78	
Merluccius paradoxus, female	92.60 418	13.05	6561
Chlorophthalmus atlanticus	79.84 2994	11.25	
Merluccius capensis, female	52.00 124	7.33	6557
Coelorinchus fasciatus	40.80 1024	5.75	
Merluccius capensis, male	21.90 64	3.09	6558
Genypterus capensis	12.40 8	1.75	6559
Merluccius paradoxus, male	8.20 24	1.16	6562
Epigonus denticulatus	8.00 384	1.13	
Squilla acuelata calmani	2.08 80	0.29	
Maurolicus muelleri	1.12 704	0.16	
Lophius vomerinus	0.84 2	0.12	6560
Bathynectes piperitus	0.64 16	0.09	
S H R I M P S	0.48 128	0.07	
Total	709.70	100.02	

PROJECT STATION:1963
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2359 Long E 1316
 start stop duration
 TIME :01:50:17 02:20:12 30 (min) Purpose code: 3
 LOG :3295.46 3297.06 1.60 Area code : 2
 FDEPTH: 362 363 GearCond.code:
 BDEPTH: 362 363 Validity code:
 Towing dir: 350° Wire out:1100 m Speed: 30 kn*10

Sorted: 203 Kg Total catch: 257.54 CATCH/HOUR: 515.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	330.40	416	64.15	6563
Helicolenus dactylopterus	68.10	500	13.22	
Coelorrinchus fasciatus	55.50	1072	10.78	
Selachophidium guentheri	19.20	660	3.73	
Merluccius paradoxus, male	17.30	24	3.36	6564
Nezumia sp.	11.10	624	2.16	
S H R I M P S	4.50	1362	0.87	
Genypterus capensis	2.30	2	0.45	6565
Lophius vomerinus	1.88	2	0.36	6566
Epigonus denticulatus	1.56	42	0.30	
Notacanthus sexspinis	1.50	36	0.29	
Lampanyctodes hectoris	1.14	546	0.22	
Squilla aculeata calmani	0.42	12	0.08	
Galeus polli	0.18	6	0.03	
Total	515.08		100.00	

PROJECT STATION:1966
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2425 Long E 1339
 start stop duration
 TIME :14:18:19 14:47:42 29 (min) Purpose code: 2
 LOG :3355.14 3356.56 1.42 Area code : 2
 FDEPTH: 346 342 GearCond.code:
 BDEPTH: 346 342 Validity code:
 Towing dir: 360° Wire out:1100 m Speed: 30 kn*10

Sorted: 137 Kg Total catch: 328.60 CATCH/HOUR: 679.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	187.55	4078	27.59	
Merluccius paradoxus, female	147.72	434	21.73	6572
Coelorrinchus fasciatus	128.17	1922	18.85	
Nezumia sp.	58.37	1767	8.59	
Schedophilus huttoni	35.92	14	5.28	
Krill	32.15	2897	4.73	
Trachurus capensis	27.72	99	4.08	6574
Lophius vomerinus	16.76	4	2.47	6575
Merluccius paradoxus, male	6.72	27	0.99	6573
Merluccius capensis, female	6.50	4	0.96	6577
Shrimps, small, non comm.	6.37	2028	0.94	
Todarodes sagittatus	4.72	4	0.69	
Genypterus capensis	4.14	4	0.61	6576
Yarella blackfordi	3.91	14	0.58	
Merluccius capensis, male	3.83	2	0.56	6578
Epigonus denticulatus	3.33	145	0.49	
Lampanyctodes hectoris	2.46	1506	0.36	
Squilla aculeata calmani	2.32	130	0.34	
Selachophidium guentheri	0.87	58	0.13	
Chlorophthalmus atlanticus	0.29	14	0.04	
Mauroliscus muelleri	0.29	406	0.04	
Galeus polli	0.29	14	0.04	
Total	680.40		100.00	

PROJECT STATION:1964
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2355 Long E 1311
 start stop duration
 TIME :03:56:00 04:26:00 30 (min) Purpose code: 3
 LOG :3303.42 3305.06 1.64 Area code : 2
 FDEPTH: 453 449 GearCond.code:
 BDEPTH: 453 449 Validity code:
 Towing dir: 350° Wire out:1350 m Speed: 31 kn*10

Sorted: 457 Kg Total catch: 619.31 CATCH/HOUR: 1238.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	787.40	844	63.57	6568
Trachyrincus scabrus	144.20	370	11.64	
Nezumia sp.	112.70	5538	9.10	
Merluccius paradoxus, male	72.60	98	5.86	6567
Helicolenus dactylopterus	42.56	266	3.44	
Schedophilus pamarco	29.82	14	2.41	
Selachophidium guentheri	26.66	448	2.15	
Krill	5.60	14	0.45	
Todarodes sagittatus	4.20	14	0.34	
Small squids	3.92	574	0.32	
Myxine capensis	2.80	14	0.23	
Ebinania costaecanarie	2.38	28	0.19	
Notacanthus sexspinis	1.40	42	0.11	
Photichthys argenteus	1.26	98	0.10	
Galeus polli	1.12	14	0.09	
Total	1238.62		100.00	

PROJECT STATION:1967
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2428 Long E 1338
 start stop duration
 TIME :18:09:00 18:39:00 30 (min) Purpose code: 2
 LOG :3379.50 3380.90 1.40 Area code : 2
 FDEPTH: 358 352 GearCond.code:
 BDEPTH: 358 352 Validity code:
 Towing dir: 10° Wire out:1100 m Speed: 31 kn*10

Sorted: 208 Kg Total catch: 402.20 CATCH/HOUR: 804.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	318.72	622	39.62	6581
Coelorrinchus fasciatus	185.40	7912	23.05	
Helicolenus dactylopterus	128.70	2190	16.00	
Nezumia sp.	78.48	1794	9.76	
Notacanthus sexspinis	16.56	1098	2.06	
Genypterus capensis	15.20	10	1.89	6583
Merluccius paradoxus, male	13.28	50	1.65	6582
Merluccius capensis, female	10.20	2	1.27	6580
Selachophidium guentheri	9.36	336	1.16	
Shrimps, small, non comm.	7.20	2160	0.90	
Centrolophus niger	6.20	2	0.77	
Squilla aculeata calmani	5.22	342	0.65	
Krill	3.60	14	0.45	
Trachurus capensis	3.38	10	0.42	6579
Ebinania costaecanarie	1.62	54	0.20	
Galeus polli	1.44	18	0.18	
C R A B S	0.90	36	0.11	
Lophius vomerinus	0.54	2	0.07	6584
Total	806.00		100.21	

PROJECT STATION:1965
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2402 Long E 1311
 start stop duration
 TIME :07:25:05 07:54:56 30 (min) Purpose code: 3
 LOG :3314.10 3315.60 1.50 Area code : 2
 FDEPTH: 600 614 GearCond.code:
 BDEPTH: 600 614 Validity code:
 Towing dir: 165° Wire out:1650 m Speed: 30 kn*10

Sorted: 122 Kg Total catch: 216.82 CATCH/HOUR: 433.64

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	167.90	150	38.72	6571
Nezumia sp.	65.80	3656	15.17	
Deania quadrispinosum	44.06	70	10.16	
Yarella blackfordi	37.52	2506	8.65	
Trachipterus jacksonensis	23.80	14	5.49	
Shrimps, small, non comm.	15.96	3962	3.68	
Todarodes sagittatus	13.60	22	3.14	
Schedophilus huttoni	9.90	10	2.28	
Selachophidium guentheri	9.66	140	2.23	
Raja confundens	9.40	8	2.17	
Lophius vomerinus	5.10	4	1.18	6569
Hoplostethus cadonati	4.62	252	1.07	
Trachyrincus scabrus	4.06	28	0.94	
Tetragonurus cuvieri	3.78	14	0.87	
Notacanthus sexspinis	3.78	154	0.87	
Merluccius paradoxus, male	3.60	4	0.83	6570
Malacocephalus laevis	3.36	28	0.77	
Epigonus denticulatus	2.52	266	0.58	
Raja doutreii	2.10	4	0.48	
Ebinania costaecanarie	0.98	14	0.23	
Photichthys argenteus	0.14	14	0.03	
Total	431.64		99.54	

PROJECT STATION:1968
 DATE:27/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2428 Long E 1338
 start stop duration
 TIME :20:19:00 20:49:00 30 (min) Purpose code: 1
 LOG :3368.90 3388.70 9.80 Area code : 2
 FDEPTH: 18 19 GearCond.code:
 BDEPTH: 18 19 Validity code:
 Towing dir: 10° Wire out: 100 m Speed: 40 kn*10

Sorted: 20 Kg Total catch: 82.27 CATCH/HOUR: 164.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Symbolophorus boops	88.70	16472	53.91	
Lampanyctodes hectoris	45.70	24126	27.77	
Brama brama	17.00	18	10.33	
Trachipterus jacksonensis	11.40	6	6.93	
Allothenus fallai	1.74	6	1.06	
Total	164.54		100.00	

PROJECT STATION:1969
 DATE:27/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2428 Long E 1338
 start stop duration
 TIME :22:35:22 23:05:32 30 (min) Purpose code: 1
 LOG :3395.67 3397.44 1.77 Area code : 2
 FDEPTH: 75 75 GearCond.code:
 BDEPTH: 358 356 Validity code:
 Towing dir: 360° Wire out: 450 m Speed: 38 kn*10

Sorted: 6 Kg Total catch: 40.78 CATCH/HOUR: 81.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lampanyctodes hectoris	47.54	28524	58.29	
Krill	15.58	33386	19.10	
Symbolophorus boops	9.34	1336	11.45	
Mauroliscus muelleri	5.46	6552	6.69	
Brama brama	3.64	4	4.46	
Total	81.56		99.99	

PROJECT STATION:1970
 DATE:28/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2428
 start stop duration Long E 1339
 TIME :00:38:01 01:08:57 31 (min) Purpose code: 1
 LOG :3404.59 3406.48 1.89 Area code : 2
 FDEPTH: 150 150 GearCond.code:
 BDEPTH: 359 352 Validity code:
 Towing dir: 360° Wire out: 600 m Speed: 38 kn*10

Sorted: 22 Kg Total catch: 70.79 CATCH/HOUR: 137.01

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	91.94 51075	67.10	
Schedophilus huttoni	10.65 4	7.77	
Centrolophus niger	9.29 4	6.78	
Brama brama	8.13 8	5.93	
Krill	5.98 10467	4.36	
Maurolicus muelleri	5.86 6060	4.28	
Symbolophorus boops	5.01 650	3.66	
Scomberesox saurus	0.15 2	0.11	
Total	137.01	99.99	

PROJECT STATION:1976
 DATE:28/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2423
 start stop duration Long E 1340
 TIME :21:40:11 22:10:09 30 (min) Purpose code: 1
 LOG :3484.56 3486.21 1.65 Area code : 2
 FDEPTH: 180 167 GearCond.code:
 BDEPTH: 336 343 Validity code:
 Towing dir: 180° Wire out: 600 m Speed: 34 kn*10

Sorted: 8 Kg Total catch: 50.65 CATCH/HOUR: 101.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	84.68 36814	83.59	
Maurolicus muelleri	15.20 12394	15.00	
Krill	1.42 2646	1.40	
Total	101.30	99.99	

PROJECT STATION:1971
 DATE:28/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2428
 start stop duration Long E 1338
 TIME :04:41:33 08:04:46 203 (min) Purpose code: 2
 LOG :3413.65 3424.59 0.94 Area code : 2
 FDEPTH: 358 325 GearCond.code:
 BDEPTH: 358 325 Validity code:
 Towing dir: 340° Wire out:1000 m Speed: 35 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
N O C A T C H	0.00		

PROJECT STATION:1972
 DATE:28/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420
 start stop duration Long E 1325
 TIME :10:47:49 11:20:51 33 (min) Purpose code: 2
 LOG :3438.93 3440.40 1.47 Area code : 2
 FDEPTH: 360 354 GearCond.code:
 BDEPTH: 360 354 Validity code:
 Towing dir: 350° Wire out: 930 m Speed: 37 kn*10

Sorted: 249 Kg Total catch: 1246.69 CATCH/HOUR: 2266.71

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Beryx splendens	1428.55 6431	63.02	
Merluccius paradoxus	373.91 549	16.50	6585
Cubiceps caeruleus	277.36 736	12.24	
Deepwater fish mixture	178.69	7.88	
Genypterus capensis	8.20 4	0.36	6586
Total	2266.71	100.00	

PROJECT STATION:1977
 DATE:28/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 3935
 start stop duration Long E 1340
 TIME :22:59:09 23:29:03 30 (min) Purpose code: 1
 LOG :136.21 3490.19 3.98 Area code : 2
 FDEPTH: 20 23 GearCond.code:
 BDEPTH: 343 334 Validity code:
 Towing dir: 360° Wire out: 150 m Speed: 40 kn*10

Sorted: 19 Kg Total catch: 47.85 CATCH/HOUR: 95.70

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	54.38 24718	56.82	
Brama brama	22.90 22	23.93	
Krill	7.60 19000	7.94	
Schedophilus huttoni	7.30 4	7.63	
Todarodes sagittatus	3.20 6	3.34	
Maurolicus muelleri	0.32 1088	0.33	
Total	95.70	99.99	

PROJECT STATION:1973
 DATE:28/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420
 start stop duration Long E 1325
 TIME :14:49:08 15:18:33 29 (min) Purpose code: 2
 LOG :3450.26 3451.59 1.32 Area code : 2
 FDEPTH: 364 363 GearCond.code:
 BDEPTH: 364 363 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 471 Kg Total catch: 535.40 CATCH/HOUR: 1107.72

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	857.48 1343	77.41	6857
Deepwater fish mixture	197.07	17.79	
Centrolophus niger	17.90 6	1.62	
Genypterus capensis	15.52 8	1.40	6858
Schedophilus huttoni	10.03 4	0.91	
Lophius vomerinus	9.72 4	0.88	6859
Total	1107.72	100.01	

PROJECT STATION:1978
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2423
 start stop duration Long E 1339
 TIME :00:13:53 00:44:39 31 (min) Purpose code: 1
 LOG :3492.22 3494.04 1.82 Area code : 2
 FDEPTH: 100 100 GearCond.code:
 BDEPTH: 337 344 Validity code:
 Towing dir: 180° Wire out: 400 m Speed: 40 kn*10

Sorted: 6 Kg Total catch: 36.94 CATCH/HOUR: 71.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	60.31 32166	84.35	
Brama brama	6.58 6	9.20	
Maurolicus muelleri	1.95 3739	2.73	
Krill	1.55 619	2.17	
Symbolophorus boops	1.10 155	1.54	
Total	71.49	99.99	

PROJECT STATION:1974
 DATE:28/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420
 start stop duration Long E 1325
 TIME :16:31:32 17:01:21 30 (min) Purpose code: 2
 LOG :3457.15 3458.48 1.33 Area code : 2
 FDEPTH: 366 367 GearCond.code:
 BDEPTH: 366 367 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 330 Kg Total catch: 329.55 CATCH/HOUR: 659.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	576.10 1016	87.41	6860
Deepwater fish mixture	78.00	11.83	
Genypterus capensis	5.50 2	0.83	6861
Total	659.60	100.07	

PROJECT STATION:1979
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2424
 start stop duration Long E 1339
 TIME :01:17:43 01:47:53 30 (min) Purpose code: 1
 LOG :3495.72 3497.62 1.90 Area code : 2
 FDEPTH: 50 50 GearCond.code:
 BDEPTH: 343 337 Validity code:
 Towing dir: 360° Wire out: 250 m Speed: 40 kn*10

Sorted: 7 Kg Total catch: 19.92 CATCH/HOUR: 39.84

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	18.24 29184	45.78	
Brama brama	8.44 8	21.18	
Krill	6.90 34500	17.32	
Symbolophorus boops	3.46 546	8.68	
Maurolicus muelleri	2.82 8460	7.08	
Total	39.86	100.04	

PROJECT STATION:1975
 DATE:28/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420
 start stop duration Long E 1325
 TIME :18:14:14 18:44:06 30 (min) Purpose code: 2
 LOG :3464.39 3465.73 1.34 Area code : 2
 FDEPTH: 364 364 GearCond.code:
 BDEPTH: 364 364 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 101 Kg Total catch: 126.75 CATCH/HOUR: 253.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	130.50 232	51.48	6862
Deepwater fish mixture	104.60	41.26	
Beryx splendens	7.20 8	2.84	
Genypterus capensis	6.90 2	2.72	6863
Schedophilus huttoni	4.30 2	1.70	
Total	253.50	100.00	

PROJECT STATION:1980
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2420
 start stop duration Long E 1325
 TIME :04:54:51 05:24:20 29 (min) Purpose code: 2
 LOG :3511.85 3513.33 1.48 Area code : 2
 FDEPTH: 366 367 GearCond.code:
 BDEPTH: 366 367 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 107 Kg Total catch: 158.45 CATCH/HOUR: 327.83

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	158.90	48.47	
Merluccius paradoxus	135.52 186	41.34	6864
Centrolophus niger	12.00 2	3.66	
Genypterus capensis	8.69 4	2.65	6866
Schedophilus huttoni	5.28 4	1.61	
Lophius vomerinus	4.34 2	1.32	6865
Beryx splendens	3.10 6	0.95	
Total	327.83	100.00	

PROJECT STATION:1981
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2419 Long E 1325
 start stop duration
 TIME :06:40:00 07:10:00 30 (min) Purpose code: 2
 LOG :3517.90 3519.50 1.60 Area code : 2
 FDEPTH: 366 364 GearCond.code:
 BDEPTH: 366 364 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 189 Kg Total catch: 260.05 CATCH/HOUR: 520.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	257.00 366	49.41	6867
Miscellaneous fishes	190.00	36.53	
Schedophilus huttoni	32.40 16	6.23	
Centrolophus niger	17.60 6	3.38	
Genypterus capensis	15.90 6	3.06	6868
Beryx splendens	3.20 4	0.62	
Lophius vomerinus	3.20 2	0.62	6869
Chaceon maritae	0.80 2	0.15	
Total	520.10	100.00	

PROJECT STATION:1987
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2420 Long E 1329
 start stop duration
 TIME :18:31:24 18:50:24 19 (min) Purpose code: 1
 LOG :3565.82 3566.82 1.00 Area code : 2
 FDEPTH: 18 25 GearCond.code:
 BDEPTH: 333 333 Validity code:
 Towing dir: 301° Wire out: 100 m Speed: 35 kn*10

Sorted: 70 Kg Total catch: 744.10 CATCH/HOUR: 2349.79

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	1121.05	47.71	
Symbolophorus boops	1020.16	90922	43.41
Lampanyctodes hectoris	100.89	65479	4.29
Brama brama	68.68	69	2.92
CARSE04	38.84	9	1.65
Maurollicus muelleri	0.09	316	
Krill	0.06	373	
Total	2349.77	99.98	

PROJECT STATION:1982
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2419 Long E 1325
 start stop duration
 TIME :08:40:08 09:10:11 30 (min) Purpose code: 2
 LOG :3525.62 3527.16 1.55 Area code : 2
 FDEPTH: 362 358 GearCond.code:
 BDEPTH: 362 358 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 291 Kg Total catch: 320.95 CATCH/HOUR: 641.90

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	428.00 622	66.68	6870
Deepwater fish mixture	120.40	18.76	
Schedophilus huttoni	43.60 20	6.79	
Centrolophus niger	36.20 6	5.64	
Genypterus capensis	10.40 6	1.62	6871
Beryx splendens	3.30 14	0.51	
Total	641.90	100.00	

PROJECT STATION:1988
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2423 Long E 1338
 start stop duration
 TIME :20:35:13 20:55:00 20 (min) Purpose code: 1
 LOG :3577.22 3578.19 0.97 Area code : 2
 FDEPTH: 70 70 GearCond.code:
 BDEPTH: 340 339 Validity code:
 Towing dir: 115° Wire out: 200 m Speed: 30 kn*10

Sorted: 5 Kg Total catch: 27.65 CATCH/HOUR: 82.95

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	44.52 33756	53.67	
Maurollicus muelleri	11.94 27270	14.39	
Symbolophorus boops	9.06 1755	10.92	
Schedophilus huttoni	7.05 3	8.50	
Krill	5.49 23496	6.62	
Brama brama	3.30 3	3.98	
Lycoteuthis diadema	0.93 645	1.12	
Todaropsis eblanae	0.66 3	0.80	
Total	82.95	100.00	

PROJECT STATION:1983
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2418 Long E 1325
 start stop duration
 TIME :10:58:00 11:28:00 30 (min) Purpose code: 2
 LOG :3534.14 3534.14 1.70 Area code : 2
 FDEPTH: 365 358 GearCond.code:
 BDEPTH: 365 358 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 34 kn*10

Sorted: 300 Kg Total catch: 708.10 CATCH/HOUR: 1416.20

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	884.00	62.42	
Merluccius paradoxus	506.40 656	35.76	6873
Genypterus capensis	25.80 12	1.82	6872
Total	1416.20	100.00	

PROJECT STATION:1989
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2423 Long E 1338
 start stop duration
 TIME :21:34:34 21:54:09 20 (min) Purpose code: 1
 LOG :3579.97 3581.13 1.16 Area code : 2
 FDEPTH: 20 20 GearCond.code:
 BDEPTH: 341 340 Validity code:
 Towing dir: 295° Wire out: 100 m Speed: 30 kn*10

Sorted: 6 Kg Total catch: 21.43 CATCH/HOUR: 64.29

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Symbolophorus boops	31.95 3111	49.70	
Lampanyctodes hectoris	11.01 7893	17.13	
Krill	8.70 87000	13.53	
Trachipterus jacksonensis	5.73 3	8.91	
Brama brama	3.21 3	4.99	
Maurollicus muelleri	3.09 13389	4.81	
Lepidopus caudatus	0.39 177	0.61	
Lycoteuthis diadema	0.21 147	0.33	
Total	64.29	100.01	

PROJECT STATION:1984
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2419 Long E 1325
 start stop duration
 TIME :12:56:03 13:26:12 30 (min) Purpose code: 2
 LOG :3542.50 3543.89 1.39 Area code : 2
 FDEPTH: 366 361 GearCond.code:
 BDEPTH: 366 361 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 120 Kg Total catch: 184.20 CATCH/HOUR: 368.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	193.80	52.61	
Merluccius paradoxus	145.50 194	39.50	6874
Genypterus capensis	29.10 16	7.90	6875
Total	368.40	100.01	

PROJECT STATION:1990
 DATE:29/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2424 Long E 1336
 start stop duration
 TIME :22:49:04 23:29:26 40 (min) Purpose code: 1
 LOG :3583.61 3585.66 2.05 Area code : 2
 FDEPTH: 200 200 GearCond.code:
 BDEPTH: 346 353 Validity code:
 Towing dir: 180° Wire out: 700 m Speed: 40 kn*10

Sorted: 4 Kg Total catch: 44.89 CATCH/HOUR: 67.34

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	38.04 18114	56.49	
Maurollicus muelleri	10.65 15491	15.82	
Symbolophorus boops	9.36 1118	13.90	
Krill	6.27 20900	9.31	
Todarodes sagittatus	1.32 2	1.96	
Brama brama	1.20 2	1.78	
Lycoteuthis diadema	0.26 153	0.39	
Merluccius paradoxus	0.24 2	0.36	
Total	67.34	100.01	

PROJECT STATION:1985
 DATE:29/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2419 Long E 1325
 start stop duration
 TIME :14:42:07 15:12:01 30 (min) Purpose code: 2
 LOG :3549.78 3551.15 1.37 Area code : 2
 FDEPTH: 363 360 GearCond.code:
 BDEPTH: 363 360 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 34 kn*10

Sorted: 51 Kg Total catch: 165.20 CATCH/HOUR: 330.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	286.50	86.71	
Merluccius paradoxus	43.90 54	13.29	6876
Total	330.40	100.00	

PROJECT STATION:1991
 DATE:30/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2426 Long E 1336
 start stop duration
 TIME :00:08:56 00:39:00 30 (min) Purpose code: 1
 LOG :3587.15 3589.07 1.92 Area code : 2
 FDEPTH: 100 120 GearCond.code:
 BDEPTH: 350 346 Validity code:
 Towing dir: 340° Wire out: 370 m Speed: 40 kn*10

Sorted: 14 Kg Total catch: 61.66 CATCH/HOUR: 123.32

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	65.80 27416	53.36	
Symbolophorus boops	32.94 3408	26.71	
Trachipterus jacksonensis	9.84 2	7.98	
Lophius vomerinus	3.96 2	3.21	
Brama brama	3.92 4	3.18	
Krill	2.28 5016	1.85	
Maurollicus muelleri	2.28 6128	1.85	
Beryx splendens	1.42 14	1.15	
Merluccius paradoxus	0.64 2	0.52	
Todarodes sagittatus	0.24 2	0.19	
Total	123.32	100.00	

PROJECT STATION:1986
 DATE:29/ 1/96 GEAR TYPE: BT No:2 POSITION:Lat S 2420 Long E 1325
 start stop duration
 TIME :16:26:02 16:55:14 29 (min) Purpose code: 2
 LOG :3556.70 3558.10 1.40 Area code : 2
 FDEPTH: 368 368 GearCond.code:
 BDEPTH: 368 368 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 57.35 CATCH/HOUR: 118.66

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Deepwater fish mixture	73.03	61.55	
Merluccius paradoxus	45.62 66	38.45	6877
Total	118.65	100.00	

PROJECT STATION:1992
 DATE:30/ 1/97 GEAR TYPE: PT No:1 POSITION:Lat S 2425 Long E 1336
 start stop duration
 TIME :01:16:20 01:46:16 30 (min) Purpose code: 1
 LOG :3590.47 3592.29 1.82 Area code : 2
 FDEPTH: 30 30 GearCond.code:
 BDEPTH: 346 352 Validity code:
 Towing dir: 170° Wire out: 150 m Speed: 40 kn*10
 Sorted: 24 Kg Total catch: 151.67 CATCH/HOUR: 303.34

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Symbolophorus boops	237.32	2580	78.24	
Brama brama	32.36	28	10.67	
Lampanyctodes hectoris	21.88	12690	7.21	
Centrolophus niger	8.90	2	2.93	
Torpedo nobiliana	1.84	2	0.61	
Krill	1.04	6760	0.34	
Total	303.34		100.00	

PROJECT STATION:1993
 DATE:30/ 1/97 GEAR TYPE: BT No:2 POSITION:Lat S 2419 Long E 1325
 start stop duration
 TIME :04:49:21 05:19:40 30 (min) Purpose code: 2
 LOG :3607.22 3608.68 1.46 Area code : 2
 FDEPTH: 364 362 GearCond.code:
 BDEPTH: 364 362 Validity code:
 Towing dir: 340° Wire out:1120 m Speed: 30 kn*10
 Sorted: 174 Kg Total catch: 312.90 CATCH/HOUR: 625.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Deepwater fish mixture	347.00		55.45	
Merluccius paradoxus	225.20	304	35.99	6878
Schedophilus huttoni	28.20	16	4.51	
Genypterus capensis	15.40	4	2.46	6879
Centrolophus niger	6.80	2	1.09	
Todarodes sagittatus	2.80	6	0.45	
Total	625.40		99.95	

PROJECT STATION:1994
 DATE: 1/ 2/97 GEAR TYPE: PT No:2 POSITION:Lat S 2255 Long E 1413
 start stop duration
 TIME :14:58:29 15:13:02 15 (min) Purpose code: 1
 LOG :3768.11 3768.78 0.67 Area code : 2
 FDEPTH: 80 80 GearCond.code:
 BDEPTH: 107 105 Validity code:
 Towing dir: 58° Wire out: 240 m Speed: 30 kn*10
 Sorted: 34 Kg Total catch: 2500.00 CATCH/HOUR: 10000.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, juveniles	10000.00	432940	100.00	6880
Total	10000.00		100.00	

PROJECT STATION:1995
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2340 Long E 1303
 start stop duration
 TIME :00:18:14 00:48:13 30 (min) Purpose code: 3
 LOG :3857.43 3858.75 1.32 Area code : 2
 FDEPTH: 650 641 GearCond.code:
 BDEPTH: 650 641 Validity code:
 Towing dir: 346° Wire out:1750 m Speed: 32 kn*10
 Sorted: 193 Kg Total catch: 443.09 CATCH/HOUR: 886.18

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	270.90	256	30.57	6881
Nezumia sp.	194.40	9624	21.94	
Selachophidium guentheri	164.40	1968	18.55	
Todarodes sagittatus	48.96	48	5.52	
Coelorinchus matama	42.72	168	4.82	
Deania profundorum	31.20	20	3.52	
Yarella blackfordi	22.80	1128	2.57	
Lithodes ferox	22.08	72	2.49	
Ebinania costaecanarie	20.16	24	2.27	
Bathyraxia smithii	16.10	2	1.82	
Notacanthus sexspinis	12.48	336	1.41	
Lophius vomerinus	9.20	4	1.04	6883
Raja confundens	6.50	2	0.73	
Aristeus varidens	4.56	240	0.51	
Bathyraxia vicinus	4.32	48	0.49	
Lamprogrammus exotus	4.08	24	0.46	
Merluccius paradoxus, male	3.40	4	0.38	6882
Allocyttus verrucosus	3.36	48	0.38	
Centroscyllium fabricii	2.40	2	0.27	
Hoplostethus cadenati	2.16	168	0.24	
Total	886.18		99.98	

PROJECT STATION:1996
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2341 Long E 1306
 start stop duration
 TIME :03:06:22 03:35:42 29 (min) Purpose code: 3
 LOG :3868.63 3869.95 1.32 Area code : 2
 FDEPTH: 538 539 GearCond.code:
 BDEPTH: 538 539 Validity code:
 Towing dir: 350° Wire out:1500 m Speed: 32 kn*10
 Sorted: 69 Kg Total catch: 192.66 CATCH/HOUR: 398.61

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	95.30	623	23.91	
Merluccius paradoxus, female	88.97	93	22.32	6885
Helicolenus dactylopterus	66.04	275	16.57	
Selachophidium guentheri	59.81	1057	15.00	
Nezumia sp.	44.61	1694	11.19	
Schedophilus huttoni	17.81	14	4.47	
Merluccius paradoxus, male	6.72	8	1.69	6884
Etmopterus pusillus	4.49	14	1.13	
Lophius vomerinus	4.28	4	1.07	6886
Notacanthus sexspinis	1.88	58	0.47	
Epigonus denticulatus	1.74	14	0.44	
Hoplostethus cadenati	1.45	87	0.36	
Yarella blackfordi	1.45	72	0.36	
Symbolophorus boops	0.72	58	0.18	
Photichthys argenteus	0.58	43	0.15	
S H R I M P S	0.43	29	0.11	
Heterocarpus sp.	0.29	14	0.07	
Nephropsis atlantica	0.29	14	0.07	
Coelorinchus matama	0.23	14	0.06	
Neoscolepius macrolepidotus	0.14	14	0.04	
Total	397.23		99.66	

PROJECT STATION:1997
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2337 Long E 1308
 start stop duration
 TIME :06:58:45 07:29:04 30 (min) Purpose code: 3
 LOG :3880.51 3881.86 1.35 Area code : 2
 FDEPTH: 437 435 GearCond.code:
 BDEPTH: 437 435 Validity code:
 Towing dir: 350° Wire out:1299 m Speed: 30 kn*10
 Sorted: 222 Kg Total catch: 310.61 CATCH/HOUR: 621.22

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	360.80	500	58.08	6888
Helicolenus dactylopterus	136.00	992	21.89	
Trachyrincus scabrus	44.40	360	7.15	
Nezumia sp.	29.96	1064	4.81	
Todarodes sagittatus	15.30	30	2.46	
Merluccius paradoxus, male	10.00	16	1.61	6887
Krill	8.00	10666	1.29	
Beryx splendens	1.60	8	0.26	
Ebinania costaecanarie	1.44	16	0.23	
Notacanthus sexspinis	1.20	48	0.19	
Neoscolepius macrolepidotus	0.96	120	0.15	
Centrolophus squamosus	0.72	8	0.12	
Galeus polli	0.64	8	0.10	
Photichthys argenteus	0.56	40	0.09	
Laemonema laureysi	0.48	8	0.08	
Shrimps, small, non comm.	0.40	104	0.06	
Epigonus denticulatus	0.24	24	0.04	
Symbolophorus boops	0.16	32	0.03	
Hoplostethus cadenati	0.16	8	0.03	
Argyropelecus affinis	0.00	8		
Total	612.92		98.67	

PROJECT STATION:1998
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2338 Long E 1311
 start stop duration
 TIME :09:54:08 10:23:58 30 (min) Purpose code: 3
 LOG :3893.37 3894.62 1.25 Area code : 2
 FDEPTH: 386 394 GearCond.code:
 BDEPTH: 386 394 Validity code:
 Towing dir: 350° Wire out:1200 m Speed: 31 kn*10
 Sorted: 238 Kg Total catch: 368.63 CATCH/HOUR: 737.26

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	333.30	576	45.21	6889
Helicolenus dactylopterus	156.50	1180	21.23	
Schedophilus huttoni	111.50	30	15.12	
Todarodes sagittatus	52.30	88	7.09	
Centrolophus niger	26.50	20	3.59	
Merluccius paradoxus, male	21.40	42	2.90	6890
Coelorinchus fasciatus	8.60	260	1.17	
Krill	7.60	74	1.03	
Selachophidium guentheri	7.30	200	0.99	
Genypterus capensis	3.26	2	0.44	6891
Nezumia sp.	1.80	130	0.24	
Chlorophthalmus atlanticus	1.60	60	0.22	
Shrimps, small, non comm.	1.50	430	0.20	
Trachyrincus scabrus	1.30	30	0.18	
Lampanyctodes hectoris	1.10	440	0.15	
Epigonus denticulatus	1.10	100	0.15	
MYCTOPHIDAE	0.60	60	0.08	
Total	737.26		99.99	

PROJECT STATION:1999
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2339 Long E 1316
 start stop duration
 TIME :13:07:19 13:37:22 30 (min) Purpose code: 3
 LOG :3906.46 3907.77 1.31 Area code : 2
 FDEPTH: 327 331 GearCond.code:
 BDEPTH: 327 331 Validity code:
 Towing dir: 355° Wire out:1050 m Speed: 30 kn*10
 Sorted: 358 Kg Total catch: 387.77 CATCH/HOUR: 775.54

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	396.90 1018	51.18	6892
Merluccius capensis, female	133.50 96	17.21	6894
Centrolophus niger	39.20 10	5.05	
Helicolenus dactylopterus	35.00 360	4.51	
Lampanyctodes hectoris	33.20 10444	4.28	
Merluccius paradoxus, male	21.30 62	2.75	6893
Chlorophthalmus atlanticus	17.66 624	2.28	
Epigonus denticulatus	16.96 1048	2.19	
Schedophilus huttoni	16.40 6	2.11	
Todarodes sagittatus	16.30 26	2.10	
Coelorinchus fasciatus	14.84 512	1.91	
Merluccius capensis, male	14.80 10	1.91	6895
Trachipterus jacksonensis	12.40 6	1.60	
Lophius vomerinus	2.76 2	0.36	6897
Genypterus capensis	1.92 2	0.25	6896
Symbolophorus boops	1.20 144	0.15	
Shrimps, small, non comm.	0.56 204	0.07	
Malacocephalus laevis	0.28 4	0.04	
Ebinania costaecanarie	0.28 4	0.04	
Coelorinchus coelorhinc. polli	0.08 4	0.01	
Total	775.54	100.00	

PROJECT STATION:2000
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2339 Long E 1321
 start stop duration
 TIME :15:04:27 15:34:35 30 (min) Purpose code: 3
 LOG :3915.81 3917.31 1.50 Area code : 2
 FDEPTH: 287 289 GearCond.code:
 BDEPTH: 287 289 Validity code:
 Towing dir: 350° Wire out: 920 m Speed: 31 kn*10
 Sorted: 216 Kg Total catch: 927.22 CATCH/HOUR: 1854.44

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Trachurus capensis	1173.60 4272	63.29	6905
Chlorophthalmus atlanticus	153.60 6894	8.28	
Merluccius capensis	148.00 638	7.98	6902
Merluccius capensis, female	144.20 108	7.78	6899
Coelorinchus fasciatus	41.76 1872	2.25	
Helicolenus dactylopterus	41.76 2016	2.25	
Merluccius capensis, female	30.10 136	1.62	6901
Lampanyctodes hectoris	25.92 8186	1.40	
Todarodes sagittatus	22.00 34	1.19	
Merluccius capensis, male	17.70 84	0.95	6900
Coelorinchus coelorhinc. polli	15.36 960	0.83	
Beryx splendens	12.48 96	0.67	
Sufflogobius bibarbatatus	10.56 3360	0.57	
Merluccius capensis, male	6.10 8	0.33	6898
Squilla sp.	5.28 336	0.28	
Galeus polli	3.36 48	0.18	
Lophius vomerinus	1.92 2	0.10	6903
Genypterus capensis	0.74 2	0.04	6904
Total	1854.44	99.99	

PROJECT STATION:2001
 DATE: 2/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2338 Long E 1326
 start stop duration
 TIME :17:00:49 17:32:13 31 (min) Purpose code: 3
 LOG :3925.77 3927.44 1.67 Area code : 2
 FDEPTH: 257 257 GearCond.code:
 BDEPTH: 259 257 Validity code:
 Towing dir: 350° Wire out: 860 m Speed: 30 kn*10
 Sorted: 160 Kg Total catch: 573.22 CATCH/HOUR: 1109.46

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Trachurus capensis	643.06 2613	57.96	6910
Coelorinchus fasciatus	109.45 4053	9.87	
Merluccius capensis, female	99.00 352	8.92	6908
Galeus polli	72.58 1103	6.54	
Merluccius capensis, female	71.32 41	6.43	6906
Merluccius capensis, male	52.35 226	4.72	6907
Lophius vomerinus	15.48 15	1.40	6909
Helicolenus dactylopterus	13.65 1219	1.23	
Todarodes sagittatus	12.77 23	1.15	
Sufflogobius bibarbatatus	11.90 4761	1.07	
Todaropsis eblanae	3.48 29	0.31	
Chlorophthalmus atlanticus	1.74 290	0.16	
Scomber japonicus	1.49 2	0.13	
Coelorinchus coelorhinc. polli	1.16 58	0.10	
Total	1109.43	99.99	

PROJECT STATION:2002
 DATE: 3/ 2/97 GEAR TYPE: PT No:2 POSITION:Lat S 2320 Long E 1346
 start stop duration
 TIME :01:13:52 01:23:12 9 (min) Purpose code: 1
 LOG :3993.45 3994.01 0.56 Area code : 2
 FDEPTH: 80 45 GearCond.code:
 BDEPTH: 163 162 Validity code:
 Towing dir: 90° Wire out: 140 m Speed: 35 kn*10
 Sorted: 20 Kg Total catch: 20.00 CATCH/HOUR: 133.33

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Maurolucius muelleri	133.33 222220	100.00	
Total	133.33	100.00	

PROJECT STATION:2003
 DATE: 2/ 3/97 GEAR TYPE: BT No:2 POSITION:Lat S 2318 Long E 1326
 start stop duration
 TIME :05:18:16 05:46:37 28 (min) Purpose code: 3
 LOG :4016.31 4017.86 1.55 Area code : 2
 FDEPTH: 275 279 GearCond.code:
 BDEPTH: 275 279 Validity code:
 Towing dir: 350° Wire out: 840 m Speed: 30 kn*10
 Sorted: 116 Kg Total catch: 124.04 CATCH/HOUR: 265.80

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius capensis, female	75.64 214	28.46	6912
Merluccius capensis, male	47.36 193	17.82	6911
Merluccius capensis	39.11 165	14.71	6913
Chlorophthalmus atlanticus	20.10 1986	7.56	
Scomber japonicus	15.54 15	5.85	
Todarodes sagittatus	13.29 21	5.00	
Coelorinchus fasciatus	10.52 199	3.96	
Merluccius paradoxus, female	9.26 30	3.48	6914
Sufflogobius bibarbatatus	7.84 4434	2.95	
Helicolenus dactylopterus	7.46 223	2.81	
Trachurus capensis	5.79 13	2.18	6915
Schedophilus huttoni	4.93 2	1.85	
Brama brama	3.75 4	1.41	
MYCTOPHIDAE	2.74 701	1.03	
Solenocera africana	1.14 302	0.43	
Galeus polli	0.62 19	0.23	
Coelorinchus coelorhinc. polli	0.43 30	0.16	
Bathynectes piperitus	0.17 4	0.06	
Todaropsis eblanae	0.13 4	0.05	
Total	265.82	100.00	

PROJECT STATION:2004
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2319 Long E 1322
 start stop duration
 TIME :07:19:41 07:50:12 31 (min) Purpose code: 3
 LOG :4026.54 4028.18 1.64 Area code : 2
 FDEPTH: 316 322 GearCond.code:
 BDEPTH: 316 322 Validity code:
 Towing dir: 350° Wire out: 960 m Speed: 30 kn*10
 Sorted: 90 Kg Total catch: 107.04 CATCH/HOUR: 207.17

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	91.26 215	44.05	6919
Chlorophthalmus atlanticus	31.74 1223	15.32	
Merluccius capensis, female	21.68 10	10.46	6917
Schedophilus huttoni	10.35 6	5.00	
Merluccius capensis, male	9.58 6	4.62	6916
Todarodes sagittatus	8.32 14	4.02	
Genypterus capensis	7.45 6	3.60	6921
Merluccius paradoxus, male	5.90 15	2.85	6918
Lophius vomerinus	5.71 6	2.76	6920
Helicolenus dactylopterus	3.64 139	1.76	
Coelorinchus coelorhinc. polli	2.79 147	1.35	
Trachipterus trachipterus	1.94 2	0.94	
Coelorinchus fasciatus	1.78 54	0.86	
Nezumia sp.	1.47 54	0.71	
Epigonus denticulatus	1.08 77	0.52	
Lampanyctodes hectoris	0.93 395	0.45	
Sufflogobius bibarbatatus	0.46 356	0.22	
Galeus polli	0.31 15	0.15	
Solenocera africana	0.31 70	0.15	
Squilla sp.	0.23 8	0.11	
Maurolucius muelleri	0.15 271	0.07	
Ebinania costaecanarie	0.08 8	0.04	
Total	207.16	100.01	

PROJECT STATION:2005
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2318 Long E 1319
 start stop duration
 TIME :09:10:48 09:41:12 30 (min) Purpose code: 3
 LOG :4035.26 4036.77 1.51 Area code : 2
 FDEPTH: 348 352 GearCond.code:
 BDEPTH: 348 352 Validity code:
 Towing dir: 350° Wire out:1050 m Speed: 30 kn*10
 Sorted: 300 Kg Total catch: 359.91 CATCH/HOUR: 719.82

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	460.00 1170	63.90	6922
Schedophilus huttoni	93.30 66	12.96	
Centrolophus niger	26.60 6	3.70	
Helicolenus dactylopterus	26.58 258	3.69	
Nezumia sp.	15.60 810	2.17	
Todarodes sagittatus	14.60 26	2.03	
Merluccius paradoxus, male	14.00 42	1.94	6923
Genypterus capensis	13.80 10	1.92	6925
Coelorinchus fasciatus	13.02 264	1.81	
Galeus polli	12.66 156	1.76	
Chlorophthalmus atlanticus	9.12 336	1.27	
Lophius vomerinus	4.90 2	0.68	6926
Epigonus denticulatus	4.20 228	0.58	
Merluccius capensis, female	3.98 2	0.55	6924
Trachipterus jacksonensis	2.36 2	0.33	
Krill	2.04 2	0.28	
Coelorinchus coelorhinc. polli	1.20 42	0.17	
Shrimps, small, non comm.	0.84 270	0.12	
Lampanyctodes hectoris	0.36 174	0.05	
Selachophidium guentheri	0.36 36	0.05	
Squilla aculeata calmani	0.30 6	0.04	
Total	719.82	100.00	

PROJECT STATION:2006
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2319 Long E 1315
 start stop duration
 TIME :11:03:48 11:33:32 30 (min) Purpose code: 3
 LOG :4044.13 4045.43 1.30 Area code : 2
 FDEPTH: 378 381 GearCond.code:
 BDEPTH: 378 381 Validity code:
 Towing dir: 350° Wire out:1150 m Speed: 31 kn*10
 Sorted: 122 Kg Total catch: 246.72 CATCH/HOUR: 493.44

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	207.00 14	41.95	
Merluccius paradoxus, female	132.60 314	26.87	6927
Galeus polli	41.80 550	8.47	
Nezumia sp.	21.80 940	4.42	
Centroscyllium fabricii	16.60 16	3.36	
Coelorinchus fasciatus	11.40 250	2.31	
Todarodes sagittatus	10.90 14	2.21	
Krill	8.60 11220	1.74	
Merluccius paradoxus, male	8.50 16	1.72	6928
Schedophilus huttoni	7.90 8	1.60	
Selachophidium guentheri	5.40 220	1.09	
Shrimps, small, non comm.	5.30 1970	1.07	
Chlorophthalmus atlanticus	3.70 130	0.75	
Gemypterus capensis	3.20 2	0.65	6929
Epigonus denticulatus	2.00 90	0.41	
Neoharriotta pinnata	1.64 2	0.33	
Ebinania costaecanarie	1.60 20	0.32	
Notacanthus sexspinis	1.50 80	0.30	
Lampanyctodes hectoris	0.60 120	0.12	
Bathynectes piperitus	0.50 10	0.10	
Coelorinchus coelorhinc. polli	0.50 20	0.10	
Squilla aculata calmani	0.40 10	0.08	
Total	493.44	99.97	

PROJECT STATION:2009
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2317 Long E 1302
 start stop duration
 TIME :17:24:07 17:54:36 30 (min) Purpose code: 3
 LOG :4069.84 4071.26 1.42 Area code : 2
 FDEPTH: 570 570 GearCond.code:
 BDEPTH: 570 570 Validity code:
 Towing dir: * Wire out:1500 m Speed: 30 kn*10
 Sorted: 96 Kg Total catch: 121.29 CATCH/HOUR: 242.58

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	114.20 108	47.08	6936
Trachyrincus scabrus	32.70 168	13.48	
Deania quadrispinosum	29.50 14	12.16	
Nezumia sp.	22.50 900	9.28	
Deania calcea	14.40 8	5.94	
Raja leopardenus	6.58 2	2.71	
S H R I M P S	5.10 604	2.10	
Hoplostethus cadenati	4.50 300	1.86	
Selachophidium guentheri	3.72 54	1.53	
Deania profundorum	3.70 2	1.53	
Yarrella blackfordi	2.52 288	1.04	
Photichthys argenteus	0.90 90	0.37	
Notacanthus sexspinis	0.66 30	0.27	
Caristius groenlandicus	0.54 6	0.22	
Epigonus denticulatus	0.36 24	0.15	
Ebinania costaecanarie	0.30 6	0.12	
Venefica proboscidea	0.24 6	0.10	
Heterocarpus grimaldii	0.16 4	0.07	
Total	242.58	100.01	

PROJECT STATION:2007
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2319 Long E 1311
 start stop duration
 TIME :11:01:54 13:32:22 30 (min) Purpose code: 3
 LOG :4052.14 4053.48 1.34 Area code : 2
 FDEPTH: 402 404 GearCond.code:
 BDEPTH: 402 404 Validity code:
 Towing dir: 350° Wire out:1220 m Speed: 33 kn*10
 Sorted: 217 Kg Total catch: 289.79 CATCH/HOUR: 579.58

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	316.40 578	54.59	6930
Helicolenus dactylopterus	138.26 1128	23.86	
Todarodes sagittatus	28.60 52	4.93	
Nezumia sp.	26.40 1022	4.56	
Coelorinchus fasciatus	12.54 252	2.16	
Merluccius paradoxus, male	10.40 22	1.79	6931
Schedophilus huttoni	8.50 6	1.47	
Lophius vomerinus	8.30 6	1.43	6932
Selachophidium guentheri	6.38 190	1.10	
Galeus polli	5.68 70	0.98	
Deania profundorum	2.90 2	0.50	
Notacanthus sexspinis	2.66 70	0.46	
Epigonus denticulatus	2.46 148	0.42	
Coelorinchus coelorhinc. polli	2.18 56	0.38	
Shrimps, small, non comm.	1.90 560	0.33	
Ebinania costaecanarie	1.76 14	0.30	
Centroscyllium fabricii	1.60 2	0.28	
Trachyrincus scabrus	1.12 50	0.19	
Krill	0.70 980	0.12	
Symbolophorus boops	0.28 14	0.05	
PHOTICHTHYIDAE	0.28 42	0.05	
Bathynectes piperitus	0.14 8	0.02	
GALATHEIDAE *	0.14 14	0.02	
Total	579.58	99.99	

PROJECT STATION:2010
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2316 Long E 1259
 start stop duration
 TIME :20:27:14 20:57:52 31 (min) Purpose code: 3
 LOG :4081.25 4082.68 1.43 Area code : 2
 FDEPTH: 667 673 GearCond.code:
 BDEPTH: 667 673 Validity code:
 Towing dir: 350° Wire out:1750 m Speed: 30 kn*10
 Sorted: 199 Kg Total catch: 280.65 CATCH/HOUR: 543.19

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	198.97 180	36.63	6937
Neocyttus rhomboidalis	149.03 261	27.44	
Todarodes sagittatus	87.29 120	16.07	
Deania calcea	41.61 23	7.66	
Nezumia sp.	20.42 881	3.76	
Centroscymnus crepidater	16.74 2	3.08	
Hoplostethus cadenati	7.74 416	1.42	
Selachophidium guentheri	4.65 68	0.86	
Notacanthus sexspinis	3.97 39	0.73	
Coelorinchus matamua	3.48 10	0.64	
Shrimps, small, non comm.	2.32 10	0.43	
Symbolophorus boops	2.03 310	0.37	
Yarrella blackfordi	1.16 39	0.21	
Heterocarpus grimaldii	0.97 58	0.18	
Deepwater fish mixture	0.87 10	0.16	
Bathylagus glacialis	0.58 10	0.11	
Dicrolene intronigra	0.48 10	0.09	
Photichthys argenteus	0.39 39	0.07	
Stereomastis sp.	0.29 19	0.05	
Nephropsis atlantica	0.19 10	0.03	
Total	543.18	99.99	

PROJECT STATION:2008
 DATE: 3/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2318 Long E 1307
 start stop duration
 TIME :14:58:34 15:28:17 30 (min) Purpose code: 3
 LOG :4060.51 4061.89 1.38 Area code : 2
 FDEPTH: 450 461 GearCond.code:
 BDEPTH: 450 461 Validity code:
 Towing dir: 350° Wire out:1300 m Speed: 30 kn*10
 Sorted: 285 Kg Total catch: 410.10 CATCH/HOUR: 820.20

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	428.90 482	52.29	6934
Trachyrincus scabrus	69.50 520	8.47	
Deania profundorum	68.20 40	8.32	
Todarodes sagittatus	59.40 126	7.24	
Helicolenus dactylopterus	56.30 370	6.86	
Krill	30.00 50000	3.66	
Nezumia sp.	29.30 1374	3.57	
Schedophilus huttoni	19.30 20	2.35	
Raja confundens	12.50 10	1.52	
Selachophidium guentheri	11.40 180	1.39	
Bassanago albescens	10.60 20	1.29	
Raja doutrei	8.30 2	1.01	
Merluccius paradoxus, male	8.20 12	1.00	6933
Lophius vomerinus	2.60 2	0.32	6935
Etmopterus lucifer	2.50 10	0.30	
MYCTOPHIDAE	1.10 180	0.13	
Photichthys argenteus	0.90 180	0.11	
Epigonus denticulatus	0.40 40	0.05	
Hoplostethus cadenati	0.40 10	0.05	
Notacanthus sexspinis	0.30 10	0.04	
Coelorinchus fasciatus	0.10 10	0.01	
Total	820.20	99.98	

PROJECT STATION:2011
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2260 Long E 1254
 start stop duration
 TIME :23:32:37 00:03:19 31 (min) Purpose code: 3
 LOG :4097.28 4098.69 1.41 Area code : 2
 FDEPTH: 699 697 GearCond.code:
 BDEPTH: 699 697 Validity code:
 Towing dir: 350° Wire out:1800 m Speed: 30 kn*10
 Sorted: 208 Kg Total catch: 253.53 CATCH/HOUR: 490.70

SPECIES	CATCH/HOUR weight numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	264.00 225	53.80	6938
Deania calcea	54.87 23	11.18	
Todarodes sagittatus	44.61 68	9.09	
Centroscymnus coelolepis	42.87 2	8.74	
Nezumia sp.	18.70 482	3.81	
Neocyttus rhomboidalis	14.17 29	2.89	
Trachyrincus scabrus	8.94 75	1.82	
Selachophidium guentheri	7.20 99	1.47	
Coelorinchus matamua	6.68 17	1.36	
Raja confundens	6.37 8	1.30	
Hoplostethus cadenati	6.27 197	1.28	
Alepocephalus sp.	3.77 29	0.77	
Notacanthus sexspinis	2.73 17	0.56	
Bathylagus glacialis	2.55 93	0.52	
Yarrella blackfordi	2.44 203	0.50	
Parapnaeus longirostris	2.32 482	0.47	
Stereomastis sp.	0.81 35	0.17	
Bathyroconger vicinus	0.70 6	0.14	
Photichthys argenteus	0.29 6	0.06	
NEPHROPIDAE	0.17 12	0.03	
Lampadena sp.	0.12 6	0.02	
GALATHEIDAE *	0.06 12	0.01	
Lampanyctodes hectoris	0.06 12	0.01	
Total	490.70	100.00	

PROJECT STATION:2012
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1256
 start stop duration
 TIME :02:01:22 02:31:49 30 (min) Purpose code: 3
 LOG :4106.68 4108.02 1.34 Area code : 2
 FDEPTH: 599 601 GearCond.code:
 BDEPTH: 599 601 Validity code:
 Towing dir: 335° Wire out:1600 m Speed: 30 kn*10

Sorted: 154 Kg Total catch: 201.36 CATCH/HOUR: 402.72

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	214.10	178	53.16	6939
Deania quadrispinosum	45.00	16	11.17	
Nezumia sp.	35.40	1056	8.79	
Todarodes sagittatus	30.40	52	7.55	
Trachyrincus scabrus	25.00	68	6.21	
Deania calcea	11.80	8	2.93	
Hoplostethus cadenati	8.20	568	2.04	
Selachophidium guentheri	7.84	128	1.95	
Raja confundens	6.96	8	1.73	
Helicolenus dactylopterus	4.08	8	1.01	
Symbolophorus boops	2.96	364	0.74	
Notacanthus sexspinis	2.60	32	0.65	
Alepocephalus sp.	2.52	52	0.63	
Yarella blackfordi	1.52	196	0.38	
Parapanaeus longirostris	1.00	116	0.25	
Raja straeleni	1.00	8	0.25	
Lamprogrammus exutus	0.52	4	0.13	
Macroparalepis macrogeneion	0.48	12	0.12	
Scomberesox saurus	0.46	4	0.11	
Photichthys argenteus	0.40	28	0.10	
Stereomastis sp.	0.36	16	0.09	
NEPHROPIDAE	0.08	4	0.02	
GALATHEIDAE *	0.04	28	0.01	
Total	402.72		100.02	

PROJECT STATION:2015
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1318
 start stop duration
 TIME :10:52:38 11:22:35 30 (min) Purpose code: 3
 LOG :4149.54 4151.03 1.49 Area code : 2
 FDEPTH: 361 359 GearCond.code:
 BDEPTH: 361 359 Validity code:
 Towing dir: 350° Wire out:1100 m Speed: 32 kn*10

Sorted: 201 Kg Total catch: 477.27 CATCH/HOUR: 954.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	610.76	2050	63.98	6950
Symbolophorus boops	50.70	12870	5.31	
Brama brama	44.50	20	4.66	
Todarodes sagittatus	27.70	48	2.90	
Merluccius paradoxus, male	25.76	86	2.70	6954
Merluccius capensis, female	23.80	18	2.49	6948
Schedophilus huttoni	22.30	10	2.34	
Nezumia sp.	22.10	1050	2.32	
Chlorophthalmus atlanticus	20.30	730	2.13	
Genypterus capensis	16.70	6	1.75	6953
Lampanyctodes hectoris	11.70	5460	1.23	
Epigonus denticulatus	11.30	370	1.18	
Helicolenus dactylopterus	10.00	140	1.05	
Merluccius paradoxus, female	9.30	10	0.97	6955
Coelorinchus fasciatus	8.90	110	0.93	
Zenopsis conchifer	8.40	10	0.88	
Lophius vomerinus	8.40	4	0.88	6952
Trachipterus jacksonensis	6.20	4	0.65	
Trachurus capensis	5.90	12	0.62	6956
Merluccius capensis, male	5.82	4	0.61	6949
Merluccius paradoxus, male	1.90	2	0.20	6951
Galeus polli	1.50	30	0.16	
Coelorinchus coelorhinc. polli	0.50	60	0.05	
Selachophidium guentheri	0.10	20	0.01	
Total	954.54		100.00	

PROJECT STATION:2013
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1259
 start stop duration
 TIME :05:40:39 06:10:00 29 (min) Purpose code: 3
 LOG :4120.81 4122.30 1.49 Area code : 2
 FDEPTH: 501 502 GearCond.code:
 BDEPTH: 501 502 Validity code:
 Towing dir: 340° Wire out:1450 m Speed: 30 kn*10

Sorted: 186 Kg Total catch: 263.40 CATCH/HOUR: 544.97

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	286.03	323	52.49	6941
Trachyrincus scabrus	101.79	1076	18.68	
Nezumia sp.	51.14	1366	9.38	
Helicolenus dactylopterus	27.89	199	5.12	
Merluccius paradoxus, male	25.76	29	4.73	6940
Ruvettus pretiosus	14.69	2	2.70	
Schedophilus huttoni	7.45	8	1.37	
Deepwater fish mixture	7.20		1.32	
Todarodes sagittatus	5.13	10	0.94	
Deania profundorum	4.88	8	0.90	
Selachophidium guentheri	3.89	66	0.71	
Etmopterus pusillus	2.57	8	0.47	
Epigonus telescopus	1.82	8	0.33	
Shrimps, small, non comm.	1.08	364	0.20	
Maurollic muelleri	1.08	844	0.20	
Photichthys argenteus	0.99	58	0.18	
Hoplostethus cadenati	0.58	41	0.11	
Todaropsis eblanae	0.41	8	0.08	
Lampanyctodes hectoris	0.25	58	0.05	
Yarella blackfordi	0.25	8	0.05	
Howella shernborni	0.08	8	0.01	
Total	544.96		100.02	

PROJECT STATION:2016
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1329
 start stop duration
 TIME :13:21:43 13:51:57 30 (min) Purpose code: 3
 LOG :4164.42 4165.80 1.38 Area code : 2
 FDEPTH: 258 259 GearCond.code:
 BDEPTH: 258 259 Validity code:
 Towing dir: 350° Wire out: 840 m Speed: 30 kn*10

Sorted: 243 Kg Total catch: 539.88 CATCH/HOUR: 1079.76

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	250.80	804	23.23	6962
Merluccius capensis, female	225.60	930	20.89	6958
Merluccius capensis, male	174.60	714	16.17	6959
Merluccius capensis, female	146.80	84	13.60	6960
Sufflogobius bibarbatatus	143.00	23030	13.24	
Coelorinchus fasciatus	57.30	1330	5.31	
Merluccius capensis, male	34.60	34	3.20	6961
Todarodes sagittatus	11.40	18	1.06	
Lophius vomerinus	9.20	24	0.85	6963
Galeus polli	8.50	90	0.79	
Thyrssites atun	7.90	2	0.73	6957
Scomber japonicus	4.90	4	0.45	
Brama brama	2.20	2	0.20	
Hyperoglyphe moselii	1.56	2	0.14	
Synagrops microlepis	1.00	10	0.09	
Bathynectes piperitus	0.40	10	0.04	
Total	1079.76		99.99	

PROJECT STATION:2014
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1310
 start stop duration
 TIME :08:23:42 08:54:20 31 (min) Purpose code: 3
 LOG :4137.23 4138.96 1.73 Area code : 2
 FDEPTH: 309 303 GearCond.code:
 BDEPTH: 309 303 Validity code:
 Towing dir: 350° Wire out: 990 m Speed: 30 kn*10

Sorted: 207 Kg Total catch: 421.55 CATCH/HOUR: 815.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	249.29	4335	30.55	
Brama brama	117.10	108	14.35	
Lepidopus caudatus	112.26	93	13.76	
Merluccius capensis, female	92.32	52	11.32	6943
Merluccius paradoxus, female	52.94	163	6.49	6945
Galeus polli	48.15	542	5.90	
Chlorophthalmus atlanticus	35.92	1827	4.40	
Hexanchus griseus	24.19	2	2.96	
Coelorinchus coelorhinc. polli	19.97	805	2.45	
Centrolophus niger	19.45	6	2.38	
Todarodes sagittatus	13.55	27	1.66	
Coelorinchus fasciatus	7.90	201	0.97	
Merluccius paradoxus, male	5.13	17	0.63	6944
Trachurus capensis	4.92	10	0.60	6947
Merluccius capensis, male	4.84	4	0.59	6942
Schedophilus huttoni	4.30	2	0.53	
Lophius vomerinus	1.88	2	0.23	6946
Beryx splendens	1.34	6	0.16	
Bathynectes piperitus	0.46	15	0.06	
Total	815.91		99.99	

PROJECT STATION:2017
 DATE: 4/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2258 Long E 1339
 start stop duration
 TIME :15:35:00 16:05:00 30 (min) Purpose code: 3
 LOG :4177.58 4178.83 1.25 Area code : 2
 FDEPTH: 150 149 GearCond.code:
 BDEPTH: 150 149 Validity code:
 Towing dir: 350° Wire out: 520 m Speed: 30 kn*10

Sorted: 141 Kg Total catch: 264.66 CATCH/HOUR: 529.32

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	194.36	1214	36.72	6965
Merluccius capensis, female	145.36	704	27.46	6966
Merluccius capensis, female	58.10	28	10.98	6962
Thyrssites atun	45.90	12	8.67	6964
Sufflogobius bibarbatatus	31.26	4848	5.91	
Lophius vomerinus	19.86	58	3.75	6963
Chelidonichthys capensis	12.08	24	2.28	
Lophius vomerinus	11.24	2	2.12	6969
Merluccius capensis, male	5.80	8	1.10	6961
Austroglossus microlepis	4.00	8	0.76	6967
Trachurus capensis	0.72	4	0.14	6968
Chatrabus melanurus	0.32	4	0.06	
Bathynectes piperitus	0.18	4	0.03	
Lepidopus caudatus	0.10	4	0.02	
Todaropsis eblanae	0.04	4	0.01	
Chrysaora sp.	0.00	556		
Total	529.32		100.01	

PROJECT STATION:2018
 DATE: 5/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2235 Long E 1339
 start stop duration
 TIME :05:36:06 06:07:17 31 (min) Purpose code: 3
 LOG :4246.42 4248.02 1.60 Area code : 2
 FDEPTH: 134 136 GearCond.code:
 BDEPTH: 134 136 Validity code:
 Towing dir: 260° Wire out: 450 m Speed: 30 kn*10

Sorted: 92 Kg Total catch: 234.24 CATCH/HOUR: 453.37

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	162.00	1041	35.73	6972
Merluccius capensis, female	143.23	759	31.59	6971
Miscellaneous fishes	96.77		21.34	
Merluccius capensis, female	48.19	31	10.61	6970
Merluccius capensis, juveniles	3.17	77	0.70	6973
Chrysaora sp.	0.00	6451		
Total	453.36		99.99	

PROJECT STATION:2019
 DATE: 5/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2236
 Long E 1326
 start stop duration
 TIME :07:53:43 08:23:56 30 (min) Purpose code: 3
 LOG :4258.73 4260.26 1.53 Area code : 2
 FDEPTH: 234 237 GearCond.code:
 BDEPTH: 234 237 Validity code:
 Towing dir: 325° Wire out: 750 m Speed: 30 kn*10

Sorted: 64 Kg Total catch: 73.80 CATCH/HOUR: 147.60

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, male	44.30 268	30.01	6975
Merluccius capensis, female	42.20 210	28.59	6974
Sufflogobius bibarbatatus	23.50 2720	15.92	
Coelorinchus fasciatus	15.40 304	10.43	
Pterothrissus belloci	8.72 60	5.91	
Lophius vomerinus	7.58 28	5.14	6977
Todarodes sagittatus	1.70 2	1.15	
Austroglossus microlepis	1.58 2	1.07	6979
Trachurus capensis	1.54 6	1.04	6978
Todaropsis eblanae	0.94 22	0.64	
Merluccius capensis, juveniles	0.10 6	0.07	6976
Synagrops microlepis	0.04 2	0.03	
Total	147.60	100.00	

PROJECT STATION:2020
 DATE: 5/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2238
 Long E 1312
 start stop duration
 TIME :10:24:07 10:55:19 31 (min) Purpose code: 3
 LOG :4273.89 4275.38 1.49 Area code : 2
 FDEPTH: 299 298 GearCond.code:
 BDEPTH: 299 298 Validity code:
 Towing dir: 310° Wire out: 950 m Speed: 32 kn*10

Sorted: 113 Kg Total catch: 927.56 CATCH/HOUR: 1795.28

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Lampanyctodes hectoris	1137.83 1672	63.38	
Symbolophorus boops	272.26 63372	15.17	
Coelorinchus fasciatus	119.32 3153	6.65	
Merluccius capensis, female	79.65 226	4.44	6980
Trachipterus jacksonensis	35.71 17	1.99	
Merluccius capensis, male	35.03 126	1.95	6981
Todarodes sagittatus	33.48 66	1.86	
Chlorophthalmus atlanticus	31.25 1968	1.75	
Helicolenus dactylopterus	11.67 1881	0.65	
Lophius vomerinus	10.16 8	0.57	6982
Beryx splendens	9.75 35	0.54	
Solenocera africana	4.70 1080	0.26	
Coelorinchus coelorhinc. polli	4.01 261	0.22	
Galeus polli	3.31 35	0.18	
Genypterus capensis	3.10 4	0.17	6983
Bassanago albescens	1.22 17	0.07	
Trachurus capensis	1.01 4	0.06	6984
Malacocephalus laevis	0.70 17	0.04	
Todaropsis eblanae	0.70 35	0.04	
Lepidopus caudatus	0.31 2	0.02	
Total	1795.27	100.01	

PROJECT STATION:2021
 DATE: 5/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2238
 Long E 1303
 start stop duration
 TIME :12:28:20 12:58:47 30 (min) Purpose code: 3
 LOG :4282.98 4284.28 1.58 Area code : 2
 FDEPTH: 311 308 GearCond.code:
 BDEPTH: 311 308 Validity code:
 Towing dir: 300° Wire out: 980 m Speed: 32 kn*10

Sorted: 160 Kg Total catch: 428.42 CATCH/HOUR: 856.84

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Coelorinchus fasciatus	177.00 2880	20.66	
Symbolophorus boops	147.60 32320	17.23	
Merluccius capensis, female	140.20 376	16.36	6985
Helicolenus dactylopterus	101.00 2480	11.79	
Coelorinchus coelorhinc. polli	60.60 2680	7.07	
Galeus polli	50.00 700	5.84	
Chlorophthalmus atlanticus	39.00 1940	4.55	
Todarodes sagittatus	31.70 58	3.70	
Merluccius capensis, male	30.50 118	3.56	6986
Lophius vomerinus	26.40 22	3.08	6987
Trachurus capensis	12.80 30	1.49	6989
Lampanyctodes hectoris	9.40 4140	1.10	
Trachipterus jacksonensis	9.20 4	1.07	
Zenopsis conchifer	3.70 2	0.43	
Todaropsis eblanae	3.60 80	0.42	
Brama brama	3.60 2	0.42	
Genypterus capensis	3.14 4	0.37	6988
Bassanago albescens	2.60 60	0.30	
Solenocera africana	2.40 600	0.28	
Malacocephalus laevis	2.00 20	0.23	
Bathymectes piperitus	0.40 20	0.05	
Total	856.84	100.00	

PROJECT STATION:2022
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2338
 Long E 1332
 start stop duration
 TIME :05:05:06 05:35:55 31 (min) Purpose code: 3
 LOG :4366.91 4368.50 1.65 Area code : 2
 FDEPTH: 232 230 GearCond.code:
 BDEPTH: 232 230 Validity code:
 Towing dir: 350° Wire out: 750 m Speed: 30 kn*10

Sorted: 78 Kg Total catch: 101.35 CATCH/HOUR: 196.16

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	60.58 391	30.88	6992
Merluccius capensis, male	45.87 209	23.38	6993
Coelorinchus fasciatus	37.61 975	19.17	
Merluccius capensis, female	15.77 10	8.04	6990
Merluccius capensis, male	11.61 6	5.92	6991
Sufflogobius bibarbatatus	10.01 1428	5.10	
Todarodes sagittatus	6.68 12	3.41	
Lophius vomerinus	4.65 15	2.37	6994
Trachurus capensis	1.94 8	0.99	6995
Lepidopus caudatus	0.72 23	0.37	
Todaropsis eblanae	0.48 72	0.24	
Synagrops microlepis	0.23 23	0.12	
Bassanago albescens	0.02 2	0.01	
Total	196.17	100.00	

PROJECT STATION:2023
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2339
 Long E 1345
 start stop duration
 TIME :07:42:16 08:12:11 30 (min) Purpose code: 3
 LOG :4382.68 4384.30 1.62 Area code : 2
 FDEPTH: 193 190 GearCond.code:
 BDEPTH: 193 190 Validity code:
 Towing dir: 350° Wire out: 620 m Speed: 30 kn*10

Sorted: 96 Kg Total catch: 157.04 CATCH/HOUR: 314.08

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, male	90.20 508	28.72	6998
Merluccius capensis, female	82.20 348	26.17	6999
Sufflogobius bibarbatatus	60.20 8028	19.17	
Merluccius capensis, female	32.50 20	10.35	6997
Todarodes sagittatus	18.90 46	6.02	
Coelorinchus fasciatus	10.08 208	3.21	
Brama brama	9.40 8	2.99	
Merluccius capensis, male	6.10 6	1.94	6996
Lophius vomerinus	3.14 20	1.00	7000
Chatrabus melanurus	0.56 4	0.18	
Bassanago albescens	0.40 8	0.13	
Bathymectes piperitus	0.24 8	0.08	
Merluccius capensis, juveniles	0.08 8	0.03	7001
Lepidopus caudatus	0.08 4	0.03	
Total	314.08	100.02	

PROJECT STATION:2024
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2339
 Long E 1356
 start stop duration
 TIME :09:47:00 10:18:00 31 (min) Purpose code: 3
 LOG :4395.70 4397.20 1.50 Area code : 2
 FDEPTH: 173 171 GearCond.code:
 BDEPTH: 173 171 Validity code:
 Towing dir: 350° Wire out: 560 m Speed: 30 kn*10

Sorted: 189 Kg Total catch: 463.41 CATCH/HOUR: 896.92

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachurus capensis	333.87 1723	37.22	7006
Merluccius capensis, female	121.26 52	13.52	7002
Lepidopus caudatus	107.42 716	13.98	
Merluccius capensis, female	96.10 418	10.71	7003
Sufflogobius bibarbatatus	93.87 24542	10.47	
Merluccius capensis, male	79.55 463	8.87	7004
Coelorinchus fasciatus	33.10 658	3.69	
Todarodes sagittatus	22.06 39	2.46	
Lophius vomerinus	8.81 6	0.98	7005
Austroglossus microlepis	0.89 4	0.10	7007
Total	896.93	100.00	

PROJECT STATION:2025
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2320
 Long E 1349
 start stop duration
 TIME :12:33:00 13:03:00 30 (min) Purpose code: 3
 LOG :4415.00 4416.40 1.40 Area code : 2
 FDEPTH: 161 160 GearCond.code:
 BDEPTH: 161 160 Validity code:
 Towing dir: 270° Wire out: 550 m Speed: 3 kn*10

Sorted: 204 Kg Total catch: 288.32 CATCH/HOUR: 576.64

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Sufflogobius bibarbatatus	188.40 36652	32.67	
Merluccius capensis	160.10 900	27.76	7014
Merluccius capensis, female	79.70 422	13.82	7009
Merluccius capensis, male	53.00 364	9.19	7010
Merluccius capensis, female	40.70 24	7.06	7008
Trachurus capensis	11.50 58	1.99	7012
Brama brama	10.90 6	1.89	
Lophius vomerinus	9.50 38	1.65	7011
Todaropsis eblanae	4.80 60	0.83	
Coelorinchus fasciatus	4.80 84	0.83	
Lepidopus caudatus	3.60 24	0.62	
Callorhynchus capensis	3.42 2	0.59	
Merluccius capensis, male	1.90 2	0.33	7015
Austroglossus microlepis	0.32 6	0.06	7013
Chrysaora sp.	0.00 60		
Total	572.64	99.29	

PROJECT STATION:2026
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2319
 Long E 1337
 start stop duration
 TIME :14:33:38 14:54:17 21 (min) Purpose code: 3
 LOG :4426.70 4427.73 '0.93 Area code : 2
 FDEPTH: 169 165 GearCond.code:
 BDEPTH: 169 165 Validity code:
 Towing dir: 31° Wire out: 580 m Speed: 30 kn*10

Sorted: 532 Kg Total catch: 6308.83 CATCH/HOUR: 18025.23

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachurus capensis	16937.14 74109	93.96	7019
Merluccius capensis, female	652.71 263	3.62	7017
Merluccius capensis, male	233.43 197	1.30	7016
Thyrisites atun	177.00 40	0.98	7018
Raja straeleni	11.71 3	0.06	
Chelidonichthys capensis	9.00 11	0.05	
Lophius vomerinus	2.94 14	0.02	7020
Scomber japonicus	1.29 3	0.01	
Total	18025.22	100.00	

PROJECT STATION:2027
 DATE: 6/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2301
 start stop duration Long E 1348
 TIME :16:55:00 17:09:19 14 (min) Purpose code: 3
 LOG :4446.88 4447.63 0.72 Area code : 2
 FDEPTH: 145 145 GearCond.code: 9
 BDEPTH: 145 145 Validity code: 1
 Towing dir: 350° Wire out: 450 m Speed: 30 kn*10

Sorted: 141 Kg Total catch: 141.80 CATCH/HOUR: 607.71

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	222.21	1483	36.57	7021
Merluccius capensis, female	208.07	1080	34.24	7024
Lepidopus caudatus	88.71	729	14.60	
Merluccius capensis, female	51.86	30	8.53	7022
Thyrsites atun	16.93	4	2.79	7025
Todarodes sagittatus	7.89	17	1.30	
Lophius vomerinus	5.87	21	0.97	7027
Sufflogobius bibarbatatus	2.57	600	0.42	
Trachurus capensis	1.63	9	0.27	7026
Pterothrissus belloci	1.03	9	0.17	
Coelorrhinchus fasciatus	0.73	13	0.12	
Merluccius capensis, juveniles	0.21	9	0.03	7023
Chrysaora sp.	0.00	3570		
Total	607.71		100.01	

PROJECT STATION:2030
 DATE: 7/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2218
 start stop duration Long E 1248
 TIME :08:56:45 09:26:53 30 (min) Purpose code: 3
 LOG :4573.01 4574.50 1.49 Area code : 2
 FDEPTH: 423 429 GearCond.code: 9
 BDEPTH: 423 429 Validity code: 1
 Towing dir: 350° Wire out: 1250 m Speed: 30 kn*10

Sorted: 126 Kg Total catch: 209.54 CATCH/HOUR: 419.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	171.10	204	40.83	7032
Helicolenus dactylopterus	102.20	700	24.39	
Nezumia sp.	36.26	672	8.65	
Todarodes sagittatus	20.80	54	4.96	
Schedophilus huttoni	14.70	14	3.51	
Krill	13.72		3.27	
Merluccius paradoxus, male	9.90	14	2.36	7033
Tetragonurus atlanticus	8.40	28	2.00	
Epigonus telescopus	7.98	42	1.90	
Deania quadrispinosum	7.52	10	1.79	
Epigonus denticulatus	7.42	448	1.77	
Etmopterus lucifer	6.90	20	1.65	
Centrophorus uyato	5.90	2	1.41	
Neoharriotta pinnata	2.22	2	0.53	
Selachophidium guentheri	1.40	28	0.33	
Notacanthus sexspinis	1.12	28	0.27	
Chlorophthalmus atlanticus	0.84	28	0.20	
GONOSTOMATIDAE	0.42	112	0.10	
Nemichthys scolopaceus	0.14	14	0.03	
Hoplostethus cadenati	0.14	42	0.03	
Photichthys argenteus	0.14	14	0.03	
Total	419.22		100.01	

PROJECT STATION:2028
 DATE: 7/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 2238
 start stop duration Long E 1247
 TIME :03:35:50 04:05:24 30 (min) Purpose code: 3
 LOG :4544.08 4545.48 1.36 Area code : 2
 FDEPTH: 658 624 GearCond.code: 9
 BDEPTH: 658 624 Validity code: 1
 Towing dir: 10° Wire out: 1750 m Speed: 30 kn*10

Sorted: 215 Kg Total catch: 480.07 CATCH/HOUR: 960.14

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	727.20	662	75.74	7029
Deania profundorum	39.12	24	4.07	
Deania calcea	35.04	16	3.65	
Nezumia sp.	33.60	936	3.50	
Allocyttus verrucosus	18.64	184	1.94	
Trachyrinchus scabrus	18.16	136	1.89	
Centroscymnus crepidater	16.00	16	1.67	
Coelorrhinchus matama	11.92	24	1.24	
Trachyscorpia capensis	10.88	8	1.13	
Merluccius paradoxus, male	9.20	12	0.96	7028
Selachophidium guentheri	8.80	80	0.92	
Etmopterus lucifer	6.40	24	0.67	
Todarodes sagittatus	5.74	10	0.60	
Beryx splendens	4.16	8	0.43	
Notacanthus sexspinis	3.44	16	0.36	
Ehinania costaecanarie	3.28	2	0.34	
Lithodes ferox	1.80	6	0.19	
Shrimps, small, non comm.	1.28	400	0.13	
Hoplostethus cadenati	1.20	96	0.12	
Deepwater fish mixture	0.96		0.10	
Hoplostethus atlanticus	0.68	2	0.07	
Yarella blackfordi	0.64	16	0.07	
Symbolophorus boops	0.56	40	0.06	
Alepocephalus sp.	0.56	24	0.06	
Nephropsis atlantica	0.48	16	0.05	
Neoscorpelus macrolepidotus	0.24	8	0.02	
Photichthys argenteus	0.16	8	0.02	
Total	960.14		100.00	

PROJECT STATION:2031
 DATE: 7/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2218
 start stop duration Long E 1257
 TIME :11:22:08 11:46:04 24 (min) Purpose code: 3
 LOG :4585.75 4586.88 1.13 Area code : 2
 FDEPTH: 304 305 GearCond.code: 9
 BDEPTH: 304 305 Validity code: 1
 Towing dir: 10° Wire out: 950 m Speed: 31 kn*10

Sorted: 128 Kg Total catch: 375.92 CATCH/HOUR: 939.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chlorophthalmus atlanticus	416.38	13790	44.31	
Symbolophorus boops	184.10	49630	19.59	
Merluccius capensis, female	100.88	175	10.73	7035
Todarodes sagittatus	42.50	98	4.52	
Coelorrhinchus coelorhinc. polli	38.85	1575	4.13	
Galeus polli	33.95	368	3.61	
Merluccius capensis, male	26.00	50	2.77	7036
Zenopsis conchifer	24.38	23	2.59	
Brama brama	20.25	15	2.15	
Coelorrhinchus fasciatus	15.40	263	1.64	
Trachipterus jacksonensis	15.38	3	1.64	
Schedophilus huttoni	7.25	3	0.77	
Tetragonurus atlanticus	4.20	18	0.45	
Lampanyctodes hectoris	3.68	735	0.39	
Malacocephalus laevis	2.63	35	0.28	
Helicolenus dactylopterus	1.75	88	0.19	
Merluccius paradoxus, female	1.38	3	0.15	7034
Bathynectes piperitus	0.70	35	0.07	
Solenocera africana	0.18	35	0.02	
Total	939.84		100.00	

PROJECT STATION:2029
 DATE: 7/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2219
 start stop duration Long E 1245
 TIME :06:50:42 07:21:33 31 (min) Purpose code: 3
 LOG :4564.06 4565.56 1.50 Area code : 2
 FDEPTH: 555 567 GearCond.code: 9
 BDEPTH: 555 567 Validity code: 1
 Towing dir: 345° Wire out: 1500 m Speed: 30 kn*10

Sorted: 146 Kg Total catch: 188.44 CATCH/HOUR: 364.72

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Deania calcea	164.32	116	45.05	
Merluccius paradoxus, female	95.81	106	26.27	7031
SHRPA14	25.41	7473	6.97	
Nezumia sp.	23.67	494	6.49	
Centrophorus squamosus	12.35	4	3.39	
Todarodes sagittatus	12.10	19	3.32	
Hoplostethus cadenati	6.54	544	1.79	
Trachyrinchus scabrus	5.61	45	1.54	
Selachophidium guentheri	3.31	68	0.91	
Merluccius paradoxus, male	2.42	4	0.66	7030
Notacanthus sexspinis	2.38	35	0.65	
Raja confundens	2.32	2	0.64	
Helicolenus dactylopterus	2.01	6	0.55	
Deepwater fish mixture	1.84		0.50	
Schedophilus huttoni	1.59	2	0.44	
Deania quadrispinosum	1.45	4	0.40	
Epigonus telescopus	0.87	15	0.24	
Neocyttus rhomboidalis	0.62	4	0.17	
Allocyttus verrucosus	0.41	4	0.11	
Aristeus varidens	0.23	39	0.06	
Yarella blackfordi	0.21	4	0.06	
Ehinania costaecanarie	0.19	2	0.05	
Todaropsis eblanae	0.10	2	0.03	
Total	365.76		100.29	

PROJECT STATION:2032
 DATE: 7/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 2217
 start stop duration Long E 1306
 TIME :13:22:25 13:51:16 29 (min) Purpose code: 3
 LOG :4597.22 4598.49 1.50 Area code : 2
 FDEPTH: 254 254 GearCond.code: 9
 BDEPTH: 254 254 Validity code: 1
 Towing dir: 360° Wire out: 850 m Speed: 31 kn*10

Sorted: 222 Kg Total catch: 269.62 CATCH/HOUR: 557.83

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	138.00	652	24.74	7041
Merluccius capensis, female	136.76	656	24.52	7037
Merluccius capensis, male	66.41	360	11.91	7039
Coelorrhinchus fasciatus	48.41	1024	8.68	
Lophius vomerinus	20.38	25	3.65	7042
Chlorophthalmus atlanticus	20.05	2650	3.59	
Merluccius capensis, female	19.76	31	3.54	7038
Synagrops microlepis	17.13	1428	3.07	
Galeus polli	15.64	546	2.80	
Dentex macrophthalmus	14.79	37	2.65	7045
Sufflogobius bibarbatatus	14.77	2483	2.65	
Schedophilus huttoni	13.34	6	2.39	
Todarodes sagittatus	9.43	25	1.69	
Merluccius capensis, male	8.59	14	1.54	7040
Trachurus capensis	5.48	17	0.98	7043
Brama brama	3.04	12	0.54	
Bathynectes piperitus	2.42	87	0.43	
Todaropsis eblanae	1.68	62	0.30	
Pterothrissus belloci	1.49	37	0.27	
Merluccius capensis, juveniles	0.31	31	0.06	7044
Aequorea aequorea	0.00	62		
Chrysaora sp.	0.00	35		
Total	557.88		100.00	

PROJECT STATION:2033
 DATE: 7/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2216 Long E 1316
 start stop duration
 TIME :15:38:18 16:07:31 29 (min) Purpose code: 3
 LOG :4611.17 4612.58 1.56 Area code : 2
 FDEPTH: 226 224 GearCond.code: 2
 BDEPTH: 226 224 Validity code:
 Towing dir: 360° Wire out: 750 m Speed: 30 kn*10

Sorted: 59 Kg Total catch: 86.05 CATCH/HOUR: 178.03

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbus	62.90	11727	35.33	
Merluccius capensis, male	49.14	238	27.60	7047
Merluccius capensis, female	33.41	137	18.77	7046
Pterothrissus belloci	13.66	81	7.67	
Todarodes sagittatus	6.29	8	3.53	
Lophius vomerinus	5.73	23	3.22	7049
Coelorinchus fasciatus	3.31	66	1.86	
Todaropsis eblanae	1.32	83	0.74	
Trachurus capensis	0.99	4	0.56	7048
Bathynectes piperitus	0.99	33	0.56	
Austroglossus microlepis	0.85	2	0.48	7050
Bassanago albescens	0.41	8	0.23	
Galeus polli	0.25	25	0.14	
Synagrops microlepis	0.17	8	0.10	
Helicolenus dactylopterus	0.08	25	0.04	
Merluccius capensis, juveniles	0.02	4	0.01	7051
Total	179.52		100.84	

PROJECT STATION:2037
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2148 Long E 1322
 start stop duration
 TIME :07:51:18 08:10:46 19 (min) Purpose code: 3
 LOG :4714.22 4715.25 0.96 Area code : 2
 FDEPTH: 148 147 GearCond.code: 9
 BDEPTH: 148 147 Validity code: 1
 Towing dir: 330° Wire out: 450 m Speed: 30 kn*10

Sorted: 196 Kg Total catch: 2756.00 CATCH/HOUR: 8703.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	8156.84	50703	93.72	7072
Merluccius capensis, female	310.74	306	3.57	7065
Merluccius capensis, female	94.58	433	1.09	7067
Merluccius capensis, male	72.63	461	0.83	7068
Merluccius capensis, male	35.37	44	0.41	7066
Sufflogobius bibarbus	17.05	4547	0.20	
Lophius vomerinus	5.91	25	0.07	7071
Callorhynchus capensis	4.39	3	0.05	
Austroglossus microlepis	2.78	6	0.03	7070
Todarodes sagittatus	1.58	3	0.02	
Merluccius capensis, juveniles	1.29	51	0.01	7069
Total	8703.16		100.00	

PROJECT STATION:2038
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2149 Long E 1313
 start stop duration
 TIME :09:40:35 10:00:21 20 (min) Purpose code: 3
 LOG :4725.92 4726.95 1.05 Area code : 2
 FDEPTH: 166 165 GearCond.code:
 BDEPTH: 166 165 Validity code:
 Towing dir: 340° Wire out: 500 m Speed: 32 kn*10

Sorted: 266 Kg Total catch: 786.63 CATCH/HOUR: 2359.89

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	998.94	2481	42.33	7077
Merluccius capensis, male	473.10	2052	20.05	7076
Merluccius capensis, female	458.40	339	19.42	7073
Merluccius capensis, male	123.90	126	5.25	7075
Merluccius capensis, female	109.74	399	4.65	7074
Chelidonichthys capensis	61.56	114	2.61	
Lepidopus caudatus	34.77	228	1.47	
Thyrssites atun	26.40	6	1.12	7080
Pterothrissus belloci	18.81	144	0.80	
Bathynectes piperitus	13.11	600	0.56	
Todaropsis eblanae	12.84	399	0.54	
Todarodes sagittatus	12.27	30	0.52	
Squalus megalops	10.56	30	0.45	
Austroglossus microlepis	5.01	9	0.21	7079
Lophius vomerinus	0.48	3	0.02	7078
Total	2359.89		100.00	

PROJECT STATION:2039
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2151 Long E 1302
 start stop duration
 TIME :11:53:03 12:22:15 29 (min) Purpose code: 3
 LOG :4740.29 4741.62 1.42 Area code : 2
 FDEPTH: 278 276 GearCond.code:
 BDEPTH: 278 276 Validity code:
 Towing dir: 10° Wire out: 920 m Speed: 31 kn*10

Sorted: 171 Kg Total catch: 190.77 CATCH/HOUR: 394.70

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	112.14	106	28.41	7081
Merluccius capensis, female	65.98	416	16.72	7082
Trachurus capensis	65.07	145	16.49	7086
Merluccius capensis, male	36.62	248	9.28	7084
Sufflogobius bibarbus	27.52	6217	6.97	
Pterothrissus belloci	24.93	261	6.32	
Todarodes sagittatus	17.28	29	4.38	
Coelorinchus fasciatus	9.83	248	2.49	
Brama brama	8.17	8	2.07	
Merluccius capensis, male	5.38	10	1.36	7083
Chlorophthalmus atlanticus	4.55	445	1.15	
Galeus polli	4.45	124	1.13	
Todaropsis eblanae	3.41	207	0.86	
Trachipterus jacksonensis	3.41	2	0.86	
Lophius vomerinus	1.97	2	0.50	7085
Genypterus capensis	1.92	2	0.49	7087
Synagrops microlepis	1.66	93	0.42	
Bathynectes piperitus	0.41	21	0.10	
Total	394.70		100.00	

PROJECT STATION:2040
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2152 Long E 1248
 start stop duration
 TIME :14:33:29 15:02:22 29 (min) Purpose code: 3
 LOG :4757.49 4758.85 1.59 Area code : 2
 FDEPTH: 325 324 GearCond.code:
 BDEPTH: 325 324 Validity code:
 Towing dir: 5° Wire out: 1020 m Speed: 31 kn*10

Sorted: 98 Kg Total catch: 292.41 CATCH/HOUR: 604.99

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Beryx splendens	192.62	753	31.84	7089
Helicolenus dactylopterus	118.76	2361	19.63	
Chlorophthalmus atlanticus	85.45	4403	14.12	
Merluccius paradoxus, female	76.34	182	12.62	7090
Merluccius capensis, female	37.03	25	6.12	7088
Galeus polli	26.79	377	4.43	
Todarodes sagittatus	18.39	43	3.04	
Lophius vomerinus	16.66	10	2.75	7092
Coelorinchus coelorrhinc. polli	14.92	449	2.47	
Malacocephalus laevis	4.06	101	0.67	
Coelorinchus fasciatus	3.91	159	0.65	
Merluccius paradoxus, male	3.31	6	0.55	7091
Lampanyctodes hectoris	2.32	782	0.38	
Austroglossus microlepis	1.53	2	0.25	7093
Todaropsis eblanae	1.30	72	0.21	
Shrimps, small, non comm.	0.87	290	0.14	
Epigonus denticulatus	0.72	130	0.12	
Total	604.98		99.99	

PROJECT STATION:2035
 DATE: 7/ 2/97 GEAR TYPE: PT No:4 POSITION:Lat S 2212 Long E 1358
 start stop duration
 TIME :21:23:39 21:38:46 15 (min) Purpose code: 1
 LOG :4652.62 4653.62 0.97 Area code : 2
 FDEPTH: 0 0 GearCond.code:
 BDEPTH: 94 92 Validity code:
 Towing dir: 90° Wire out: 100 m Speed: 40 kn*10

Sorted: 14 Kg Total catch: 666.89 CATCH/HOUR: 2667.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, juveniles	1734.60	77420	65.03	7061
Etrumeus whiteheadi	456.68	18032	17.12	7059
Sardinops ocellatus	213.64	3136	8.01	7058
Engraulis capensis	117.60	6468	4.41	7057
Thyrssites atun	107.80	392	4.04	7060
Todarodes sagittatus	37.24	588	1.40	
Chrysaora sp.	0.00	776		
Aequorea aequorea	0.00	60480		
Total	2667.56		100.01	

PROJECT STATION:2036
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2147 Long E 1343
 start stop duration
 TIME :04:48:03 05:04:43 17 (min) Purpose code: 3
 LOG :4690.86 4691.67 0.84 Area code : 2
 FDEPTH: 95 92 GearCond.code: 9
 BDEPTH: 95 92 Validity code: 1
 Towing dir: 90° Wire out: 330 m Speed: 30 kn*10

Sorted: 12 Kg Total catch: 97.20 CATCH/HOUR: 343.06

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, juveniles	320.47	10532	93.42	7062
Sufflogobius bibarbus	13.55	2795	3.95	
Merluccius capensis, female	5.08	56	1.48	7064
Merluccius capensis, male	3.95	56	1.15	7063
Aequorea aequorea	0.00	35294		
Total	343.05		100.00	

PROJECT STATION:2041
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2154 Long E 1239
 start stop duration
 TIME :17:11:00 17:41:00 30 (min) Purpose code: 3
 LOG :4779.70 4773.20 1.50 Area code : 2
 FDEPTH: 510 512 GearCond.code:
 BDEPTH: 510 512 Validity code:
 Towing dir: 350° Wire out:1450 m Speed: 3 kn*10

Sorted: 124 Kg Total catch: 205.45 CATCH/HOUR: 410.90

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Trachyrincus scabrus	139.50	590	33.95
Merluccius paradoxus, female	123.70	136	30.10
Centrophorus squamosus	45.00	6	10.95
Todarodes sagittatus	19.40	36	4.72
Helicolenus dactylopterus	16.80	80	4.09
Nezumia sp.	16.40	570	3.99
Raja confundens	11.50	20	2.80
Centrophorus uyato	8.20	2	2.00
RAJIDAE	6.30	2	1.53
Lophius vomerinus	5.30	2	1.29
Photichthys argenteus	4.30	250	1.05
Epigonus telescopus	3.80	50	0.92
Beryx splendens	1.70	10	0.41
S H R I M P S	1.60	250	0.39
Merluccius paradoxus, male	1.60	2	0.39
Galeus polli	1.40	30	0.34
Yarrella blackfordi	1.20	180	0.29
Notacanthus sexspinis	1.20	30	0.29
Hoplostethus cadenati	0.70	60	0.17
Bassanago albescens	0.60	10	0.15
Selachophidium guentheri	0.60	30	0.15
Lampnycotodes hectoris	0.10	20	0.02
Total	410.90		99.99

PROJECT STATION:2044
 DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2135 Long E 1235
 start stop duration
 TIME :00:02:32 00:31:40 29 (min) Purpose code: 3
 LOG :4799.81 4801.22 1.40 Area code : 2
 FDEPTH: 529 529 GearCond.code:
 BDEPTH: 529 529 Validity code:
 Towing dir: 345° Wire out:1500 m Speed: 31 kn*10

Sorted: 250 Kg Total catch: 383.11 CATCH/HOUR: 792.64

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	457.76	575	57.75
Trachyrincus scabrus	192.41	757	24.27
Centroscyllium fabricii	63.72	6	8.04
Todarodes sagittatus	21.97	25	2.77
Merluccius paradoxus, male	16.55	23	2.09
Nezumia sp.	13.66	472	1.72
Centrolophus niger	7.94	12	1.00
Hoplostethus cadenati	4.34	670	0.55
Helicolenus dactylopterus	3.48	25	0.44
Raja confundens	3.35	25	0.42
Triplophos sp.	2.73	360	0.34
Epigonus denticulatus	1.86	25	0.23
Yarrella blackfordi	1.61	186	0.20
Symbolophorus boops	0.62	87	0.08
Aristeus varidens	0.62	37	0.08
Total	792.62		99.98

PROJECT STATION:2042
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2152 Long E 1237
 start stop duration
 TIME :19:12:00 19:42:00 30 (min) Purpose code: 3
 LOG :4779.40 4780.90 1.50 Area code : 2
 FDEPTH: 600 600 GearCond.code:
 BDEPTH: 600 600 Validity code:
 Towing dir: 5° Wire out:1650 m Speed: 3 kn*10

Sorted: 134 Kg Total catch: 174.76 CATCH/HOUR: 349.52

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	190.80	218	54.59
Trachyrincus scabrus	64.50	168	18.45
Todarodes sagittatus	22.30	48	6.38
Hoplostethus cadenati	18.48	1632	5.29
Nezumia sp.	14.88	714	4.26
Deania calcea	10.50	18	3.00
Lophius vaillanti	10.40	2	2.98
Centroscymnus crepidater	6.60	18	1.89
Deepwater fish mixture	4.86	4	1.39
Merluccius paradoxus, male	2.90	4	0.83
S H R I M P S	1.14	60	0.33
Epigonus telescopus	0.84	24	0.24
Selachophidium guentheri	0.66	18	0.19
Yarrella blackfordi	0.48	12	0.14
Bassanago albescens	0.12	6	0.03
Nephropsis atlantica	0.06	6	0.02
Total	349.52		100.01

PROJECT STATION:2045
 DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2134 Long E 1235
 start stop duration
 TIME :02:45:00 03:15:00 30 (min) Purpose code: 3
 LOG :4812.70 4813.90 1.20 Area code : 2
 FDEPTH: 629 632 GearCond.code:
 BDEPTH: 629 632 Validity code:
 Towing dir: 345° Wire out:1700 m Speed: 30 kn*10

Sorted: 126 Kg Total catch: 289.16 CATCH/HOUR: 578.32

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Centroscymnus coelolepis	166.20	12	28.74
Merluccius paradoxus, female	153.50	154	26.54
Trachyrincus scabrus	116.40	420	20.13
Hoplostethus cadenati	44.40	2964	7.68
Bathyrja smithii	23.70	4	4.10
Deepwater fish mixture	20.76		3.59
Raja confundens	14.04	72	2.43
Schedophilus huttoni	9.72	12	1.68
Merluccius paradoxus, male	6.80	8	1.18
Nezumia sp.	6.60	636	1.14
Yarrella blackfordi	5.64	444	0.98
Todarodes sagittatus	3.34	6	0.58
Lamprogrammus exutus	2.88	60	0.50
Alepocephalus sp.	2.28	180	0.39
Heterocarpus grimaldii	1.80	132	0.31
Bassanago albescens	0.72	24	0.12
Nephropsis atlantica	0.36	12	0.06
Total	579.14		100.15

PROJECT STATION:2043
 DATE: 8/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2143 Long E 1233
 start stop duration
 TIME :21:44:57 22:14:49 30 (min) Purpose code: 3
 LOG :4790.43 4791.76 1.48 Area code : 2
 FDEPTH: 695 691 GearCond.code:
 BDEPTH: 695 691 Validity code:
 Towing dir: 350° Wire out:1850 m Speed: 30 kn*10

Sorted: 161 Kg Total catch: 269.25 CATCH/HOUR: 538.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	242.40	226	45.01
Deania quadrispinosum	48.50	50	9.01
Hoplostethus cadenati	46.40	1920	8.62
Nezumia sp.	27.50	690	5.11
Bathylagus glacialis	25.80	2930	4.79
Bathyrja smithii	25.50	10	4.74
Deania calcea	25.00	10	4.64
Raja springeri	21.30	2	3.96
Yarrella blackfordi	13.70	890	2.54
Raja confundens	12.50	10	2.32
Coelocinichus matamua	12.00	20	2.23
Alepocephalus sp.	10.60	240	1.97
Todarodes sagittatus	9.50	40	1.76
Lamprogrammus exutus	3.20	50	0.59
Selachophidium guentheri	3.10	60	0.58
Merluccius paradoxus, male	3.10	4	0.58
Heterocarpus grimaldii	2.20	180	0.41
Bathyroconger vicinus	1.20	10	0.22
Stereomastis sp.	1.10	100	0.20
Notacanthus sexspinis	1.00	10	0.19
Stomias boa boa	0.50	20	0.09
Shrimps, small, non comm.	0.50	180	0.09
Nephropsis atlantica	0.40	20	0.07
Photichthys argenteus	0.40	20	0.07
Raja straeleni	0.30	10	0.06
Dicrolene intronigra	0.30	10	0.06
Notacanthus sexspinis	0.30	10	0.06
Maurolicus muelleri	0.10	20	0.02
Halosaurus ovenii	0.10	20	0.02
Total	538.50		100.01

PROJECT STATION:2046
 DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2131 Long E 1237
 start stop duration
 TIME :04:54:30 05:24:48 30 (min) Purpose code: 3
 LOG :4822.56 4824.13 1.41 Area code : 2
 FDEPTH: 425 428 GearCond.code:
 BDEPTH: 425 428 Validity code:
 Towing dir: 350° Wire out:1250 m Speed: 30 kn*10

Sorted: 108 Kg Total catch: 183.75 CATCH/HOUR: 367.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight	numbers		
Merluccius paradoxus, female	147.80	212	40.22
Helicolenus dactylopterus	90.80	704	24.71
Trachyrincus scabrus	44.88	704	12.21
Nezumia sp.	20.64	688	5.62
Merluccius paradoxus, male	11.00	16	2.99
Raja confundens	10.40	16	2.80
Miscellaneous fishes	9.92		2.73
Selachophidium guentheri	7.68	312	2.09
Schedophilus pamarco	7.52	8	2.05
Todarodes sagittatus	5.90	16	1.61
Galeus polli	5.20	56	1.41
S H R I M P S	3.36		0.91
Laemonema laureysi	1.20	16	0.33
Lampnycotodes hectoris	0.56	152	0.15
Epigonus telescopus	0.40	8	0.11
Notacanthus sexspinis	0.16	8	0.04
Hoplostethus cadenati	0.16	8	0.04
Ebinania costaecanarie	0.08	8	0.02
Total	367.66		100.04

PROJECT STATION:2047
DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2127
start stop duration Long E 1252
TIME :07:53:02 08:23:08 30 (min) Purpose code: 3
LOG :4841.16 4842.90 1.49 Area code : 2
FDEPTH: 305 307 GearCond.code: 2
BDEPTH: 305 307 Validity code: 2
Towing dir: 350° Wire out: 950 m Speed: 30 kn*10

Sorted: 321 Kg Total catch: 346.10 CATCH/HOUR: 692.20

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Merluccius capensis, female	392.24	800	56.67	7108
Merluccius capensis, male	112.30	336	16.22	7109
Chlorophthalmus atlanticus	37.60	2112	5.43	
Centrolophus niger	32.20	12	4.65	
Sufflogobius bibarbatatus	20.52	4886	2.96	
Lophius vomerinus	18.90	18	2.73	7111
Todarodes sagittatus	18.20	32	2.63	
Schedophilus huttoni	13.40	4	1.94	
Coelorrhinus coelorrhinc. polli	11.40	464	1.65	
Galeus polli	9.12	216	1.32	
Diaphus dumerili	6.56	1874	0.95	
Helicolenus dactylopterus	6.32	180	0.91	
Synagrops microlepis	4.48	296	0.65	
Coelorrhinus fasciatus	3.00	52	0.43	
Merluccius paradoxus, female	2.84	6	0.41	7110
Raja confundens	1.32	4	0.19	
Todaropsis eblanae	1.20	44	0.17	
Malacocephalus laevis	0.36	20	0.05	
Bathymectes piperitus	0.12	4	0.02	
Raja straeleni	0.08	4	0.01	
Selachophidium guentheri	0.04	4	0.01	
Total	692.20	100.00		

PROJECT STATION:2048
DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2124
start stop duration Long E 1203
TIME :10:06:25 10:28:42 22 (min) Purpose code: 3
LOG :4855.19 4856.32 1.06 Area code : 2
FDEPTH: 188 184 GearCond.code: 9
BDEPTH: 188 184 Validity code: 1
Towing dir: 350° Wire out: 660 m Speed: 32 kn*10

Sorted: 167 Kg Total catch: 172.86 CATCH/HOUR: 471.44

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Merluccius capensis, female	217.61	944	46.16	7112
Merluccius capensis, male	152.59	698	32.37	7113
Dentex macrophthalmus	26.18	82	5.55	7116
Lophius vomerinus	16.23	33	3.44	7114
Synagrops microlepis	11.45	955	2.43	
Taractichthys longipinnis	7.64	3	1.62	
Schedophilus huttoni	7.36	3	1.56	
Todarodes sagittatus	6.33	11	1.34	
Sufflogobius bibarbatatus	6.22	1516	1.32	
Trachurus capensis	4.91	33	1.04	7115
Merluccius capensis, juveniles	4.15	316	0.88	7117
Zenopsis conchifer	2.56	3	0.54	
Raja confundens	2.51	5	0.53	
Austroglossus microlepis	1.47	3	0.31	7118
Chlorophthalmus atlanticus	1.25	180	0.27	
Pterothrissus belloci	0.87	22	0.18	
Todaropsis eblanae	0.82	71	0.17	
Lepidopus caudatus	0.68	3	0.14	
Bathymectes piperitus	0.38	16	0.08	
Coelorrhinus fasciatus	0.22	5	0.05	
Chrysaora sp.	0.00	344		
Total	471.43	99.98		

PROJECT STATION:2049
DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2124
start stop duration Long E 1314
TIME :11:52:22 12:21:59 30 (min) Purpose code: 3
LOG :4865.70 4866.90 1.63 Area code : 2
FDEPTH: 134 132 GearCond.code: 2
BDEPTH: 134 132 Validity code: 2
Towing dir: 85° Wire out: 480 m Speed: 30 kn*10

Sorted: 193 Kg Total catch: 2547.55 CATCH/HOUR: 5095.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Trachurus capensis	3659.00	29414	71.81	7123
Merluccius capensis, male	678.08	4714	13.31	7120
Merluccius capensis, female	599.08	2002	11.76	7119
Chelidonichthys capensis	40.60	132	0.80	
Todarodes sagittatus	27.90	52	0.55	
Merluccius capensis, juveniles	26.06	1028	0.51	7121
Sufflogobius bibarbatatus	23.44	4568	0.46	
Pterothrissus belloci	16.00	78	0.31	
Austroglossus microlepis	10.00	20	0.20	7122
Etrumeus whiteheadi	4.46	52	0.09	7125
Todaropsis eblanae	4.22	184	0.08	
Bathymectes piperitus	3.80	176	0.07	
Lophius vomerinus	2.46	4	0.05	7124
Total	5095.10	100.00		

PROJECT STATION:2050
DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2108
start stop duration Long E 1316
TIME :15:25:00 15:35:00 10 (min) Purpose code: 3
LOG :4887.50 4888.00 0.50 Area code : 2
FDEPTH: 123 121 GearCond.code: 9
BDEPTH: 123 121 Validity code: 1
Towing dir: 128° Wire out: 450 m Speed: 3 kn*10

Sorted: 70 Kg Total catch: 304.84 CATCH/HOUR: 1829.04

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Merluccius capensis, female	1294.80	6372	70.79	7127
Merluccius capensis, male	475.80	3534	26.01	7126
Sufflogobius bibarbatatus	21.84	4812	1.19	
Merluccius capensis, juveniles	13.02	600	0.71	7129
Pterothrissus belloci	12.48	1296	0.68	
Trachurus capensis	5.40	54	0.30	7128
Austroglossus microlepis	3.12	24	0.17	7130
Todaropsis eblanae	2.58	102	0.14	
Total	1829.04	99.99		

PROJECT STATION:2051
DATE: 9/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2108
start stop duration Long E 1317
TIME :17:21:00 17:36:00 15 (min) Purpose code: 3
LOG :4902.40 4903.20 0.80 Area code : 2
FDEPTH: 121 131 GearCond.code: 9
BDEPTH: 121 131 Validity code: 1
Towing dir: 304° Wire out: 450 m Speed: 3 kn*10

Sorted: 118 Kg Total catch: 276.86 CATCH/HOUR: 1107.44

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Merluccius capensis, female	469.20	1752	42.37	7134
Merluccius capensis, male	343.20	1932	30.99	7133
Merluccius capensis, female	90.20	128	8.14	7132
Chelidonichthys capensis	39.12	72	3.53	
Squalus megalops	31.44	72	2.84	
Mustelus mustelus	23.60	4	2.13	
Trachurus capensis	21.96	192	1.98	7135
Lophius vomerinus	20.40	28	1.84	7137
Sufflogobius bibarbatatus	15.12	2724	1.37	
Merluccius capensis, juveniles	15.00	732	1.35	7138
Merluccius capensis, male	9.00	12	0.81	7131
Callorhynchus capensis	8.32	4	0.75	
Pterothrissus belloci	6.96	96	0.63	
Austroglossus microlepis	5.96	12	0.54	7136
Bathymectes piperitus	3.36	144	0.30	
Todaropsis eblanae	2.52	108	0.23	
Todarodes sagittatus	2.08	4	0.19	
Total	1107.44	99.99		

PROJECT STATION:2052
DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2103
start stop duration Long E 1319
TIME :04:49:54 05:09:45 20 (min) Purpose code: 3
LOG :4931.17 4932.11 1.09 Area code : 2
FDEPTH: 104 104 GearCond.code: 9
BDEPTH: 104 104 Validity code: 1
Towing dir: 350° Wire out: 360 m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 171.92 CATCH/HOUR: 515.76

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Sufflogobius bibarbatatus	472.50	72630	91.61	
Merluccius capensis, juveniles	20.31	636	3.94	7139
Merluccius capensis, male	7.50	60	1.45	7140
Raja straeleni	7.05	3	1.37	
Merluccius capensis, female	5.70	42	1.11	7141
Bathymectes piperitus	2.10	90	0.41	
Todaropsis eblanae	0.60	30	0.12	
Aequorea aequorea	0.00	12330		
Total	515.76	100.01		

PROJECT STATION:2053
DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2103
start stop duration Long E 1255
TIME :07:52:17 08:08:05 16 (min) Purpose code: 3
LOG :4954.68 4955.37 0.81 Area code : 2
FDEPTH: 261 261 GearCond.code: 9
BDEPTH: 261 261 Validity code: 1
Towing dir: 350° Wire out: 810 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 166.68 CATCH/HOUR: 625.05

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Merluccius capensis, female	354.38	1260	56.70	7146
Merluccius capensis, male	170.06	679	27.21	7147
Merluccius capensis, juveniles	38.10	1928	6.10	7142
Pterothrissus belloci	31.13	563	4.98	
Sufflogobius bibarbatatus	12.75	2888	2.04	
Dentex macrophthalmus	6.53	19	1.04	7143
Lophius vomerinus	4.69	23	0.75	7145
Solenocera africana	3.60	863	0.58	
Diaphus dumerili	1.28	390	0.20	
Synagrops microlepis	1.20	98	0.19	
Myxirophius rostellatus	0.60	8	0.10	
Trachurus capensis	0.38	60	0.06	7144
Coelorrhinus fasciatus	0.23	4	0.04	
Todaropsis eblanae	0.15	8	0.02	
Chrysaora sp.	0.00	375		
Aequorea aequorea	0.00	22500		
Total	625.08	100.01		

PROJECT STATION:2054
DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2104
start stop duration Long E 1246
TIME :09:42:15 10:12:45 31 (min) Purpose code: 3
LOG :4965.01 4966.54 1.47 Area code : 2
FDEPTH: 334 337 GearCond.code: 2
BDEPTH: 334 337 Validity code: 2
Towing dir: 350° Wire out:1030 m Speed: 31 kn*10

Sorted: 279 Kg Total catch: 2098.52 CATCH/HOUR: 4061.65

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
	weight numbers			
Beryx splendens	3115.03	13155	76.69	7155
Merluccius paradoxus	196.16	571	4.83	7150
Merluccius paradoxus, female	156.68	439	3.86	7148
Centrolophus niger	146.90	134	3.62	
Brama brama	118.86	68	2.93	
Todarodes sagittatus	50.09	68	1.23	
Diaphus dumerili	44.07	14824	1.09	
Epigonus denticulatus	39.41	5342	0.97	
Chlorophthalmus atlanticus	39.41	5342	0.97	
Helicolenus dactylopterus	38.07	534	0.94	
Merluccius capensis, female	29.03	27	0.71	7151
Coelorrhinus fasciatus	23.38	68	0.58	
Merluccius capensis	15.48	17	0.38	7153
Coelorrhinus coelorrhinc. polli	14.69	602	0.36	
Lophius vomerinus	13.16	15	0.32	7154
Heptranchias perlo	7.45	2	0.18	
Lepidopus caudatus	6.39	4	0.16	
Merluccius capensis, male	4.92	4	0.12	7152
Merluccius paradoxus, male	4.49	14	0.11	7149
Synagrops microlepis	2.67	68	0.07	
Malacocephalus laevis	2.67	68	0.07	
Nezumia sp.	1.41	1202	0.03	
Todaropsis eblanae	1.34	68	0.03	
Total	4071.76	100.25		

PROJECT STATION:2055
 DATE:10/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 2105
 start stop duration Long E 1237
 TIME :11:50:56 12:20:10 29 (min) Purpose code: 3
 LOG :4975.32 4976.82 1.33 Area code : 2
 FDEPTH: 383 384 GearCond.code:
 BDEPTH: 383 384 Validity code:
 Towing dir: 5° Wire out:1080 m Speed: 31 kn*10
 Sorted: 92 Kg Total catch: 632.80 CATCH/HOUR: 1309.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	972.83	2094	74.30	7156
Helicolenus dactylopterus	179.79	1798	13.73	
Merluccius paradoxus, male	46.84	110	3.58	7157
Genypterus capensis	22.34	14	1.71	7158
Nezumia sp.	20.69	621	1.58	
Diaphus dumerili	10.61	3066	0.81	
Krill	10.55		0.81	
Raja confundens	9.31	10	0.71	
Todarodes sagittatus	8.96	41	0.68	
Epigonus telescopus	5.50	606	0.42	
Lophius vomerinus	4.24	6	0.32	7159
Brama brama	3.68	4	0.28	
Squalus megalops	3.21	2	0.25	
Galeus polli	3.10	27	0.24	
Shrimps, small, non comm.	2.48	883	0.19	
Trachyrincus scabrus	1.39	83	0.11	
Dicrolene intronigra	1.10	14	0.08	
Lampanyctodes hectoreis	0.97	415	0.07	
Chlorophthalmus atlanticus	0.83	27	0.06	
Notacanthus sexapinnis	0.54	27	0.04	
Symbolophorus boops	0.27	39	0.02	
Total	1309.23		99.99	

PROJECT STATION:2058
 DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2051
 start stop duration Long E 1209
 TIME :20:38:21 21:07:46 29 (min) Purpose code: 3
 LOG :5018.74 5020.34 1.18 Area code : 3
 FDEPTH: 687 684 GearCond.code:
 BDEPTH: 687 684 Validity code:
 Towing dir: 325° Wire out:1850 m Speed: 30 kn*10
 Sorted: 112 Kg Total catch: 202.29 CATCH/HOUR: 418.53

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	139.34	145	33.29	7165
Nezumia sp.	94.14	5679	22.49	
Trachyrincus scabrus	50.17	217	11.99	
Deania profundorum	35.69	10	8.53	
Deania calcea	27.41	10	6.55	
Bathyraxia smithii	12.93	2	3.09	
Lophius vomerinus	9.79	2	2.34	7166
Todarodes sagittatus	8.48	23	2.03	
Raja confundens	7.76	87	1.85	
Raja springeri	7.34	2	1.75	
Yarrella blackfordi	5.59	569	1.34	
Alepocephalus sp.	5.07	83	1.21	
Heterocarpus grimaldii	4.76	279	1.14	
Selachophidium guentheri	2.69	52	0.64	
Bathyrcongiger vicinus	2.17	10	0.52	
OPHIDIIDAE	1.55	10	0.37	
Bathylagus glacialis	1.45	145	0.35	
Dicrolene intronigra	1.34	52	0.32	
Alloctycus verrucosus	0.52	10	0.12	
Myxine capensis	0.33	2	0.08	
Shrimps, small, non comm.	0.21	124	0.05	
Total	418.73		100.05	

PROJECT STATION:2056
 DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2108
 start stop duration Long E 1226
 TIME :14:25:40 14:55:06 29 (min) Purpose code: 3
 LOG :4989.77 4991.23 1.17 Area code : 2
 FDEPTH: 570 576 GearCond.code:
 BDEPTH: 570 576 Validity code:
 Towing dir: 348° Wire out:1550 m Speed: 31 kn*10
 Sorted: 112 Kg Total catch: 306.90 CATCH/HOUR: 634.97

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	223.45	782	35.19	
Merluccius paradoxus, female	135.21	161	21.29	7160
Hoplostethus cadenati	102.41	9377	16.13	
Yarrella blackfordi	35.94	2874	5.66	
Nezumia sp.	29.61	1694	4.66	
Shrimps, small, non comm.	27.93	14803	4.40	
Deania profundorum	19.45	6	3.06	
Todarodes sagittatus	16.57	37	2.61	
Triplophos sp.	9.31	1978	1.47	
Deania quadrispinosa	8.38	2	1.32	
Bathyrcongiger vicinus	8.19	205	1.29	
Raja confundens	5.90	25	0.93	
OPHIDIIDAE	2.42	74	0.38	
Helicolenus dactylopterus	1.97	8	0.31	
Trachipterus jacksonensis	1.76	2	0.28	
Epigonus denticulatus	1.49	56	0.23	
Merluccius paradoxus, male	1.45	2	0.23	7161
Nemichthys scolopaceus	1.30	74	0.20	
Stomias boa boa	1.12	112	0.18	
Selachophidium guentheri	1.12	37	0.18	
Total	634.98		100.00	

PROJECT STATION:2059
 DATE:10/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2049
 start stop duration Long E 1212
 TIME :22:56:31 23:26:19 30 (min) Purpose code: 3
 LOG :5027.49 5029.12 0.85 Area code : 3
 FDEPTH: 594 602 GearCond.code:
 BDEPTH: 594 602 Validity code:
 Towing dir: 303° Wire out:1650 m Speed: 31 kn*10
 Sorted: 188 Kg Total catch: 339.24 CATCH/HOUR: 678.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	261.80	312	38.59	7167
Trachyrincus scabrus	226.40	752	33.37	
Nezumia sp.	58.40	2288	8.61	
Hoplostethus cadenati	37.12	2112	5.47	
Centrophorus squamosus	29.50	2	4.35	
Deania calcea	23.90	8	3.52	
Raja confundens	6.80	4	1.00	
Bathyrcongiger vicinus	4.64	64	0.68	
Alepocephalus sp.	4.48	192	0.66	
Shrimps, small, non comm.	3.84	1696	0.57	
Yarrella blackfordi	3.84	256	0.57	
Lophius vomerinus	3.60	2	0.53	7168
Deania profundorum	3.20	2	0.47	
Cruriraja parcomaculata	3.10	8	0.46	
Lamprogrammus exutus	1.60	32	0.24	
Lithodes ferox	1.46	2	0.22	
ARISTEIDAE	1.28	96	0.19	
Myxine capensis	1.28	16	0.19	
Selachophidium guentheri	0.80	32	0.12	
Bathylagus glacialis	0.64	48	0.09	
Triplophos sp.	0.32	48	0.05	
Plesiopeanaeus edwardsianus	0.32	48	0.05	
Macroparalepis macrogenion	0.16	16	0.02	
Total	678.48		100.02	

PROJECT STATION:2057
 DATE:10/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 2107
 start stop duration Long E 1222
 TIME :16:34:00 17:04:17 31 (min) Purpose code: 3
 LOG :4997.18 4998.87 1.54 Area code : 2
 FDEPTH: 646 642 GearCond.code:
 BDEPTH: 646 642 Validity code:
 Towing dir: 345° Wire out:1800 m Speed: 30 kn*10
 Sorted: 119 Kg Total catch: 296.46 CATCH/HOUR: 573.79

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	140.81	159	24.54	7162
Trachyrincus scabrus	109.06	325	19.01	
Nezumia sp.	75.87	2048	13.22	
Hoplostethus cadenati	35.09	1680	6.12	
Lamprogrammus exutus	31.84	81	5.55	
Deania calcea	31.16	14	5.43	
ALEPOCEPHALIDAE	30.62	1409	5.34	
Bathyraxia smithii	23.71	4	4.13	
Todarodes sagittatus	19.65	27	3.42	
OPHIDIIDAE	18.02	447	3.14	
Yarrella blackfordi	11.25	786	1.96	
GONOSTOMATIDAE	10.43	1274	1.82	
Bathyrcongiger vicinus	8.40	149	1.46	
Lophius vomerinus	7.94	2	1.38	7164
Raja confundens	5.42	27	0.94	
Heterocarpus grimaldii	4.34	339	0.76	
Coelorrinchus matamua	3.66	27	0.64	
Phrynichthys wedli	2.17	14	0.38	
Merluccius paradoxus, male	1.39	2	0.24	7163
Shrimps, small, non comm.	0.95	312	0.17	
Notacanthus sexapinnis	0.95	14	0.17	
Selachophidium guentheri	0.54	14	0.09	
Nemichthys scolopaceus	0.27	14	0.05	
Nephropsis atlantica	0.27	14	0.05	
Total	573.81		100.01	

PROJECT STATION:2060
 DATE:11/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2048
 start stop duration Long E 1223
 TIME :05:12:32 05:42:11 30 (min) Purpose code: 3
 LOG :5046.59 5048.16 1.48 Area code : 3
 FDEPTH: 388 378 GearCond.code:
 BDEPTH: 388 378 Validity code:
 Towing dir: 325° Wire out:1250 m Speed: 3 kn*10
 Sorted: 127 Kg Total catch: 869.78 CATCH/HOUR: 1739.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1109.50	2786	63.78	7170
Helicolenus dactylopterus	427.00	4852	24.55	
Merluccius paradoxus, male	71.96	210	4.14	7169
Nezumia sp.	54.04	2072	3.11	
Raja confundens	22.54	42	1.30	
Coelorrinchus coelorhinc. polli	17.22	518	0.99	
Galeus polli	14.70	126	0.85	
Epigonus telescopus	5.88	336	0.34	
Todarodes sagittatus	5.26	8	0.30	
Chlorophthalmus atlanticus	2.24	56	0.13	
Selachophidium guentheri	1.96	42	0.11	
Trachyrincus scabrus	1.82	112	0.10	
Shrimps, small, non comm.	1.82	518	0.10	
Lophius vomerinus	1.66	2	0.10	7171
Laemonema laureysi	0.70	56	0.04	
Ebinania costaecanarie	0.70	28	0.04	
Diaphus dumerili	0.28	56	0.02	
Nemichthys scolopaceus	0.14	14	0.01	
Scomberesox saurus	0.14	14	0.01	
Total	1739.56		100.02	

PROJECT STATION:2061
 DATE:11/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2047
 start stop duration Long E 1228
 TIME :07:16:29 07:45:43 29 (min) Purpose code: 3
 LOG :5056.18 5057.88 1.27 Area code : 3
 FDEPTH: 341 336 GearCond.code:
 BDEPTH: 341 336 Validity code:
 Towing dir: 320° Wire out:1150 m Speed: 30 kn*10
 Sorted: 108 Kg Total catch: 191.51 CATCH/HOUR: 396.23

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Diaphus dumerili	132.00	45517	33.31	
Merluccius paradoxus, female	115.14	317	29.06	7172
Helicolenus dactylopterus	71.59	1316	18.07	
Merluccius capensis, female	29.07	14	7.34	7174
Chloropthalmus atlanticus	17.81	668	4.49	
Todarodes sagittatus	10.03	21	2.53	
Coelorinchus fasciatus	5.71	8	1.44	
Raja confundens	4.92	4	1.24	
Schedophilus huttoni	3.54	2	0.89	
Merluccius paradoxus, male	3.10	10	0.78	7173
Nezumia sp.	1.82	58	0.46	
Galeus polli	0.91	17	0.23	
Epigonus pandionis	0.50	50	0.13	
Selachophidium guentheri	0.08	8	0.02	
Total	396.22		99.99	

PROJECT STATION:2065
 DATE:11/ 2/97 GEAR TYPE: FT No:1 POSITION:Lat S 2017
 start stop duration Long E 1300
 TIME :17:32:49 17:40:06 7 (min) Purpose code: 1
 LOG :5125.93 5126.44 0.51 Area code : 3
 FDEPTH: 40 40 GearCond.code:
 BDEPTH: 103 105 Validity code:
 Towing dir: 254° Wire out: 130 m Speed: 30 kn*10
 Sorted: 1 Kg Total catch: 1.00 CATCH/HOUR: 8.57

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	7.71	1080	89.96	
Trachurus capensis	0.86	223	10.04	
Total	8.57		100.00	

PROJECT STATION:2062
 DATE:11/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2044
 start stop duration Long E 1239
 TIME :09:42:40 10:12:22 30 (min) Purpose code: 3
 LOG :5070.45 5072.03 1.51 Area code : 3
 FDEPTH: 315 310 GearCond.code:
 BDEPTH: 315 310 Validity code:
 Towing dir: 340° Wire out: 980 m Speed: 31 kn*10
 Sorted: 199 Kg Total catch: 567.24 CATCH/HOUR: 1134.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	592.20	1488	52.20	7179
Merluccius capensis, female	161.30	120	14.22	7175
Chloropthalmus atlanticus	48.48	2340	4.27	
Merluccius capensis, female	47.40	60	4.18	7177
Pterothrissus belloci	46.80	408	4.13	
Diaphus dumerili	46.32	11638	4.08	
Merluccius capensis, male	32.40	72	2.86	7178
Brama brama	30.30	28	2.67	
Centrolophus niger	16.70	8	1.47	
Todarodes sagittatus	15.84	36	1.40	
Coelorinchus fasciatus	14.88	204	1.31	
Synagrops microlepis	14.52	924	1.28	
Trachipterus jacksonensis	14.50	4	1.28	
Lophius vomerinus	9.00	6	0.79	7182
Merluccius paradoxus, male	8.40	24	0.74	7180
Coelorinchus coelorrhinc. polli	7.44	300	0.66	
Schedophilus huttoni	6.70	2	0.59	
Squalus megalops	5.50	8	0.48	
Merluccius capensis, male	5.40	8	0.48	7176
Galeus polli	2.76	48	0.24	
Todaropsis eblanae	2.64	132	0.23	
Helicolenus dactylopterus	2.16	264	0.19	
Genypterus capensis	2.00	2	0.18	7181
Bathymectes piperitus	0.48	36	0.04	
Epigonus denticulatus	0.24	12	0.02	
Trachurus capensis, juvenile	0.12	12	0.01	7183
Aequorea aequorea	0.00	4800		
Chrysaora sp.	0.00	34		
Total	1134.48		100.00	

PROJECT STATION:2066
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2021
 start stop duration Long E 1257
 TIME :04:57:06 05:25:06 28 (min) Purpose code: 3
 LOG :5146.57 5148.02 1.32 Area code : 3
 FDEPTH: 121 120 GearCond.code: 9
 BDEPTH: 121 120 Validity code: 1
 Towing dir: 340° Wire out: 380 m Speed: 30 kn*10
 Sorted: 1 Kg Total catch: 1.13 CATCH/HOUR: 2.42

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	2.14	300	88.43	
Merluccius capensis, female	0.17	2	7.02	7193
Trachurus capensis	0.11	30	4.55	7192
Aequorea aequorea	0.00	129		
Total	2.42		100.00	

PROJECT STATION:2063
 DATE:11/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2044
 start stop duration Long E 1248
 TIME :11:49:29 12:04:31 15 (min) Purpose code: 3
 LOG :5081.83 5082.57 0.67 Area code : 3
 FDEPTH: 256 253 GearCond.code: 9
 BDEPTH: 256 253 Validity code: 1
 Towing dir: 340° Wire out: 820 m Speed: 31 kn*10
 Sorted: 13 Kg Total catch: 18.85 CATCH/HOUR: 75.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	25.80	28	34.22	7184
Sufflogobius bibarbatatus	22.92	4668	30.40	
Merluccius capensis, juveniles	11.16	592	14.80	7186
Merluccius capensis, male	8.80	12	11.67	7185
Diaphus dumerili	5.80	2552	7.69	
Trachurus, juveniles	0.92	264	1.22	7187
Chrysaora sp.	0.00	476		
Aequorea aequorea	0.00	63360		
Total	75.40		100.00	

PROJECT STATION:2067
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2025
 start stop duration Long E 1231
 TIME :08:27:38 08:57:29 30 (min) Purpose code: 3
 LOG :5174.27 5175.77 1.36 Area code : 3
 FDEPTH: 275 272 GearCond.code:
 BDEPTH: 275 272 Validity code:
 Towing dir: 340° Wire out: 860 m Speed: 30 kn*10
 Sorted: 40 Kg Total catch: 213.96 CATCH/HOUR: 427.92

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	348.00	41940	81.32	
Merluccius capensis, female	40.20	76	9.39	7195
Pterothrissus belloci	25.80	810	6.03	
Merluccius capensis, male	11.20	40	2.62	7194
Merluccius capensis, juveniles	1.98	102	0.46	7196
Dentex macrophthalmus	0.74	2	0.17	7197
Aequorea aequorea	0.00	6000		
Total	427.92		99.99	

PROJECT STATION:2064
 DATE:11/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2038
 start stop duration Long E 1303
 TIME :14:33:06 14:42:40 10 (min) Purpose code: 3
 LOG :5101.42 5101.90 0.39 Area code : 3
 FDEPTH: 123 124 GearCond.code: 9
 BDEPTH: 123 124 Validity code: 1
 Towing dir: 209° Wire out: 440 m Speed: 30 kn*10
 Sorted: 6 Kg Total catch: 8.70 CATCH/HOUR: 52.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	28.62	4032	54.83	
Merluccius capensis, male	10.80	48	20.69	7190
Merluccius capensis, female	9.18	72	17.59	7189
Merluccius capensis, juveniles	3.54	126	6.78	7191
Trachurus capensis, juvenile	0.06	6	0.11	7188
Chrysaora sp.	0.00	84		
Aequorea aequorea	0.00	9000		
Total	52.20		100.00	

PROJECT STATION:2068
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2027
 start stop duration Long E 1219
 TIME :10:44:12 11:14:39 30 (min) Purpose code: 3
 LOG :5186.91 5188.40 1.42 Area code : 3
 FDEPTH: 304 304 GearCond.code:
 BDEPTH: 304 304 Validity code:
 Towing dir: 345° Wire out: 950 m Speed: 31 kn*10
 Sorted: 98 Kg Total catch: 503.94 CATCH/HOUR: 1007.88

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	303.00	758	30.06	7202
Merluccius capensis, female	195.30	154	19.38	7198
Merluccius capensis, female	187.20	266	18.57	7200
Pterothrissus belloci	79.46	480	7.88	
Merluccius capensis, male	50.60	86	5.02	7201
Chloropthalmus atlanticus	47.46	2304	4.71	
Centrolophus niger	31.00	12	3.08	
Merluccius capensis, male	24.60	20	2.44	7199
Todarodes sagittatus	16.32	32	1.62	
Heptanchias perlo	15.20	4	1.51	
Synagrops microlepis	13.22	958	1.31	
Coelorinchus fasciatus	10.00	108	0.99	
Trachipterus jacksonensis	7.80	2	0.77	
Coelorinchus coelorrhinc. polli	7.68	276	0.76	
Merluccius paradoxus, male	6.20	10	0.62	7203
Squalus megalops	3.20	10	0.32	
Trigla lyra	2.40	10	0.24	
Genypterus capensis	2.36	2	0.23	7205
Diaphus dumerili	1.48	508	0.15	
Todaropsis eblanae	0.32	10	0.03	
Lampanyctodes hecteris	0.22	54	0.02	
Lepidopus caudatus	0.20	10	0.02	
Helicolenus dactylopterus	0.10	30	0.01	
Trachurus capensis, juvenile	0.10	20	0.01	7204
Galeus polli	0.10	32	0.01	
Aequorea aequorea	0.00	15600		
Total	1005.52		99.76	

PROJECT STATION:2069
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2031 Long E 1208
 start stop duration
 TIME :13:20:00 13:50:26 30 (min) Purpose code: 3
 LOG :5202.01 5203.59 1.31 Area code : 3
 FDEPTH: 398 401 GearCond.code:
 BDEPTH: 398 401 Validity code:
 Towing dir: 330° Wire out:1200 m Speed: 32 kn*10
 Sorted: 215 Kg Total catch: 229.25 CATCH/HOUR: 458.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	219.90	940	47.96	
Merluccius paradoxus, female	170.30	382	37.14	7206
Helicolenus dactylopterus	35.42	260	7.73	
Merluccius paradoxus, male	9.90	88	2.16	7207
Todarodes sagittatus	8.96	28	1.95	
Krill	4.68		1.02	
Nezumia sp.	4.40	168	0.96	
Laemonema laureysi	1.28	20	0.28	
Epigonus denticulatus	0.88	48	0.19	
Chlorophthalmus atlanticus	0.80	32	0.17	
Ebinania costaecanarie	0.60	4	0.13	
Coelorinchus coelorhinc. polli	0.44	8	0.10	
Beryx splendens	0.40	4	0.09	7208
Selachophidium guentheri	0.24	8	0.05	
Stomias boa boa	0.16	48	0.03	
Trachyrincus scabrus	0.08	4	0.02	
Coelorinchus fasciatus	0.04	4	0.01	
Triplophos sp.	0.04	16	0.01	
Aequorea aequorea	0.00	6000		
Total	458.52		100.00	

PROJECT STATION:2072
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2009 Long E 1158
 start stop duration
 TIME :05:23:36 05:51:50 28 (min) Purpose code: 3
 LOG :5266.83 5268.17 1.38 Area code : 3
 FDEPTH: 368 372 GearCond.code:
 BDEPTH: 368 372 Validity code:
 Towing dir: 330° Wire out:1130 m Speed: 30 kn*10
 Sorted: 222 Kg Total catch: 289.48 CATCH/HOUR: 620.31

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	226.25	444	47.76	7215
Helicolenus dactylopterus	129.00	2046	20.80	
Merluccius capensis, male	97.39	163	15.70	7216
Chlorophthalmus atlanticus	25.89	960	4.17	
Nezumia sp.	21.26	651	3.43	
Todarodes sagittatus	12.86	26	2.07	
Lophius vomerinus	8.68	6	1.40	7217
Synagrops microlepis	6.43	463	1.04	
Galeus polli	6.17	77	0.99	
Ruvettus pretiosus	5.57	2	0.90	
Neoharriotta pinnata	4.54	2	0.73	
Heptranchias perlo	2.36	2	0.38	
Malacocephalus laevis	1.46	17	0.24	
Dentex macrophthalms	1.26	4	0.20	7218
Coelorinchus coelorhinc. polli	1.03	34	0.17	
Selachophidium guentheri	0.17	17	0.03	
Total	620.32		100.01	

PROJECT STATION:2073
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2006 Long E 1208
 start stop duration
 TIME :08:09:17 08:22:42 13 (min) Purpose code: 3
 LOG :5282.40 5282.90 0.50 Area code : 3
 FDEPTH: 296 296 GearCond.code:
 BDEPTH: 296 296 Validity code:
 Towing dir: 330° Wire out: 920 m Speed: 30 kn*10
 Sorted: 3 Kg Total catch: 3.06 CATCH/HOUR: 14.12

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	5.31	9	37.61	7219
Sufflogobius bibarbatatus	5.08	785	35.98	
Merluccius capensis, male	3.74	14	26.49	7220
Aequorea aequorea	0.00	92308		
Total	14.13		100.08	

PROJECT STATION:2070
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2010 Long E 1147
 start stop duration
 TIME :17:59:06 18:29:50 31 (min) Purpose code: 3
 LOG :5231.96 5233.74 1.29 Area code : 3
 FDEPTH: 580 580 GearCond.code:
 BDEPTH: 580 580 Validity code:
 Towing dir: 320° Wire out:1500 m Speed: 30 kn*10
 Sorted: 155 Kg Total catch: 297.47 CATCH/HOUR: 575.75

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	235.55	290	40.91	7209
Trachyrincus scabrus	147.48	592	25.62	
Nezumia sp.	53.42	2055	9.28	
Deania calcea	49.94	23	8.67	
Hoplostethus cadenati	20.09	1521	3.49	
Deania quadrispinosum	15.68	12	2.72	
Neoharriotta pinnata	10.45	12	1.82	
Deepwater fish mixture	10.45	23	1.82	
Todarodes sagittatus	6.85	23	1.19	
R A Y S	5.34	58	0.93	
Merluccius paradoxus, male	5.23	8	0.91	7210
Yarrella blackfordi	4.18	302	0.73	
Lophius vomerinus	3.58	2	0.62	7211
Todaropsis eblanae	1.86	23	0.32	
ALAPOCEPHALIDAE	1.05	93	0.18	
Bathyrcongonger vicinus	1.05	23	0.18	
Lamprogrammus exutus	0.93	12	0.16	
Nephropsis atlantica	0.81	35	0.14	
Aristeus varidens	0.81	93	0.14	
Ebinania costaecanarie	0.66	23	0.11	
Selachophidium guentheri	0.23	12	0.04	
S H R I M P S	0.12	70	0.02	
Total	575.76		100.00	

PROJECT STATION:2074
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2003 Long E 1217
 start stop duration
 TIME :10:08:57 10:19:23 10 (min) Purpose code: 3
 LOG :5294.79 5295.23 0.43 Area code : 3
 FDEPTH: 245 245 GearCond.code: 9
 BDEPTH: 245 245 Validity code: 1
 Towing dir: 320° Wire out: 760 m Speed: 30 kn*10
 Sorted: 9 Kg Total catch: 10.72 CATCH/HOUR: 64.32

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dasyatis violacea	44.40	6	69.03	
Sufflogobius bibarbatatus	14.94	2160	23.23	
Merluccius capensis, male	3.36	12	5.22	7222
Merluccius capensis, female	1.20	6	1.87	7221
Merluccius capensis, juveniles	0.36	24	0.56	7223
BRAMIDAE	0.06	6	0.09	
Chrysaora sp.	0.00	414		
Aequorea aequorea	0.00	285000		
Total	64.32		100.00	

PROJECT STATION:2075
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2001 Long E 1226
 start stop duration
 TIME :12:01:38 12:10:15 9 (min) Purpose code: 3
 LOG :5305.82 5306.21 0.44 Area code : 3
 FDEPTH: 196 193 GearCond.code: 9
 BDEPTH: 196 193 Validity code: 1
 Towing dir: 360° Wire out: 660 m Speed: 30 kn*10
 Sorted: 1 Kg Total catch: 3.41 CATCH/HOUR: 22.73

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	20.00	2893	87.99	
Merluccius capensis, juveniles	1.27	33	5.59	7224
Perulibatrachus rossignoli	0.80	7	3.52	
Schedophilus huttoni	0.60	7	2.64	
Trachurus, Juveniles	0.07	7	0.31	7225
Chrysaora sp.	0.00	260		
Aequorea aequorea	0.00	457333		
Total	22.74		100.05	

PROJECT STATION:2071
 DATE:12/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 2011 Long E 1153
 start stop duration
 TIME :20:34:44 21:08:44 34 (min) Purpose code: 3
 LOG :5245.32 5247.22 1.56 Area code : 3
 FDEPTH: 474 475 GearCond.code:
 BDEPTH: 474 475 Validity code:
 Towing dir: 320° Wire out:1290 m Speed: 30 kn*10
 Sorted: 235 Kg Total catch: 456.09 CATCH/HOUR: 804.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	354.44	598	44.04	7212
Trachyrincus scabrus	196.15	1604	24.37	
Nezumia sp.	75.76	3097	9.41	
Raja confundens	50.03	48	6.22	
Deania calcea	40.50	16	5.03	
Helicolenus dactylopterus	33.35	238	4.14	
Hoplostethus cadenati	9.85	858	1.22	
Deania profundorum	9.05	16	1.12	
Merluccius paradoxus, male	8.82	18	1.10	7213
Epigonus telescopus	7.62	79	0.95	
Notacanthus sexspinis	5.56	95	0.69	
Naucrates ductor	4.92	16	0.61	
Lophius vomerinus	3.09	2	0.38	7214
Yarrella blackfordi	1.75	191	0.22	
Shrimps, small, non comm.	1.43	302	0.18	
Bathyrcongonger vicinus	1.11	48	0.14	
Laemonema laureysi	0.79	16	0.10	
Ebinania costaecanarie	0.64	16	0.08	
Total	804.86		100.00	

PROJECT STATION:2076
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1952 Long E 1237
 start stop duration
 TIME :14:44:00 14:54:00 10 (min) Purpose code: 3
 LOG :5321.40 5321.90 0.50 Area code : 3
 FDEPTH: 120 124 GearCond.code: 9
 BDEPTH: 120 124 Validity code: 1
 Towing dir: 15° Wire out: 440 m Speed: 31 kn*10
 Sorted: 1 Kg Total catch: 5.82 CATCH/HOUR: 34.92

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	34.44	6516	98.63	
Trachurus, Juveniles	0.48	48	1.37	
Chrysaora sp.	0.00	666		
Aequorea aequorea	0.00	9600		
Total	34.92		100.00	

PROJECT STATION:2077
 DATE:13/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1939 Long E 1237
 start stop duration
 TIME :17:08:00 17:23:00 15 (min) Purpose code: 3
 LOG :5336.10 5336.90 0.80 Area code : 3
 FDEPTH: 107 106 GearCond.code: 9
 BDEPTH: 107 106 Validity code: 9
 Towing dir: 145° Wire out: 360 m Speed: 30 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Total			

PROJECT STATION:2081
 DATE:14/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 1805 Long E 1125
 start stop duration
 TIME :11:25:13 11:54:21 29 (min) Purpose code: 3
 LOG :5469.79 5471.01 1.27 Area code : 3
 FDEPTH: 552 561 GearCond.code: 9
 BDEPTH: 552 561 Validity code: 9
 Towing dir: 340° Wire out:1550 m Speed: 30 kn*10

Sorted: 154 Kg Total catch: 649.08 CATCH/HOUR: 1342.92

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Trachyrincus scabrus	454.03	2594	33.81
Merluccius paradoxus, female	203.59	261	15.16
Helicolenus dactylopterus	153.70	1219	11.45
Raja doutrei	143.48	39	10.68
Deania calcea	141.91	39	10.57
Nezumia sp.	96.31	2005	7.17
Merluccius polli, female	30.52	33	2.27
Lophius vaillanti	25.86	6	1.93
Neoharriotta pinnata	19.26	39	1.43
Todarodes sagittatus	18.48	39	1.38
Alepocephalus sp.	10.22	39	0.76
Notacanthus sexspinis	9.83	79	0.73
Epigonus denticulatus	9.43	197	0.70
Chaceon maritae	6.68	39	0.50
Hoplostethus cadenati	6.29	472	0.47
Ebinania costaecanarie	4.32	39	0.32
Shrimps, small, non comm.	3.54	1769	0.26
Aristeus varidens	2.36	590	0.18
Triplophos sp.	1.18	157	0.09
Merluccius paradoxus, male	1.14	2	0.08
Bathyrcongus vicinus	0.79	39	0.06
Total	1342.92		100.00

PROJECT STATION:2078
 DATE:14/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1813 Long E 1133
 start stop duration
 TIME :05:09:00 05:31:00 22 (min) Purpose code: 3
 LOG :5440.30 5441.30 1.00 Area code : 3
 FDEPTH: 231 232 GearCond.code: 9
 BDEPTH: 231 232 Validity code: 1
 Towing dir: 355° Wire out: 710 m Speed: 30 kn*10

Sorted: 204 Kg Total catch: 914.31 CATCH/HOUR: 2493.57

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Trachurus capensis	760.04	5564	30.48
Merluccius capensis, female	358.58	1631	14.38
Pterothrissus bellocci	339.76	3011	13.63
Synagrops microlepis	319.91	56122	12.83
Merluccius capensis, female	269.45	270	10.81
Dentex macrophthalmus	248.81	1317	9.98
Merluccius capensis, male	80.51	524	3.23
Ophiusurus serpens	78.79	19	3.16
Merluccius capensis, male	18.27	22	0.73
Merluccius polli, juveniles	11.70	439	0.47
Trigla lyra	7.75	41	0.31
Total	2493.57		100.01

PROJECT STATION:2082
 DATE:14/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 1759 Long E 1122
 start stop duration
 TIME :13:57:38 14:26:33 29 (min) Purpose code: 3
 LOG :5480.15 5481.52 1.54 Area code : 3
 FDEPTH: 505 491 GearCond.code: 9
 BDEPTH: 505 491 Validity code: 1
 Towing dir: 350° Wire out:1480 m Speed: 30 kn*10

Sorted: 214 Kg Total catch: 863.68 CATCH/HOUR: 1786.92

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Trachyrincus scabrus	655.45	4128	36.68
Helicolenus dactylopterus	279.93	2048	15.67
Merluccius paradoxus, female	230.48	337	12.90
Hoplostethus cadenati	153.85	7848	8.61
Deania calcea	96.21	31	5.38
Nezumia sp.	86.94	2503	4.87
Todarodes sagittatus	64.18	182	3.59
Notacanthus sexspinis	38.23	501	2.34
Raja confundens	27.31	46	1.53
Galeus polli	26.86	228	1.50
Shrimps, small, non comm.	23.21	8290	1.30
Merluccius polli, female	22.66	23	1.27
Schedophilus huttoni	19.12	137	1.07
Lophius vomerinus	14.79	6	0.83
Ebinania costaecanarie	14.57	273	0.82
Lophius vaillanti	10.45	2	0.58
Lamprogrammus exutus	5.92	956	0.33
Triplophos sp.	5.92	956	0.33
Merluccius paradoxus, male	4.03	6	0.23
Aristeus varidens	3.19	592	0.18
MORIDAE	1.82	91	0.10
Yarella blackfordi	1.37	46	0.08
Bathyrcongus vicinus	0.46	91	0.03
Total	1786.95		100.02

PROJECT STATION:2080
 DATE:14/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1801 Long E 1124
 start stop duration
 TIME :09:07:40 09:33:34 26 (min) Purpose code: 3
 LOG :5458.68 5459.86 1.18 Area code : 3
 FDEPTH: 444 457 GearCond.code: 9
 BDEPTH: 444 457 Validity code: 1
 Towing dir: 145° Wire out:1250 m Speed: 30 kn*10

Sorted: 220 Kg Total catch: 864.08 CATCH/HOUR: 1994.03

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Hoplostethus cadenati	545.54	30879	27.36
Helicolenus dactylopterus	523.38	4375	26.25
Merluccius paradoxus, female	289.85	478	14.54
Trachyrincus scabrus	153.42	4290	7.69
Merluccius polli, female	99.46	113	4.99
Nezumia sp.	73.11	3157	3.67
Laemonema laureysi	64.80	1274	3.25
Ebinania costaecanarie	62.03	443	3.11
Coelorinchus coelorhinc. polli	49.29	1274	2.47
Shrimps, small, non comm.	39.88	11393	2.00
Lophius vaillanti	19.85	5	1.00
Centrophorus squamosus	12.69	5	0.64
Galeus polli	8.86	111	0.44
Aristeus varidens	8.31	2382	0.42
Schedophilus huttoni	6.97	2	0.35
Yarella blackfordi	6.65	1274	0.33
CHIMAERIDAE	6.23	5	0.31
Chlorophthalmus atlanticus	5.54	332	0.28
Merluccius capensis, female	4.85	7	0.24
Merluccius paradoxus, male	3.46	7	0.17
Malacocephalus laevis	3.32	111	0.17
Lophius vomerinus	2.91	2	0.15
Raja confundens	2.54	2	0.13
Nemichthys scolopaceus	0.55	55	0.03
Epigonus denticulatus	0.55	55	0.03
Total	1994.04		100.02

PROJECT STATION:2083
 DATE:14/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1758 Long E 1124
 start stop duration
 TIME :16:02:36 16:33:14 31 (min) Purpose code: 3
 LOG :5487.87 5489.38 1.68 Area code : 3
 FDEPTH: 314 311 GearCond.code: 9
 BDEPTH: 314 311 Validity code: 9
 Towing dir: * Wire out: 980 m Speed: 30 kn*10

Sorted: 242 Kg Total catch: 724.84 CATCH/HOUR: 1402.92

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Helicolenus dactylopterus	710.71	9691	50.66
Merluccius capensis, female	354.10	358	25.24
Coelorinchus coelorhinc. polli	135.64		9.67
Todarodes sagittatus	77.42	248	5.52
Chlorophthalmus atlanticus	49.55		3.53
Merluccius capensis, male	35.42	50	2.52
Laemonema laureysi	9.60	93	0.68
Lophius vomerinus	9.29	6	0.66
Dentex macrophthalmus	7.74	31	0.55
Galeus polli	6.19	93	0.44
Merluccius polli, female	5.85	8	0.42
Merluccius polli, juveniles	0.79	6	0.06
Merluccius paradoxus, male	0.48	2	0.03
Merluccius paradoxus, female	0.48	2	0.03
Dicologlossa cuneata	0.31	31	0.02
Notacanthus sexspinis	0.31	31	0.02
Total	1403.88		100.05

PROJECT STATION:2084
DATE:14/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1746 Long E 1120
start stop duration
TIME :20:00:26 20:29:33 29 (min) Purpose code: 3
LOG :5516.26 5517.68 1.38 Area code : 3
FDEPTH: 569 585 GearCond.code:
BDEPTH: 569 585 Validity code:
Towing dir: 350° Wire out:1400 m Speed: 30 kn*10

Sorted: 153 Kg Total catch: 318.28 CATCH/HOUR: 658.51

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	243.00	290	36.90	7264
Trachyrincus scabrus	213.52	1159	32.42	
Nezumia sp.	66.70	2102	10.13	
Deania calcea	42.21	17	6.41	
Centroprorus squamosus	28.14	17	4.27	
Merluccius polli, female	22.76	25	3.46	7262
Helicolenus dactylopterus	17.05	99	2.59	
Todarodes sagittatus	7.78	17	1.18	
Merluccius paradoxus, male	2.63	4	0.40	7263
Yarrella blackfordi	2.48	248	0.38	
Alepocephalus sp.	2.32	182	0.35	
Deepwater fish mixture	2.15		0.33	
Etrumeus whiteheadi	1.82	33	0.28	7261
Epigonus telescopus	1.82	83	0.28	
Notacanthus sexspinis	0.99	17	0.15	
Hoplostethus cadenati	0.99	66	0.15	
S H R I M P S	0.66	149	0.10	
Lamprogrammus exutus	0.66	33	0.10	
Halosaurus ovenii	0.50	17	0.08	
MELANOSTOMIATIDAE	0.33	17	0.05	
Total	658.51		100.01	

PROJECT STATION:2085
DATE:14/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1738 Long E 1119
start stop duration
TIME :22:39:47 23:09:32 30 (min) Purpose code: 3
LOG :5528.78 5530.17 1.57 Area code : 3
FDEPTH: 635 639 GearCond.code:
BDEPTH: 635 639 Validity code:
Towing dir: 173° Wire out:1700 m Speed: 30 kn*10

Sorted: 95 Kg Total catch: 230.97 CATCH/HOUR: 461.94

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	105.00	378	22.73	
Merluccius paradoxus, female	91.90	94	19.89	7265
Nezumia sp.	62.44	1376	13.52	
Centroprorus squamosus	53.90	14	11.67	
Deania calcea	33.60	14	7.27	
Merluccius polli, female	21.00	22	4.55	7266
Todarodes sagittatus	16.56	42	3.58	
Trachurus capensis	16.20	232	3.51	7269
Raja straeleni	14.00	28	3.03	
Raja doutrei	7.20	2	1.56	
Helicolenus dactylopterus	6.02	28	1.30	
Lithodes ferax	5.32	14	1.15	
Chaceon maritae	4.70	18	1.02	
Hoplostethus cadenati	3.50	168	0.76	
Alepocephalus sp.	3.08	154	0.67	
Necharrionta pinnata	2.62	2	0.57	
MAJIDAE	2.24	28	0.48	
S H R I M P S	2.24	602	0.48	
ALEPOCEPHALIDAE	1.82	252	0.39	
Bathylagus glacialis	1.82	252	0.39	
Yarrella blackfordi	1.82	126	0.39	
Melanostomias sp.	1.40	70	0.30	
ARGONAUTIDAE	1.12	14	0.24	
Glyphus marsupialis	0.42	14	0.09	
Aristeus varidens	0.42	42	0.09	
Etrumeus whiteheadi	0.40	10	0.09	7267
Sardinops ocellatus	0.12	2	0.03	7268
Total	460.86		99.75	

PROJECT STATION:2086
DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1731 Long E 1116
start stop duration
TIME :01:52:25 02:22:39 30 (min) Purpose code: 3
LOG :5544.89 5546.45 1.51 Area code : 3
FDEPTH: 673 662 GearCond.code:
BDEPTH: 673 662 Validity code:
Towing dir: 340° Wire out:1700 m Speed: 32 kn*10

Sorted: 97 Kg Total catch: 357.81 CATCH/HOUR: 715.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Nezumia sp.	236.70	5778	33.08	
Trachyrincus scabrus	164.88	360	23.04	
Trachurus capensis	81.00	912	11.32	7272
Merluccius paradoxus, female	55.50	50	7.76	7271
Deania calcea	48.96	18	6.84	
Alepocephalus sp.	44.10	408	6.16	
Bathyrcongus vicinus	19.44	162	2.72	
Notacanthus sexspinis	12.96	72	1.81	
ALEPOCEPHALIDAE	10.26	1386	1.43	
Hoplostethus cadenati	6.84	144	0.96	
Chaceon maritae	6.12	18	0.86	
Etrumeus whiteheadi	4.74	112	0.66	7270
Todarodes sagittatus	4.32	18	0.60	
Raja confundens	3.78	36	0.53	
Alloctytus verrucosus	3.06	36	0.43	
Yarrella blackfordi	2.52	72	0.35	
Parapenaeus longirostris	2.16	18	0.30	
Shrimps, small, non comm.	2.16	630	0.30	
Bathylagus glacialis	1.98	198	0.28	
BATHYLAGIDAE	1.44	90	0.20	
Stomias boa	1.26	90	0.18	
Glyphus marsupialis	0.54	18	0.08	
Triphophos sp.	0.54	72	0.08	
Diaphus dumerili	0.36	126	0.05	
Total	715.62		100.02	

PROJECT STATION:2087
DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1731 Long E 1118
start stop duration
TIME :04:04:58 04:35:11 30 (min) Purpose code: 3
LOG :5553.28 5554.86 1.58 Area code : 3
FDEPTH: 574 565 GearCond.code:
BDEPTH: 574 565 Validity code:
Towing dir: 344° Wire out:1550 m Speed: 30 kn*10

Sorted: 86 Kg Total catch: 296.95 CATCH/HOUR: 593.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	255.60	1278	43.04	
Merluccius paradoxus, female	109.60	122	18.45	7276
Trachurus capensis	104.40	1098	17.58	7273
Nezumia sp.	75.06	2144	12.64	
Merluccius polli, female	10.72	12	1.81	7275
Helicolenus dactylopterus	10.44	72	1.76	
Hoplostethus cadenati	8.10	342	1.36	
Melanostomias sp.	3.78	72	0.64	
Alepocephalus sp.	3.78	162	0.64	
Etrumeus whiteheadi	3.42	54	0.58	7274
Yarrella blackfordi	3.24	198	0.55	
Photichthys sp.	1.62	162	0.27	
Lamprogrammus exutus	1.08	18	0.18	
S H R I M P S	0.90	414	0.15	
ARISTEUS VARIDENS	0.90	108	0.15	
MORIDAE	0.54	36	0.09	
Nemichthys scolopaceus	0.36	18	0.06	
Epigonus denticulatus	0.36	18	0.06	
Total	593.90		100.01	

PROJECT STATION:2088
DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1732 Long E 1127
start stop duration
TIME :06:32:27 06:55:55 23 (min) Purpose code: 3
LOG :5567.43 5568.65 1.27 Area code : 3
FDEPTH: 207 208 GearCond.code: 9
BDEPTH: 207 208 Validity code: 1
Towing dir: * Wire out: 650 m Speed: 30 kn*10

Sorted: 139 Kg Total catch: 1472.44 CATCH/HOUR: 3841.15

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chlorophthalmus atlanticus	1098.78	65403	28.61	
Dentex macrophthalmus	840.52	5917	21.88	7279
Pterothrissus belloci	793.57	8170	20.66	
Trigla lyra	255.44	2348	6.65	
Merluccius capensis, female	234.52	443	6.11	7278
Synagrops microlepis	200.03	31255	5.21	
Raja miraletus	97.67	94	2.54	
Hyperoglyphe moselii	74.19	94	1.93	
Brotula barbata	65.74	282	1.71	
Merluccius polli	63.86	1033	1.66	7281
Trachurus capensis	42.26	563	1.10	7280
Merluccius capensis, male	29.48	68	0.77	7277
Squalus megalops	24.42	94	0.64	
Chatrabus melanurus	7.51	94	0.20	
SOLEIDAE	5.63	376	0.15	
Parapenaeus longirostris	4.70	2348	0.12	
Helicolenus dactylopterus	2.82	94	0.07	
Total	3841.14		100.01	

PROJECT STATION:2089
DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1731 Long E 1131
start stop duration
TIME :08:21:50 08:42:14 20 (min) Purpose code: 3
LOG :5576.93 5577.99 1.17 Area code : 3
FDEPTH: 159 158 GearCond.code:
BDEPTH: 159 158 Validity code:
Towing dir: 10° Wire out: 490 m Speed: 30 kn*10

Sorted: 52 Kg Total catch: 1796.67 CATCH/HOUR: 5390.01

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalmus	4533.30	65265	84.11	7285
Trachurus capensis	705.18	13938	13.08	7286
Raja miraletus	92.46	138	1.72	
Merluccius capensis, female	34.50	102	0.64	7282
Trigla lyra	15.18	138	0.28	
Dicologlossa cuneata	5.52	138	0.10	
Atractoscion aeguidens	1.77	3	0.03	
Merluccius capensis, male	1.23	15	0.02	7284
Merluccius polli	0.87	18	0.02	7283
Total	5390.01		100.00	

PROJECT STATION:2090
DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1725 Long E 1129
start stop duration
TIME :09:51:04 10:21:36 31 (min) Purpose code: 3
LOG :5584.93 5586.58 1.55 Area code : 3
FDEPTH: 168 174 GearCond.code:
BDEPTH: 168 174 Validity code:
Towing dir: 190° Wire out: 530 m Speed: 30 kn*10

Sorted: 177 Kg Total catch: 1379.77 CATCH/HOUR: 2670.52

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalmus	1251.87	10390	46.88	7291
Pterothrissus belloci	587.61	80137	22.00	
Merluccius capensis, female	215.61	511	8.07	7289
Raja miraletus	110.71	6	4.15	
Merluccius capensis, female	108.58	383	4.07	7287
Chatrabus melanurus	77.42	39	2.90	
Trachurus capensis	74.52	809	2.79	7293
Merluccius polli, juveniles	65.15	2001	2.44	7292
Chelidionichthys capensis	55.35	29	2.07	
Hyperoglyphe moselii	25.55	10	0.96	
Squalus megalops	22.99	19	0.86	
Bathyrcongus vicinus	17.03	10	0.64	
Synagrops microlepis	15.75	658	0.59	
Merluccius capensis, male	12.39	31	0.46	7290
Trigla lyra	10.65	19	0.40	
Merluccius capensis, male	9.79	43	0.37	7288
Sepia sp.	5.11	10	0.19	
Mustelus mustelus	2.44	2	0.09	
Argyrosomus hololepidotus	1.14	2	0.04	7294
Todaropsis eblanae	0.85	10	0.03	
Total	2670.51		100.00	

PROJECT STATION:2091
 DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1721 Long E 1125
 start stop duration
 TIME :11:44:00 11:59:22 15 (min) Purpose code: 3
 LOG :5594.27 5594.93 0.73 Area code : 3
 FDEPTH: 247 247 GearCond.code: 9
 BDEPTH: 247 247 Validity code: 1
 Towing dir: 360° Wire out: 800 m Speed: 32 kn*10
 Sorted: 157 Kg Total catch: 1810.70 CATCH/HOUR: 7242.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	4616.00	6560	63.73	7295
Squalus megalops	448.00	1280	6.19	
Merluccius capensis, male	444.00	760	6.13	7296
Helicolenus dactylopterus	344.00	4000	4.75	
Chlorophthalmus atlanticus	199.20	5840	2.75	
Trachurus capensis	190.40	960	2.63	7297
Dentex macrophthalmus	188.00	800	2.60	7298
Raja straeleni	132.00	80	1.82	
Pterothrissus belloci	123.60	19680	1.71	
Mustelus mustelus	116.00	80	1.60	
Synagrops microlepis	105.60	9120	1.46	
Hyperoglyphe moselii	96.00	80	1.33	
Merluccius polli, juveniles	85.60	1360	1.18	7299
Diaphus dumerili	45.60	6480	0.63	
Trigla lyra	44.80	240	0.62	
Todarodes sagittatus	42.40	80	0.59	
Malacocephalus laevis	9.60	320	0.13	
Galeus polli	8.00	80	0.11	
Dicologlossa cuneata	4.00	80	0.06	
Total	7242.80		100.02	

PROJECT STATION:2092
 DATE:15/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1721 Long E 1134
 start stop duration
 TIME :13:37:21 14:07:31 30 (min) Purpose code: 3
 LOG :5606.38 5607.82 1.67 Area code : 3
 FDEPTH: 126 124 GearCond.code: 9
 BDEPTH: 126 124 Validity code: 1
 Towing dir: 360° Wire out: 440 m Speed: 31 kn*10
 Sorted: 32 Kg Total catch: 3075.74 CATCH/HOUR: 6151.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	6149.80	129884	99.97	7300
Perulibatrachus rossignoli	1.44	4	0.02	
Dentex macrophthalmus	0.24	2		7301
Total	6151.48		99.99	

PROJECT STATION:2093
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1721 Long E 1140
 start stop duration
 TIME :06:23:12 06:43:00 20 (min) Purpose code: 3
 LOG :5637.68 5638.62 1.12 Area code : 3
 FDEPTH: 78 79 GearCond.code: 9
 BDEPTH: 78 79 Validity code: 1
 Towing dir: 360° Wire out: 280 m Speed: 30 kn*10
 Sorted: 1 Kg Total catch: 2062.50 CATCH/HOUR: 6187.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	6188.70	336939	100.02	7302
Total	6188.70		100.02	

PROJECT STATION:2094
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1729 Long E 1139
 start stop duration
 TIME :08:05:35 08:35:23 30 (min) Purpose code: 3
 LOG :5648.77 5650.30 1.46 Area code : 3
 FDEPTH: 95 103 GearCond.code: 9
 BDEPTH: 95 103 Validity code: 1
 Towing dir: 200° Wire out: 320 m Speed: 30 kn*10
 Sorted: 4 Kg Total catch: 353.24 CATCH/HOUR: 706.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	700.00	22262	99.08	7303
Uropterygius wheeleri	5.34	40	0.76	
Dentex macrophthalmus	0.58	4	0.08	7304
Dicologlossa cuneata	0.56	10	0.08	
Total	706.48		100.00	

PROJECT STATION:2095
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1737 Long E 1134
 start stop duration
 TIME :09:48:53 10:08:28 20 (min) Purpose code: 3
 LOG :5658.29 5659.23 0.99 Area code : 3
 FDEPTH: 139 139 GearCond.code: 9
 BDEPTH: 139 139 Validity code: 1
 Towing dir: 180° Wire out: 440 m Speed: 30 kn*10
 Sorted: 28 Kg Total catch: 362.83 CATCH/HOUR: 1088.49

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	1060.20	22914	97.40	7305
Dentex macrophthalmus	10.35	96	0.95	7306
Chatrabus melanurus	9.27	21	0.85	
Squalus megalops	3.69	9	0.34	
Chelidonichthys capensis	3.18	9	0.29	
Merluccius capensis, female	1.50	12	0.14	7307
Dicologlossa cuneata	0.21	3	0.02	
MURAENESOCIDAE	0.09	3	0.01	
Total	1088.49		100.00	

PROJECT STATION:2096
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1743 Long E 1133
 start stop duration
 TIME :11:08:56 11:38:43 30 (min) Purpose code: 3
 LOG :5665.18 5666.47 1.39 Area code : 3
 FDEPTH: 170 169 GearCond.code: 9
 BDEPTH: 170 169 Validity code: 1
 Towing dir: 170° Wire out: 560 m Speed: 30 kn*10
 Sorted: 11 Kg Total catch: 10.54 CATCH/HOUR: 21.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	10.04	34	47.63	7308
Chatrabus melanurus	4.06	22	19.26	
Trachurus capensis	2.30	38	10.91	7311
Merluccius polli, juveniles	1.48	10	7.02	7310
Merluccius capensis, male	1.40	2	6.64	7309
Uropterygius wheeleri	0.92	2	4.36	
Mystriophis rostellatus	0.80	2	3.80	
Todarodes eblanae	0.04	6	0.19	
SOLEIDAE	0.02	2	0.09	
Sufflogobius bibarbus	0.02	2	0.09	
Total	21.08		99.99	

PROJECT STATION:2097
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1752 Long E 1135
 start stop duration
 TIME :12:49:40 13:19:42 30 (min) Purpose code: 3
 LOG :5674.04 5675.50 1.47 Area code : 3
 FDEPTH: 168 160 GearCond.code: 9
 BDEPTH: 168 160 Validity code: 1
 Towing dir: 165° Wire out: m Speed: kn*10
 Sorted: 29 Kg Total catch: 630.04 CATCH/HOUR: 1260.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	1195.02	20250	94.84	7315
Chatrabus melanurus	54.00	270	4.29	
Merluccius capensis, female	6.60	26	0.52	7312
Trachurus capensis	3.34	10	0.27	
Merluccius capensis, male	0.94	2	0.07	7313
Merluccius polli, male	0.18	2	0.01	7314
Total	1260.08		100.00	

PROJECT STATION:2098
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1802 Long E 1133
 start stop duration
 TIME :14:50:33 15:16:07 26 (min) Purpose code: 3
 LOG :5684.61 5685.86 1.21 Area code : 3
 FDEPTH: 213 217 GearCond.code: 9
 BDEPTH: 213 217 Validity code: 1
 Towing dir: 180° Wire out: 680 m Speed: 31 kn*10
 Sorted: 156 Kg Total catch: 1142.78 CATCH/HOUR: 2637.18

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Pterothrissus belloci	1031.88	30538	39.13	
Trachurus capensis	668.26	2933	25.34	7320
Dentex macrophthalmus	356.03	2400	13.50	7322
Merluccius capensis, female	256.38	1041	9.72	7318
Merluccius capensis, female	193.96	219	7.35	7317
Merluccius capensis, male	77.42	355	2.94	7319
Merluccius polli, juveniles	15.99	648	0.61	7324
Mystriophis rostellatus	14.47	76	0.55	
Chatrabus melanurus	11.82	39	0.45	
Merluccius capensis, male	6.35	9	0.24	7316
Etrumeus whiteheadi	2.28	39	0.09	7323
Hyperoglyphe moselii	1.50	2	0.06	
Austroglossus microlepis	0.83	2	0.03	7321
Total	2637.17		100.01	

PROJECT STATION:2099
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1808 Long E 1141
 start stop duration
 TIME :16:55:42 17:25:45 30 (min) Purpose code: 3
 LOG :5698.08 5699.49 1.74 Area code : 3
 FDEPTH: 125 130 GearCond.code: 9
 BDEPTH: 125 130 Validity code: 1
 Towing dir: 324° Wire out: 400 m Speed: 30 kn*10
 Sorted: 7 Kg Total catch: 6.78 CATCH/HOUR: 13.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	5.70	76	42.04	7325
Sardinops ocellatus	3.52	54	25.96	7327
Etrumeus whiteheadi	2.48	88	18.29	7326
Chelidonichthys capensis	0.80	2	5.90	
Squalus megalops	0.66	2	4.87	
Mystriophis rostellatus	0.36	4	2.65	
Sufflogobius bibarbus	0.02	2	0.15	
Engraulis capensis	0.02	2	0.15	
Aequorea aequorea	0.00	800		
Total	13.56		100.01	

PROJECT STATION:2100
 DATE:16/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1840
 start stop duration Long E 1122
 TIME :22:06:12 22:38:44 33 (min) Purpose code: 3
 LOG :5740.53 5742.20 1.73 Area code : 3
 FDEPTH: 526 529 GearCond.code:
 BDEPTH: 526 529 Validity code:
 Towing dir: 10° Wire out:1400 m Speed: 31 kn*10

Sorted: 182 Kg Total catch: 740.13 CATCH/HOUR: 1345.69

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	904.36	1229	67.20
Trachyrincus scabrus	154.91	895	11.51
Deania calcea	66.15	27	4.92
Nezumia sp.	61.45	1593	4.57
Helicolenus dactylopterus	57.82	407	4.30
Raja confundens	15.27	15	1.13
Merluccius paradoxus, male	14.62	22	1.09
Todarodes sagittatus	12.58	22	0.93
Deepwater fish mixture	12.51		0.93
Hoplostethus cadenati	10.98	1280	0.82
Neoharriotta pinnata	9.89	7	0.73
Schedophilus huttoni	9.60	7	0.71
Galeus polli	5.16	44	0.38
Lophius vomerinus	3.55	2	0.26
Epigonus denticulatus	1.45	29	0.11
Chaceon maritae	1.45	7	0.11
Triplophos sp.	1.38	211	0.10
Yarella blackfordi	0.95	109	0.07
Shrimps, small, non comm.	0.80	225	0.06
Ebinania costaecanarie	0.44	15	0.03
Stomias boa boa	0.36	7	0.03
Total	1345.68		99.99

PROJECT STATION:2101
 DATE:17/ 2/97 GEAR TYPE: BT No: POSITION:Lat S 1840
 start stop duration Long E 1124
 TIME :00:11:12 00:42:01 31 (min) Purpose code: 3
 LOG :5749.34 5750.74 1.54 Area code : 3
 FDEPTH: 417 425 GearCond.code:
 BDEPTH: 417 425 Validity code:
 Towing dir: 360° Wire out:1210 m Speed: 30 kn*10

Sorted: 227 Kg Total catch: 317.36 CATCH/HOUR: 614.25

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	190.95	526	30.99
Merluccius paradoxus	164.71	544	26.81
Helicolenus dactylopterus	127.74	1517	20.80
Nezumia sp.	27.48	1324	4.47
Galeus polli	18.23	201	2.97
Todarodes sagittatus	15.02	31	2.45
Chlorophthalmus atlanticus	10.99	333	1.79
Deepwater fish mixture	10.45		1.70
Deania calcea	9.48	2	1.54
Ebinania costaecanarie	9.29	31	1.51
Laemonema laureysi	5.34	170	0.87
Lophius vomerinus	5.05	2	0.82
Merluccius paradoxus, male	4.84	14	0.79
Coelorinchus coelorhinc. polli	3.33	85	0.54
Raja confundens	3.10	15	0.50
Trachurus capensis	2.46	14	0.40
Merluccius polli, female	2.36	2	0.38
Malacocephalus laevis	1.55	31	0.25
Lophius vaillanti	1.03	2	0.17
Coelorinchus fasciatus	0.62	8	0.10
Epigonus denticulatus	0.54	31	0.09
Hoplostethus cadenati	0.08	46	0.01
Total	614.04		99.95

PROJECT STATION:2102
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1839
 start stop duration Long E 1126
 TIME :05:12:56 05:43:19 30 (min) Purpose code: 3
 LOG :5761.58 5762.96 1.71 Area code : 3
 FDEPTH: 323 325 GearCond.code:
 BDEPTH: 323 325 Validity code:
 Towing dir: 10° Wire out: 980 m Speed: 30 kn*10

Sorted: 211 Kg Total catch: 1711.15 CATCH/HOUR: 3422.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Helicolenus dactylopterus	1644.00	61600	48.04
Merluccius capensis, female	879.90	1212	25.71
Chlorophthalmus atlanticus	429.60	15280	12.55
Merluccius capensis, male	208.80	306	6.10
Coelorinchus coelorhinc. polli	124.80	4400	3.65
Synagrops microlepis	70.40	6960	2.06
Dentex macrophthalmus	51.20	160	1.50
Trigla lyra	8.80	240	0.26
Galeus polli	4.80	80	0.14
Total	3422.30		100.01

PROJECT STATION:2103
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1835
 start stop duration Long E 1135
 TIME :07:23:34 07:53:16 30 (min) Purpose code: 3
 LOG :5773.88 5775.34 1.55 Area code : 3
 FDEPTH: 225 229 GearCond.code:
 BDEPTH: 225 229 Validity code:
 Towing dir: 170° Wire out: 690 m Speed: 30 kn*10

Sorted: 139 Kg Total catch: 1591.42 CATCH/HOUR: 3182.84

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachurus capensis	1663.20	13112	52.26
Dentex macrophthalmus	1276.00	9504	40.09
Merluccius capensis, female	148.90	532	4.68
Merluccius capensis, male	60.70	292	1.91
Sufflogobius bibarbatus	33.44	7568	1.05
Merluccius capensis, juveniles	0.40	10	0.01
Merluccius polli, juveniles	0.20	8	0.01
Total	3182.84		100.01

PROJECT STATION:2104
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1835
 start stop duration Long E 1140
 TIME :09:13:15 09:26:50 14 (min) Purpose code: 3
 LOG :5782.44 5783.13 0.78 Area code : 3
 FDEPTH: 219 209 GearCond.code: 9
 BDEPTH: 219 209 Validity code: 1
 Towing dir: 340° Wire out: 680 m Speed: 30 kn*10

Sorted: 31 Kg Total catch: 103.37 CATCH/HOUR: 443.01

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachurus capensis	397.71	4076	89.77
Dentex macrophthalmus	15.43	103	3.48
Merluccius capensis, male	14.79	107	3.34
Merluccius capensis, female	14.14	111	3.19
Merluccius capensis, juveniles	0.94	39	0.21
Total	443.01		99.99

PROJECT STATION:2105
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1841
 start stop duration Long E 1149
 TIME :11:12:36 11:42:59 30 (min) Purpose code: 3
 LOG :5796.16 5797.61 1.32 Area code : 3
 FDEPTH: 201 201 GearCond.code:
 BDEPTH: 201 201 Validity code:
 Towing dir: 140° Wire out: 640 m Speed: 30 kn*10

Sorted: 1 Kg Total catch: 2.79 CATCH/HOUR: 5.58

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Sufflogobius bibarbatus	3.34	1038	59.86
Squalus megalops	0.88	2	15.77
Merluccius capensis, female	0.78	10	13.98
Chatrabus melanurus	0.34	6	6.09
Merluccius capensis, juveniles	0.20	16	3.58
Lepidopus caudatus	0.02	2	0.36
Trachurus, Juveniles	0.02	8	0.36
Aequorea aequorea	0.00	1200	
Total	5.58		100.00

PROJECT STATION:2106
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1852
 start stop duration Long E 1149
 TIME :13:07:52 13:39:00 31 (min) Purpose code: 3
 LOG :5806.61 5807.89 1.65 Area code : 3
 FDEPTH: 249 257 GearCond.code:
 BDEPTH: 249 257 Validity code:
 Towing dir: 178° Wire out: 780 m Speed: 30 kn*10

Sorted: 4 Kg Total catch: 4.94 CATCH/HOUR: 9.56

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius capensis, female	6.02	23	62.97
Merluccius capensis, male	1.88	8	19.67
Sufflogobius bibarbatus	1.32	391	13.81
Merluccius capensis, juveniles	0.31	35	3.24
Miscellaneous fishes	0.02	10	0.21
Trachurus, Juveniles	0.02	4	0.21
Chrysaora sp.	0.00	2	
Aequorea aequorea	0.00	1138	
Total	9.57		100.11

PROJECT STATION:2107
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1858
 start stop duration Long E 1140
 TIME :15:26:15 15:56:59 31 (min) Purpose code: 3
 LOG :5820.04 5821.65 1.52 Area code : 3
 FDEPTH: 297 293 GearCond.code:
 BDEPTH: 297 293 Validity code:
 Towing dir: 350° Wire out: 920 m Speed: 32 kn*10

Sorted: 144 Kg Total catch: 307.58 CATCH/HOUR: 595.32

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Dentex macrophthalmus	209.61	708	35.21
Merluccius capensis, female	167.77	304	28.18
Pterothrissus belloci	150.97	2278	25.36
Merluccius capensis, male	39.68	97	6.67
Shrimps, small, non comm.	14.63	5853	2.46
Merluccius polli, juveniles	9.17	1022	1.54
Diaphus dumerilii	1.74	674	0.29
Sufflogobius bibarbatus	1.05	302	0.18
Lophius vomerinus	0.35	12	0.06
Trigla lyra	0.23	12	0.04
Squilla aculeata calmani	0.12		0.02
Total	595.32		100.01

PROJECT STATION:2108
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1859
 start stop duration Long E 1135
 TIME :17:03:15 17:35:22 32 (min) Purpose code: 3
 LOG :5828.91 5830.70 1.78 Area code : 3
 FDEPTH: 275 275 GearCond.code:
 BDEPTH: 275 275 Validity code:
 Towing dir: 350° Wire out: 860 m Speed: 30 kn*10

Sorted: 151 Kg Total catch: 257.92 CATCH/HOUR: 483.60

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Pterothrissus belloci	201.09	5916	41.58
Merluccius capensis, female	185.34	411	38.33
Merluccius capensis, male	47.16	143	9.75
Dentex macrophthalmus	31.22	131	6.46
Shrimps, small, non comm.	7.78	2775	1.61
Todarodes sagittatus	5.25	9	1.09
Merluccius capensis, juveniles	3.23	165	0.67
Synagrops microlepis	1.22	516	0.25
Chlorophthalmus atlanticus	0.56	66	0.12
Sufflogobius bibarbatus	0.56	197	0.12
Todaropsis eblanae	0.19	19	0.04
Total	483.60		100.02

PROJECT STATION:2109
 DATE:17/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1903 Long E 1130
 start stop duration
 TIME :19:35:36 20:04:42 29 (min) Purpose code: 3
 LOG :5842.26 5843.77 1.47 Area code : 3
 FDEPTH: 311 301 GearCond.code:
 BDEPTH: 311 301 Validity code:
 Towing dir: * Wire out: 980 m Speed: 30 kn*10

Sorted: 130 Kg Total catch: 401.27 CATCH/HOUR: 830.21

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chlorophthalmus atlanticus	320.28	14340	38.58	
Helicolenus dactylopterus	174.10	5439	20.97	
Merluccius capensis, female	137.90	257	16.61	7367
Dentex macrophthalmus	90.31	354	10.88	7372
Merluccius capensis, male	36.21	87	4.36	7368
Trigla lyra	22.16	261	2.27	
Pterothrissus belloci	18.62	93	2.64	
Austrogllossus microlepis	13.45	23	1.62	7370
Lophius vomerinus	6.21	2	0.75	7371
Merluccius polli, juveniles	3.91	112	0.47	7369
Diaphus hudsoni	2.42	1024	0.29	
Coelorinchus coelorhinc. polli	2.23	74	0.27	
Shrimps, small, non comm.	1.49	559	0.18	
Todarodes sagittatus	0.93	2	0.11	
Total	830.22		100.00	

PROJECT STATION:2112
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1926 Long E 1134
 start stop duration
 TIME :05:25:39 05:55:26 30 (min) Purpose code: 3
 LOG :5899.35 5900.85 1.69 Area code : 3
 FDEPTH: 455 456 GearCond.code:
 BDEPTH: 455 456 Validity code:
 Towing dir: 354° Wire out:1250 m Speed: 30 kn*10

Sorted: 233 Kg Total catch: 291.64 CATCH/HOUR: 583.28

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	216.20	422	37.07	7376
Schedophilus huttoni	97.50	30	16.72	
Deania profundorum	56.00	10	9.60	
Helicolenus dactylopterus	46.80	396	8.02	
Trachyrincus scabrus	25.38	372	4.35	
Neoharriotta pinnata	22.80	24	3.91	
Todarodes sagittatus	18.10	30	3.12	
Nezumia sp.	18.00	828	3.09	
Deepwater fish mixture	16.56		2.84	
Hoplostethus cadenati	15.84	1266	2.72	
Galeus polli	13.20	138	2.26	
Raja confundens	5.88	4	1.01	7378
Lophius vomerinus	5.24	2	0.90	
Yarrella blackfordi	5.16	572	0.88	
Merluccius paradoxus, male	5.00	14	0.86	7377
Epigonus telescopus	4.80	192	0.82	
Shrimps, small, non comm.	2.58	208	0.44	
Aristeus varidens	2.16	810	0.37	
Chlorophthalmus atlanticus	2.04	96	0.35	
Selachophidium guentheri	1.62	48	0.28	
Laemonema laureysi	0.72	12	0.12	
Ebinania costaeanarie	0.66	120	0.11	
Notacanthus sexspinis	0.36	12	0.06	
Todaropsis eblanae	0.36	12	0.06	
Alepocephalus sp.	0.18	6	0.03	
Scomberesox saurus	0.06	12	0.01	
Total	583.28		100.00	

PROJECT STATION:2110
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1929 Long E 1123
 start stop duration
 TIME :00:28:26 00:58:54 30 (min) Purpose code: 3
 LOG :5876.83 5878.42 1.51 Area code : 3
 FDEPTH: 650 649 GearCond.code:
 BDEPTH: 650 649 Validity code:
 Towing dir: 355° Wire out:1700 m Speed: 31 kn*10

Sorted: 170 Kg Total catch: 290.93 CATCH/HOUR: 581.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	217.90	258	37.45	7372
Nezumia sp.	83.40	2472	14.33	
Todarodes sagittatus	50.52	108	8.68	
Hoplostethus cadenati	50.52	1824	8.68	
Trachyrincus scabrus	47.40	156	8.15	
Deania calcea	46.10	38	7.92	
Centroscymnus crepidater	27.90	4	4.79	
Alepocephalus sp.	24.00	144	4.12	
Raja confundens	11.28	76	1.94	
Selachophidium guentheri	4.56	60	0.78	
Trigla lyra	4.44	12	0.76	
Triplophos sp.	3.36	752	0.58	
Glyphus marsupialis	2.88	144	0.49	
Notacanthus sexspinis	2.28	12	0.39	
Lamprogrammus exutus	1.68	12	0.29	
Yarrella blackfordi	1.44	144	0.25	
Diaphus dumerili	0.60	156	0.10	
ALEPOCEPHALIDAE	0.60	216	0.10	
Stomias boa boa	0.36	60	0.06	
Chaceon maritae	0.36	2	0.06	
Scomberesox saurus	0.16	2	0.03	
Stereomastis sp.	0.12	12	0.02	
Total	581.86		99.97	

PROJECT STATION:2113
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1922 Long E 1143
 start stop duration
 TIME :06:40:49 08:20:15 28 (min) Purpose code: 3
 LOG :5914.11 5915.50 1.54 Area code : 3
 FDEPTH: 343 342 GearCond.code:
 BDEPTH: 343 342 Validity code:
 Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: 359 Kg Total catch: 427.64 CATCH/HOUR: 916.37

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	408.11	561	44.54	7379
Trachurus capensis	176.46	669	19.26	7381
Todarodes sagittatus	135.86	334	14.83	
Merluccius capensis, male	110.14	229	12.02	7380
Helicolenus dactylopterus	63.43	634	6.92	
Chlorophthalmus atlanticus	11.23	1097	1.23	
Synagrops microlepis	6.09	497	0.66	
Pterothrissus belloci	2.06	9	0.22	
Coelorinchus coelorhinc. polli	1.63	51	0.18	
Galeus polli	0.51	9	0.06	
Bathynectes piperitus	0.43	9	0.05	
Shrimps, small, non comm.	0.43	137	0.05	
Total	916.38		100.02	

PROJECT STATION:2111
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1928 Long E 1129
 start stop duration
 TIME :02:55:38 03:25:00 29 (min) Purpose code: 3
 LOG :5887.75 5889.35 1.55 Area code : 3
 FDEPTH: 549 549 GearCond.code:
 BDEPTH: 549 549 Validity code:
 Towing dir: 352° Wire out:1500 m Speed: 31 kn*10

Sorted: 133 Kg Total catch: 230.99 CATCH/HOUR: 477.91

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	186.52	246	39.03	7374
Trachyrincus scabrus	108.62	517	22.73	
Hoplostethus cadenati	30.21	2013	6.32	
Helicolenus dactylopterus	29.38	238	6.15	
Nezumia sp.	26.90	797	5.63	
Raja confundens	22.55	155	4.72	
Deania calcea	16.86	8	3.53	
Deania quadrispinosum	8.07	6	1.69	
ALEPOCEPHALIDAE	7.97	383	1.67	
Lithodes ferox	7.34	31	1.54	
Schedophilus huttoni	7.03	4	1.47	
Shrimps, small, non comm.	6.93	3176	1.45	
Deepwater fish mixture	4.97		1.04	
Lophius vomerinus	4.88	2	1.02	7375
Lamprogrammus exutus	3.00	31	0.63	
Selachophidium guentheri	2.17	31	0.45	
Galeus polli	1.24	10	0.26	
Merluccius paradoxus, male	1.24	2	0.26	7373
Trachipterus jacksonensis	0.99	2	0.21	
Thysanoteuthis rhombus	0.72	10	0.15	
Aristeus varidens	0.31	31	0.06	
Total	477.90		100.01	

PROJECT STATION:2114
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1920 Long E 1153
 start stop duration
 TIME :10:22:00 10:52:00 30 (min) Purpose code: 3
 LOG :5928.50 5929.90 1.40 Area code : 3
 FDEPTH: 307 305 GearCond.code:
 BDEPTH: 307 305 Validity code:
 Towing dir: 340° Wire out: 430 m Speed: 30 kn*10

Sorted: 127 Kg Total catch: 428.45 CATCH/HOUR: 856.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Pterothrissus belloci	338.00	4824	39.44	
Merluccius capensis, female	189.16	494	22.07	7385
Merluccius capensis, female	73.50	58	8.58	7383
Dentex macrophthalmus	71.18	240	8.31	7387
Trachurus capensis	60.12	168	7.02	7388
Merluccius capensis, male	53.96	136	6.30	7386
Solenocera africana	25.48	10530	2.97	
Synagrops microlepis	16.52	2028	1.93	
Sufflogobius bibarbatatus	15.08	2172	1.76	
Todarodes sagittatus	5.34	14	0.62	
Merluccius capensis, male	3.50	4	0.41	7384
Merluccius polli, juveniles	1.82	78	0.21	7382
Chlorophthalmus atlanticus	1.18	312	0.14	
Galeus polli	0.92	14	0.11	
Helicolenus dactylopterus	0.52	14	0.06	
Diaphus dumerili	0.26	78	0.03	
Total	856.54		99.96	

PROJECT STATION:2115
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1918 Long E 1203
 start stop duration
 TIME :12:57:41 13:04:39 7 (min) Purpose code: 3
 LOG :5944.26 5944.61 0.33 Area code : 3
 FDEPTH: 258 257 GearCond.code: 9
 BDEPTH: 258 257 Validity code: 9
 Towing dir: 355° Wire out: 800 m Speed: 30 kn*10

Sorted: 74 Kg Total catch: 148.44 CATCH/HOUR: 1272.34

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	937.71	3214	73.70	7389
Merluccius capensis, male	330.86	1114	26.00	7390
Sufflogobius bibarbatatus	3.25	703	0.26	
Trachurus, juveniles	0.43	171	0.03	7392
Merluccius polli, juveniles	0.09	9	0.01	7391
Chrysaora sp.	0.00	86		
Aequorea aequorea	0.00	7200		
Total	1272.35		100.00	

PROJECT STATION:2116
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1914 Long E 1211
 start stop duration
 TIME :14:37:31 15:08:06 31 (min) Purpose code: 3
 LOG :5955.14 5956.87 1.82 Area code : 3
 FDEPTH: 181 183 GearCond.code:
 BDEPTH: 181 183 Validity code:
 Towing dir: 175° Wire out: 600 m Speed: 30 kn*10
 Sorted: 56 Kg Total catch: 56.38 CATCH/HOUR: 109.12

PROJECT STATION:2120
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1952 Long E 1141
 start stop duration
 TIME :06:21:28 06:51:30 30 (min) Purpose code: 3
 LOG :6064.18 6066.22 1.64 Area code : 3
 FDEPTH: 474 474 GearCond.code:
 BDEPTH: 474 474 Validity code:
 Towing dir: 330° Wire out:1290 m Speed: 30 kn*10
 Sorted: 144 Kg Total catch: 247.48 CATCH/HOUR: 494.96

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius capensis, female	77.81	343	71.31 7393
Merluccius capensis, male	30.00	188	27.49 7394
Sufflogobius bibarbatatus	0.85	143	0.78
Brama japonica	0.19	2	0.17
Merluccius capensis, juveniles	0.15	12	0.14 7395
Trachurus, Juveniles	0.08	60	0.07 7396
Notacanthus sexspinis	0.04	2	0.04
Chrysaora sp.	0.00	130	
Aequorea aequorea	0.00	6968	
Total	109.12		100.00

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius paradoxus, female	193.20	276	39.03 7403
Trachyrincus scabrus	119.40	852	24.12
Shrimps, small, non comm.	62.76	34866	12.68
Helicolenus dactylopterus	33.60	264	6.79
Centrophorus squamosus	22.80	2	4.61
Ruvettus pretiosus	22.40	2	4.53
Hoplostethus cadenati	13.68	2160	2.76
Merluccius paradoxus, male	7.20	12	1.45 7404
Rossia enigmatica	5.04	120	1.02
Yarrella blackfordi	4.32	1044	0.87
Raja confundens	3.96	24	0.80
Stomias boa boa	2.76	228	0.56
Epigonus telescopus	1.68	156	0.34
Notacanthus sexspinis	1.08	48	0.22
Alepocephalus sp.	0.60	84	0.12
Chlorophthalmus atlanticus	0.36	24	0.07
Nemichthys scolopaceus	0.12	24	0.02
Total	494.96		99.99

PROJECT STATION:2117
 DATE:18/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1911 Long E 1223
 start stop duration
 TIME :17:11:51 17:26:00 14 (min) Purpose code: 3
 LOG :5972.29 5972.98 0.81 Area code : 3
 FDEPTH: 112 111 GearCond.code: 9
 BDEPTH: 112 111 Validity code: 1
 Towing dir: 330° Wire out: 360 m Speed: 30 kn*10
 Sorted: Kg Total catch: 0.12 CATCH/HOUR: 0.51

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Schedophilus huttoni	0.30	4	58.82
Trachurus, Juveniles	0.09	30	17.65 7397
Merluccius capensis, juveniles	0.09	4	17.65
Sufflogobius bibarbatatus	0.04	4	7.84
Chrysaora sp.	0.00	999	
Total	0.52		101.96

PROJECT STATION:2121
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1946 Long E 1153
 start stop duration
 TIME :09:00:19 09:30:26 30 (min) Purpose code: 3
 LOG :6081.45 6083.02 1.64 Area code : 3
 FDEPTH: 359 359 GearCond.code:
 BDEPTH: 359 359 Validity code:
 Towing dir: 330° Wire out:1050 m Speed: 30 kn*10
 Sorted: 163 Kg Total catch: 350.23 CATCH/HOUR: 700.46

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius capensis, female	497.20	660	70.98 7405
Merluccius capensis, male	116.40	196	16.62 7406
Helicolenus dactylopterus	58.50	1340	8.35
Galeus polli	5.00	70	0.71
Chlorophthalmus atlanticus	4.20	150	0.60
Dentex macrophthalms	3.70	10	0.53
Coelorinchus coelorhinc. polli	3.60	110	0.51
Nezumia sp.	2.80	90	0.40
Todarodes sagittatus	2.20	10	0.31
Trachurus capensis	2.10	10	0.30
Trachipterus jacksonensis	1.70	2	0.24
Lophius vomerinus	1.46	2	0.21 7407
Synagrops microlepis	0.90	80	0.13
Laemonema laureysi	0.70	20	0.10
Chrysaora sp.	0.00	200	
Total	700.46		99.99

PROJECT STATION:2118
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1956 Long E 1133
 start stop duration
 TIME :01:20:25 01:49:07 29 (min) Purpose code: 3
 LOG :6043.45 6044.75 1.49 Area code : 3
 FDEPTH: 670 671 GearCond.code:
 BDEPTH: 670 671 Validity code:
 Towing dir: 330° Wire out:1720 m Speed: 31 kn*10
 Sorted: 111 Kg Total catch: 176.47 CATCH/HOUR: 365.11

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius paradoxus, female	113.48	118	31.08 7398
Trachyrincus scabrus	68.69	199	18.81
Centrophorus squamosus	51.72	4	14.17
Nezumia sp.	47.59	1622	13.03
Alepocephalus sp.	14.98	215	4.10
Deania calcea	14.90	10	4.08
Yarrella blackfordi	13.32	869	3.65
Glyphus marsupialis	7.78	422	2.13
Hoplostethus cadenati	7.45	364	2.04
Raja confundens	6.79	41	1.86
Lophius vaillanti	4.59	2	1.26 7399
Bathylagus glacialis	2.15	223	0.59
Bathyroconger vicinus	1.99	33	0.55
Selachophidium guentheri	1.41	25	0.39
Ebhinania costaeacanarie	1.41	8	0.39
MELANOSPOMIIDAE	1.24	50	0.34
ALPHECETHALIDAE	1.24	290	0.34
Lamprogrammus exutus	1.08	8	0.30
Galeus polli	1.08	8	0.30
Benthodesmus tenuis	0.99	8	0.27
Notacanthus sexspinis	0.41	8	0.11
Diaphus dumerili	0.33	58	0.09
Dicrolene intronigra	0.33	17	0.09
Shrimps, small, non comm.	0.17	124	0.05
Total	365.12		100.02

PROJECT STATION:2122
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1943 Long E 1202
 start stop duration
 TIME :11:07:45 11:36:12 28 (min) Purpose code: 3
 LOG :6093.11 6094.48 1.44 Area code : 3
 FDEPTH: 311 303 GearCond.code:
 BDEPTH: 311 303 Validity code:
 Towing dir: 75° Wire out: 940 m Speed: 31 kn*10
 Sorted: 95 Kg Total catch: 97.09 CATCH/HOUR: 208.05

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius capensis, female	167.25	399	80.39 7408
Merluccius capensis, male	34.93	116	16.79 7409
Sufflogobius bibarbatatus	4.11	669	1.98
Merluccius polli, juveniles	1.22	96	0.59 7410
Pterothrissus belloci	0.51	51	0.25
Trachurus, Juveniles	0.02	4	0.01 7411
Chrysaora sp.	0.00	54	
Aequorea aequorea	0.00	4500	
Total	208.04		100.01

PROJECT STATION:2119
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1954 Long E 1137
 start stop duration
 TIME :03:45:48 04:15:14 29 (min) Purpose code: 3
 LOG :6054.20 6055.58 1.52 Area code : 3
 FDEPTH: 572 573 GearCond.code:
 BDEPTH: 572 573 Validity code:
 Towing dir: 332° Wire out:1520 m Speed: 30 kn*10
 Sorted: 88 Kg Total catch: 181.45 CATCH/HOUR: 375.41

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Trachyrincus scabrus	165.00	672	43.95
Merluccius paradoxus, female	118.97	149	31.69 7400
Nezumia sp.	23.90	1361	6.37
Deepwater fish mixture	21.21	4039	5.65
Lophius vomerinus	13.24	8	3.53 7402
Helicolenus dactylopterus	10.86	83	2.89
Hoplostethus cadenati	9.00	631	2.40
Yarrella blackfordi	3.83	476	1.02
Lamprogrammus exutus	2.69	31	0.72
Alepocephalus sp.	2.17	93	0.58
Merluccius paradoxus, male	1.66	2	0.44 7401
Selachophidium guentheri	1.03	21	0.27
Diaphus dumerili	0.93	176	0.25
Stomias boa boa	0.83	72	0.22
Raja confundens	0.10	10	0.03
Total	375.42		100.01

PROJECT STATION:2123
 DATE:19/ 2/97 GEAR TYPE: BT No:2 POSITION:Lat S 1941 Long E 1209
 start stop duration
 TIME :12:43:59 13:12:11 28 (min) Purpose code: 3
 LOG :6099.94 6101.39 1.39 Area code : 3
 FDEPTH: 262 251 GearCond.code:
 BDEPTH: 262 251 Validity code:
 Towing dir: 75° Wire out: 820 m Speed: 31 kn*10
 Sorted: 8 Kg Total catch: 8.54 CATCH/HOUR: 18.30

SPECIES	CATCH/HOUR weight	% OF TOT. C numbers	SAMP
Merluccius capensis, female	11.04	26	60.33 7412
Merluccius capensis, male	3.75	13	20.49 7413
Sufflogobius bibarbatatus	1.63	257	8.91
Todarodes sagittatus	0.75	2	4.10
Merluccius polli, juveniles	0.49	24	2.68 7414
Dentex macrophthalms	0.43	2	2.35
Schedophilus huttoni	0.17	2	0.93
Trachurus, Juveniles	0.04	15	0.22 7415
Chrysaora sp.	0.00	71	
Aequorea aequorea	0.00	10286	
Total	18.30		100.01

Annex IV Instruments and fishing gear used

Acoustic instruments

The SIMRAD EK500/38 KHZ scientific sounder was used during the survey for estimation of fish density. The EK500 has a built- in digital echo integrator, but the Bergen Echo Integrator system (BEI) was used throughout the survey. The details of the instrument settings are as follows:

Transceiver settings:

Bandwidth	Wide (3.8 KHz)
Pulse length	Medium (1 ms)
Max Power	2000 Watt
Sv Transducer gain	27.8 dB
Ts Transducer gain	28.1 dB

Printer settings:

Range	0 - 100 or 0 - 250 m
TVG	20 log R
TS Colour min	- 50 dB
Sv Colour min	- 64 dB

An ES38B with a 6.8° -3dB beamwith transducer was used for integration.

A calibration experiment using a standard copper sphere, performed in Baia dos Tigres 23/2 1994 gave the following results: Sv Transducer gain 27.8 dB, Ts Transducer gain 28.1 dB.

Glossary:

Sv Transducer gain: Peak transducer gain assumed during computation of volume backscattering strength.

Ts Transducer gain: Peak transducer gain assumed during computation of target strength.

Ts Colour min: Lower limit of colour scale relative to target strength.

Sv Colour min: Lower limit of colour scale relative to volume back scattering.

Hydrography

Conductivity, temperature, density and oxygen were sampled regularly at CTD stations with a Seabird CTD-sonde. The salinity was calculated by a computer.

Fishing gear

The vessel has two different sized 'Åkrahamn' pelagic trawls and one Gisund super bottom trawl. Only the bottom trawl was used during the survey.

The bottom trawl has a headline of 31m, footrope 47m and 20mm meshsize in the codend with an innernet of 10mm meshsize. The estimated headline height is 5m and distance between the wings during towing about 18m. The trawl is equipped with a 12" rubber bobbins gear and 7.8m², 1670kg 'Tyborøn' trawl doors. The sweeps are 40m long.

The following drawings show the size of these trawls.

F/F Dr. Fridtjof Nansen

OVER/UNDER/SIDER

OVERDEL:
50 STK 11' PLASTKULER

UNDERDEL
14 M/M WIRE OMSP. MED
14 M/M BLYTAU
+ KJETTING.

TOTAL VEKT UNDER 400 KG.

SIDER.

MASKER TRAAD LENGDE MASKER
M/M NR. I MTR. I EVING

1/2 HOGG 5,00 MTR
STRF. 6,00 MTR
ARM 6,00 MTR
TAMP 2,60 MTR
TOT. 36,00 MTR
22 M/M Ø COMB. TAU

1/2 HOGG 4,00 MTR
STRF. 6,00 MTR
ARM 22,40 MTR
TAMP 2,60 MTR
TOT. 35,00 MTR
28 M/M Ø
FL. DANLINE

2H1-2
3H1-1

3200.0 240 22.4 4

3200.0 240 32.0 4 9.5L

1620.0 160 13.0 4

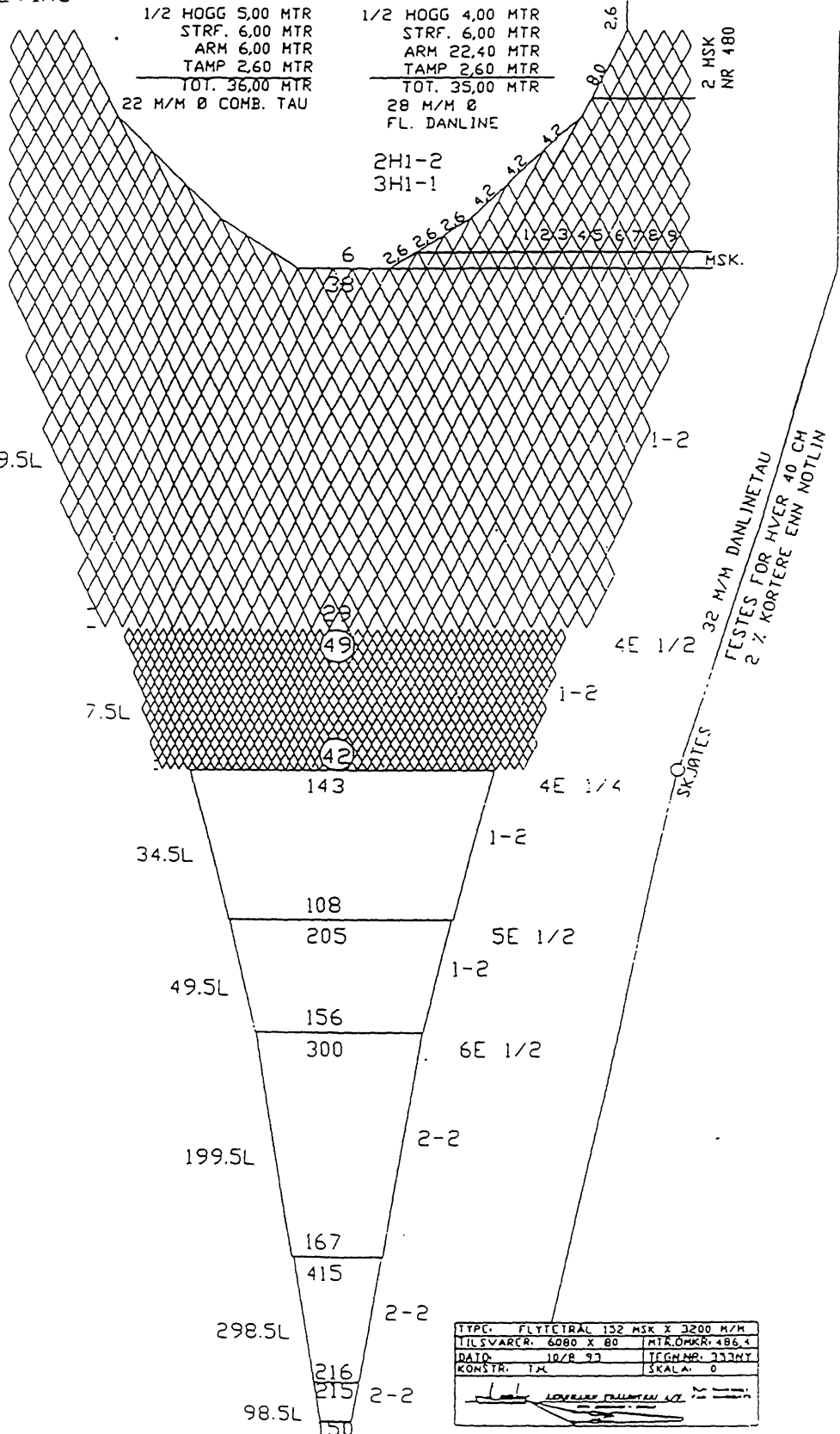
400.0 48 14.0 4

200.0 32 10.00 4

100.0 24 20.0 4

38.0 12 11.4 4

38.0 18 3.76 4



TYPE:	FLYETRAL 132 MSK X 3200 M/M
TILSVARER:	6080 X 80 MTR. ØMØR. 486.4
DATE:	10/28 93
KONSTR. T.M.	TJGH. NR. 333NY
	SKALA: 0

[Signature]

F/F Dr. Fridtjof Nansen

OVER/UNDER

SIDER

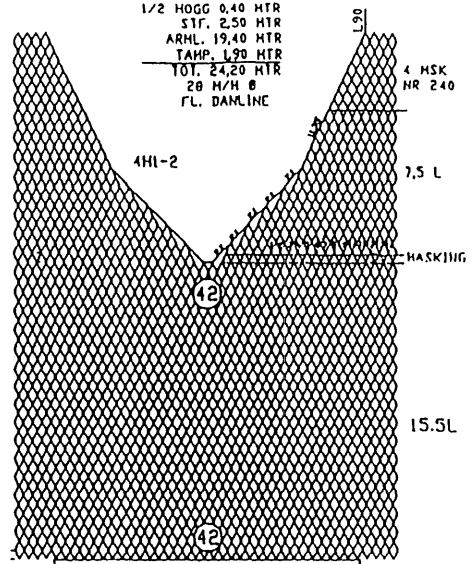
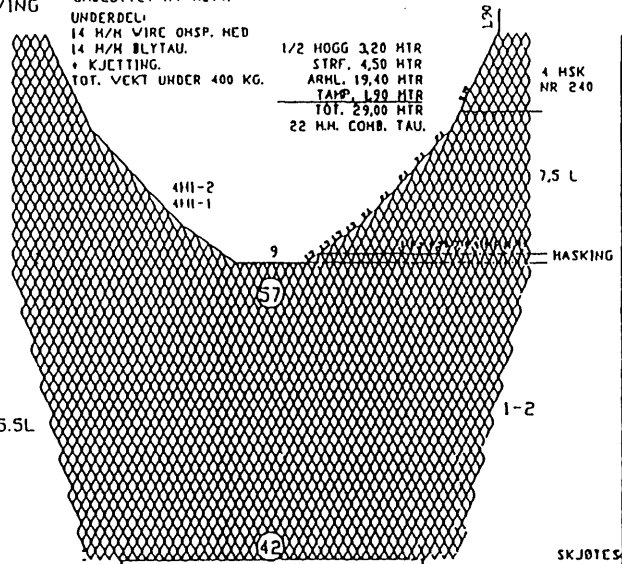
MASKER TRAAD LENGDE MASKER
H/M NR. I MTR. I EVING

OVERDEL:
50 STK 11' KVALER
OMSLUTTET AV NETT.
UNDERDEL:
14 H/M VIRE OHSP. MED
14 H/M BLYTAU.
+ KJETTING.
TOT. VEKT UNDER 400 KG.

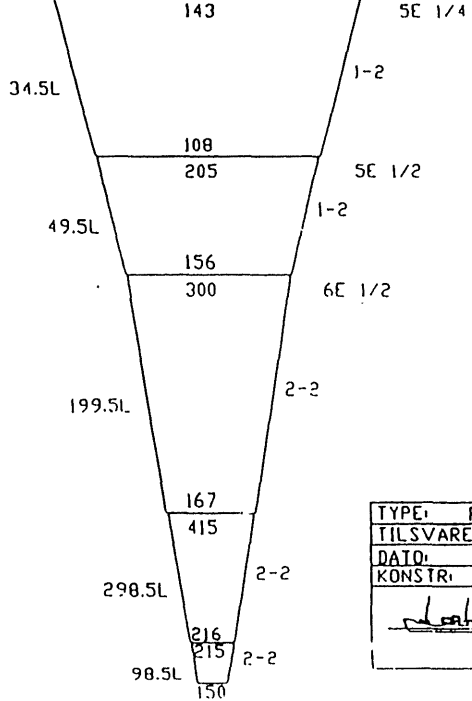
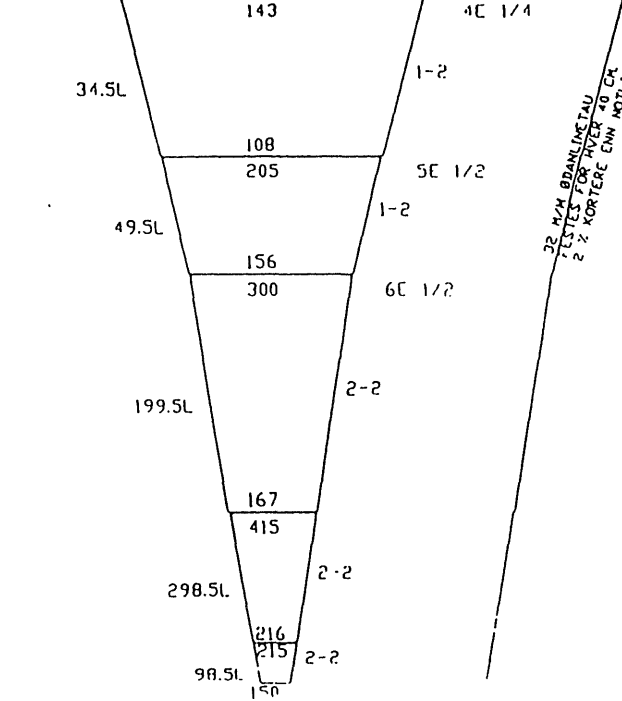
1/2 HOGG 3,20 MTR
STRF. 4,50 MTR
ARHL. 19,40 MTR
TAMP. 1,90 MTR
TOT. 29,00 MTR
22 H.M. COMB. TAU.

1/2 HOGG 0,40 MTR
STRF. 2,50 MTR
ARHL. 19,40 MTR
TAMP. 1,90 MTR
TOT. 24,20 MTR
28 H/M Ø
FL. DAMLINE

16200 160 19.4 4



16200 160 25.9 4 15.5L



4000 48 14.0 4

2000 32 10.00 4

1000 24 20.0 4

380 12 11.4 4

360 18 3.76 4

TYPE: FLYTETRAL 198 MSK X 1620 H/M	
TILSVARER: 4010 X 80	MTR.OMKR. 320
DATE: 23/6 93	TEGN.NR. 510
KONSTR: T-H	SKALA: 0

Table 1. General haul data, total catch (kg), hake catch (kg) and densities (kg/1000m²).

Comparative trawling: Dr. Fridtjof Nansen / Africana. 13-15/1 1997.

<i>Africana</i>	18506	* 18507	18508	18509	18510	18511	18512	18513	18514	18515	18516	18517	18518	18519	18520	18521	18522
Dist	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Speed	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Wing spread	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86	27.86
Swept area	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368	60368
<i>Nansen</i>	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876
Date	13.jan	13.jan	13.jan	13.jan	13.jan	13.jan	14.jan	14.jan	14.jan	14.jan	14.jan	14.jan	14.jan	15.jan	15.jan	15.jan	15.jan
Hour UTC	724	1017	1207	1403	1607	1736	449	717	1003	1221	1439	1619	429	648	923	1303	1455
N	2903	2919	2918	2925	2931	2938	3014	3009	3007	3013	3013	3003	3036	3042	3053	3049	3040
E	1637	1622	1616	1614	1606	1609	1457	1504	1518	1529	1539	1544	1523	1527	1533	1601	1601
Depth	92	147	157	164	174	185	473	429	252	245	232	213	319	339	470	220	201
Dist	1.00	0.99	1.10	1.14	1.30	1.31	1.06	1.04	1.16	1.07	1.04	0.86	1.21	1.30	1.21	0.90	1.03
Wing spread	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Swept area	38892	38503	42781	44337	50560	50949	41226	40448	45115	41614	40448	33447	47059	50560	47059	35003	40059
TOTAL	Catch (kg), all species																
A	584.27		206.99	148.92	240.30	284.53	157.08	378.05	405.62	508.01	309.42	218.52	721.77	830.19	145.77	375.40	489.29
N	418.23		289.62	220.72	258.20	355.28	231.62	459.37	217.37	617.10	202.53	119.43	808.32	326.47	173.07	311.45	167.36
A swept	9.68		3.43	2.47	3.98	4.71	2.60	6.26	6.72	8.42	5.13	3.62	11.96	13.75	2.41	6.22	8.11
N swept	10.75		6.77	4.98	5.11	6.97	5.62	11.36	4.82	14.83	5.01	3.57	17.18	6.46	3.68	8.90	4.18
Difference	-1.08		-3.34	-2.51	-1.13	-2.26	-3.02	-5.09	1.90	-6.41	0.12	0.05	-5.22	7.30	-1.26	-2.68	3.93
Average A		6.22		Average	7.51		Ttest:	0.16									
TOT. HAKE	Catch (kg)																
A	240.00		111.20	96.20	166.90	155.60	96.80	178.00	94.00	346.40	203.00	57.80	307.70	388.40	9.60	52.00	171.00
N	182.88		172.02	139.22	169.11	186.13	170.40	277.05	49.65	474.08	123.85	46.98	495.80	205.40	41.85	18.95	20.95
A swept	3.98		1.84	1.59	2.76	2.58	1.60	2.95	1.56	5.74	3.36	0.96	5.10	6.43	0.16	0.86	2.83
N swept	4.70		4.02	3.14	3.34	3.65	4.13	6.85	1.10	11.39	3.06	1.40	10.54	4.06	0.89	0.54	0.52
Difference	-0.73		-2.18	-1.55	-0.58	-1.08	-2.53	-3.90	0.46	-5.65	0.30	-0.45	-5.44	2.37	-0.73	0.32	2.31
Average A		2.77		Average	3.96		Ttest:	0.06									

* Cancelled due to problems on *Nansen*

Table 2. Hake densities in kg/1000m² and number/1000m². Comparisons by 10 cm length groups and all lengths summed.

TTest for hake in 10 cm length groups and totals. 13-15 January 1997.

<i>Africana</i>	18506	18507	18508	18509	18510	18511	18512	18513	18514	18515	18516	18517	18518	18519	18520	18521	18522
<i>Nansen</i>	1860	* 1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876
< 10 cm	Numbers																
A swept	0.00		0.00	0.14	0.11	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N swept	2.82		1.33	1.30	6.82	3.82	0.00	0.00	0.13	0.00	3.58	4.99	0.00	0.00	0.00	0.00	0.00
Diff.	-2.82		-1.33	-1.17	-6.71	-3.78	0.00	0.00	-0.13	0.00	-3.58	-4.99	0.00	0.00	0.00	0.00	0.00
Average A:	0.02		Average N:		1.55		T test:	0.01									
10 - 20 cm																	
A swept	2.62		18.95	12.28	10.77	3.18	0.00	0.00	0.31	3.00	2.29	0.60	0.00	0.00	0.00	0.00	0.00
N swept	56.17		70.02	33.54	29.66	17.43	0.00	0.00	0.82	17.62	13.48	3.72	0.00	0.00	0.00	0.00	0.00
Diff.	-53.54		-51.06	-21.26	-18.90	-14.26	0.00	0.00	-0.51	-14.62	-11.19	-3.12	0.00	0.00	0.00	0.00	0.00
Average A:	3.38		Average N:		15.15		T test:	0.02									
20 - 30 cm																	
A swept	11.85		12.29	13.35	24.33	14.68	0.33	0.86	9.59	45.92	29.80	3.31	8.28	17.02	0.00	0.00	0.00
N swept	13.00		12.41	19.55	28.45	27.75	2.16	9.65	5.50	116.16	28.86	5.26	44.69	12.11	0.04	0.00	0.00
Diff.	-1.15		-0.12	-6.19	-4.12	-13.07	-1.83	-8.79	4.09	-70.24	0.94	-1.95	-36.40	4.90	-0.04	0.00	0.00
Average A:	11.98		Average N:		20.35		T test:	0.10									
30 - 40 cm																	
A swept	7.16		0.53	0.61	1.29	2.09	2.05	4.42	0.12	0.97	0.64	0.36	2.35	7.45	0.00	0.00	0.13
N swept	8.23		1.47	2.13	1.11	2.14	5.80	10.16	0.11	1.70	0.21	0.42	11.12	5.12	0.11	0.03	0.10
Diff.	-1.07		-0.94	-1.52	0.17	-0.06	-3.74	-5.74	0.01	-0.73	0.43	-0.05	-8.76	2.33	-0.11	-0.03	0.03
Average A:	1.89		Average N:		3.12		T test:	0.09									
40 - 50 cm																	
A swept	0.00		0.00	0.05	0.00	0.23	0.76	1.47	0.06	0.15	0.05	0.03	0.23	1.14	0.02	0.00	0.40
N swept	0.00		0.00	0.00	0.00	0.25	1.84	2.75	0.02	0.10	0.42	0.18	1.36	0.90	0.21	0.03	0.05
Diff.	0.00		0.00	0.05	0.00	-0.02	-1.08	-1.27	0.03	0.05	-0.37	-0.15	-1.12	0.24	-0.20	-0.03	0.35
Average A:	0.29		Average N:		0.51		T test:	0.10									
50 - 60 cm																	
A swept	0.00		0.00	0.00	0.00	0.30	0.13	0.13	0.18	0.17	0.22	0.31	0.33	0.27	0.05	0.12	0.66
N swept	0.00		0.00	0.00	0.00	0.18	0.27	0.19	0.07	0.19	0.17	0.30	0.21	0.02	0.45	0.09	0.17
Diff.	0.00		0.00	0.00	0.00	0.12	-0.13	-0.06	0.12	-0.03	0.04	0.02	0.12	0.25	-0.40	0.03	0.49
Average A:	0.18		Average N:		0.14		T test:	0.46									
60 - 70 cm																	
A swept	0.00		0.00	0.00	0.00	0.03	0.05	0.03	0.03	0.00	0.03	0.00	0.40	0.27	0.00	0.13	0.40
N swept	0.00		0.00	0.00	0.00	0.02	0.05	0.06	0.07	0.05	0.00	0.00	0.34	0.06	0.06	0.03	0.02
Diff.	0.00		0.00	0.00	0.00	0.01	0.00	-0.03	-0.03	-0.05	0.03	0.00	0.06	0.21	-0.06	0.10	0.37
Average A:	0.09		Average N:		0.05		T test:	0.18									
70 - 80 cm																	
A swept	0.00		0.00	0.00	0.00	0.00	0.03	0.07	0.02	0.00	0.02	0.02	0.15	0.05	0.05	0.10	0.17
N swept	0.00		0.00	0.00	0.00	0.00	0.05	0.13	0.07	0.02	0.00	0.06	0.11	0.02	0.00	0.06	0.05
Diff.	0.00		0.00	0.00	0.00	0.00	-0.02	-0.06	-0.05	-0.02	0.02	-0.04	0.04	0.03	0.05	0.04	0.12
Average A:	0.04		Average N:		0.03		T test:	0.57									
> 80 cm																	
A swept	0.00		0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.03
N swept	0.00		0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.03	0.00
Diff.	0.00		0.00	0.00	0.00	0.00	-0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	-0.03	0.03
Average A:	0.01		Average N:		0.01		T test:	0.73									
All lengths, in numbers																	
A swept	21.63		31.78	26.43	36.49	20.55	3.40	7.01	10.30		33.05	4.64	11.76	26.21	0.12	0.35	1.79
N swept	80.21		85.24	56.52	66.04	51.60	10.21	22.94	6.78	135.84	46.74	14.93	57.82	18.26	0.87	0.26	0.40
Diff.	-58.59		-53.46	-30.09	-29.55	-31.05	-6.82	-15.93	3.52	####	-13.69	-10.29	-46.05	7.95	-0.76	0.09	1.39
Average A:	15.70		Average N:		40.92		Ttest:	0.00									
All lengths, in weight																	
A swept	3.98		1.84	1.59	2.76	2.58	1.60	2.95	1.56	5.74	3.36	0.96	5.10	6.43	0.16	0.86	2.83
N swept	4.70		4.02	3.14	3.34	3.65	4.13	6.85	1.10	11.39	3.06	1.40	10.54	4.06	0.89	0.54	0.52
Diff.	-0.73		-2.18	-1.55	-0.58	-1.08	-2.53	-3.90	0.46	-5.65	0.30	-0.45	-5.44	2.37	-0.73	0.32	2.31
Average A:	2.77		Average N:		3.96		Ttest:	0.06									

* St. 1861 and 18507 are cancelled due trawl problems on Nansen

Table 3. Hake, total length frequencies.

Total length frequencies of hake

Africana	18506	18507	18508	18509	18510	18511	18512	18513	18514	18515	18516	18517	18518	18519	18520	18521	18522
Length																	
0	0	0	0	8	7	2	0	0	0	0	0	0	0	0	0	0	0
10	158	553	1144	741	650	192	0	0	19	181	138	36	0	0	0	0	0
20	715	594	742	806	1469	886	20	52	579	2772	1799	200	500	1027	0	0	0
30	432	40	32	37	78	126	124	267	7	59	39	22	142	450	0	0	8
40	0	1	0	3	0	14	46	89	3	9	3	2	14	69	1	0	24
50	0	0	0	0	0	18	8	8	11	10	13	19	20	16	3	7	40
60	0	0	0	0	0	2	3	2	2	0	2	0	24	16	0	8	24
70	0	0	0	0	0	0	2	4	1	0	1	1	9	3	3	6	10
80	0	0	0	0	0	0	2	1	0	0	0	0	1	1	0	0	2
90+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	1306	1188	1918	1596	2203	1240	205	423	622	3031	1995	280	710	1582	7	21	108
Nansen	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876
Length																	
0	110	9	57	58	345	195	0	0	6	0	145	167	0	0	0	0	0
10	2184	156	2995	1487	1500	888	0	0	37	733	545	124	0	0	0	0	0
20	506	113	531	867	1438	1414	89	390	248	4834	1168	176	2103	613	2	0	0
30	320	18	63	94	56	109	239	411	5	71	9	14	523	259	5	1	4
40	0	0	0	0	0	13	76	111	1	4	17	6	64	46	10	1	2
50	0	0	0	0	0	9	11	8	3	8	7	10	10	1	21	3	7
60	0	1	0	0	0	1	2	3	3	2	0	0	16	3	3	1	1
70	0	0	0	0	0	0	2	5	3	1	0	2	5	1	0	2	2
80	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	1	0
90+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	3120	297	3647	2506	3339	2629	421	928	306	5653	1890	499	2721	923	41	9	16

Table 4. Comparisons of numbers and weights of monk and gurnard.

TTEST for monk and gurnard. 13-15 January 1997.

MONK																	
<i>Africana</i>	18506	18507	18508	18509	18510	18511	18512	18513	18514	18515	18516	18517	18518	18519	18520	18521	18522
N TOT	0		20	29	13	20	2	12	6	15	10	11	76	3	0	10	20
Weight T	0.00		4.00	4.00	3.00	8.50	10.00	22.80	10.00	21.00	11.00	13.20	108.00	4.00	0.00	12.00	33.00
<i>Nansen</i>	1860	* 1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876
N TOT	0		15	34	60	16	3	8	1	8	6	7	16	1	4	0	9
Weight T	0.00		1.96	3.94	3.44	11.60	3.75	7.65	1.43	6.35	3.65	10.80	31.75	1.15	11.60	0.00	8.90
NUMBER																	
A swept	0.00		0.33	0.48	0.22	0.33	0.03	0.20	0.10	0.25	0.17	0.18	1.26	0.05	0.00	0.17	0.33
N swept	0.00		0.35	0.77	1.18	0.31	0.07	0.20	0.02	0.19	0.15	0.21	0.34	0.02	0.08	0.00	0.22
Difference	0.00		-0.02	-0.29	-0.97	0.02	-0.04	0.00	0.08	0.06	0.02	-0.03	0.92	0.03	-0.08	0.17	0.11
Average A:	0.26		Average N:		0.26	Ttest:		0.98									
WEIGHT																	
A swept	0.00		0.07	0.07	0.05	0.14	0.17	0.38	0.17	0.35	0.18	0.22	1.79	0.07	0.00	0.20	0.55
N swept	0.00		0.05	0.09	0.07	0.23	0.09	0.19	0.03	0.15	0.09	0.32	0.67	0.02	0.25	0.00	0.22
Difference	0.00		0.02	-0.02	-0.02	-0.09	0.07	0.19	0.13	0.20	0.09	-0.10	1.11	0.04	-0.25	0.20	0.32
Average A:	0.27		Average N:		0.15	Ttest:		0.13									

GURNARD																	
<i>Africana</i>	18506	18507	18508	18509	18510	18511	18512	18513	18514	18515	18516	18517	18518	18519	18520	18521	18522
N TOT	325		37		16	35	0	0		0	6		1	0	0	517	17
Weight T	104.20		11.00	4.20	7.17	15.56	0.00	0.00	1.20	0.00	2.00	19.60	0.14	0.00	0.00	82.20	4.56
<i>Nansen</i>	1860	* 1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876
N TOT	131		21	25	4	10	0	0	0	0	3	19	1	0	0	70	0
Weight T	43.36		7.84	8.08	1.65	4.98	0.00	0.00	0.00	0.00	0.60	3.56	0.10	0.00	0.00	13.05	0.00
NUMBER																	
A swept	5.38		0.61		0.27	0.58	0.00	0.00		0.00	0.10		0.02	0.00	0.00	8.56	0.28
N swept	3.37		0.49	0.56	0.08	0.20	0.00	0.00	0.00	0.00	0.07	0.57	0.02	0.00	0.00	2.00	0.00
Difference	2.02		0.12	-0.56	0.19	0.38	0.00	0.00	0.00	0.00	0.03	-0.57	0.00	0.00	0.00	6.56	0.28
Average A:	1.22		Average N:		0.46	Ttest:		0.17									
WEIGHT																	
A swept	1.73		0.18	0.07	0.12	0.26	0.00	0.00	0.02	0.00	0.03	0.32	0.00	0.00	0.00	1.36	0.08
N swept	1.11		0.18	0.18	0.03	0.10	0.00	0.00	0.00	0.00	0.01	0.11	0.00	0.00	0.00	0.37	0.00
Difference	0.61		0.00	-0.11	0.09	0.16	0.00	0.00	0.02	0.00	0.02	0.22	0.00	0.00	0.00	0.99	0.08
Average A:	0.26		Average N:		0.13	Ttest:		0.09									

