CRUISE REPORTS 'DR. FRIDTJOF NANSEN'

SURVEYS OF THE HAKE STOCKS

Cruise Report No 1/98

Surveys of the hake stocks
12 January - 22 February 1998

by

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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 RV '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 1/1998

The main objectives were to continue to monitor the abundance, geographic distribution and size composition of the hake stocks within the Namibian EEZ and to describe the trends in development of the hake stocks within the programme perspective of support to rebuilding of the hake stocks since independence. These objectives are in line with the national priorities set in the Government White paper of 1990. As secondary objectives, the lesser abundant, but commercial important species as monk, sole and kingklip would be studied in detail as these species form a natural bycatch of a hake survey in Namibia. As part of the hake research, environment parameters where 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 observe and include in the estimates possible mid-water occurrences of the hakes. 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 where 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 two local freezer trawlers. Specific aims of trawl intercalibration with commercial freezer trawlers include: (a) investigate viability of using trawlers in conducting hake biomass surveys by doing a full coverage with the trawlers and make an independent assessment from these data (b) compare the catch rates of the research vessel to 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:
Suama ASSER (12-31/1), David BOYER (16-22/2), Liza BURMEISTER (12-31/1), August CHRISTOF (2-22/2), Johnny GAMATHAM (2-22/2), Titus IILENDE (2-22/2), David KAANANDUNGE (12-31/1), Theophelus KAIRUA (2-22/2), Ekkehard KLINGELHOEFFER (16-22/2), Lima MAARTENS (2-22/2), Maria MUTOTA (2-22/2), Toni MWEENDA (12-31/1), John SACHEUS (2-22/2), Malakia SHIMANDA (12-31/1), Arved STABY (2-22/2), Bernhard VASKE (2-22/2), Elisabeth VOGES (12-31/1), Sean WELLS (12-31/1).

From Norway:
Oddgeir ALVHEIM (18/1-22/2), Bjørn AXELSEN (12/1-22/2), Ingvar HUSE (Cruise leader 12/1-1/2), Ronald PEDERSEN (12/1-22/2), Tore STRØMME (Cruise leader 1-22/2), Jan Arne VÅGENES (12/1-22/2).

1.4 NARRATIVE

The course tracks with the positions of the fishing and hydrographic stations are shown in Figures 1 a-c and are, with a few exceptions, a repetition of the sampling grid of the 1997 survey.

«Dr. Fridtjof Nansen», accompanied by the Namibian freezer trawler «Oshakati», left Walvis Bay on the afternoon of 12 January and steamed south to commence the work between Lüderitz and Orange River. Some experimental trawl hauls were made *en route* to adjust the «Nansen» type trawl equipment on the «Oshakati», and to compare the performance for the two ships. Trawling inshore of 300 m was preferably carried out during daylight hours, but the deeper stations on the slope were also carried out during dark. CTD-stations were taken on almost every trawl station in order to map the environment conditions in relation to fish distribution. Both ships trawled side by side on all stations except a few where the «Oshakati» did not trawl. On 31 January the ship called at Walvis Bay for crew change, having covered the area north to Conception Bay.

«Dr. Fridtjof Nansen» departed the port of Walvis Bay for the second leg of the survey on 2 February accompanied by the freezer trawler «Garoya». Fishing started on the morning of 3 February, trawling with «Garoya» in a tandem. Both ships worked northwards following the standard grid pattern. On the hydrographical transect off Cape Cross, a set of drifting buoys was launched as part of a global experiments to monitor the movements of intermediate Atlantic water masses. On 16 February two scientists were transferred from «Welwitchia» who had to cancel its horse mackerel survey and return to Walvis Bay for repair of the winch system. The northern border was reached on 17 February, but sampling continued southwards, filling in gaps left open during the northern route. Arrival in Walvis Bay was on 22 February.

The weather conditions were generally rough in the south, with wind force ranged from 10 to 47 knots (average of 22 knots), but the work continued uninterrupted. On the northern leg the weather conditions were favourable

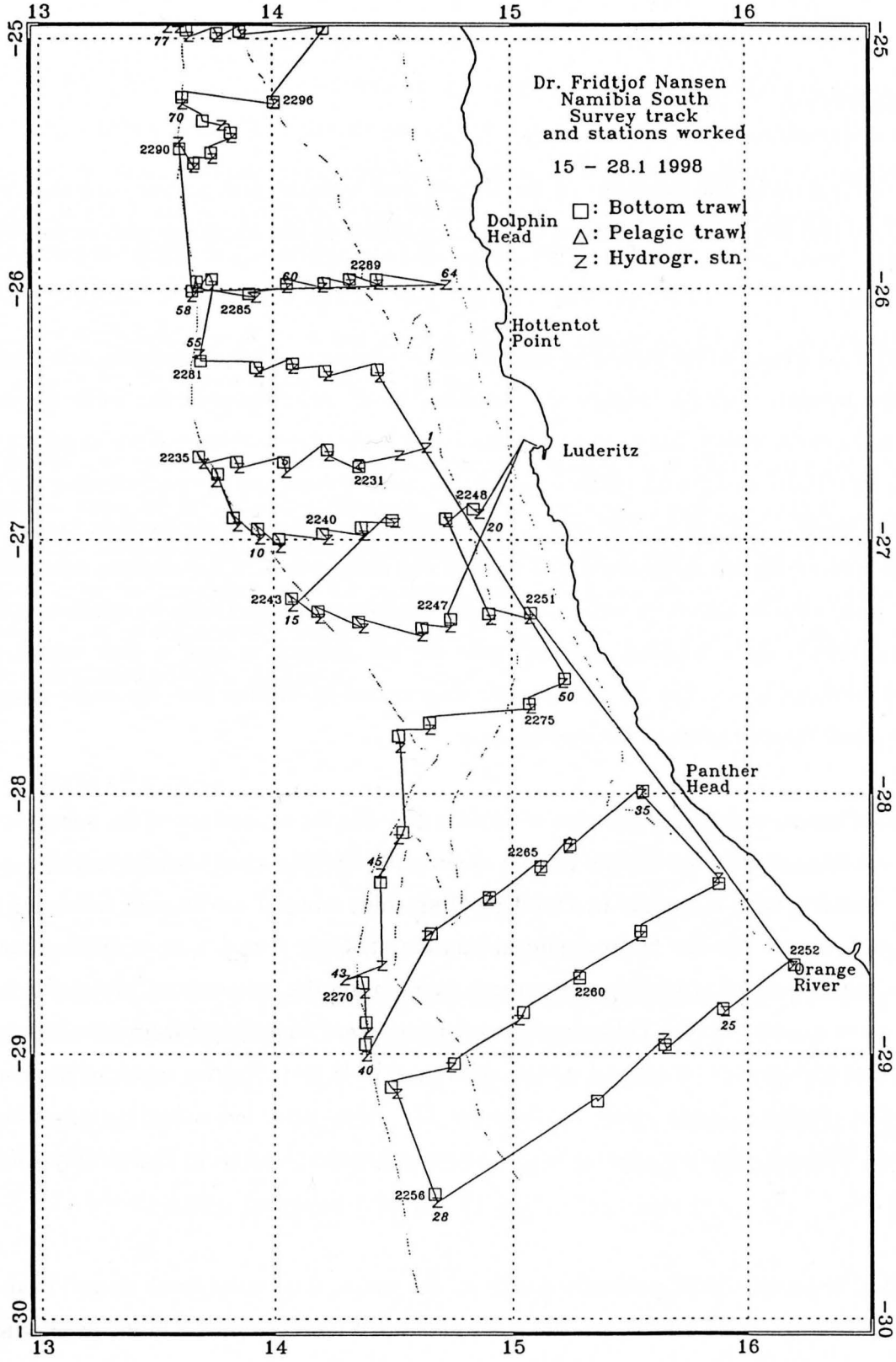


Figure 1a Southern Region (Orange River to St. Francis Bay). Course tracks, fishing stations and hydrographic stations.

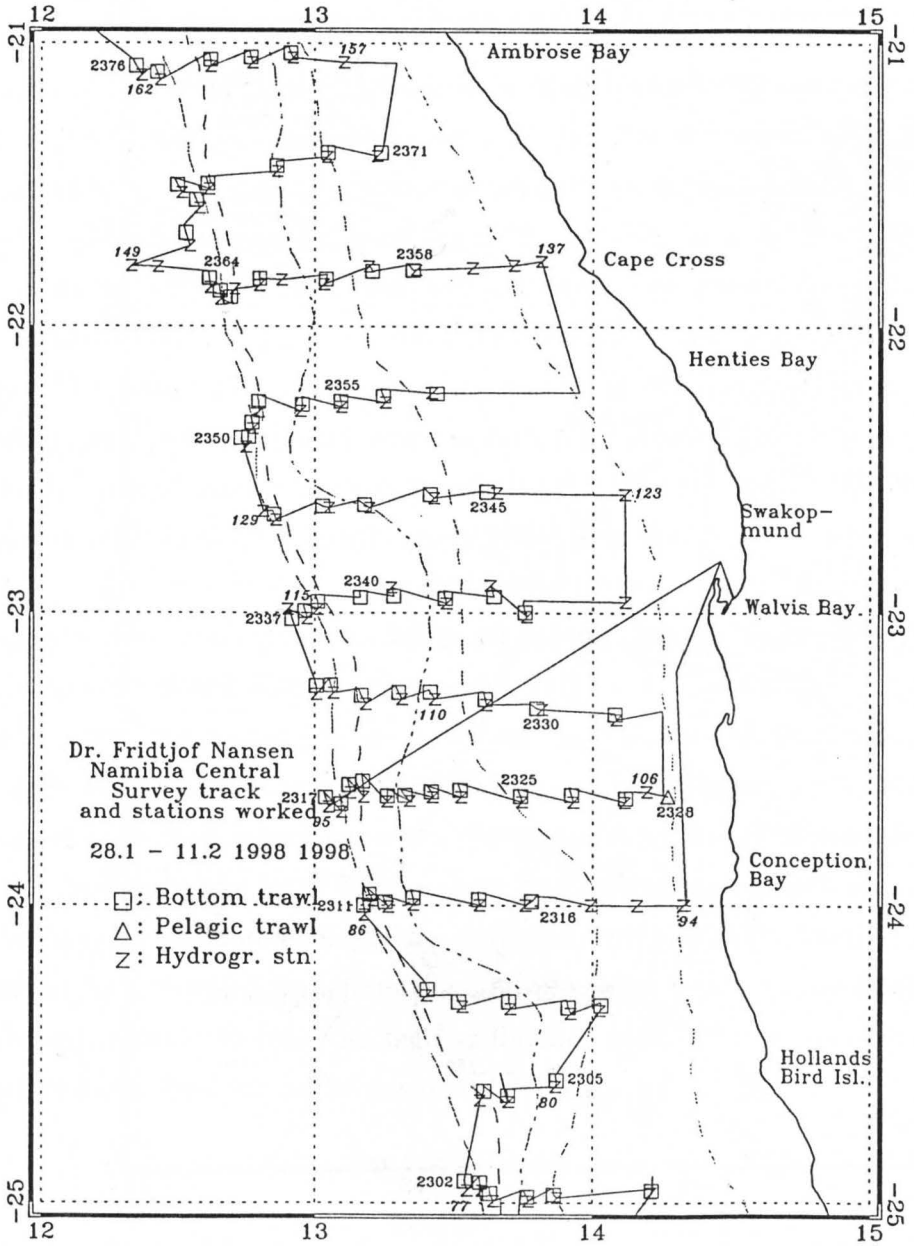


Figure 1b Central Region (St. Francis Bay to Ambrose Bay). Course tracks, fishing stations and hydrographic stations.

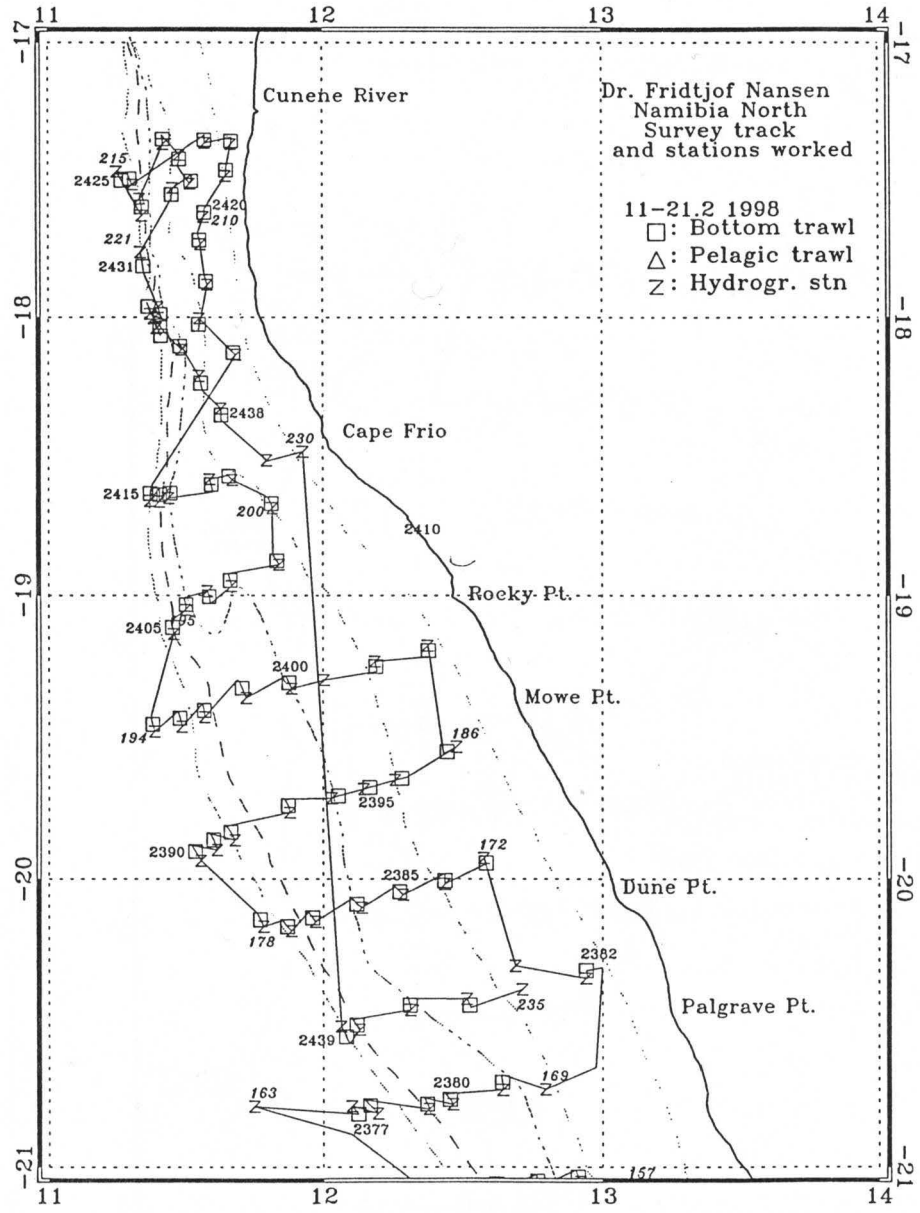


Figure 1c Northern Region (Ambrose Bay to Cunene River). Course tracks, fishing stations and hydrographic stations.

CHAPTER 2 HYDROGRAPHY

Strong southern winds prevailed during the first part of the survey until the call on Walvis Bay, where after a less rough period occurred. North of Cape Cross the weather was calm with average wind force 10 knots. Figure 2 shows the wind conditions along the survey track.

Sea temperature at 5 m depth was recorded continuously along the cruise track and is shown in Figures 3a-c. Six hydrographic sections were collected at the standard locations and are shown in Figures 4a-c. The surface temperature shows cool upwelled waters in much of the southern region and well developed upwelling in the Lüderitz area. The northern upwelling cell with a traditional center off Cape Frio, was not active during the survey. The sections off Cape Frio and Dune Point (Figure 4c) show well stratified water masses with formation of thermoclines. The map of the surface temperature in the North (Figure 3c) indicate southward intrusion of warm Angola Current waters in the area off Cape Frio. The absence of wind and the intrusion of warm water could indicate that a local El Niño could be in its early development, and should be monitored closely in the time ahead.

Dissolved oxygen (DO level) was recorded at all fishing stations (Figures 5a-c), to monitor the effect on the hake distribution. In this survey, bottom DO was adequate for the whole Southern and most of the central region. However, the entire North shelf was covered with the oxygen-deficient water masses (≤0.5 ml/l). Oxygen levels higher than 0.25 ml/l seems to be a prerequisite for bottom settlement of the pre-recruit hake and effective utilisation of the shelf areas for feeding by the hake. The southern and central region shelf areas seems well supplied with oxygen, while in the northern region the shelf and slope down to 300m bottom depth seems to be penetrated by intermediate and hypoxic water masses from the Angola Current. The water seems to enter the shelf in the area off Cape Frio. This feature will be analysed further in the final version of this report.

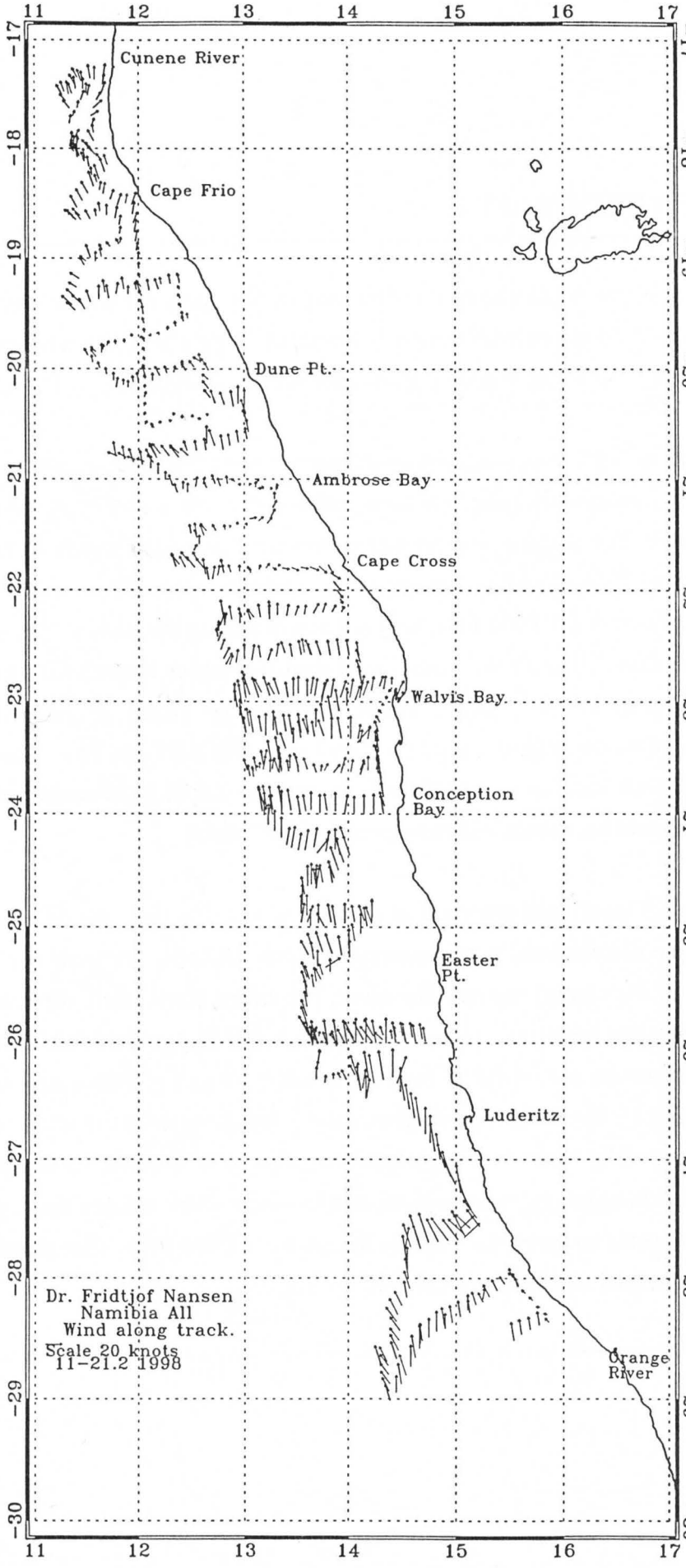


Figure 2 Orange River toCunene River. Wind conditions along the survey track.

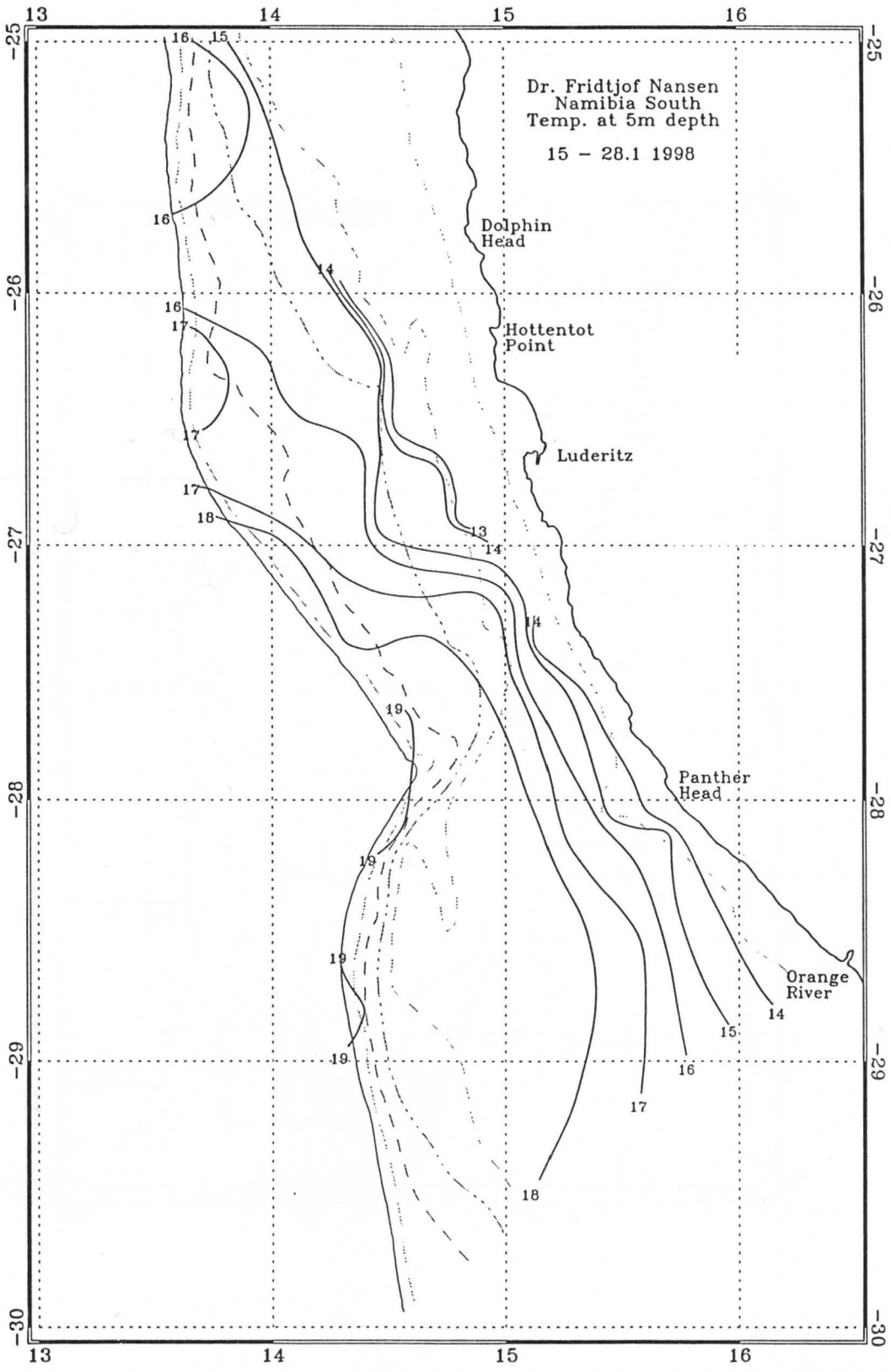


Figure 3a Orange River to St. Francis Bay. Distribution of sea temperature at 5 m depth.

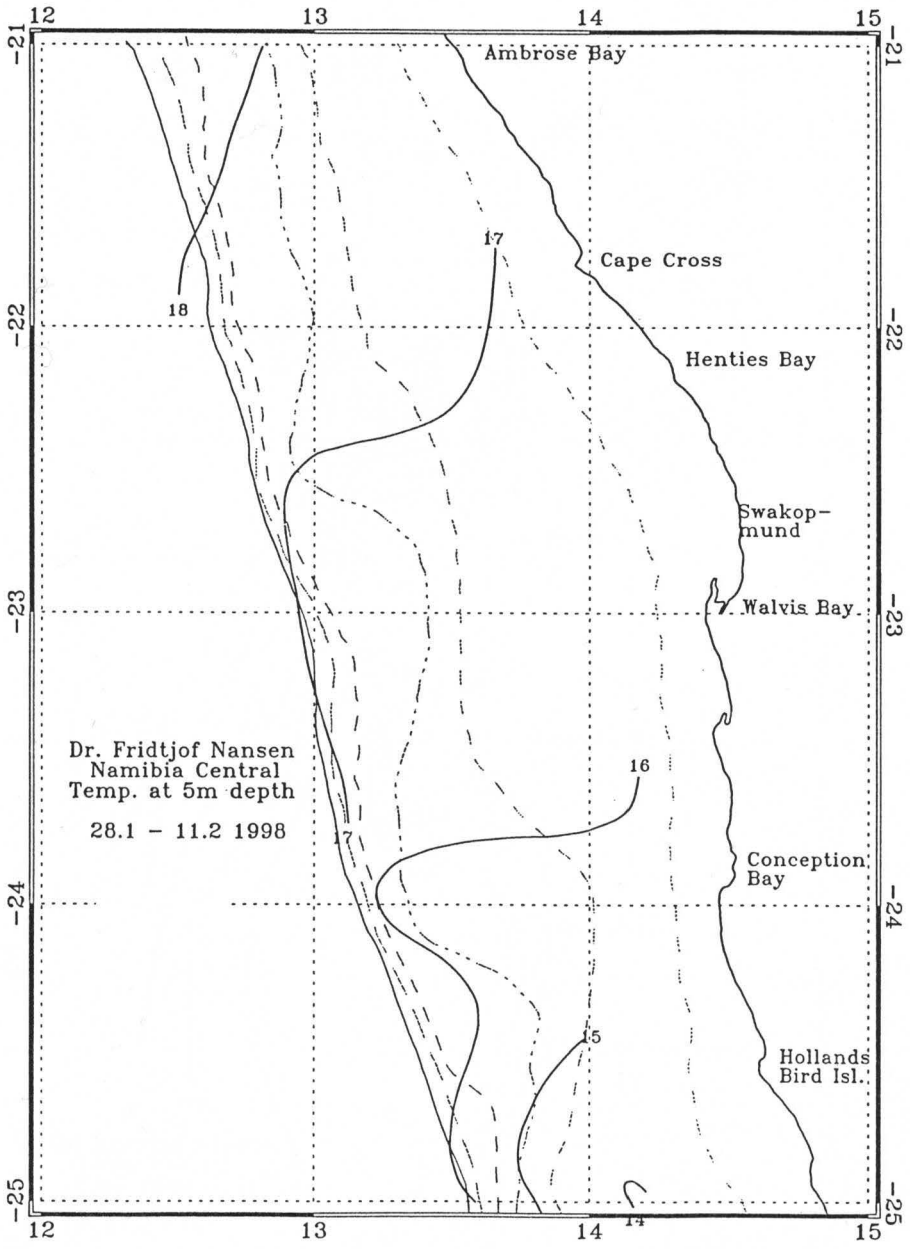


Figure 3b St. Francis Bay toAmbrose Bay. Distribution of sea temperature at 5 m depth.

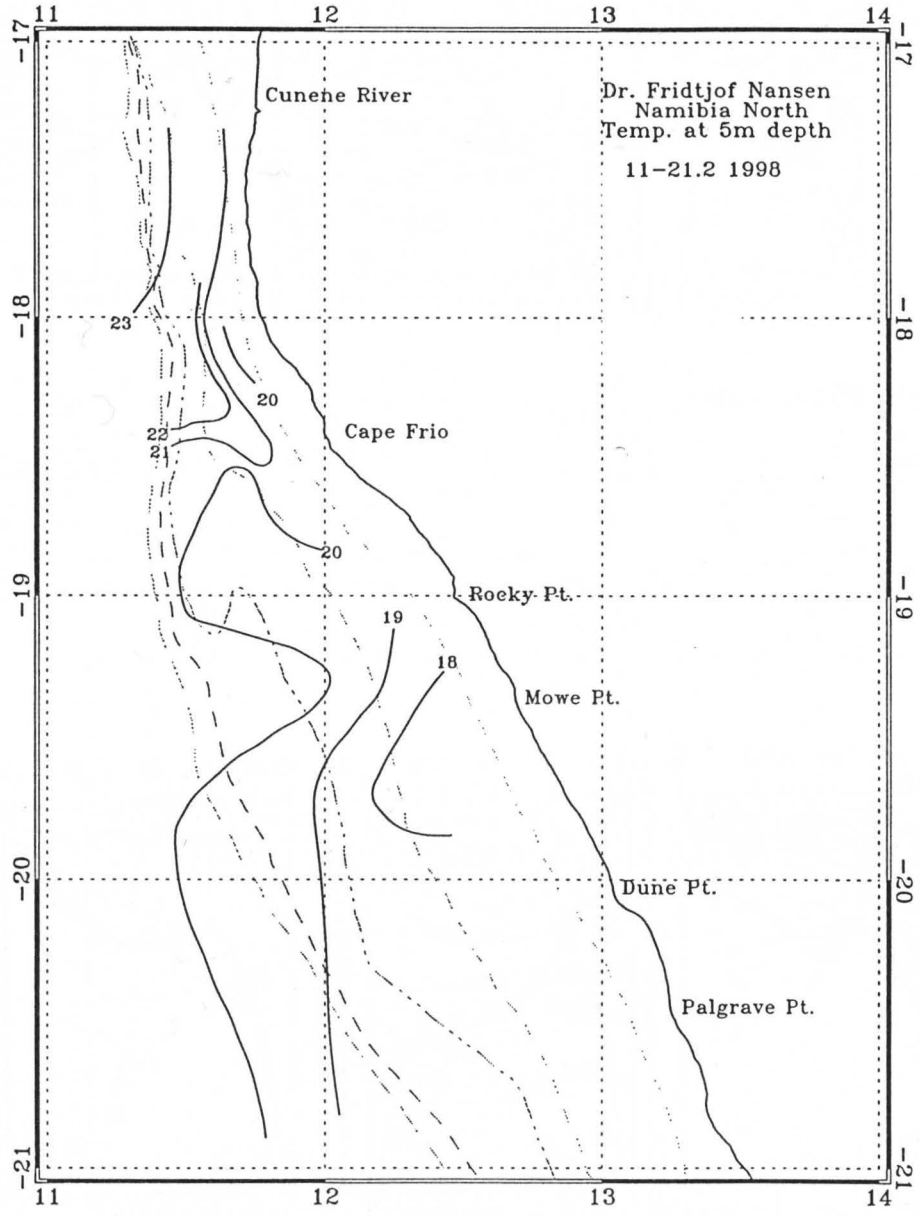
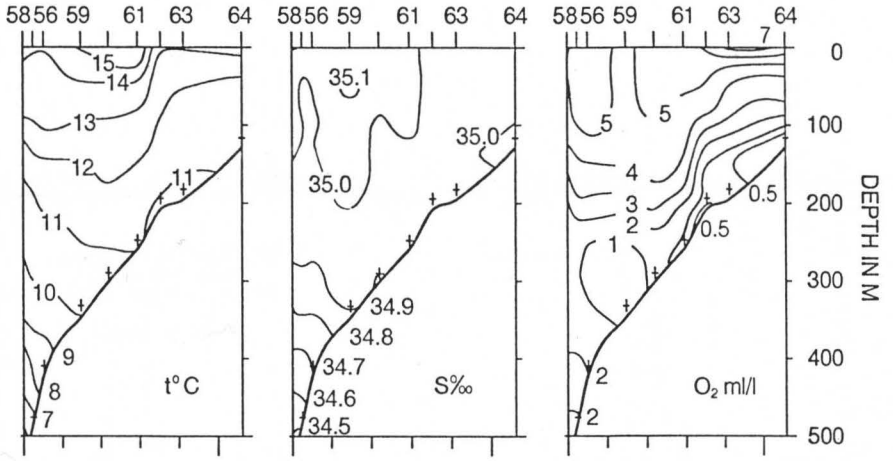


Figure 3c Ambrose Bay toCunene River. Distribution of sea temperature at 5 m depth.



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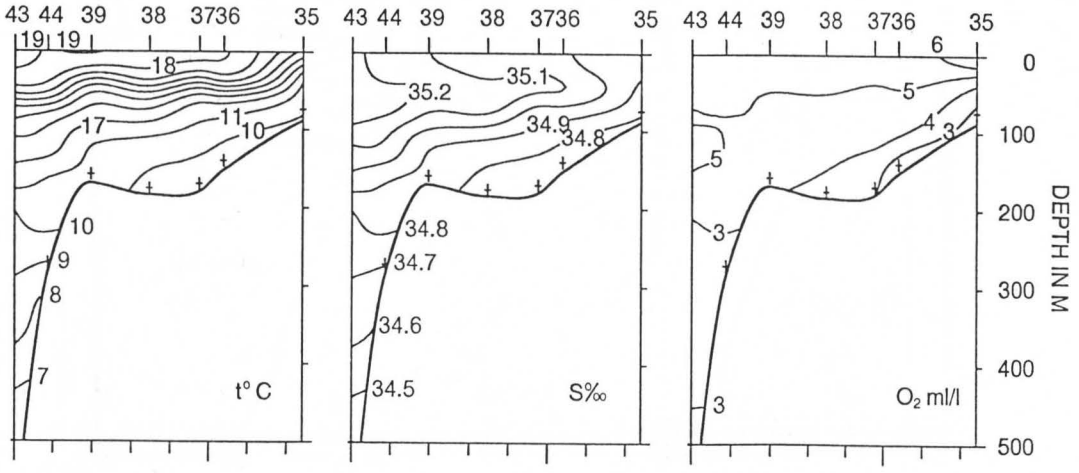

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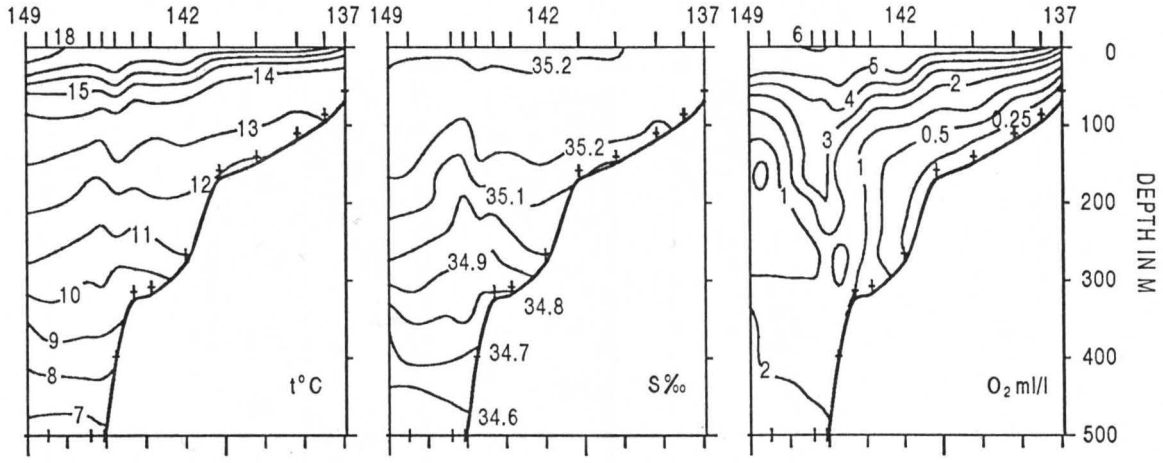
Figure 4a Temperature, salinity and oxygen in the standard profiles worked.



CAPE CROSS 8-9.2 1998

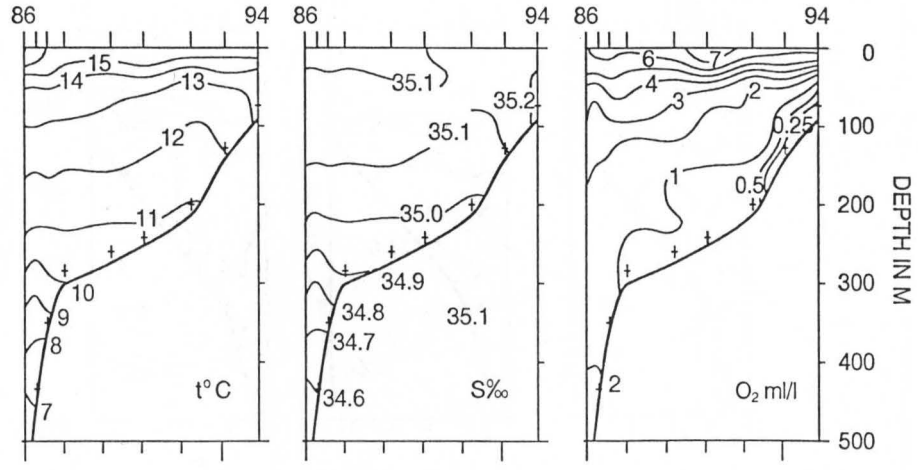


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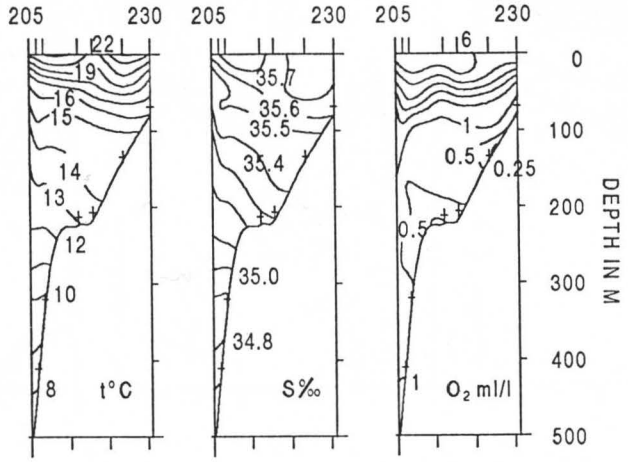
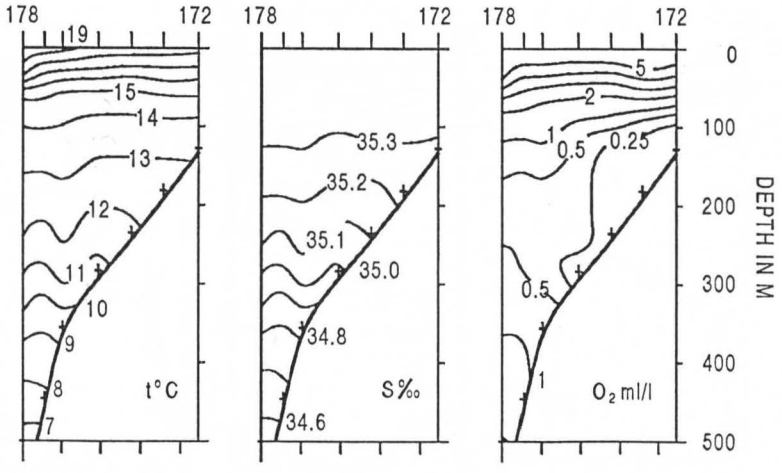
Figure 4b Temperature, salinity and oxygen in the standard profiles worked.



CAPE FRIO 16-19.2 1998



DUNE POINT 13.2 1998

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

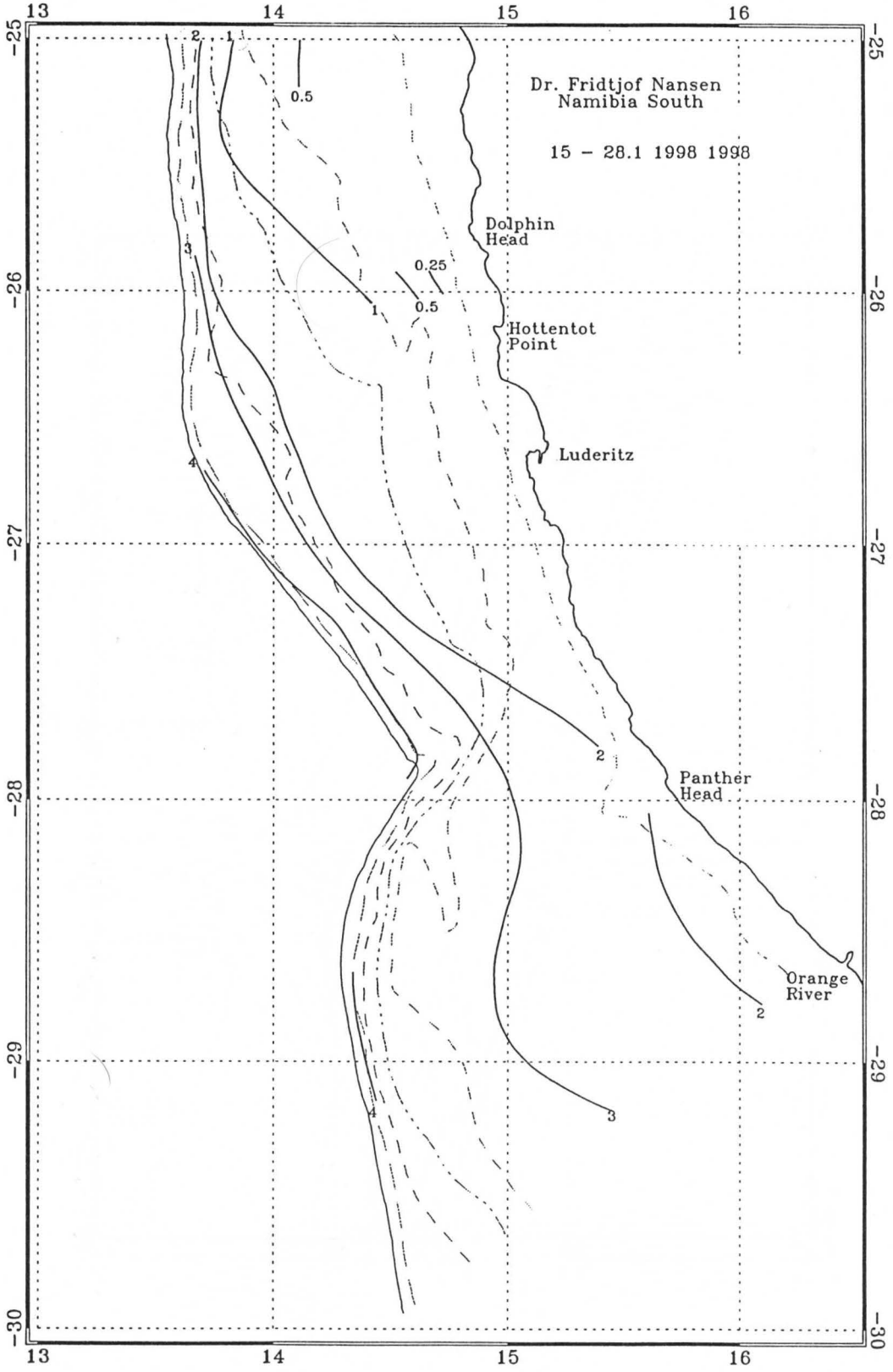


Figure 5a Orange River to St. Francis Bay. Distribution of oxygen (ml/l) near the bottom.

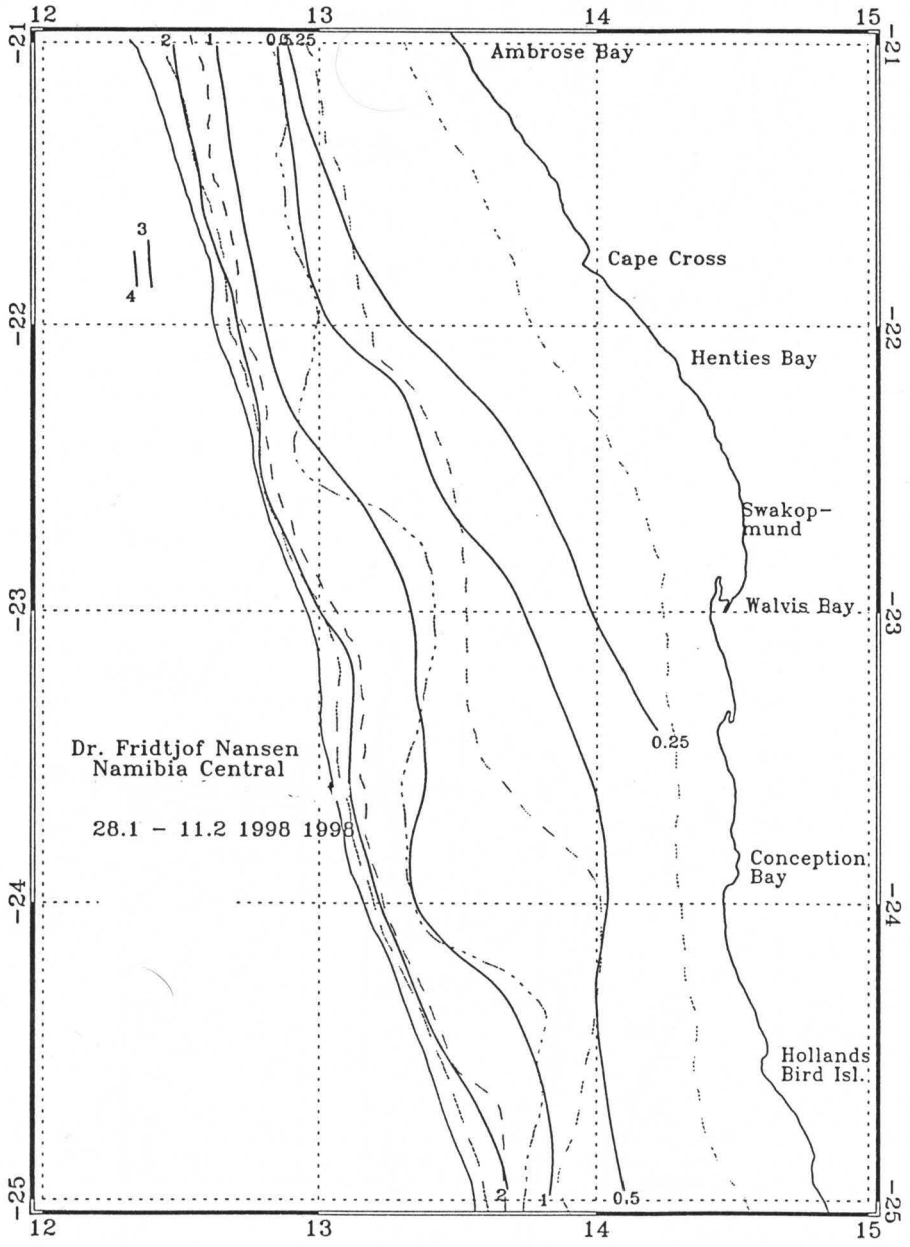


Figure 5b St. Francis Bay to Ambrose Bay. Distribution of oxygen (ml/l) near the bottom

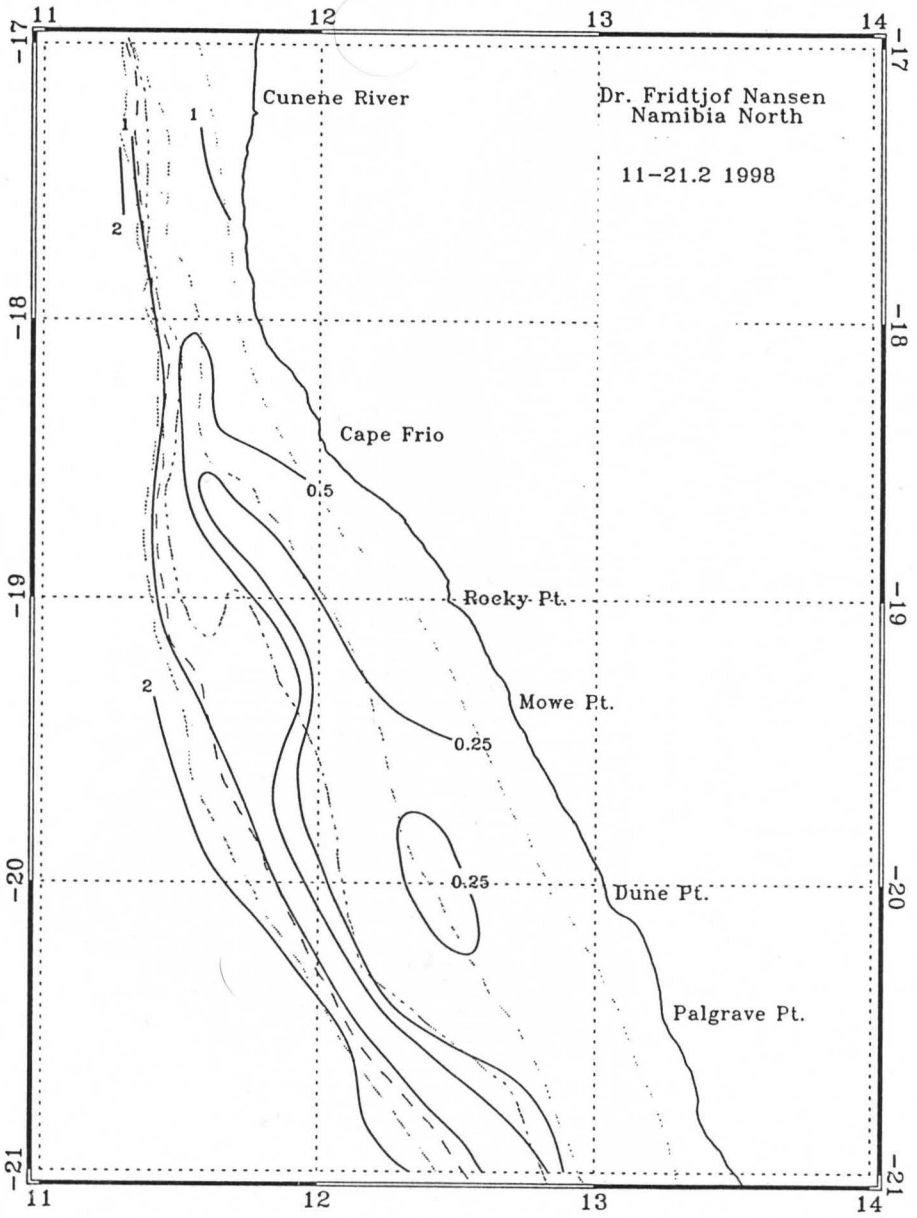


Figure 5c Ambrose Bay to Cunene River. Distribution of oxygen (ml/l) near the bottom

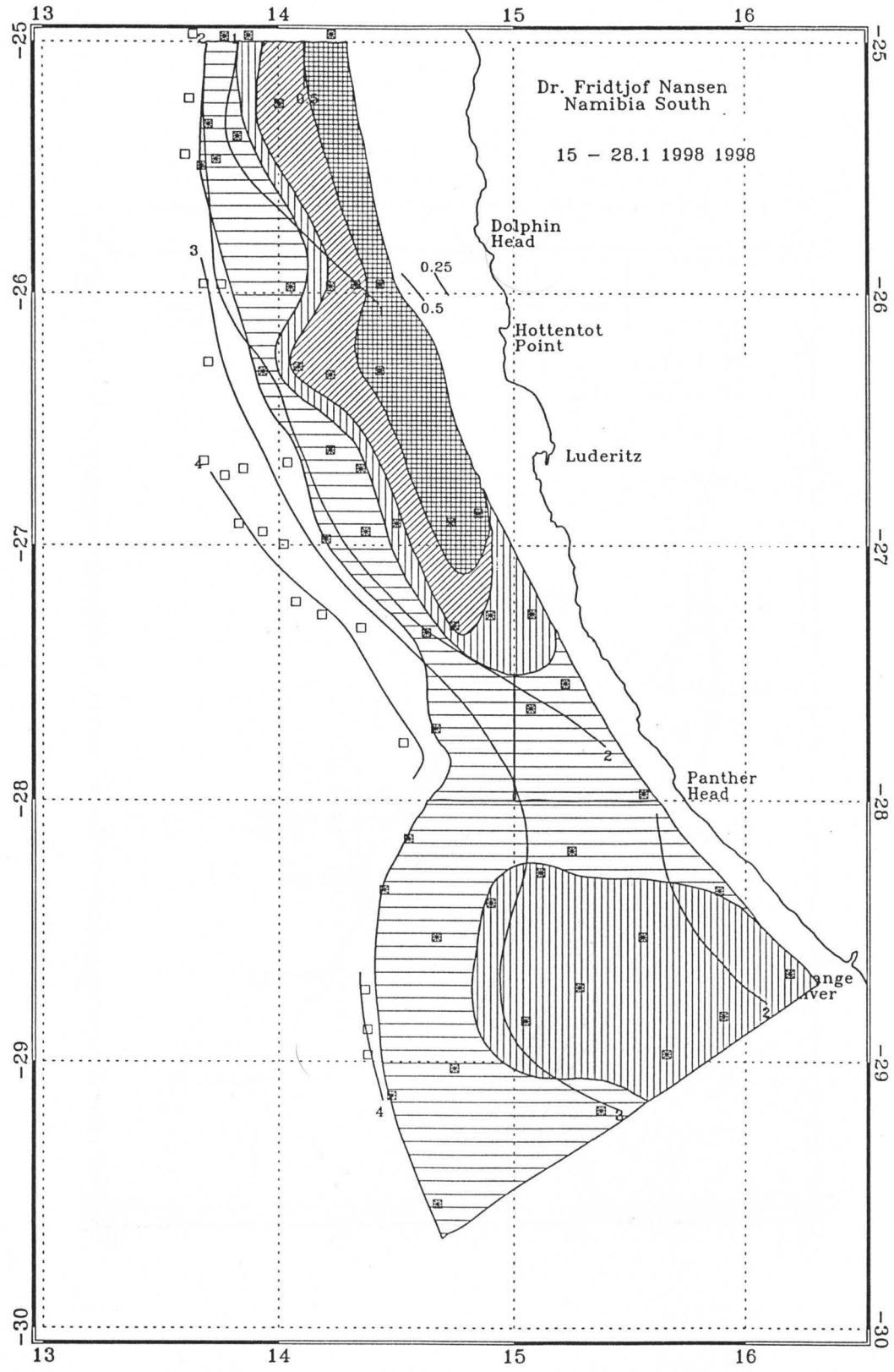


Figure 6a Orange River to St. Francis Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

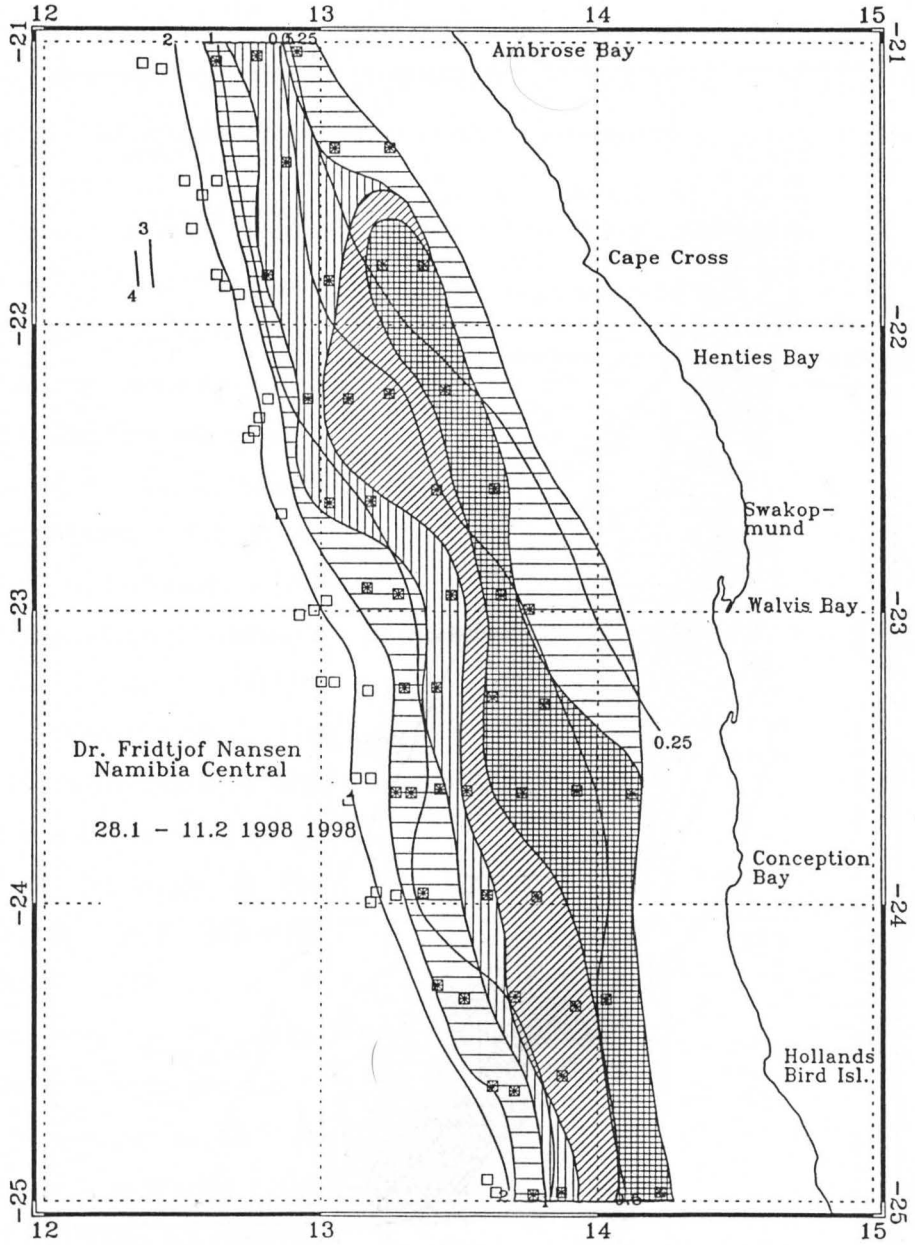


Figure 6b St. Francis Bay to Ambrose Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

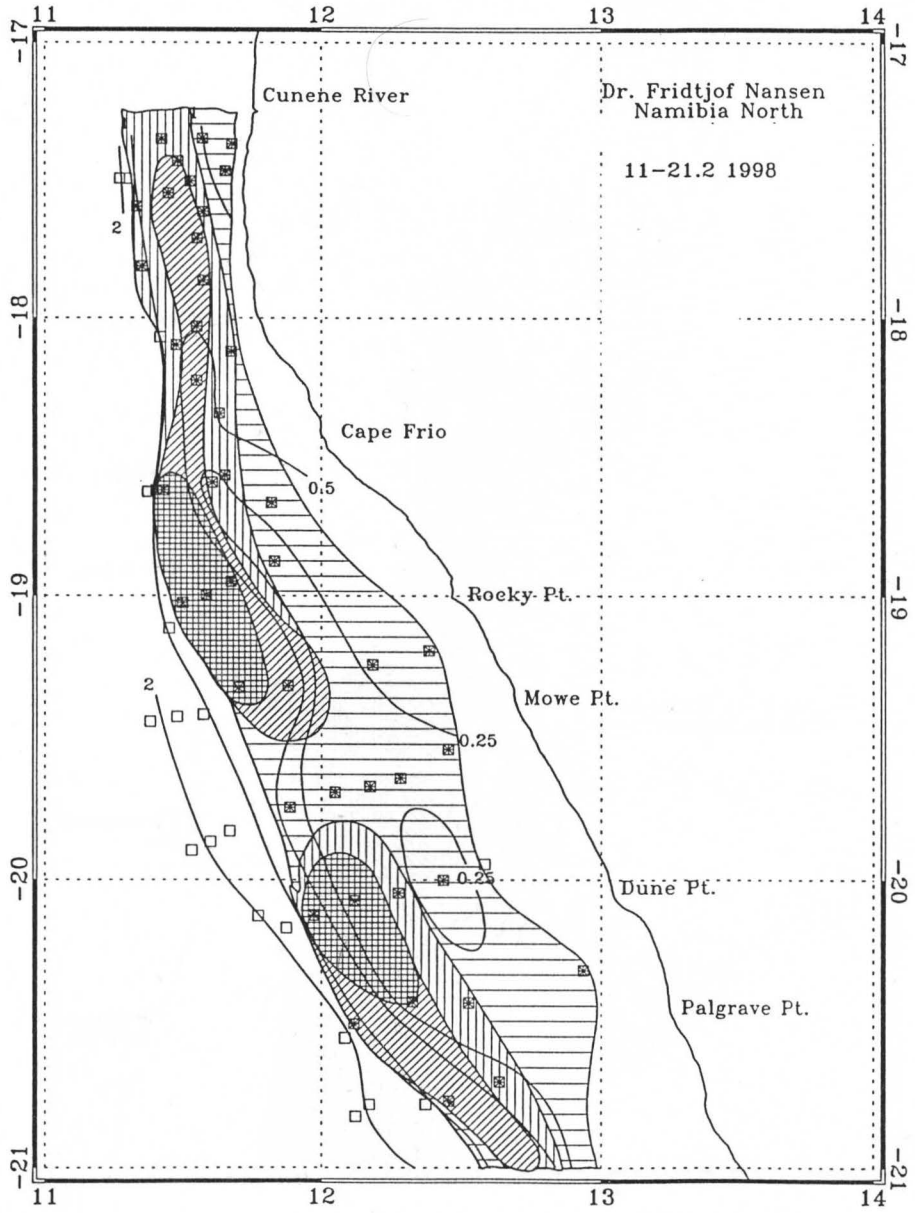


Figure 6c Ambrose Bay to Cunene River. Distribution of Cape hake and oxygen (ml/l) near the bottom.

CHAPTER 3 RESULTS OF THE ACOUSTIC AND TRAWL SURVEY

3.1 DISCUSSION OF METHODS

In the trawl survey programme all catches were sampled for composition in weight and numbers by species. The bottom trawl has 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 10 m constraining rope is 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 set to 1. However, the width of the swept area assessments used in the whole time series of surveys is 18.5 m, while the true wing spread is 21 m. Therefore, if the wings are assumed to constitute the limits of the swept area, q has in practice been 1.14, which is the proportion of 21 by 18.5. However, it has been decided to keep the old constants used in the

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).

	DAY	NIGHT
ORANGE RIVER - ST. FRANCIS BAY		
Trawl		
No. stations	55	9
Mean density	33.7	8.9
Acousticobs.		
No. stations	42	9
Mean density	1.7	4.1
Averageacou.corr.	4 %	46 %
ST. FRANCIS BAY - AMBROSE BAY		
Trawl		
No. stations	65	12
Mean density	34.7	8.8
Acousticobs.		
No. stations	51	9
Mean density	2.7	1.7
Averageacou.corr.	6 %	14 %
AMBROSE BAY - CUNENE RIVER		
Trawl		
No. stations	45	20
Mean density	31.4	23.6
Acousticobs.		
No. stations	17	16
Mean density	4.3	3.6
Average acou. corr.	5 %	12 %

time series until more precise measure of bias becomes available. In contrast to many other gadoid species, gear avoidance and herding is low in the hakes and the wing distance are assumed to be close to the effective swept path. With the new vessel, starting from January 1994, a new trawl gear with smaller bobbins was introduced. For the hake species the new gear is assumed to have no difference in performance. The trawl doors are Thyborøen 7.9 m^2, 2060 kg, but the net, warp and wire dimensions are as with the former vessel (see Annex IV). 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. This was also the case for the northern region in this survey where, on average, a 5% addition to the demersal biomass in the day hauls was applied. In the night hauls the average correction were 46%, 14% and 12% for south, central and northern region respectively (Table 1). The extreme 46% value from the southern night-hauls is associated with one outlier figure, from trawl st. no. 2296.

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 weighting factors, and regional length based estimates are obtained through pooling the length frequencies from these areas with the biomass of the aggregations as 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 996 kg/hr , while in the slope they are 786 kg/hr. This represent an increase of 130 % and 56 % for the shelf and the slope respectively, compared to the survey in January 1997. Monk catch rates on the shelf are not significantly different from 1997 and remain low as expected for this sampling gear. On the slope the

reduction from 1997 to 1998 is from 12 kg/hr to 4.8 but this change could be more associated with behaviour (patchiness and burying) of the species than changes in abundance.

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

SHELF 50-259 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Kingklip	Other
2248	185	2024.8					759.9
2249	225	3185.9				1.3	102.1
2250	205	316.0			30.9	3.0	39.3
2251	156	625.7				1.8	24.9
2252	98	1536.9			106.6	12.1	257.3
2253	152	279.0	23.3	1.1	55.6	0.0	188.2
2254	182	377.1	68.3	15.7	118.3	7.7	532.7
2255	184	68.8			8.5		126.9
2258	222	207.4	77.0	15.8	56.6	3.9	106.1
2259	171	612.0	2.7	1.7	19.3		185.9
2260	170	99.1	14.7	5.7			97.0
2261	165	668.9	48.8		630.6		278.2
2262	106	278.2			21.8	60.8	18.1
2263	88	144.6			2.6		53.6
2264	143	170.2	2.4		1.6	7.3	73.2
2265	179	400.4		6.0	64.0		312.6
2266	184	341.0	5.1	18.7	63.3		169.1
2267	174	241.0		2.1	13.6		2018.5
2275	170	125.3			1.5	1.0	117.5
2276	130	163.6			0.7	4.2	152.8
2277	256	7342.4		2.0		5.4	18.7
2287	256	899.7					8.7
2288	225	1145.9					33.8
2289	195	2559.5					13.0
2296	205	848.7		7.3		0.2	198.0
MEAN		986.5	9.7	3.0	47.8	4.4	235.4

SHELF 260-700 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Kingklip	Other
2231	345	32.7	568.0			92.3	330.0
2232	369		1265.6			15.3	122.0
2233	404		2264.0	6.6		39.3	262.0
2234	429		622.5			17.6	133.7
2235	566		134.9	7.0			150.5
2236	472		169.2				138.4
2237	553		204.5				63.9
2238	455		189.5	18.9			30.8
2239	434		657.8				56.8
2240	391		277.1	42.0		40.0	98.8
2241	353	23.8	209.9			41.4	227.4
2242	316	173.8	3.6			92.7	643.1
2243	601		19.3				51.4
2244	476		411.5				205.3
2245	411		6264.4			13.9	251.0
2246	338	2.3	910.4	4.1	1184.7		223.2
2247	295	266.1	163.1		186.9	10.4	771.0
2256	365		42.8				70.9
2257	361	1.6	266.1			58.0	1072.8
2268	528		83.7			11.4	56.6
2269	464		95.8			26.5	49.3
2270	459		100.0			23.8	34.7
2271	438		2928.8			141.0	150.0
2272	417		1453.7			54.2	375.6
2273	572		64.5				77.6
2274	396	4.5	5003.4			51.8	528.6
2278	320	163.1	47.7			18.6	558.8
2279	344	161.0	173.6	2.2		10.9	725.6
2280	377		3007.6	17.3		31.9	129.7
2281	440		785.7			9.2	327.0
2282	427		640.3			11.8	186.1
2283	494		155.8	12.9			293.9
2286	300	34.7		4.9		1.3	143.5
2290	513		251.2	7.0			2421.8
2291	416		90.5	11.1		25.6	227.2
2292	348	1.8	51.7	17.0		30.0	178.1
2293	290	20.3		20.2	0.9	1.8	198.9
2294	344	7.4	42.6	14.5		77.8	198.3
2295	487		139.5			13.5	324.2
MEAN		22.9	763.1	4.8	35.2	24.7	310.0

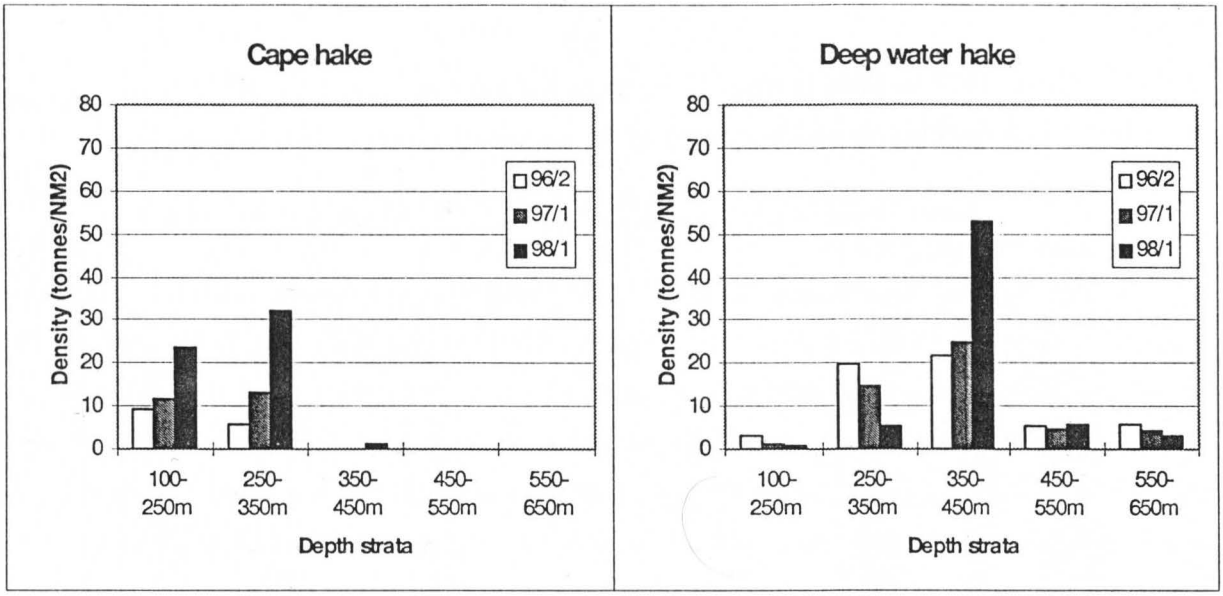


Figure 7. Southern Region. Depth distribution of two hake species. Mean densities in tonnes/NM^2.

Figure 7 shows the depth distribution of the two hake species based on the catch rates converted to densities. A comparison with two previous January surveys (1996 and 1997) shows that the catch rates for the Cape hake have increased considerably in the 100-250 and the 250-350 m zones. At the same time the deep water hake has decreased in the 250-350m zone and increased in the 350-450m zone. An explanation could be that as the Cape hake has increased in abundance in the 250-350 zone the deep water hake has retreated deeper to its natural habitat. Following this, the northward expansion in the deep water hake in the later years could therefore be seen as a window of opportunity as the adult part of the Cape hake stock has been low.

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. The Cape hake (Figure 8)densities in were very high the shallow areas north of S 27°. This is caused by a new yearclass of hake establishing on the shelf. The features on the slope seem normal for the Cape hake. For the deep water hake (Figure 9) dense registrations on the slope are pictured.

Table 4 Southern Region. Estimates of total biomass by surveys, 1 000 tonnes.

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
98/1	327	186

Biomass estimates based on a post-stratification of the densities as shown in Figures 8 and 9, gives 327 000 tonnes for the Cape and 186 000 tonnes for the deep water hake (Table 4), an increase of 170 % for the Cape hake and 40% for deep water hakes since the previous survey. The 95% confidence limits give a range of ±37% on the estimate of the Cape hake and ±11% of the deep water hake.

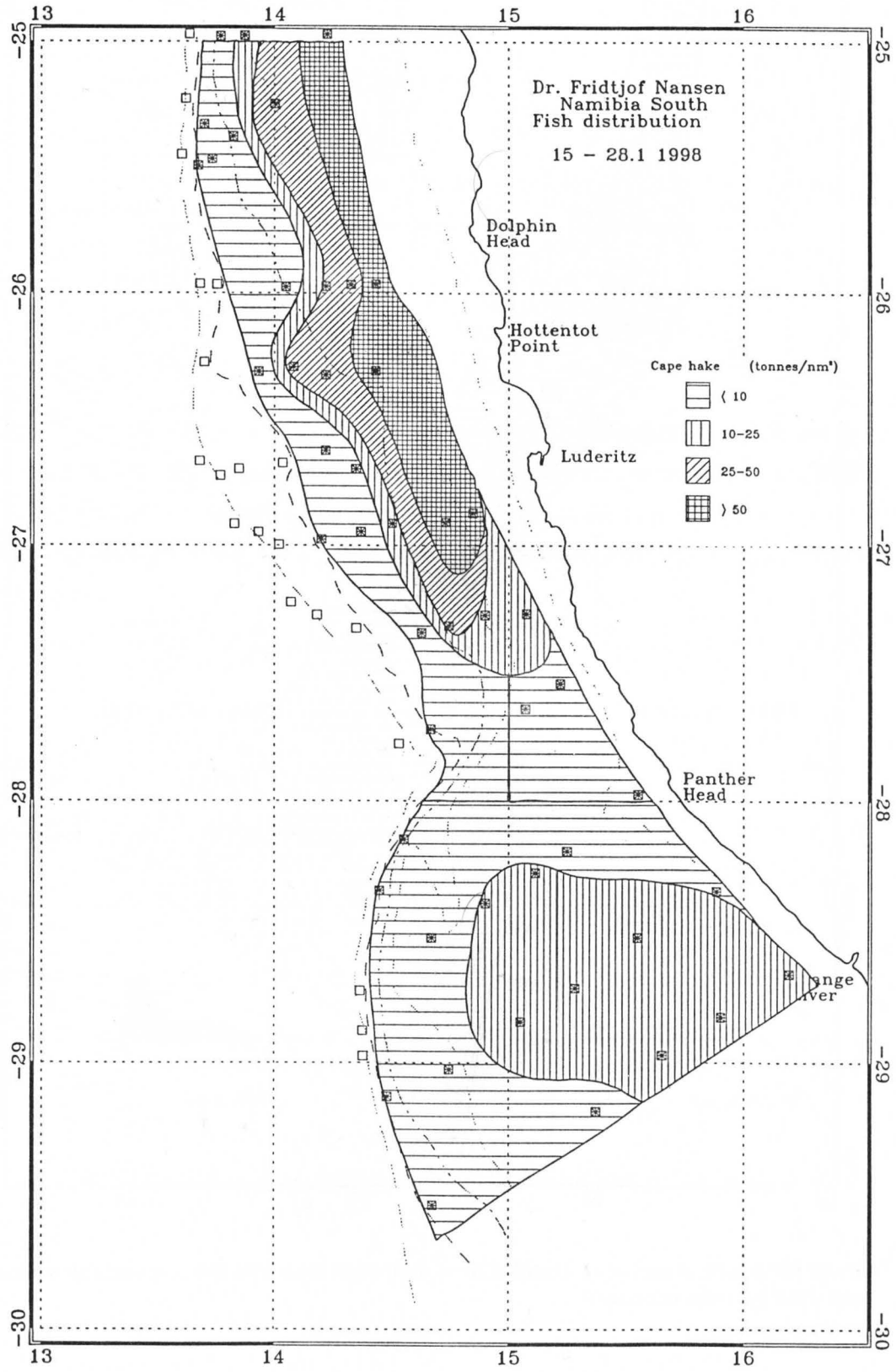


Figure 8 Orange River to Francis Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

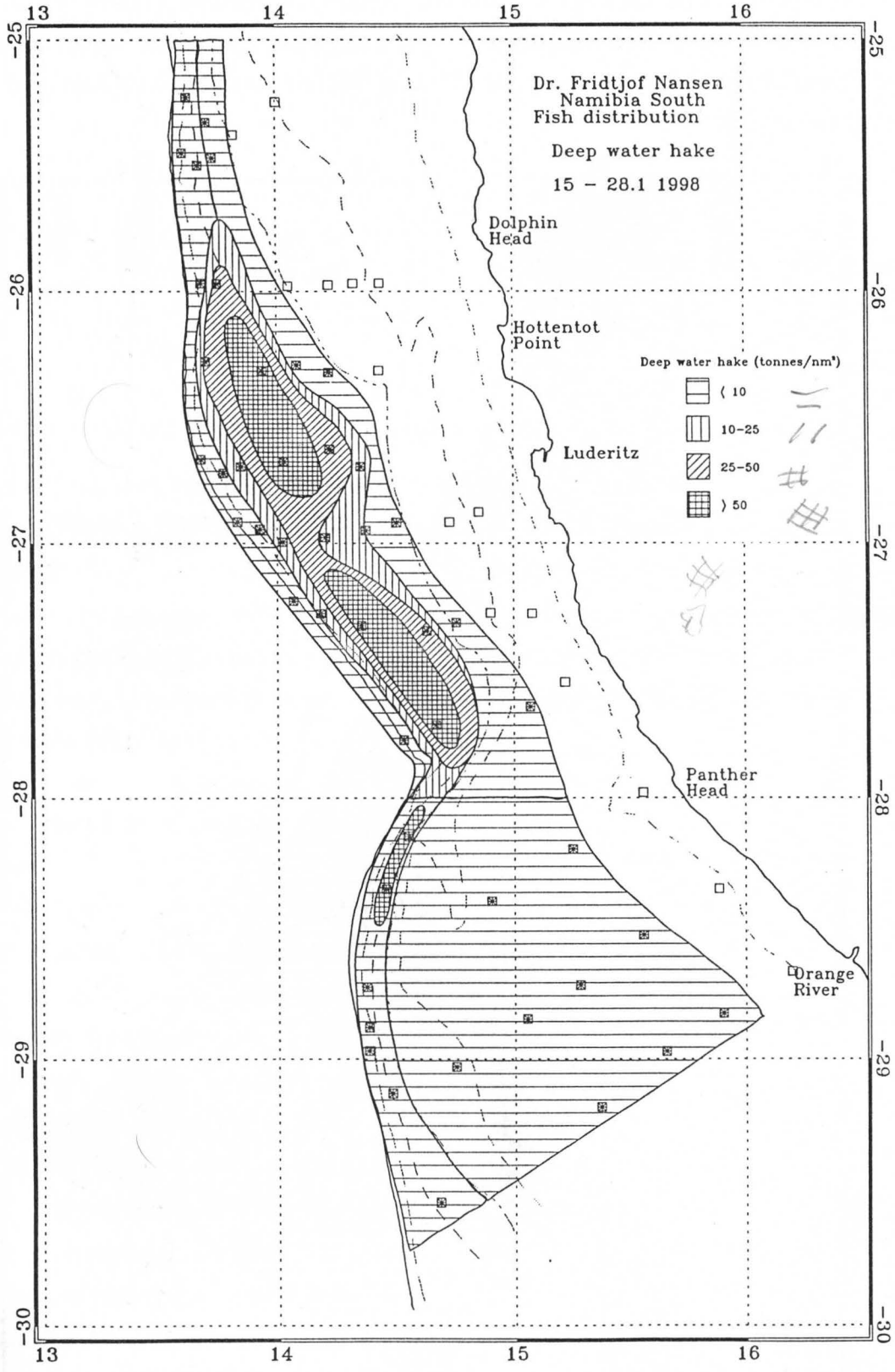


Figure 9 Orange River to St. Francis Bay. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.

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 cohorts in the stock, was performed in the same way as during the six previous surveys. The results are shown in Table 5.

Table 5 Southern 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
1997	12.1	2.1	0.115	314	4
1996	22.2	1.9	0.52	1417	103
1995	26.2	2.5	0.25	724	87
1994	35.0	3.2	0.08	202	57
older			0.035	100	76

As seen in Figure 10 the main part of the Cape hake, both in numbers and biomass, is made up of fish below 30 cm. This is partly the weak 1995 year-class that is now in the upper 20ies of the length scale, while the main part of the small fish constitutes the newly bottom settled 1996 year-class. The still younger 1997 year-class is not representatively sampled, as it is still primarily in its pelagic phase.

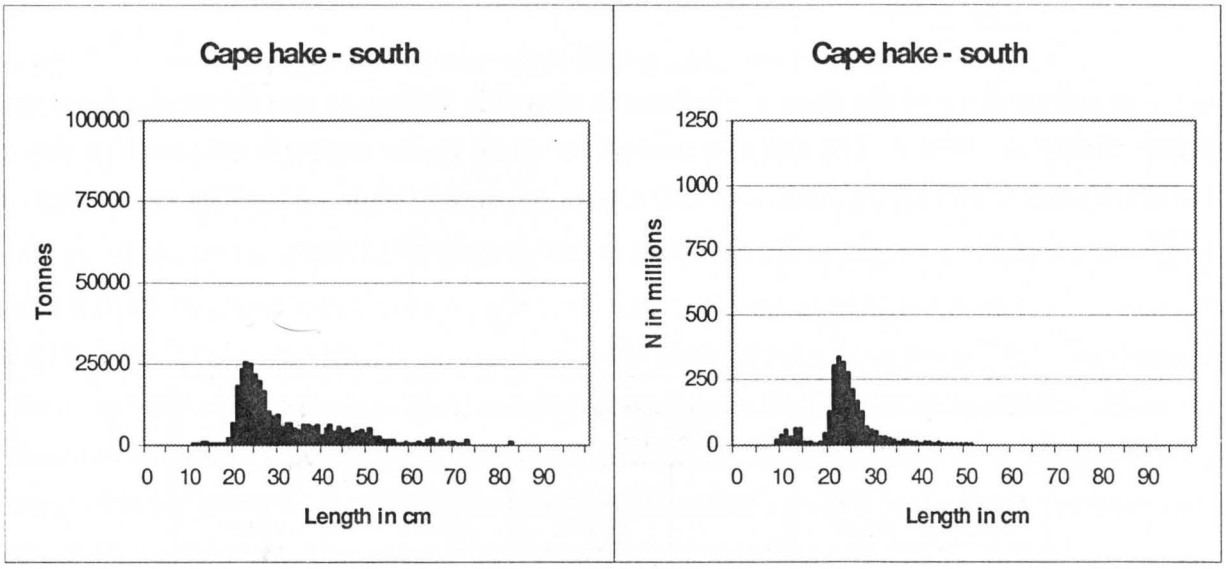


Figure 10 Length composition of Cape hake in biomass and numbers.

The fishable biomass of Cape hake, defined as all fish bigger than 35cm, is estimated to 106 000 tonnes and 184 million fish. This is a considerable increase from last years' very low 37 000 tonnes and 64 million fish. The increase can mainly be explained by favourable survival conditions for the 1994 yearclass, that is now fully recruited into the fishable biomass. The mean body weight remains the same in the fishable southern population for both years' January surveys, around 580 grams.

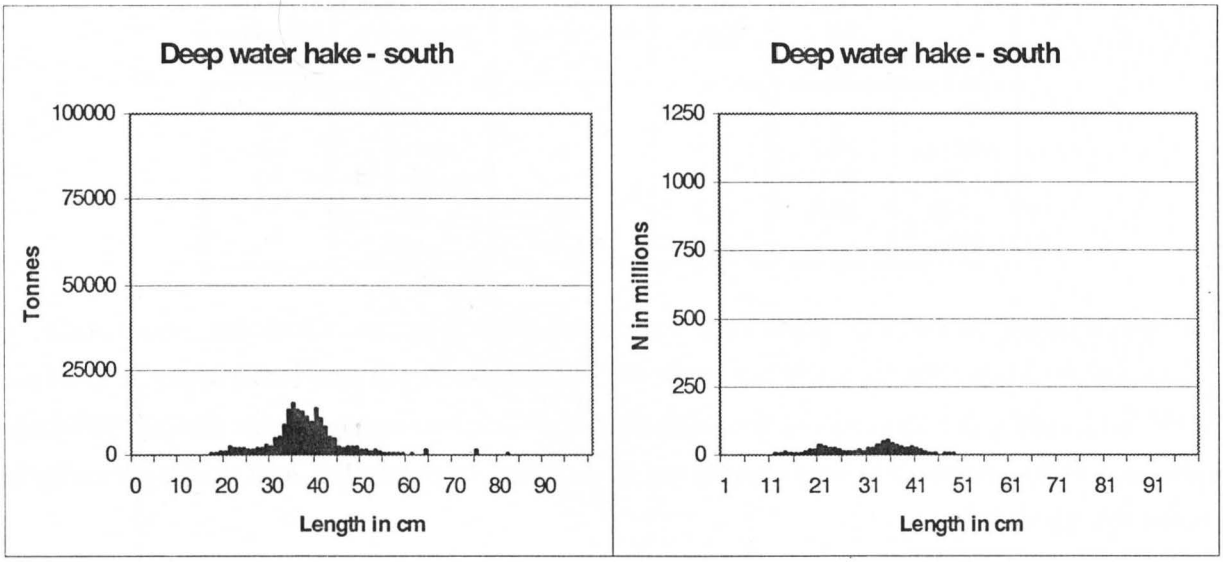


Figure 11 Length composition of deep water hake in biomass and numbers.

The size composition of the deep water hake is shown in Figure 11 and the results from the cohort slicing in Table 6. The fishable part of the stock in the region is estimated to about 116 000 tonnes or 265 million fish, a 40 000 tonnes increase in regional biomass since January 1997. The mean body weight in the fishable biomass is only 440 grams.

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
1997	14	1.5	0.045	33	0.6
1996	21.5	2.5	0.26	197	13
1995	27.5	2.0	0.07	54	7
1994	35.0	3.00	0.49	367	104
older			0.135	107	61

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 the hakes on the shelf have increased more than four times since the previous survey, from 520 to 2160 kg/hr. On the slope the rate has increased by 25% from 300 to 380 kg/hr. The very high on-shelf catches are mainly caused by a new young cohort of fish, not yet recruited to the fishery.

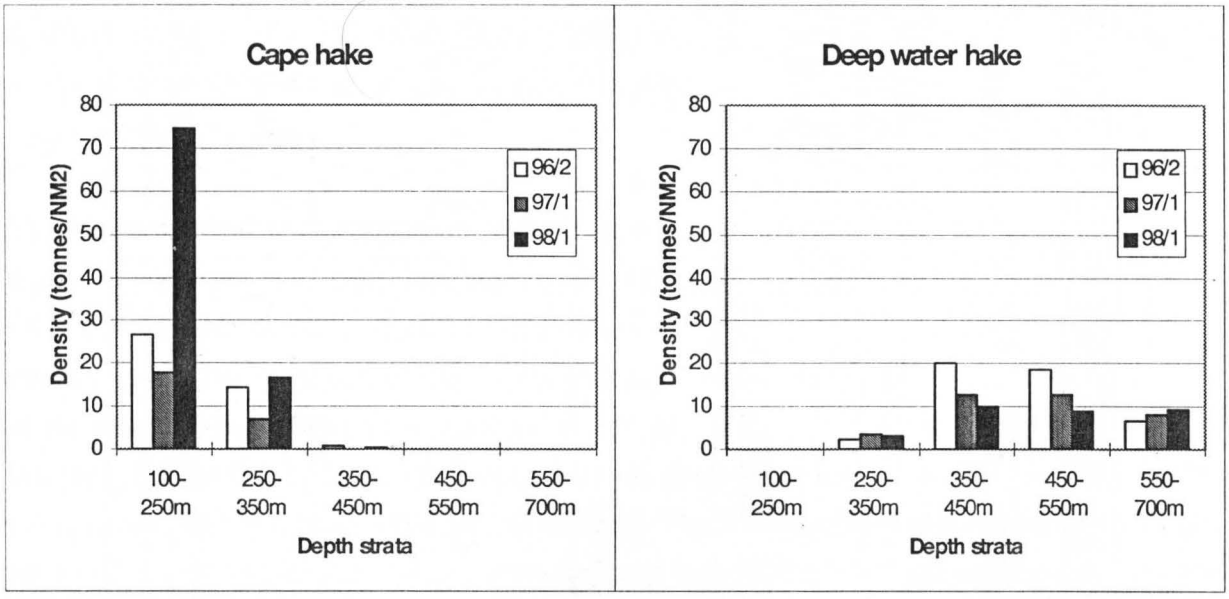


Figure 12. Central region. Depth distribution of two hake species. Mean densities in tonnes/NM^2.

Figure 12 shows the mean catch rates by depth ranges of the two hake species, and compared with the two previous January surveys in 1996 and 1997. As already mentioned the catch rates for the Cape hake on the shelf shows an increase in order of magnitude since 1997. The densities show on the slope a recovery from the very low figures in 1997 and are slightly above the situation in 1996. The deep water hake, only present on the slope, shows a down-going trend since 1996 and are now close 10 tonnes/NM^2, equivalent to approximately 300 kg/hr mean catch rate with standard "Dr. Fridtjof Nansen" trawl.

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

SLOPE 100-259 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Kingklip	Other
2297	164	2713.2					14.9
2298	210	418.3		0.6	604.0		119.0
2305	257	2140.2		37.2			362.3
2306	182	4416.2					26.0
2316	243	240.2		20.5	3.2	5.4	162.0
2324	230	942.5		5.1	13.5		70.7
2325	190	4071.6		0.8	233.2		27.8
2326	168	577.4		1.9	163.5		55.2
2327	150	10043.0					
2330	160	1440.6			14.0		142.1
2331	168	1354.3					132.7
2343	149	3126.0			470.0		3.4
2344	145	228.8					57.6
2345	136	1798.5					33.7
2346	242	1069.9		54.9	141.7		358.7
2355	252	1352.0		118.1	1510.1		152.5
2356	227	1093.3		6.4	1232.8		144.5
2357	163	309.9					44.2
2358	150	2201.6					5.1
2359	168	10062.0					40.6
2370	190	66.5		0.7	0.2		7.8
2371	133	1.1					36.2
2372	258	21.9					3.6
MEAN		2160.4		10.7	190.7	0.2	87.0

SLOPE 260-705 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Kingklip	Other
2299	295	41.2	19.5	6.5		4.1	143.1
2300	462		189.8	1.1			302.5
2301	492		157.6				541.5
2303	394	21.1	476.2	7.5	3.9	5.3	288.0
2304	375	50.4	460.6	3.0	1.4	18.8	140.5
2307	263	908.5		12.9			395.2
2308	316	1519.1	34.5	6.9		10.3	512.0
2309	331	45.2	467.1		115.8	41.8	513.3
2310	348	13.2	139.3		8.5	30.6	184.0
2311	555		368.8	13.5	3.6		233.8
2312	467		178.1				219.0
2313	368		256.4	5.5		13.3	204.0
2314	302	235.4		5.4	35.9	9.3	151.7
2315	269	714.0		7.1	6.6		227.0
2317	663		174.1	15.1			624.7
2318	531		545.1	11.2			1450.5
2319	437		137.5	4.2			426.8
2320	398		231.4	3.5	2.0		250.1
2321	327	16.6	152.7	7.7	16.0	7.7	115.0
2322	299	140.4	1.3	9.0	75.5	4.3	110.0
2323	261	98.2		14.6			94.6
2332	286	557.1		6.1	8081.3		228.7
2333	356	33.5	462.4	3.3		3.3	170.7
2334	408		488.0	14.8			244.0
2335	537		95.9	4.6			320.0
2336	623		124.5	8.4			266.3
2337	668		110.1				161.7
2338	558		109.3	3.2			532.8
2339	439		176.2	2.2			216.1
2340	300	219.1	140.7	7.5	944.0	2.5	723.0
2341	357	81.0	181.3	10.3		19.2	75.1
2342	265	581.5		20.0	37.6		228.4
2347	298	627.0		21.7	619.4		197.7
2348	307	920.3	58.0	57.1	94.1	11.2	396.9
2349	455		141.7	7.2			1023.9
2350	704		184.5				542.7
2351	595		137.9				267.2
2352	491		165.9				390.8
2353	410		179.1	31.6		8.9	229.7
2354	302	389.0		70.8	253.8		260.2
2360	272	277.5		84.3			576.9
2361	324	322.9	299.4	46.2	11.9	9.5	452.4
2362	433		300.1	100.9			920.1
2363	519		367.0	26.5			704.8
2364	597		424.1	40.3			330.4
2365	699		579.0	19.6			856.5
2366	462		478.1	13.5			353.6
2367	467		328.2	13.1			485.2
2368	332		902.9	13.1		2.5	582.1
2369	307	403.5		37.8	45.1		153.5
2373	331	718.3		59.5			851.2
2374	383	2.0	203.4	10.7		8.0	393.3
2375	557		509.0	15.4			919.3
2376	641		340.8	24.3			906.9
MEAN		165.5	212.5	16.8	191.8	3.9	409.1

Figure 13 shows the geographical distribution of Cape hake in the central region, confirming the shallow distribution of the high density aggregations of young fish. On the upper part of the slope, densities in the range 10-25 tonnes/NM² signify an increase since the previous January survey. The deep water hake (Figure 14) shows the traditional distribution pattern along the slope, with densities in the 1-10 tonnes/NM² range and two patches in the 10-25 tonnes/NM² range.

Table 9 Central region. Estimates of total biomass by surveys, 1 000 tonnes.

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
98/1	461	42

The biomass estimate of Cape hake for the central region, based on post stratification, is 461 000 tonnes, a dramatic increase from 112 000 tonnes in January 1997. The main part of this increase should be ascribed the young fish on the shelf and is not yet available for the fishing fleet. The estimate on the deep water hake is 42 000 tonnes, a similar figure as assessed in January 1997 (46 000 tonnes) The 95% confidence limits on the estimates are ±38% on the Cape hake and ±13% on the deep water hake. The high variance on the Cape hake is mainly associated with the high catches of young fish on the shelf.

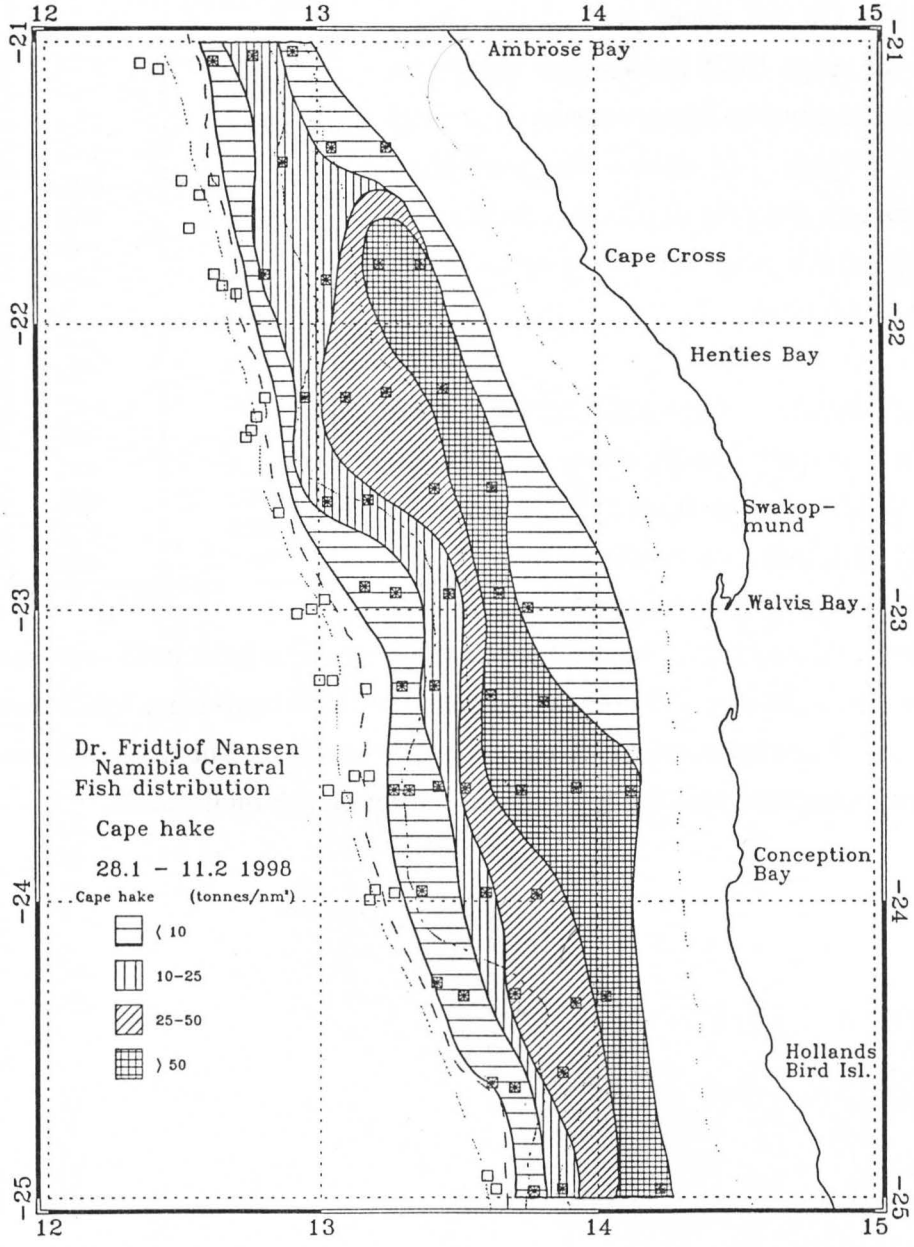


Figure 13 St. Francis Bay to Ambrose Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

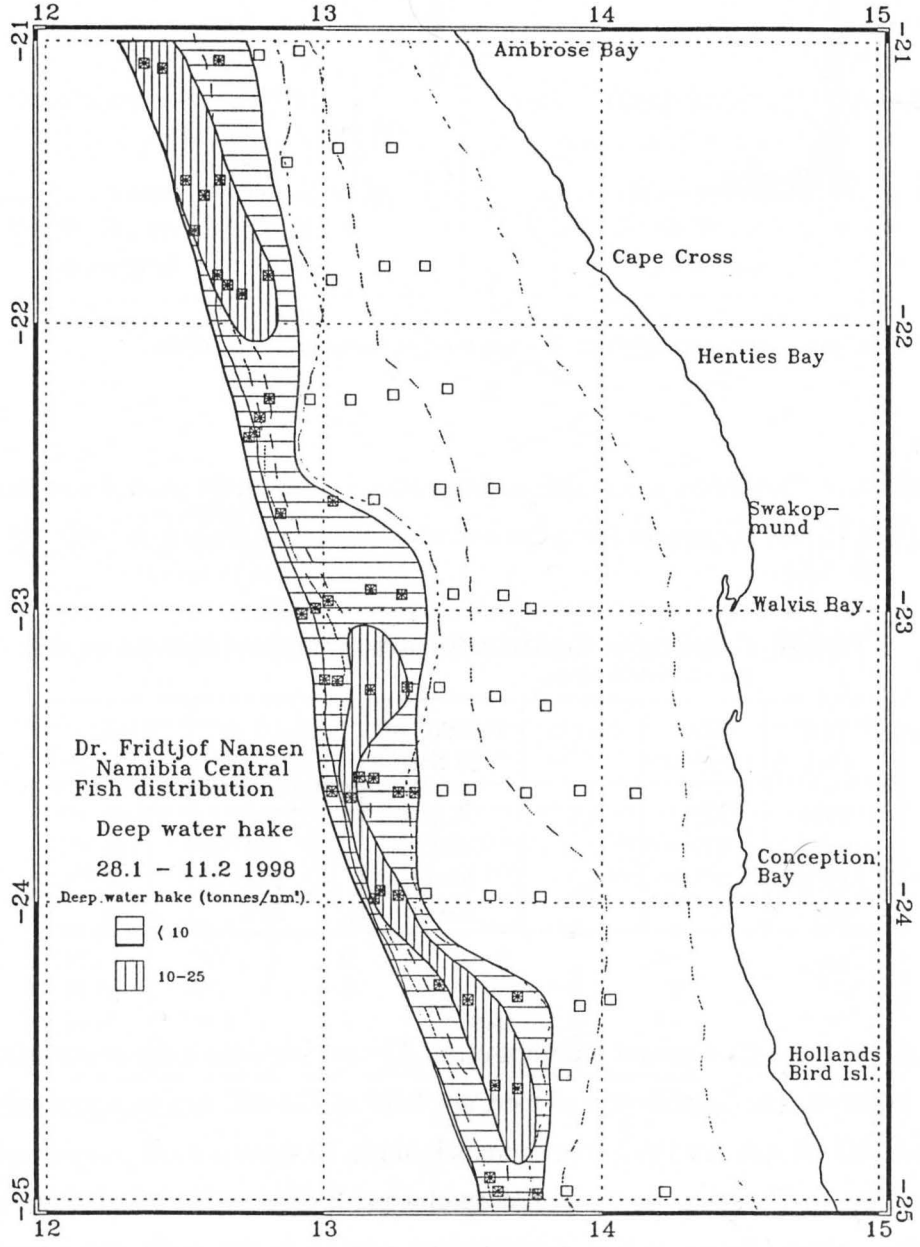


Figure 14 St. Francis Bay to Ambrose Bay. Distribution of deep water hake. Empty squares indicate stations where Cape hake was not caught.

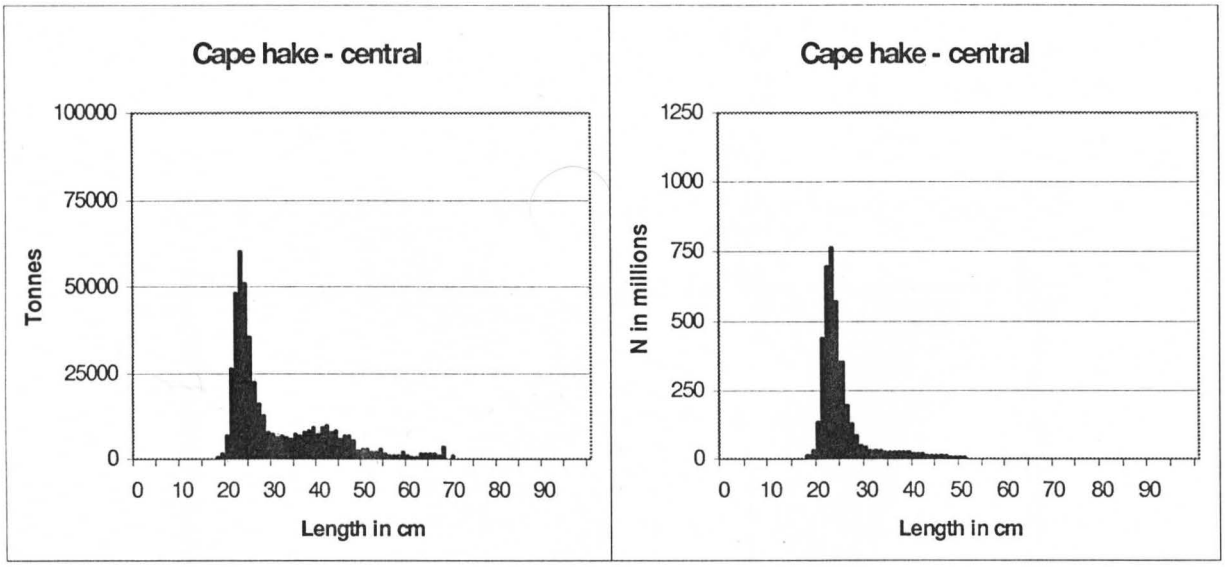


Figure 15 Central region. Length composition of Cape hake in biomass and numbers.

Size composition of Cape hake, in number and biomass, based on the pooled length samples are shown in Figure 15 and the results from the cohort 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
1996	22.9	1.7	0.82	3140	248
1995	27.0	2.0	0.08	344	45
1994	33.00	2.5	0.045	183	42
older			0.055	229	126

The 1996 year class, with a modal length around 23 cm constitutes the dominating cohort in number and biomass. The fishable part of the Cape hake is 134 000 tonnes, an increase of 88 000 tonnes from 46 000 in January 1997. The modals in table 10 show a weak progression compared to the lengths obtained last year for the same yearclasses. It is uncertain whether this is an artifact created by the cohort slicing or if it signify poor growth in the adult fish population. This question deserves further analysis. The mean body weight in the fishable biomass is 530 grams.

Size composition from the pooled length samples and the results from the cohort slicing on the deep water hake is shown in Figure 16 and Table 11 respectively. The regional population

consists mainly of fish estimated from the 1993 year class, i.e. 5 year old fish. The presence of old deep water hake has been remarkably constant since January 1997, suggesting that this resource is not fully utilized. Fishable biomass is estimated to 39 000 tonnes (40 000 tonnes in 1997). Mean body weight in the fishable biomass is 650 grams.

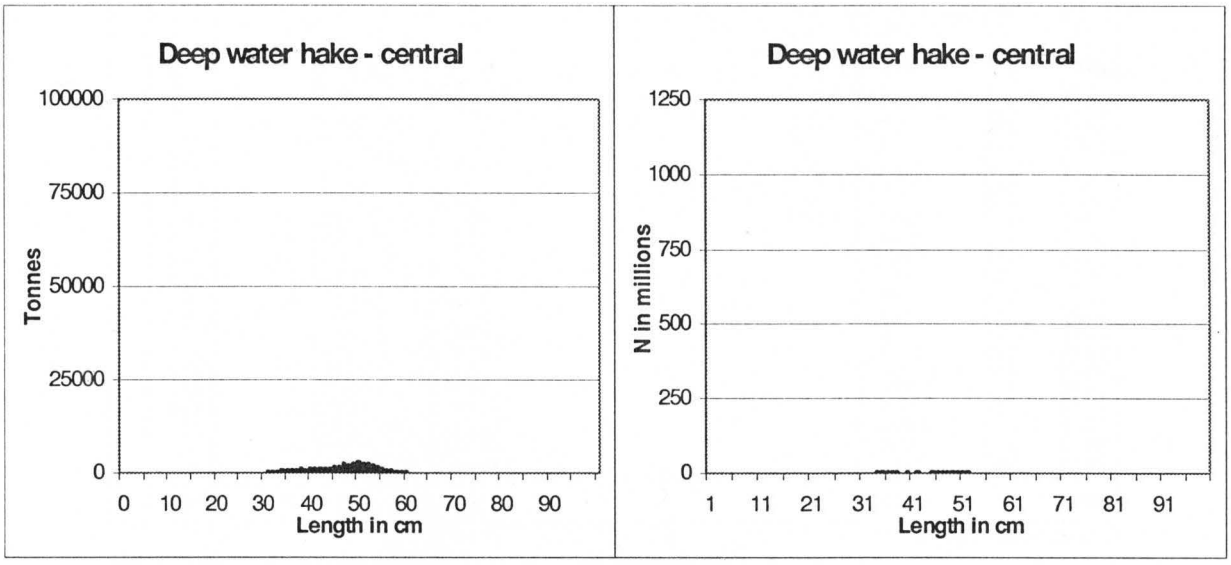


Figure 16 Central region. Length composition of deep water hake in biomass and numbers.

Table 11 Central 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
1996	26.0	2.0	0.04	3	0.5
1995	36.0	4.0	0.40	31	9.5
1994	42.0	2.8	0.09	7	3
1993	49.0	4.0	0.45	34	27
older			0.02	2	2

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 rate for both hakes combined show is the same on the shelf as during the previous survey, while the slope the rates have increased by 252% from 328 to 1154 kg/hr. The average catch rate for monk on the slope has increased from the low 1996 value of (4.6 kg/hr) to 26 kg/hr. Horse mackerel

mean catch rate has increased from 707 to 1702 kg/hr on the shelf. The catch rates of large-eye dentex are high on the shelf, the mean catch rates for the whole region is 1260 kg/hr, but 2335 kg/hr in 14 hauls north of Cape Frio.

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

SHELF 50-259 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Dentex	Other
2382	118	20.1			4.2		1.2
2384	185	43.4					0.6
2385	248	390.0					1.6
2395	244	98.4					2.8
2396	186	145.4					0.8
2397	135	1.9			0.2		0.8
2398	115	65.8			63.2		0.1
2399	180	95.1					2.3
2409	246	7.4					22.5
2410	193	30.4			116.2		10.3
2411	212	338.6			36.5		4.2
2412	229	83.2			18.7		1.6
2416	130	679.1			895.3	2038.2	196.6
2417	218	953.3			854.7	2571.8	29.1
2418	170	1347.1			31.3	458.4	1418.7
2419	163	851.2			239.7	1644.8	589.2
2420	138	594.4			1701.1	12124.8	2707.1
2421	95	307.8			534.0		63.2
2422	79	1418.3			2824.2		26.2
2423	125	256.3			3094.4	5283.1	231.6
2427	241	468.2			141.1	781.2	1308.8
2428	181	785.4			312.4	2662.5	780.4
2429	156	540.2			7156.8	1164.4	438.4
2430	201	4094.0			3427.8	2405.6	971.6
2437	221	428.2			3108.6	759.0	
2438	168	445.3			19693.2	861.5	
MEAN		557.3			1702.1	1259.8	338.8

SLOPE 260-700 m

ST.NO.	DEP.	Cape hake	D. w. hake	Monk	Horse mck.	Dentex	Other
2378	614		240.1	9.5			1196.0
2379	386		150.2	7.5			616.3
2380	334	1068.7	283.8	7.7			440.3
2381	310	714.0		1.9	0.8		137.7
2386	302	1948.4			2.8		95.5
2387	372	1981.0	271.7	42.0	9.6	0.5	413.0
2388	468		680.1	6.6			1113.4
2389	572		299.4	40.8			974.1
2390	671		408.5	18.1			529.6
2391	566		275.9	36.4			695.2
2392	482		219.2	21.4			511.1
2393	358	12.9		8.4		1.0	212.9
2394	297	44.6					4.3
2400	304	1117.2		25.0	273.6	379.2	440.4
2401	343	3607.5	371.8	23.0	3.7	1.9	649.3
2402	441		395.6	13.9			175.2
2403	543		332.4	29.3			693.5
2404	654		748.2	26.9			386.0
2405	423		160.1	17.6			490.2
2406	308	1624.9		12.4		14.5	856.0
2407	277	5729.0		11.7	178.4	91.7	157.0
2408	291	4730.0		28.8	104.7	99.7	569.5
2413	322	7473.9		26.2		170.0	1784.2
2414	434	157.2	360.4	16.0	18.2		1367.2
2415	530		334.0	62.6			937.9
2424	557		322.8	19.6	14.1		1834.0
2425	670		43.4				529.0
2426	454	34.6	76.9	325.6	13.9		1544.4
2431	498	444.0	360.3	85.1			1485.6
2433	477	338.4	423.0	29.1	53.8		2048.8
2434	533		806.7				1609.9
2435	445	107.7	540.9	7.7			1163.6
2436	306	150.7			3.5	16.1	318.5
2439	506		645.8				398.2
2440	412	494.6	413.6				280.6
2441	305	1441.4		0.9	3.1	1.9	91.3
2442	278	372.0			0.4		1.9
MEAN		907.9	247.7	26.0	18.4	21.0	723.0

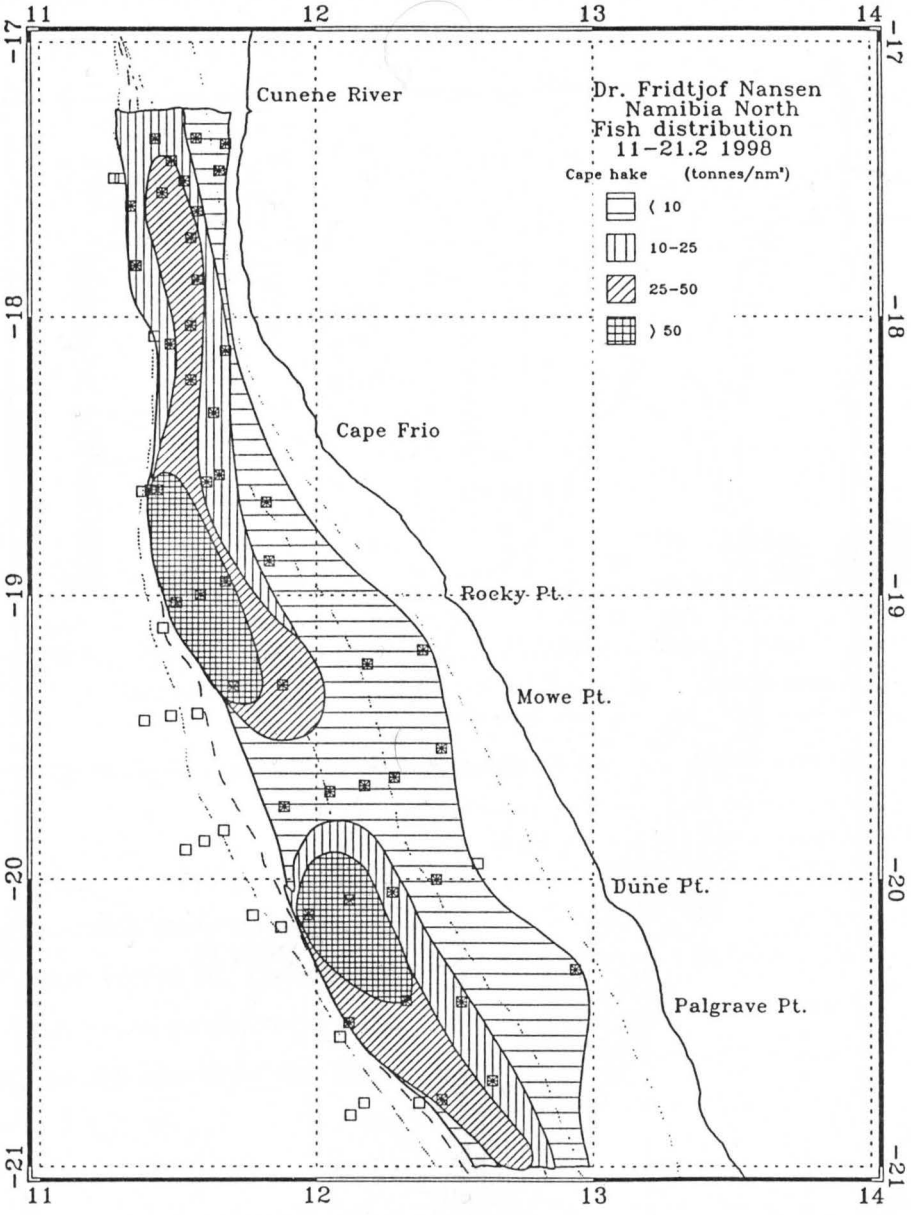


Figure 17 Ambrose Bay to Cunene River. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

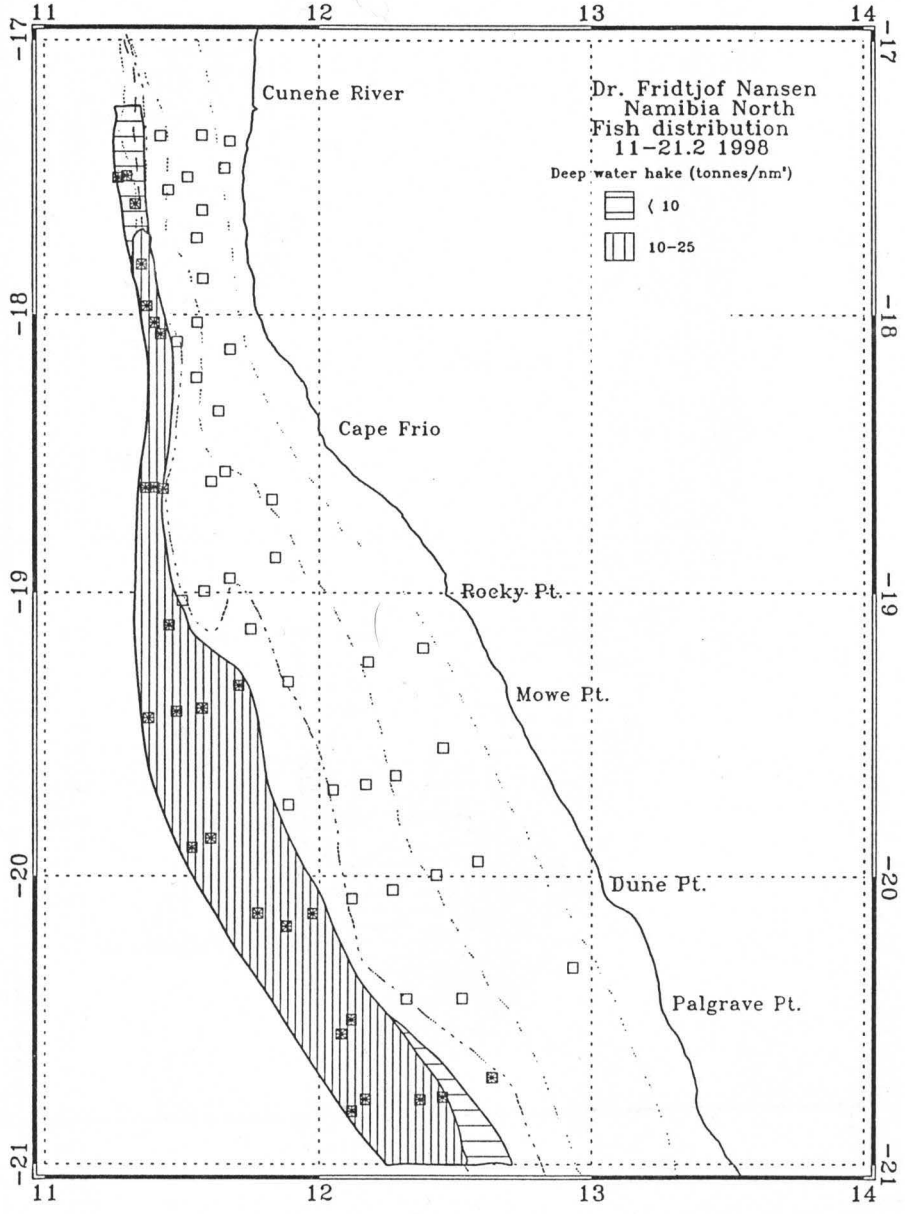


Figure 18 Ambrose Bay to Cunene River. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.

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. A considerable increase in fish densities since the previous two January surveys is demonstrated. Densities higher than 25 tonnes/nm^2 are found for most parts of the outer shelf and upper slope. The deep water hake, Figure 18, has a similar distribution as during the two previous January surveys.

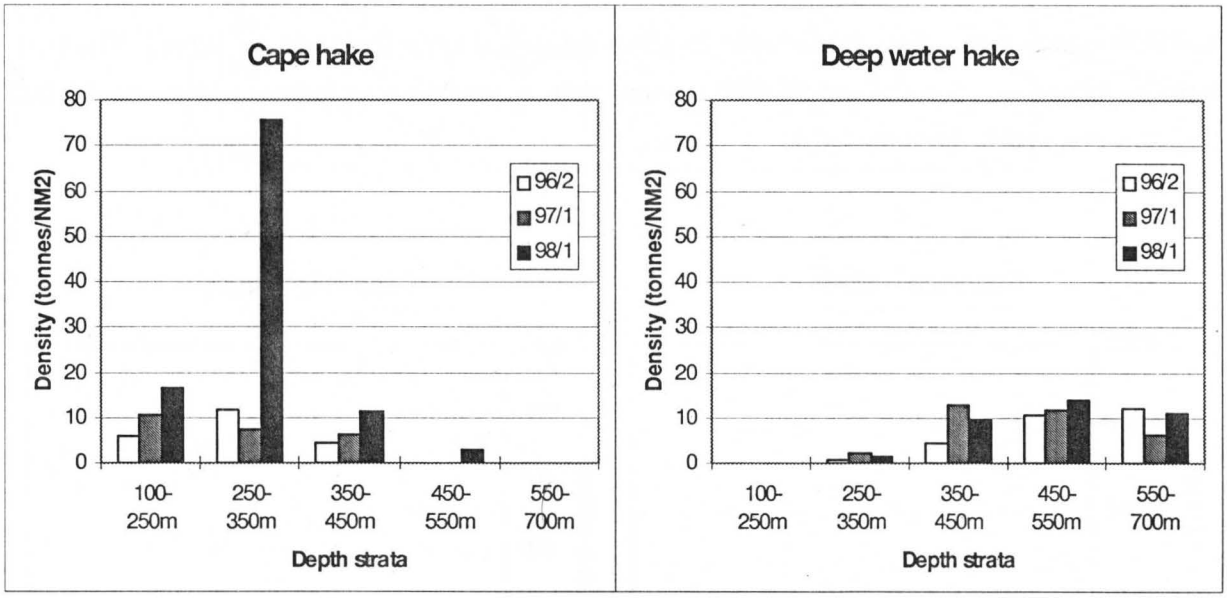


Figure 19 Northern region. Depth distribution of two hake species. Mean densities in tonnes/NM^2.

The depth distribution of the two hake species based on catch rates converted to densities is shown in Figure 19. Densities of Cape hake have increased moderately on the shelf, but dramatically on the upper slope (250-350), an increase of close to 9 times since the previous survey. For the deep water hake the densities have remained rather stable during the last three January surveys. Biomass estimates give a total of 229 000 tonnes of Cape hake and 50 000 tonnes of deep water hake (Table 14). For the Cape hake this represents a significant increase of 155 000 tonnes since the last survey. The

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
98/1	229	50

* + hake in the mid-water

deep water hake increased from 40 to 50 000 tonnes. The 95% confidence limits on the estimates of the Cape hake are ±25%. For deep water hake the confidence limits are ±22%.

The size compositions of the two hake species are shown in Figure 20 and in Annex I. A cohort analysis was done on the two hake species and the results are shown in Tables 15 and 16. Both Table 15 and Figure 20 show that the biomass of Cape hake is composed mainly of adult fish while the young fish dominates in numbers. The so called 'fishable biomass' of Cape hake in the northern region, representing fish of 36 cm and larger, constitutes 160 000 tonnes. This is 100 000 tonnes more than the fishable biomass estimated from the previous survey. The non-fishable biomass is now about 69 000 tonnes, also a considerable increase from the 14 000 tonnes estimated in January 1997.

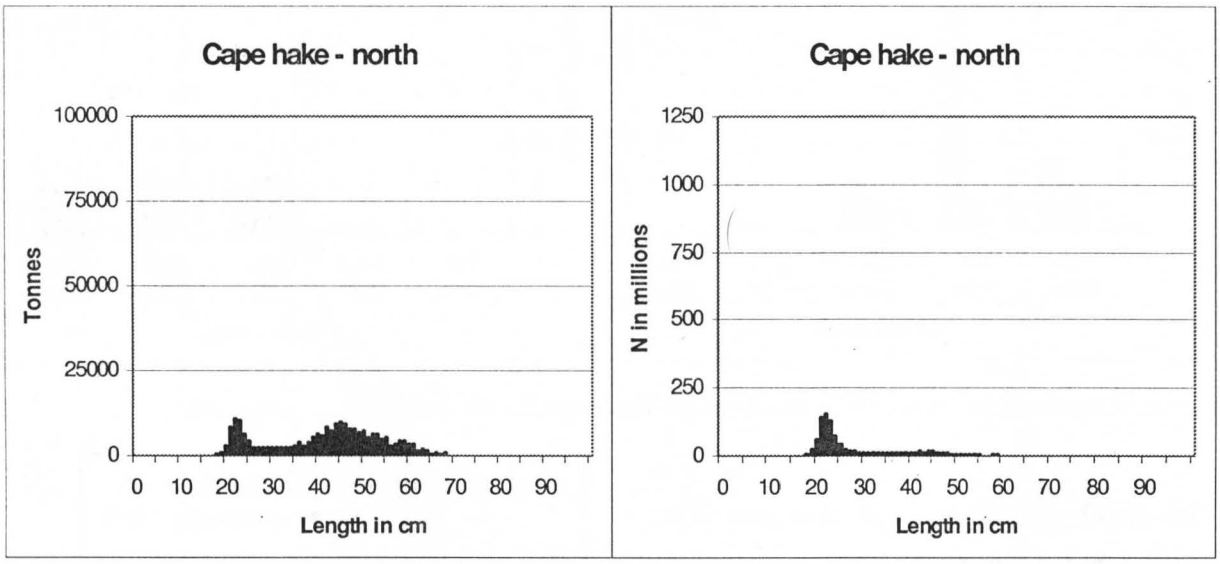


Figure 20 Northern region. Length composition of Cape hake in biomass and numbers.

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
1996	21.9	1.73	0.57	584	40
1995	25.4	2.2	0.10	102	11
1994	31.0	2.5	0.09	92	19
1993	42.0	3.2	0.15	154	73
older			0.09	90	85

The estimated fishable biomass of deep water hake is 49 000 tonnes, in practice the whole biomass. Figure 21 shows that the entire biomass of deep water hake consists of adult fish of fairly big sizes.

Table 15 Northern region. Deep water hake. Estimated age-cohorts.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1994	37.6	3.0	0.22	18	6
1993	44.3	3.0	0.38	30	17
1992	49.7	3.4	0.397	33	26
older			0.003	0.2	0.4

CHAPTER 4 CONSIDERATIONS ON THE SURVEY RESULTS

Survey effort

The present survey is the 16th 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 41 days. About 5 days more than planned was spent on covering the southern leg as the following fishing vessel doing parallel sampling was not sufficiently crewed to be run 24 hours a day. Consequently there was not time available during this survey to do planned experiments investigating trawl bias and on sampling the pelagial.

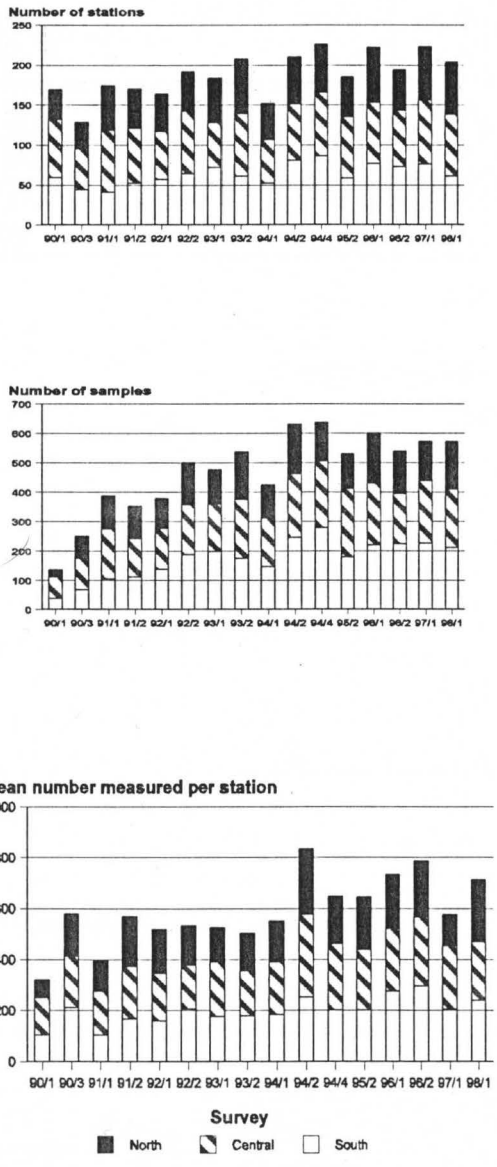


Figure 22 Hake survey effort 1990-97. a) Number of trawl stations by regions; b) Number of length frequency samples by regions; c) Mean number of fish measured per station.

Hakes may be partly inaccessible to the trawl-net due to vertical migrations. If not compensated for this would underestimate the abundance of fish. However, the uses of acoustic assessment techniques and the Bergen Echo Integrator (BEI) post processing system enabled the biomass in the overlying water column to be included in the assessment.

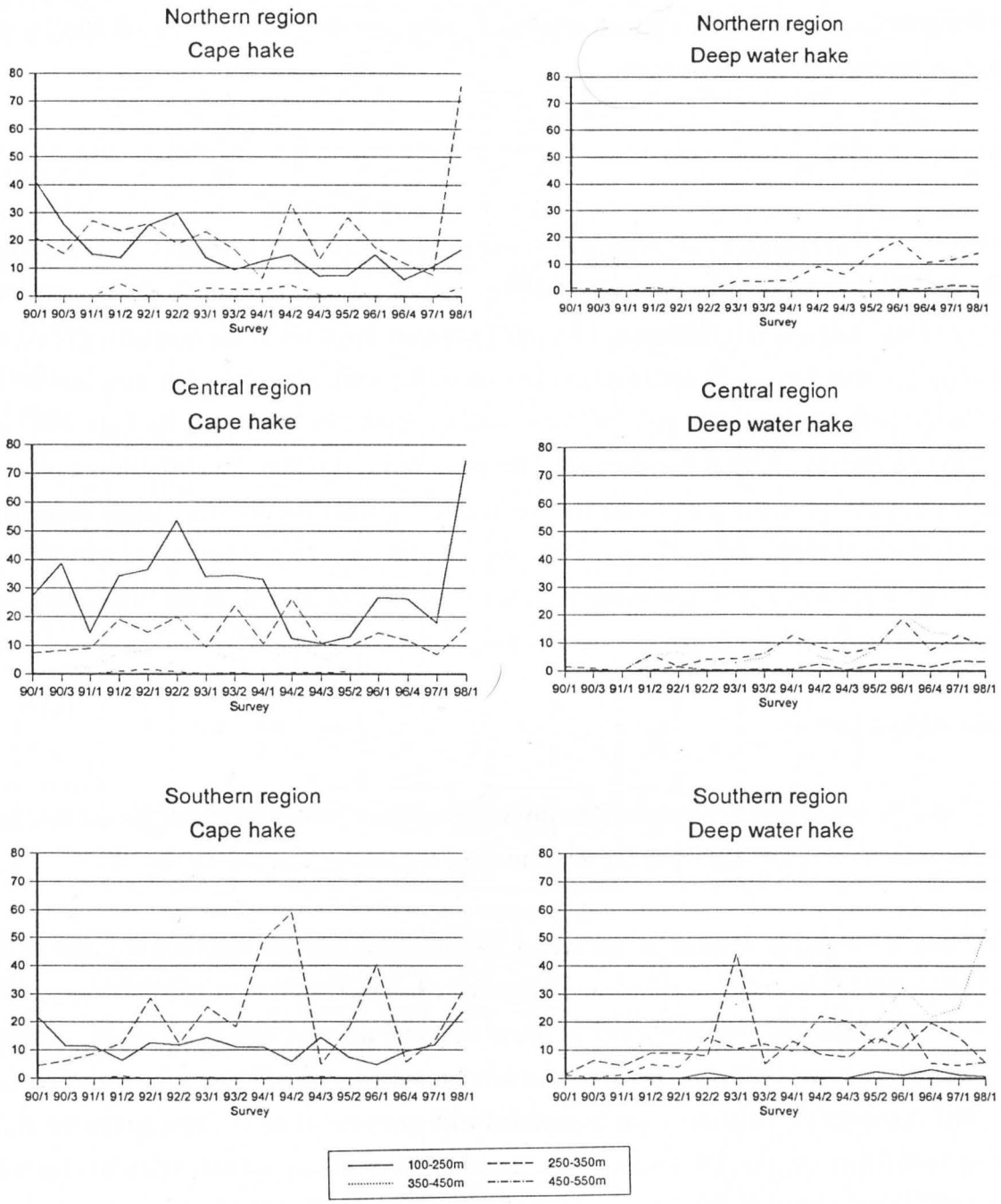


Figure 23 Estimated mean densities in depth strata by surveys. Mean densities in tonnes/NM^2.

It is therefore not likely that major off-bottom aggregations of hakes have been missed. During the recent survey the average acoustic corrections during day time were 4%,6% and 5% for the south, central and northern region respectively. The corresponding figures for the night hauls are

46%, 14% and 12%. Most hauls are carried out during daylight hours, but for logistic reasons a limited number of night hauls are conducted. These are usually carried out on the peripheries of the fish distributions where the densities are low and where the corrections for fish off bottom in absolute terms therefore are small.

Catch per unit effort

A summary of the estimates of the mean density 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 catch rates on the shelf in the southern and central regions show a strong increase due to a new yearclass, the 1996 yearclass, that now has settled on the shelf. On the upper slope, at 250-350 m bottom depth, the catch rates for Cape hake has increased considerably. This is mainly caused by good survival of the 1994 yearclass as it is now and since last year fully recruited to the fishery. The catch rates for the deep water hake in the southern region has increased considerably in the 350-450 m zone and declined in the 250-350 m zone. This shift is probably associated with the Cape hake re-occupying the natural habitat of the 250-350m zone and therefore pressing the deep water hake back.

Biomass estimates

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

Figure 24a-d show the summaries of estimated fishable, non-fishable and total biomass of hake species since 1990. The fishable biomass of Cape hake has increased with 260 000 tonnes from about 140 000 tonnes in February 1997 to about 400 000 tonnes in February 1998. The last survey represents a very fast recovery from the low biomass levels of Cape hake recorded since 1994. The recovery is to a large extent associated with one year-class that now has successfully recruited to the fishery, the 1994 year-class. In addition mortality on older fish has been low during 1997. The estimated fishable biomass of deep water hakes has also shown an increase, from about 150 000 tonnes to 200 000 tonnes in one year. Most of this increase, 40 000 tonnes, is in the southern region, a sign a that the fish could have migrated in from South Africa. The total fishable biomass is now at the level of the peak in 1992, but with a smaller size composition than then. This means that the fishable biomass still has an intrinsic growth potential if the smaller size classes are not fished too hard upon.

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

	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-May 1995	Jan-Feb 1996	Sep-Oct 1996	Jan-Feb 1997	Jan-Feb 1998
TOTAL BIOMASS																
SOUTHERN REGION																
Cape hake	118	142	128	84	203	163	222	179	200	240	150	145	169	89	121	327
Deep water hake	21	30	34	83	145	125	150	115	160	215	120	140	202	167	132	186
CENTRAL REGION																
Cape hake	176	202	147	309	265	530	285	279	225	160	110	105	145	182	112	462
Deep water hake	4	5	6	15	15	17	16	19	30	30	15	40	73	58	46	42
NORTHERN REGION																
Cape hake	203	116*	174	140	190	199	147	110	92	130	90	120	132	94	74	229
Deep water hake				2	4	8	4	6	20	15	10	25	31	31	40	50
TOTAL NAMIBIA																
Cape hake	497	460*	449	533	658	892	654	568	520	530	350	370	446	365	307	1018
Deep water hake	25	35	40	100	164	150	170	140	210	260	145	205	306	256	218	278
Both	522	485*	489	633	822	1042	824	708	737	790	495	575	752	621	525	1296
FISHABLE BIOMASS																
SOUTHERN REGION																
Cape hake	20	44	54	50	145	69	92	99	112	130	35	62	51	14	36	107
Deep water hake	16	20	14	42	113	80	123	95	114	164	61	66	113	66	71	114
CENTRAL REGION																
Cape hake	20	76	67	147	108	180	133	121	50	65	58	54	41	46	46	134
Deep water hake	4	5	6	6	13	12	13	19	26	22	10	34	56	46	40	39
NORTHERN REGION																
Cape hake	66	62*	155	134	145	133	106	89	74	102	63	93	88	48	60	160
Deep water hake	-	-	-	2	4	8	4	6	19	13	8	21	28	27	35	49
Cape hake	106	182*	276	331	398	382	331	309	240	300	156	209	180	108	142	401
Deep water hake	20	25*	20	50	130	100	140	120	160	200	79	121	197	139	146	202
TOTAL FISHABLE	126	207*	296	381	528	482	471	429	400	500	235	330	377	247	288	603
NON-FISHABLE BIOMASS																
Cape hake	391	278	173	202	250	510	260	259	280	230	193	161	266	257	165	617
Deep water hake	5	15	20	50	34	50	30	20	50	60	66	84	109	117	72	76
TOTAL NON-FISHABLE	396	293	193	252	284	560	290	279	330	290	259	245	375	374	236	693

* Unadjusted underestimate due to fish off the bottom

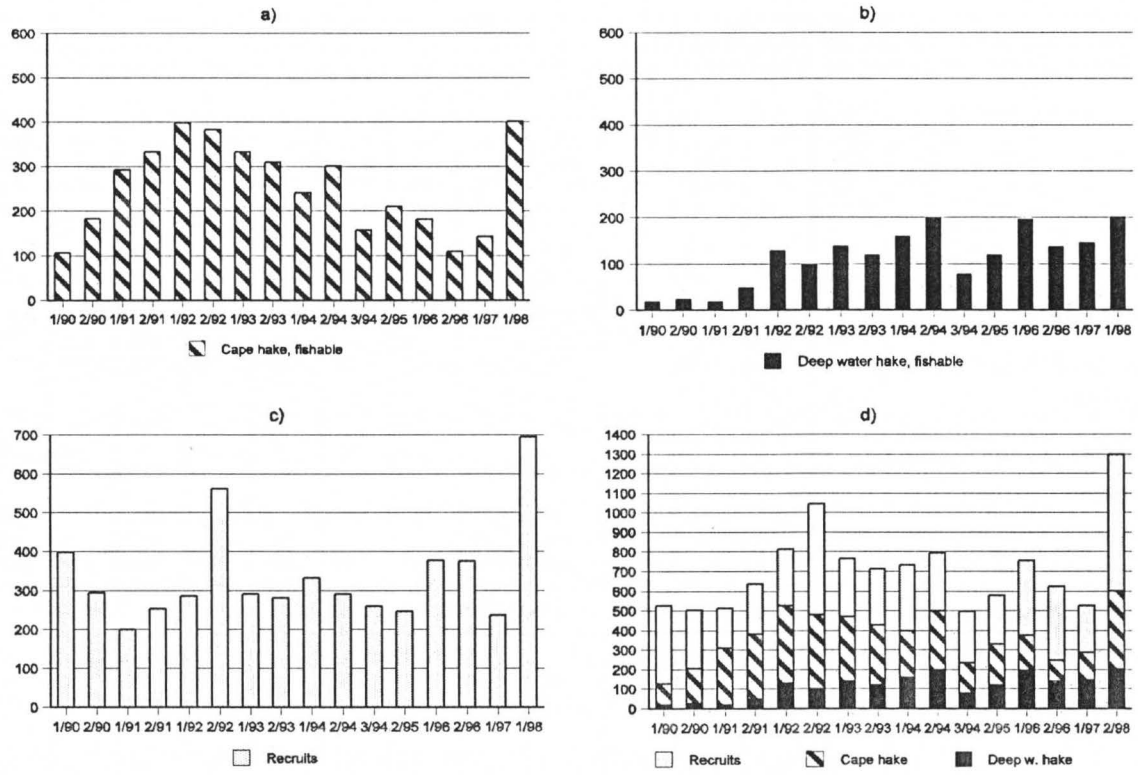


Figure 24 Trends in biomass estimates: a) Cape hake, 'fishable stock', b) deep water hake, 'fishable stock', c) recruits ('non-fishable' biomass) and d) total hake in Namibia. Thousand tonnes.

The non-fishable biomass or the recruits, Figure 24c, is now about 600 000 tonnes of which 400 000 tonnes is Cape hake (Table 17) and 200 000 tonnes deep water hake. This is another record high figure that even surpasses the recruit estimate of November 1994 before the stock was, within a few months, severely reduced by natural events.

Size composition

Figure 25 shows the estimated size distribution in number and biomass for the Cape hake for all three regions combined. The figure shows that the fishable part of the stock is dominated by the four-yearlings (the 1994 year-class) with a modal length around 38 cm. This fish is now present in all three region and this cohort is going to dominate the fishery for the next 2-3 years. A moderate abundance of recruits from the 1994 year class has been observed during the two surveys of 1996, through 1997 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, 650 mill.

in February 1997 and 364 mill. in February 1998. The corresponding biomass figures is 158, 135, 101 and 130 000 tonnes respectively.

The absence of fish around 30 cm is striking. This signals that the three-yearlings, the 1995 year-class is low and that new recruitment to the fishable biomass will consequently be low during 1998. On the other hand the exceptionally high number of 2-yearlings forebode well for future recruitment. This is the strongest year-class recorded in the course of surveys since independence, and signals that a very high number of fish is on way and should show up in the fishable biomass from year 2000.

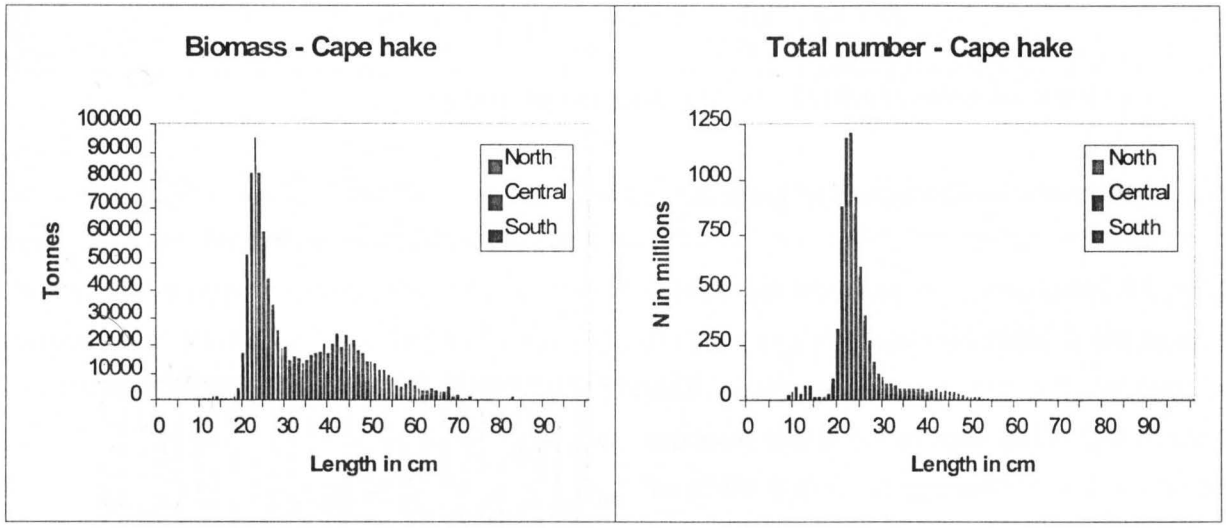


Figure 25 Length composition of Cape hake in biomass and numbers.

The size distribution of the deep water hake is shown in Figure 26. In the very south a small area is functioning as a nursery area for a limited number of young fish, 20-25 cm. The low abundance of young fish in Namibia indicate that most of the recruitment is through migration from South Africa. The three-yearlings are almost exclusively concentrated in the south, the four-yearlings have more than 80% of the biomass in the south while the older fish is more evenly distributed between the three regions. This distribution pattern could be explained by a gradual dispersal of the stock northwards as it enters from the South Africa with lengths in the 30-40cm range and migrate northwards as it grows.

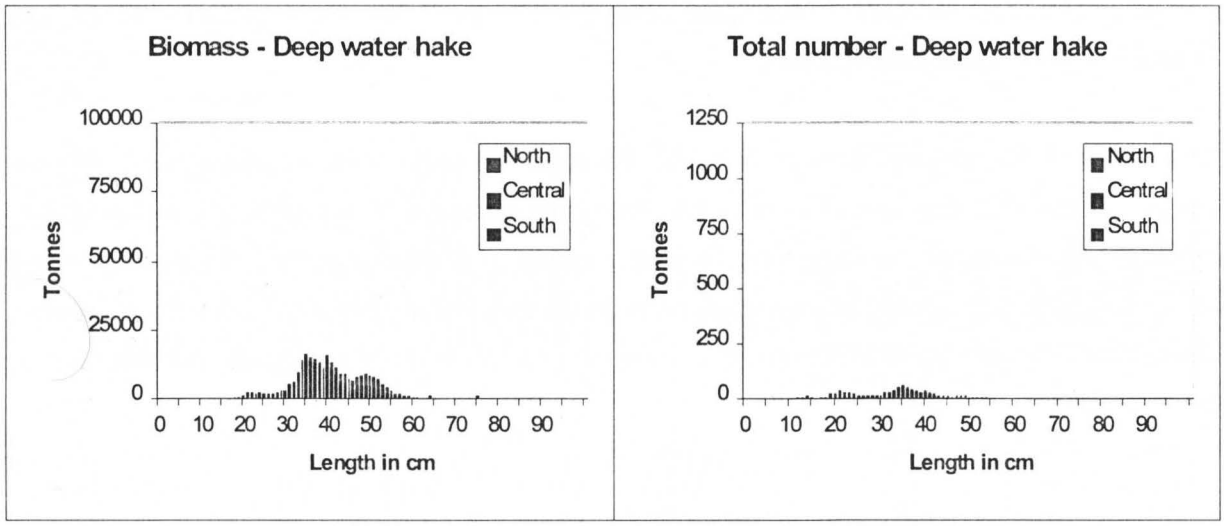


Figure 26 Length composition of deep water hake in biomass and numbers.

Geographic shift in the fishable biomass

Figure 27 shows the development of the relative share of the fishable biomass of Cape hakes in the regions for the last seven years. The northern region has been rather stable over the last four years, accounting for about 40 % of the adult Cape hake population. The central region had a low relative share of the biomass in 1994 (Figure 27), a feature that was associated with poor environment conditions in this region. In 1997 and 1998 the regional share of the central stock is about 30%, indicating that the region has now recovered its productive capacity.

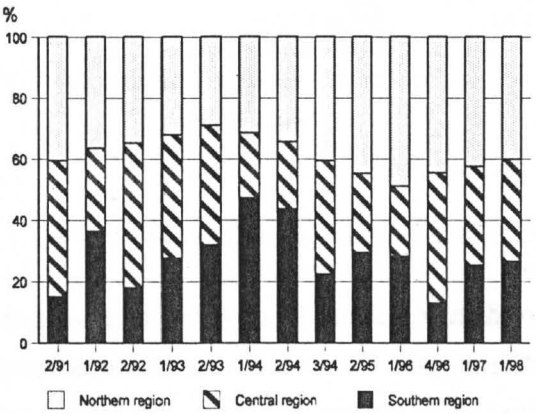


Figure 27 Relative regional share of fishable biomass of Cape hake 1991-97.

Recruitment potential

Incoming recruits to the stock of Cape hakes 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 ±200 million. The 1996 year class estimated from this survey consists of about 5.1 billion fish and is the strongest recorded since independence.

Table 18 Estimates of strength of recent year classes of Cape hake. Cohort population numbers at about two years of age for the gr assumed to have been spawned in 1988, 1989, 1990, 1991 and 1992. Millions of fish.

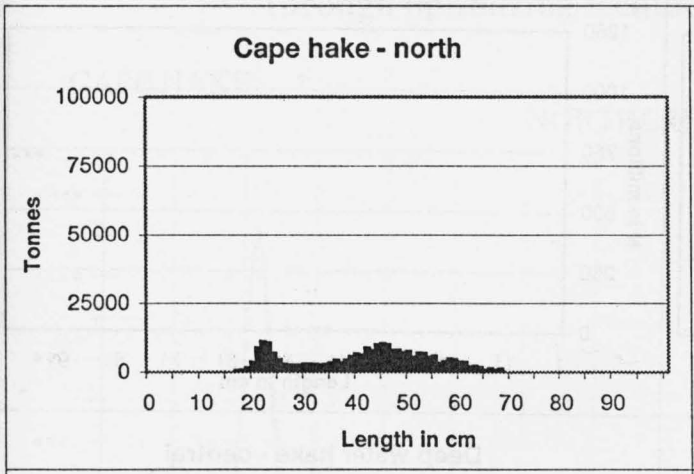
Year class	11988	11989	11990	11991	11991	11991	11992	11992	11993	11993	11994	11994	11995	11996
Southern region	980	100	300	990	670	390	250	2 308	I 730	510	485	672	10	I 417
Central region	I 320	170	I 620	3 500	I 230	I 370	I 880	3 017	490	430	I 030	I 313	120	3 140
Northern region	10	10	240	440	270	130	70	5	190	80	0	342	200	584
Total	2 205	515	I 518	4 930	2 170	I 890	2 200	I 235	2410	I 020	I 515	2 327	330	5 141
Survey/Year	1/90	1/91	1/92	2/92	1/93	2/93	1/94	2/94	3/94	1/95	1/96	4196	1/97	1/98

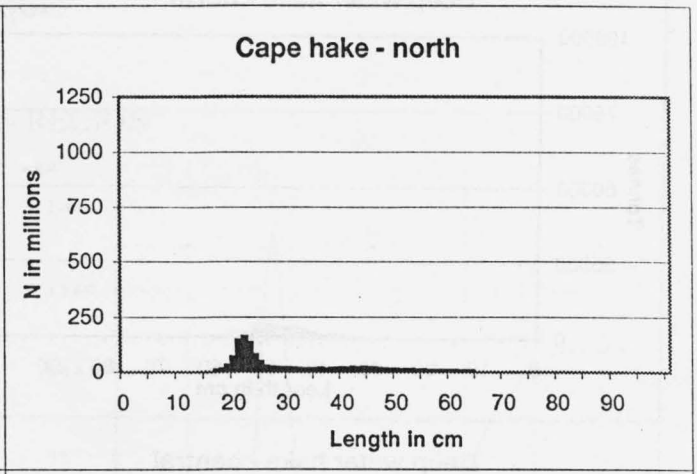
In Table 19 the non-fishable biomass are split by the age classes identified through the cohort analysis. The table shows that large proportion of the recruits (390 000 tonnes) belongs to the cohort that is now two years, the 1996 year class. These fish have now a mean around 22 cm. As already mentioned the 3-yearlings of Cape hake are very low in abundance and this is confirmed by the 143 000 tonnes in the table.

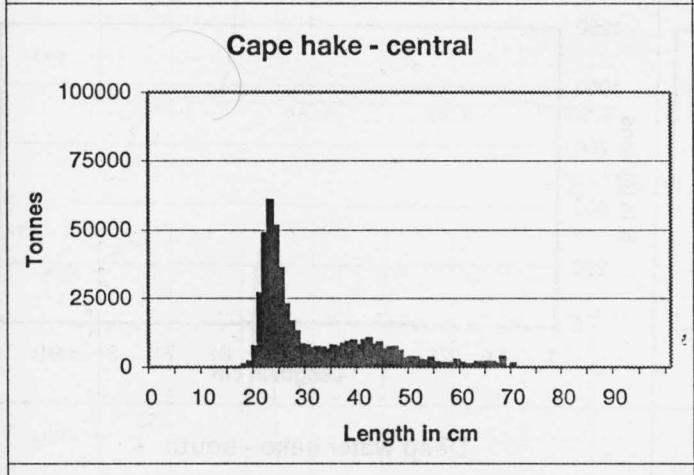
Table 19. Recruit biomass and age groups. 1 000 tonnes

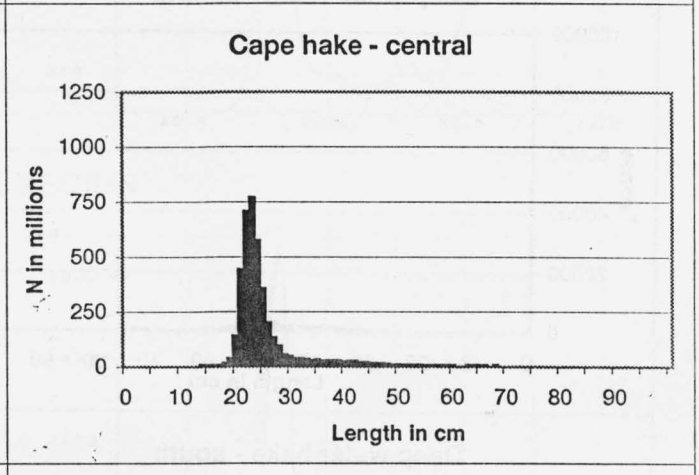
	1 year	2 year	3 year
Cape hake	-	390	143
Deepwater hake	-	13	17
Total	-	403	160

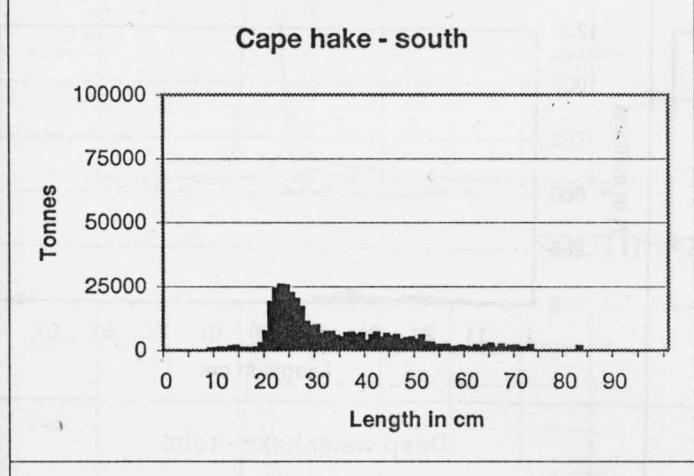
Annex I Size composition of main stocks

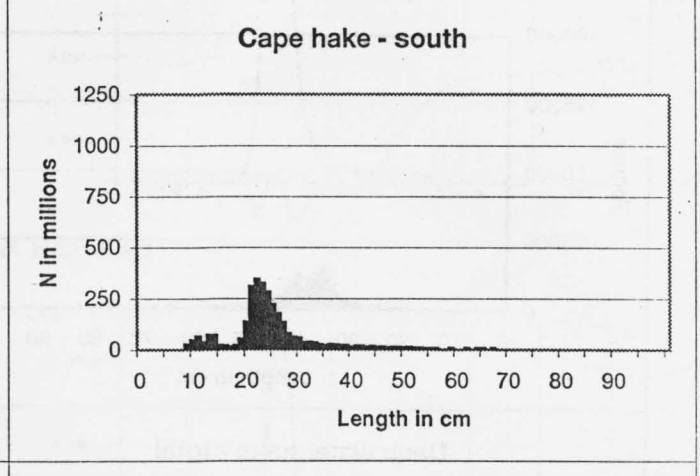


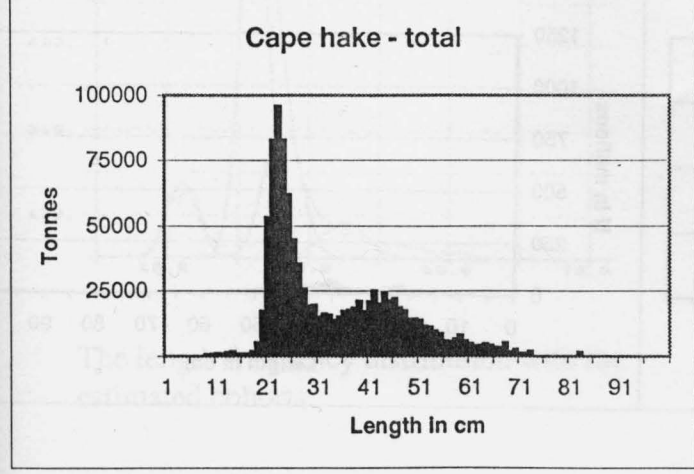


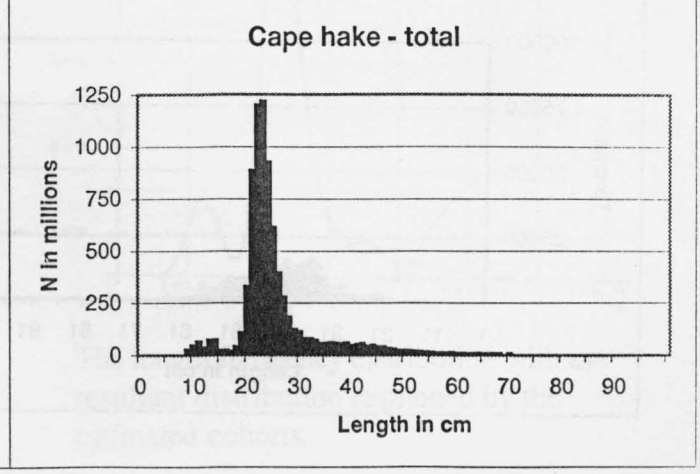


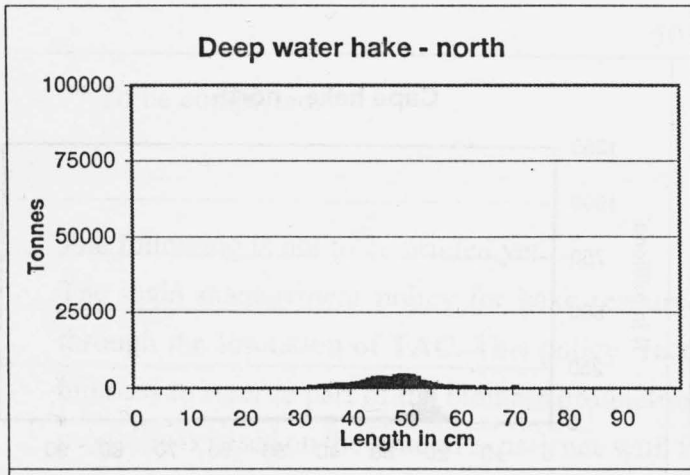


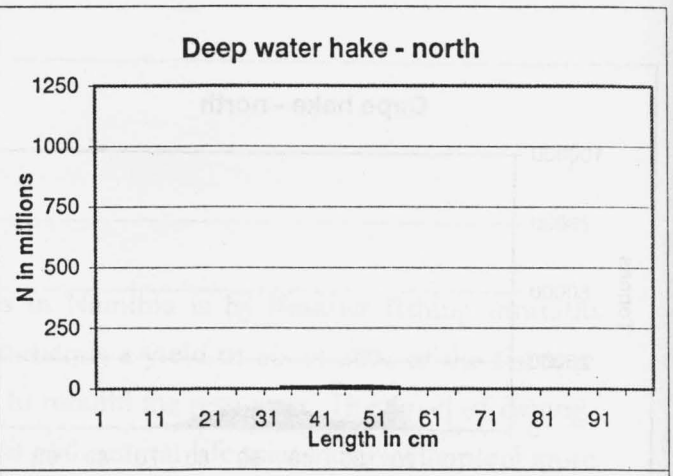


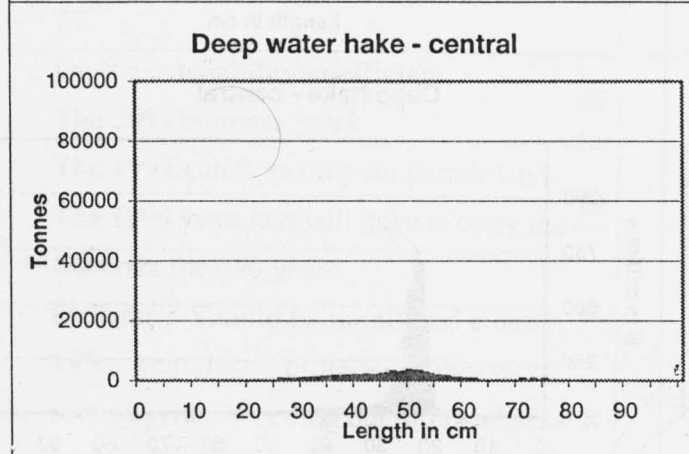


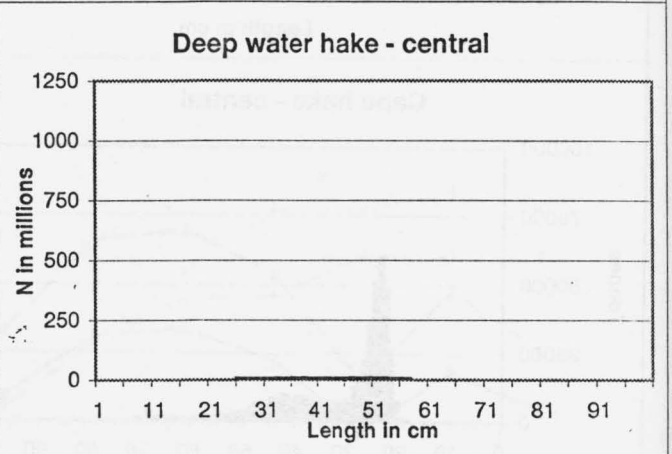


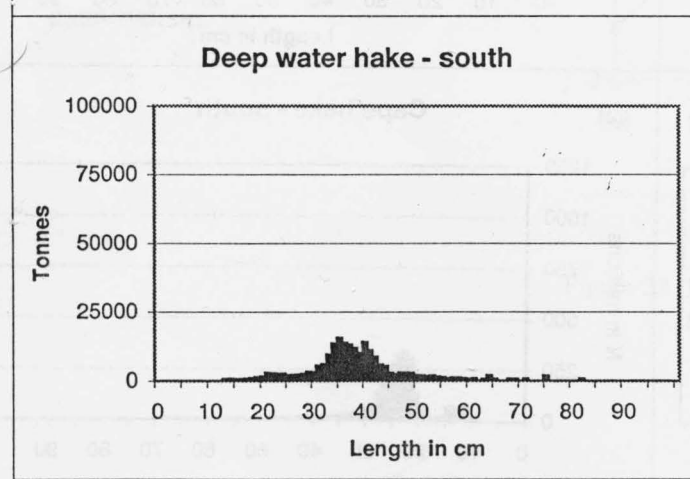


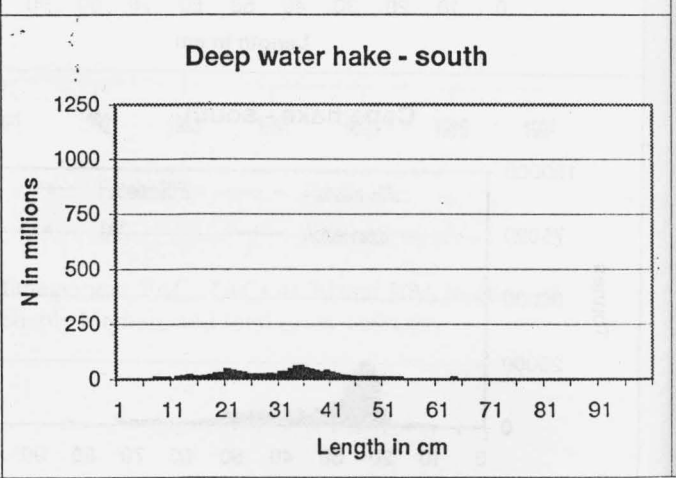

Deep water hake - north
Tonnes
100000
75000
50000
25000
0
0 10 20 30 40 50 60 70 80 90
Length in cm

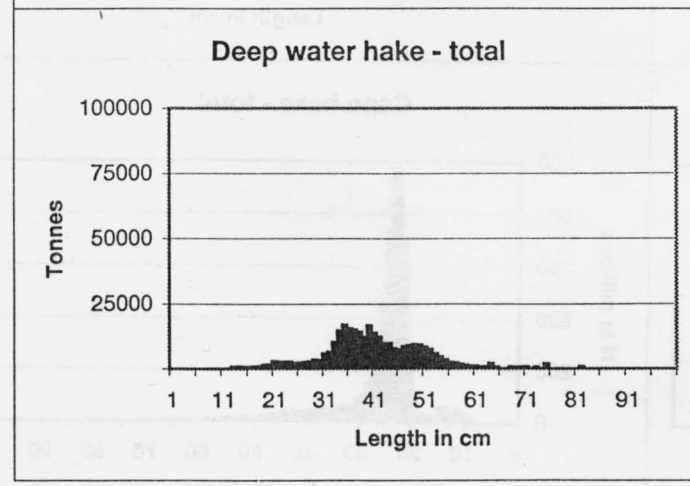

Deep water hake - north
N in millions
1250
1000
750
500
250
0
1 11 21 31 41 51 61 71 81 91
Length in cm

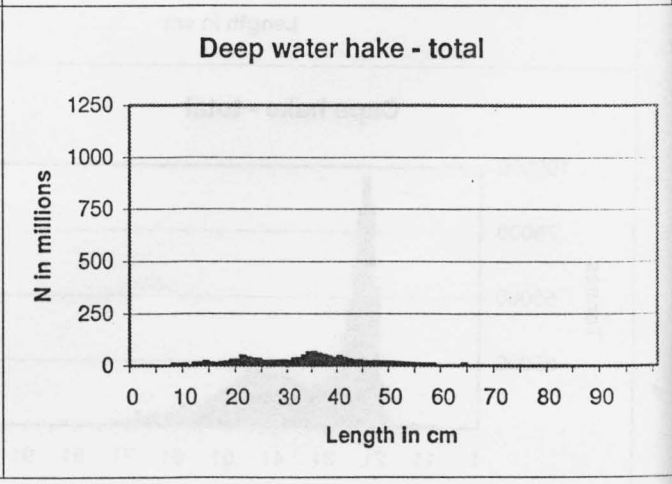

Deep water hake - central
Tonnes
100000
80000
60000
40000
20000
0
0 10 20 30 40 50 60 70 80 90
Length in cm


Deep water hake - central
N in millions
1250
1000
750
500
250
0
1 11 21 31 41 51 61 71 81 91
Length in cm


Deep water hake - south
Tonnes
100000
75000
50000
25000
0
0 10 20 30 40 50 60 70 80 90
Length in cm


Deep water hake - south
N in millions
1250
1000
750
500
250
0
1 11 21 31 41 51 61 71 81 91
Length in cm

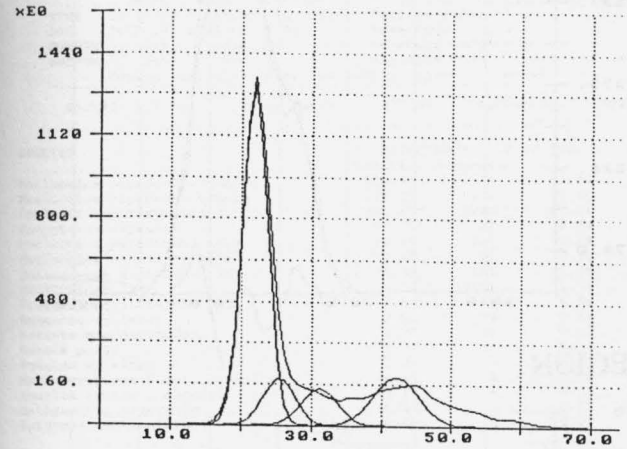

Deep water hake - total
Tonnes
100000
75000
50000
25000
1 11 21 31 41 51 61 71 81 91
Length in cm

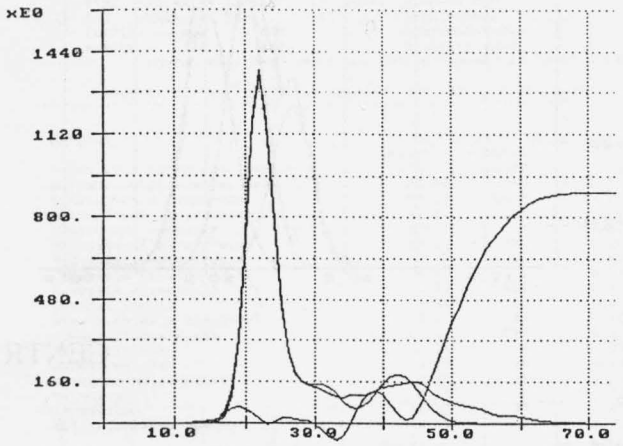

Deep water hake - total
N in millions
1250
1000
750
500
250
0
0 10 20 30 40 50 60 70 80 90
Length in cm

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

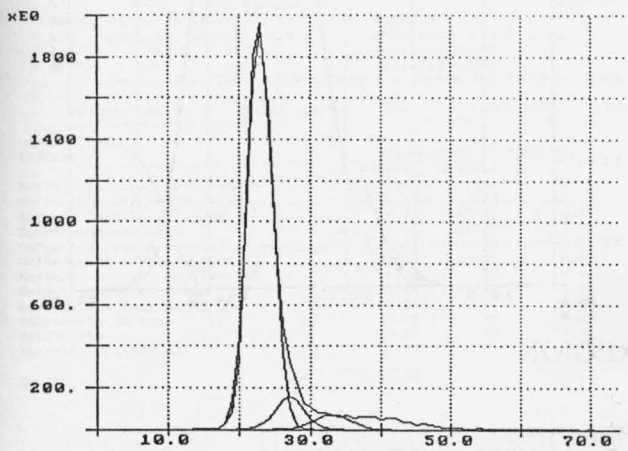
CAPE HAKE

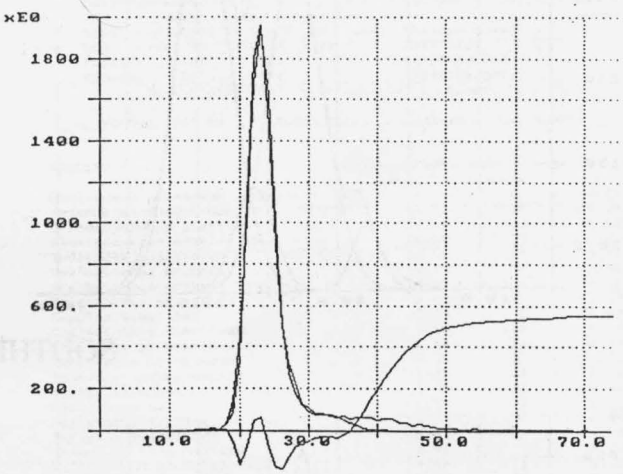
NORTHERN REGION



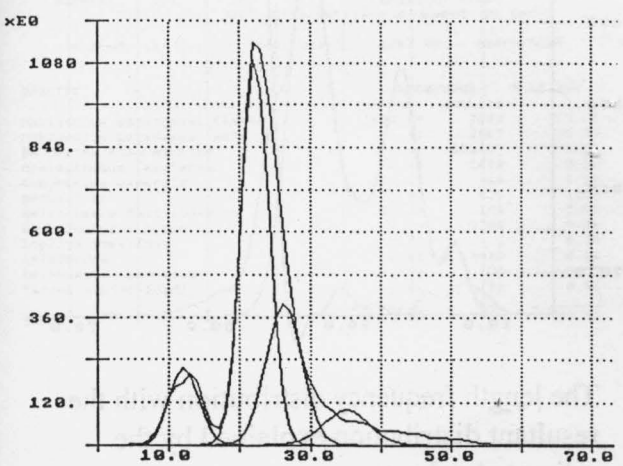


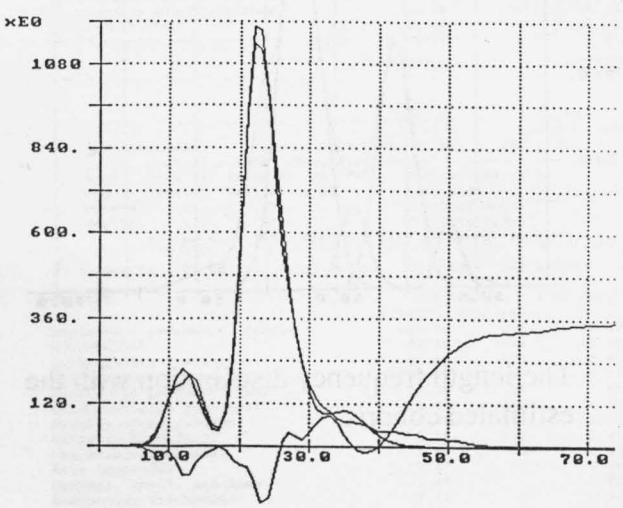
CENTRAL REGION





SOUTHERN REGION



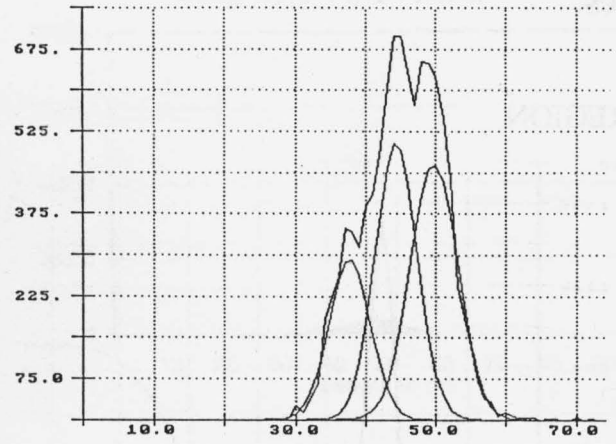


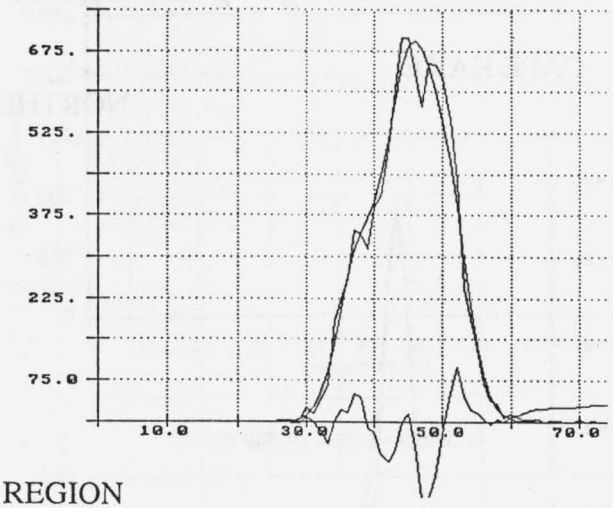
The length frequency distribution with the estimated cohorts.

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

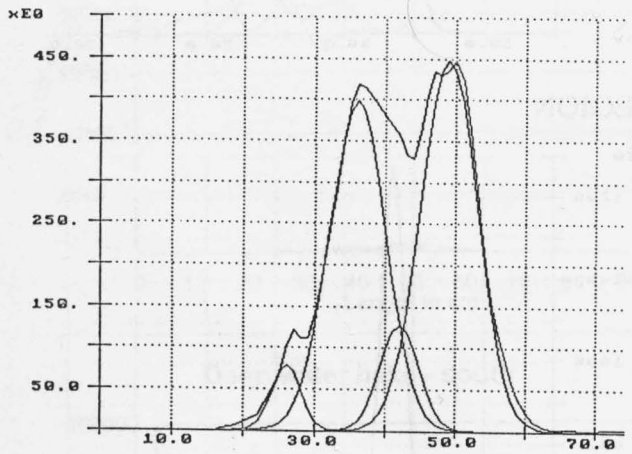
DEEP WATER HAKE

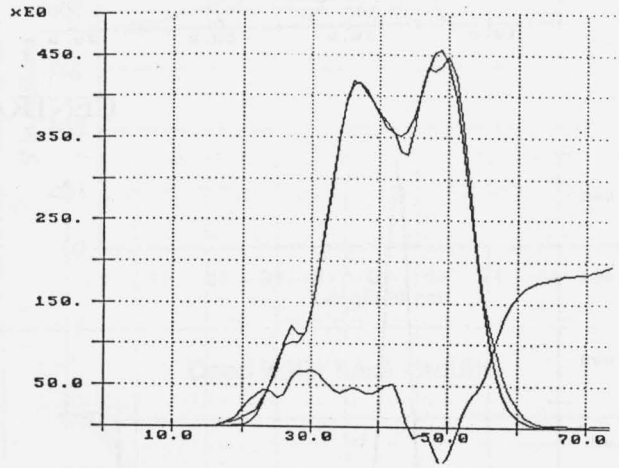
NORTHERN REGION



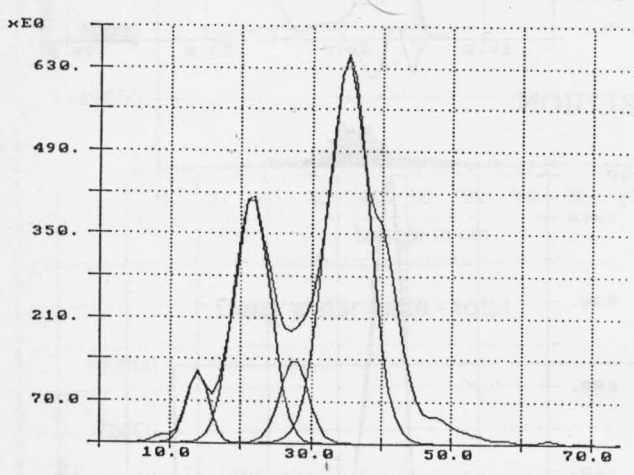


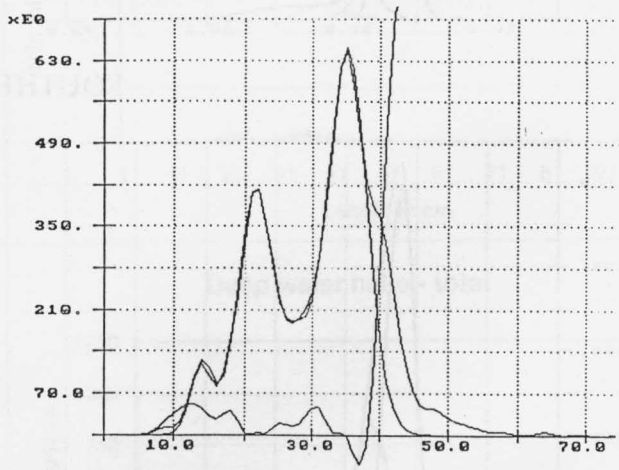
CENTRAL REGION





SOUTHERN REGION





The length frequency distribution with the estimated cohorts.

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

Annex 3 Records of fishing stations

PROJECT STATION:2231
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2642
start stop duration Long E 1421
TIME :04:15:00 04:43:00 28 (min) Purpose code: 3
LOG :9612.10 9613.40 1.35 Area code : 1
FDEPTH: 346 344 GearCond.code:
BDEPTH: 346 344 Validity code:
Towing dir: 150° Wire out:1000 m Speed: kn*10

Sorted: 477 Kg Total catch: 477.00 CATCH/HOUR: 1022.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	529.33	1530	51.79	7627
Merluccius capensis, female	166.71	135	16.31	7625
Coelorinchus fasciatus	105.43	1260	10.31	
Genypterus capensis	92.25	56	9.03	7626
Merluccius paradoxus, male	38.66	126	3.78	7630
Merluccius capensis, male	32.66	69	3.20	7629
Helicolenus dactylopterus	24.39	144	2.39	
MYCTOPHIDAE	18.24	10941	1.78	
Todarodes sagittatus	6.06	11	0.59	
Hexanchus griseus	3.66	2	0.36	
Nezumia micronychodon	2.27	36	0.22	
Galeus polli	1.29	54	0.13	
Squalus megalops	1.16	2	0.11	
Merluccius paradoxus, juvenile	0.49	4	0.05	7628
Squilla acuelata calmani	0.17	6	0.02	
Bathynectes piperitus	0.11	2	0.01	
Epigonus denticulatus	0.06	2	0.01	
Total	1022.94		100.09	

PROJECT STATION:2232
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2638
start stop duration Long E 1413
TIME :06:53:00 07:21:00 28 (min) Purpose code: 3
LOG :9625.50 9627.20 1.65 Area code : 1
FDEPTH: 368 369 GearCond.code:
BDEPTH: 368 369 Validity code:
Towing dir: 350° Wire out:1050 m Speed:300 kn*10

Sorted: 84 Kg Total catch: 655.12 CATCH/HOUR: 1403.83

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	993.64	2226	70.78	7632
Merluccius paradoxus, male	271.93	709	19.37	7633
Shrimps, small, non comm.	54.21	135711	3.86	
Symbolophorus boops	40.91	25575	2.91	
Genypterus capensis	15.32	13	1.09	7634
Helicolenus dactylopterus	13.69	64	0.98	
Merluccius capensis, female	8.57	17	0.61	7631
Coelorinchus fasciatus	2.96	32	0.21	
Nezumia micronychodon	0.84	17	0.06	
Todaropsis eblanae	0.49	148	0.03	
ARISTEIDAE	0.15	64	0.01	
Yarrella blackfordi	0.15	32	0.01	
Total	1402.86		99.92	

PROJECT STATION:2233
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2641
start stop duration Long E 1402
TIME :10:18:00 10:45:00 27 (min) Purpose code: 3
LOG :9642.60 9643.90 1.31 Area code : 1
FDEPTH: 404 404 GearCond.code:
BDEPTH: 404 404 Validity code:
Towing dir: 350° Wire out:1200 m Speed: 31 kn*10

Sorted: 116 Kg Total catch: 1162.80 CATCH/HOUR: 2584.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	1682.89	3673	65.13	7635
Merluccius paradoxus, male	581.11	2987	22.49	7636
Deepwater fish mixture	101.40	101407	3.92	
Coelorinchus fasciatus	90.44	1042	3.50	
Genypterus capensis	39.31	18	1.52	7637
Nezumia sp.	27.69	438	1.07	
Helicolenus dactylopterus	27.13	164	1.05	
Symbolophorus boops	7.67	3289	0.30	
Lophius vomerinus	6.58	2	0.25	7638
ARISTEIDAE	4.11	1040	0.16	
Bathynectes piperitus	1.91	56	0.07	
Yarrella blackfordi	1.64	82	0.06	
Total	2571.88		99.52	

PROJECT STATION:2234
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2642
start stop duration Long E 1351
TIME :12:44:28 13:12:42 28 (min) Purpose code: 3
LOG :9656.14 9657.63 1.47 Area code : 1
FDEPTH: 428 430 GearCond.code:
BDEPTH: 428 430 Validity code:
Towing dir: 350° Wire out:1250 m Speed: 32 kn*10

Sorted: 202 Kg Total catch: 361.10 CATCH/HOUR: 773.79

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	524.14	1089	67.74	7639
Merluccius paradoxus, male	98.40	212	12.72	7640
Coelorinchus fasciatus	53.83	1622	6.96	
Helicolenus dactylopterus	40.35	178	5.21	
Genypterus capensis	17.57	4	2.27	7641
Deepwater fish mixture	15.17	15354	1.96	
Todarodes sagittatus	7.95	13	1.03	
Cruriraja parcomaculata	4.50	4	0.58	
Yarrella blackfordi	3.62	283	0.47	
Nezumia leonis	3.21	84	0.41	
Selachophidium guentheri	2.91	39	0.38	
Symbolophorus boops	1.14	221	0.15	
PARALEPIDIDAE	0.24	9	0.03	
GONOSTOMATIDAE	0.19	28	0.02	
Epigonus denticulatus	0.15	15	0.02	
Galeus polli	0.15	9	0.02	
ARISTEIDAE	0.15	43	0.02	
Malacocephalus laevis	0.11	9	0.01	
Total	773.78		100.00	

PROJECT STATION:2235
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2640
start stop duration Long E 1341
TIME :15:00:02 15:00:21 29 (min) Purpose code: 3
LOG :9668.65 9670.14 1.46 Area code : 1
FDEPTH: 567 564 GearCond.code:
BDEPTH: 567 564 Validity code:
Towing dir: 335° Wire out:1550 m Speed: 30 kn*10

Sorted: 141 Kg Total catch: 141.24 CATCH/HOUR: 292.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	134.90	124	46.16	7642
Nezumia micronychodon	51.52	1537	17.63	
Selachophidium guentheri	20.48	211	7.01	
Plesiopenaeus edwardsianus	14.59	3124	4.99	
Todarodes sagittatus	10.34	19	3.54	
Coelorinchus braueri	9.39	134	3.21	
Trachyrincus scabrus	9.31	238	3.19	
Notacanthus sexspinis	9.04	145	3.09	
Lophius vomerinus	7.03	2	2.41	7643
Coelorinchus fasciatus	6.56	166	2.24	
Cruriraja parcomaculata	6.50	12	2.22	
Etmopterus brachyurus	2.23	14	0.76	
Ebinania costaecanarie	1.92	14	0.66	
Myxine capensis	1.70	17	0.58	
Hydrolagus sp.	1.59	2	0.54	
Etmopterus lucifer	1.14	4	0.39	
Yarrella blackfordi	1.01	70	0.35	
Deepwater fish mixture	0.85		0.29	
Helicolenus dactylopterus	0.64	6	0.22	
Symbolophorus boops	0.54	81	0.18	
ASTRONESTHIDAE	0.37	19	0.13	
PENAEIDAE	0.19	50	0.07	
Hoplostethus atlanticus	0.17	8	0.06	
HISTIOTEUTHIDAE	0.17	2	0.06	
Neoscopelus macrolepidotus	0.12	6	0.04	
ALEPOCEPHALIDAE	0.04	2	0.01	
BATHYLAGIDAE	0.04	2	0.01	
Total	292.38		100.04	

PROJECT STATION:2236
DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2644
start stop duration Long E 1346
TIME :18:47:14 19:16:25 29 (min) Purpose code: 3
LOG :9684.05 9685.65 1.58 Area code : 1
FDEPTH: 472 471 GearCond.code:
BDEPTH: 472 471 Validity code:
Towing dir: 340° Wire out:1450 m Speed: 30 kn*10

Sorted: 63 Kg Total catch: 148.68 CATCH/HOUR: 307.61

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	145.86	211	47.42	7643
MYCTOPHIDAE	42.41	5646	13.79	
Coelorinchus fasciatus	29.69	528	9.65	
Helicolenus dactylopterus	25.86	87	8.41	
Merluccius paradoxus, male	23.38	29	7.60	7644
Selachophidium guentheri	18.99	292	6.17	
Nezumia micronychodon	9.91	244	3.22	
Yarrella blackfordi	5.59	362	1.82	
Coelorinchus braueri	1.59	46	0.52	
Raja leopardus	1.47	10	0.48	
Shrimps, small, non comm.	1.01		0.33	
Etmopterus brachyurus	0.43	2	0.14	
PENAEIDAE	0.25	68	0.08	
ARISTEIDAE	0.25	60	0.08	
Todaropsis eblanae	0.17	60	0.06	
PENAEIDAE	0.17	39	0.06	
BATHYLAGIDAE	0.14	8	0.05	
Ebinania costaecanarie	0.14	6	0.05	
ALEPOCEPHALIDAE	0.10	17	0.03	
NOTOSUDIDAE	0.10	14	0.03	
Notacanthus sexspinis	0.06	2	0.02	
Neoscopelus macrolepidotus	0.02	2	0.01	

PROJECT STATION:2237

DATE:15/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2655
start stop duration Long E 1350
TIME :22:38:08 23:07:26 29 (min) Purpose code: 3
LOG :9704.94 9706.60 1.65 Area code : 1
FDEPTH: 556 549 GearCond.code:
BDEPTH: 556 549 Validity code:
Towing dir: 340° Wire out:1550 m Speed: 32 kn*10

Sorted: 130 Kg Total catch: 129.76 CATCH/HOUR: 268.47

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	178.86	223	66.62	7646
Merluccius paradoxus, male	25.66	39	9.56	7645
Trachyrincus scabrus	22.86	420	8.51	
Selachophidium guentheri	9.14	95	3.40	
Nezumia leonis	8.40	174	3.13	
Deepwater fish mixture	6.43		2.40	
Notacanthus sexspinis	4.90	114	1.83	
Raja leopardus	2.59	6	0.96	
Coelorinchus braueri	1.30	14	0.48	
Nezumia milleri	1.22	46	0.45	
Yarrella blackfordi	1.16	50	0.43	
Ebinania costaecanarie	1.08	12	0.40	
Plesiopenaeus edwardsianus	1.06	184	0.39	
Neoscopelus macrolepidotus	1.03	41	0.38	
Todarodes sagittatus	0.85	2	0.32	
Symbolophorus boops	0.74	95	0.28	
Trachyscorpia capensis	0.31	2	0.12	
Melanostomias sp.	0.21	4	0.08	
Malacocephalus laevis	0.17	4	0.06	
PENAEIDAE	0.14	14	0.05	
Tripterophycis gilchristi	0.12	4	0.04	
Hoplostethus cadenati	0.10	8	0.04	
ARISTEIDAE	0.08	14	0.03	
Epigonus denticulatus	0.04	2	0.01	
Total	268.45		99.97	

PROJECT STATION:2238

DATE:16/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2657
start stop duration Long E 1356
TIME :04:36:52 05:02:48 26 (min) Purpose code: 3
LOG :9726.06 9727.64 1.56 Area code : 1
FDEPTH: 458 452 GearCond.code:
BDEPTH: 458 452 Validity code:
Towing dir: 350° Wire out:1350 m Speed: 30 kn*10

Sorted: 103 Kg Total catch: 103.65 CATCH/HOUR: 239.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	163.62	272	68.41	7647
Merluccius paradoxus, male	25.85	42	10.81	7648
Lophius vomerinus	18.92	2	7.91	7649
Helicolenus dactylopterus	11.33	46	4.74	
Coelorinchus fasciatus	5.03	95	2.10	
Yarrella blackfordi	2.84	187	1.19	
Nezumia micronychodon	2.38	58	1.00	
Coelorinchus braueri	1.75	55	0.73	
Raja sp.	1.27	5	0.53	
Trachyrincus scabrus	1.20	18	0.50	
Todarodes sagittatus	1.15	2	0.48	
Raja leopardus	0.99	2	0.41	
Etmopterus brachyurus	0.65	16	0.27	
Deepwater fish mixture	0.60		0.25	
Notacanthus sexspinis	0.32	2	0.13	
MYCTOPHIDAE	0.32	48	0.13	
Shrimps, small, non comm.	0.25		0.10	
Todaropsis eblanae	0.23	39	0.10	
NOTOSUDIDAE	0.16	7	0.07	
PHOTICHTHYIDAE	0.12	18	0.05	
SOLENOCERIDAE	0.07	7	0.03	
Neoscopelus macrolepidotus	0.05	2	0.02	
ARISTEIDAE	0.05	12	0.02	
Nezumia milleri	0.05	2	0.02	
Total	239.20		100.00	

PROJECT STATION:2239

DATE:16/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2660
start stop duration Long E 1401
TIME :07:44:04 08:14:14 30 (min) Purpose code: 3
LOG :9741.17 9742.94 1.76 Area code : 1
FDEPTH: 434 433 GearCond.code:
BDEPTH: 434 433 Validity code:
Towing dir: 350° Wire out:1250 m Speed: 36 kn*10

Sorted: 95 Kg Total catch: 357.32 CATCH/HOUR: 714.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	559.80	1214	78.33	7650
Merluccius paradoxus, male	98.00	248	13.71	7651
Bathyraja smithii	16.30	2	2.28	
Helicolenus dactylopterus	14.48	58	2.03	
Coelorinchus fasciatus	7.16	88	1.00	
Todarodes sagittatus	5.40	8	0.76	
Yarrella blackfordi	3.58	352	0.50	
Shrimps, small, non comm.	3.28		0.46	
Deepwater fish mixture	1.52		0.21	
Nezumia micronychodon	1.30	44	0.18	
Selachophidium guentheri	1.24	14	0.17	
MYCTOPHIDAE	0.80	226	0.11	
NOTOSUDIDAE	0.66	30	0.09	
Coelorinchus sp.	0.42	14	0.06	
PHOTICHTHYIDAE	0.42	66	0.06	
Todaropsis eblanae	0.28	44	0.04	
Total	714.64		99.99	

Total	307.59		100.02	

PROJECT STATION:2240

DATE:16/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2659
start stop duration Long E 1412
TIME :11:11:46 11:40:14 28 (min) Purpose code: 3
LOG :9759.77 9761.21 1.43 Area code : 1
FDEPTH: 391 391 GearCond.code:
BDEPTH: 391 391 Validity code:
Towing dir: 350° Wire out:1150 m Speed: 30 kn*10

Sorted: 214 Kg Total catch: 213.66 CATCH/HOUR: 457.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	218.89	510	47.81	7655
Coelorinchus fasciatus	59.04	677	12.90	
Merluccius paradoxus, male	58.18	163	12.71	7652
Lophius vomerinus	42.00	4	9.17	7653
Genypterus capensis	39.96	24	8.73	7656
Helicolenus dactylopterus	16.20	90	3.54	
Deepwater fish mixture	10.95		2.39	
Todarodes sagittatus	3.21	2	0.70	
Nezumia leonis	3.04	51	0.66	
Merluccius capensis, female	2.61	2	0.57	7654
Selachophidium guentheri	2.57	30	0.56	
Solenocera africana	0.39	116	0.09	
Symbolophorus boops	0.36	71	0.08	
Hoplostethus cadenati	0.15	2	0.03	
Lampanyctodes hectoris	0.13	58	0.03	
Tripterophycis gilchristi	0.11	11	0.02	
Epigonus denticulatus	0.04	4	0.01	
Total	457.83		100.00	

PROJECT STATION:2241

DATE:16/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2657
start stop duration Long E 1422
TIME :14:36:00 15:03:00 27 (min) Purpose code: 3
LOG :9776.40 9777.70 1.34 Area code : 1
FDEPTH: 353 353 GearCond.code:
BDEPTH: 353 353 Validity code:
Towing dir: 360° Wire out:1050 m Speed: 30 kn*10

Sorted: 226 Kg Total catch: 226.14 CATCH/HOUR: 502.53

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	195.89	380	38.98	7658
Coelorinchus fasciatus	90.11	909	17.93	
Merluccius capensis, female	64.78	120	12.89	7659
Helicolenus dactylopterus	51.78	262	10.30	
Genypterus capensis	41.44	22	8.25	7661
Merluccius capensis, male	23.78	76	4.73	7660
Merluccius paradoxus, male	14.00	42	2.79	7657
Nezumia micronychodon	8.44	138	1.68	
Shrimps, small, non comm.	5.13		1.02	
MYCTOPHIDAE	3.33	2776	0.66	
Symbolophorus boops	2.22	260	0.44	
Apristurus saldanha	0.67	4	0.13	
Deepwater fish mixture	0.42		0.08	
PENAEIDAE	0.22	102	0.04	
Maurolicus muelleri	0.16	124	0.03	
Epigonus denticulatus	0.07	4	0.01	
Squilla acuelata calmani	0.04	4	0.01	
Sufflogobius bibarbatus	0.02	4		
Bathynectes piperitus	0.02	2		
Total	502.52		99.97	

PROJECT STATION:2242

DATE:16/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2655
start stop duration Long E 1430
TIME :17:01:54 17:34:26 33 (min) Purpose code: 3
LOG :9789.24 9791.00 1.74 Area code : 1
FDEPTH: 312 320 GearCond.code:
BDEPTH: 312 320 Validity code:
Towing dir: 300° Wire out: 900 m Speed: 30 kn*10

Sorted: 110 Kg Total catch: 502.32 CATCH/HOUR: 913.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	564.55	1251	61.81	7662
Merluccius capensis, male	173.82	720	19.03	7663
Genypterus capensis	92.73	65	10.15	7665
Coelorinchus fasciatus	25.64	278	2.81	
Todarodes sagittatus	17.18	49	1.88	
Helicolenus dactylopterus	16.73	56	1.83	
Apristurus saldanha	5.56	49	0.61	
Raja pullopunctata	4.84	2	0.53	
MYCTOPHIDAE	3.76	2507	0.41	
Merluccius paradoxus, female	3.64	7	0.40	7664
Etrumeus whiteheadi	1.87	24	0.20	
Lepidopus caudatus	1.05	7	0.11	
Shrimps, small, non comm.	0.89		0.10	
Nezumia micronychodon	0.49	7	0.05	
Epigonus denticulatus	0.40	24	0.04	
Sufflogobius bibarbatus	0.16	16	0.02	
Total	913.31		99.98	

PROJECT STATION:2243

DATE:17/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2714
start stop duration Long E 1404
TIME :04:34:29 05:06:48 32 (min) Purpose code: 3
LOG :9839.62 9841.36 1.70 Area code : 1
FDEPTH: 598 604 GearCond.code:
BDEPTH: 598 604 Validity code:
Towing dir: 330° Wire out:1600 m Speed: 32 kn*10

Sorted: 37 Kg Total catch: 37.71 CATCH/HOUR: 70.71

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	19.31	15	27.31	7666
Coelorinchus braueri	12.47	332	17.64	
Nezumia micronychodon	9.09	141	12.86	
ARISTEIDAE	6.68	1907	9.45	
Centrophorus squamosus	6.66	2	9.42	
Todarodes sagittatus	5.06	9	7.16	
Selachophidium guentheri	2.38	24	3.37	
Schedophilus huttoni	2.03	2	2.87	
Yarrella blackfordi	1.63	84	2.31	
Trachyrincus scabrus	1.01	17	1.43	
Deepwater fish mixture	0.81		1.15	
Hoplostethus melanopus	0.71	41	1.00	
Malacocephalus laevis	0.49	4	0.69	
Coelorinchus coelorhinc. polli	0.41	13	0.58	
Parapenaeus longirostris	0.39		0.55	
Neoscopelus macrolepidotus	0.28	15	0.40	
Histioteuthis reversa	0.26	4	0.37	
PHOTICHTHYIDAE	0.17	24	0.24	
Glyphus marsupialis	0.15	9	0.21	
CHAULIODONTIDAE	0.13	2	0.18	
ASTRONESTHIDAE	0.13	2	0.18	
STOMIIDAE	0.11	4	0.16	
Shrimps, small, non comm.	0.08		0.11	
Symbolophorus boops	0.08		0.11	
MYCTOPHIDAE	0.06	34	0.08	
Todaropsis eblanae	0.06	15	0.08	
Centroscyllium fabricii	0.04	2	0.06	
ARISTEIDAE	0.02	4	0.03	
Diaphus sp.	0.02	6	0.03	
Total	70.72		100.03	

PROJECT STATION:2244

DATE:17/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2717
start stop duration Long E 1411
TIME :07:48:06 08:17:22 29 (min) Purpose code: 3
LOG :9855.20 9856.83 1.60 Area code : 1
FDEPTH: 477 475 GearCond.code:
BDEPTH: 477 475 Validity code:
Towing dir: 330° Wire out:1400 m Speed: 32 kn*10

Sorted: 99 Kg Total catch: 298.11 CATCH/HOUR: 616.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	316.14	722	51.26	7667
Merluccius paradoxus, male	95.38	259	15.46	7668
S H R I M P S	89.38		14.49	
Coelorinchus fasciatus	42.21	1053	6.84	
Helicolenus dactylopterus	19.10	87	3.10	
Todarodes sagittatus	16.76	23	2.72	
Yarrella blackfordi	13.63	854	2.21	
Selachophidium guentheri	6.68	99	1.08	
Nezumia micronychodon	6.29	271	1.02	
Symbolophorus boops	3.25	325	0.53	
Parapenaeus longirostris	1.86	259	0.30	
Coelorinchus braueri	1.78	46	0.29	
Beryx splendens	1.61	14	0.26	7669
Todaropsis eblanae	0.72	87	0.12	
Histioteuthis reversa	0.46	6	0.07	
Trachyrincus scabrus	0.27	6	0.04	
Photichthys sp.	0.21	33	0.03	
ARISTEIDAE	0.21	54	0.03	
STROMATEIDAE	0.21	6	0.03	
Malacocephalus laevis	0.21	6	0.03	
MYCTOPHIDAE	0.12	39	0.02	
PENAEIDAE	0.12	46	0.02	
Cruriraja parcomaculata	0.06	6	0.01	
NOTOSUDIDAE	0.06	6	0.01	
Epigonus denticulatus	0.06	6	0.01	
Total	616.78		99.98	

PROJECT STATION:2245

DATE:17/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2720
start stop duration Long E 1421
TIME :11:00:31 11:27:57 27 (min) Purpose code: 3
LOG :9873.48 9874.91 1.41 Area code : 1
FDEPTH: 410 411 GearCond.code:
BDEPTH: 410 411 Validity code:
Towing dir: 340° Wire out:1150 m Speed: 32 kn*10

Sorted: 197 Kg Total catch: 2938.63 CATCH/HOUR: 6530.29

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	3742.22	12944	57.31	7671
Merluccius paradoxus, male	2522.22	9849	38.62	7670
Coelorinchus fasciatus	143.18	2076	2.19	
Helicolenus dactylopterus	69.64	316	1.07	
Lepidopus caudatus	26.02	36	0.40	
Genypterus capensis	13.89	9	0.21	7672
Todarodes sagittatus	12.13	16	0.19	
Total	6529.30		99.99	

PROJECT STATION:2246

DATE:17/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2721
start stop duration Long E 1438
TIME :14:34:48 14:54:29 20 (min) Purpose code: 3
LOG :9894.54 9895.61 1.05 Area code : 1
FDEPTH: 338 338 GearCond.code:
BDEPTH: 338 338 Validity code:
Towing dir: 350° Wire out:1000 m Speed: 32 kn*10

Sorted: 151 Kg Total catch: 774.89 CATCH/HOUR: 2324.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	1184.70	3681	50.96	7679
Merluccius paradoxus, female	544.53	7980	23.42	7677
Merluccius paradoxus, male	181.80	2610	7.82	7678
Merluccius paradoxus, female	169.20	384	7.28	7675
Coelorinchus fasciatus	82.20	1056	3.54	
Merluccius capensis, female	39.15	27	1.68	7673
Helicolenus dactylopterus	29.37	363	1.26	
Todarodes sagittatus	27.30	45	1.17	
Squalus mitsukurii	16.83	33	0.72	
MYCTOPHIDAE	15.18	7590	0.65	
Merluccius paradoxus, male	14.85	42	0.64	7676
Raja straeleni	8.25	33	0.35	
Lophius vomerinus	4.14	3	0.18	7680
Lepidopus caudatus	2.64	33	0.11	
Merluccius capensis, male	2.25	6	0.10	7674
Bathynectes piperitus	1.65	33	0.07	
MACROURIDAE	0.66	759	0.03	
Total	2324.70		99.98	

PROJECT STATION:2247

DATE:17/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2719
start stop duration Long E 1445
TIME :16:57:17 17:25:12 28 (min) Purpose code: 3
LOG :9906.33 9907.88 1.53 Area code : 1
FDEPTH: 295 295 GearCond.code:
BDEPTH: 295 295 Validity code:
Towing dir: 340° Wire out: 900 m Speed: 30 kn*10

Sorted: 91 Kg Total catch: 652.16 CATCH/HOUR: 1397.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	491.01	1661	35.14	7683
Merluccius capensis, male	210.09	928	15.03	7684
Trachurus capensis	186.88	621	13.37	7688
Merluccius capensis, female	167.57	75	11.99	7681
Merluccius paradoxus, female	150.84	2687	10.79	7685
Merluccius capensis, male	56.04	26	4.01	7682
Coelorinchus fasciatus	52.14	806	3.73	
Scomber japonicus	24.00	21	1.72	
Merluccius paradoxus, male	12.21	159	0.87	7686
Thyrsites atun	10.50	9	0.75	7687
Genypterus capensis	10.39	13	0.74	7689
Helicolenus dactylopterus	6.36	47	0.46	
Raja straeleni	4.89	2	0.35	
Sufflogobius bibarbatus	4.76	733	0.34	
MYCTOPHIDAE	3.77	2516	0.27	
Chelidonichthys capensis	3.04	2	0.22	
Todarodes sagittatus	1.63	4	0.12	
Squalus mitsukurii	1.01	2	0.07	
Maulisia microlepis	0.36	281	0.03	
Total	1397.49		100.00	

PROJECT STATION:2248

DATE:19/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2653
start stop duration Long E 1451
TIME :07:48:40 08:17:26 29 (min) Purpose code: 3
LOG : 6.96 8.45 1.46 Area code : 1
FDEPTH: 181 188 GearCond.code:
BDEPTH: 181 188 Validity code:
Towing dir: 300° Wire out: 520 m Speed: 30 kn*10

Sorted: 72 Kg Total catch: 1345.95 CATCH/HOUR: 2784.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1159.76	13512	41.65	7690
Merluccius capensis, male	865.03	10334	31.06	7691
Squilla sp.	702.41	39	25.22	
Chelidonichthys capensis	37.97	110	1.36	
Sufflogobius bibarbatus	11.88	1494	0.43	
Lepidopus caudatus	4.99	192	0.18	
MYCTOPHIDAE	2.69	1264	0.10	
Total	2784.73		100.00	

PROJECT STATION:2249

DATE:19/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2655
start stop duration Long E 1444
TIME :09:41:17 10:09:59 29 (min) Purpose code: 3
LOG : 16.79 18.29 1.46 Area code : 1
FDEPTH: 225 225 GearCond.code:
BDEPTH: 225 225 Validity code:
Towing dir: 360° Wire out: 650 m Speed: 32 kn*10

Sorted: 58 Kg Total catch: 1645.39 CATCH/HOUR: 3404.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1710.00	14270	50.23	7694
Merluccius capensis, male	1475.92	13326	43.36	7693
Callorhinchus capensis	78.43	39	2.30	
MYCTOPHIDAE	12.39	8551	0.36	
Todarodes sagittatus	4.18	8	0.12	
Lepidopus caudatus	3.54	39	0.10	
Sufflogobius bibarbatus	3.54	296	0.10	
Genypterus capensis	1.32	2	0.04	7695
Total	3289.32		96.61	

PROJECT STATION:2250
DATE:19/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2717
start stop duration Long E 1454
TIME :14:32:30 15:02:13 30 (min) Purpose code: 3
LOG : 48.84 50.52 1.66 Area code : 1
FDEPTH: 201 209 GearCond.code:
BDEPTH: 201 209 Validity code:
Towing dir: 350° Wire out: 650 m Speed: 34 kn*10

Sorted: 47 Kg Total catch: 194.64 CATCH/HOUR: 389.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	159.20	1728	40.90	7697
Merluccius capensis, female	156.80	1176	40.28	7696
Trachurus capensis	30.90	104	7.94	7700
Thyrsites atun	18.70	10	4.80	7698
Chelidonichthys capensis	6.86	14	1.76	
Callorhinchus capensis	4.60	4	1.18	
Lepidopus caudatus	4.00	90	1.03	
Raja straeleni	3.64	6	0.94	
Genypterus capensis	3.04	8	0.78	7699
Sufflogobius bibarbatus	1.34	174	0.34	
Todaropsis eblanae	0.20	2	0.05	
Total	389.28		100.00	

PROJECT STATION:2251
DATE:19/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2717
start stop duration Long E 1505
TIME :17:16:50 17:46:06 29 (min) Purpose code: 3
LOG : 64.14 65.89 1.72 Area code : 1
FDEPTH: 155 157 GearCond.code:
BDEPTH: 155 157 Validity code:
Towing dir: 340° Wire out: 510 m Speed: 36 kn*10

Sorted: 22 Kg Total catch: 317.51 CATCH/HOUR: 656.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	334.55	3823	50.93	7702
Merluccius capensis, female	291.10	2897	44.31	7701
Sufflogobius bibarbatus	10.14	174	1.54	
Etrumeus whiteheadi	4.63	58	0.70	
Todarodes sagittatus	4.34	29	0.66	
SEPIIDAE	2.90	145	0.44	
Genypterus capensis	1.80	6	0.27	7703
Lepidopus caudatus	1.45	145	0.22	
Chelidonichthys capensis	1.45	145	0.22	
Total	652.36		99.29	

PROJECT STATION:2252
DATE:20/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2840
start stop duration Long E 1612
TIME :06:02:55 06:29:40 27 (min) Purpose code: 3
LOG : 173.59 174.96 1.35 Area code : 1
FDEPTH: 99 96 GearCond.code:
BDEPTH: 99 96 Validity code:
Towing dir: 340° Wire out: 370 m Speed: 30 kn*10

Sorted: 138 Kg Total catch: 860.81 CATCH/HOUR: 1912.91

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	832.00	12287	43.49	7705
Merluccius capensis, female	704.89	9416	36.85	7704
Callorhinchus capensis	139.89	147	7.31	
Trachurus capensis	106.60	664	5.57	7709
Chelidonichthys capensis	70.78	260	3.70	
Centrophorus uyato	14.16	173	0.74	
Genypterus capensis	12.11	7	0.63	7706
Jasus lalandii	11.67	100	0.61	7707
Austroglossus microlepis	11.00	40	0.58	7708
Loligo reynaudi	7.80	3120	0.41	
Sepia australis	1.16	58	0.06	
Squilla acuelata calmani	0.58	116	0.03	
Sufflogobius bibarbatus	0.29	29	0.02	
Total	1912.93		100.00	

PROJECT STATION:2253
DATE:20/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2850
start stop duration Long E 1554
TIME :09:34:47 10:07:33 33 (min) Purpose code: 3
LOG : 197.05 198.54 1.47 Area code : 1
FDEPTH: 157 147 GearCond.code:
BDEPTH: 157 147 Validity code:
Towing dir: 229° Wire out: 650 m Speed: 30 kn*10

Sorted: 111 Kg Total catch: 300.39 CATCH/HOUR: 546.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	151.09	1255	27.66	7715
Merluccius capensis, male	127.91	1324	23.42	7716
Sepia australis	76.84	4304	14.07	
Trachurus capensis	55.56	169	10.17	7714
Galeorhinus galeus	55.45	4	10.15	
Merluccius capensis, juveniles	28.24	1302	5.17	7713
Merluccius paradoxus, female	17.53	265	3.21	7711
Chelidonichthys capensis	15.07	35	2.76	
Merluccius paradoxus, male	5.73	89	1.05	7710
Callorhinchus capensis	2.96	2	0.54	
Merluccius paradoxus, juvenile	2.93	102	0.54	7712
Todaropsis eblanae	2.87	265	0.53	
Cynoglossus capensis	1.24	42	0.23	
Lophius vomerinus	1.09	4	0.20	7717
Paracallionymus costatus	0.75	35	0.14	
Holohalaelurus regani	0.69	27	0.13	
Sufflogobius bibarbatus	0.62	7	0.11	
Helicolenus dactylopterus	0.55	35	0.10	
Genypterus capensis	0.04	2	0.01	7718
Total	547.16		100.19	

PROJECT STATION:2254
DATE:20/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2858
start stop duration Long E 1539
TIME :12:38:20 13:07:07 29 (min) Purpose code: 3
LOG : 216.38 217.83 1.42 Area code : 1
FDEPTH: 182 182 GearCond.code:
BDEPTH: 182 182 Validity code:
Towing dir: 350° Wire out: 600 m Speed: 32 kn*10

Sorted: 281 Kg Total catch: 541.18 CATCH/HOUR: 1119.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	274.32	352	24.50	7724
Merluccius capensis, juveniles	260.69	21321	23.28	7727
Sepia australis	123.27	9180	11.01	
Trachurus capensis	118.32	358	10.57	7729
Merluccius capensis, male	87.83	116	7.84	7723
Merluccius paradoxus, juvenile	73.55	7355	6.57	7728
Merluccius paradoxus, male	35.19	279	3.14	7721
Raja straeleni	28.86	19	2.58	
Merluccius paradoxus, female	28.68	484	2.56	7722
Lophius vomerinus	15.66	43	1.40	7720
Merluccius capensis, male	14.90	689	1.33	7726
Paracallionymus costatus	11.17	1117	1.00	
Helicolenus dactylopterus	8.01	540	0.72	
Genypterus capensis	7.66	21	0.68	7719
Raja miraletus	6.89	19	0.62	
Mustelus palumbes	6.23	2	0.56	
Todaropsis eblanae	5.59	577	0.50	
Merluccius paradoxus, female	4.45	10	0.40	7725
Holohalaelurus regani	3.72	19	0.33	
Cynoglossus capensis	2.42	56	0.22	
Etrumeus whiteheadi	1.49	19	0.13	
Todarodes sagittatus	0.79	2	0.07	
Total	1119.69		100.01	

PROJECT STATION:2255
DATE:20/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2911
start stop duration Long E 1522
TIME :16:35:12 16:48:55 14 (min) Purpose code: 3
LOG : 241.85 242.62 0.78 Area code : 1
FDEPTH: 185 182 GearCond.code: 9
BDEPTH: 185 182 Validity code: 1
Towing dir: 330° Wire out: 580 m Speed: 32 kn*10

Sorted: 44 Kg Total catch: 44.23 CATCH/HOUR: 204.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Lepidopus caudatus	49.62	235	24.31	
Merluccius capensis, female	37.62	37	18.43	7731
Helicolenus dactylopterus	30.28	863	14.83	
Merluccius capensis, male	24.00	18	11.76	7732
Todarodes sagittatus	15.92	198	7.80	
Merluccius paradoxus, juvenile	12.18	817	5.97	7730
Trachurus capensis	8.45	23	4.14	7735
Sepia australis	6.05	803	2.96	
Merluccius capensis, female	4.75	78	2.33	7733
Coelorinchus fasciatus	4.15	37	2.03	
Holohalaelurus regani	3.69	14	1.81	
Loligo reynaudi	2.58	1292	1.26	
Merluccius capensis, male	2.40	42	1.18	7734
Paracallionymus costatus	1.15	138	0.56	
Cynoglossus capensis	0.78	18	0.38	
Maurolicus muelleri	0.42	263	0.21	
Emmelichthys nitidus	0.09	5	0.04	
Total	204.13		100.00	

PROJECT STATION:2256
DATE:20/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2932
start stop duration Long E 1441
TIME :23:04:39 23:19:11 15 (min) Purpose code: 3
LOG : 289.15 289.90 0.75 Area code : 1
FDEPTH: 366 364 GearCond.code: 9
BDEPTH: 366 364 Validity code: 1
Towing dir: 350° Wire out:1000 m Speed: 30 kn*10

Sorted: 28 Kg Total catch: 28.43 CATCH/HOUR: 113.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	31.72	64	27.89	7738
Callorhinchus capensis	22.28	24	19.59	
Helicolenus dactylopterus	14.20	160	12.49	
Merluccius paradoxus, male	11.08	44	9.74	7737
Merluccius capensis, female	10.80	12	9.50	7736
Coelorinchus fasciatus	5.76	64	5.07	
Malacocephalus laevis	4.24	4	3.73	
Zeus capensis	3.48	4	3.06	
Holohalaelurus regani	2.64	12	2.32	
Lampanyctodes hectoris	2.28	1712	2.00	
Hoplostethus cadenati	2.00	36	1.76	
Todaropsis eblanae	1.20	224	1.06	
Cynoglossus capensis	1.00	20	0.88	
Epigonus denticulatus	0.32	4	0.28	
Sepia australis	0.28	40	0.25	
Symbolophorus boops	0.16	8	0.14	
SEPIOLIDAE	0.12	8	0.11	
Paracallionymus costatus	0.08	8	0.07	
Scopelosaurus meadi	0.04	8	0.04	
Total	113.68		99.98	

PROJECT STATION:2257
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2908
start stop duration Long E 1429
TIME :04:31:24 04:59:33 28 (min) Purpose code: 3
LOG : 316.54 318.02 1.45 Area code : 1
FDEPTH: 358 363 GearCond.code:
BDEPTH: 358 363 Validity code:
Towing dir: 342° Wire out:1000 m Speed: 30 kn*10

Sorted: 165 Kg Total catch: 652.61 CATCH/HOUR: 1398.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Epigonus denticulatus	492.75	14700	35.24	
Helicolenus dactylopterus	233.25	930	16.68	
Paracallionymus costatus	106.50	15	7.62	
Merluccius paradoxus, female	97.65	675	6.98	7743
Nezumia micronychodon	93.00	15	6.65	
Merluccius paradoxus, female	82.93	75	5.93	7739
Merluccius paradoxus, male	70.80	510	5.06	7744
Genypterus capensis	57.96	36	4.14	7745
Coelorinchus fasciatus	42.15	285	3.01	
Merluccius capensis, female	32.79	26	2.34	7741
Holohalaelurus regani	25.61	30	1.83	
Octopus vulgaris	23.25	4	1.66	
Merluccius paradoxus, male	14.68	21	1.05	7740
Todarodes sagittatus	8.38	17	0.60	
Centrolophus niger	5.04	2	0.36	
Thyrsites atun	3.09	2	0.22	7747
Aristurus saldanha	2.10	15	0.15	
Cynoglossus capensis	1.80	15	0.13	
Merluccius capensis, male	1.61	2	0.12	7742
Histioteuthis reversa	1.35	45	0.10	
Beryx splendens	1.03	11	0.07	7746
MYCTOPHIDAE	0.60	465	0.04	
Aristeus varidens	0.15	75	0.01	
Total	1398.47		99.99	

PROJECT STATION:2258
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2902
start stop duration Long E 1445
TIME :07:30:20 07:58:06 28 (min) Purpose code: 3
LOG : 336.18 337.47 1.26 Area code : 1
FDEPTH: 224 219 GearCond.code:
BDEPTH: 224 219 Validity code:
Towing dir: 30° Wire out: 680 m Speed: 30 kn*10

Sorted: 188 Kg Total catch: 217.78 CATCH/HOUR: 466.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	185.14	159	39.67	7748
Trachurus capensis	56.57	334	12.12	7756
Merluccius paradoxus, female	31.35	429	6.72	7751
Merluccius paradoxus, male	27.96	251	5.99	7749
Thyrsites atun	26.04	30	5.58	7754
Merluccius capensis, male	22.29	26	4.78	7752
Lophius vomerinus	15.75	13	3.37	7773
Lepidopus caudatus	13.35	75	2.86	
Helicolenus dactylopterus	10.61	126	2.27	
Merluccius paradoxus, female	10.29	30	2.20	7750
Squalus mitsukurii	9.17	6	1.96	
Congiopodus torvus	8.04	4	1.72	
Zeus capensis	7.84	51	1.68	
Merluccius paradoxus, male	7.39	24	1.58	7753
Todarodes sagittatus	5.31	109	1.14	
Coelorinchus fasciatus	4.93	58	1.06	
Sepia australis	4.48	617	0.96	
Merluccius paradoxus, juvenile	4.44	294	0.95	7757
Genypterus capensis	3.86	4	0.83	7755
Holohalaelurus regani	3.26	11	0.70	
Paracallionymus costatus	1.99	268	0.43	
Cynoglossus capensis	1.84	17	0.39	
Malacocephalus laevis	1.52	19	0.33	
Etrumeus whiteheadi	0.96	11	0.21	
Histioteuthis reversa	0.84	557	0.18	
Chelidonichthys capensis	0.51	4	0.11	
Epigonus denticulatus	0.45	19	0.10	
Galeus polli	0.32	4	0.07	
Maurolicus muelleri	0.13	107	0.03	
Emmelichthys nitidus	0.04	4	0.01	
Total	466.67		100.00	

PROJECT STATION:2259
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2851
start stop duration Long E 1503
TIME :10:18:48 10:47:16 28 (min) Purpose code: 3
LOG : 356.17 357.57 1.39 Area code : 1
FDEPTH: 172 170 GearCond.code:
BDEPTH: 172 170 Validity code: 1
Towing dir: 30° Wire out: 550 m Speed: 31 kn*10

Sorted: 150 Kg Total catch: 383.41 CATCH/HOUR: 821.59

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	447.94	418	54.52	7762
Merluccius capensis, male	164.08	191	19.97	7761
Chelidonichthys queketti	54.88	90	6.68	
Callorhinchus capensis	41.16	21	5.01	
Helicolenus dactylopterus	34.48	289	4.20	
Trachurus capensis	19.33	77	2.35	7759
Squalus mitsukurii	10.31	24	1.25	
Sepia australis	9.58	1408	1.17	
Thyrsites atun	6.09	4	0.74	7763
Etrumeus whiteheadi	5.23	62	0.64	
Todaropsis eblanae	4.56	139	0.56	
Zeus capensis	4.46	90	0.54	
Todarodes sagittatus	2.79	6	0.34	
Merluccius paradoxus, female	2.68	11	0.33	7760
Emmelichthys nitidus	2.51	154	0.31	
Histioteuthis reversa	2.44	836	0.30	
Merluccius paradoxus, juvenile	2.40	345	0.29	7758
Lophius vomerinus	1.71	4	0.21	
Paracallionymus costatus	1.50	195	0.18	
Lepidopus caudatus	1.46	24	0.18	
Congiopodus torvus	1.18	6	0.14	
Cynoglossus capensis	0.84	6	0.10	
Total	821.61		100.01	

PROJECT STATION:2260
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2843
start stop duration Long E 1517
TIME :13:13:47 13:38:03 24 (min) Purpose code: 3
LOG : 374.97 376.25 1.27 Area code : 1
FDEPTH: 169 170 GearCond.code:
BDEPTH: 169 170 Validity code: 1
Towing dir: 360° Wire out: 550 m Speed: 31 kn*10

Sorted: 87 Kg Total catch: 86.57 CATCH/HOUR: 216.43

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	75.88	115	35.06	7765
Sepia australis	27.38	3338	12.65	
Merluccius paradoxus, juvenile	24.13	593	11.15	7772
Merluccius capensis, male	20.38	28	9.42	7766
Merluccius paradoxus, female	13.33	160	6.16	7767
Raja straeleni	7.35	8	3.40	
Holohalaelurus regani	6.28	28	2.90	
Brama brama	6.25	3	2.89	
Chelidonichthys queketti	5.93	13	2.74	
Lophius vomerinus	5.65	15	2.61	7764
Callorhinchus capensis	4.15	3	1.92	
Helicolenus dactylopterus	3.70	118	1.71	
Todarodes sagittatus	3.70	5	1.71	
Merluccius capensis, female	2.05	35	0.95	7769
Zeus capensis	2.03	25	0.94	
Merluccius capensis, juveniles	1.63	43	0.75	7771
Etrumeus whiteheadi	1.58	18	0.73	
Merluccius paradoxus, male	1.40	23	0.65	7768
Histioteuthis reversa	1.13	580	0.52	
Merluccius capensis, male	0.83	13	0.38	7770
Todaropsis eblanae	0.78	35	0.36	
Paracallionymus costatus	0.70	65	0.32	
Maurolicus muelleri	0.13	75	0.06	
Cynoglossus capensis	0.10	3	0.05	
Notopogon macrosolen	0.03	5	0.01	
Total	216.50		100.04	

PROJECT STATION:2261
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2832
start stop duration Long E 1533
TIME :15:56:02 16:25:22 29 (min) Purpose code: 3
LOG : 394.08 395.66 1.58 Area code : 1
FDEPTH: 167 162 GearCond.code:
BDEPTH: 167 162 Validity code: 1
Towing dir: 360° Wire out: 500 m Speed: 30 kn*10

Sorted: 102 Kg Total catch: 786.16 CATCH/HOUR: 1626.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	630.62	2001	38.77	7780
Merluccius capensis, female	407.17	2071	25.03	7776
Merluccius capensis, male	261.72	1651	16.09	7777
Sepia australis	100.76	10543	6.19	
Chelidonichthys capensis	59.17	186	3.64	
Merluccius paradoxus, female	40.76	559	2.51	7774
TRIAKIDAE	38.28	2	2.35	
Callorhinchus capensis	23.48	12	1.44	
Merluccius paradoxus, juvenile	14.90	1024	0.92	7778
Coelorinchus fasciatus	9.06	116	0.56	
Merluccius paradoxus, male	8.07	161	0.50	7775
Todarodes sagittatus	7.66	186	0.47	
Holohalaelurus regani	6.27	23	0.39	
Raja pullopunctata	5.09	2	0.31	
Raja pullopunctata	5.09	2	0.31	
Raja straeleni	3.37	2	0.21	
Austroglossus microlepis	2.98	4	0.18	7779
Macrorhamphosus scolopax	0.46	23	0.03	
Zeus capensis	0.46	23	0.03	
Cynoglossus capensis	0.27	4	0.02	
Histioteuthis reversa	0.23	46	0.01	
Paracallionymus costatus	0.23	23	0.01	
Sufflogobius bibarbatus	0.23	23	0.01	
Helicolenus dactylopterus	0.23	23	0.01	
Total	1626.56		99.99	

PROJECT STATION:2262
DATE:21/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2821
start stop duration Long E 1553
TIME :18:39:34 18:50:26 11 (min) Purpose code: 3
LOG : 416.02 416.55 0.54 Area code : 1
FDEPTH: 107 105 GearCond.code: 9
BDEPTH: 107 105 Validity code: 1
Towing dir: 360° Wire out: 370 m Speed: 30 kn*10

Sorted: 69 Kg Total catch: 69.37 CATCH/HOUR: 378.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	165.55	1762	43.75	7782
Merluccius capensis, male	112.64	1560	29.77	7781
Genypterus capensis	60.82	60	16.07	7786
Trachurus capensis	21.16	60	5.59	7784
Callorhinchus capensis	9.00	11	2.38	
Sepia australis	3.16	164	0.84	
Chelidonichthys capensis	1.96	16	0.52	
Cynoglossus capensis	1.80	27	0.48	
Sufflogobius bibarbatus	1.20	109	0.32	
Todarodes sagittatus	0.87	27	0.23	
Merluccius capensis, juveniles	0.11	11	0.03	7785
Trachurus capensis, juvenile	0.11	16	0.03	7783
Total	378.38		100.01	

PROJECT STATION:2263

DATE:22/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2759

start stop duration Long E 1533

TIME :03:20:50 03:21:33 27 (min) Purpose code: 3

LOG : 450.77 452.12 1.35 Area code : 1

FDEPTH: 87 89 GearCond.code:

BDEPTH: 87 89 Validity code: 1

Towing dir: 3° Wire out: 320 m Speed: 29 kn*10

Sorted: 90 Kg Total catch: 90.34 CATCH/HOUR: 200.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	86.04	1036	42.86	7788
Merluccius capensis, female	58.51	364	29.14	7787
Chelidonichthys queketti	36.78	169	18.32	
Callorhinchus capensis	8.22	7	4.09	
Trachurus capensis	2.58	13	1.29	7790
Lepidopus caudatus	2.53	33	1.26	
Austroglossus microlepis	2.40	22	1.20	7791
Sepia australis	1.40	73	0.70	
Sufflogobius bibarbatus	0.76	67	0.38	
Histioteuthis reversa	0.71	473	0.35	
Etrumeus whiteheadi	0.27	4	0.13	
Merluccius capensis, juveniles	0.22	16	0.11	7789
Cynoglossus capensis	0.18	4	0.09	
Todarodes sagittatus	0.11	11	0.05	
Engraulis capensis	0.02	2	0.01	
Zeus capensis	0.02	2	0.01	
Total	200.75		99.99	

PROJECT STATION:2264

DATE:22/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2812

start stop duration Long E 1515

TIME :08:14:10 08:43:13 29 (min) Purpose code: 3

LOG : 478.22 479.66 1.40 Area code : 1

FDEPTH: 147 138 GearCond.code: 8

BDEPTH: 147 138 Validity code: 1

Towing dir: 55° Wire out: 450 m Speed: 30 kn*10

Sorted: 123 Kg Total catch: 123.04 CATCH/HOUR: 254.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	73.08	826	28.71	7793
Merluccius capensis, female	46.66	43	18.33	7848
Hexanchus griseus	42.12	2	16.55	
Merluccius capensis, female	41.44	408	16.28	7792
Chelidonichthys capensis	11.32	23	4.45	
Merluccius capensis, male	9.00	21	3.54	7802
Genypterus capensis	7.26	17	2.85	7798
Callorhinchus capensis	5.69	4	2.24	
Thyrsites atun	3.33	2	1.31	7794
Etrumeus whiteheadi	2.81	33	1.10	7801
Merluccius paradoxus, female	2.13	43	0.84	7795
Sufflogobius bibarbatus	1.78	118	0.70	
Trachurus capensis	1.55	10	0.61	7799
Austroglossus microlepis	1.28	4	0.50	7800
Sepia australis	1.18	83	0.46	
Histioteuthis reversa	1.03	426	0.40	
Todaropsis eblanae	0.93	50	0.37	
Helicolenus dactylopterus	0.72	35	0.28	
Zeus capensis	0.48	8	0.19	
Merluccius paradoxus, male	0.27	6	0.11	7797
Lepidopus caudatus	0.25	10	0.10	
Maurolicus muelleri	0.12	134	0.05	
Merluccius paradoxus, juvenile	0.12	8	0.05	7796
Total	254.55		100.02	

PROJECT STATION:2265

DATE:22/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2817

start stop duration Long E 1507

TIME :10:36:31 11:06:44 30 (min) Purpose code: 3

LOG : 492.30 493.87 1.56 Area code : 1

FDEPTH: 179 179 GearCond.code:

BDEPTH: 179 179 Validity code: 1

Towing dir: 10° Wire out: 580 m Speed: 32 kn*10

Sorted: 240 Kg Total catch: 391.49 CATCH/HOUR: 782.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	283.90	324	36.26	7804
Galeorhinus galeus	154.80	8	19.77	
Merluccius capensis, male	91.60	96	11.70	7803
Trachurus capensis	64.00	176	8.17	7805
Callorhinchus capensis	50.00	16	6.39	
Merluccius capensis, juveniles	21.84	656	2.79	7807
Sepia australis	21.04	3096	2.69	
Merluccius capensis, female	16.80	88	2.15	7809
Etrumeus whiteheadi	12.88	144	1.64	7806
Raja straeleni	12.08	8	1.54	
Chelidonichthys capensis	11.68	24	1.49	
Merluccius capensis, male	8.08	72	1.03	7808
Lophius vomerinus	6.04	14	0.77	7823
Holohalaelurus regani	5.92	32	0.76	
Paracallionymus costatus	5.76	696	0.74	
Zeus capensis	4.08	88	0.52	
Congiopodus spinifer	3.92	24	0.50	
Todaropsis eblanae	2.16	88	0.28	
Coelorinchus fasciatus	1.76	16	0.22	
Lepidopus caudatus	1.44	56	0.18	
Helicolenus dactylopterus	1.04	104	0.13	
Chelidonichthys queketti	0.80	8	0.10	
Histioteuthis reversa	0.48	96	0.06	
Cynoglossus capensis	0.48	8	0.06	
Sufflogobius bibarbatus	0.40	72	0.05	
Total	782.98		99.99	

PROJECT STATION:2266

DATE:22/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2824

start stop duration Long E 1454

TIME :13:37:18 14:06:31 29 (min) Purpose code: 3

LOG : 511.61 513.09 1.44 Area code : 1

FDEPTH: 185 183 GearCond.code:

BDEPTH: 185 183 Validity code: 1

Towing dir: 360° Wire out: 550 m Speed: 31 kn*10

Sorted: 206 Kg Total catch: 288.62 CATCH/HOUR: 597.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	286.97	219	48.06	7810
Trachurus capensis	63.31	209	10.60	7814
Merluccius capensis, male	54.00	52	9.04	7811
Callorhinchus capensis	50.90	21	8.52	
Zeus capensis	32.44	368	5.43	
Thyrsites atun	20.77	14	3.48	7816
Lophius vomerinus	18.72	6	3.13	7815
Holohalaelurus regani	14.69	43	2.46	
Raja straeleni	12.17	6	2.04	
Chelidonichthys capensis	8.90	21	1.49	
Squalus megalops	8.69	21	1.46	
Merluccius paradoxus, female	5.07	50	0.85	7813
Lepidopus caudatus	3.72	87	0.62	
Paracallionymus costatus	3.33	426	0.56	
Merluccius capensis, juveniles	3.33	261	0.56	7812
Todarodes sagittatus	3.10	108	0.52	
Sepia australis	2.32	412	0.39	
Chelidonichthys queketti	2.23	14	0.37	
Etrumeus whiteheadi	1.45	21	0.24	7817
Cynoglossus capensis	1.03	14	0.17	
Total	597.14		99.99	

PROJECT STATION:2267

DATE:22/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2832

start stop duration Long E 1440

TIME :16:52:52 17:23:00 30 (min) Purpose code: 3

LOG : 533.10 534.69 1.56 Area code : 1

FDEPTH: 169 178 GearCond.code:

BDEPTH: 169 178 Validity code: 1

Towing dir: 50° Wire out: 550 m Speed: 32 kn*10

Sorted: 196 Kg Total catch: 1137.64 CATCH/HOUR: 2275.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Squalus mitsukurii	1841.40	7316	80.93	
Merluccius capensis, female	219.70	152	9.66	7818
Thyrsites atun	77.60	58	3.41	7822
Chelidonichthys capensis	70.06	186	3.08	
Merluccius capensis, male	21.30	18	0.94	7819
Emmelichthys nitidus	19.22	1488	0.84	
Trachurus capensis	13.64	62	0.60	7821
Raja straeleni	5.46	2	0.24	
Polyprion americanus	4.78	2	0.21	
Lophius vomerinus	2.12	2	0.09	7820
Total	2275.28		100.00	

PROJECT STATION:2268

DATE:22/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2858

start stop duration Long E 1423

TIME :22:31:34 23:02:12 31 (min) Purpose code: 3

LOG : 573.19 574.77 1.55 Area code : 1

FDEPTH: 537 519 GearCond.code:

BDEPTH: 537 519 Validity code: 1

Towing dir: 360° Wire out:1520 m Speed: 32 kn*10

Sorted: 78 Kg Total catch: 78.37 CATCH/HOUR: 151.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	76.35	70	50.34	7824
Helicolenus dactylopterus	16.30	62	10.75	
Genypterus capensis	11.42	2	7.53	7826
Merluccius paradoxus, male	7.35	10	4.85	7825
Coelorinchus fasciatus	7.03	68	4.63	
Notacanthus sexspinis	5.21	75	3.43	
Apristurus saldanha	4.16	2	2.74	
Hydrolagus sp.	3.81	4	2.51	
Selachophidium guentheri	3.33	39	2.20	
Raja leopardus	2.38	4	1.57	
Yarrella blackfordi	2.13	139	1.40	
Symbolophorus boops	1.39	103	0.92	
Centroscyllium fabricii	1.24	27	0.82	
Lepidion capensis	1.12	2	0.74	
Coelorinchus braueri	1.05	10	0.69	
SOLENOCERIDAE	0.97	99	0.64	
Todarodes sagittatus	0.97	2	0.64	
Nezumia leonis	0.93	33	0.61	
Solenocera africana	0.87	294	0.57	
Malacocephalus laevis	0.79	2	0.52	
Squalus mitsukurii	0.60	2	0.40	
Chelidonichthys capensis	0.58	2	0.38	
Nezumia aequalis	0.39	4	0.26	
Nezumia sp.	0.23	17	0.15	
Glyphus marsupialis	0.21	165	0.14	
Trachyrincus scabrus	0.21	14	0.14	
Myxine capensis	0.17	2	0.11	
Todaropsis eblanae	0.14	4	0.09	
Aristeus varidens	0.12	21	0.08	
Physiculus capensis	0.10	2	0.07	
Tripterophycis gilchristi	0.08	2	0.05	
Scopelosaurus meadi	0.06	2	0.04	
Total	151.69		100.01	

PROJECT STATION:2269

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2853
start stop duration Long E 1423
TIME :00:32:23 00:51:06 19 (min) Purpose code: 3
LOG : 579.65 580.58 0.91 Area code : 1
FDEPTH: 461 467 GearCond.code: 9
BDEPTH: 461 467 Validity code: 1
Towing dir: 5° Wire out:1300 m Speed: 31 kn*10

Sorted: 54 Kg Total catch: 54.36 CATCH/HOUR: 171.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	82.58	98	48.11	7829
Genypterus capensis	26.53	9	15.45	7828
Helicolenus dactylopterus	21.95	54	12.79	
Merluccius paradoxus, male	13.26	19	7.72	7827
Coelorinchus fasciatus	11.08	111	6.45	
Raja leopardus	9.38	9	5.46	
Symbolophorus boops	2.08	180	1.21	
Squalus mitsukurii	1.45	3	0.84	
Centroscyllium fabricii	1.20	57	0.70	
Yarrella blackfordi	0.95	63	0.55	
Lampanyctodes hectoris	0.51	205	0.30	
SOLENOCERIDAE	0.19	16	0.11	
Solenocera africana	0.16	54	0.09	
Venefica proboscidea	0.13	3	0.08	
Aristeus varidens	0.06	6	0.03	
Tripterophycis gilchristi	0.06	3	0.03	
Neoscopelus macrolepidotus	0.03	3	0.02	
MORIDAE	0.03	6	0.02	
Glyphus marsupialis	0.03	95	0.02	
Total	171.66		99.98	

PROJECT STATION:2270

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2844
start stop duration Long E 1422
TIME :01:41:09 03:20:53 31 (min) Purpose code: 3
LOG : 589.51 591.14 1.60 Area code : 1
FDEPTH: 452 465 GearCond.code:
BDEPTH: 452 465 Validity code: 1
Towing dir: 10° Wire out:1250 m Speed: 30 kn*10

Sorted: 81 Kg Total catch: 81.87 CATCH/HOUR: 158.46

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	74.61	106	47.08	7830
Merluccius paradoxus, male	25.35	46	16.00	7831
Genypterus capensis	23.81	17	15.03	7832
Coelorinchus fasciatus	8.88	126	5.60	
Etmopterus sp.	4.30	139	2.71	
Todarodes sagittatus	3.37	4	2.13	
Yarella blackfordi *	3.33	151	2.10	
Symbolophorus boops	2.92	345	1.84	
Cruriraja parcomaculata	2.85	2	1.80	
Helicolenus dactylopterus	2.46	6	1.55	
PENAEIDAE	2.32	290	1.46	
Nezumia micronychodon	0.62	21	0.39	
Shrimps, small, non comm.	0.60		0.38	
Stereomastis sculpta	0.52	345	0.33	
Coelorinchus braueri	0.50	29	0.32	
Holohalaelurus regani	0.37	2	0.23	
Plesionika martia	0.33	68	0.21	
Deepwater fish mixture	0.31		0.20	
Myxine capensis	0.23	2	0.15	
Gadella imberbis	0.23	12	0.15	
MYCTOPHIDAE	0.19	97	0.12	
Selachophidium guentheri	0.12	2	0.08	
Rossia enigmatica	0.10	15	0.06	
Glyphus marsupialis	0.08	19	0.05	
Hymenocephalus italicus	0.04	8	0.03	
Paracallionymus costatus	0.02	2	0.01	
Total	158.46		100.01	

PROJECT STATION:2271

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2821
start stop duration Long E 1427
TIME :08:10:42 08:42:48 32 (min) Purpose code: 3
LOG : 627.18 628.64 1.46 Area code : 1
FDEPTH: 435 441 GearCond.code:
BDEPTH: 435 441 Validity code: 1
Towing dir: 9° Wire out:1250 m Speed: 28 kn*10

Sorted: 187 Kg Total catch: 1717.21 CATCH/HOUR: 3219.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus	2928.81	7883	90.96	
Genypterus capensis	141.00	84	4.38	7834
Merluccius capensis, female	40.11	28	1.25	7833
Coelorinchus fasciatus	31.54	469	0.98	
Nezumia sp.	29.33	913	0.91	
Todarodes sagittatus	27.11	56	0.84	
Beryx splendens	14.94	56	0.46	
Yarrella blackfordi	3.04	249	0.09	
Solenocera africana	1.39	249	0.04	
Centroscyllium fabricii	1.11	83	0.03	
Tripterophycis gilchristi	0.56	56	0.02	
Trachyrincus scabrus	0.28	28	0.01	
Epigonus denticulatus	0.28	28	0.01	
Lampanyctodes hectoris	0.28	111	0.01	
Total	3219.78		99.99	

PROJECT STATION:2272

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2809
start stop duration Long E 1433
TIME :10:59:39 11:30:11 31 (min) Purpose code: 3
LOG : 640.56 642.07 1.46 Area code : 1
FDEPTH: 415 419 GearCond.code:
BDEPTH: 415 419 Validity code: 1
Towing dir: 35° Wire out:1220 m Speed: 31 kn*10

Sorted: 156 Kg Total catch: 973.14 CATCH/HOUR: 1883.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	1032.66	2234	54.83	7837
Merluccius paradoxus, male	421.08	1605	22.36	7836
Coelorinchus fasciatus	123.89	1605	6.58	
Merluccius capensis, female	114.58	43	6.08	7838
Genypterus capensis	54.19	37	2.88	7835
Todarodes sagittatus	35.94	58	1.91	
Nezumia leonis	20.90	658	1.11	
Raja leopardus	16.90	14	0.90	
Holohalaelurus regani	12.60	29	0.67	
Helicolenus dactylopterus	10.61	14	0.56	
S H R I M P S	10.03		0.53	
Symbolophorus boops	6.74	801	0.36	
Lampanyctodes hectoris	6.31	5758	0.34	
Epigonus denticulatus	5.30	658	0.28	
Todaropsis eblanae	4.16	1175	0.22	
Malacocephalus laevis	3.15	14	0.17	
Yarrella blackfordi	2.86	215	0.15	
Solenocera africana	1.30	257	0.07	
Bathynectes piperitus	0.29	14	0.02	
Total	1883.49		100.02	

PROJECT STATION:2273

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2747
start stop duration Long E 1432
TIME :14:31:01 15:01:31 31 (min) Purpose code: 3
LOG : 664.24 665.94 1.68 Area code : 1
FDEPTH: 578 566 GearCond.code:
BDEPTH: 578 566 Validity code: 1
Towing dir: 340° Wire out:1650 m Speed: 33 kn*10

Sorted: 73 Kg Total catch: 73.42 CATCH/HOUR: 142.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	61.94	48	43.59	7839
Trachyrincus scabrus	32.32	362	22.74	
Todarodes sagittatus	12.29	31	8.65	
Yarrella blackfordi	11.77	1308	8.28	
Nezumia micronychodon	7.74	234	5.45	
Merluccius paradoxus, male	2.54	2	1.79	7840
S H R I M P S	2.11	263	1.48	
Raja confundens	1.94	2	1.37	
Deepwater fish mixture	1.70		1.20	
Hydrolagus sp.	1.61	2	1.13	
MYCTOPHIDAE	1.45	223	1.02	
SQUALIDAE	0.91	27	0.64	
Notacanthus sexspinis	0.79	4	0.56	
Malacocephalus laevis	0.75	6	0.53	
STOMIIDAE	0.64	23	0.45	
Selachophidium guentheri	0.60	6	0.42	
Helicolenus dactylopterus	0.37	2	0.26	
NOTOSUDIDAE	0.33	12	0.23	
Cryptopsaras couesii	0.12	2	0.08	
S H R I M P S	0.08	23	0.06	
Heterocarpus grimaldii	0.04	10	0.03	
GERYONIDAE	0.04	2	0.03	
Hoplostethus cadenati	0.04	2	0.03	
Argyropelecus affinis	0.00	2		
Total	142.12		100.02	

PROJECT STATION:2274

DATE:23/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2743
start stop duration Long E 1440
TIME :16:58:12 17:29:14 31 (min) Purpose code: 3
LOG : 676.88 678.56 1.65 Area code : 1
FDEPTH: 397 394 GearCond.code:
BDEPTH: 397 394 Validity code: 1
Towing dir: 340° Wire out:1200 m Speed: 32 kn*10

Sorted: 233 Kg Total catch: 2887.25 CATCH/HOUR: 5588.23

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	2926.45	8563	52.37	7842
Merluccius paradoxus, male	2026.84	6335	36.27	7841
Coelorinchus fasciatus	192.93	2818	3.45	
Merluccius capensis, female	152.13	106	2.72	7843
Todarodes sagittatus	85.08	54	1.52	
Merluccius capensis, female	54.19	54	0.97	
Genypterus capensis	51.77	39	0.93	7846
Merluccius paradoxus, female	50.13	33	0.90	7845
Helicolenus dactylopterus	40.10	163	0.72	
Merluccius capensis, male	4.47	4	0.08	7844
Beryx splendens	3.04	21	0.05	7847
Epigonus denticulatus	0.54	54	0.01	
Yarrella blackfordi	0.54	54	0.01	
Total	5588.21		100.00	

PROJECT STATION:2275
DATE:24/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2739
start stop duration Long E 1504
TIME :04:36:38 05:06:51 30 (min) Purpose code: 3
LOG : 723.44 725.04 1.59 Area code : 1
FDEPTH: 169 170 GearCond.code:
BDEPTH: 169 170 Validity code: 1
Towing dir: 360° Wire out: 510 m Speed: 32 kn*10

Sorted: 73 Kg Total catch: 122.65 CATCH/HOUR: 245.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	63.52	442	25.89	7849
Merluccius capensis, male	61.78	550	25.19	7848
Chelidonichthys capensis	52.50	182	21.40	
Merluccius paradoxus, juvenile	9.34	470	3.81	7850
Callorhinchus capensis	9.10	8	3.71	
Deepwater fish mixture	8.76		3.57	
Sepia australis	8.08	462	3.29	
Thyrsites atun	7.90	6	3.22	7851
Raja straeleni	5.30	2	2.16	
Etrumeus whiteheadi	5.04	56	2.05	
Beryx splendens	4.54	2	1.85	
Austroglossus microlepis	2.70	10	1.10	7853
Sufflogobius bibarbatus	2.70	386	1.10	
Trachurus capensis	1.48	8	0.60	
Genypterus capensis	1.00	16	0.41	7852
Todarodes sagittatus	0.50	18	0.20	
Lepidopus caudatus	0.42	10	0.17	
Coelorinchus fasciatus	0.32	8	0.13	
Zeus capensis	0.24	4	0.10	
LOLIGINIDAE	0.08	50	0.03	
Total	245.30		99.98	

PROJECT STATION:2276
DATE:24/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2733
start stop duration Long E 1513
TIME :06:42:04 07:11:30 29 (min) Purpose code: 3
LOG : 736.16 737.84 1.65 Area code : 1
FDEPTH: 129 130 GearCond.code:
BDEPTH: 129 130 Validity code: 1
Towing dir: 350° Wire out: 400 m Speed: 33 kn*10

Sorted: 126 Kg Total catch: 155.31 CATCH/HOUR: 321.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	105.52	223	32.84	7855
Raja straeleni	103.45	2	32.19	
Merluccius capensis, male	58.03	650	18.06	7854
CARCHARHINIDAE	22.86	2	7.11	
Chelidonichthys capensis	9.48	25	2.95	
Thyrsites atun	9.31	2	2.90	
Genypterus capensis	4.24	12	1.32	7856
Sepia australis	2.96	153	0.92	
Austroglossus microlepis	1.82	8	0.57	7857
Etrumeus whiteheadi	1.61	23	0.50	7858
Sufflogobius bibarbatus	1.16	112	0.36	
Trachurus capensis	0.74	4	0.23	
LOLIGINIDAE	0.10	10	0.03	
Helicolenus dactylopterus	0.04	4	0.01	
Total	321.32		99.99	

PROJECT STATION:2277
DATE:24/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2619
start stop duration Long E 1426
TIME :15:00:31 15:30:28 30 (min) Purpose code: 3
LOG : 821.58 823.18 1.57 Area code : 1
FDEPTH: 280 231 GearCond.code:
BDEPTH: 280 231 Validity code: 1
Towing dir: 350° Wire out: 950 m Speed: 32 kn*10

Sorted: 153 Kg Total catch: 3684.28 CATCH/HOUR: 7368.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	3895.00	16400	52.86	7862
Merluccius capensis, male	3329.20	24852	45.18	7861
Merluccius capensis, female	103.60	86	1.41	7860
Merluccius capensis, male	14.60	8	0.20	7859
Lampanyctodes hectoris	9.84	5248	0.13	
Raja pullopunctata	5.60	2	0.08	
Genypterus capensis	5.40	4	0.07	7863
Lophius vomerinus	2.04	2	0.03	7864
Coelorinchus fasciatus	1.64	82	0.02	
Sufflogobius bibarbatus	1.64	328	0.02	
Total	7368.56		100.00	

PROJECT STATION:2278
DATE:24/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2620
start stop duration Long E 1413
TIME :17:47:18 18:15:36 28 (min) Purpose code: 3
LOG : 837.02 838.39 1.36 Area code : 1
FDEPTH: 321 318 GearCond.code:
BDEPTH: 321 318 Validity code: 1
Towing dir: 350° Wire out:1000 m Speed: 28 kn*10

Sorted: 95 Kg Total catch: 367.82 CATCH/HOUR: 788.19

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	322.71	746	40.94	7868
Merluccius capensis, male	159.43	514	20.23	7867
Coelorinchus fasciatus	73.03	1157	9.27	
Merluccius capensis, female	66.21	32	8.40	7866
Merluccius paradoxus, female	47.70	231	6.05	7869
Todarodes sagittatus	41.14	180	5.22	
Genypterus capensis	18.64	9	2.36	7870
Helicolenus dactylopterus	16.84	90	2.14	
Nezumia micronychodon	15.56	309	1.97	
Deepwater fish mixture	12.21		1.55	
Squalus megalops	5.40	13	0.69	
Merluccius capensis, male	3.64	2	0.46	7865
Galeus polli	2.19	26	0.28	
Maurolicus muelleri	2.19	2186	0.28	
Epigonus pandionis	0.51	39	0.06	
Squilla acuelata calmani	0.39	13	0.05	
MYCTOPHIDAE	0.26	309	0.03	
Sufflogobius bibarbatus	0.13	13	0.02	
Total	788.18		100.00	

PROJECT STATION:2279
DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2618
start stop duration Long E 1405
TIME :04:41:16 05:12:10 31 (min) Purpose code: 3
LOG : 872.17 873.51 1.32 Area code : 1
FDEPTH: 344 343 GearCond.code:
BDEPTH: 344 343 Validity code: 1
Towing dir: 330° Wire out:1050 m Speed: 26 kn*10

Sorted: 162 Kg Total catch: 554.56 CATCH/HOUR: 1073.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	478.74	1005	44.60	7872
Merluccius paradoxus, female	162.46	526	15.14	7874
Merluccius capensis, male	153.83	395	14.33	7871
Coelorinchus fasciatus	79.37	675	7.39	
Helicolenus dactylopterus	73.63	519	6.86	
Merluccius capensis, female	58.55	35	5.45	7876
Todarodes sagittatus	11.92	41	1.11	
Merluccius paradoxus, male	11.11	41	1.04	7873
Genypterus capensis	10.94	6	1.02	7877
Shrimps, small, non comm.	7.24		0.67	
Merluccius capensis, male	7.16	4	0.67	7875
Nezumia micronychodon	6.66	132	0.62	
MYCTOPHIDAE	3.21	1835	0.30	
Galeus polli	2.81	25	0.26	
Lophius vomerinus	2.23	4	0.21	7878
Synaphobranchus kaupii	1.49	8	0.14	
Maurolicus muelleri	1.32	914	0.12	
Selachophidium guentheri	0.33	8	0.03	
Bathynectes piperitus	0.17	8	0.02	
Epigonus pandionis	0.17	8	0.02	
Total	1073.34		100.00	

PROJECT STATION:2280
DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2619
start stop duration Long E 1356
TIME :07:00:12 07:31:53 32 (min) Purpose code: 3
LOG : 884.16 885.78 1.60 Area code : 1
FDEPTH: 378 376 GearCond.code:
BDEPTH: 378 376 Validity code: 1
Towing dir: 340° Wire out:1100 m Speed: 31 kn*10

Sorted: 126 Kg Total catch: 1699.35 CATCH/HOUR: 3186.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	2600.51	8299	81.62	7881
Merluccius paradoxus, male	407.06	1659	12.78	7880
Helicolenus dactylopterus	32.87	219	1.03	
Genypterus capensis	31.88	13	1.00	7882
Coelorinchus fasciatus	28.50	281	0.89	
Merluccius capensis, female	18.43	32	0.58	7879
Lophius vomerinus	17.25	2	0.54	7883
Todarodes sagittatus	15.98	32	0.50	
Deepwater fish mixture	14.10		0.44	
Nezumia micronychodon	9.71	188	0.30	
MYCTOPHIDAE	7.52	3758	0.24	
Solenocera africana	0.62	188	0.02	
LOLIGINIDAE	0.62	188	0.02	
Yarrella blackfordi	0.62	62	0.02	
Selachophidium guentheri	0.62	32	0.02	
Total	3186.29		100.00	

PROJECT STATION:2281
DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2617
start stop duration Long E 1342
TIME :09:37:57 10:07:48 30 (min) Purpose code: 3
LOG : 901.71 903.12 1.38 Area code : 1
FDEPTH: 440 440 GearCond.code:
BDEPTH: 440 440 Validity code: 1
Towing dir: 10° Wire out:1250 m Speed: 31 kn*10

Sorted: 122 Kg Total catch: 560.95 CATCH/HOUR: 1121.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	667.86	1948	59.53	7886
Coelorinchus fasciatus	190.00	2594	16.94	
Merluccius paradoxus, male	117.80	342	10.50	7884
Helicolenus dactylopterus	39.42	190	3.51	
Nezumia leonis	38.96	1388	3.47	
Lampanyctodes hectoris	17.20	11656	1.53	
Selachophidium guentheri	13.12	248	1.17	
Genypterus capensis	9.20	6	0.82	7885
Raja leopardus	5.80	10	0.52	
Notacanthus sexspinis	5.04	114	0.45	
Shrimps, small, non comm.	3.90		0.35	
Etmopterus lucifer	3.24	20	0.29	
Epigonus denticulatus	2.28	190	0.20	
Yarrella blackfordi	2.00	332	0.18	
Tripterophycis gilchristi	1.52	66	0.14	
Solenocera africana	1.24	684	0.11	
Ebinania costaecanarie	1.24	58	0.11	
Symbolophorus boops	1.04	200	0.09	
Myxine capensis	0.66	10	0.06	
Bathynectes piperitus	0.20	10	0.02	
POLYCHAELIDAE	0.10	48	0.01	
Todaropsis eblanae	0.08	10	0.01	
Total	1121.90		100.01	

PROJECT STATION:2282

DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2558
start stop duration Long E 1345
TIME :13:07:37 13:37:27 30 (min) Purpose code: 3
LOG : 922.49 923.99 1.45 Area code : 1
FDEPTH: 424 430 GearCond.code:
BDEPTH: 424 430 Validity code: 1
Towing dir: 350° Wire out:1200 m Speed: 32 kn*10

Sorted: 128 Kg Total catch: 419.13 CATCH/HOUR: 838.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	523.46	1188	62.45	7889
Raja caudaspinosa	64.36	34	7.68	
Coelorinchus fasciatus	61.88	684	7.38	
Merluccius paradoxus, male	61.46	156	7.33	7890
Merluccius paradoxus, female	55.40	14	6.61	7887
Nezumia leonis	32.18	694	3.84	
Genypterus capensis	11.80	6	1.41	7888
Shrimps, small, non comm.	11.30		1.35	
Helicolenus dactylopterus	7.50	34	0.89	
Lampanyctodes hectoris	1.98	966	0.24	
Notacanthus sexspinis	1.82	42	0.22	
Hoplostethus cadenati	1.48	66	0.18	
Thyrsites atun	1.34	2	0.16	
Selachophidium guentheri	0.66	24	0.08	
Yarrella blackfordi	0.66	34	0.08	
MYCTOPHIDAE	0.50	50	0.06	
Ebinania costaecanarie	0.24	8	0.03	
Maurolicus muelleri	0.24	206	0.03	
Total	838.26		100.02	

PROJECT STATION:2283

DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2558
start stop duration Long E 1341
TIME :15:04:24 15:34:41 30 (min) Purpose code: 3
LOG : 930.71 932.21 1.48 Area code : 1
FDEPTH: 494 493 GearCond.code:
BDEPTH: 494 493 Validity code: 1
Towing dir: 5° Wire out:1400 m Speed: 31 kn*10

Sorted: 117 Kg Total catch: 231.29 CATCH/HOUR: 462.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	138.88	244	30.02	7892
Nezumia micronychodon	112.56	1340	24.33	
Selachophidium guentheri	38.74	642	8.37	
Coelorinchus fasciatus	35.74	386	7.73	
Hoplostethus cadenati	29.96	1092	6.48	
Raja confundens	19.70	14	4.26	
Notacanthus sexspinis	18.58	300	4.02	
Merluccius paradoxus, male	16.90	30	3.65	7891
Lophius vomerinus	12.90	4	2.79	7893
Shrimps, small, non comm.	10.74		2.32	
Trachyrincus scabrus	4.58	64	0.99	
Ebinania costaecanarie	4.46	64	0.96	
Galeus polli	4.06	18	0.88	
Helicolenus dactylopterus	3.00	18	0.65	
Maurolicus muelleri	2.62	2332	0.57	
Deepwater fish mixture	2.14		0.46	
Yarrella blackfordi	1.80	60	0.39	
MYCTOPHIDAE	1.50	1074	0.32	
MYCTOPHIDAE	1.02	120	0.22	
Neoscopelus macrolepidotus	0.64	38	0.14	
Squalus megalops	0.52	4	0.11	
Symbolophorus boops	0.30	48	0.06	
Stereomastis sp.	0.30		0.06	
Epigonus denticulatus	0.30	4	0.06	
Tripterophycis gilchristi	0.26	12	0.06	
Coelorinchus braueri	0.26	22	0.06	
Xenodermichthys copei	0.12	4	0.03	
Argyropelecus affinis	0.02	4		
Total	462.60		99.99	

PROJECT STATION:2284

DATE:25/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2601
start stop duration Long E 1339
TIME :17:30:26 17:49:14 19 (min) Purpose code: 3
LOG : 940.76 941.73 0.96 Area code : 1
FDEPTH: 535 534 GearCond.code: 8
BDEPTH: 535 534 Validity code: 9
Towing dir: 360° Wire out:1430 m Speed: 30 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:2285

DATE:26/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2601
start stop duration Long E 1354
TIME :04:48:41 04:56:01 7 (min) Purpose code: 3
LOG : 979.73 980.14 0.40 Area code : 1
FDEPTH: 357 358 GearCond.code: 9
BDEPTH: 357 358 Validity code: 4
Towing dir: 345° Wire out:1000 m Speed: 30 kn*10

Sorted: Kg Total catch: 36.05 CATCH/HOUR: 309.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Deepwater fish mixture	222.86		72.12	
Coelorinchus fasciatus	22.20	257	7.18	
Lophius vomerinus	17.91	9	5.80	7895
Helicolenus dactylopterus	16.03	86	5.19	
Merluccius capensis, female	8.14	17	2.63	
Trachurus capensis	6.86	26	2.22	
Lophius vomerinus	5.83	9	1.89	7894
Galeus polli	3.17	26	1.03	
Merluccius capensis, male	3.00	17	0.97	
Nezumia micronychodon	2.40	86	0.78	
Austroglossus microlepis	0.60	9	0.19	
Total	309.00		100.00	

PROJECT STATION:2286

DATE:26/ 1/98 GEAR TYPE: BT No: POSITION:Lat S 2559
start stop duration Long E 1403
TIME :06:51:10 07:19:31 28 (min) Purpose code: 3
LOG : 992.06 993.56 1.48 Area code : 1
FDEPTH: 298 302 GearCond.code:
BDEPTH: 298 302 Validity code: 1
Towing dir: 345° Wire out: 900 m Speed: 30 kn*10

Sorted: Kg Total catch: 86.05 CATCH/HOUR: 184.39

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	69.86	137	37.89	7897
Coelorinchus fasciatus	40.07	426	21.73	
Merluccius capensis, male	34.71	99	18.82	7896
Austroglossus microlepis	12.11	15	6.57	7900
Shrimps, small, non comm.	9.94		5.39	
Lophius vomerinus	4.93	9	2.67	7898
Galeus polli	4.05	62	2.20	
Squilla acuelata calmani	1.78	84	0.97	
MYCTOPHIDAE	1.50	1129	0.81	
Todarodes sagittatus	1.46	4	0.79	
Sufflogobius bibarbatus	1.31	139	0.71	
Genypterus capensis	1.29	2	0.70	7899
Squalus megalops	0.77	2	0.42	
Maurolicus muelleri	0.28	300	0.15	
Bathynectes piperitus	0.13	9	0.07	
Lepidopus caudatus	0.11	2	0.06	
Nezumia micronychodon	0.11	11	0.06	
Total	184.41		100.01	

PROJECT STATION:2287

DATE:26/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2559
start stop duration Long E 1413
TIME :09:22:10 09:51:03 29 (min) Purpose code: 3
LOG :1005.92 1007.58 1.64 Area code : 1
FDEPTH: 256 255 GearCond.code:
BDEPTH: 256 255 Validity code: 1
Towing dir: 350° Wire out: 800 m Speed: 30 kn*10

Sorted: 50 Kg Total catch: 439.05 CATCH/HOUR: 908.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	502.20	4517	55.29	7901
Merluccius capensis, male	397.53	4498	43.76	7902
Lampanyctodes hectoris	4.22	2259	0.46	
Coelorinchus fasciatus	1.66	19	0.18	
Sufflogobius bibarbatus	1.28	93	0.14	
Todarodes sagittatus	0.74	19	0.08	
Lepidopus caudatus	0.56	19	0.06	
Merluccius capensis, juveniles	0.19	19	0.02	
Total	908.38		99.99	

PROJECT STATION:2288

DATE:26/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2558
start stop duration Long E 1419
TIME :11:33:35 12:02:22 29 (min) Purpose code: 3
LOG :1017.56 1019.17 1.58 Area code : 1
FDEPTH: 216 233 GearCond.code:
BDEPTH: 216 233 Validity code: 1
Towing dir: 360° Wire out: 650 m Speed: 31 kn*10

Sorted: 93 Kg Total catch: 570.17 CATCH/HOUR: 1179.66

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	544.55	5909	46.16	7903
Merluccius capensis, male	446.07	5156	37.81	7904
Merluccius capensis, female	143.07	242	12.13	7905
Sufflogobius bibarbatus	26.65	2723	2.26	
Merluccius capensis, male	12.21	19	1.04	7906
Lampanyctodes hectoris	6.95	4577	0.59	
Austroglossus microlepis	0.17	2	0.01	7907
Total	1179.67		100.00	

PROJECT STATION:2289

DATE:26/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2558
start stop duration Long E 1426
TIME :13:44:57 14:14:02 29 (min) Purpose code: 3
LOG :1029.35 1030.77 1.39 Area code : 1
FDEPTH: 195 194 GearCond.code:
BDEPTH: 195 194 Validity code: 1
Towing dir: 360° Wire out: 620 m Speed: 31 kn*10

Sorted: 80 Kg Total catch: 1243.38 CATCH/HOUR: 2572.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1834.97	9141	71.33	7909
Merluccius capensis, male	724.55	5090	28.17	7908
Sufflogobius bibarbatus	10.70	1781	0.42	
Todarodes sagittatus	1.08	2	0.04	
Todaropsis eblanae	0.97	33	0.04	
Austroglossus microlepis	0.25	2	0.01	
Total	2572.52		100.01	

PROJECT STATION:2290

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2527
start stop duration Long E 1336
TIME :06:06:14 06:36:29 30 (min) Purpose code: 3
LOG :1154.82 1156.28 1.43 Area code : 1
FDEPTH: 511 515 GearCond.code:
BDEPTH: 511 515 Validity code: 1
Towing dir: 5° Wire out:1450 m Speed: 29 kn*10

Sorted: 246 Kg Total catch: 1339.60 CATCH/HOUR: 2679.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
J E L L Y F I S H	1845.00		68.86	
Nezumia micronychodon	281.20	10816	10.50	
Merluccius paradoxus, female	235.20	262	8.78	7910
Hoplostethus cadenati	135.92	6472	5.07	
Selachophidium guentheri	55.36	590	2.07	
Trachyrincus scabrus	54.12	124	2.02	
Raja confundens	17.60	14	0.66	
Merluccius paradoxus, male	16.00	20	0.60	7911
Todarodes sagittatus	12.80	28	0.48	
Lophius vomerinus	7.00	2	0.26	7912
Raja spinacidermis	6.00	2	0.22	
Yarrella blackfordi	3.70	196	0.14	
Notacanthus sexspinis	2.96	124	0.11	
Schedophilus huttoni	2.44	2	0.09	
Lithodes ferox	1.36	4	0.05	
Epigonus denticulatus	1.24	24	0.05	
Caristius groenlandicus	0.82	24	0.03	
BATHYLAGIDAE	0.50	24	0.02	
Oreosoma atlanticum	0.50	24	0.02	
MYCTOPHIDAE	0.24	24	0.01	
Total	2679.96		100.04	

PROJECT STATION:2291

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2530
start stop duration Long E 1340
TIME :09:01:28 09:32:16 31 (min) Purpose code: 3
LOG :1166.17 1167.75 1.57 Area code : 1
FDEPTH: 416 415 GearCond.code:
BDEPTH: 416 415 Validity code: 1
Towing dir: 360° Wire out:1200 m Speed: 31 kn*10

Sorted: 92 Kg Total catch: 183.08 CATCH/HOUR: 354.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	84.77	259	23.92	7914
Nezumia leonis	72.10	3099	20.35	
Raja confundens	50.32	48	14.20	
Bathynectes piperitus	33.87	1893	9.56	
Genypterus capensis	25.55	14	7.21	7917
Coelorinchus fasciatus	23.23	310	6.56	
Hoplostethus cadenati	13.74	1055	3.88	
Lophius vomerinus	11.13	2	3.14	7915
MYCTOPHIDAE	8.52	1132	2.40	
Helicolenus dactylopterus	7.16	39	2.02	
Merluccius paradoxus, male	5.71	14	1.61	7916
Todarodes sagittatus	4.32	12	1.22	
Selachophidium guentheri	4.16	271	1.17	
Ebinania costaecanarie	4.06	39	1.15	
Merluccius capensis, female	1.74	2	0.49	7913
Trachyrincus scabrus	1.65	48	0.47	
Solenocera africana	0.87	281	0.25	
Notacanthus sexspinis	0.77	29	0.22	
S H R I M P S	0.29	174	0.08	
Yarrella blackfordi	0.19	10	0.05	
Galeus polli	0.10	10	0.03	
Symbolophorus boops	0.10	10	0.03	
Total	354.35		100.01	

PROJECT STATION:2292

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2528
start stop duration Long E 1344
TIME :11:00:10 11:31:30 31 (min) Purpose code: 3
LOG :1174.54 1176.12 1.56 Area code : 1
FDEPTH: 346 349 GearCond.code:
BDEPTH: 346 349 Validity code: 1
Towing dir: 350° Wire out:1000 m Speed: 31 kn*10

Sorted: 89 Kg Total catch: 143.90 CATCH/HOUR: 278.52

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	58.99	424	21.18	
Merluccius paradoxus, female	51.68	174	18.56	7918
Coelorinchus fasciatus	34.03	523	12.22	
Nezumia leonis	30.08	739	10.80	
Genypterus capensis	30.00	19	10.77	7920
Raja confundens	18.17	17	6.52	
Merluccius capensis, female	17.94	23	6.44	7922
Lophius vomerinus	17.03	8	6.11	7919
Todarodes sagittatus	3.19	6	1.15	
Hoplostethus cadenati	3.19	186	1.15	
Galeus polli	2.61	93	0.94	
Bathynectes piperitus	2.44	128	0.88	
Merluccius capensis, male	1.76	6	0.63	7921
Etmopterus pusillus	1.63	6	0.59	
Squilla acuelata calmani	1.45	87	0.52	
Epigonus denticulatus	1.28	75	0.46	
Symbolophorus boops	1.05	163	0.38	
Lampanyctodes hectoris	0.87	505	0.31	
Solenocera africana	0.41	110	0.15	
Selachophidium guentheri	0.41	6	0.15	
Shrimps, small, non comm.	0.29	244	0.10	
Maurolicus muelleri	0.02	41	0.01	
Total	278.52		100.02	

PROJECT STATION:2293

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2523
start stop duration Long E 1349
TIME :13:14:18 13:44:56 31 (min) Purpose code: 3
LOG :1185.66 1187.33 1.65 Area code : 1
FDEPTH: 291 289 GearCond.code:
BDEPTH: 291 289 Validity code: 1
Towing dir: 350° Wire out: 900 m Speed: 30 kn*10

Sorted: 125 Kg Total catch: 125.06 CATCH/HOUR: 242.05

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	101.13	134	41.78	7926
Coelorinchus fasciatus	34.65	945	14.32	
Merluccius capensis, male	20.32	43	8.39	7925
Lophius vomerinus	20.23	10	8.36	7924
Helicolenus dactylopterus	19.41	145	8.02	
Sufflogobius bibarbatus	11.30	2357	4.67	
Lepidopus caudatus	7.68	23	3.17	
Galeus polli	7.35	93	3.04	
Miscellaneous fishes	6.45		2.66	
Raja wallacei	3.39	2	1.40	
Todarodes sagittatus	2.34	4	0.97	
Genypterus capensis	1.80	2	0.74	7927
S H R I M P S	1.61		0.67	
Squilla acuelata calmani	1.20	62	0.50	
Nezumia leonis	0.93	45	0.38	
Trachurus capensis	0.85	4	0.35	7923
Etrumeus whiteheadi	0.66	12	0.27	
Chlorophthalmus atlanticus	0.46	29	0.19	
Epigonus denticulatus	0.21	15	0.09	
Bathynectes piperitus	0.08	2	0.03	
Total	242.05		100.00	

PROJECT STATION:2294

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2520
start stop duration Long E 1342
TIME :15:24:05 15:55:31 31 (min) Purpose code: 3
LOG :1195.56 1197.26 1.69 Area code : 1
FDEPTH: 345 343 GearCond.code:
BDEPTH: 345 343 Validity code: 1
Towing dir: 360° Wire out:1000 m Speed: 33 kn*10

Sorted: 176 Kg Total catch: 175.92 CATCH/HOUR: 340.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Genypterus capensis	77.81	14	22.85	7933
Helicolenus dactylopterus	74.52	403	21.89	
Merluccius paradoxus, female	41.81	114	12.28	7929
Coelorinchus fasciatus	39.48	395	11.60	
Nezumia micronychodon	28.65	623	8.41	
Merluccius capensis, female	24.19	27	7.10	7931
Lophius vomerinus	14.52	10	4.26	7932
Galeus polli	9.97	103	2.93	
Raja confundens	9.87	8	2.90	
Merluccius capensis, male	7.35	19	2.16	7930
Epigonus denticulatus	2.92	182	0.86	
Squalus megalops	2.30	6	0.68	
Squilla acuelata calmani	1.59	95	0.47	
Shrimps, small, non comm.	1.35		0.40	
MYCTOPHIDAE	1.03	1028	0.30	
Selachophidium guentheri	0.89	66	0.26	
S H R I M P S	0.79	215	0.23	
Merluccius paradoxus, male	0.74	2	0.22	7928
Notacanthus sexspinis	0.31	14	0.09	
Symbolophorus boops	0.19	27	0.06	
MYCTOPHIDAE	0.08	14	0.02	
Bathynectes piperitus	0.06	2	0.02	
Yarrella blackfordi	0.04	6	0.01	
Triplophos sp.	0.02	4	0.01	
Ebinania costaecanarie	0.02	4	0.01	
Total	340.50		100.02	

PROJECT STATION:2295

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2514
start stop duration Long E 1337
TIME :17:29:58 18:01:42 32 (min) Purpose code: 3
LOG :1205.17 1206.69 1.49 Area code : 1
FDEPTH: 488 486 GearCond.code:
BDEPTH: 488 486 Validity code: 1
Towing dir: 360° Wire out:1400 m Speed: 28 kn*10

Sorted: 116 Kg Total catch: 254.54 CATCH/HOUR: 477.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	127.88	150	26.79	7935
Raja confundens	86.72	47	18.17	
Nezumia micronychodon	78.28	932	16.40	
Trachyrincus scabrus	70.31	253	14.73	
Selachophidium guentheri	30.28	403	6.34	
Hoplostethus cadenati	18.00	525	3.77	
Todarodes sagittatus	16.78	47	3.52	
Yarrella blackfordi	16.50	1138	3.46	
Genypterus capensis	13.50	2	2.83	7936
Merluccius paradoxus, male	11.70	4	2.45	7934
Ebinania costaecanarie	1.69	9	0.35	
MYCTOPHIDAE	1.50	778	0.31	
Maurolicus muelleri	1.31	876	0.27	
MYCTOPHIDAE	1.22	206	0.26	
Solenocera africana	0.56	131	0.12	
Caristius groenlandicus	0.28	9	0.06	
Symbolophorus boops	0.28	38	0.06	
Notacanthus sexspinis	0.28	19	0.06	
Aristeus varidens	0.09	19	0.02	
Epigonus denticulatus	0.09	9	0.02	
Total	477.25		99.99	

PROJECT STATION:2296

DATE:27/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2515
start stop duration Long E 1400
TIME :21:01:52 21:30:37 29 (min) Purpose code: 3
LOG :1230.45 1231.93 1.46 Area code : 1
FDEPTH: 204 205 GearCond.code:
BDEPTH: 204 205 Validity code: 1
Towing dir: 31° Wire out: 600 m Speed: 30 kn*10

Sorted: 90 Kg Total catch: 509.40 CATCH/HOUR: 1053.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	516.41	1308	49.00	7937
Merluccius capensis, male	288.00	910	27.33	7938
Coelorinchus fasciatus	115.03	1908	10.91	
Todarodes sagittatus	52.63	99	4.99	
Merluccius capensis, female	44.28	19	4.20	7936
Sufflogobius bibarbatus	9.27	1241	0.88	
Thyrsites atun	8.28	2	0.79	7935
Lophius vomerinus	7.28	12	0.69	7941
Trachyrincus scabrus	5.96	17	0.57	
Chelidonichthys capensis	3.31	17	0.31	
Lampanyctodes hectoris	1.82	1407	0.17	
Austroglossus microlepis	1.70	6	0.16	7940
Genypterus capensis	0.17	17	0.02	7939
Total	1054.14		100.02	

PROJECT STATION:2297

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2458
start stop duration Long E 1413
TIME :04:41:43 04:51:44 10 (min) Purpose code: 3
LOG :1265.26 1265.72 0.45 Area code : 1
FDEPTH: 164 164 GearCond.code:
BDEPTH: 164 164 Validity code: 1
Towing dir: 350° Wire out: 500 m Speed: 27 kn*10

Sorted: 98 Kg Total catch: 454.69 CATCH/HOUR: 2728.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1407.60	11118	51.60	7943
Merluccius capensis, male	1305.60	11274	47.86	7942
Merluccius capensis, juveniles	6.12	666	0.22	7944
Raja confundens	5.52	6	0.20	
Austroglossus microlepis	3.30	6	0.12	7945
J E L L Y F I S H	0.00	120612		
Total	2728.14		100.00	

PROJECT STATION:2298

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2458
start stop duration Long E 1352
TIME :07:24:03 07:54:56 31 (min) Purpose code: 3
LOG :1286.67 1288.09 1.39 Area code : 1
FDEPTH: 207 212 GearCond.code:
BDEPTH: 207 212 Validity code: 1
Towing dir: 360° Wire out: m Speed: 27 kn*10

Sorted: 125 Kg Total catch: 589.99 CATCH/HOUR: 1141.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	604.03	2561	52.90	7950
Merluccius capensis, female	216.97	199	19.00	7947
Merluccius capensis, male	201.35	244	17.63	7946
Sufflogobius bibarbatus	53.42	5342	4.68	
Etrumeus whiteheadi	43.66	780	3.82	
MYCTOPHIDAE	13.88	9010	1.22	
Todarodes sagittatus	4.97	37	0.44	
Bathynectes piperitus	2.03	74	0.18	
Austroglossus microlepis	0.74	2	0.06	7949
Lophius vomerinus	0.60	2	0.05	7948
Squilla acuelata calmani	0.27	37	0.02	
Total	1141.92		100.00	

PROJECT STATION:2299

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2459
start stop duration Long E 1346
TIME :09:18:42 09:51:05 32 (min) Purpose code: 3
LOG :1295.69 1297.29 1.59 Area code : 1
FDEPTH: 288 301 GearCond.code:
BDEPTH: 288 301 Validity code: 1
Towing dir: 360° Wire out: 900 m Speed: 31 kn*10

Sorted: 70 Kg Total catch: 114.28 CATCH/HOUR: 214.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	41.72	1403	19.47	
Helicolenus dactylopterus	38.21	326	17.83	
Merluccius capensis, female	29.72	36	13.87	7954
Merluccius paradoxus, female	18.64	62	8.70	7953
Nezumia leonis	17.12	446	7.99	
Coelorinchus fasciatus	12.34	353	5.76	
Merluccius capensis, male	11.44	34	5.34	7951
Notacanthus sexspinis	7.78	259	3.63	
Lophius vomerinus	6.49	9	3.03	7955
Shrimps, small, non comm.	5.44		2.54	
Squilla acuelata calmani	4.59	193	2.14	
Sufflogobius bibarbatus	4.56	722	2.13	
Schedophilus huttoni	4.44	2	2.07	
Genypterus capensis	4.05	6	1.89	7952
Epigonus denticulatus	1.97	113	0.92	
MYCTOPHIDAE	1.31	159	0.61	
Lampanyctodes hectoris	1.31	563	0.61	
Merluccius paradoxus, male	0.88	4	0.41	7950
Maurolicus muelleri	0.66	563	0.31	
Galeus polli	0.38	15	0.18	
Todarodes sagittatus	0.38	15	0.18	
Lepidopus caudatus	0.34	6	0.16	
Chlorophthalmus atlanticus	0.15	15	0.07	
Bathynectes piperitus	0.15	6	0.07	
Symbolophorus boops	0.09	9	0.04	
Tripterophycis gilchristi	0.06	6	0.03	
Todaropsis eblanae	0.06	6	0.03	
Solenocera africana	0.02	24	0.01	
Total	214.30		100.02	

PROJECT STATION:2300

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2458
start stop duration Long E 1338
TIME :11:34:00 12:04:54 31 (min) Purpose code: 3
LOG :1306.19 1307.74 1.51 Area code : 1
FDEPTH: 460 463 GearCond.code:
BDEPTH: 460 463 Validity code: 1
Towing dir: 360° Wire out:1250 m Speed: 30 kn*10

Sorted: 138 Kg Total catch: 254.93 CATCH/HOUR: 493.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	186.97	207	37.89	7957
Hoplostethus cadenati	117.58	4434	23.83	
Nezumia leonis	70.16	2175	14.22	
Raja wallacei	52.26	29	10.59	
Todarodes sagittatus	18.29	31	3.71	
Selachophidium guentheri	15.87	474	3.22	
Notacanthus sexspinis	8.03	174	1.63	
Yarrella blackfordi	4.45	29	0.90	
Helicolenus dactylopterus	3.39	48	0.69	
MYCTOPHIDAE	3.29	494	0.67	
Merluccius paradoxus, male	2.81	4	0.57	7958
Odontostomias micropogon	2.52	17	0.51	
Lamprogrammus exutus	1.55	10	0.31	
Lampanyctodes hectoris	1.26	1065	0.26	
Lophius vomerinus	1.12	2	0.23	7956
Ebinania costaecanarie	0.97	29	0.20	
Galeus polli	0.87	10	0.18	
Solenocera africana	0.77	397	0.16	
Coelorinchus fasciatus	0.39	10	0.08	
S H R I M P S	0.29	135	0.06	
Maurolicus muelleri	0.29	348	0.06	
Bathyuroconger vicinus	0.19	10	0.04	
Symbolophorus boops	0.10	29	0.02	
Total	493.42		100.03	

PROJECT STATION:2301

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2456
start stop duration Long E 1336
TIME :13:29:44 13:59:55 30 (min) Purpose code: 3
LOG :1312.33 1313.76 1.38 Area code : 1
FDEPTH: 496 488 GearCond.code:
BDEPTH: 496 488 Validity code: 1
Towing dir: 360° Wire out:1250 m Speed: 32 kn*10

Sorted: 121 Kg Total catch: 349.53 CATCH/HOUR: 699.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	157.60	142	22.54	7960
Todarodes sagittatus	152.74	224	21.85	
Nezumia leonis	109.90	3498	15.72	
Hoplostethus cadenati	98.00	3458	14.02	
Trachyrincus scabrus	39.20	182	5.61	
Selachophidium guentheri	26.32	462	3.77	
Ebinania costaecanarie	24.78	28	3.54	
Yarrella blackfordi	21.14	1400	3.02	
Centrophorus sp.	17.64	14	2.52	
STOMIIDAE	10.50	798	1.50	
Notacanthus sexspinis	9.38	224	1.34	
OPISTHOTEUTHIDAE	8.68	56	1.24	
Raja wallacei	8.12	70	1.16	
Brama brama	6.36	6	0.91	
MYCTOPHIDAE	3.22	266	0.46	
Schedophilus huttoni	2.12	2	0.30	
Epigonus denticulatus	1.96	24	0.28	
S H R I M P S	0.98		0.14	
Solenocera africana	0.28	42	0.04	
POLYCHAELIDAE	0.14	14	0.02	
Total	699.06		99.98	

PROJECT STATION:2302

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2456
start stop duration Long E 1333
TIME :15:55:34 16:03:47 8 (min) Purpose code: 3
LOG :1321.98 1322.42 0.40 Area code : 1
FDEPTH: 595 590 GearCond.code:
BDEPTH: 595 590 Validity code: 2
Towing dir: 360° Wire out:1650 m Speed: 30 kn*10

Sorted: 41 Kg Total catch: 41.00 CATCH/HOUR: 307.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	307.50	248	100.00	7961
Total	307.50		100.00	

PROJECT STATION:2303

DATE:28/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2437
start stop duration Long E 1337
TIME :18:50:28 19:12:49 22 (min) Purpose code: 3
LOG :1340.95 1342.00 1.04 Area code : 2
FDEPTH: 395 392 GearCond.code:
BDEPTH: 395 392 Validity code: 1
Towing dir: 360° Wire out:1200 m Speed: 30 kn*10

Sorted: 137 Kg Total catch: 294.07 CATCH/HOUR: 802.01

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	445.50	971	55.55	7965
Helicolenus dactylopterus	171.22	914	21.35	
Merluccius paradoxus, male	30.68	74	3.83	7964
Selachophidium guentheri	17.92	330	2.23	
Coelorinchus fasciatus	17.92	221	2.23	
Nezumia micronychodon	17.86	319	2.23	
Brama brama	17.18	19	2.14	
Raja confundens	15.00	8	1.87	
Merluccius capensis, female	11.73	5	1.46	7963
Merluccius capensis, male	9.38	5	1.17	7962
Symbolophorus boops	9.05		1.13	
MYCTOPHIDAE	8.51		1.06	

Lophius vomerinus	7.47	3	0.93	7966
Genypterus capensis	5.32	5	0.66	7967
Notacanthus sexspinis	4.91	153	0.61	
Bassanago albescens	4.55	14	0.57	
Trachurus capensis	3.93	14	0.49	7968
Todarodes sagittatus	2.02	5	0.25	

PROJECT STATION:2304

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2438
start stop duration Long E 1342
TIME :04:45:39 05:16:41 31 (min) Purpose code: 3
LOG :1364.37 1365.81 1.41 Area code : 2
FDEPTH: 375 374 GearCond.code:
BDEPTH: 375 374 Validity code: 1
Towing dir: 350° Wire out:1100 m Speed: 28 kn*10

Sorted: 112 Kg Total catch: 348.53 CATCH/HOUR: 674.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	428.65	886	63.54	7970
Helicolenus dactylopterus	52.51	279	7.78	
Coelorinchus fasciatus	39.04	499	5.79	
Merluccius paradoxus, male	31.94	56	4.73	7969
Merluccius capensis, male	25.55	35	3.79	7971
Merluccius capensis, female	24.83	35	3.68	7972
Genypterus capensis	18.77	10	2.78	7975
Schedophilus huttoni	16.65	8	2.47	
Nezumia micronychodon	8.52	29	1.26	
Raja confundens	6.00	4	0.89	
Todarodes sagittatus	5.61	8	0.83	
Notacanthus sexspinis	4.55	70	0.67	
Lophius vomerinus	2.98	6	0.44	7973
Hoplostethus cadenati	1.49	35	0.22	
Selachophidium guentheri	1.41	35	0.21	
Trachurus capensis	1.41	8	0.21	7974
Lithodes ferox	1.12	2	0.17	
MYCTOPHIDAE	0.93	99	0.14	
Ebinania costaecanarie	0.85	8	0.13	
Symbolophorus boops	0.70	14	0.10	
Squilla acuelata calmani	0.50	29	0.07	
Epigonus denticulatus	0.21	8	0.03	
MYCTOPHIDAE	0.14	29	0.02	
S H R I M P S	0.14	50	0.02	
Bathynectes piperitus	0.08	8	0.01	
Total	674.58		99.98	

PROJECT STATION:2305

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2435
start stop duration Long E 1352
TIME :07:29:34 07:49:54 20 (min) Purpose code: 3
LOG :1378.77 1379.80 1.01 Area code : 2
FDEPTH: 254 260 GearCond.code:
BDEPTH: 254 260 Validity code: 1
Towing dir: 360° Wire out: 750 m Speed: 30 kn*10

Sorted: 135 Kg Total catch: 846.57 CATCH/HOUR: 2539.71

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1574.70	3285	62.00	7977
Merluccius capensis, male	565.50	2415	22.27	7976
Sufflogobius bibarbatus	207.72	13401	8.18	
Coelorinchus fasciatus	81.99	870	3.23	
Lophius vomerinus	37.20	45	1.46	7978
Schedophilus huttoni	23.70	3	0.93	
Todarodes sagittatus	20.88	66	0.82	
Austroglossus microlepis	12.63	45	0.50	
MYCTOPHIDAE	8.91	2973	0.35	
Galeus polli	2.61	45	0.10	
Maurolicus muelleri	1.08	1089	0.04	
Nezumia micronychodon	1.08	21	0.04	
Squilla acuelata calmani	0.87	45	0.03	
Lepidopus caudatus	0.84	3	0.03	
Total	2539.71		99.98	

PROJECT STATION:2306

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2420
start stop duration Long E 1402
TIME :10:16:33 10:33:37 17 (min) Purpose code: 3
LOG :1397.43 1398.14 0.69 Area code : 2
FDEPTH: 176 187 GearCond.code:
BDEPTH: 176 187 Validity code: 1
Towing dir: 360° Wire out: 560 m Speed: 30 kn*10

Sorted: 80 Kg Total catch: 1258.61 CATCH/HOUR: 4442.15

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	2314.55	18416	52.10	7979
Merluccius capensis, male	2101.62	21127	47.31	7981
Merluccius capensis, juveniles	13.27	1271	0.30	7980
Sufflogobius bibarbatus	12.71	1327	0.29	
Total	4442.15		100.00	

PROJECT STATION:2307

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2421
start stop duration Long E 1355
TIME :12:10:13 12:40:57 31 (min) Purpose code: 3
LOG :1406.37 1407.93 1.56 Area code : 2
FDEPTH: 261 265 GearCond.code:
BDEPTH: 261 265 Validity code: 1
Towing dir: 360° Wire out: 800 m Speed: 31 kn*10

Sorted: 97 Kg Total catch: 680.23 CATCH/HOUR: 1316.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	611.50	1965	46.45	7983
Merluccius capensis, male	297.04	1575	22.56	7984
Sufflogobius bibarbatus	256.99		19.52	
Schedophilus huttoni	39.56	15	3.00	
Coelorinchus fasciatus	38.34	652	2.91	
Squalus megalops	35.77	60	2.72	
Lophius vomerinus	12.87	17	0.98	7982
Todarodes sagittatus	10.55	25	0.80	
Lepidopus caudatus	9.70	31	0.74	
Lampanyctodes hectoris	3.33	1591	0.25	
Shrimps, small, non comm.	0.31	637	0.02	
Squilla acuelata calmani	0.31	31	0.02	
S H R I M P S	0.82		0.10	
Galeus polli	0.55	5	0.07	
Trachyrincus scabrus	0.44	14	0.05	
Ebinania costaecanarie	0.05	5	0.01	
Total	802.01		99.99	
Bathynectes piperitus	0.15	15	0.01	
Galeus polli	0.15	15	0.01	
Total	1316.57		99.99	

PROJECT STATION:2308

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2419
start stop duration Long E 1342
TIME :13:21:14 15:00:28 31 (min) Purpose code: 3
LOG :1421.41 1423.03 1.61 Area code : 2
FDEPTH: 318 313 GearCond.code:
BDEPTH: 318 313 Validity code: 1
Towing dir: 360° Wire out: 920 m Speed: 32 kn*10

Sorted: 132 Kg Total catch: 1076.13 CATCH/HOUR: 2082.83

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1022.81	1755	49.11	7985
Merluccius capensis, male	496.32	1152	23.83	7984
Coelorinchus fasciatus	212.30	2832	10.19	
Helicolenus dactylopterus	190.61	3315	9.15	
MYCTOPHIDAE	57.60		2.77	
Merluccius paradoxus, female	34.53	75	1.66	7986
Schedophilus huttoni	21.48	10	1.03	
Genypterus capensis	10.26	8	0.49	7988
Shrimps, small, non comm.	9.97		0.48	
Todarodes sagittatus	8.90	14	0.43	
Lophius vomerinus	6.91	8	0.33	7987
Nezumia micronychodon	3.97	132	0.19	
Galeus polli	3.58	114	0.17	
Epigonus denticulatus	2.26	132	0.11	
S H R I M P S	0.75	207	0.04	
Squilla acuelata calmani	0.39	19	0.02	
Sufflogobius bibarbatus	0.19	19	0.01	
Total	2082.83		100.01	

PROJECT STATION:2309

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2420
start stop duration Long E 1331
TIME :17:22:39 17:53:21 31 (min) Purpose code: 3
LOG :1434.70 1436.17 1.46 Area code : 2
FDEPTH: 332 329 GearCond.code:
BDEPTH: 332 329 Validity code: 1
Towing dir: 350° Wire out:1000 m Speed: 29 kn*10

Sorted: 151 Kg Total catch: 611.32 CATCH/HOUR: 1183.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	436.70	1645	36.91	7990
Helicolenus dactylopterus	387.06	2497	32.71	
Trachurus capensis	115.84	54	9.79	7991
Coelorinchus fasciatus	74.38	1219	6.29	
Genypterus capensis	41.81	21	3.53	7992
Merluccius capensis, female	37.24	27	3.15	7994
Merluccius paradoxus, male	30.35	83	2.57	7989
Epigonus denticulatus	19.86	1103	1.68	
Schedophilus huttoni	13.35	6	1.13	
Nezumia micronychodon	9.83	321	0.83	
Merluccius capensis, male	7.94	10	0.67	7993
Todarodes sagittatus	2.40	184	0.20	
S H R I M P S	1.84	451	0.16	
Selachophidium guentheri	1.66	56	0.14	
Symbolophorus boops	1.20	230	0.10	
MYCTOPHIDAE	1.10	432	0.09	
Squilla acuelata calmani	0.37	27	0.03	
Galeus polli	0.27	19	0.02	
Total	1183.20		100.00	

PROJECT STATION:2310

DATE:29/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2417
start stop duration Long E 1325
TIME :19:31:43 20:03:01 31 (min) Purpose code: 3
LOG :1444.32 1445.82 1.49 Area code : 2
FDEPTH: 352 344 GearCond.code:
BDEPTH: 352 344 Validity code: 1
Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: Kg Total catch: 194.03 CATCH/HOUR: 375.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	131.81	406	35.10	7996
Coelorinchus fasciatus	91.55	1512	24.38	
Helicolenus dactylopterus	38.42	182	10.23	
Genypterus capensis	30.58	12	8.14	7998
Squalus megalops	21.68	25	5.77	
Merluccius capensis, female	13.16	4	3.50	7999
Raja doutrei	10.35	2	2.76	
Trachurus capensis	8.52	21	2.27	7997
Merluccius paradoxus, male	7.45	23	1.98	7995
Epigonus denticulatus	4.05	118	1.08	
Guentherus altivela	3.15	2	0.84	
Symbolophorus boops	3.06	383	0.81	
Todarodes sagittatus	2.69	6	0.72	
MYCTOPHIDAE	2.26		0.60	
Lithodes ferox	2.15	2	0.57	
Nezumia micronychodon	1.88	58	0.50	
Notacanthus sexspinis	1.20	14	0.32	
Bathynectes piperitus	0.46	14	0.12	
S H R I M P S	0.43	14	0.11	
Shrimps, small, non comm.	0.43		0.11	
Maurolicus muelleri	0.21	213	0.06	
Stomias boa boa	0.02	2	0.01	
Ebinania costaecanarie	0.02	4	0.01	
Squilla acuelata calmani	0.02	2	0.01	
Total	375.55		100.00	

PROJECT STATION:2311

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2400

start stop duration Long E 1311

TIME :04:53:32 05:19:17 26 (min) Purpose code: 3

LOG :1473.42 1474.69 1.24 Area code : 2

FDEPTH: 558 552 GearCond.code:

BDEPTH: 558 552 Validity code:

Towing dir: 350° Wire out:1550 m Speed: 30 kn*10

Sorted: 143 Kg Total catch: 268.50 CATCH/HOUR: 619.62

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	359.08	355	57.95	8001
Hoplostethus cadenati	69.92	2151	11.28	
Nezumia micronychodon	35.63	792	5.75	
Coelorinchus fasciatus	23.08		3.72	
Squalus megalops	20.54	28	3.31	
Trachyrincus scabrus	19.20	166	3.10	
Todarodes sagittatus	15.28	28	2.47	
Lophius vomerinus	13.50	5	2.18	8003
Selachophidium guentheri	12.42	171	2.00	
Merluccius paradoxus, male	9.74	14	1.57	8000
Raja doutrei	7.85	2	1.27	
Schedophilus huttoni	7.73	7	1.25	
Raja confundens	6.58	2	1.06	
Ebinania costaecanarie	3.90	2	0.63	
Trachurus capensis	3.55	14	0.57	8002
Yarrella blackfordi	2.58	125	0.42	
Melanostomias sp.	1.80	136	0.29	
MYCTOPHIDAE	1.20	222	0.19	
Lamprogrammus exutus	1.15	18	0.19	
Deepwater fish mixture	0.78		0.13	
Notacanthus sexspinis	0.74	18	0.12	
Nansenia problematica	0.65	5	0.10	
GONOSTOMATIDAE	0.65	23	0.10	
Alepocephalus sp.	0.55	14	0.09	
Bassanago albescens	0.51	14	0.08	
Symbolophorus boops	0.42	129	0.07	
R A Y S	0.23	5	0.04	
Bathylagus glacilis	0.18	5	0.03	
L O B S T E R S	0.14	7	0.02	
Solenocera africana	0.05	134	0.01	
Total	619.63		99.99	

PROJECT STATION:2312

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2358

start stop duration Long E 1312

TIME :07:05:48 07:37:46 32 (min) Purpose code: 3

LOG :1480.20 1481.73 1.51 Area code : 2

FDEPTH: 462 471 GearCond.code:

BDEPTH: 462 471 Validity code:

Towing dir: 350° Wire out:1300 m Speed: 30 kn*10

Sorted: 115 Kg Total catch: 211.81 CATCH/HOUR: 397.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	173.25	218	43.62	8004
Trachyrincus scabrus	73.88	632	18.60	
Nezumia micronychodon	44.25	731	11.14	
Helicolenus dactylopterus	35.51	195	8.94	
Schedophilus huttoni	23.63	17	5.95	
Selachophidium guentheri	13.43	218	3.38	
Hoplostethus cadenati	7.80	446	1.96	
Merluccius paradoxus, male	4.88	8	1.23	8005
Raja confundens	4.59	6	1.16	
Yarrella blackfordi	3.60	289	0.91	
Ebinania costaecanarie	2.44	4	0.61	
Deepwater fish mixture	2.21		0.56	
Raja sp.	1.78	2	0.45	
Todarodes sagittatus	1.58	8	0.40	
Squalus megalops	1.16	4	0.29	
GONOSTOMATIDAE	0.86	79	0.22	
Notacanthus sexspinis	0.60	8	0.15	
S H R I M P S	0.56	191	0.14	
Solenocera africana	0.34	94	0.09	
Epigonus denticulatus	0.23	8	0.06	
MYCTOPHIDAE	0.19	26	0.05	
Myxine capensis	0.19	4	0.05	
MYCTOPHIDAE	0.15	94	0.04	
Symbolophorus boops	0.04	4	0.01	
GONOSTOMATIDAE	0.02	8	0.01	
Total	397.17		100.02	

PROJECT STATION:2313

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2359

start stop duration Long E 1316

TIME :09:41:22 10:12:26 31 (min) Purpose code: 3

LOG :1490.93 1492.41 1.48 Area code : 2

FDEPTH: 366 369 GearCond.code:

BDEPTH: 366 369 Validity code:

Towing dir: 350° Wire out:1000 m Speed: 31 kn*10

Sorted: 111 Kg Total catch: 247.65 CATCH/HOUR: 479.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	244.37	786	50.98	8009
Helicolenus dactylopterus	76.97	546	16.06	
Coelorinchus fasciatus	52.30	1037	10.91	
Raja wallacei	20.55	17	4.29	
Schedophilus huttoni	16.22	10	3.38	
Genypterus capensis	13.26	6	2.77	8006
Merluccius paradoxus, male	12.06	33	2.52	8008
Epigonus denticulatus	8.17	273	1.70	
Todarodes sagittatus	7.82	14	1.63	
Lophius vomerinus	5.46	2	1.14	8007
Nezumia leonis	4.34	151	0.91	
Trachyrincus scabrus	3.60	27	0.75	
Centroscyllium fabricii	2.96	10	0.62	
Solenocera africana	2.79	854	0.58	
Deania profundorum	2.11	4	0.44	
Selachophidium guentheri	2.11	64	0.44	
MYCTOPHIDAE	1.92	225	0.40	
Notacanthus sexspinis	1.41	17	0.29	
Symbolophorus boops	0.33	50	0.07	
Malacocephalus laevis	0.27	4	0.06	
Yarrella blackfordi	0.14	4	0.03	
Total	479.16		99.97	

PROJECT STATION:2314

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2358

start stop duration Long E 1322

TIME :11:59:07 12:29:57 31 (min) Purpose code: 3

LOG :1501.94 1503.62 1.69 Area code : 2

FDEPTH: 301 303 GearCond.code:

BDEPTH: 301 303 Validity code:

Towing dir: 355° Wire out: 900 m Speed: 32 kn*10

Sorted: 122 Kg Total catch: 226.07 CATCH/HOUR: 437.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	90.19	95	20.61	8013
Merluccius capensis, male	77.92	801	17.81	8015
Helicolenus dactylopterus	68.52	2559	15.66	
Merluccius capensis, female	53.30	569	12.18	8014
Trachurus capensis	35.90	116	8.20	8016
Coelorinchus fasciatus	28.57	523	6.53	
Todarodes sagittatus	16.65	31	3.81	
Chlorophthalmus atlanticus	16.14	801	3.69	
Hexanchus griseus	14.98	12	3.42	
Merluccius capensis, male	13.94	25	3.19	8010
Genypterus capensis	9.29	4	2.12	8012
Lophius vomerinus	5.38	6	1.23	8011
Schedophilus huttoni	3.41	2	0.78	
Epigonus denticulatus	1.63	70	0.37	
Galeus polli	0.93	12	0.21	
Symbolophorus boops	0.70	139	0.16	
Squilla acuelata calmani	0.12	12	0.03	
Total	437.57		100.00	

PROJECT STATION:2315

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2359

start stop duration Long E 1336

TIME :15:00:33 15:31:00 30 (min) Purpose code: 3

LOG :1519.78 1521.40 1.59 Area code : 2

FDEPTH: 271 267 GearCond.code:

BDEPTH: 271 267 Validity code:

Towing dir: 360° Wire out: 840 m Speed: 31 kn*10

Sorted: 151 Kg Total catch: 477.36 CATCH/HOUR: 954.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	281.60	2904	29.50	8020
Merluccius capensis, female	215.60	2156	22.58	8021
Merluccius capensis, female	168.40	216	17.64	8017
Helicolenus dactylopterus	73.70	3070	7.72	
Merluccius capensis, male	48.40	78	5.07	8016
Chlorophthalmus atlanticus	43.12	2330	4.52	
Coelorinchus fasciatus	41.14	858	4.31	
Sufflogobius bibarbatus	34.76	5794	3.64	
Galeus polli	8.14	220	0.85	
Symbolophorus boops	7.70	2024	0.81	
Lophius vomerinus	7.10	12	0.74	8019
Trachurus capensis	6.62	20	0.69	8018
Lepidopus caudatus	6.38	44	0.67	
Todarodes sagittatus	5.90	8	0.62	
Deepwater fish mixture	2.42		0.25	
MYCTOPHIDAE	2.42	1914	0.25	
Solenocera africana	0.88	220	0.09	
Maurolicus muelleri	0.44	154	0.05	
Total	954.72		100.00	

PROJECT STATION:2316

DATE:30/ 1/98 GEAR TYPE: BT No:2 POSITION:Lat S 2359

start stop duration Long E 1347

TIME :17:29:39 17:55:27 26 (min) Purpose code: 3

LOG :1533.65 1535.04 1.36 Area code : 2

FDEPTH: 246 240 GearCond.code:

BDEPTH: 246 240 Validity code:

Towing dir: 40° Wire out: 760 m Speed: 30 kn*10

Sorted: 131 Kg Total catch: 186.88 CATCH/HOUR: 431.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	158.08	415	36.66	8023
Sufflogobius bibarbatus	91.94	10816	21.32	
Merluccius capensis, male	82.15	328	19.05	8022
Coelorinchus fasciatus	40.02	616	9.28	
Lophius vomerinus	20.54	42	4.76	8024
Helicolenus dactylopterus	19.11	1232	4.43	
Brama brama	8.54	7	1.98	
Genypterus capensis	5.38	5	1.25	8025
Trachurus capensis	3.16	14	0.73	8026
Squilla acuelata calmani	1.38	55	0.32	
Solenocera africana	0.69	83	0.16	
Maurolicus muelleri	0.14	28	0.03	
MYCTOPHIDAE	0.14	83	0.03	
Total	431.27		100.00	

PROJECT STATION:2317

DATE: 3/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2338

start stop duration Long E 1302

TIME :07:37:28 08:07:28 30 (min) Purpose code: 3

LOG :1777.98 1779.31 1.33 Area code : 2

FDEPTH: 660 665 GearCond.code:

BDEPTH: 660 665 Validity code:

Towing dir: 346° Wire out:1750 m Speed: 26 kn*10

Sorted: 352 Kg Total catch: 406.92 CATCH/HOUR: 813.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Deania calcea	405.80	212	49.86	
Merluccius paradoxus, female	174.10	140	21.39	8027
Nezumia sp.	48.80	1656	6.00	
Todarodes sagittatus	36.90	62	4.53	
Selachophidium guentheri	23.20	392	2.85	
Hoplostethus cadenati	20.80	640	2.56	
Heterocarpus grimaldii	16.72	896	2.05	
SQUALIDAE	14.60	4	1.79	
Lophius vaillanti	13.12	2	1.61	8029
RAJIDAE	12.68	10	1.56	
Alepocephalus sp.	8.72	120	1.07	
Bassanago albescens	7.84	96	0.96	
Neocyttus rhomboidalis	7.84	24	0.96	
Lithodes ferox	7.20	14	0.88	
OPHIDIIDAE	3.76	144	0.46	
Allocyttus verrucosus	3.20	56	0.39	
Notacanthus sexspinis	2.64	32	0.32	
Lophius vomerinus	1.94	2	0.24	8028
Hoplostethus atlanticus	0.94	4	0.12	
Shrimps, small, non comm.	0.88	56	0.11	
Neolithodes asperrimus	0.72	8	0.09	
Dicrolene intronigra	0.72	8	0.09	
C E P H A L O P O D A	0.72	8	0.09	
Total	813.84		99.98	

PROJECT STATION:2318

DATE: 3/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2339

start stop duration Long E 1306

TIME :10:12:59 10:37:57 25 (min) Purpose code: 3

LOG :1789.05 1790.27 1.21 Area code : 2

FDEPTH: 531 530 GearCond.code:

BDEPTH: 531 530 Validity code:

Towing dir: 350° Wire out:1790 m Speed:300 kn*10

Sorted: 259 Kg Total catch: 836.17 CATCH/HOUR: 2006.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	787.20	38400	39.23	
Merluccius paradoxus, female	533.28	557	26.57	8030
Trachyrincus scabrus	223.20	1344	11.12	
Todarodes sagittatus	129.12	192	6.43	
Deania calcea	101.88	58	5.08	
Nezumia micronychodon	96.48	2810	4.81	
Selachophidium guentheri	43.68	624	2.18	
Ebinania costaecanarie	13.44	48	0.67	
Merluccius paradoxus, male	11.83	19	0.59	8031
Lophius vomerinus	11.16	5	0.56	8032
Raja confundens	10.56	48	0.53	
Nezumia sp.	7.68	48	0.38	
Helicolenus dactylopterus	7.68	48	0.38	
Deania profundorum	6.38	10	0.32	
Raja confundens	5.93	2	0.30	
Yarrella blackfordi	4.80	192	0.24	
Alepocephalus sp.	3.84	192	0.19	
Centrolophus niger	3.38	2	0.17	
Notacanthus sexspinis	2.88	96	0.14	
OCTOPODIDAE	2.40	48	0.12	
Total	2006.80		100.01	

PROJECT STATION:2319

DATE: 3/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2335

start stop duration Long E 1308

TIME :12:19:12 12:48:24 29 (min) Purpose code: 3

LOG :1796.01 1797.46 1.43 Area code : 2

FDEPTH: 436 438 GearCond.code:

BDEPTH: 436 438 Validity code:

Towing dir: 350° Wire out:1300 m Speed: 30 kn*10

Sorted: 101 Kg Total catch: 274.73 CATCH/HOUR: 568.41

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	147.00	7423	25.86	
Merluccius paradoxus, female	131.79	219	23.19	8034
Trachyrincus scabrus	119.92	1214	21.10	
Helicolenus dactylopterus	48.23	521	8.49	
Deania calcea	47.50	72	8.36	
Nezumia micronychodon	24.62	782	4.33	
Bassanago albescens	12.02	29	2.11	
Todarodes sagittatus	7.45	8	1.31	
Coelorinchus fasciatus	7.39	188	1.30	
Merluccius paradoxus, male	5.69	10	1.00	8033
Lophius vomerinus	4.16	4	0.73	8035
Notacanthus sexspinis	3.91	217	0.69	
Selachophidium guentheri	3.04	87	0.53	
Galeus polli	2.03	14	0.36	
Yarrella blackfordi	1.45	130	0.26	
Raja confundens	0.74	14	0.13	
Solenocera africana	0.72	14	0.13	
S H R I M P S	0.43	130	0.08	
Bathynectes piperitus	0.23	14	0.04	
Nemichthys scolopaceus	0.08	14	0.01	
Total	568.40		100.01	

PROJECT STATION:2320

DATE: 3/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2335

start stop duration Long E 1311

TIME :14:51:18 15:21:37 30 (min) Purpose code: 3

LOG :1807.59 1809.17 1.55 Area code : 2

FDEPTH: 397 399 GearCond.code:

BDEPTH: 397 399 Validity code:

Towing dir: 350° Wire out:1200 m Speed: 30 kn*10

Sorted: 243 Kg Total catch: 243.47 CATCH/HOUR: 486.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	213.50	438	43.85	8037
Helicolenus dactylopterus	153.00	1048	31.42	
Coelorinchus fasciatus	20.50	308	4.21	
Hoplostethus cadenati	20.10	1106	4.13	
Merluccius paradoxus, male	17.90	38	3.68	8036
Epigonus pandionis	12.80	534	2.63	
Raja clavata	11.70	10	2.40	
Deepwater fish mixture	5.94		1.22	
Selachophidium guentheri	5.20		1.07	
Nezumia sp.	4.52	256	0.93	
Todarodes sagittatus	3.70	10	0.76	
Lophius vomerinus	3.50	4	0.72	8038
Deania profundorum	3.38	6	0.69	
Aristeus varidens	3.14	776	0.64	
Trachurus capensis	1.96	8	0.40	8039
Bathynectes piperitus	1.94	92	0.40	
Galeus polli	1.20	12	0.25	
Yarrella blackfordi	1.10	140	0.23	
Lithodes ferox	0.86	2	0.18	
Ebinania costaecanarie	0.50	4	0.10	
Notacanthus sexspinis	0.34	14	0.07	
Chlorophthalmus atlanticus	0.08	4	0.02	
MYCTOPHIDAE	0.06	10	0.01	
NEMICHTHYIDAE	0.02	4		
Total	486.94		100.01	

PROJECT STATION:2321

DATE: 3/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2338

start stop duration Long E 1316

TIME :17:06:38 17:36:34 30 (min) Purpose code: 3

LOG :1819.33 1820.83 1.50 Area code : 2

FDEPTH: 325 328 GearCond.code:

BDEPTH: 325 328 Validity code:

Towing dir: 355° Wire out:1050 m Speed: 30 kn*10

Sorted: 158 Kg Total catch: 157.87 CATCH/HOUR: 315.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	145.10	382	45.96	8041
Helicolenus dactylopterus	53.30	658	16.88	
Merluccius capensis, female	16.60	14	5.26	8044
Trachurus capensis	16.00	72	5.07	8042
Coelorinchus fasciatus	13.70	294	4.34	
Deania profundorum	10.30	8	3.26	
Todarodes sagittatus	9.80	20	3.10	
Chlorophthalmus atlanticus	9.30	480	2.95	
Lophius vomerinus	7.70	14	2.44	8043
Genypterus capensis	7.70	2	2.44	8045
Merluccius paradoxus, male	7.60	20	2.41	8040
Raja leopardus	6.90	2	2.19	
Epigonus pandionis	2.98	174	0.94	
Deepwater fish mixture	2.38		0.75	
Galeus polli	2.02	14	0.64	
Raja confundens	1.54	4	0.49	
Aristeus varidens	1.18	338	0.37	
Nezumia sp.	0.78	56	0.25	
Squilla acuelata calmani	0.30	12	0.10	
Malacocephalus laevis	0.24	2	0.08	
Diaphus sp.	0.18	36	0.06	
Hoplostethus cadenati	0.08	4	0.03	
Bathynectes piperitus	0.06	4	0.02	
Total	315.74		100.03	

PROJECT STATION:2322

DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2338

start stop duration Long E 1320

TIME :05:12:34 05:42:25 30 (min) Purpose code: 3

LOG :1850.81 1852.36 1.54 Area code : 2

FDEPTH: 295 302 GearCond.code:

BDEPTH: 295 302 Validity code:

Towing dir: 350° Wire out: 920 m Speed: 30 kn*10

Sorted: 170 Kg Total catch: 170.24 CATCH/HOUR: 340.48

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	96.10	114	28.22	8051
Trachurus capensis	75.50	230	22.17	8053
Helicolenus dactylopterus	36.20	1104	10.63	
Merluccius capensis, male	34.50	58	10.13	8050
Coelorinchus fasciatus	31.50	636	9.25	
Chlorophthalmus atlanticus	19.60	1078	5.76	
Squilla acuelata calmani	15.50	534	4.55	
Lophius vomerinus	9.00	18	2.64	8047
Merluccius capensis, male	6.28	54	1.84	8048
Genypterus capensis	4.30	4	1.26	8052
Merluccius capensis, female	3.54	40	1.04	8049
Todarodes sagittatus	2.46	4	0.72	
Sufflogobius bibarbatus	2.06	572	0.61	
Merluccius paradoxus, female	1.26	4	0.37	8046
Etmopterus brachyurus	0.88	2	0.26	
Torpedo nobiliana	0.42	2	0.12	
Solenocera africana	0.38	92	0.11	
Bassanago albescens	0.32	4	0.09	
Galeus polli	0.30	4	0.09	
MYCTOPHIDAE	0.18	70	0.05	

Ebinania costaecanarie	0.10	2	0.03
Bathynectes piperitus	0.10	4	0.03
Total	340.48		99.97

PROJECT STATION:2323
DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2337
start stop duration Long E 1326
TIME :07:20:09 07:50:04 30 (min) Purpose code: 3
LOG :1861.49 1863.06 1.53 Area code : 2
FDEPTH: 259 262 GearCond.code:
BDEPTH: 259 262 Validity code:
Towing dir: 350° Wire out: 860 m Speed: 30 kn*10

Sorted: 76 Kg Total catch: 103.71 CATCH/HOUR: 207.42

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	51.60	84	24.88	8055
Coelorinchus fasciatus	40.40	1040	19.48	
Merluccius capensis, male	28.00	66	13.50	8054
Trachipterus jacksonensis	18.60	8	8.97	
Sufflogobius bibarbatus	16.24	4274	7.83	
Lophius vomerinus	14.60	28	7.04	8058
Merluccius capensis, male	13.50	108	6.51	8056
Chlorophthalmus punctatus	7.04	440	3.39	
Merluccius capensis, female	5.10	38	2.46	8057
Todarodes sagittatus	4.82	18	2.32	
Solenocera africana	3.44	592	1.66	
Helicolenus dactylopterus	1.84	408	0.89	
Galeus polli	1.20	32	0.58	
Squilla acuelata calmani	0.48	32	0.23	
Bathynectes piperitus	0.32	8	0.15	
MYCTOPHIDAE	0.24	176	0.12	
Total	207.42		100.01	

PROJECT STATION:2324
DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2337
start stop duration Long E 1332
TIME :09:31:29 10:01:11 30 (min) Purpose code: 3
LOG :1873.28 1874.87 1.58 Area code : 2
FDEPTH: 231 229 GearCond.code:
BDEPTH: 231 229 Validity code:
Towing dir: 350° Wire out: 750 m Speed: 30 kn*10

Sorted: 115 Kg Total catch: 515.94 CATCH/HOUR: 1031.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	518.42	422	50.24	8060
Merluccius capensis, male	424.12	594	41.10	8059
Todarodes sagittatus	28.70	56	2.78	
Sufflogobius bibarbatus	22.90	2444	2.22	
Trachurus capensis	13.52		1.31	
Squalus megalops	6.44	18	0.62	
Coelorinchus fasciatus	6.34	120	0.61	
Lophius vomerinus	5.12	12	0.50	8061
Galeus polli	2.48	82	0.24	
Austroglossus microlepis	1.74	2	0.17	
Coelorinchus coelorhinc. polli	0.82	36	0.08	
Todaropsis eblanae	0.64	18	0.06	
Bathynectes piperitus	0.36	10	0.03	
Solenocera africana	0.28	74	0.03	
Total	1031.88		99.99	

PROJECT STATION:2325
DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2338
start stop duration Long E 1344
TIME :12:13:35 12:43:12 30 (min) Purpose code: 3
LOG :1890.69 1892.31 1.59 Area code : 2
FDEPTH: 191 189 GearCond.code:
BDEPTH: 191 189 Validity code:
Towing dir: 350° Wire out: 620 m Speed: 30 kn*10

Sorted: 119 Kg Total catch: 2166.70 CATCH/HOUR: 4333.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	2117.00	10402	48.85	8064
Merluccius capensis, male	1954.58	15586	45.10	8063
Trachurus capensis	233.24	766	5.38	8065
Pterothrissus belloci	24.10	220	0.56	
Sufflogobius bibarbatus	3.66	256	0.08	
Lophius vomerinus	0.82	2	0.02	8066
Total	4333.40		99.99	

PROJECT STATION:2326
DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2337
start stop duration Long E 1355
TIME :14:41:40 15:11:05 29 (min) Purpose code: 3
LOG :1906.84 1908.52 1.65 Area code : 2
FDEPTH: 169 166 GearCond.code:
BDEPTH: 169 166 Validity code:
Towing dir: 350° Wire out: 560 m Speed: 30 kn*10

Sorted: 89 Kg Total catch: 385.66 CATCH/HOUR: 797.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	334.86	1990	41.97	8071
Merluccius capensis, female	242.52	1229	30.39	8069
Trachurus capensis	163.47	753	20.49	8070
Chelidonichthys capensis	23.38	35	2.93	
Brama brama	19.72	19	2.47	
Sufflogobius bibarbatus	5.92	534	0.74	
Merluccius capensis, juveniles	2.15	197	0.27	8067
Pterothrissus belloci	2.13	19	0.27	
Lophius vomerinus	1.88	8	0.24	8068
Lepidopus caudatus	1.88	8	0.24	
Total	797.91		100.01	

PROJECT STATION:2327
DATE: 4/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2338
start stop duration Long E 1407
TIME :17:05:01 17:35:29 30 (min) Purpose code: 3
LOG :1922.56 1924.05 1.48 Area code : 2
FDEPTH: 150 150 GearCond.code:
BDEPTH: 150 150 Validity code:
Towing dir: 350° Wire out: 500 m Speed: 30 kn*10

Sorted: 61 Kg Total catch: 5021.50 CATCH/HOUR: 10043.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	5677.20	48970	56.53	8073
Merluccius capensis, male	4365.80	42496	43.47	8072
Total	10043.00		100.00	

PROJECT STATION:2328
DATE: 4/ 2/98 GEAR TYPE: PT No:1 POSITION:Lat S 2338
start stop duration Long E 1416
TIME :21:12:06 21:33:28 21 (min) Purpose code: 3
LOG :1937.32 1938.59 1.28 Area code : 2
FDEPTH: 25 35 GearCond.code:
BDEPTH: 112 120 Validity code:
Towing dir: 284° Wire out: 105 m Speed: 32 kn*10

Sorted: 223 Kg Total catch: 526.10 CATCH/HOUR: 1503.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sufflogobius bibarbatus	962.86	80237	64.06	
Thyrsites atun	539.43	197	35.89	8074
Merluccius capensis, juveniles	0.86	23	0.06	8075
Total	1503.15		100.01	

PROJECT STATION:2329
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2320
start stop duration Long E 1404
TIME :04:38:00 04:43:00 5 (min) Purpose code: 3
LOG :1976.98 1977.30 0.32 Area code : 2
FDEPTH: 140 140 GearCond.code: 9
BDEPTH: 140 140 Validity code: 2
Towing dir: 340° Wire out: m Speed: 30 kn*10

Sorted: 1 Kg Total catch: 0.87 CATCH/HOUR: 10.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	5.28	36	50.57	8076
Merluccius capensis, female	3.72	48	35.63	8077
Sufflogobius bibarbatus	1.44	396	13.79	
Total	10.44		99.99	

PROJECT STATION:2330
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2320
start stop duration Long E 1348
TIME :06:49:19 07:18:59 30 (min) Purpose code: 3
LOG :1993.55 1995.16 1.57 Area code : 2
FDEPTH: 159 160 GearCond.code:
BDEPTH: 159 160 Validity code:
Towing dir: 270° Wire out: 550 m Speed: 32 kn*10

Sorted: 59 Kg Total catch: 798.35 CATCH/HOUR: 1596.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	595.00	8204	37.26	8081
Merluccius capensis, female	505.40	6692	31.65	8080
Merluccius capensis, female	252.00	868	15.78	8078
Sufflogobius bibarbatus	105.00	45528	6.58	
Merluccius capensis, male	88.20	420	5.52	8079
Trachurus capensis	14.00	84	0.88	8083
Chelidonichthys capensis	11.20	28	0.70	
Todarodes sagittatus	8.96	28	0.56	
Thyrsites atun	5.18	2	0.32	8084
Todaropsis eblanae	4.20	168	0.26	
Merluccius capensis, juveniles	3.92	280	0.25	8082
Austroglossus microlepis	3.64	28	0.23	8085
Total	1596.70		99.99	

PROJECT STATION:2331
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2318
start stop duration Long E 1337
TIME :08:49:49 09:19:43 30 (min) Purpose code: 3
LOG :2005.62 2007.21 1.58 Area code : 2
FDEPTH: 168 168 GearCond.code:
BDEPTH: 168 168 Validity code:
Towing dir: 350° Wire out: 580 m Speed: 32 kn*10

Sorted: 79 Kg Total catch: 743.51 CATCH/HOUR: 1487.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	679.56	554	45.70	8087
Merluccius capensis, male	674.74	712	45.38	8086
Sufflogobius bibarbatus	127.22	8480	8.56	
Hexanchus griseus	2.74	2	0.18	
Pterothrissus belloci	1.74	20	0.12	
Austroglossus microlepis	1.02	14	0.07	8088
Total	1487.02		100.01	

PROJECT STATION:2332
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2316
start stop duration Long E 1325
TIME :11:07:42 11:17:10 9 (min) Purpose code: 3
LOG :2019.40 2019.93 0.52 Area code : 2
FDEPTH: 284 287 GearCond.code: 9
BDEPTH: 284 287 Validity code: 1
Towing dir: 350° Wire out: 840 m Speed: 30 kn*10

Sorted: 157 Kg Total catch: 1330.99 CATCH/HOUR: 8873.27

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	8081.33	36353	91.07	8090
Merluccius capensis, female	325.33	987	3.67	8092
Merluccius capensis, male	231.80	713	2.61	8091

Chlorophthalmus atlanticus	139.33	7727	1.57	
Helicolenus dactylopterus	43.07	4560	0.49	
Trachipterus jacksonensis	18.33	7	0.21	
Brama brama	16.87	13	0.19	
Todarodes sagittatus	7.00	20	0.08	
Lophius vomerinus	6.13	13	0.07	8089
Hyperoglyphe moselii	4.07	7	0.05	

PROJECT STATION:2333
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2316
start stop duration Long E 1318
TIME :12:50:45 13:19:58 29 (min) Purpose code: 3
LOG :2028.15 2029.73 1.56 Area code : 2
FDEPTH: 352 360 GearCond.code:
BDEPTH: 352 360 Validity code:
Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: 246 Kg Total catch: 325.41 CATCH/HOUR: 673.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	453.10	726	67.30	8096
Torpedo nobiliana	69.31	2	10.29	
Galeus polli	42.21	573	6.27	
Merluccius capensis, female	27.79	17	4.13	8094
Chlorophthalmus atlanticus	20.69	207	3.07	
Helicolenus dactylopterus	12.52	103	1.86	
Merluccius paradoxus, male	9.31	23	1.38	8095
Schedophilus huttoni	8.32	4	1.24	
Merluccius capensis, male	5.75	6	0.85	8093
Coelorinchus fasciatus	4.20	74	0.62	
Nezumia micronychodon	3.87	124	0.57	
Lophius vomerinus	3.31	4	0.49	8098
Genypterus capensis	3.31	2	0.49	8097
Todarodes sagittatus	3.23	8	0.48	
Shrimps, small, non comm.	2.36		0.35	
Hoplostethus cadenati	2.03	85	0.30	
Epigonus telescopus	1.59	97	0.24	
Solenocera africana	0.29	91	0.04	
Notacanthus sexspinis	0.08	4	0.01	
Total	673.27		99.98	

PROJECT STATION:2334
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2317
start stop duration Long E 1310
TIME :15:07:08 15:36:08 29 (min) Purpose code: 3
LOG :2039.68 2041.19 1.50 Area code : 2
FDEPTH: 406 410 GearCond.code:
BDEPTH: 406 410 Validity code:
Towing dir: 350° Wire out:1220 m Speed: 30 kn*10

Sorted: 220 Kg Total catch: 360.93 CATCH/HOUR: 746.75

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	457.14	737	61.22	8100
Helicolenus dactylopterus	120.52	879	16.14	
Todarodes sagittatus	32.59	62	4.36	
Merluccius paradoxus, male	30.89	43	4.14	8099
Deania profundorum	22.97	17	3.08	
Coelorinchus fasciatus	15.72	244	2.11	
Lophius vomerinus	14.79	10	1.98	8101
Etmopterus pusillus	12.62	2	1.69	
Nezumia sp.	10.34	389	1.38	
Trachipterus trachypterus	9.52	2	1.27	
Schedophilus huttoni	5.28	2	0.71	
Galeus polli	4.24	68	0.57	
Selachophidium guentheri	3.79	56	0.51	
Yarrella blackfordi	3.48	372	0.47	
Hoplostethus cadenati	1.24	79	0.17	
MYCTOPHIDAE	0.52	17	0.07	
Epigonus denticulatus	0.48	10	0.06	
PANDALIDAE	0.41	130	0.05	
Trachyrincus scabrus	0.27	6	0.04	
Total	746.81		100.02	

PROJECT STATION:2335
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2315
start stop duration Long E 1303
TIME :17:17:05 17:47:25 30 (min) Purpose code: 3
LOG :2049.02 2050.41 1.39 Area code : 2
FDEPTH: 534 540 GearCond.code:
BDEPTH: 534 540 Validity code:
Towing dir: 360° Wire out:1400 m Speed: 30 kn*10

Sorted: 98 Kg Total catch: 210.27 CATCH/HOUR: 420.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	130.50	6942	31.03	
Trachyrincus scabrus	91.50	270	21.76	
Merluccius paradoxus, female	88.90	84	21.14	8103
Deania profundorum	39.50	16	9.39	
Nezumia sp.	18.10	780	4.30	
Helicolenus dactylopterus	13.50	80	3.21	
Yarrella blackfordi	10.10	500	2.40	
Merluccius paradoxus, male	7.00	4	1.66	8102
Octopus sp.	5.00	10	1.19	
Lophius vomerinus	4.64	2	1.10	8104
Selachophidium guentheri	4.00	70	0.95	
Todarodes sagittatus	3.50	10	0.83	
S H R I M P S	3.10	410	0.74	
OREOSOMATIDAE	1.10	2	0.26	
MYCTOPHIDAE	0.10	20	0.02	
Total	420.54		99.98	

Total	8873.26	100.01

PROJECT STATION:2336
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2315
start stop duration Long E 1300
TIME :19:33:38 20:03:36 30 (min) Purpose code: 3
LOG :2057.60 2059.00 1.38 Area code : 2
FDEPTH: 620 625 GearCond.code:
BDEPTH: 620 625 Validity code:
Towing dir: 350° Wire out:1600 m Speed: 30 kn*10

Sorted: 121 Kg Total catch: 199.61 CATCH/HOUR: 399.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	124.50	112	31.19	8105
Neocyttus rhomboidalis	59.86	92	14.99	
Nezumia sp.	58.80	2626	14.73	
Deania profundorum	33.40	16	8.37	
Yarrella blackfordi	17.44	610	4.37	
Ebinania costaecanarie	13.30	8	3.33	
UNIDENTIFIED FISH	10.36	126	2.60	
Todarodes sagittatus	9.96	18	2.49	
Trachyrincus scabrus	9.46	50	2.37	
Hoplostethus cadenati	9.04	260	2.26	
Lophius vomerinus	8.40	4	2.10	8106
Selachophidium guentheri	7.84	120	1.96	
CHIMAERIDAE	6.24	8	1.56	
Lithodes ferox	5.12	14	1.28	
Dicrolene intronigra	4.48	98	1.12	
Raja confundens	4.28	8	1.07	
Lamprogrammus exutus	3.92	22	0.98	
S H R I M P S	2.52	140	0.63	
Shrimps, small, non comm.	2.24	554	0.56	
Hoplostethus atlanticus	2.12	10	0.53	8107
Notacanthus sexspinis	1.76	8	0.44	
C E P H A L O P O D A	1.06	8	0.27	
Allocyttus verrucosus	0.84	14	0.21	
Diaphus sp.	0.64	92	0.16	
Myxine capensis	0.64	8	0.16	
Stomias boa boa	0.50	50	0.13	
MYCTOPHIDAE	0.36	42	0.09	
Lepidopus caudatus	0.14	8	0.04	
Total	399.22		99.99	

PROJECT STATION:2337
DATE: 5/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2301
start stop duration Long E 1255
TIME :22:16:45 22:45:23 29 (min) Purpose code: 3
LOG :2072.60 2073.97 1.34 Area code : 2
FDEPTH: 670 665 GearCond.code:
BDEPTH: 670 665 Validity code:
Towing dir: 360° Wire out:1750 m Speed: 30 kn*10

Sorted: 91 Kg Total catch: 131.37 CATCH/HOUR: 271.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	110.07	97	40.50	8108
Todarodes sagittatus	31.47	56	11.58	
Nezumia micronychodon	18.43	484	6.78	
Alepocephalus sp.	18.12	180	6.67	
Deania calcea	15.31	12	5.63	
Cruriraja parcomaculata	15.31	14	5.63	
Yarrella blackfordi	12.60	482	4.64	
Selachophidium guentheri	9.93	137	3.65	
Pseudocyttus maculatus	9.74	19	3.58	8109
Hoplostethus cadenati	8.69	261	3.20	
Heterocarpus grimaldii	3.17	335	1.17	
Ebinania costaecanarie	2.86	19	1.05	
Notacanthus sexspinis	2.36	25	0.87	
Coelorinchus matamua	2.30	6	0.85	
Schedophilus huttoni	1.90	2	0.70	
Bathylagus glacilis	1.49	56	0.55	
Lithodes ferox	1.32	2	0.49	
Lamprogrammus exutus	1.24	12	0.46	
Etmopterus lucifer	1.08	2	0.40	
Bathyuroconger vicinus	0.99	19	0.36	
NOTACANTHIDAE	0.87	6	0.32	
Dicrolene intronigra	0.87	25	0.32	
Allocyttus verrucosus	0.81	19	0.30	
POLYCHAELIDAE	0.43	50	0.16	
Nemichthys scolopaceus	0.19	6	0.07	
NEPHROPIDAE	0.12	6	0.04	
S H R I M P S	0.06	12	0.02	
Symbolophorus boops	0.06	6	0.02	
NEPHROPIDAE	0.00			
Total	271.79		100.01	

PROJECT STATION:2338
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2260
start stop duration Long E 1258
TIME :01:10:36 01:43:18 33 (min) Purpose code: 3
LOG :2082.70 2084.25 1.51 Area code : 2
FDEPTH: 562 553 GearCond.code:
BDEPTH: 562 553 Validity code:
Towing dir: 350° Wire out:1550 m Speed: 30 kn*10

Sorted: 97 Kg Total catch: 354.87 CATCH/HOUR: 645.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Hoplostethus cadenati	333.82	14205	51.74	
Merluccius paradoxus, female	109.27	96	16.94	8110
Todarodes sagittatus	71.35	131	11.06	
Trachyrincus scabrus	55.47	213	8.60	
Nezumia micronychodon	24.71	982	3.83	
Helicolenus dactylopterus	17.35	49	2.69	
Yarrella blackfordi	12.93	884	2.00	
Lamprogrammus exutus	5.56	33	0.86	

Deania calcea	4.02	2	0.62	
Lophius vomerinus	3.20	2	0.50	8111
Selachophidium guentheri	2.95	49	0.46	
Ebinania costaecanarie	2.45	33	0.38	
Bathyuroconger vicinus	0.82	16	0.13	
Raja doutrei	0.71	2	0.11	
Beryx splendens	0.49	2	0.08	8112
Raja confundens	0.13	2	0.02	

PROJECT STATION:2339
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2258
start stop duration Long E 1301
TIME :03:27:07 03:56:06 29 (min) Purpose code: 3
LOG :2091.31 2092.83 1.49 Area code : 2
FDEPTH: 442 435 GearCond.code:
BDEPTH: 442 435 Validity code:
Towing dir: 340° Wire out:1350 m Speed: 30 kn*10

Sorted: 112 Kg Total catch: 190.66 CATCH/HOUR: 394.47

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	169.66	186	43.01	8114
Trachyrincus scabrus	112.55	1316	28.53	
Helicolenus dactylopterus	53.88	372	13.66	
Nezumia sp.	23.17	745	5.87	
Bassanago albescens	8.03	8	2.04	
Todarodes sagittatus	7.12	25	1.80	
Merluccius paradoxus, male	6.52	4	1.65	8113
Hoplostethus cadenati	3.56	207	0.90	
Selachophidium guentheri	2.73	41	0.69	
Lophius vomerinus	2.21	2	0.56	8115
Epigonus denticulatus	1.57	33	0.40	
Stomias boa boa	1.24	66	0.31	
MYCTOPHIDAE	0.91	141	0.23	
Diaphus sp.	0.66	99	0.17	
Yarrella blackfordi	0.66	74	0.17	
Total	394.47		99.99	

PROJECT STATION:2340
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2256
start stop duration Long E 1310
TIME :05:49:00 06:19:00 30 (min) Purpose code: 3
LOG :2104.10 2105.70 1.60 Area code : 2
FDEPTH: 302 297 GearCond.code:
BDEPTH: 302 297 Validity code:
Towing dir: 350° Wire out: 999 m Speed: 3 kn*10

Sorted: 144 Kg Total catch: 1018.34 CATCH/HOUR: 2036.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	943.96	5308	46.35	8125
Helicolenus dactylopterus	282.76	14152	13.88	
Schedophilus huttoni	152.26	58	7.48	
Merluccius capensis, female	130.20	76	6.39	8116
Todarodes sagittatus	115.72	262	5.68	
Merluccius paradoxus, female	102.96	436	5.06	8123
Merluccius capensis, female	73.96	146	3.63	8121
SQUALIDAE	56.26	58	2.76	
Epigonus denticulatus	54.82	2262	2.69	
Merluccius paradoxus, male	31.90	58	1.57	8124
Chlorophthalmus atlanticus	26.68	1160	1.31	
Galeus polli	15.08	116	0.74	
Coelorinchus fasciatus	12.76	378	0.63	
Merluccius capensis, male	11.50	8	0.56	8117
Lophius vomerinus	7.54	2	0.37	8120
Merluccius paradoxus, female	5.80	6	0.28	8118
Nezumia sp.	5.52	58	0.27	
Merluccius capensis, male	3.48	30	0.17	8122
Genypterus capensis	2.46	2	0.12	8119
MYCTOPHIDAE	1.16	262	0.06	
Total	2036.78		100.00	

PROJECT STATION:2341
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2257
start stop duration Long E 1317
TIME :07:46:25 08:16:37 30 (min) Purpose code: 3
LOG :2115.42 2116.91 1.46 Area code : 2
FDEPTH: 358 355 GearCond.code:
BDEPTH: 358 355 Validity code:
Towing dir: 350° Wire out:1080 m Speed: 30 kn*10

Sorted: 99 Kg Total catch: 183.45 CATCH/HOUR: 366.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	180.20	468	49.11	8127
Merluccius capensis, female	72.60	44	19.79	8129
Genypterus capensis	19.20	14	5.23	8131
Coelorinchus fasciatus	13.84	232	3.77	
Nezumia sp.	13.80	460	3.76	
Helicolenus dactylopterus	11.40	148	3.11	
Lophius vomerinus	10.30	8	2.81	8130
Todarodes sagittatus	9.64	24	2.63	
Merluccius capensis, male	8.40	8	2.29	8128
Hoplostethus cadenati	6.28	272	1.71	
Galeus polli	6.00	80	1.64	
SQUALIDAE	4.64	4	1.26	
Coelorinchus sp.	3.32	84	0.90	
Deania profundorum	3.08	4	0.84	
Shrimps, small, non comm.	1.60	200	0.44	
Etmopterus brachyurus	1.20	4	0.33	
Merluccius paradoxus, male	1.12	4	0.31	8126
Chlorophthalmus atlanticus	0.12	12	0.03	
Solenocera africana	0.08	12	0.02	
Ebinania costaecanarie	0.08	20	0.02	
Total	366.90		100.00	

Total	645.23	100.02

PROJECT STATION:2342
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2257
start stop duration Long E 1328
TIME :10:36:18 11:06:37 30 (min) Purpose code: 3
LOG :2130.76 2132.40 1.64 Area code : 2
FDEPTH: 262 267 GearCond.code:
BDEPTH: 262 267 Validity code:
Towing dir: 350° Wire out: 840 m Speed: 30 kn*10

Sorted: 139 Kg Total catch: 433.77 CATCH/HOUR: 867.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	461.06	928	53.15	8133
Sufflogobius bibarbatus	153.84	14422	17.73	
Merluccius capensis, male	120.46	650	13.89	8132
Trachurus capensis	37.60	186	4.33	8135
Todarodes sagittatus	36.90	66	4.25	
Lophius vomerinus	20.00	40	2.31	8134
Coelorinchus fasciatus	18.80	294	2.17	
Schedophilus huttoni	7.80	4	0.90	
MYCTOPHIDAE	3.90	1334	0.45	
Chlorophthalmus atlanticus	2.68	164	0.31	
Solenocera africana	2.08	502	0.24	
Lepidopus caudatus	0.86	8	0.10	
Squilla acuelata calmani	0.52	18	0.06	
Helicolenus dactylopterus	0.52	26	0.06	
Mystriophis rostellatus	0.44	18	0.05	
Bathynectes piperitus	0.08	8	0.01	
Total	867.54		100.01	

PROJECT STATION:2343
DATE: 6/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2257
start stop duration Long E 1339
TIME :13:01:27 13:31:12 30 (min) Purpose code: 3
LOG :2144.99 2146.67 1.66 Area code : 2
FDEPTH: 150 148 GearCond.code:
BDEPTH: 150 148 Validity code:
Towing dir: 350° Wire out: 520 m Speed: 30 kn*10

Sorted: 92 Kg Total catch: 1799.68 CATCH/HOUR: 3599.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1744.00	10320	48.45	8137
Merluccius capensis, male	1382.00	12120	38.40	8136
Trachurus capensis	470.00	2160	13.06	8138
Hexanchus griseus	3.36	2	0.09	
Total	3599.36		100.00	

PROJECT STATION:2344
DATE: 6/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2260
start stop duration Long E 1345
TIME :15:26:58 15:57:21 30 (min) Purpose code: 3
LOG :2158.50 2160.32 1.79 Area code : 2
FDEPTH: 147 142 GearCond.code:
BDEPTH: 147 142 Validity code:
Towing dir: 350° Wire out: 500 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 143.18 CATCH/HOUR: 286.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	121.26	1162	42.35	8140
Merluccius capensis, male	107.50	1156	37.54	8139
Sufflogobius bibarbatus	57.50	12778	20.08	
Todaropsis eblanae	0.10	10	0.03	
Total	286.36		100.00	

PROJECT STATION:2345
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2235
start stop duration Long E 1337
TIME :04:35:37 05:05:53 30 (min) Purpose code: 3
LOG :2241.95 2243.49 1.53 Area code : 2
FDEPTH: 135 137 GearCond.code:
BDEPTH: 135 137 Validity code:
Towing dir: 260° Wire out: 450 m Speed: 30 kn*10

Sorted: 28 Kg Total catch: 916.08 CATCH/HOUR: 1832.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	910.80	12342	49.71	8141
Merluccius capensis, female	887.70	9834	48.45	8142
Sufflogobius bibarbatus	26.40	3564	1.44	
Pterothrissus belloci	3.96	66	0.22	
Todarodes sagittatus	3.30	66	0.18	
Total	1832.16		100.00	

PROJECT STATION:2346
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2235
start stop duration Long E 1325
TIME :06:37:50 07:07:39 30 (min) Purpose code: 3
LOG :2253.81 2255.39 1.56 Area code : 2
FDEPTH: 241 243 GearCond.code:
BDEPTH: 241 243 Validity code:
Towing dir: 325° Wire out: 750 m Speed: 31 kn*10

Sorted: 143 Kg Total catch: 812.59 CATCH/HOUR: 1625.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	659.70	2628	40.59	8146
Merluccius capensis, male	352.80	2448	21.71	8145
Sufflogobius bibarbatus	162.00	19518	9.97	
Trachurus capensis	141.66	648	8.72	8150
Coelorinchus fasciatus	125.10	3292	7.70	

Lophius vomerinus	54.90	262	3.38	8147
Merluccius capensis, female	46.00	40	2.83	8144
Pterothrissus belloci	16.92	522	1.04	
Bathynectes piperitus	11.70	450	0.72	
Merluccius capensis, male	11.40	10	0.70	8143
Solenocera africana	8.82	1472	0.54	
Synagrops microlepis	7.56	1098	0.47	
Squalus megalops	6.66	18	0.41	
Austroglossus microlepis	6.64	20	0.41	8149

PROJECT STATION:2347
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2237
start stop duration Long E 1311
TIME :09:05:03 09:36:11 31 (min) Purpose code: 3
LOG :2269.07 2270.63 1.55 Area code : 2
FDEPTH: 298 298 GearCond.code:
BDEPTH: 298 298 Validity code:
Towing dir: 310° Wire out: 950 m Speed: 31 kn*10

Sorted: 236 Kg Total catch: 757.28 CATCH/HOUR: 1465.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	619.35	2826	42.26	8154
Merluccius capensis, male	318.66	621	21.74	8151
Merluccius capensis, female	308.30	567	21.03	8152
Coelorinchus fasciatus	64.10	1823	4.37	
Helicolenus dactylopterus	27.81	2621	1.90	
Lophius vomerinus	21.68	50	1.48	8153
Epigonus telescopus	21.10	1471	1.44	
Todarodes sagittatus	18.45	48	1.26	
Trachipterus jacksonensis	15.68	6	1.07	
Schedophilus huttoni	13.94	8	0.95	
Torpedo nobiliana	8.90	2	0.61	
Galeus polli	8.09	97	0.55	
Bathyuroconger vicinus	6.23	48	0.43	
Bathynectes piperitus	4.95	64	0.34	
Hexanchus griseus	4.78	4	0.33	
Solenocera africana	2.88	559	0.20	
MYCTOPHIDAE	0.79	161	0.05	
Total	1465.69		100.01	

PROJECT STATION:2348
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2238
start stop duration Long E 1302
TIME :11:02:39 11:33:29 31 (min) Purpose code: 3
LOG :2278.84 2280.45 1.59 Area code : 2
FDEPTH: 308 306 GearCond.code:
BDEPTH: 308 306 Validity code:
Towing dir: 300° Wire out: 980 m Speed: 30 kn*10

Sorted: 203 Kg Total catch: 794.40 CATCH/HOUR: 1537.55

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	607.76	2361	39.53	8155
Merluccius capensis, female	312.50	2028	20.32	8156
Helicolenus dactylopterus	94.99	2545	6.18	
Trachurus capensis	94.06	219	6.12	8157
Galeus polli	57.89	763	3.77	
Lophius vomerinus	57.10	72	3.71	8158
Merluccius paradoxus, male	49.95	74	3.25	8160
Centrolophus niger	43.55	14	2.83	
Coelorinchus fasciatus	41.69	933	2.71	
Coelorinchus coelorhinc. polli	25.55	1047	1.66	
Todarodes sagittatus	24.56	52	1.60	
Chlorophthalmus atlanticus	24.02	1310	1.56	
Epigonus denticulatus	23.54	1070	1.53	
MYCTOPHIDAE	19.86	1572	1.29	
Schedophilus huttoni	15.10	8	0.98	
Deepwater fish mixture	12.23		0.80	
Genypterus capensis	11.23	8	0.73	8159
Merluccius paradoxus, female	8.05	95	0.52	8161
Zenopsis conchifer	5.61	4	0.36	
Malacocephalus laevis	4.37	21	0.28	
Bathyuroconger vicinus	3.72	66	0.24	
Bathynectes piperitus	0.21	45	0.01	
Total	1537.54		99.98	

PROJECT STATION:2349
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2240
start stop duration Long E 1251
TIME :13:21:15 13:39:26 18 (min) Purpose code: 3
LOG :2291.53 2292.41 0.87 Area code : 2
FDEPTH: 441 468 GearCond.code: 9
BDEPTH: 441 468 Validity code: 1
Towing dir: 345° Wire out:1320 m Speed: 30 kn*10

Sorted: 72 Kg Total catch: 351.82 CATCH/HOUR: 1172.73

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	608.00	2480	51.84	
Helicolenus dactylopterus	151.60	400	12.93	
Merluccius paradoxus, female	132.50	130	11.30	8162
Raja confundens	72.40	40	6.17	
Nezumia sp.	62.80	1560	5.36	
Raja straeleni	32.00	40	2.73	
Epigonus telescopus	30.80	200	2.63	
Deepwater fish mixture	30.40		2.59	
Galeus polli	14.40	120	1.23	
Coelorinchus fasciatus	12.80	40	1.09	
Merluccius paradoxus, male	9.17	10	0.78	8163
Lophius vomerinus	7.20	3	0.61	8164
Centrophorus sp.	4.57	3	0.39	
Bathynectes piperitus	2.80	80	0.24	
Beryx splendens	1.30	3	0.11	
Total	1172.74		100.00	

Merluccius capensis, juveniles	5.22	648	0.32	8148
Todarodes sagittatus	4.68	162	0.29	
Trigla lyra	1.62	18	0.10	
Chlorophthalmus atlanticus	1.08	108	0.07	
Bassanago albescens	0.36	18	0.02	
MYCTOPHIDAE	0.36	108	0.02	
Total	1625.18		100.01	

PROJECT STATION:2350
DATE: 7/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2224
start stop duration Long E 1244
TIME :18:02:36 18:32:10 30 (min) Purpose code: 3
LOG :2319.26 2320.86 1.58 Area code : 2
FDEPTH: 705 702 GearCond.code: 8
BDEPTH: 705 702 Validity code: 1
Towing dir: 163° Wire out:1750 m Speed: 30 kn*10

Sorted: 197 Kg Total catch: 363.58 CATCH/HOUR: 727.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Deania calcea	220.80	114	30.36	
Merluccius paradoxus, female	181.30	160	24.93	8166
Centrophorus squamosus	111.60	18	15.35	
Nezumia sp.	50.76	870	6.98	
Todarodes sagittatus	31.00	42	4.26	
Hoplostethus cadenati	20.94	576	2.88	
Neoharriotta pinnata	19.50	6	2.68	
Ebinania costaecanarie	19.08	18	2.62	
SQUALIDAE	18.60	18	2.56	
Alepocephalus sp.	9.60	180	1.32	
Lithodes ferox	9.30	26	1.28	
Selachophidium guentheri	7.14	66	0.98	
Trachyrincus scabrus	6.12	106	0.84	
Allocyttus verrucosus	4.80	60	0.66	
Notacanthus sexspinis	4.68	42	0.64	
Merluccius paradoxus, male	3.20	4	0.44	8165
Hoplostethus atlanticus	2.26	6	0.31	8167
Dicrolene intronigra	2.22	60	0.31	
Octopus sp.	1.74	6	0.24	
Nephropsis atlantica	1.02	84	0.14	
Shrimps, small, non comm.	0.66	150	0.09	
Neocyttus rhomboidalis	0.48	6	0.07	
STOMIIDAE	0.30	24	0.04	
NEMICHTHYIDAE	0.06	6	0.01	
Total	727.16		99.99	

PROJECT STATION:2351
DATE: 7/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2223
start stop duration Long E 1245
TIME :20:07:26 20:38:13 31 (min) Purpose code: 3
LOG :2324.66 2326.15 1.46 Area code : 2
FDEPTH: 599 590 GearCond.code:
BDEPTH: 599 590 Validity code:
Towing dir: 345° Wire out:1500 m Speed: 29 kn*10

Sorted: 154 Kg Total catch: 209.29 CATCH/HOUR: 405.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	131.61	124	32.49	8169
Deania profundorum	59.42	39	14.67	
Hoplostethus cadenati	54.00	1556	13.33	
Nezumia sp.	53.13	906	13.12	
Todarodes sagittatus	20.13	33	4.97	
Centrophorus squamosus	15.97	4	3.94	
Centroscymnus coelolepis	12.10	2	2.99	
Alepocephalus sp.	11.55	488	2.85	
Trachyrincus scabrus	10.51	64	2.59	
Raja confundens	7.32	6	1.81	
Merluccius paradoxus, male	6.29	8	1.55	8168
Selachophidium guentheri	5.81	75	1.43	
Bathyuroconger vicinus	4.99	41	1.23	
Raja confundens	3.48	12	0.86	
Shrimps, small, non comm.	3.02	801	0.75	
Notacanthus sexspinis	1.68	12	0.41	
MYCTOPHIDAE	1.28	197	0.32	
Neocyttus rhomboidalis	0.87	12	0.21	
Allocyttus verrucosus	0.81	17	0.20	
Lamprogrammus exutus	0.52	12	0.13	
NEMICHTHYIDAE	0.17	6	0.04	
S H R I M P S	0.12	12	0.03	
Solenocera africana	0.12	12	0.03	
Yarrella blackfordi	0.06	12	0.01	
STOMIIDAE	0.06	6	0.01	
Nephropsis atlantica	0.06	12	0.01	
Total	405.08		99.98	

PROJECT STATION:2352
DATE: 7/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2220
start stop duration Long E 1246
TIME :21:56:12 22:27:16 31 (min) Purpose code: 3
LOG :2329.68 2331.21 1.51 Area code : 2
FDEPTH: 492 490 GearCond.code:
BDEPTH: 492 490 Validity code:
Towing dir: 340° Wire out:1350 m Speed: 30 kn*10

Sorted: 212 Kg Total catch: 287.67 CATCH/HOUR: 556.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Deania calcea	176.71	122	31.74	
Merluccius paradoxus, female	161.42	180	28.99	8171
Trachyrincus scabrus	104.52	519	18.77	
Nezumia micronychodon	49.32	945	8.86	
Helicolenus dactylopterus	15.56	70	2.79	
Todarodes sagittatus	9.19	14	1.65	
Epigonus denticulatus	8.98	116	1.61	
Hydrolagus sp.	5.65	8	1.01	
Merluccius paradoxus, male	4.51	6	0.81	8170
Notacanthus sexspinis	4.10	70	0.74	
Deania profundorum	3.39	6	0.61	
Centroscymnus coelolepis	2.01	2	0.36	
Hoplostethus cadenati	1.70	77	0.31	

Raja confundens	1.49	4	0.27
Coelorinchus fasciatus	1.24	8	0.22
Selachophidium guentheri	1.24	23	0.22
Etmopterus pusillus	1.01	4	0.18
Neocyttus rhomboidalis	0.93	8	0.17
Etmopterus lucifer	0.77	2	0.14
S H R I M P S	0.70	147	0.13
MYCTOPHIDAE	0.70	116	0.13
Yarrella blackfordi	0.62	77	0.11

PROJECT STATION:2353

DATE: 8/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2216
start stop duration Long E 1248
TIME :04:35:47 05:06:03 30 (min) Purpose code: 3
LOG :2343.19 2344.77 1.56 Area code : 2
FDEPTH: 412 407 GearCond.code:
BDEPTH: 412 407 Validity code:
Towing dir: 355° Wire out:1250 m Speed: 30 kn*10

Sorted: 139 Kg Total catch: 224.64 CATCH/HOUR: 449.28

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	167.40	258	37.26	8173
Helicolenus dactylopterus	84.00	616	18.70	
Trachyrincus scabrus	70.40	1384	15.67	
Nezumia sp.	23.12	704	5.15	
Coelorinchus fasciatus	19.76	552	4.40	
Selachophidium guentheri	17.44	288	3.88	
Lophius vomerinus	16.40	10	3.65	8174
Lophius vaillanti	15.20	2	3.38	8175
Merluccius paradoxus, male	11.70	18	2.60	8172
Genypterus capensis	8.90	4	1.98	8176
Galeus polli	3.76	40	0.84	
Epigonus denticulatus	3.28	200	0.73	
Todarodes sagittatus	3.04	8	0.68	
Lithodes ferox	2.16	8	0.48	
Notacanthus sexspinis	0.72	40	0.16	
Shrimps, small, non comm.	0.64	192	0.14	
Histioteuthis reversa	0.56	16	0.12	
MYCTOPHIDAE	0.40	80	0.09	
CONGRIDAE	0.32	8	0.07	
NEMICHTHYIDAE	0.08	8	0.02	
Total	449.28		100.00	

PROJECT STATION:2354

DATE: 8/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2216
start stop duration Long E 1257
TIME :07:07:22 07:37:24 30 (min) Purpose code: 3
LOG :2357.39 2359.02 1.62 Area code : 2
FDEPTH: 299 304 GearCond.code:
BDEPTH: 299 304 Validity code:
Towing dir: 350° Wire out: 950 m Speed: 30 kn*10

Sorted: 169 Kg Total catch: 486.90 CATCH/HOUR: 973.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	292.00	492	29.99	8177
Trachurus capensis	253.80	1206	26.06	8182
Chlorophthalmus atlanticus	127.80	7092	13.12	
Lophius vomerinus	70.80	170	7.27	8181
Merluccius capensis, male	70.40	140	7.23	8178
Helicolenus dactylopterus	66.60	1584	6.84	
Coelorinchus fasciatus	28.62	1206	2.94	
Todarodes sagittatus	17.82	36	1.83	
Merluccius capensis, female	16.68	160	1.71	8179
Schedophilus huttoni	15.80	6	1.62	
Merluccius capensis, male	9.88	84	1.01	8180
Raja confundens	1.98	2	0.20	
Bassanago albescens	0.72	18	0.07	
Solenocera africana	0.54	126	0.06	
Bathynectes piperitus	0.18	18	0.02	
MYCTOPHIDAE	0.18	90	0.02	
Total	973.80		99.99	

PROJECT STATION:2355

DATE: 8/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2216
start stop duration Long E 1306
TIME :09:58:23 10:23:11 25 (min) Purpose code: 3
LOG :2369.91 2371.21 1.27 Area code : 2
FDEPTH: 252 252 GearCond.code: 9
BDEPTH: 252 252 Validity code: 1
Towing dir: 360° Wire out: 850 m Speed: 30 kn*10

Sorted: 174 Kg Total catch: 1305.28 CATCH/HOUR: 3132.67

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	1510.08	9540	48.20	8187
Merluccius capensis, male	702.24	4726	22.42	8183
Merluccius capensis, female	633.60	3802	20.23	8184
Lophius vomerinus	118.08	514	3.77	8185
Coelorinchus fasciatus	88.18	1610	2.81	
Sufflogobius bibarbatus	16.63	1980	0.53	
Merluccius capensis, female	16.20	7	0.52	8188
Bathynectes piperitus	15.31	554	0.49	
Austroglossus microlepis	11.76	48	0.38	8186
Coelorinchus coelorhinc. polli	9.50	317	0.30	
Pterothrissus belloci	3.70	475	0.12	
Mystriophis rostellatus	3.70	53	0.12	
Synagrops microlepis	2.11	185	0.07	
Chlorophthalmus atlanticus	1.58	185	0.05	
Total	3132.67		100.01	

PROJECT STATION:2356

DATE: 8/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2215
start stop duration Long E 1315
TIME :12:17:25 12:47:33 30 (min) Purpose code: 3
LOG :2383.97 2385.61 1.67 Area code : 2
FDEPTH: 226 227 GearCond.code:
BDEPTH: 226 227 Validity code:
Towing dir: 350° Wire out: 750 m Speed: 30 kn*10

Sorted: 84 Kg Total catch: 1238.47 CATCH/HOUR: 2476.94

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	1232.80	8508	49.77	8193
Merluccius capensis, male	650.14	4508	26.25	8190
Solenocera africana	0.46	77	0.08	
Bathyuroconger vicinus	0.23	8	0.04	
Galeus polli	0.17	2	0.03	
S H R I M P S	0.15	77	0.03	
Galeus polli	0.00			
Total	556.77		100.00	

Merluccius capensis, female	443.14	1626	17.89 8189
Pterothrissus belloci	134.02	1410	5.41
Bathynectes piperitus	9.20	154	0.37
Lophius vomerinus	6.40	18	0.26 8191
Austroglossus microlepis	1.24	8	0.05 8192
Total	2476.94		100.00

PROJECT STATION:2357

DATE: 8/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2214
start stop duration Long E 1327
TIME :14:31:58 14:52:09 20 (min) Purpose code: 3
LOG :2398.04 2399.06 1.01 Area code : 2
FDEPTH: 166 160 GearCond.code: 9
BDEPTH: 166 160 Validity code: 1
Towing dir: 90° Wire out: 540 m Speed: 30 kn*10

Sorted: 59 Kg Total catch: 118.02 CATCH/HOUR: 354.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	157.20	984	44.40	8195
Merluccius capensis, male	152.70	1500	43.13	8194
Sufflogobius bibarbatus	33.84	6042	9.56	
Pterothrissus belloci	9.48	246	2.68	
Perulibatrachus rossignoli	0.48	6	0.14	
Bathynectes piperitus	0.36	12	0.10	
Total	354.06		100.01	

PROJECT STATION:2358

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2148
start stop duration Long E 1322
TIME :04:36:35 05:06:19 30 (min) Purpose code: 3
LOG :2484.60 2485.99 1.36 Area code : 2
FDEPTH: 150 150 GearCond.code:
BDEPTH: 150 150 Validity code:
Towing dir: 330° Wire out: 450 m Speed: 30 kn*10

Sorted: 35 Kg Total catch: 1103.36 CATCH/HOUR: 2206.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1164.80	12096	52.78	8197
Merluccius capensis, male	1036.80	11392	46.98	8196
Sufflogobius bibarbatus	3.20	1088	0.15	
Todarodes sagittatus	1.92	64	0.09	
Total	2206.72		100.00	

PROJECT STATION:2359

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2148
start stop duration Long E 1313
TIME :06:49:46 07:04:47 15 (min) Purpose code: 3
LOG :2495.75 2496.52 0.75 Area code : 2
FDEPTH: 168 168 GearCond.code: 9
BDEPTH: 168 168 Validity code: 1
Towing dir: 340° Wire out: 500 m Speed: 30 kn*10

Sorted: 32 Kg Total catch: 2525.64 CATCH/HOUR: 10102.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	5070.00	58344	50.19	8198
Merluccius capensis, female	4992.00	53664	49.41	8199
Sufflogobius bibarbatus	40.56	7800	0.40	
Total	10102.56		100.00	

PROJECT STATION:2360

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2151
start stop duration Long E 1302
TIME :09:07:00 09:27:00 20 (min) Purpose code: 3
LOG :2508.96 2509.95 0.99 Area code : 2
FDEPTH: 273 270 GearCond.code:
BDEPTH: 273 270 Validity code:
Towing dir: 10° Wire out: 920 m Speed: 30 kn*10

Sorted: 91 Kg Total catch: 312.90 CATCH/HOUR: 938.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Pterothrissus belloci	342.00	2310	36.43	
Merluccius capensis, female	171.00	774	18.22	8201
Solenocera africana	137.52	29274	14.65	
Lophius vomerinus	84.30	375	8.98	8205
Merluccius capensis, male	79.20	540	8.44	8200
Sufflogobius bibarbatus	49.68	5070	5.29	
Austroglossus microlepis	27.90	168	2.97	8206
Merluccius capensis, female	23.40	27	2.49	8202
Bathynectes piperitus	11.88	468	1.27	
Merluccius capensis, juveniles	5.04	558	0.54	8203
Merluccius capensis, male	3.90	6	0.42	8204
Coelorinchus fasciatus	2.34	54	0.25	
Mystriophis rostellatus	0.54	18	0.06	
Total	938.70		100.01	

PROJECT STATION:2361

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2150
start stop duration Long E 1248
TIME :12:04:20 12:34:18 30 (min) Purpose code: 3
LOG :2526.71 2528.32 1.59 Area code : 2
FDEPTH: 324 323 GearCond.code:
BDEPTH: 324 323 Validity code:
Towing dir: 360° Wire out:1020 m Speed: 30 kn*10

Sorted: 280 Kg Total catch: 571.17 CATCH/HOUR: 1142.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	294.24	554	25.76	8215
Merluccius capensis, female	194.14	278	16.99	8210
Helicolenus dactylopterus	130.86	1620	11.46	
Merluccius capensis, female	88.90	52	7.78	8209
Schedophilus huttoni	72.40	34	6.34	
Hexanchus griseus	50.00		4.38	
Lophius vomerinus	46.20	42	4.04	8212
Chlorophthalmus atlanticus	43.86	2618	3.84	
Merluccius capensis, male	32.42	138	2.84	8208
Etmopterus pusillus	26.20	66	2.29	
Trachipterus jacksonensis	25.40	6	2.22	
Deepwater fish mixture	18.28		1.60	
Todarodes sagittatus	14.14	22	1.24	
Trachurus capensis	11.88	30	1.04	8213
Beryx splendens	11.28	90	0.99	8211
Galeus polli	9.88	226	0.86	
Centrolophus niger	9.80	4	0.86	
Genypterus capensis	9.54	8	0.84	8214
Merluccius capensis, male	7.44		0.65	
Heptranchias perlo	6.20	2	0.54	
Coelorinchus coelorhinc. polli	5.80	174	0.51	
Merluccius paradoxus, male	5.20	8	0.46	
RAJIDAE	4.78	4	0.42	
MYCTOPHIDAE	3.82	988	0.33	
Coelorinchus fasciatus	3.64	60	0.32	
Nezumia micronychodon	3.56	96	0.31	
Bathynectes piperitus	3.46	122	0.30	
Epigonus denticulatus	3.46	226	0.30	
Solenocera africana	2.26	424	0.20	
Lepidopus caudatus	1.90	2	0.17	
Malacocephalus laevis	1.22	242	0.11	
Mystriophis rostellatus	0.18	8	0.02	
Total	1142.34		100.01	

PROJECT STATION:2362

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2154
start stop duration Long E 1242
TIME :15:00:02 15:00:33 31 (min) Purpose code: 3
LOG :2540.76 2542.25 1.47 Area code : 2
FDEPTH: 433 432 GearCond.code:
BDEPTH: 433 432 Validity code:
Towing dir: 175° Wire out:1300 m Speed: 30 kn*10

Sorted: 238 Kg Total catch: 682.60 CATCH/HOUR: 1321.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	664.26	6828	50.28	
Merluccius paradoxus, female	288.48	343	21.84	8218
Lophius vomerinus	95.32	41	7.21	8219
Helicolenus dactylopterus	74.79	557	5.66	
Epigonus denticulatus	66.43	325	5.03	
Nezumia sp.	41.34	836	3.13	
Deania profundorum	23.23	46	1.76	
Etmopterus sp.	14.40	46	1.09	
Merluccius paradoxus, male	11.61	15	0.88	8217
Lithodes ferox	10.84	31	0.82	
Todarodes sagittatus	10.45	21	0.79	
Solenocera africana	7.90	1161	0.60	
Lophius vaillanti	5.61	2	0.42	8220
Galeus polli	5.11	46	0.39	
Notacanthus sexspinis	1.39	46	0.11	
Total	1321.16		100.01	

PROJECT STATION:2363

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2152
start stop duration Long E 1239
TIME :16:00:37 17:00:11 30 (min) Purpose code: 3
LOG :2547.64 2549.08 1.42 Area code : 2
FDEPTH: 517 521 GearCond.code:
BDEPTH: 517 521 Validity code:
Towing dir: 360° Wire out:1450 m Speed: 30 kn*10

Sorted: 236 Kg Total catch: 549.17 CATCH/HOUR: 1098.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	460.60	4816	41.94	
Merluccius paradoxus, female	357.30	368	32.53	8222
S H A R K S	72.80	28	6.63	
Nezumia sp.	52.64	1820	4.79	
Hoplostethus cadenati	32.76	1904	2.98	
Helicolenus dactylopterus	29.96	168	2.73	
Lophius vomerinus	26.50	4	2.41	8223
Todarodes sagittatus	25.60	42	2.33	
Merluccius paradoxus, male	9.70	12	0.88	8221
Raja straeleni	8.40	112	0.76	
Selachophidium guentheri	5.60	168	0.51	
Bathyuroconger vicinus	5.04	168	0.46	
Schedophilus huttoni	3.74	2	0.34	
Epigonus telescopus	3.08	56	0.28	
Stomias boa boa	1.96	140	0.18	
Lithodes ferox	1.54	4	0.14	
Bathynectes piperitus	0.56	28	0.05	
MYCTOPHIDAE	0.56	56	0.05	
Total	1098.34		99.99	

PROJECT STATION:2364

DATE: 9/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2150
start stop duration Long E 1237
TIME :19:00:26 19:00:44 30 (min) Purpose code: 3
LOG :2554.05 2555.52 1.45 Area code : 2
FDEPTH: 599 595 GearCond.code:
BDEPTH: 599 595 Validity code:
Towing dir: 5° Wire out:1650 m Speed: 30 kn*10

Sorted: 294 Kg Total catch: 397.38 CATCH/HOUR: 794.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	418.80	382	52.70	8225
Trachyrincus scabrus	183.60	552	23.10	
Nezumia sp.	27.00	708	3.40	
Centrophorus squamosus	26.60	2	3.35	
Bathyraja smithii	25.30	4	3.18	
Lophius vaillanti	22.10	2	2.78	8227
Hoplostethus cadenati	18.84	624	2.37	
Lophius vomerinus	18.20	6	2.29	8226
Todarodes sagittatus	12.70	20	1.60	
Deania calcea	10.50	4	1.32	
Merluccius paradoxus, male	5.30	6	0.67	8224
Brama brama	4.66	4	0.59	
Selachophidium guentheri	4.20	84	0.53	
Raja straeleni	4.08	48	0.51	
Lithodes ferox	3.28	6	0.41	
Alepocephalus sp.	3.12	120	0.39	
Yarrella blackfordi	1.92	72	0.24	
Lamprogrammus exutus	1.68	24	0.21	
Bathyuroconger vicinus	1.20	24	0.15	
MYCTOPHIDAE	0.84	72	0.11	
Shrimps, small, non comm.	0.60	144	0.08	
Nephropsis atlantica	0.24	12	0.03	
Total	794.76		100.01	

PROJECT STATION:2365

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2140
start stop duration Long E 1232
TIME :00:50:07 01:20:25 30 (min) Purpose code: 3
LOG :2589.04 2590.67 1.62 Area code : 2
FDEPTH: 698 699 GearCond.code:
BDEPTH: 698 699 Validity code:
Towing dir: 350° Wire out:1850 m Speed: 30 kn*10

Sorted: 486 Kg Total catch: 727.54 CATCH/HOUR: 1455.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	579.00	474	39.79	8228
Todarodes sagittatus	436.00	576	29.96	
Deania calcea	93.00	94	6.39	
Centroscyllium fabricii	60.20	4	4.14	
Alepocephalus sp.	42.30	200	2.91	
Nezumia micronychodon	35.20	968	2.42	
Hoplostethus atlanticus	31.90	154	2.19	8230
Bathyraja smithii	31.40	8	2.16	
Selachophidium guentheri	25.20	370	1.73	
Ebinania costaecanarie	24.50	20	1.68	
Lophius vaillanti	19.60	2	1.35	8229
RAJIDAE	14.20	56	0.98	
Dicrolene sp.	12.60	250	0.87	
Centroscymnus crepidater	11.60	4	0.80	
Bathyuroconger vicinus	10.00	80	0.69	
Heterocarpus grimaldii	5.70	280	0.39	
Notacanthus sexspinis	3.90	20	0.27	
Coelorinchus matamua	3.70	20	0.25	
Allocyttus verrucosus	3.10	60	0.21	
Lithodes ferox	3.06	8	0.21	
Etmopterus sp.	2.74	2	0.19	
Raja confundens	2.14	10	0.15	
Etmopterus lucifer	2.06	4	0.14	
Hoplostethus cadenati	0.60	20	0.04	
Nephropsis atlantica	0.50	30	0.03	
Galeus polli	0.40	10	0.03	
Raja pullopunctata	0.28	6	0.02	
POLYCHAELIDAE	0.20	20	0.01	
Total	1455.08		100.00	

PROJECT STATION:2366

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2133
start stop duration Long E 1234
TIME :03:00:46 03:01:15 30 (min) Purpose code: 3
LOG :2598.88 2600.48 1.59 Area code : 2
FDEPTH: 432 492 GearCond.code:
BDEPTH: 432 492 Validity code:
Towing dir: 350° Wire out:1500 m Speed: 30 kn*10

Sorted: 319 Kg Total catch: 422.63 CATCH/HOUR: 845.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	463.92	494	54.88	8232
Trachyrincus scabrus	243.90	1440	28.86	
Hoplostethus cadenati	55.44	2196	6.56	
Helicolenus dactylopterus	18.36	72	2.17	
Nezumia sp.	14.76	522	1.75	
Merluccius paradoxus, male	14.20	8	1.68	8231
Lophius vomerinus	13.50	4	1.60	8233
Todarodes sagittatus	9.54	36	1.13	
Yarrella blackfordi	3.24	360	0.38	
Bathyuroconger vicinus	2.88	72	0.34	
Nephropsis atlantica	2.52	72	0.30	

Chaceon maritae	1.92	2	0.23
Notacanthus sexspinis	0.54	18	0.06
Selachophidium guentheri	0.36	36	0.04
Alepocephalus sp.	0.18	18	0.02
Total	845.26		100.00

PROJECT STATION:2367

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2130
start stop duration Long E 1230
TIME :05:23:27 05:53:38 30 (min) Purpose code: 3
LOG :2605.08 2606.57 1.46 Area code : 2
FDEPTH: 432 502 GearCond.code:
BDEPTH: 432 502 Validity code:
Towing dir: 345° Wire out:1700 m Speed: 30 kn*10

Sorted: 221 Kg Total catch: 413.25 CATCH/HOUR: 826.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	326.70	276	39.53	8235
Trachyrincus scabrus	190.80	468	23.09	
Todarodes sagittatus	137.34	162	16.62	
Centrophorus squamosus	49.90	4	6.04	
Nezumia sp.	49.68	2160	6.01	
Hoplostethus cadenati	27.90	864	3.38	
Lophius vaillanti	13.08	2	1.58	8236
ALEPOCEPHALIDAE	10.98	378	1.33	
Lamprogrammus exutus	5.22	90	0.63	
S H R I M P S	4.50	216	0.54	
Yarrella blackfordi	3.42	198	0.41	
Allocyttus verrucosus	2.34	36	0.28	
Merluccius paradoxus, male	1.52	2	0.18	8234
Dicrolene intronigra	1.44	36	0.17	
Lithodes ferox	1.38	4	0.17	
Notacanthus sexspinis	0.18	18	0.02	
Deania calcea	0.12	2	0.01	
Total	826.50		99.99	

PROJECT STATION:2368

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2130
start stop duration Long E 1237
TIME :07:48:27 08:18:57 31 (min) Purpose code: 3
LOG :2616.76 2618.21 1.44 Area code : 2
FDEPTH: 322 342 GearCond.code:
BDEPTH: 322 342 Validity code: 1
Towing dir: 350° Wire out:1250 m Speed: 30 kn*10

Sorted: 190 Kg Total catch: 775.30 CATCH/HOUR: 1500.58

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	889.88	1057	59.30	8238
Trachyrincus scabrus	231.48	4823	15.43	
Helicolenus dactylopterus	161.86	1297	10.79	
Deania profundorum	53.13	23	3.54	
Nezumia sp.	31.20	906	2.08	
Raja sp.	27.68	17	1.84	
Epigonus pandionis	20.13	503	1.34	
Todarodes sagittatus	13.06	21	0.87	
Lophius vomerinus	13.06	8	0.87	8239
Merluccius paradoxus, male	13.01	17	0.87	8237
Lithodes ferox	7.74	23	0.52	
Schedophilus huttoni	7.65	4	0.51	
Shrimps, small, non comm.	6.87	1448	0.46	
Hoplostethus cadenati	5.86	1341	0.39	
Selachophidium guentheri	4.20	184	0.28	
Chaceon maritae	3.39	4	0.23	
Ebinania costaecanarie	3.02	33	0.20	
Notacanthus sexspinis	2.69	50	0.18	
Genypterus capensis	2.52	2	0.17	8240
Yarrella blackfordi	1.01	201	0.07	
Etmopterus sp.	0.64	2	0.04	
Alepocephalus sp.	0.33	134	0.02	
L O B S T E R S	0.17	536	0.01	
Total	1500.58		100.01	

PROJECT STATION:2369

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2126
start stop duration Long E 1252
TIME :10:42:43 11:02:37 20 (min) Purpose code: 3
LOG :2635.46 2636.39 0.93 Area code : 2
FDEPTH: 306 308 GearCond.code:
BDEPTH: 306 308 Validity code: 1
Towing dir: 350° Wire out: 950 m Speed: 30 kn*10

Sorted: 254 Kg Total catch: 213.31 CATCH/HOUR: 639.93

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	331.80	576	51.85	8241
Merluccius capensis, male	71.70	414	11.20	8240
Schedophilus huttoni	45.90	24	7.17	
Trachurus capensis	43.20	96	6.75	8244
Chlorophthalmus atlanticus	39.36	3120	6.15	
Lophius vomerinus	37.80	156	5.91	8242
Todarodes sagittatus	19.50	57	3.05	
Coelorinchus fasciatus	10.56	336	1.65	
Synagrops microlepis	9.60	1488	1.50	
Bathynectes piperitus	6.24	192	0.98	
Solenocera africana	5.76	1200	0.90	
MYCTOPHIDAE	3.84	864	0.60	
Helicolenus dactylopterus	3.84	864	0.60	
Coelorinchus coelorhinc. polli	3.36	144	0.53	
Trigla lyra	2.88	48	0.45	
Austroglossus microlepis	2.67	21	0.42	8243
Trachurus capensis, juvenile	1.92	432	0.30	
Aequorea aequorea	0.00	55392		
Chrysaora sp.	0.00	285		
Total	639.93		100.01	

PROJECT STATION:2370

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2123
start stop duration Long E 1303
TIME :12:50:05 13:20:24 30 (min) Purpose code: 3
LOG :2648.97 2650.53 1.52 Area code : 2
FDEPTH: 192 188 GearCond.code:
BDEPTH: 192 188 Validity code: 1
Towing dir: 350° Wire out: 630 m Speed: 30 kn*10

Sorted: 93 Kg Total catch: 37.59 CATCH/HOUR: 75.18

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	39.70	398	52.81	8246
Merluccius capensis, male	26.80	338	35.65	8245
Merluccius capensis, juveniles	5.10	282	6.78	8248
Todaropsis eblanae	1.20	12	1.60	
Perulibatrachus rossignoli	0.96	12	1.28	
Lophius vomerinus	0.70	4	0.93	8249
Sufflogobius bibarbatus	0.54	174	0.72	
Trachurus capensis, juvenile	0.18	192	0.24	8247
Aequorea aequorea	0.00	1224		
Chrysaora sp.	0.00	172		
Total	75.18		100.01	

PROJECT STATION:2371

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2123
start stop duration Long E 1315
TIME :14:56:45 15:24:17 28 (min) Purpose code: 3
LOG :2662.75 2664.13 1.38 Area code : 2
FDEPTH: 134 132 GearCond.code:
BDEPTH: 134 132 Validity code:
Towing dir: 15° Wire out: 480 m Speed: 30 kn*10

Sorted: 75 Kg Total catch: 17.36 CATCH/HOUR: 37.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Sufflogobius bibarbatus	34.14	6596	91.77	
Merluccius capensis, juveniles	2.01	92	5.40	8252
Merluccius capensis, female	0.56	6	1.51	8251
Merluccius capensis, male	0.49	9	1.32	8250
Aequorea aequorea	0.00	11514		
Chrysaora sp.	0.00	906		
Total	37.20		100.00	

PROJECT STATION:2372

DATE:10/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2102
start stop duration Long E 1255
TIME :06:17:00 06:48:00 31 (min) Purpose code: 3
LOG :2725.10 2726.51 1.39 Area code : 2
FDEPTH: 259 257 GearCond.code:
BDEPTH: 259 257 Validity code:
Towing dir: 350° Wire out: 810 m Speed: 3 kn*10

Sorted: 13 Kg Total catch: 13.18 CATCH/HOUR: 25.51

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	11.63	66	45.59	8254
Merluccius capensis, male	10.26	89	40.22	8253
Sufflogobius bibarbatus	2.65	619	10.39	
Merluccius capensis, juveniles	0.97	46	3.80	8255
Total	25.51		100.00	

PROJECT STATION:2373

DATE:11/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2103
start stop duration Long E 1246
TIME :08:24:00 08:53:00 29 (min) Purpose code: 3
LOG :2736.65 2738.09 1.41 Area code : 2
FDEPTH: 331 331 GearCond.code:
BDEPTH: 331 331 Validity code: 1
Towing dir: 350° Wire out:1030 m Speed: 29 kn*10

Sorted: 159 Kg Total catch: 787.35 CATCH/HOUR: 1629.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Chlorophthalmus atlanticus	497.86	19757	30.56	
Merluccius capensis, female	448.72	1113	27.55	8259
Krill	170.69		10.48	
Merluccius capensis, male	131.90	466	8.10	8258
Merluccius capensis, female	126.00	87	7.73	8257
Lophius vomerinus	59.48	147	3.65	8261
Galeus polli	33.37	517	2.05	
Coelorinchus coelorhinc. polli	30.52	1241	1.87	
Dentex macrophthalmus	29.48	155	1.81	8263
Coelorinchus fasciatus	23.54	544	1.45	
Synagrops microlepis	13.97	3000	0.86	
Merluccius capensis, male	11.69	12	0.72	8256
Helicolenus dactylopterus	11.13	2172	0.68	
Solenocera africana	9.58	2127	0.59	
Bassanago albescens	7.51	207	0.46	
Merluccius capensis, juveniles	7.24	828	0.44	8260
Todarodes sagittatus	6.72	27	0.41	
Austroglossus microlepis	5.71	12	0.35	8262
Todaropsis eblanae	2.86	130	0.18	
MYCTOPHIDAE	1.03	492	0.06	
Aequorea aequorea	0.00	3079		

Total	1629.00	100.00

PROJECT STATION:2374
DATE:11/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2104
start stop duration Long E 1237
TIME :10:42:10 11:12:06 30 (min) Purpose code: 3
LOG :2749.11 2750.62 1.50 Area code : 2
FDEPTH: 383 383 GearCond.code:
BDEPTH: 383 383 Validity code: 1
Towing dir: 5° Wire out:1080 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 308.69 CATCH/HOUR: 617.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	285.30	2328	46.21	
Merluccius paradoxus, female	201.00	380	32.56	8265
Deepwater fish mixture	36.00		5.83	
Chlorophthalmus atlanticus	17.02	576	2.76	
Coelorinchus fasciatus	14.50	54	2.35	
Lophius vomerinus	10.70	6	1.73	8266
Nezumia micronychodon	10.00	208	1.62	
Galeus polli	9.00	90	1.46	
Genypterus capensis	8.02	4	1.30	8267
Todarodes sagittatus	5.02	22	0.81	
Raja confundens	4.64	6	0.75	
Krill	4.50		0.73	
Coelorinchus coelorhinc. polli	3.34	64	0.54	
Merluccius paradoxus, male	2.36	6	0.38	8264
Merluccius capensis, male	2.00	2	0.32	8263
Bathynectes piperitus	1.26	36	0.20	
Laemonema laureysi	0.82	10	0.13	
Epigonus denticulatus	0.82	72	0.13	
Heterocarpus grimaldii	0.54	108	0.09	
Selachophidium guentheri	0.54	28	0.09	
Total	617.38		99.99	

PROJECT STATION:2375
DATE:11/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2106
start stop duration Long E 1225
TIME :13:25:11 13:55:06 30 (min) Purpose code: 3
LOG :2764.97 2766.58 1.58 Area code : 2
FDEPTH: 556 557 GearCond.code:
BDEPTH: 556 557 Validity code:
Towing dir: 350° Wire out:1550 m Speed: 30 kn*10

Sorted: 419 Kg Total catch: 721.85 CATCH/HOUR: 1443.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	488.80	600	33.86	8268
Trachyrincus scabrus	360.00	1408	24.94	
Todarodes sagittatus	209.60	592	14.52	
Deepwater fish mixture	112.00		7.76	
Deania calcea	86.40	22	5.98	
Nezumia micronychodon	42.56	1880	2.95	
Hoplostethus cadenati	39.20	2200	2.72	
Merluccius paradoxus, male	20.20	28	1.40	8269
Centroscymnus coelolepis	15.60	2	1.08	
Helicolenus dactylopterus	15.44	80	1.07	
Lophius vomerinus	11.40	4	0.79	8270
Alepocephalus sp.	5.60	24	0.39	
Selachophidium guentheri	5.20	136	0.36	
RAJIDAE	5.04	28	0.35	
Lophius vaillanti	4.00	2	0.28	8271
Raja confundens	3.92		0.27	
Bathyuroconger vicinus	3.84	96	0.27	
Lithodes ferox	3.04	8	0.21	
Mystriophis rostellatus	2.82	248	0.20	
Benthodesmus tenuis	2.64	24	0.18	
Yarrella blackfordi	2.40	136	0.17	
Schedophilus huttoni	1.60	2	0.11	
Notacanthus sexspinis	1.20	24	0.08	
NEPHROPIDAE	0.56	64	0.04	
Bathynectes piperitus	0.56	8	0.04	
POLYCHAELIDAE	0.08	24	0.01	
Total	1443.70		100.03	

PROJECT STATION:2376
DATE:11/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2105
start stop duration Long E 1221
TIME :15:39:31 16:09:42 30 (min) Purpose code: 3
LOG :2773.51 2775.07 1.55 Area code : 2
FDEPTH: 640 642 GearCond.code:
BDEPTH: 640 642 Validity code:
Towing dir: 345° Wire out:1600 m Speed: 30 kn*10

Sorted: 280 Kg Total catch: 636.01 CATCH/HOUR: 1272.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	334.90	334	26.33	8273
Hoplostethus cadenati	202.24	9216	15.90	
Trachyrincus scabrus	201.60	576	15.85	
Deepwater fish mixture	90.88		7.14	
Deania calcea	71.30	16	5.61	
Yarrella blackfordi	59.20	4672	4.65	
Nezumia sp.	54.40	1600	4.28	
Dicrolene intronigra	52.16	1312	4.10	
Centroscymnus coelolepis	32.30	2	2.54	
Bassanago albescens	32.00	512	2.52	
Todarodes sagittatus	29.30	50	2.30	
Lophius vomerinus	20.20	2	1.59	8274
Notacanthus sexspinis	19.52	32	1.53	
Alepocephalus sp.	18.88	576	1.48	
Lamprogrammus exutus	14.72	256	1.16	
Chlamydoselachus anguineus	9.10	2	0.72	
Merluccius paradoxus, male	5.90	8	0.46	8272
Selachophidium guentheri	4.80	96	0.38	
GALATHEIDAE *	4.48	192	0.35	
S H R I M P S	4.48	288	0.35	
Lophius vaillanti	4.10	2	0.32	8275
Chaceon maritae, male	2.40	2	0.19	
Lithodes ferox	2.20	2	0.17	
Aristeus varidens	0.32	128	0.03	
POLYCHAELIDAE	0.32	32	0.03	
Nephropsis atlantica	0.32	64	0.03	
Total	1272.02		100.01	

PROJECT STATION:2377
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2049
start stop duration Long E 1207
TIME :00:51:52 01:21:50 30 (min) Purpose code: 3
LOG :2839.28 2840.84 1.54 Area code : 2
FDEPTH: 899 879 GearCond.code:
BDEPTH: 899 879 Validity code: 1
Towing dir: 325° Wire out:1750 m Speed: 30 kn*10

Sorted: 328 Kg Total catch: 659.10 CATCH/HOUR: 1318.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Nezumia micronychodon	318.00	5048	24.12	
Merluccius paradoxus, female	314.20	282	23.84	8276
Deepwater fish mixture	168.00		12.74	
Trachyrincus scabrus	133.20	432	10.10	
RAJIDAE	65.00		4.93	
Centroscyllium fabricii	60.00	4	4.55	
Dicrolene intronigra	57.72	1374	4.38	
Deania calcea	38.40	10	2.91	
Heterocarpus grimaldii	38.00	3230	2.88	
Alepocephalus sp.	32.64	264	2.48	
Todarodes sagittatus	24.80	44	1.88	
Centroscymnus coelolepis	18.00	2	1.37	
Bathyuroconger vicinus	15.96	108	1.21	
Chaceon maritae	8.80	6	0.67	
Yarrella blackfordi	6.96	264	0.53	
Selachophidium guentheri	6.72	108	0.51	
Hoplostethus cadenati	1.92	36	0.15	
Phrynichthys wedli	1.92	12	0.15	
Lithodes ferox	1.84	2	0.14	
Allocyttus verrucosus	1.56	24	0.12	
Benthodesmus tenuis	1.44	12	0.11	
Ebinania costaecanarie	1.32	12	0.10	
Notacanthus sexspinis	0.72	12	0.05	
POLYCHAELIDAE	0.60	24	0.05	
GALATHEIDAE *	0.48	240	0.04	
Glyphus marsupialis	0.24	12	0.02	
Total	1318.44		100.03	

PROJECT STATION:2378
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2047
start stop duration Long E 1210
TIME :03:53:05 04:23:41 31 (min) Purpose code: 3
LOG :2850.50 2852.13 1.61 Area code : 2
FDEPTH: 613 615 GearCond.code:
BDEPTH: 613 615 Validity code:
Towing dir: 315° Wire out:1580 m Speed: 30 kn*10

Sorted: 255 Kg Total catch: 746.90 CATCH/HOUR: 1445.61

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	304.84	1045	21.09	
Nezumia sp.	284.81	9552	19.70	
Merluccius paradoxus, female	228.39	223	15.80	8278
Deania calcea	126.77	29	8.77	
Yarrella blackfordi	114.97	7665	7.95	
Alepocephalus sp.	112.94	4413	7.81	
Hoplostethus cadenati	64.16	1887	4.44	
Centrophorus squamosus	39.48	2	2.73	
Lamprogrammus exutus	34.26	348	2.37	
Centrolophus niger	22.06	29	1.53	
Dicrolene intronigra	20.90	406	1.45	
Todarodes sagittatus	18.87	58	1.31	
Phrynichthys wedli	13.65	58	0.94	
Merluccius paradoxus, male	11.71	10	0.81	8277
Lophius vomerinus	9.48	2	0.66	8279
Raja leopardus	8.61	2	0.60	
Selachophidium guentheri	6.10	145	0.42	
MYCTOPHIDAE	5.23	1277	0.36	
Notacanthus sexspinis	5.23	58	0.36	
Bathyuroconger vicinus	4.06	58	0.28	
Shrimps, small, non comm.	3.19	1016	0.22	
Chaceon maritae	1.84	2	0.13	
UNIDENTIFIED FISH	1.45	29	0.10	
RAJIDAE	1.16	29	0.08	
NEPHROPIDAE	0.58	29	0.04	
GALATHEIDAE *	0.58	319	0.04	
POLYCHAELIDAE	0.29	29	0.02	
Total	1445.61		100.01	

PROJECT STATION:2379
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2047
start stop duration Long E 1222
TIME :06:51:39 07:21:52 30 (min) Purpose code: 3
LOG :2868.01 2869.44 1.41 Area code : 2
FDEPTH: 389 382 GearCond.code:
BDEPTH: 389 382 Validity code:
Towing dir: 90° Wire out:1250 m Speed: 30 kn*10

Sorted: 128 Kg Total catch: 386.98 CATCH/HOUR: 773.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	425.00	3740	54.91	
Merluccius paradoxus, female	148.90	324	19.24	8281
Galeus polli	67.98	68	8.78	
Raja leopardus	37.24	36	4.81	
Nezumia sp.	27.20	930	3.51	
OPHIDIIDAE	25.12	294	3.25	

Lophius vomerinus	7.46	8	0.96	8283
MACROURIDAE	6.12	250	0.79	
Schedophilus huttoni	5.58	2	0.72	
Genypterus capensis	4.84	2	0.63	8282
Selachophidium guentheri	4.30	158	0.56	
Neoharriotta pinnata	3.82	2	0.49	
Notacanthus sexspinis	3.18	136	0.41	
Chlorophthalmus atlanticus	1.58	90	0.20	
Merluccius paradoxus, male	1.30	4	0.17	8280
MYCTOPHIDAE	1.14	294	0.15	
Trachyrincus scabrus	1.14	46	0.15	

PROJECT STATION:2380
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2046
start stop duration Long E 1227
TIME :08:55:43 09:25:59 30 (min) Purpose code: 3
LOG :2877.64 2879.12 1.47 Area code : 3
FDEPTH: 336 332 GearCond.code:
BDEPTH: 336 332 Validity code: 1
Towing dir: 320° Wire out:1100 m Speed: 30 kn*10

Sorted: 205 Kg Total catch: 900.24 CATCH/HOUR: 1800.48

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	701.26	1088	38.95	8285
Merluccius paradoxus, female	283.76	550	15.76	8288
Merluccius capensis, male	231.26	412	12.84	8284
Helicolenus dactylopterus	193.76	3982	10.76	
Merluccius capensis, female	131.00	94	7.28	8287
Galeus polli	75.00	980	4.17	
Chlorophthalmus atlanticus	59.26	1886	3.29	
Todarodes sagittatus	22.38	76	1.24	
Bathynectes piperitus	21.62	338	1.20	
Coelorinchus fasciatus	21.50	688	1.19	
Nezumia micronychodon	15.26	812	0.85	
MYCTOPHIDAE	10.00	3572	0.56	
Lophius vomerinus	7.10	6	0.39	8290
Epigonus denticulatus	6.88	338	0.38	
Squalus megalops	6.62	12	0.37	
Merluccius capensis, male	5.14	4	0.29	8286
Raja confundens	4.76	12	0.26	
Alepocephalus sp.	1.62	38	0.09	
Beryx splendens	1.40	6	0.08	8289
Lophius vaillanti	0.64	2	0.04	8291
Plesionika acanthurus	0.26	138	0.01	
Total	1800.48		100.00	

PROJECT STATION:2381
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2042
start stop duration Long E 1238
TIME :11:40:06 12:10:15 30 (min) Purpose code: 3
LOG :2894.10 2895.70 1.58 Area code : 3
FDEPTH: 313 307 GearCond.code:
BDEPTH: 313 307 Validity code: 1
Towing dir: 340° Wire out: 980 m Speed: 30 kn*10

Sorted: 87 Kg Total catch: 427.18 CATCH/HOUR: 854.36

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	499.00	1040	58.41	8292
Merluccius capensis, male	215.00	680	25.17	8293
Pterothrissus belloci	68.60	3330	8.03	
Sufflogobius bibarbatus	58.20	14196	6.81	
Solenocera africana	9.00	2424	1.05	
Lophius vomerinus	1.86	10	0.22	8294
Trachurus capensis	0.80	4	0.09	8296
Austroglossus microlepis	0.76	6	0.09	8297
Beryx splendens	0.64	2	0.07	8295
Bathynectes piperitus	0.50	30	0.06	
Total	854.36		100.00	

PROJECT STATION:2382
DATE:12/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2019
start stop duration Long E 1256
TIME :17:46:28 18:16:15 30 (min) Purpose code: 3
LOG :2946.14 2947.68 1.51 Area code : 3
FDEPTH: 118 117 GearCond.code:
BDEPTH: 118 117 Validity code:
Towing dir: 165° Wire out: 380 m Speed: 30 kn*10

Sorted: 226 Kg Total catch: 12.74 CATCH/HOUR: 25.48

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	12.02	150	47.17	8299
Merluccius capensis, male	8.08	104	31.71	8298
Trachurus capensis	4.22	22	16.56	8300
Sufflogobius bibarbatus	0.90	152	3.53	
Merluccius capensis, juveniles	0.26	12	1.02	8301
Aequorea aequorea	0.00	1314		
Chrysaora sp.	0.00	80		
Total	25.48		99.99	

PROJECT STATION:2383
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1957
start stop duration Long E 1235
TIME :04:38:21 04:42:03 4 (min) Purpose code: 3
LOG :2996.29 2996.42 0.13 Area code : 3
FDEPTH: 134 134 GearCond.code: 9
BDEPTH: 134 134 Validity code: 1
Towing dir: 160° Wire out: 380 m Speed: 30 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:2384
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2000
start stop duration Long E 1226
TIME :06:22:13 06:52:18 30 (min) Purpose code: 3
LOG :3007.62 3009.06 1.44 Area code : 3
FDEPTH: 191 178 GearCond.code:
BDEPTH: 191 178 Validity code:
Towing dir: 360° Wire out: 660 m Speed: 30 kn*10

Sorted: 215 Kg Total catch: 22.00 CATCH/HOUR: 44.00

CONGRIDAE	0.46	22	0.06
Todarodes sagittatus	0.46	22	0.06
Neocyttus rhomboidalis	0.46	22	0.06
Bathynectes piperitus	0.46	22	0.06
GALATHEIDAE *	0.22	68	0.03
Total	773.96		100.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	24.60	312	55.91	8302
Merluccius capensis, male	18.80	252	42.73	8303
Merluccius capensis, juveniles	0.46	20	1.05	8304
Sufflogobius bibarbatus	0.14	56	0.32	
Aequorea aequorea	0.00	1808		
Chrysaora sp.	0.00	178		
Total	44.00		100.01	

PROJECT STATION:2385
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2003
start stop duration Long E 1216
TIME :08:31:28 09:01:17 30 (min) Purpose code: 3
LOG :3020.41 3021.90 1.47 Area code : 3
FDEPTH: 247 248 GearCond.code:
BDEPTH: 247 248 Validity code: 1
Towing dir: 320° Wire out: 800 m Speed: 30 kn*10

Sorted: 233 Kg Total catch: 195.80 CATCH/HOUR: 391.60

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, male	208.62	3110	53.27	8305
Merluccius capensis, female	181.42	2424	46.33	8306
Merluccius capensis, juveniles	1.56	70	0.40	8307
Chrysaora sp.	0.00	828		
Aequorea aequorea	0.00	23800		
Total	391.60		100.00	

PROJECT STATION:2386
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2005
start stop duration Long E 1207
TIME :10:42:28 11:12:33 30 (min) Purpose code: 3
LOG :3032.16 3033.70 1.53 Area code : 3
FDEPTH: 300 303 GearCond.code:
BDEPTH: 300 303 Validity code: 1
Towing dir: 330° Wire out: 900 m Speed: 30 kn*10

Sorted: 158 Kg Total catch: 1023.36 CATCH/HOUR: 2046.72

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1048.32	3900	51.22	8309
Merluccius capensis, male	900.12	4322	43.98	8308
Sufflogobius bibarbatus	95.16	21676	4.65	
Trachurus capensis	2.80	16	0.14	8310
Merluccius capensis, juveniles	0.32	16	0.02	
Aequorea aequorea	0.00	418		
Chrysaora sp.	0.00	238		
Total	2046.72		100.01	

PROJECT STATION:2387
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2008
start stop duration Long E 1158
TIME :12:57:46 13:27:46 30 (min) Purpose code: 3
LOG :3044.82 3046.33 1.49 Area code : 3
FDEPTH: 370 374 GearCond.code:
BDEPTH: 370 374 Validity code:
Towing dir: 330° Wire out:1100 m Speed: 30 kn*10

Sorted: 236 Kg Total catch: 1358.91 CATCH/HOUR: 2717.82

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1657.60	1582	60.99	8315
Merluccius capensis, male	323.40	406	11.90	8314
Merluccius paradoxus, female	263.20	294	9.68	8319
Helicolenus dactylopterus	243.60	3994	8.96	
Miscellaneous fishes	68.18		2.51	
Lophius vomerinus	42.00	28	1.55	8316
CHIMAERIDAE	23.80	12	0.88	
Chlorophthalmus atlanticus	15.40	546	0.57	
Nezumia micronychodon	14.84	434	0.55	
Trachurus capensis	9.60	18	0.35	8317
Galeus polli	9.10	112	0.33	
Merluccius paradoxus, male	8.54	14	0.31	8318
Bathynectes piperitus	7.98	168	0.29	
Raja confundens	6.86	12	0.25	
Raja alba	6.50	2	0.24	
Todarodes sagittatus	4.96	8	0.18	
Centrolophus niger	3.54	2	0.13	
Coelorinchus coelorhinc. polli	3.08	126	0.11	
Coelorinchus fasciatus	2.94	42	0.11	
Ebinania costaecanarie	1.40	14	0.05	
Beryx splendens	0.82	4	0.03	8312
Dentex macrophthalmus	0.48	2	0.02	8313
Total	2717.82		99.99	

PROJECT STATION:2388
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2010
start stop duration Long E 1152
TIME :15:01:50 15:31:49 30 (min) Purpose code: 3
LOG :3054.35 3056.00 1.65 Area code : 2
FDEPTH: 466 470 GearCond.code:
BDEPTH: 466 470 Validity code:
Towing dir: 320° Wire out:1300 m Speed: 30 kn*10

Sorted: 287 Kg Total catch: 900.07 CATCH/HOUR: 1800.14

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	664.38	918	36.91	8320
Trachyrincus scabrus	392.00	8736	21.78	
Deania calcea	227.00	84	12.61	
Nezumia sp.	142.40	5376	7.91	

Hoplostethus cadenati	117.76	3616	6.54	
Helicolenus dactylopterus	70.08	544	3.89	
Schedophilus huttoni	52.16	32	2.90	
Galeus polli	40.64	384	2.26	
Merluccius paradoxus, male	15.76	26	0.88	8321
Notacanthus sexspinis	15.36	288	0.85	
Epigonus denticulatus	12.16	320	0.68	
Centrophorus squamosus	8.20	2	0.46	
Chlamydoselachus anguineus	7.90	4	0.44	
Todarodes sagittatus	6.72	32	0.37	
Lophius vomerinus	6.60	6	0.37	8322
Lithodes ferox	5.30	16	0.29	

PROJECT STATION:2389
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 2008
start stop duration Long E 1146
TIME :17:09:34 17:40:21 31 (min) Purpose code: 3
LOG :3063.20 3064.78 1.56 Area code : 3
FDEPTH: 575 569 GearCond.code:
BDEPTH: 575 569 Validity code:
Towing dir: 320° Wire out:1500 m Speed: 30 kn*10

Sorted: 256 Kg Total catch: 679.60 CATCH/HOUR: 1315.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	470.52	1889	35.77	
Merluccius paradoxus, female	297.77	312	22.64	8323
Hoplostethus cadenati	173.07	9062	13.16	
Nezumia sp.	126.68	4968	9.63	
Deania calcea	66.00	19	5.02	
Lophius vomerinus	40.84	14	3.10	8325
Centrophorus squamosus	19.55	2	1.49	
Todarodes sagittatus	18.43	66	1.40	
Yarrella blackfordi	18.10	1053	1.38	
Lamprogrammus exutus	17.77	263	1.35	
Helicolenus dactylopterus	15.46	66	1.18	
RAJIDAE	14.81	21	1.13	
Selachophidium guentheri	10.53	197	0.80	
Alepocephalus sp.	8.88	757	0.68	
Bathyuroconger vicinus	5.26	99	0.40	
CHIMAERIDAE	4.08	2	0.31	
Notacanthus sexspinis	3.29	99	0.25	
Ebinania costaecanarie	1.65	33	0.13	
Merluccius paradoxus, male	1.63	2	0.12	8324
Total	1314.32		99.94	

PROJECT STATION:2390
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1954
start stop duration Long E 1132
TIME :20:28:59 20:59:08 30 (min) Purpose code: 3
LOG :3083.93 3085.46 1.51 Area code : 3
FDEPTH: 668 673 GearCond.code:
BDEPTH: 668 673 Validity code: 1
Towing dir: 330° Wire out:1700 m Speed: 30 kn*10

Sorted: 271 Kg Total catch: 478.08 CATCH/HOUR: 956.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	403.00	394	42.15	8327
Nezumia sp.	137.70	5074	14.40	
Trachyrincus scabrus	99.90	324	10.45	
Yarrella blackfordi	65.52	2500	6.85	
Todarodes sagittatus	54.72	108	5.72	
Notacanthus sexspinis	30.96	198	3.24	
Deania calcea	29.60	18	3.10	
Heterocarpus grimaldii	27.18	1470	2.84	
Lophius vomerinus	18.10	6	1.89	8328
Raja confundens	18.00	78	1.88	
OCTOPODIDAE	16.92	18	1.77	
Raja leopardus	11.60	30	1.21	
Alepocephalus sp.	11.34	594	1.19	
Phrynichthys wedli	6.30	18	0.66	
Merluccius paradoxus, male	5.46	6	0.57	8326
Chaceon maritae	4.38	8	0.46	
Ebinania costaecanarie	3.78	18	0.40	
Bathyuroconger vicinus	3.42	36	0.36	
Aristeus varidens	2.88	378	0.30	
Dicrolene intronigra	2.70	90	0.28	
Selachophidium guentheri	1.08	162	0.11	
Shrimps, small, non comm.	0.90	216	0.09	
MYCTOPHIDAE	0.36	36	0.04	
S H R I M P S	0.18	18	0.02	
Nephropsis atlantica	0.18	18	0.02	
Total	956.16		100.00	

PROJECT STATION:2391
DATE:13/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1952
start stop duration Long E 1136
TIME :22:54:03 23:24:11 30 (min) Purpose code: 3
LOG :3094.92 3096.47 1.54 Area code : 3
FDEPTH: 565 566 GearCond.code:
BDEPTH: 565 566 Validity code: 1
Towing dir: 332° Wire out:1520 m Speed: 30 kn*10

Sorted: 223 Kg Total catch: 503.78 CATCH/HOUR: 1007.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	279.40	1144	27.73	
Merluccius paradoxus, female	274.40	300	27.23	8330
Hoplostethus cadenati	142.56	6886	14.15	
Nezumia micronychodon	70.40	2750	6.99	
Chaceon maritae	41.58	88	4.13	
Lophius vomerinus	36.40	12	3.61	8331
Helicolenus dactylopterus	36.08	264	3.58	
Deania calcea	36.00	14	3.57	
Centroscymnus coelolepis	24.80	2	2.46	
Notacanthus sexspinis	11.66	88	1.16	
Lamprogrammus exutus	11.00	264	1.09	
Todarodes sagittatus	8.88	88	0.88	
Raja confundens	7.24	52	0.72	
Raja alba	7.02	54	0.70	
Yarrella blackfordi	6.60	418	0.66	
Alepocephalus sp.	6.16	86	0.61	
Selachophidium guentheri	5.72	88	0.57	
Merluccius paradoxus, male	1.54	2	0.15	8329
GALATHEIDAE *	0.12	88	0.01	
Total	1007.56		100.00	

Aristeus varidens	4.80	928	0.27	
Chaceon maritae	3.38	6	0.19	
Yarrella blackfordi	2.56	256	0.14	
Neoharriotta pinnata	2.10	2	0.12	
Ebinania costaecanarie	1.92	96	0.11	
CONGRIDAE	0.96	32	0.05	
Total	1800.14		100.02	

PROJECT STATION:2392
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1950
start stop duration Long E 1140
TIME :01:10:53 01:40:48 30 (min) Purpose code: 3
LOG :3105.22 3106.83 1.61 Area code : 3
FDEPTH: 479 485 GearCond.code:
BDEPTH: 479 485 Validity code: 1
Towing dir: 330° Wire out:1300 m Speed: 30 kn*10

Sorted: 160 Kg Total catch: 375.85 CATCH/HOUR: 751.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	212.80	326	28.31	8332
Trachyrincus scabrus	172.80	1280	22.99	
Helicolenus dactylopterus	166.40	1460	22.14	
Nezumia micronychodon	43.84	5010	5.83	
Hoplostethus cadenati	40.32	1968	5.36	
Deepwater fish mixture	34.72		4.62	
Lophius vomerinus	21.40	8	2.85	8334
Yarrella blackfordi	11.52	928	1.53	
Merluccius paradoxus, male	6.40	10	0.85	8333
Raja confundens	6.38	8	0.85	
Galeus polli	5.44	48	0.72	
Aristeus varidens	4.96	528	0.66	
Deania calcea	4.94	18	0.66	
Chaceon maritae	3.58	6	0.48	
Lamprogrammus exutus	3.20	16	0.43	
Bathyuroconger vicinus	3.20	48	0.43	
Ebinania costaecanarie	3.04	64	0.40	
Centroscymnus coelolepis	2.36	2	0.31	
Notacanthus sexspinis	1.60	32	0.21	
Selachophidium guentheri	1.44	32	0.19	
Lithodes ferox	1.04	4	0.14	
S H R I M P S	0.32	80	0.04	
Total	751.70		100.00	

PROJECT STATION:2393
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1945
start stop duration Long E 1153
TIME :04:39:09 05:09:48 31 (min) Purpose code: 3
LOG :3124.32 3125.92 1.58 Area code : 3
FDEPTH: 358 358 GearCond.code:
BDEPTH: 358 358 Validity code: 1
Towing dir: 330° Wire out:1050 m Speed:330 kn*10

Sorted: 29 Kg Total catch: 121.58 CATCH/HOUR: 235.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Coelorinchus fasciatus	67.88	3617	28.85	
Pterothrissus belloci	33.33	244	14.16	
Bathynectes piperitus	29.67	1097	12.61	
Aristeus varidens	26.83	5894	11.40	
Austroglossus microlepis	25.16	64	10.69	8338
Helicolenus dactylopterus	16.66	935	7.08	
Merluccius capensis, female	9.62	17	4.09	8336
Lophius vomerinus	7.01	17	2.98	8337
Chlorophthalmus atlanticus	5.28	285	2.24	
Galeus polli	4.47	81	1.90	
Chelidonichthys queketti	3.66	81	1.56	
Merluccius capensis, male	3.31	6	1.41	8335
Lophius vaillanti	1.43	2	0.61	8339
Dentex macrophthalmus	1.01	4	0.43	
Total	235.32		100.01	

PROJECT STATION:2394
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1942
start stop duration Long E 1203
TIME :06:56:06 07:25:23 29 (min) Purpose code: 3
LOG :3137.73 3139.20 1.47 Area code : 3
FDEPTH: 301 292 GearCond.code:
BDEPTH: 301 292 Validity code:
Towing dir: 75° Wire out: 940 m Speed: 30 kn*10

Sorted: 22 Kg Total catch: 23.64 CATCH/HOUR: 48.91

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	23.48	333	48.01	8340
Merluccius capensis, female	21.10	290	43.14	8342
Bathynectes piperitus	3.14	79	6.42	
Sufflogobius bibarbatus	0.74	197	1.51	
Merluccius capensis, juveniles	0.35	12	0.72	8341
Octopus sp.	0.08	2	0.16	
Total	48.89		99.96	

PROJECT STATION:2395
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1941
start stop duration Long E 1210
TIME :08:29:47 08:59:54 30 (min) Purpose code: 3
LOG :3144.56 3146.05 1.45 Area code : 3
FDEPTH: 250 238 GearCond.code:
BDEPTH: 250 238 Validity code: 1
Towing dir: 75° Wire out: 800 m Speed: 30 kn*10

Sorted: 65 Kg Total catch: 50.60 CATCH/HOUR: 101.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	56.76	822	56.09	8343
Merluccius capensis, female	41.66	608	41.17	8344
Merluccius capensis, juveniles	1.82	58	1.80	8345
Sufflogobius bibarbatus	0.96	192	0.95	
Aequorea aequorea	0.00	22048		
Chrysaora sp.	0.00	96		
Total	101.20		100.01	

PROJECT STATION:2396
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1939
start stop duration Long E 1217
TIME :10:17:15 10:37:17 20 (min) Purpose code: 3
LOG :3151.66 3152.73 1.07 Area code : 3
FDEPTH: 184 187 GearCond.code:
BDEPTH: 184 187 Validity code: 1
Towing dir: 75° Wire out: 600 m Speed: 30 kn*10

Sorted: 46 Kg Total catch: 48.74 CATCH/HOUR: 146.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	74.97	1077	51.27	8347
Merluccius capensis, male	70.44	1017	48.17	8346
Sufflogobius bibarbatus	0.45	225	0.31	
Perulibatrachus rossignoli	0.36	3	0.25	
Aequorea aequorea	0.00	19980		
Chrysaora sp.	0.00	321		
Total	146.22		100.00	

PROJECT STATION:2397
DATE:14/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1933
start stop duration Long E 1227
TIME :12:33:02 12:48:01 15 (min) Purpose code: 3
LOG :3167.17 3167.97 0.79 Area code : 3
FDEPTH: 134 135 GearCond.code:
BDEPTH: 134 135 Validity code: 1
Towing dir: 240° Wire out: 450 m Speed: 30 kn*10

Sorted: 37 Kg Total catch: 0.74 CATCH/HOUR: 2.96

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1.52	12	51.35	8349
Sufflogobius bibarbatus	0.60	136	20.27	
Merluccius capensis, male	0.40	8	13.51	8348
Helicolenus dactylopterus	0.20	4	6.76	
Trachurus capensis, juvenile	0.20	196	6.76	8350
Merluccius capensis, juveniles	0.04	4	1.35	8351
Chrysaora sp.	0.00	520		
Aequorea aequorea	0.00	12240		
Total	2.96		100.00	

PROJECT STATION:2398
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1912
start stop duration Long E 1223
TIME :05:51:08 06:17:55 27 (min) Purpose code: 3
LOG :3199.50 3200.81 1.30 Area code : 3
FDEPTH: 114 116 GearCond.code:
BDEPTH: 114 116 Validity code:
Towing dir: 180° Wire out: 400 m Speed: 30 kn*10

Sorted: 90 Kg Total catch: 58.08 CATCH/HOUR: 129.07

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	63.22	1460	48.98	8354
Merluccius capensis, male	35.00	413	27.12	8352
Merluccius capensis, female	30.78	438	23.85	8353
Sufflogobius bibarbatus	0.07	20	0.05	
Aequorea aequorea	0.00	2093		
Chrysaora sp.	0.00	62		
Total	129.07		100.00	

PROJECT STATION:2399
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1915
start stop duration Long E 1211
TIME :08:18:36 08:38:19 20 (min) Purpose code: 3
LOG :3213.97 3214.98 1.00 Area code : 3
FDEPTH: 179 181 GearCond.code:
BDEPTH: 179 181 Validity code:
Towing dir: 175° Wire out: 600 m Speed: 30 kn*10

Sorted: 70 Kg Total catch: 32.45 CATCH/HOUR: 97.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, male	49.05	618	50.39	8355
Merluccius capensis, female	46.05	687	47.30	8356
Perulibatrachus rossignoli	1.89	15	1.94	
Ophisurus serpens	0.21	6	0.22	
OPHICHTHIDAE	0.15	3	0.15	
Aequorea aequorea	0.00	10767		
Chrysaora sp.	0.00	2190		
Total	97.35		100.00	

PROJECT STATION:2400
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1919
start stop duration Long E 1153
TIME :12:49:57 13:20:39 31 (min) Purpose code: 3
LOG :3238.64 3240.28 1.62 Area code : 3
FDEPTH: 303 304 GearCond.code:
BDEPTH: 303 304 Validity code: 1
Towing dir: 340° Wire out: 900 m Speed: 30 kn*10

Sorted: 205 Kg Total catch: 1154.92 CATCH/HOUR: 2235.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	704.40	1943	31.51	8358
Merluccius capensis, male	412.80	1680	18.47	8357
Dentex macrophthalmus	379.20	1163	16.96	8360
Pterothrissus belloci	357.60	3881	16.00	
Trachurus capensis	273.60	1032	12.24	8359
Sufflogobius bibarbatus	26.17	4845	1.17	
Lophius vomerinus	24.97	27	1.12	8361
Chlorophthalmus atlanticus	22.80	323	1.02	
Austroglossus microlepis	9.68	31	0.43	8362
CHIMAERIDAE	8.90	4	0.40	
Galeus polli	7.68	108	0.34	
Synagrops microlepis	3.48	648	0.16	
Solenocera africana	1.57	432	0.07	
Trigla lyra	1.57	6	0.07	
Todarodes sagittatus	0.68	2	0.03	
Todaropsis eblanae	0.23	8	0.01	
Chrysaora sp.	0.00	14		
Total	2235.33		100.00	

PROJECT STATION:2401
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1920
start stop duration Long E 1142
TIME :15:16:26 15:46:13 30 (min) Purpose code: 3
LOG :3253.10 3254.73 1.58 Area code : 3
FDEPTH: 343 343 GearCond.code:
BDEPTH: 343 343 Validity code:
Towing dir: 350° Wire out:1050 m Speed: 30 kn*10

Sorted: 200 Kg Total catch: 2328.58 CATCH/HOUR: 4657.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	2559.70	3666	54.96	8364
Merluccius capensis, male	1047.80	1586	22.50	8363
Helicolenus dactylopterus	380.90	21164	8.18	
Merluccius paradoxus, female	371.80	650	7.98	8365
Krill	99.58		2.14	
Schedophilus huttoni	53.04	26	1.14	
Chlorophthalmus atlanticus	43.42	3692	0.93	
Todarodes sagittatus	28.60	78	0.61	
Lophius vomerinus	23.00	18	0.49	8366
Heptranchias perlo	14.70	8	0.32	
Nezumia sp.	13.00	442	0.28	
Bathynectes piperitus	5.98	208	0.13	
Trachurus capensis	3.72	8	0.08	8367
Shrimps, small, non comm.	2.60	1014	0.06	
Galeus polli	2.60	26	0.06	
Squalus megalops	2.52	2	0.05	
Coelorinchus coelorhinc. polli	2.08	104	0.04	
Dentex macrophthalmus	1.86	4	0.04	
MYCTOPHIDAE	0.26	130	0.01	
Total	4657.16		100.00	

PROJECT STATION:2402
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1925
start stop duration Long E 1134
TIME :17:42:59 18:12:50 30 (min) Purpose code: 3
LOG :3267.59 3269.14 1.52 Area code : 3
FDEPTH: 441 440 GearCond.code:
BDEPTH: 441 440 Validity code:
Towing dir: 354° Wire out:1250 m Speed: 30 kn*10

Sorted: 222 Kg Total catch: 292.37 CATCH/HOUR: 584.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	382.84	492	65.47	8368
Helicolenus dactylopterus	85.50	750	14.62	
Nezumia sp.	41.70	2260	7.13	
Lophius vomerinus	13.90	4	2.38	8370
Merluccius paradoxus, male	12.80	24	2.19	8369
Coelorinchus fasciatus	7.40	380	1.27	
Selachophidium guentheri	7.20	190	1.23	
Hoplostethus cadenati	6.50	440	1.11	
Epigonus denticulatus	5.10	240	0.87	
Trachyrincus scabrus	4.80	220	0.82	
Galeus polli	4.60	80	0.79	
Yarrella blackfordi	3.50	800	0.60	
Todarodes sagittatus	2.20	10	0.38	
Aristeus varidens	2.00	420	0.34	
Dicrolene intronigra	1.30	20	0.22	
Ebinania costaecanarie	1.10	50	0.19	
Bathynectes piperitus	0.90	20	0.15	
Shrimps, small, non comm.	0.50	110	0.09	
Notacanthus sexspinis	0.50	30	0.09	
Histioteuthis reversa	0.20	20	0.03	
MYCTOPHIDAE	0.10	30	0.02	
GALATHEIDAE *	0.10	20	0.02	
Total	584.74		100.01	

PROJECT STATION:2403
DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1926
start stop duration Long E 1129
TIME :19:56:19 20:28:53 33 (min) Purpose code: 3
LOG :3278.29 3279.83 1.55 Area code : 3
FDEPTH: 542 543 GearCond.code:
BDEPTH: 542 543 Validity code: 1
Towing dir: 352° Wire out:1500 m Speed: 30 kn*10

Sorted: 475 Kg Total catch: 580.33 CATCH/HOUR: 1055.15

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	325.27	355	30.83	8372
Trachyrincus scabrus	249.36	1182	23.63	
Hoplostethus cadenati	112.27	6595	10.64	
Centrophorus squamosus	103.45	7	9.80	
Helicolenus dactylopterus	61.69	615	5.85	
Nezumia sp.	35.93	2647	3.41	
Yarrella blackfordi	32.38	5318	3.07	
Lophius vaillanti	17.27	4	1.64	8374
Deania calcea	16.45	7	1.56	
RAJIDAE	16.31	24	1.55	
C E P H A L O P O D A	13.00	24	1.23	
Lophius vomerinus	12.00	5	1.14	8373
Selachophidium guentheri	11.35	189	1.08	

Galeus polli	10.16	118	0.96	
Raja confundens	9.69	95	0.92	
Merluccius paradoxus, male	7.09	9	0.67	8371
Ebinania costaecanarie	5.67	71	0.54	
Bathyuroconger vicinus	4.73	95	0.45	
Chaceon maritae	3.27	7	0.31	
Raja leopardus	2.13	47	0.20	
CHIMAERIDAE	2.11	2	0.20	
MYCTOPHIDAE	1.65	425	0.16	
Alepocephalus sp.	0.71	24	0.07	
Stomias boa boa	0.47	24	0.04	
POLYCHAELIDAE	0.47	24	0.04	
GALATHEIDAE *	0.24	71	0.02	
Total	1055.12		100.01	

PROJECT STATION:2404

DATE:15/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1927

start stop duration Long E 1123

TIME :22:18:16 22:48:14 30 (min) Purpose code: 3

LOG :3288.78 3290.27 1.47 Area code : 3

FDEPTH: 654 654 GearCond.code:

BDEPTH: 654 654 Validity code: 1

Towing dir: 355° Wire out:1700 m Speed: 30 kn*10

Sorted: 476 Kg Total catch: 580.56 CATCH/HOUR: 1161.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	739.40	726	63.68	8376
Nezumia micronychodon	85.26	874	7.34	
Bathylagus glacilis	42.00	1082	3.62	
Yarrella blackfordi	40.46	1658	3.48	
Centroscyllium fabricii	33.60	2	2.89	
Trachyrincus scabrus	27.00	78	2.33	
RAJIDAE	23.00	48	1.98	
Deania calcea	22.80	10	1.96	
Lophius vaillanti	22.40	6	1.93	8378
Alepocephalus sp.	18.34	70	1.58	
Notacanthus sexspinis	16.38	14	1.41	
Todarodes sagittatus	16.26	30	1.40	
Hoplostethus cadenati	14.14	462	1.22	
Selachophidium guentheri	12.60	154	1.09	
Bathyraja smithii	11.00	2	0.95	
Merluccius paradoxus, male	8.80	6	0.76	8375
Raja confundens	6.60	10	0.57	
Heterocarpus grimaldii	5.46	308	0.47	
Lophius vomerinus	4.54	2	0.39	8377
Bathyuroconger vicinus	4.48	56	0.39	
Chaceon maritae	1.56	6	0.13	
Diretmus argenteus	1.12	14	0.10	
Astronesthes filifer	1.12	14	0.10	
OPHIDIIDAE	0.98	14	0.08	
Dicrolene intronigra	0.70	14	0.06	
Phrynichthys wedli	0.56	28	0.05	
Aristeus varidens	0.28	14	0.02	
POLYCHAELIDAE	0.14	14	0.01	
GALATHEIDAE *	0.14	14	0.01	
Total	1161.12		100.00	

PROJECT STATION:2405

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1907

start stop duration Long E 1127

TIME :01:42:53 02:12:48 30 (min) Purpose code: 3

LOG :3311.10 3312.56 1.46 Area code : 3

FDEPTH: 422 423 GearCond.code:

BDEPTH: 422 423 Validity code: 1

Towing dir: 355° Wire out:1200 m Speed: 30 kn*10

Sorted: 178 Kg Total catch: 333.84 CATCH/HOUR: 667.68

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	313.60	3176	46.97	
Merluccius paradoxus, female	156.40	300	23.42	8380
Centroscyllium fabricii	50.20	4	7.52	
Coelorinchus coelorhinc. polli	26.72	1054	4.00	
Lophius vomerinus	17.60	4	2.64	8381
Galeus polli	16.48	136	2.47	
Nezumia micronychodon	15.60	1098	2.34	
Todarodes sagittatus	14.20	28	2.13	
Epigonus denticulatus	13.84	680	2.07	
Deepwater fish mixture	13.12		1.97	
Ebinania costaecanarie	6.40	64	0.96	
Deania profundorum	5.26	8	0.79	
Raja confundens	5.02	4	0.75	
Laemonema laureysi	3.76	48	0.56	
Merluccius paradoxus, male	3.70	8	0.55	8379
Schedophilus huttoni	3.68	2	0.55	
RAJIDAE	0.48	16	0.07	
Todaropsis eblanae	0.48	16	0.07	
Aristeus varidens	0.40	96	0.06	
Chaceon maritae	0.32	8	0.05	
Symbolophorus boops	0.24	48	0.04	
Raja pullopunctata	0.12	6	0.02	
GALATHEIDAE *	0.08	64	0.01	
Diaphus hudsoni	0.08	8	0.01	
NEMICHTHYIDAE	0.08	8	0.01	
Total	667.86		100.03	

PROJECT STATION:2406

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1902

start stop duration Long E 1130

TIME :05:17:23 05:47:55 31 (min) Purpose code: 3

LOG :3320.54 3322.14 1.57 Area code : 3

FDEPTH: 307 309 GearCond.code:

BDEPTH: 307 309 Validity code:

Towing dir: 350° Wire out: 980 m Speed: 30 kn*10

Sorted: 239 Kg Total catch: 1295.68 CATCH/HOUR: 2507.77

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1269.27	2400	50.61	8383
Chlorophthalmus atlanticus	634.35	22101	25.30	
Merluccius capensis, male	355.61	685	14.18	8382
Helicolenus dactylopterus	190.24	5077	7.59	
Coelorinchus coelorhinc. polli	23.67	685	0.94	
Dentex macrophthalmus	14.50	50	0.58	8386
Lophius vomerinus	10.24	6	0.41	8384
Synagrops microlepis	3.87	155	0.15	
MYCTOPHIDAE	2.75	155	0.11	
Lophius vaillanti	2.15	2	0.09	8385
Beryx splendens	1.12	4	0.04	
Total	2507.77		100.00	

PROJECT STATION:2407

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1900

start stop duration Long E 1135

TIME :07:17:18 07:48:10 31 (min) Purpose code: 3

LOG :3329.64 3331.24 1.56 Area code : 3

FDEPTH: 276 278 GearCond.code:

BDEPTH: 276 278 Validity code:

Towing dir: 170° Wire out: 860 m Speed: 30 kn*10

Sorted: 329 Kg Total catch: 3186.62 CATCH/HOUR: 6167.65

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	3619.34	4355	58.68	8388
Merluccius capensis, male	1003.22	1775	16.27	8387
Merluccius capensis, male	564.50	4581	9.15	8390
Merluccius capensis, female	541.92	4258	8.79	8389
Trachurus capensis	178.35	685	2.89	8392
Dentex macrophthalmus	91.65	314	1.49	8393
Squalus megalops	31.61	33	0.51	
Raja straeleni	29.98	64	0.49	
Helicolenus dactylopterus	20.63	1806	0.33	
Zenopsis conchifer	19.03	33	0.31	
Chlorophthalmus atlanticus	15.79	1742	0.26	
Galeus polli	12.25	130	0.20	
Synagrops microlepis	12.25	1645	0.20	
Lophius vomerinus	11.67	8	0.19	8391
Chelidonichthys queketti	9.02	33	0.15	
Coelorinchus coelorhinc. polli	3.85	130	0.06	
Austroglossus microlepis	1.03	2	0.02	8394
Todaropsis eblanae	0.95	33	0.02	
Bathynectes piperitus	0.31	33	0.01	
MYCTOPHIDAE	0.31	97	0.01	
Total	6167.66		100.03	

PROJECT STATION:2408

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1857

start stop duration Long E 1140

TIME :09:12:27 09:42:57 31 (min) Purpose code: 3

LOG :3339.26 3340.81 1.53 Area code : 3

FDEPTH: 293 289 GearCond.code:

BDEPTH: 293 289 Validity code: 1

Towing dir: 350° Wire out: 920 m Speed: 30 kn*10

Sorted: 279 Kg Total catch: 2858.58 CATCH/HOUR: 5532.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	3634.30	9830	65.69	8396
Merluccius capensis, male	1095.70	7937	19.80	8395
Pterothrissus belloci	443.86	3906	8.02	
Trachurus capensis	104.71	443	1.89	8397
Dentex macrophthalmus	99.68	333	1.80	8398
Raja straeleni	55.74	25	1.01	
Lophius vomerinus	28.84	17	0.52	8399
Squalus megalops	19.41	56	0.35	
Galeus polli	14.42	194	0.26	
Synagrops microlepis	10.26	1692	0.19	
Trigla lyra	8.96	23	0.16	
Chlorophthalmus atlanticus	6.10	749	0.11	
Austroglossus microlepis	3.58	14	0.06	8400
MYCTOPHIDAE	2.23	639	0.04	
Coelorinchus coelorhinc. polli	1.94	110	0.04	
Mystriophis rostellatus	1.39	27	0.03	
Bathynectes piperitus	0.83	110	0.02	
Todarodes sagittatus	0.79	2	0.01	
Total	5532.74		100.00	

PROJECT STATION:2409

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1853

start stop duration Long E 1150

TIME :11:40:15 12:10:10 30 (min) Purpose code: 3

LOG :3354.72 3356.19 1.45 Area code : 3

FDEPTH: 245 246 GearCond.code:

BDEPTH: 245 246 Validity code: 1

Towing dir: 330° Wire out:3366 m Speed:180 kn*10

Sorted: Kg Total catch: 14.96 CATCH/HOUR: 29.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Etrumeus whiteheadi	18.10	236	60.49	8401
Merluccius capensis, male	6.70	72	22.39	8403
Sufflogobius bibarbatus	2.98	678	9.96	
Galeichthys feliceps	0.84	4	2.81	
Merluccius capensis, female	0.68	36	2.27	8404
Merluccius polli, female	0.32	6	1.07	8405
Bathynectes piperitus	0.18	14	0.60	
MYCTOPHIDAE	0.08	60	0.27	
Bathyuroconger vicinus	0.04	2	0.13	
Chrysaora sp.	0.00	44		
Aequorea aequorea	0.00	568		
Total	29.92		99.99	

PROJECT STATION:2410

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1840

	start	stop	duration			Long E	1149
TIME	:13:47:44	14:17:49	30 (min)	Purpose code:	3		
LOG	:3367.76	3369.36	1.59	Area code :	3		
FDEPTH:	194	191		GearCond.code:			
BDEPTH:	194	191		Validity code:	1		

Towing dir: 340° Wire out: 940 m Speed: 30 kn*10

Sorted: Kg Total catch: 78.43 CATCH/HOUR: 156.86

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachurus capensis	116.20 1776	74.08	8406
Merluccius capensis, female	21.20 152	13.52	8408
Merluccius capensis, male	9.20 98	5.87	8407
Deepwater fish mixture	7.44	4.74	
Sufflogobius bibarbatus	1.00 312	0.64	
Perulibatrachus rossignoli	0.84 10	0.54	
Galeichthys feliceps	0.76 4	0.48	
Mystriophis rostellatus	0.22 4	0.14	
Total	156.86	100.01	

PROJECT STATION:2411

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1834

	start	stop	duration			Long E	1139
TIME	:15:45:05	15:50:12	5 (min)	Purpose code:	3		
LOG	:3379.29	3379.51	0.22	Area code :	3		
FDEPTH:	216	208		GearCond.code:			
BDEPTH:	216	208		Validity code:			

Towing dir: 340° Wire out: 680 m Speed: 30 kn*10

Sorted: 32 Kg Total catch: 31.61 CATCH/HOUR: 379.32

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	228.24 2172	60.17	8410
Merluccius capensis, male	110.40 1428	29.10	8409
Trachurus capensis	36.36 456	9.59	8411
Sufflogobius bibarbatus	2.16 1056	0.57	
Ophisurus serpens	1.32 48	0.35	
Perulibatrachus rossignoli	0.36 12	0.09	
Galeus polli	0.36 12	0.09	
Trachurus capensis, juvenile	0.12 48	0.03	
Total	379.32	99.99	

PROJECT STATION:2412

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1836

	start	stop	duration			Long E	1136
TIME	:16:52:04	17:23:04	31 (min)	Purpose code:	3		
LOG	:3385.07	3386.72	1.61	Area code :	3		
FDEPTH:	227	231		GearCond.code:			
BDEPTH:	227	231		Validity code:			

Towing dir: 170° Wire out: 700 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 53.47 CATCH/HOUR: 103.49

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	62.71 310	60.60	8415
Merluccius capensis, male	20.52 159	19.83	8414
Trachurus capensis	18.68 172	18.05	8413
Sufflogobius bibarbatus	1.20 319	1.16	
Bathynectes piperitus	0.25 108	0.24	
Ophisurus serpens	0.10 2	0.10	
Trachurus capensis, juvenile	0.04 17	0.04	8412
Total	103.50	100.02	

PROJECT STATION:2413

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1838

	start	stop	duration			Long E	1126
TIME	:19:17:25	19:47:52	30 (min)	Purpose code:	3		
LOG	:3398.34	3399.92	1.56	Area code :	3		
FDEPTH:	323	321		GearCond.code:			
BDEPTH:	323	321		Validity code:			

Towing dir: 10° Wire out:1000 m Speed: 30 kn*10

Sorted: 381 Kg Total catch: 4727.15 CATCH/HOUR: 9454.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	6579.12 5382	69.59	8417
Helicolenus dactylopterus	1006.82 27810	10.65	
Merluccius capensis, male	894.82 1906	9.46	8416
Coelorinchus coelorhinc. polli	311.58 9476	3.30	
Pterothrissus belloci	279.38 1854	2.96	
Dentex macrophthalmus	169.96 566	1.80	8419
Hoplostethus cadenati	63.86 3862	0.68	
Chelidonichthys queketti	37.86 516	0.40	
Deepwater fish mixture	37.34	0.39	
Lophius vomerinus	26.20 32	0.28	8418
Chlorophthalmus atlanticus	22.66 798	0.24	
Bathynectes piperitus	21.64 386	0.23	
Austroglossus microlepis	3.06 24	0.03	8420
Total	9454.30	100.01	

PROJECT STATION:2414

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1838

	start	stop	duration			Long E	1124
TIME	:21:12:57	21:44:07	31 (min)	Purpose code:	3		
LOG	:3406.70	3408.28	1.57	Area code :	3		
FDEPTH:	428	440		GearCond.code:			
BDEPTH:	428	440		Validity code:	1		

Towing dir: 360° Wire out:1250 m Speed: 30 kn*10

Sorted: 358 Kg Total catch: 991.46 CATCH/HOUR: 1918.95

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Helicolenus dactylopterus	441.29 3163	23.00	
Merluccius paradoxus, female	360.39 519	18.78	8421
Hoplostethus cadenati	245.42 12643	12.79	
Nezumia micronychodon	152.13 11702	7.93	
Merluccius capensis, female	138.39 182	7.21	8423
Selachophidium guentheri	89.03 1204	4.64	
Galeus polli	89.03 968	4.64	
Ebinania costaecanarie	82.84 116	4.32	
Epigonus denticulatus	78.97 5148	4.12	
Chaceon maritae	77.42 238	4.03	
Chlorophthalmus atlanticus	51.87 1819	2.70	
Trachyrincus scabrus	30.19 1161	1.57	
Coelorinchus coelorhinc. polli	20.90 619	1.09	
Merluccius capensis, male	18.77 37	0.98	8422
Trachurus capensis	18.19 215	0.95	8424
Lophius vomerinus	14.42 8	0.75	8425
Malacocephalus laevis	6.19 39	0.32	
Aristeus varidens	1.94 348	0.10	
Lophius vaillanti	1.57 2	0.08	8426
Total	1918.95	100.00	

PROJECT STATION:2415

DATE:16/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1838

	start	stop	duration			Long E	1122
TIME	:23:12:27	23:42:20	30 (min)	Purpose code:	3		
LOG	:3414.51	3416.06	1.52	Area code :	3		
FDEPTH:	528	531		GearCond.code:			
BDEPTH:	528	531		Validity code:	1		

Towing dir: 10° Wire out:1450 m Speed: 30 kn*10

Sorted: 272 Kg Total catch: 667.26 CATCH/HOUR: 1334.52

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachyrincus scabrus	591.00 3240	44.29	
Merluccius paradoxus, female	331.30 378	24.83	8428
Helicolenus dactylopterus	128.10 780	9.60	
Nezumia micronychodon	87.60 3612	6.56	
Lophius vaillanti	37.20 8	2.79	8431
RAJIDAE	27.00 16	2.02	
Centroscyllium fabricii	27.00 2	2.02	
Lophius vomerinus	25.40 6	1.90	8430
Hoplostethus cadenati	24.00 1230	1.80	
Raja confundens	16.70 16	1.25	
Deania calcea	12.32 4	0.92	
Alepocephalus sp.	10.50 30	0.79	
Merluccius polli, female	6.76 6	0.51	8429
Ebinania costaecanarie	3.60 90	0.27	
Merluccius paradoxus, male	2.72 4	0.20	8427
OCTOPODIDAE	2.10 30	0.16	
Trachipterus jacksonensis	1.22 2	0.09	
Total	1334.52	100.00	

PROJECT STATION:2416

DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1808

	start	stop	duration			Long E	1140
TIME	:05:10:56	05:31:25	20 (min)	Purpose code:	3		
LOG	:3453.96	3454.96	0.97	Area code :	3		
FDEPTH:	128	132		GearCond.code:			
BDEPTH:	128	132		Validity code:			

Towing dir: 324° Wire out: 400 m Speed: 30 kn*10

Sorted: 204 Kg Total catch: 1269.96 CATCH/HOUR: 3809.88

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Dentex macrophthalmus	2038.20 22446	53.50	8434
Trachurus capensis	482.46 8283	12.66	8437
Trachurus trecae	412.80 6630	10.83	8438
Merluccius capensis, female	339.27 4851	8.91	8433
Merluccius capensis, male	194.79 2994	5.11	8432
Merluccius capensis, female	124.80 339	3.28	8436
Squalus megalops	70.17 156	1.84	
Chelidonichthys queketti	36.63 102	0.96	
Atractoscion aequidens	26.40 39	0.69	
Merluccius capensis, male	21.00 60	0.55	8435
RAJIDAE	16.77 27	0.44	
Perulibatrachus rossignoli	15.48 102	0.41	
Todarodes sagittatus	12.39 180	0.33	
Raja confundens	11.70 6	0.31	
Spondyliosoma cantharus	5.37 6	0.14	
Galeichthys feliceps	1.65 3	0.04	
Total	3809.88	100.00	

PROJECT STATION:2417

DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1802

	start	stop	duration			Long E	1133
TIME	:07:05:38	07:35:51	30 (min)	Purpose code:	3		
LOG	:3466.00	3467.64	1.62	Area code :	3		
FDEPTH:	217	219		GearCond.code:			
BDEPTH:	217	219		Validity code:			

Towing dir: 180° Wire out: 680 m Speed: 30 kn*10

Sorted: 345 Kg Total catch: 2204.45 CATCH/HOUR: 4408.90

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Dentex macrophthalmus	2571.80 15324	58.33	8445
Trachurus capensis	698.78 4350	15.85	8443
Merluccius capensis, female	404.00 580	9.16	8440
Merluccius capensis, female	254.10 2618	5.76	8442
Merluccius capensis, male	242.56 2580	5.50	8441
Trachurus trecae	155.92 1156	3.54	8444
Merluccius capensis, male	52.60 86	1.19	8439
Scomber japonicus	19.70 38	0.45	8446
Atractoscion aequidens	4.04 2	0.09	
Zenopsis conchifer	2.20 8	0.05	
Raja miraletus	1.36 2	0.03	
Squalus megalops	1.12 2	0.03	
Perulibatrachus rossignoli	0.72 6	0.02	
Total	4408.90	100.00	

PROJECT STATION:2418

DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1752

start stop duration Long E 1134
TIME :09:16:55 09:47:52 31 (min) Purpose code: 3
LOG :3480.10 3481.57 1.48 Area code : 3
FDEPTH: 169 170 GearCond.code:
BDEPTH: 169 170 Validity code:
Towing dir: 345° Wire out: 550 m Speed: 30 kn*10

Sorted: 281 Kg Total catch: 1673.90 CATCH/HOUR: 3239.81

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	1090.78	2909	33.67	8451
Squalus megalops	1066.45	2601	32.92	
Dentex macrophthalmus	458.38	3375	14.15	8450
Merluccius capensis, male	256.32	917	7.91	8447

PROJECT STATION:2419
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1743
start stop duration Long E 1133
TIME :11:03:53 11:33:57 30 (min) Purpose code: 3
LOG :3489.72 3491.31 1.56 Area code : 3
FDEPTH: 162 163 GearCond.code:
BDEPTH: 162 163 Validity code:
Towing dir: 350° Wire out: 550 m Speed: 30 kn*10

Sorted: 212 Kg Total catch: 1662.45 CATCH/HOUR: 3324.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	1644.80	11918	49.47	
Merluccius capensis, female	659.20	3072	19.83	8453
Squalus megalops	268.80	576	8.08	
Trachurus capensis	192.00	2602	5.77	
Merluccius capensis, male	192.00		5.77	
Callorhinchus capensis	148.00	68	4.45	
Atractoscion aequidens	53.40	46	1.61	
Trachurus trecae	47.68	646	1.43	
Austroglossus microlepis	35.20	512	1.06	
Trigla lyra	16.92	64	0.51	
Perulibatrachus rossignoli	16.00	320	0.48	
Mystriophis rostellatus	10.88	32	0.33	
Galeichthys feliceps	9.60	32	0.29	
Pterothrissus belloci	9.20	98	0.28	
Mustelus mustelus	8.20	4	0.25	
Spondyliosoma cantharus	5.86	6	0.18	
Raja pullopunctata	5.24	8	0.16	
Zeus faber	1.92	64	0.06	
Total	3324.90		100.01	

PROJECT STATION:2420
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1737
start stop duration Long E 1134
TIME :12:38:38 12:53:38 15 (min) Purpose code: 3
LOG :3496.45 3497.19 0.74 Area code : 3
FDEPTH: 138 137 GearCond.code:
BDEPTH: 138 137 Validity code:
Towing dir: 360° Wire out: 440 m Speed: 30 kn*10

Sorted: 383 Kg Total catch: 4281.85 CATCH/HOUR: 17127.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	12124.80	94752	70.79	
Spondyliosoma cantharus	1737.60	2400	10.15	
Trachurus capensis	1593.60	24288	9.30	8459
Callorhinchus capensis	580.00	24	3.39	
Merluccius capensis, female	271.68	3264	1.59	8457
Pterothrissus belloci	195.84	3072	1.14	
Merluccius capensis, female	185.80	440	1.08	8454
Zeus faber	129.60	288	0.76	
Merluccius capensis, male	112.32	1632	0.66	8456
Trachurus trecae	107.52	1248	0.63	8458
Atractoscion aequidens	49.60	52	0.29	
Merluccius capensis, male	24.60	72	0.14	8455
Mustelus mustelus	12.00	4	0.07	
Trigla lyra	2.44	4	0.01	
Total	17127.40		100.00	

PROJECT STATION:2421
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1728
start stop duration Long E 1139
TIME :14:20:15 14:38:29 18 (min) Purpose code: 3
LOG :3507.49 3508.47 0.97 Area code : 3
FDEPTH: 95 94 GearCond.code:
BDEPTH: 95 94 Validity code:
Towing dir: 360° Wire out: 320 m Speed: 30 kn*10

Sorted: 45 Kg Total catch: 271.50 CATCH/HOUR: 905.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	436.00	2520	48.18	8460
Merluccius capensis, female	176.80	2400	19.54	8462
Merluccius capensis, male	131.00	1780	14.48	8463
Trachurus capensis	98.00	600	10.83	8461
SEPIIDAE	26.40	20	2.92	
Austroglossus microlepis	20.00	820	2.21	
Atractoscion aequidens	11.00	20	1.22	
OPHICHTHIDAE	5.80	120	0.64	
Total	905.00		100.02	

PROJECT STATION:2422
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1722
start stop duration Long E 1140
TIME :15:34:57 15:51:59 17 (min) Purpose code: 3
LOG :3514.39 3515.25 0.85 Area code : 3
FDEPTH: 79 78 GearCond.code:
BDEPTH: 79 78 Validity code:
Towing dir: 360° Wire out: 280 m Speed: 30 kn*10

Sorted: 121 Kg Total catch: 1210.03 CATCH/HOUR: 4270.69

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	2824.16		66.13	8466
Merluccius capensis, female	750.64	11488	17.58	8464
Merluccius capensis, male	667.69	10186	15.63	8465
MORIDAE	17.82	286	0.42	
Austroglossus microlepis	3.74	127	0.09	8467
OPHICHTHIDAE	2.08	42	0.05	
Pterothrissus belloci	152.48	1169	4.71	
Callorhinchus capensis	148.45	62	4.58	
Atractoscion aequidens	25.74	27	0.79	
Trachurus capensis	20.01	248	0.62	8448
Trachurus trecae	11.28	110	0.35	8449
Zenopsis conchifer	8.44	39	0.26	
Spondyliosoma cantharus	4.84	6	0.15	
Mustelus palumbes	4.22	4	0.13	
Raja pullopunctata	4.20	6	0.13	
Trigla lyra	2.59	12	0.08	
Galeichthys feliceps	0.77	2	0.02	
Austroglossus microlepis	0.41	4	0.01	
Perulibatrachus rossignoli	0.12	2		
Total	3255.48		100.48	
Trichiurus lepturus	1.66	42	0.04	
Octopus sp.	0.85	42	0.02	
Total	4268.64		99.96	

PROJECT STATION:2423
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1721
start stop duration Long E 1134
TIME :16:59:42 17:20:11 20 (min) Purpose code: 3
LOG :3522.55 3523.61 1.05 Area code : 3
FDEPTH: 125 124 GearCond.code:
BDEPTH: 125 124 Validity code:
Towing dir: 360° Wire out: 440 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 2955.30 CATCH/HOUR: 8865.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	5283.57	64692	59.59	8472
Trachurus trecae	1662.72	19929	18.75	8474
Trachurus capensis	1431.69	15075	16.15	8473
Pterothrissus belloci	115.89	1137	1.31	
Merluccius capensis, male	115.89	1743	1.31	8470
Merluccius capensis, female	74.25	1212	0.84	8471
Merluccius capensis, female	55.35	132	0.62	8469
Chelidonichthys queketti	28.80	75	0.32	
Atractoscion aequidens	26.25	30	0.30	
Callorhinchus capensis	15.00	6	0.17	
Perulibatrachus rossignoli	14.40	75	0.16	
Spondyliosoma cantharus	11.94	18	0.13	
Merluccius capensis, male	10.80	30	0.12	8468
Todarodes sagittatus	6.81	75	0.08	
Zeus faber	4.71	12	0.05	
Octopus sp.	3.96	3	0.04	
Galeichthys feliceps	2.73	9	0.03	
Raja miraletus	1.14	3	0.01	
Total	8865.90		99.98	

PROJECT STATION:2424
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1730
start stop duration Long E 1118
TIME :20:07:19 20:37:11 30 (min) Purpose code: 3
LOG :3544.82 3546.19 1.36 Area code : 3
FDEPTH: 564 549 GearCond.code:
BDEPTH: 564 549 Validity code:
Towing dir: 344° Wire out:1550 m Speed: 30 kn*10

Sorted: 269 Kg Total catch: 1095.22 CATCH/HOUR: 2190.44

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	961.60	6492	43.90	
Nezumia sp.	355.20	18994	16.22	
Merluccius paradoxus, female	320.30	386	14.62	8476
Hoplostethus cadenati	186.24	7892	8.50	
Helicolenus dactylopterus	89.92	736	4.11	
Todarodes sagittatus	78.08	256	3.56	
Chaceon maritae, male	42.70	160	1.95	
Deepwater fish mixture	40.96		1.87	
Chaceon maritae, female	25.10	158	1.15	
Trachurus trecae	11.84	64	0.54	
Lophius vaillanti	11.60	10	0.53	8478
Alepocephalus sp.	10.24	1440	0.47	
Merluccius polli	9.50	10	0.43	8477
Lophius vomerinus	8.00	2	0.37	8479
Yarrella blackfordi	6.72	352	0.31	
Raja doutrei	6.14	2	0.28	
Lepidopus caudatus	5.12	32	0.23	
Galeus polli	2.88	32	0.13	
Lamprogrammus exutus	2.56	96	0.12	
Ebinania costaecanarie	2.56	64	0.12	
Merluccius paradoxus, male	2.48	4	0.11	8475
Trachurus capensis	2.24	32	0.10	
MYCTOPHIDAE	1.92	1600	0.09	
Bathyuroconger vicinus	1.92	32	0.09	
Centrolophus niger	1.36	2	0.06	
Notacanthus sexspinis	1.28	32	0.06	
Stomias boa boa	0.64	128	0.03	
Halosaurus ovenii	0.32	32	0.01	
Aristeus varidens	0.32	96	0.01	
Shrimps, small, non comm.	0.32	224	0.01	
Nemichthys scolopaceus	0.32	32	0.01	
LITHODIDAE *	0.06	2		
Total	2190.44		99.99	

PROJECT STATION:2425
DATE:17/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1730
start stop duration Long E 1116
TIME :22:13:19 22:43:41 30 (min) Purpose code: 3
LOG :3551.36 3552.97 1.60 Area code : 3
FDEPTH: 674 666 GearCond.code:
BDEPTH: 674 666 Validity code: 1
Towing dir: 160° Wire out:1700 m Speed: 30 kn*10

Sorted: 61 Kg Total catch: 286.20 CATCH/HOUR: 572.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP

	weight	numbers		
Trachyrincus scabrus	171.50	602	29.96	
Todarodes sagittatus	110.60	280	19.32	
Nezumia sp.	100.10	3404	17.49	
Hoplostethus cadenati	45.78	1680	8.00	
Chaceon maritae	44.24	154	7.73	
Merluccius paradoxus, female	43.40	44	7.58	2480
Bathylagus glacilis	9.38	812	1.64	
Deepwater fish mixture	7.00		1.22	
Odontostomias micropogon	5.74	210	1.00	
Lamprogrammus exutus	4.62	56	0.81	
Yarrella blackfordi	3.78	266	0.66	
Galeus polli	3.78	28	0.66	
Centroscymnus coelolepis	3.64	14	0.64	
Raja confundens	3.30	4	0.58	
Notacanthus sexspinis	3.08	14	0.54	

PROJECT STATION:2426
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1736
start stop duration Long E 1120
TIME :00:50:01 01:20:24 30 (min) Purpose code: 3
LOG :3563.74 3565.22 1.44 Area code : 3
FDEPTH: 459 448 GearCond.code:
BDEPTH: 459 448 Validity code:
Towing dir: 352° Wire out:1300 m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 997.60 CATCH/HOUR: 1995.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	625.00	4058	31.33	
Helicolenus dactylopterus	515.00	2784	25.81	
Lophius vomerinus	217.00	56	10.88	8483
Lophius vaillanti	108.60	20	5.44	8484
Merluccius paradoxus, female	74.60	112	3.74	8481
Merluccius sp.	65.50	1650	3.28	
Chaceon maritae	62.50	300	3.13	
Merluccius polli, female	59.40	70	2.98	8485
Epigonus denticulatus	47.00	2550	2.36	
Deepwater fish mixture	45.00		2.26	
Ebinania costaecanarie	44.00	100	2.21	
Galeus polli	32.50	250	1.63	
Merluccius capensis, female	25.00	60	1.25	8482
Aristeus varidens	14.00	2350	0.70	
Trichiurus lepturus	10.00	50	0.50	
Merluccius capensis, male	9.60	28	0.48	8486
Trachurus trecae	9.18	68	0.46	8489
Chlorophthalmus atlanticus	8.00	350	0.40	
Raja confundens	7.92	6	0.40	
Raja straeleni	5.68	4	0.28	
Trachurus capensis	4.68	48	0.23	8488
Merluccius paradoxus, male	2.28	4	0.11	8487
Centrolophus niger	1.60	2	0.08	
Lithodes ferox	1.32	2	0.07	
Total	1995.36		100.01	

PROJECT STATION:2427
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1721
start stop duration Long E 1125
TIME :05:08:08 05:28:28 20 (min) Purpose code: 3
LOG :3580.62 3581.63 1.00 Area code : 3
FDEPTH: 244 238 GearCond.code:
BDEPTH: 244 238 Validity code:
Towing dir: 360° Wire out: 800 m Speed: 30 kn*10

Sorted: 192 Kg Total catch: 899.77 CATCH/HOUR: 2699.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	781.20	3960	28.94	8491
Chlorophthalmus atlanticus	569.52	21384	21.10	
Helicolenus dactylopterus	374.40	6264	13.87	
Merluccius capensis, female	255.75	537	9.47	8492
Pterothrissus belloci	223.20	1224	8.27	
Trachurus trecae	115.20	864	4.27	8495
Merluccius capensis, female	89.85	972	3.33	8497
Merluccius capensis, male	63.60	717	2.36	8496
Synagrops microlepis	63.36	10080	2.35	
Merluccius capensis, male	58.95	150	2.18	8493
Trachurus capensis	25.92	216	0.96	8490
Coelorinchus coelorhinc. polli	20.16	648	0.75	
OPHICHTHIDAE	15.12	72	0.56	
Zenopsis conchifer	11.52	72	0.43	
CONGRIDAE	7.92	72	0.29	
Squalus megalops	7.35	15	0.27	
PORTUNIDAE	5.76	504	0.21	
Mustelus palumbes	5.25	3	0.19	
Austroglossus microlepis	3.84	66	0.14	8494
Shrimps, small, non comm.	1.44	360	0.05	
Total	2699.31		99.99	

PROJECT STATION:2428
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1726
start stop duration Long E 1129
TIME :07:07:55 07:37:50 30 (min) Purpose code: 3
LOG :3589.47 3591.06 1.58 Area code : 3
FDEPTH: 177 184 GearCond.code:
BDEPTH: 177 184 Validity code: 1
Towing dir: 190° Wire out: 550 m Speed: 30 kn*10

Sorted: 229 Kg Total catch: 2270.35 CATCH/HOUR: 4540.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Dentex macrophthalmus	2662.50	18186	58.64	8502
Pterothrissus belloci	441.62	3834	9.73	
Merluccius capensis, female	274.30	504	6.04	8501
Merluccius capensis, female	253.48	2628	5.58	8499
Squalus megalops	240.70	710	5.30	
Merluccius capensis, male	213.72	2414	4.71	8498
Trachurus trecae	209.46	1278	4.61	8505
Trachurus capensis	102.96	568	2.27	8504
Chlorophthalmus atlanticus	49.70	2130	1.09	
Merluccius capensis, male	43.90	102	0.97	8500
Synagrops microlepis	22.72	2840	0.50	
Callorhinchus capensis	15.70	8	0.35	
Atractoscion aequidens	5.08	4	0.11	
Austroglossus microlepis	3.56	72	0.08	8503
Scomber japonicus	1.30	2	0.03	8506
Total	4540.70		100.01	

Brosmiculus imberbis *	2.94	168	0.51	
Melanostomias sp.	2.38	42	0.42	
Selachophidium guentheri	1.68	14	0.29	
Alepocephalus sp.	1.54	56	0.27	
Nemichthys scolopaceus	1.26	70	0.22	
Heterocarpus grimaldii	0.80	14	0.14	
Ebinania costaecanarie	0.70	14	0.12	
Aristeus varidens	0.28	42	0.05	
Thysanoteuthis rhombus	0.28	14	0.05	
RAJIDAE	0.18	4	0.03	
S H R I M P S	0.14	70	0.02	
Glyphus marsupialis	0.14	28	0.02	
Lampadena pontifex	0.14	14	0.02	
Total	572.40		99.99	

PROJECT STATION:2429
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1730
start stop duration Long E 1131
TIME :08:44:08 09:14:10 30 (min) Purpose code: 3
LOG :3597.31 3598.85 1.50 Area code : 3
FDEPTH: 158 154 GearCond.code:
BDEPTH: 158 154 Validity code: 1
Towing dir: 10° Wire out: 500 m Speed: 30 kn*10

Sorted: 186 Kg Total catch: 4649.90 CATCH/HOUR: 9299.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus trecae	5396.00	57740	58.02	8511
Trachurus capensis	1760.80	19880	18.93	8510
Dentex macrophthalmus	1164.40	9940	12.52	8509
Pterothrissus belloci	255.60	3124	2.75	
Merluccius capensis, female	235.20	448	2.53	8508
Merluccius capensis, female	156.20	2556	1.68	8513
Merluccius capensis, male	113.60	1704	1.22	8512
Todaropsis eblanae	65.32	852	0.70	
Zenopsis conchifer	53.96	284	0.58	
Merluccius capensis, male	35.20	90	0.38	8507
Chelidonichthys capensis	25.56	284	0.27	
Atractoscion aequidens	19.00	22	0.20	
Mustelus mustelus	7.00	2	0.08	
Callorhinchus capensis	6.32	4	0.07	
Squalus megalops	2.84	4	0.03	
Mustelus palumbes	2.80	2	0.03	
Total	9299.80		99.99	

PROJECT STATION:2430
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1733
start stop duration Long E 1127
TIME :10:41:21 10:56:18 15 (min) Purpose code: 3
LOG :3606.00 3606.84 0.82 Area code : 3
FDEPTH: 201 200 GearCond.code:
BDEPTH: 201 200 Validity code: 1
Towing dir: 180° Wire out: 620 m Speed: 30 kn*10

Sorted: 232 Kg Total catch: 2724.72 CATCH/HOUR: 10898.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	3671.88	5596	33.69	8515
Trachurus capensis	3234.52	34804	29.68	8518
Dentex macrophthalmus	2405.56	14324	22.07	8516
Merluccius capensis, male	422.12	1324	3.87	8514
Zenopsis conchifer	361.08	1324	3.31	
Pterothrissus belloci	225.80	1680	2.07	
Trachurus trecae	193.24	1680	1.77	8517
Squalus megalops	157.64	712	1.45	
Atractoscion aequidens	147.48	100	1.35	
Hexanchus griseus	76.00	4	0.70	
Helicolenus dactylopterus	3.56	100	0.03	
Total	10898.88		99.99	

PROJECT STATION:2431
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1749
start stop duration Long E 1121
TIME :13:24:01 13:54:01 30 (min) Purpose code: 3
LOG :3623.70 3625.25 1.51 Area code : 3
FDEPTH: 483 513 GearCond.code:
BDEPTH: 483 513 Validity code:
Towing dir: 190° Wire out:1450 m Speed: 30 kn*10

Sorted: 350 Kg Total catch: 1187.50 CATCH/HOUR: 2375.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	795.00	4860	33.47	
Merluccius paradoxus, female	356.70	506	15.02	8524
Helicolenus dactylopterus	288.00	1740	12.13	
Merluccius capensis, female	234.00	1980	9.85	8521
Merluccius capensis, male	196.20	1560	8.26	8522
Chaceon maritae	114.60	630	4.83	
Guentherus altivela	79.80	90	3.36	
Hoplostethus cadenati	78.00	3030	3.28	
Nezumia sp.	71.70	2310	3.02	
Lophius vomerinus	49.40	16	2.08	8527
Lophius vaillanti	35.70	10	1.50	8526
Ebinania costaecanarie	14.70	60	0.62	
Merluccius polli, female	14.50	16	0.61	8525
Raja doutrei	12.30	8	0.52	
Merluccius capensis, female	11.00	14	0.46	8519
Raja clavata	6.00	2	0.25	
Raja confundens	5.00	6	0.21	
Merluccius paradoxus, male	3.62	6	0.15	8523
Merluccius capensis, male	2.78	4	0.12	8520
Laemonema laureysi	2.40	30	0.10	
Chlorophthalmus atlanticus	2.10	60	0.09	
Aristeus varidens	1.20	240	0.05	

Nemichthys scolopaceus	0.30	30	0.01
Total	2375.00		99.99

PROJECT STATION:2432
DATE:18/ 2/98 GEAR TYPE: BT No:3 POSITION:Lat S 1759
start stop duration Long E 1124
TIME :15:53:58 16:13:49 20 (min) Purpose code: 3
LOG :3635.53 3636.51 0.98 Area code : 3
FDEPTH: 324 325 GearCond.code: 8
BDEPTH: 324 325 Validity code: 9
Towing dir: 165° Wire out: 980 m Speed: 30 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

PROJECT STATION:2433
DATE:18/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1758
start stop duration Long E 1122
TIME :18:43:17 19:03:44 20 (min) Purpose code: 3
LOG :3645.66 3646.63 0.95 Area code : 3
FDEPTH: 476 478 GearCond.code:
BDEPTH: 476 478 Validity code:
Towing dir: 350° Wire out:1400 m Speed: 30 kn*10

Sorted: 380 Kg Total catch: 964.37 CATCH/HOUR: 2893.11

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachyrincus scabrus	765.90	6003	26.47	
Hoplostethus cadenati	523.71	22977	18.10	
Merluccius paradoxus, female	415.05	618	14.35	8533
Helicolenus dactylopterus	311.19	3036	10.76	
Merluccius capensis, female	295.80	279	10.22	8531
Merluccius polli, female	252.15	261	8.72	8529
Nezumia sp.	98.67	2829	3.41	
Trachurus capensis	53.82	621	1.86	8528
Merluccius capensis, male	42.60	45	1.47	8530
Lophius vomerinus	29.10	6	1.01	8534
Squalus megalops	24.15	69	0.83	
Ebinania costaecanarie	15.87	138	0.55	
Epigonus denticulatus	13.80	759	0.48	
Galeus polli	11.04	138	0.38	
Raja doutrei	10.14	3	0.35	
Merluccius paradoxus, male	7.98	12	0.28	8532
Dicrolene intronigra	7.59	69	0.26	
Raja straeleni	6.96	3	0.24	
Chlorophthalmus atlanticus	3.45	138	0.12	
Aristeus varidens	2.76	483	0.10	
Stomias boa boa	1.38	207	0.05	
Total	2893.11		100.01	

PROJECT STATION:2434
DATE:18/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1804
start stop duration Long E 1125
TIME :20:52:27 21:22:42 30 (min) Purpose code: 3
LOG :3658.57 3660.09 1.52 Area code : 3
FDEPTH: 534 531 GearCond.code:
BDEPTH: 534 531 Validity code: 1
Towing dir: 340° Wire out:1500 m Speed: 30 kn*10

Sorted: 504 Kg Total catch: 1208.30 CATCH/HOUR: 2416.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	802.20	1040	33.20	8536
Trachyrincus scabrus	508.00	3398	21.02	
Deania calcea	369.38	146	15.29	
Hoplostethus cadenati	306.40	13654	12.68	
Nezumia sp.	173.20	5248	7.17	
Helicolenus dactylopterus	138.00	1120	5.71	
Merluccius polli, female	44.20	44	1.83	8537
Centroscyllium fabricii	26.40	2	1.09	
Raja doutrei	9.40	2	0.39	
Chaceon maritae	6.80	40	0.28	
Merluccius paradoxus, male	4.54	8	0.19	8535
Notacanthus sexspinis	4.00	80	0.17	
Epigonus telescopus	4.00	40	0.17	
Laemonema laureysi	3.60	40	0.15	
Raja confundens	3.26	6	0.13	
Schedophilus huttoni	3.14	2	0.13	
Neoharriotta pinnata	2.86	2	0.12	
RAJIDAE	2.46	2	0.10	
Ebinania costaecanarie	2.40	120	0.10	
Zenopsis conchifer	1.56	2	0.06	
Deania profundorum	0.80	2	0.03	
Total	2416.60		100.01	

PROJECT STATION:2435
DATE:19/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1802
start stop duration Long E 1124
TIME :05:22:57 05:52:26 29 (min) Purpose code: 3
LOG :3684.28 3685.78 1.49 Area code : 3
FDEPTH: 447 442 GearCond.code:
BDEPTH: 447 442 Validity code:
Towing dir: 145° Wire out:1250 m Speed: 30 kn*10

Sorted: 454 Kg Total catch: 879.62 CATCH/HOUR: 1819.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	533.38	811	29.31	8541
Helicolenus dactylopterus	286.76	3172	15.76	
Trachyrincus scabrus	262.86	3259	14.44	
Hoplostethus cadenati	221.59		12.18	
Merluccius polli, female	130.45	134	7.17	8542
Merluccius capensis, female	88.14	178	4.84	8539
Aristeus varidens	44.75	9321	2.46	
Dicrolene intronigra	37.37	1173	2.05	
Raja straeleni	36.83	19	2.02	
Epigonus denticulatus	28.47	1260	1.56	
Nezumia sp.	28.03	153	1.54	
Chlorophthalmus atlanticus	24.99	718	1.37	
Merluccius capensis, male	19.55	56	1.07	8538
Deepwater fish mixture	17.81		0.98	
Squalus megalops	14.77	17	0.81	
Todarodes sagittatus	9.56	23	0.53	
Lophius vomerinus	7.68	2	0.42	8543
Merluccius paradoxus, male	7.55	12	0.41	8540
CHIMAERIDAE	6.62	4	0.36	
Coelorinchus sp.	3.70	66	0.20	
Yarrella blackfordi	3.04	565	0.17	
Selachophidium guentheri	2.17	197	0.12	

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Total				
Raja doutrei	2.07	2	0.11	
Shrimps, small, non comm.	1.30	869	0.07	
Ebinania costaecanarie	0.23	66	0.01	
MYCTOPHIDAE	0.23	327	0.01	
Total	1819.90		99.97	

PROJECT STATION:2436
DATE:19/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1806
start stop duration Long E 1129
TIME :07:11:54 07:41:47 30 (min) Purpose code: 3
LOG :3692.69 3694.17 1.46 Area code : 3
FDEPTH: 307 304 GearCond.code:
BDEPTH: 307 304 Validity code:
Towing dir: 335° Wire out: 900 m Speed: 30 kn*10

Sorted: 118 Kg Total catch: 244.41 CATCH/HOUR: 488.82

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Helicolenus dactylopterus	157.50	5250	32.22	
Merluccius capensis, female	110.80	280	22.67	8547
Pterothrissus belloci	44.30	230	9.06	
Merluccius capensis, male	39.90	146	8.16	8545
Coelorinchus coelorhinc. polli	30.50	1070	6.24	
Hoplostethus cadenati	26.20	2980	5.36	
Chlorophthalmus atlanticus	20.30	800	4.15	
Dentex macrophthalmus	16.10	56	3.29	8544
Deepwater fish mixture	14.30		2.93	
Trigla lyra	11.00	90	2.25	
Raja straeleni	4.26	2	0.87	
Trachurus capensis	3.50	40	0.72	
Synagrops microlepis	2.40	430	0.49	
Aristeus varidens	2.30	670	0.47	
SOLEIDAE	1.80	26	0.37	8546
Epigonus denticulatus	1.40	80	0.29	
Nezumia sp.	0.90	60	0.18	
MYCTOPHIDAE	0.50	100	0.10	
Bathynectes piperitus	0.40	40	0.08	
Selachophidium guentheri	0.30	20	0.06	
Austroglossus microlepis	0.16	2	0.03	8548
Total	488.82		99.99	

PROJECT STATION:2437
DATE:19/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1814
start stop duration Long E 1133
TIME :09:20:18 09:50:27 30 (min) Purpose code: 3
LOG :3705.69 3707.30 1.59 Area code : 3
FDEPTH: 225 217 GearCond.code:
BDEPTH: 225 217 Validity code: 1
Towing dir: 170° Wire out: 700 m Speed: 30 kn*10

Sorted: 186 Kg Total catch: 2148.00 CATCH/HOUR: 4296.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	3108.60	22638	72.36	8551
Dentex macrophthalmus	759.00	5844	17.67	8552
Merluccius capensis, female	196.00	420	4.56	8550
Merluccius capensis, male	99.00	858	2.30	8553
Merluccius capensis, female	79.20	594	1.84	8554
Merluccius capensis, male	54.00	154	1.26	8549
Total	4295.80		99.99	

PROJECT STATION:2438
DATE:19/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 1821
start stop duration Long E 1138
TIME :10:59:58 11:19:45 20 (min) Purpose code: 3
LOG :3714.40 3715.48 1.07 Area code : 3
FDEPTH: 166 169 GearCond.code:
BDEPTH: 166 169 Validity code: 1
Towing dir: 180° Wire out: 550 m Speed: 30 kn*10

Sorted: 173 Kg Total catch: 7000.00 CATCH/HOUR: 21000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Trachurus capensis	14138.34	206253	67.33	8555
Trachurus trecae	5554.86	76503	26.45	8559
Dentex macrophthalmus	861.51	8007	4.10	8557
Merluccius capensis, female	273.00	849	1.30	8556
Merluccius capensis, male	172.29	243	0.82	8558
Total	21000.00		100.00	

PROJECT STATION:2439
DATE:20/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2033
start stop duration Long E 1205
TIME :02:45:50 03:15:49 30 (min) Purpose code: 3
LOG :3864.25 3895.83 1.58 Area code : 3
FDEPTH: 505 507 GearCond.code:
BDEPTH: 505 507 Validity code:
Towing dir: 150° Wire out:1400 m Speed: 3 kn*10

Sorted: 381 Kg Total catch: 522.28 CATCH/HOUR: 1044.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius paradoxus, female	636.70	874	60.95	8561
Trachyrincus scabrus	195.00	1068	18.67	
Nezumia sp.	34.92	1092	3.34	
Hoplostethus cadenati	27.84	1524	2.67	
Centroscyllium fabricii	27.00	2	2.58	
Helicolenus dactylopterus	24.48	168	2.34	
Deania calcea	22.00	8	2.11	
Todarodes sagittatus	17.76	36	1.70	
Deepwater fish mixture	16.80		1.61	
Raja confundens	12.20	16	1.17	
Merluccius paradoxus, male	9.10	14	0.87	8560
C E P H A L O P O D A	8.04	12	0.77	
Alepocephalus sp.	3.24	588	0.31	

PROJECT STATION:2440
DATE:20/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2030
start stop duration Long E 1207
TIME :05:12:15 05:42:07 30 (min) Purpose code: 3
LOG :3872.14 3873.64 1.48 Area code : 3
FDEPTH: 409 415 GearCond.code:
BDEPTH: 409 415 Validity code:
Towing dir: 330° Wire out:1200 m Speed: 30 kn*10

Sorted: 500 Kg Total catch: 594.32 CATCH/HOUR: 1188.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	458.70	354	38.59	8563
Merluccius paradoxus, female	404.20	940	34.01	8565
Helicolenus dactylopterus	162.00	1128	13.63	
Merluccius capensis, male	35.90	40	3.02	8562
Nezumia sp.	31.28	1192	2.63	
Deepwater fish mixture	21.12		1.78	
CHIMAERIDAE	15.30	4	1.29	
Merluccius paradoxus, male	9.38	24	0.79	8564
Todarodes sagittatus	6.48	8	0.55	
Ebinania costaecanarie	5.78	24	0.49	
Selachophidium guentheri	5.76	216	0.48	
Schedophilus huttoni	5.12	2	0.43	
Galeus polli	4.00	4	0.34	
Ruvettus pretiosus	3.38	2	0.28	
Epigonus denticulatus	3.36	168	0.28	
Chlorophthalmus atlanticus	3.36	112	0.28	
SQUALIDAE	2.80	4	0.24	
RAJIDAE	2.18	2	0.18	
Coelorinchus fasciatus	1.92	120	0.16	
Hoplostethus cadenati	1.92	104	0.16	
Aristeus varidens	1.76	288	0.15	
Yarrella blackfordi	1.12	168	0.09	
Stomias boa boa	0.72	32	0.06	
Notacanthus sexspinis	0.72	32	0.06	
Dicrolene intronigra	0.48	8	0.04	
Total	1188.74		100.01	

PROJECT STATION:2441
DATE:20/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2026
start stop duration Long E 1219
TIME :07:46:32 08:16:41 30 (min) Purpose code: 3
LOG :3888.16 3889.63 1.44 Area code : 3
FDEPTH: 306 303 GearCond.code:
BDEPTH: 306 303 Validity code:
Towing dir: 345° Wire out: 900 m Speed: 30 kn*10

Sorted: 143 Kg Total catch: 769.28 CATCH/HOUR: 1538.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	692.50	7200	45.01	8572
Merluccius capensis, male	578.76	6100	37.62	8571
Merluccius capensis, female	143.80	226	9.35	8570
Sufflogobius bibarbatus	86.00	20750	5.59	
Merluccius capensis, male	26.30	58	1.71	8569
Trachurus capensis	3.14	16	0.20	8568
Pterothrissus belloci	3.00	50	0.19	
Dentex macrophthalmus	1.86	8	0.12	8573
Solenocera africana	1.76	350	0.11	
Lophius vomerinus	0.94	4	0.06	8566
Austroglossus microlepis	0.50	6	0.03	8567
Total	1538.56		99.99	

PROJECT STATION:2442
DATE:20/ 2/98 GEAR TYPE: BT No:2 POSITION:Lat S 2026
start stop duration Long E 1231
TIME :10:10:03 10:19:57 10 (min) Purpose code: 3
LOG :3903.54 3904.07 0.52 Area code : 3
FDEPTH: 277 278 GearCond.code:
BDEPTH: 277 278 Validity code: 1
Towing dir: 160° Wire out: 560 m Speed: 30 kn*10

Sorted: Kg Total catch: 62.37 CATCH/HOUR: 374.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP
Merluccius capensis, female	195.60	2580	52.27	8575
Merluccius capensis, male	176.40	2400	47.14	8574
Merluccius capensis, juveniles	1.44	60	0.38	8576
Trachurus capensis, juvenile	0.36	198	0.10	8577
Sufflogobius bibarbatus	0.36	66	0.10	
Notacanthus sexspinis	0.06	6	0.02	
Aequorea aequorea	0.00	38466		
Chrysaora sp.	0.00	2592		
Total	374.22		100.01	
Raja confundens	2.04	24	0.20	
Aristeus varidens	1.92	252	0.18	
Diaphus sp.	1.32	288	0.13	
Bassanago albescens	1.08	24	0.10	
Yarrella blackfordi	1.08	84	0.10	
Notacanthus sexspinis	1.08	24	0.10	
Stomias boa boa	0.36	24	0.03	
Histioteuthis reversa	0.06	12	0.01	
Total	1044.02		99.94	

Annex IV Instruments and fishing gear

The Simrad scientific echo sounder EK 500/38 kHz, was used during the survey for estimation of fish density. The Bergen Echo Integrator system (BEI) logging raw data from the echo sounder, was used to scrutinise the acoustic records, and to allocate integrator data to fish species. All raw data were stored to CD disc, and a backup of the database of scrutinised data, stored. The details of the settings of the 38 kHz echo sounder were as follows:

Transceiver-1 menu

Transducer depth	5.5 m
Absorption coeff.	10 dB/km
Pulse length	medium
Bandwidth	wide
Max. power	2 000 W
Angle sensitivity	21.9
2-way beam angle	-21.0 dB
SV transducer gain	27.54 dB
TS transducer gain	27.54 dB
3 dB Beamwidth	6.8 deg
Alongship offset	0.02 deg
Athwartship offset	-0.08 deg

Display menu

Echogram	1
Bottom range	12 m
Bottom start	10 m
TVG	20 log R
SV Colour minimum	-64 dB
TS Colour minimum	-50 dB

Printer settings

Range	0-250 m, 250-500 m
TVG	20 log R
SV Colour minimum	-64 dB

Bottom detection menu

Minimum level	-45 dB

HYDROGRAPHY

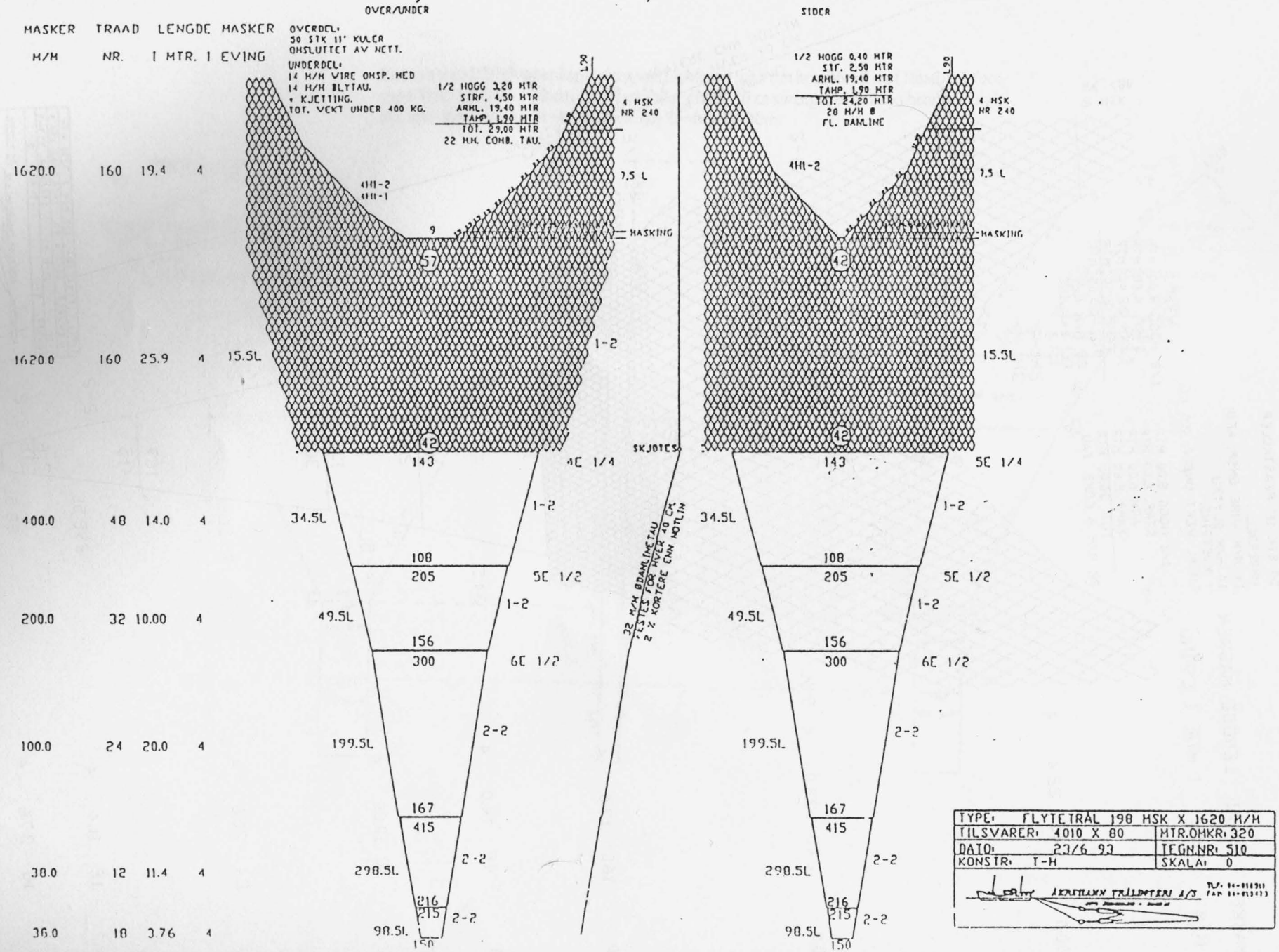
Conductivity, temperature, density, and oxygen were sampled regularly at CTD stations with a Seabird CTD-sonde. The salinity was calculated by a computer.

FISHING GEAR

The small "Åkrehamn" pelagic trawl and "Gisund super" bottom trawl was used for sampling fish.

The bottom trawl had a headline of 31 m, a footrope of 47 m and 20 mm meshsize in the codend with an inner net of 10 mm meshsize. The estimated headline height is 5 m and distance between the wings during towing about 21 m (18m used for swept area calculations). A 20 m constraining rope is mounted on the warps 130 m in front of the trawl doors. The trawl is equipped with a 12" rubber bobbins gear and the Tyborøn 7.8 sqm (1670 kg) trawl doors were used for both trawls. Complete drawings of the trawls used are included.

F/F Dr. Fridtjof Nansen



F/F Dr. Fridtjof Nansen

OVER/UNDER/SIDER

OVERDEL:
50 STK 11" PLASTKULER

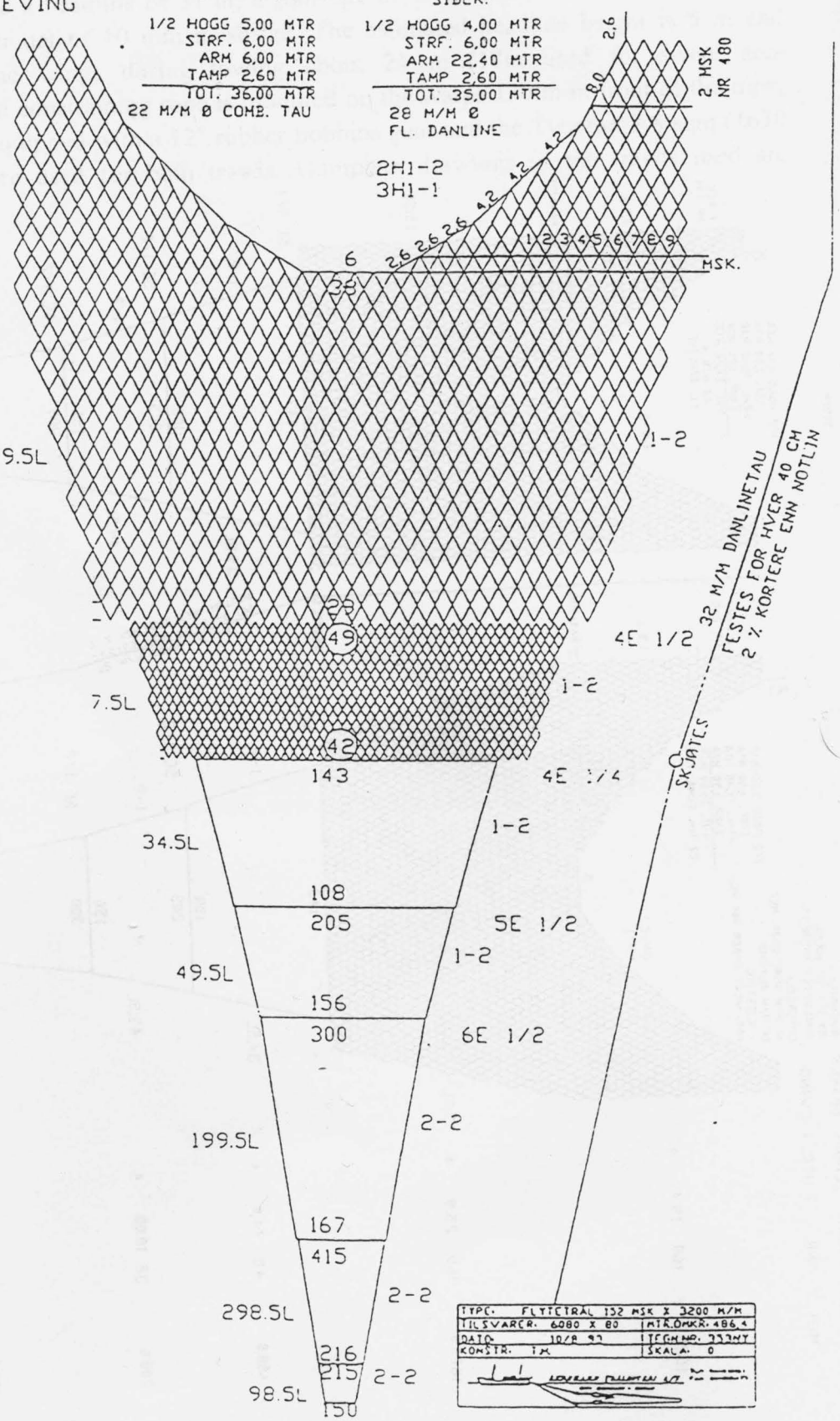
UNDERDEL
14 M/M WIRE OMSP. MED
14 M/M BLYTAU
+ KJETTING.
TOTAL VEKT UNDER 400 KG.

MASKER M/M	TRAAD NR.	LENGDE I MTR.	MASKER I EVING	
3200.0	240	22.4	4	
3200.0	240	32.0	4	9.5L
1620.0	160	13.0	4	7.5L
400.0	48	14.0	4	34.5L
200.0	32	10.00	4	49.5L
100.0	24	20.0	4	199.5L
38.0	12	11.4	4	298.5L
38.0	18	3.76	4	98.5L

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

SIDER.



TYPE:	FLYTETRÅL 132 MSK X 3200 M/M		
TILSVARER:	6080 X 80	MTR.OMKR.	486,4
DATO:	10/8 93	TEGN.NR.	7327NT
KONSTR:	TK	SKALA:	0

Bottom trawl: High opening shrimp and fish trawl with net headline 31m (floatline), foot-rope 47m, gear with 12 cm diameter roller disks, 40 m sweeps, estimated headline hight 6m and distance between wings during towing 18-20m.