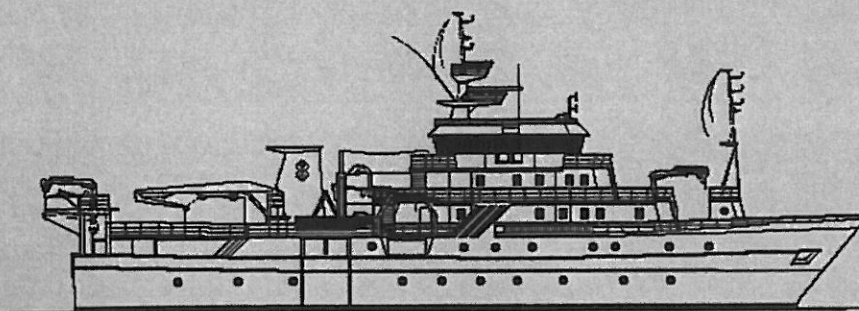


**NORAD - FAO/UNDP PROJECT GLO 92/013**

**CRUISE REPORTS "DR. FRIDTJOF NANSEN"**



**SURVEYS OF THE FISH RESOURCES OF NAMIBIA**

**Cruise Report No 1/96**

**Surveys of the hake stocks**

**12 Jan. - 19 Feb. 1996**

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

**Institute of Marine Research  
Bergen  
Norway**

The DR FRIDTJOF NANSEN RESEARCH PROGRAMME is sponsored by the Norwegian Agency for Development Cooperation (NORAD), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Development Programme (UNDP). The programme in Namibia is organized and planned under agreements between NORAD, Namibian authorities and the Institute of Marine Research, Norway. Its execution is the responsibility of the Institute of Marine Research, Bergen in cooperation with the Ministry of Fisheries & Marine Resources of Namibia. The programme has comprised the following surveys:

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

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



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12 January - 19 February 1996**

by

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**Institute of Marine Research  
Bergen, 1996**

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## **CHAPTER 1 INTRODUCTION**

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### **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 1/1996**

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 were continuously recorded in order to improve knowledge on the influence of the environment on the distribution and natural mortality of the hake stocks.

The acoustic system was used to observe 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 were laid out 10 to 15 nm apart until the zero line of hake distribution was found. Information from the acoustic system was also used in this process. Biomass estimates of hake were based on post stratification by depth and density aggregations.

A part objective was also to carry out comparative fishing with R/V “Africana” in order to find possible correction factors to facilitate harmonization between The Republic of South Africa and Namibia on the assessment of hakes.

### **1.3 PARTICIPATION**

The scientific staff consisted of:

From Namibia:

Filimon DAUSAB, Michael EVENSON (12-31/1), Johnny GAMATHAN, Hashali HAMUKUAYA (12-31/1), Heinrich LESCH, Lima MAARTENS (31/1-19/2), Malakia SHIMANDA, Shaun WELLS (31/1-19/2).

From IDFP, Chile:

Sergio LILLO VEGA (31/1-19/2).

From Norway:

Oddgeir ALVHEIM, Terje HAUGLAND, Ingvar HUSE (12-31/1), Jarle KRISTIANSEN, Tore STRØMME (31/1-19/2).

### **1.4 NARRATIVE**

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



The vessel left Walvis Bay on the afternoon of 12 January and steamed south to commence the work between Lüderitz and Orange River. Trawling inshore of 300 m was mainly carried out during daylight hours, but the deeper stations on the slope were sometimes carried out during dark. CTD-stations were taken on every trawl station in order to map the environment conditions in relation to fish distribution. On 15 January the vessel met with R/V "Africana" for a three day trawl intercalibration exercise. After that the ship called on Lüderitz to exchange chief engineers, whereupon the survey work was commenced again from Orange River. On 30 January the ship called at Walvis Bay for crew change, having covered the area south of Walvis Bay.

The vessel left for the last leg of the survey on 1 February, and the work continued northwards following the standard grid pattern. The northern border was reached on 15 February and on the way south extra sampling was conducted in shallow areas where high aggregations of young hake had been observed, in order to map the inner limit of these distributions more accurately. Arrival in Walvis Bay was on 18 February.

The weather conditions were in periods rough during the southern leg but it was not necessary to interrupt the work. On the northern leg the weather conditions were mostly favourable.

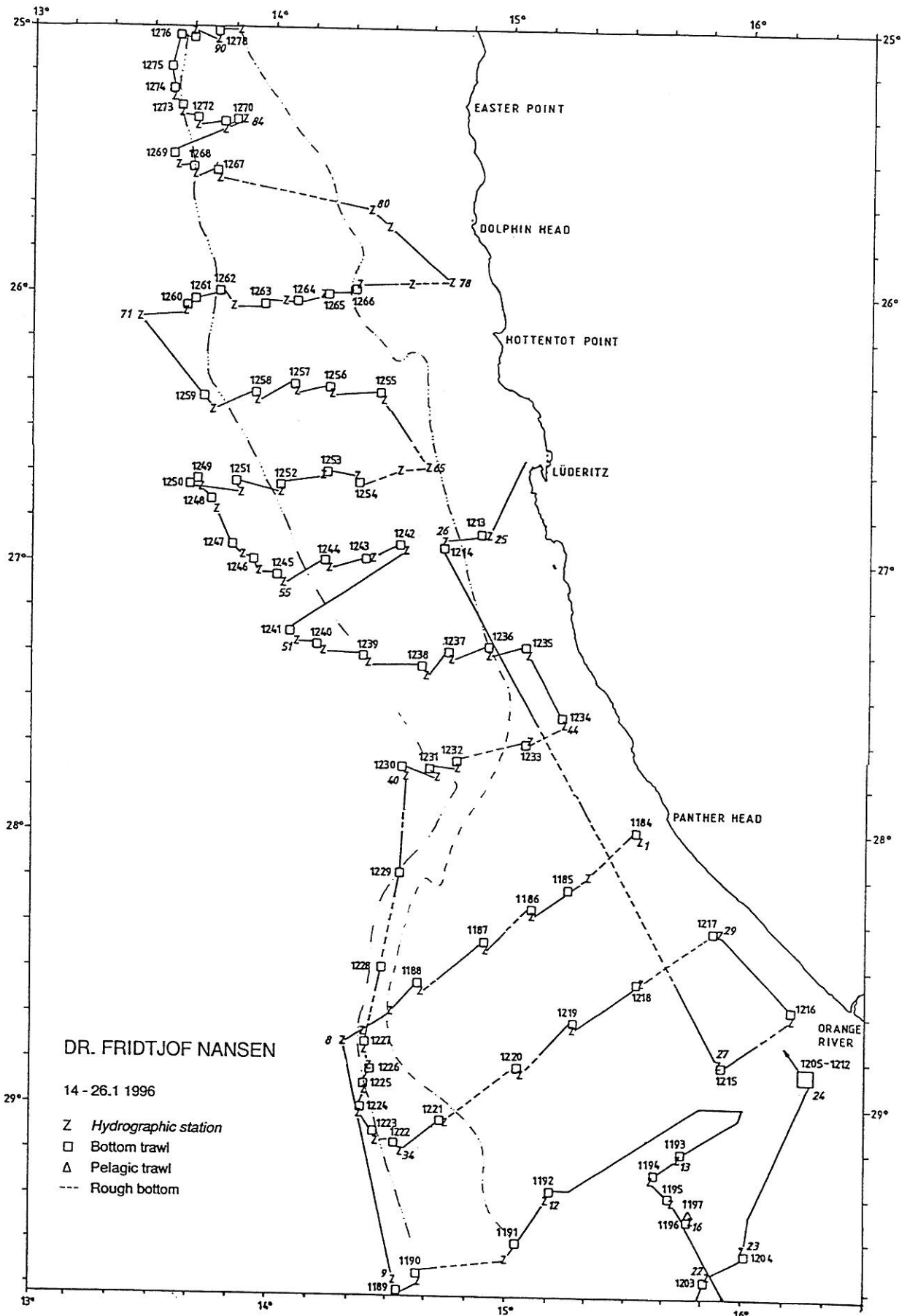


Figure 1a Southern Region (Orange River to St. Francis Bay). Course tracks, fishing stations and hydrographic stations.



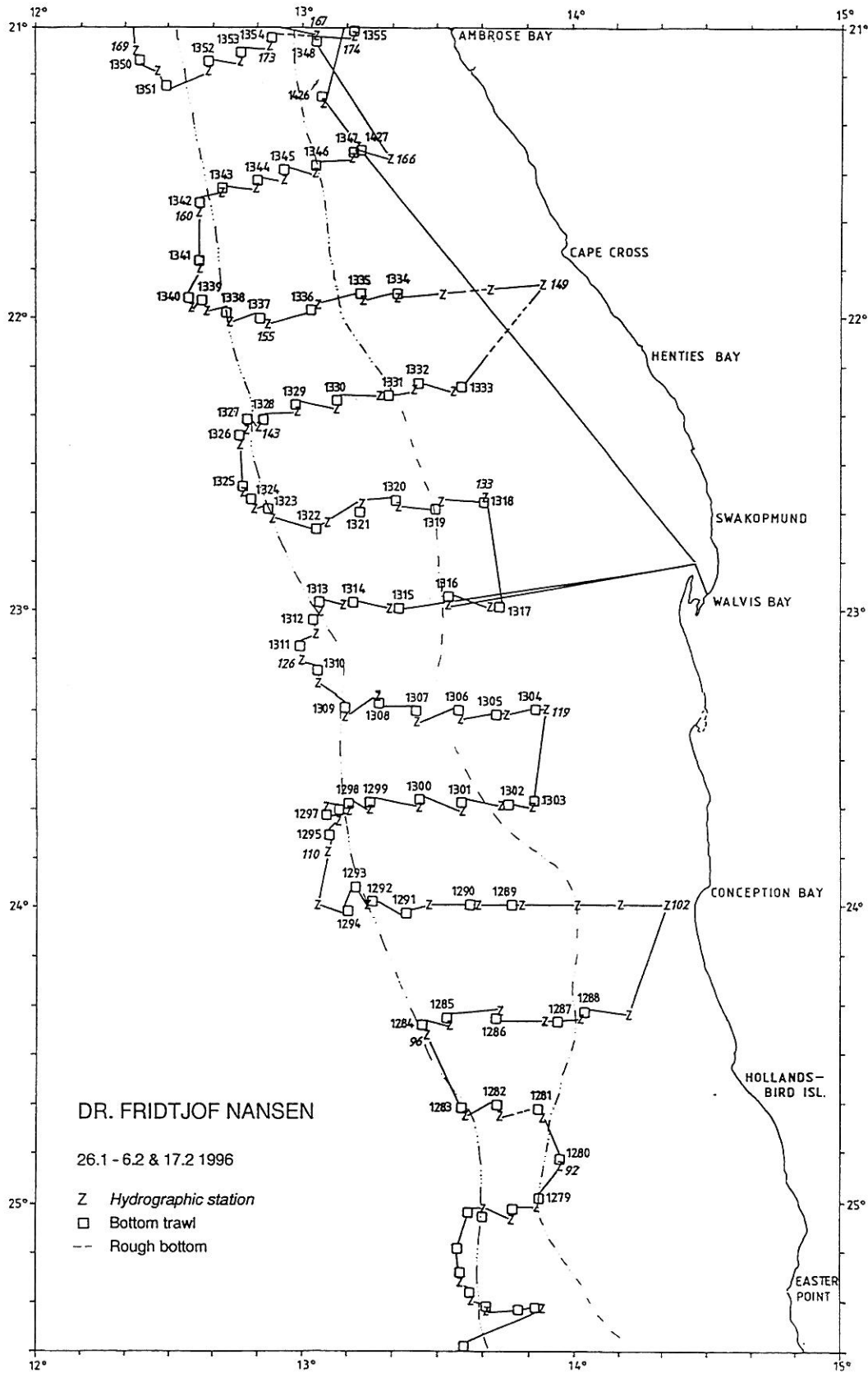


Figure 1b Central Region (St. Francis Bay to Ambrose Bay). Course tracks, fishing stations and hydrographic stations.

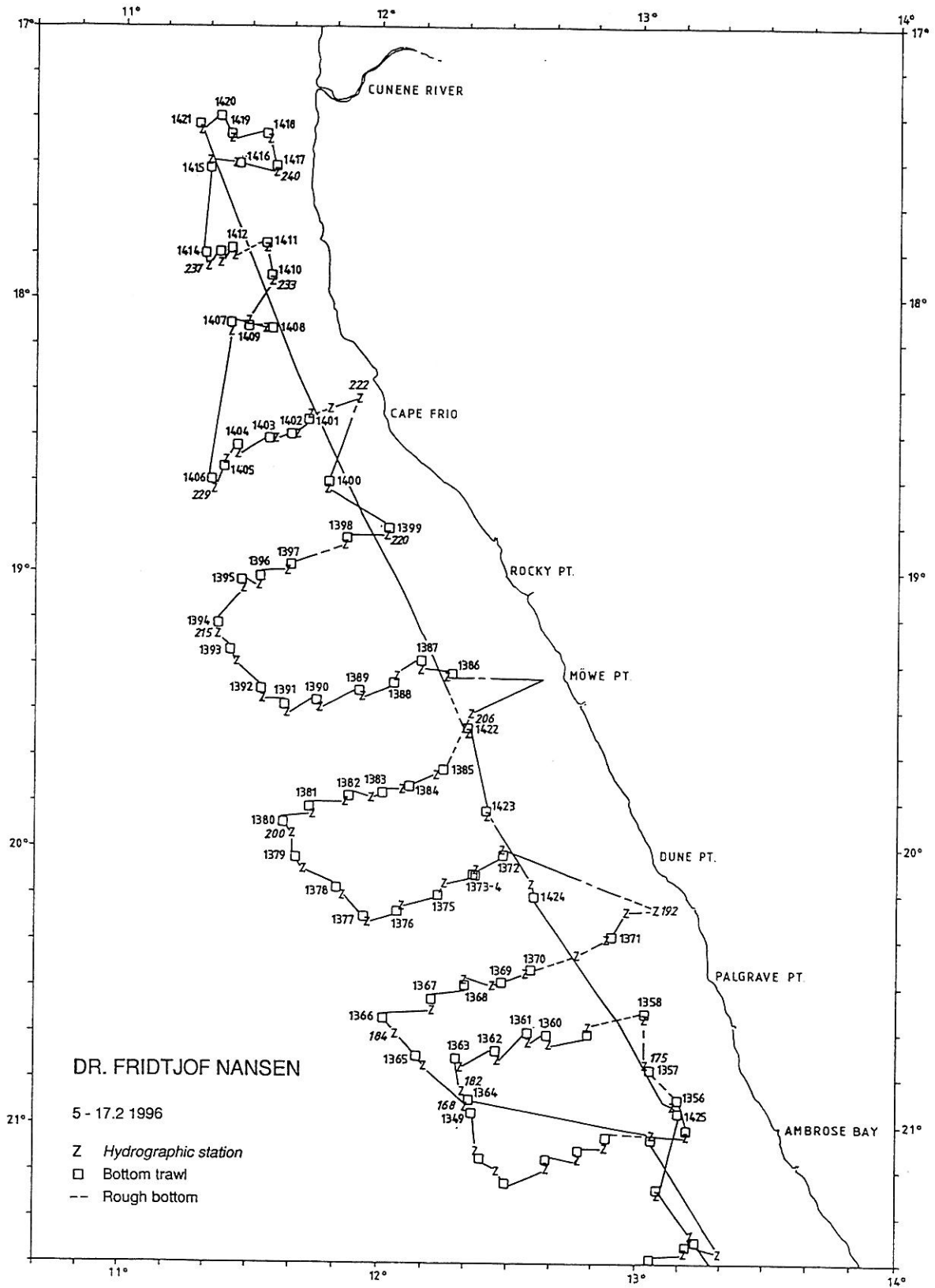


Figure 1c Northern Region (Ambrose Bay to Cunene River). Course tracks, fishing stations and hydrographic stations.



## CHAPTER 2 HYDROGRAPHY

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Strong southern winds prevailed during the first part of the survey until Cape Cross, whereafter a calm period occurred. The wind conditions along the survey track are shown in Figures 2a-c

Sea temperature at 5m 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 two upwelling cells with centres off Lüderitz and Walvis Bay, and a smaller and perhaps weaker cell around Cape Frio.

Bottom oxygen level was recorded at all fishing stations (Figures 5a-c), to monitor its effect on the hake distribution. Low oxygen conditions defined as  $O_2 < 0.5 \text{ ml}$  characterize the shelf environment beyond 200 m bottom depth between Lüderitz and Cape Frio, extending down to 500m off Easter Point, Dune Point and Rocky Point. During the preceding 13 surveys a seasonal pattern has been observed in the build up and flush out of oxygen deficient waters on the Namibian shelf with maximum buildup after the summer growth season and usually flush out during April-May. In the May 1994 survey there was not a normal flush out due to unfavourable oceanographic conditions and the oxygen depleted waters could accumulate over two years. In May 1995 that the 0.5 oxycline again had moved shorewards indicating a previous flush out. During the recent survey that the oxygen deficient waters had build up to the level of January 1995 and perhaps even more.

As during previous surveys, the oxygen maps are overlaid with the distribution maps of the Cape hake, Figures 6a-c. They show that only minor fractions of the hake distributions are found in waters of less than  $0.25 \text{ ml } O_2/l$ , while the fish seems to sustain levels just beyond that limit.

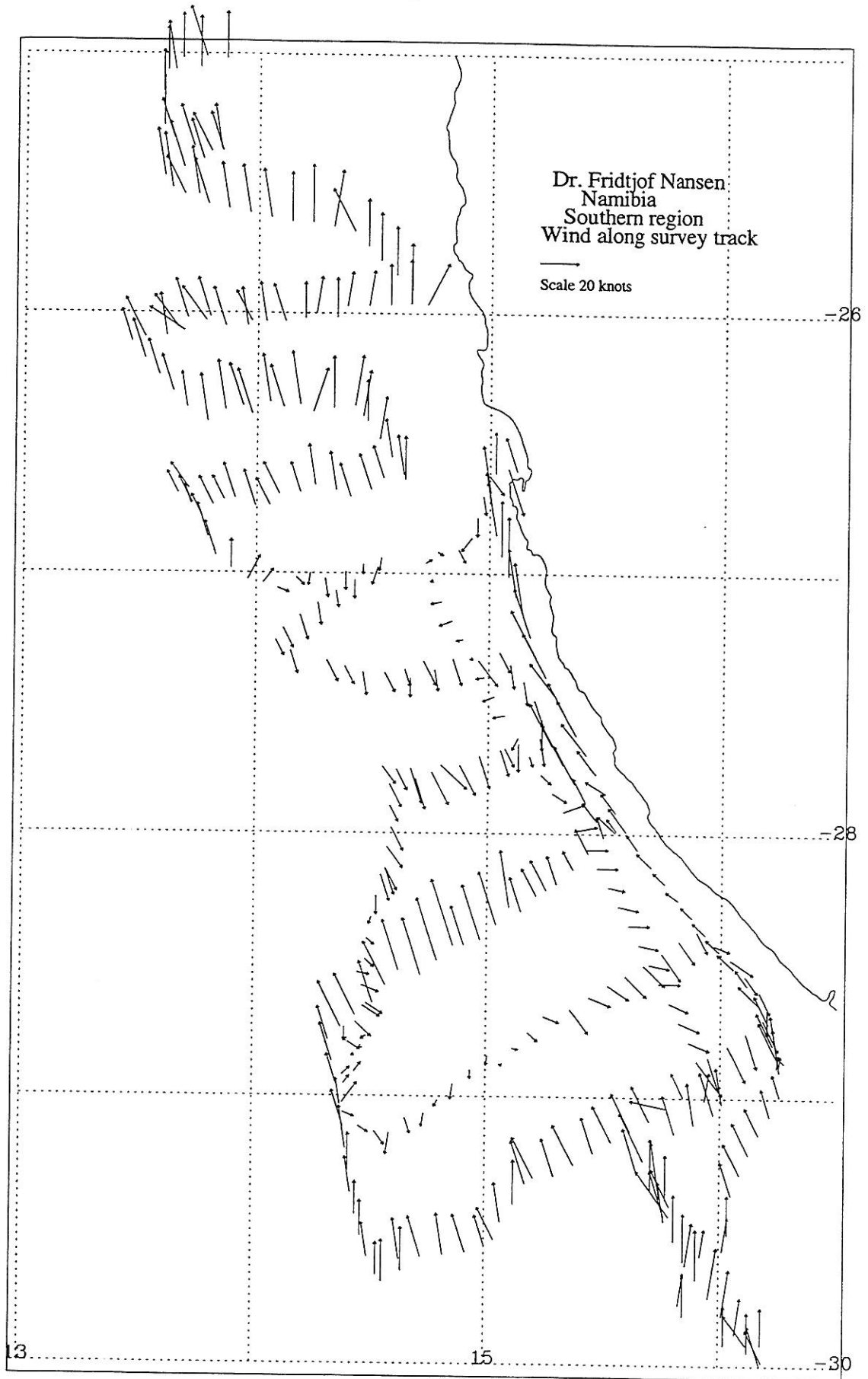


Figure 2a Orange River to St. Francis Bay. Wind conditions along the survey track.



Figure 2b St. Francis Bay to Ambrose Bay. Wind conditions along the survey track.

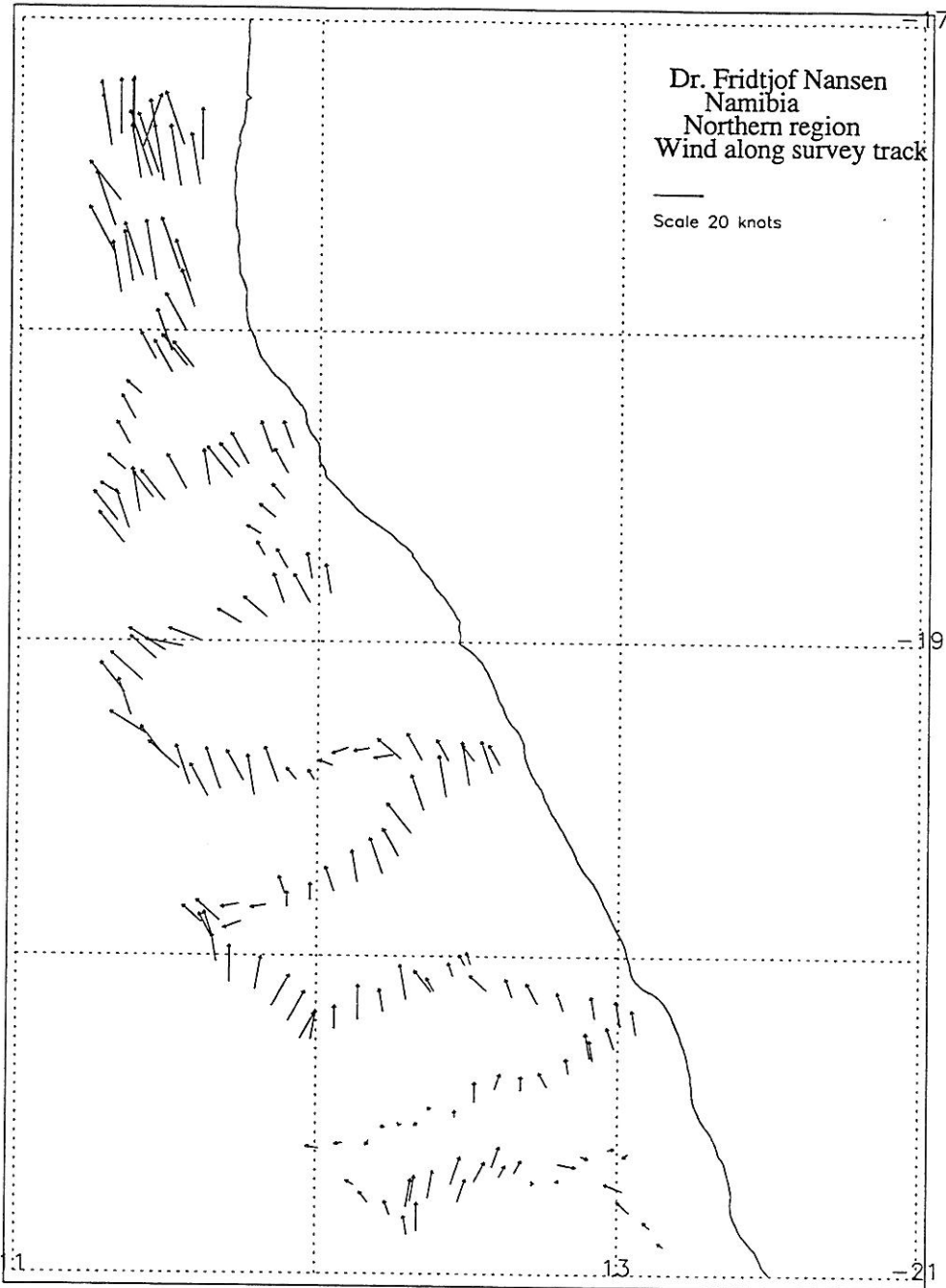


Figure 2c Ambrose Bay to Cunene River. Wind conditions along the survey track.

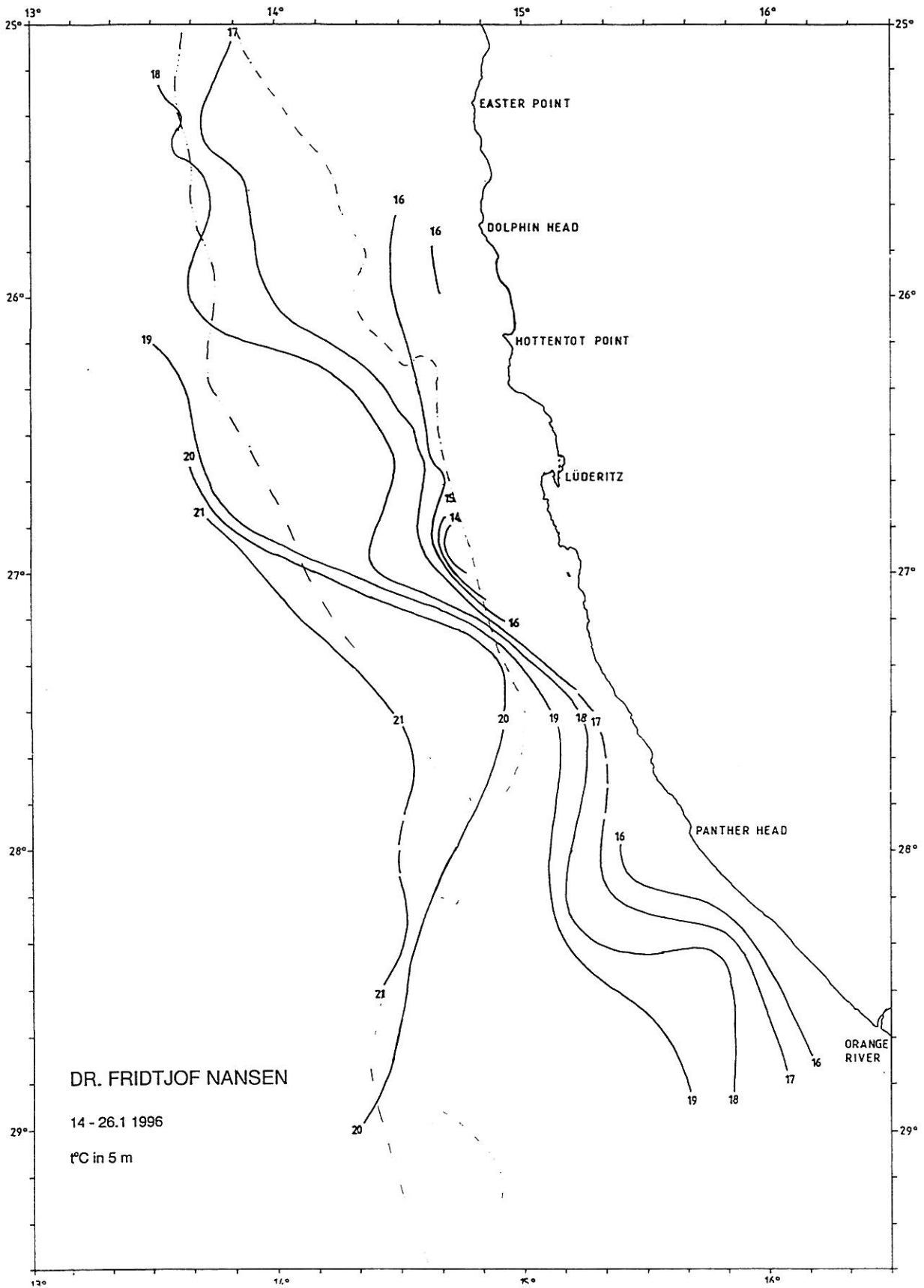


Figure 3a Orange River to St. Francis Bay. Distribution of sea temperature at 5 m depth.



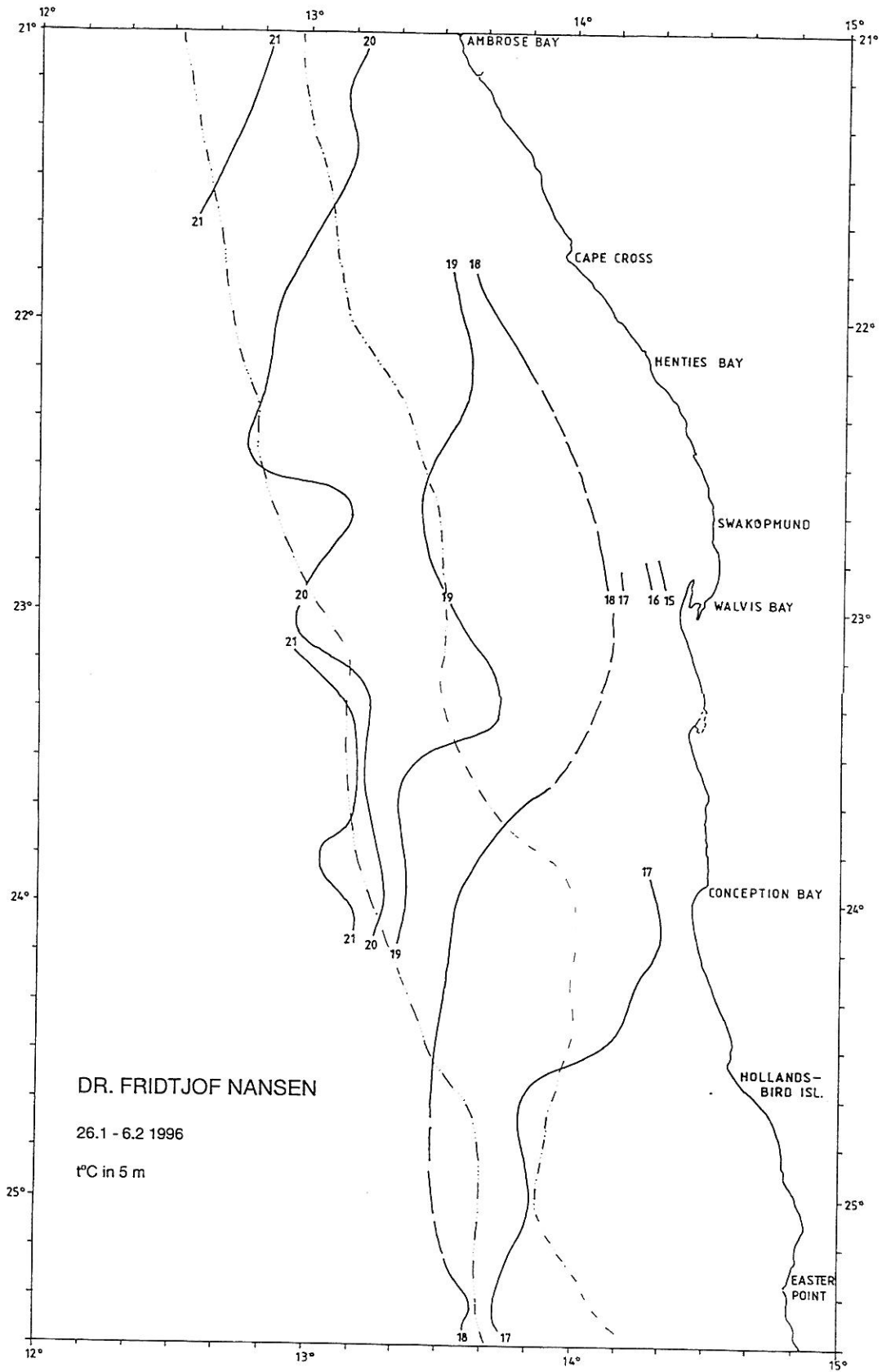


Figure 3b St. Francis Bay to Ambrose Bay. Distribution of sea temperature at 5 m depth.

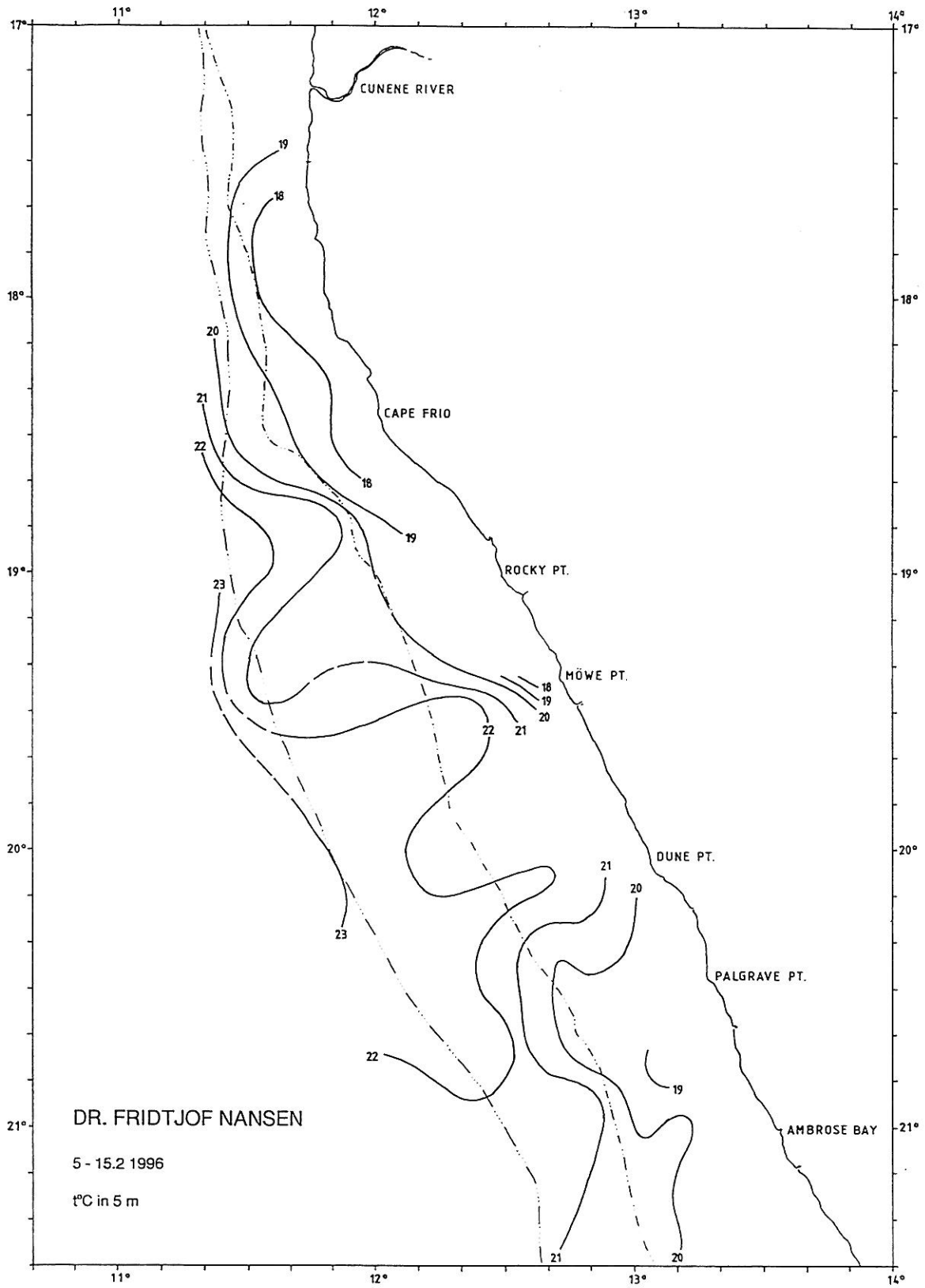
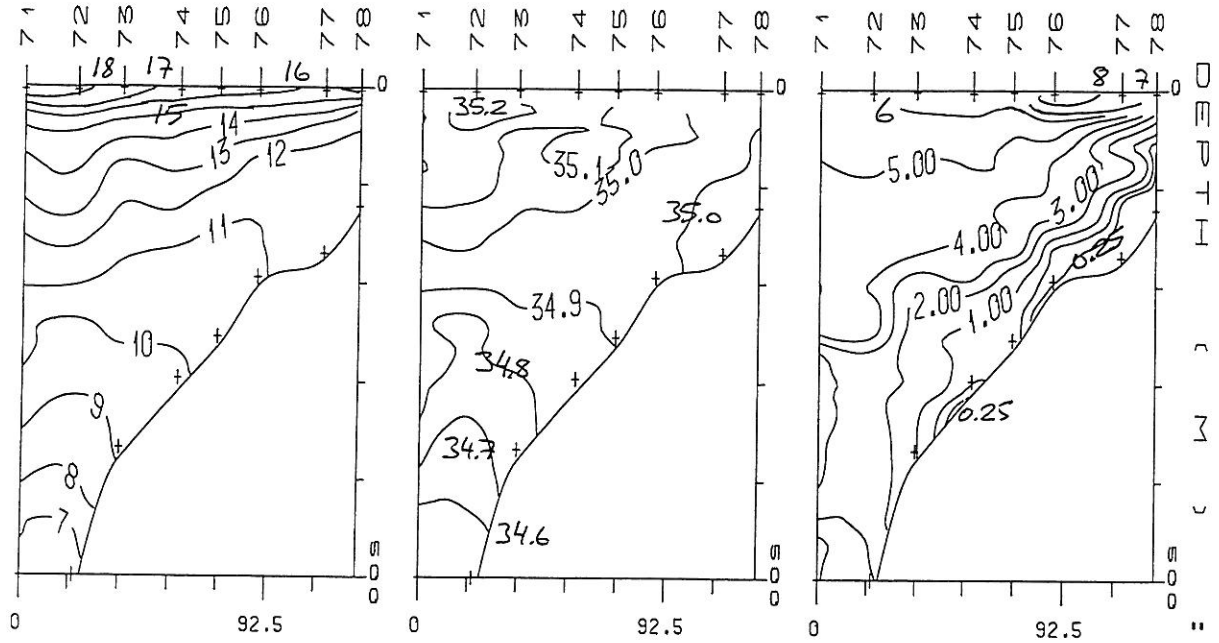
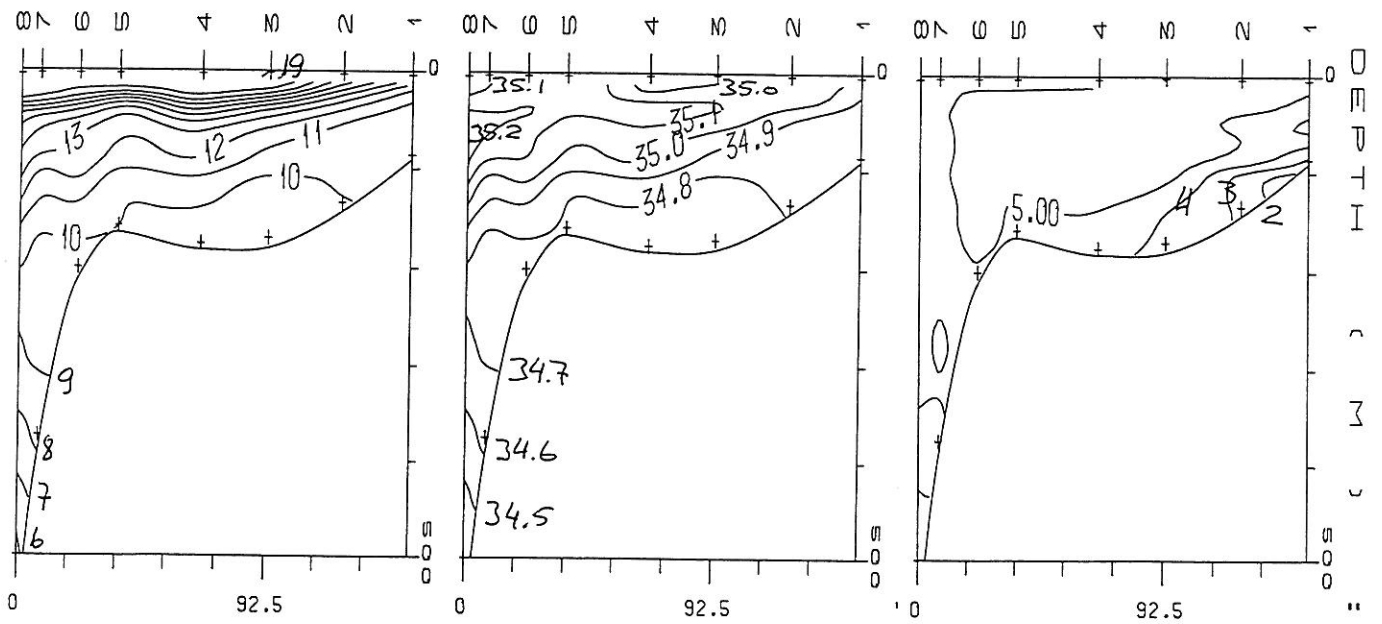


Figure 3c Ambrose Bay to Cunene River. Distribution of sea temperature at 5 m depth.



DOLPHIN HEAD 25.1 1996



PANTHER HEAD 14.1 1996

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

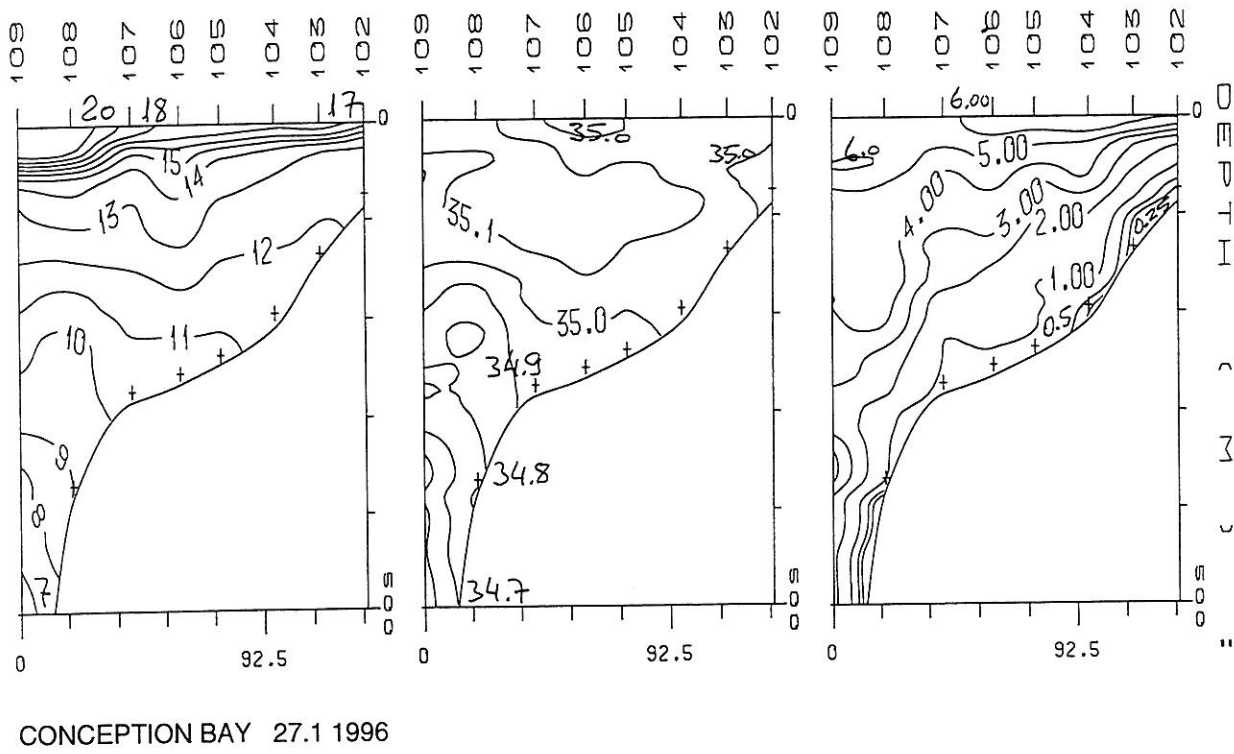
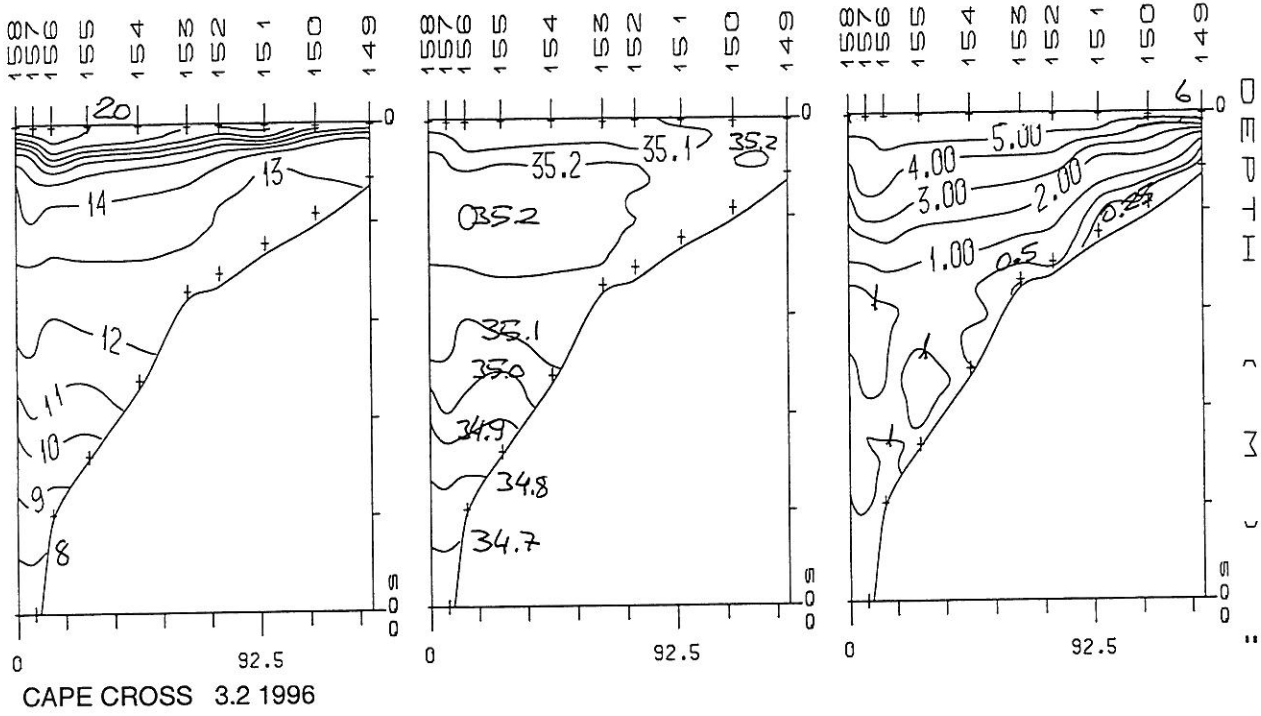
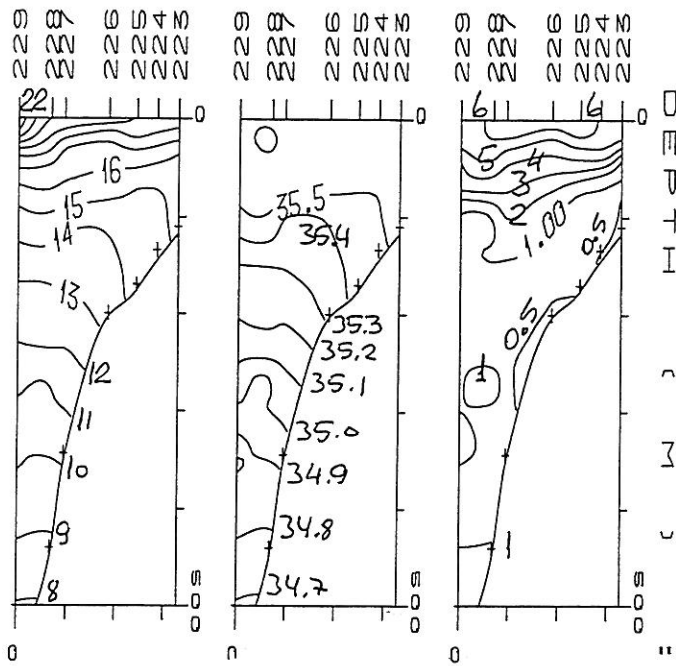
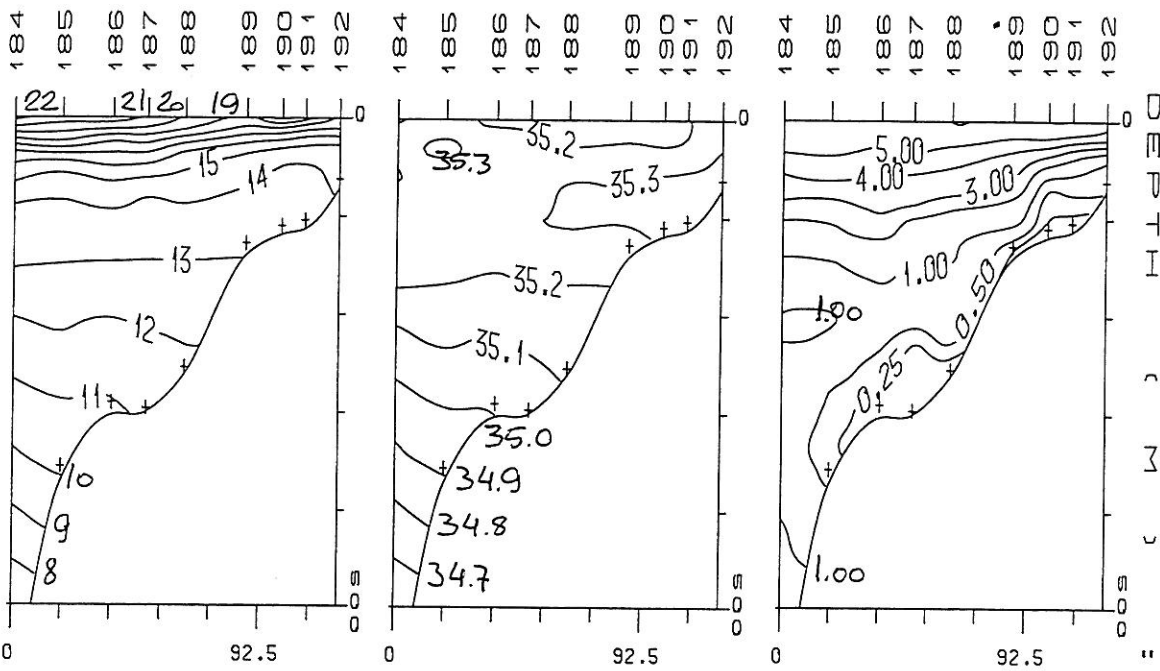


Figure 4b Temperature, salinity and oxygen in the standard profiles worked.



CAPE FRIO 12-13.2 1996



DUNE POINT 7-8.2 1996

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

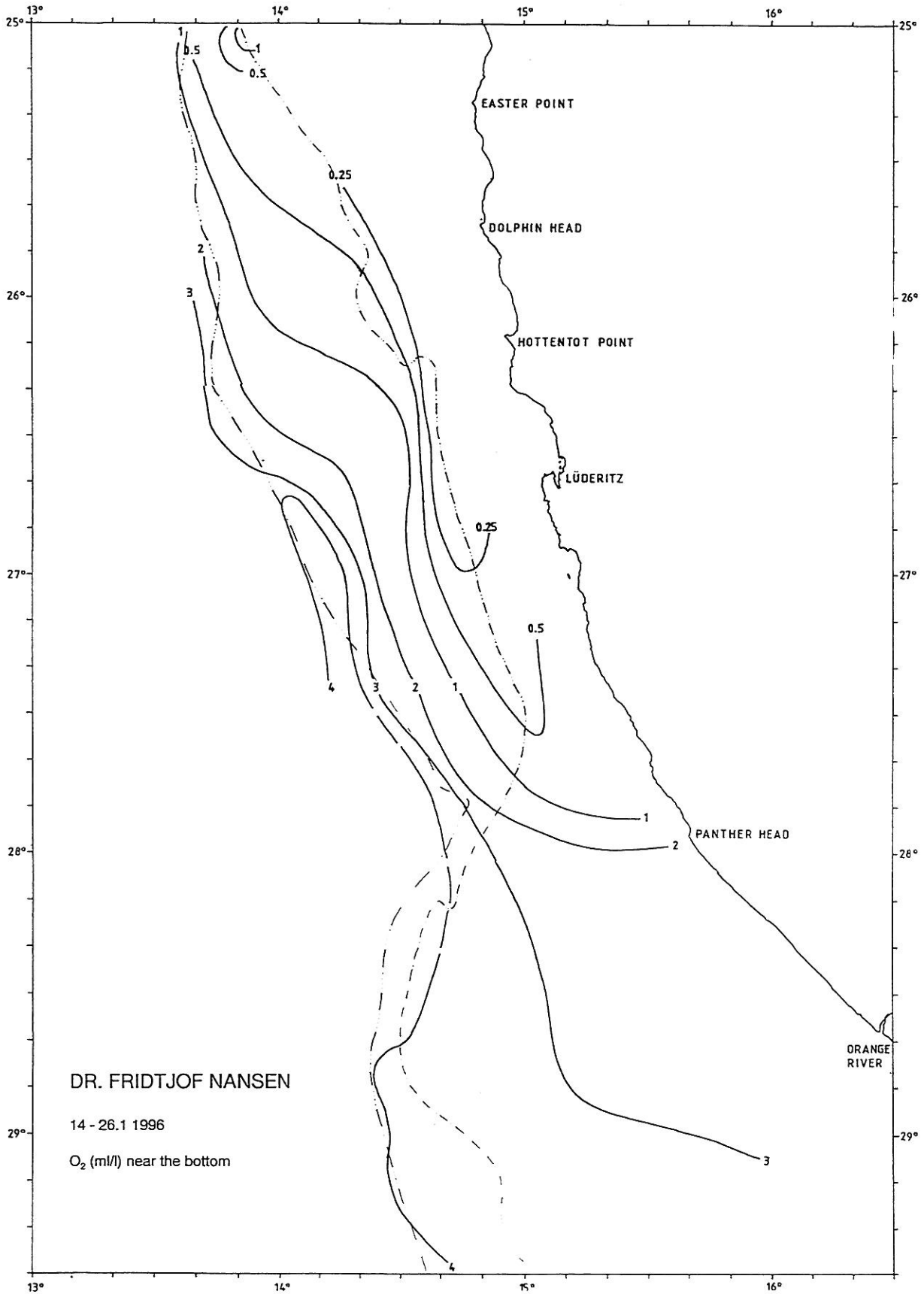


Figure 5a Orange River to St. Francis Bay. Distribution of oxygen (ml/l) near the bottom.



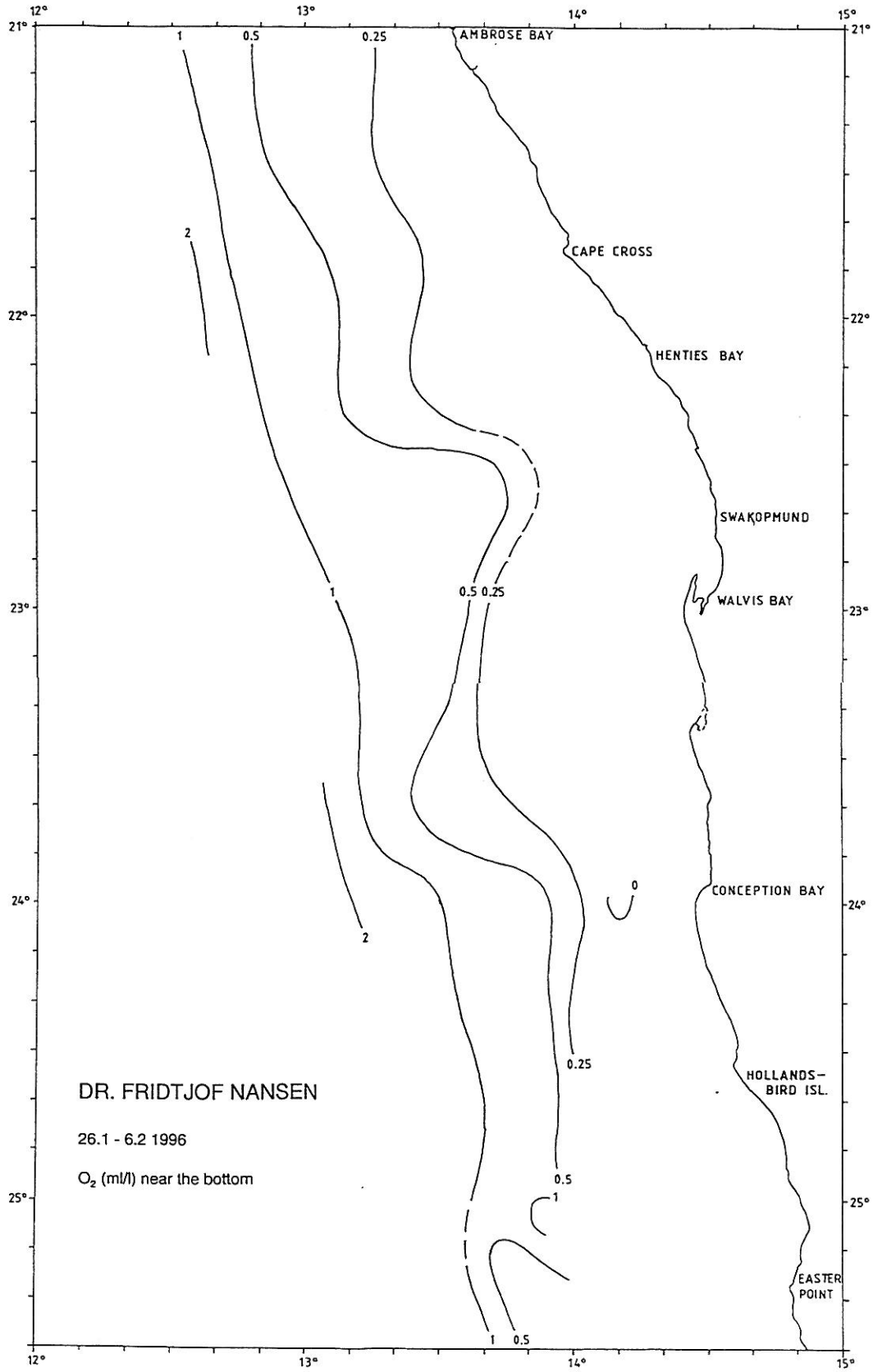


Figure 5b St. Francis Bay to Ambrose Bay. Distribution of oxygen (ml/l) near the bottom

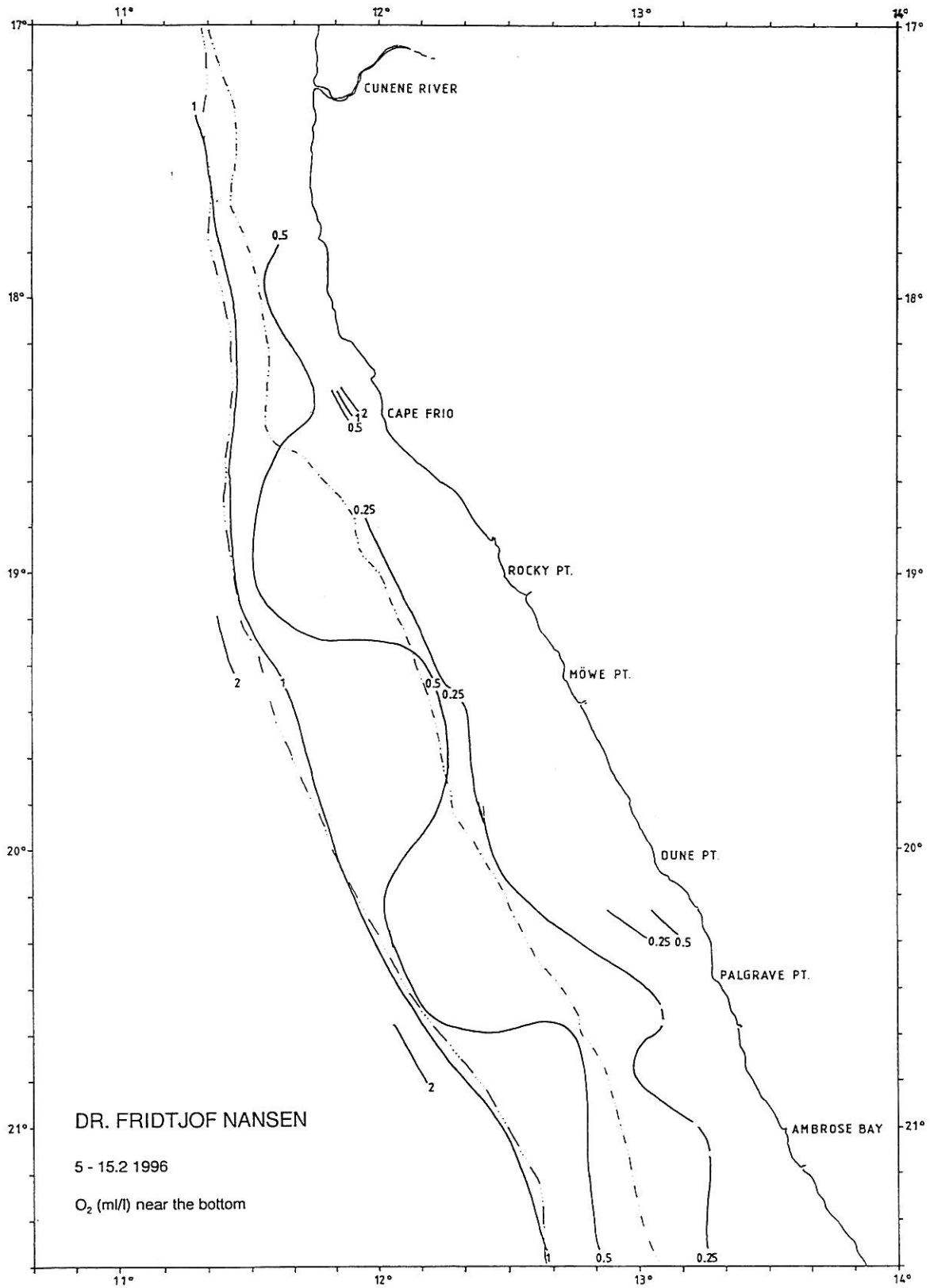


Figure 5c Ambrose Bay to Cunene River. Distribution of oxygen (ml/l) near the bottom

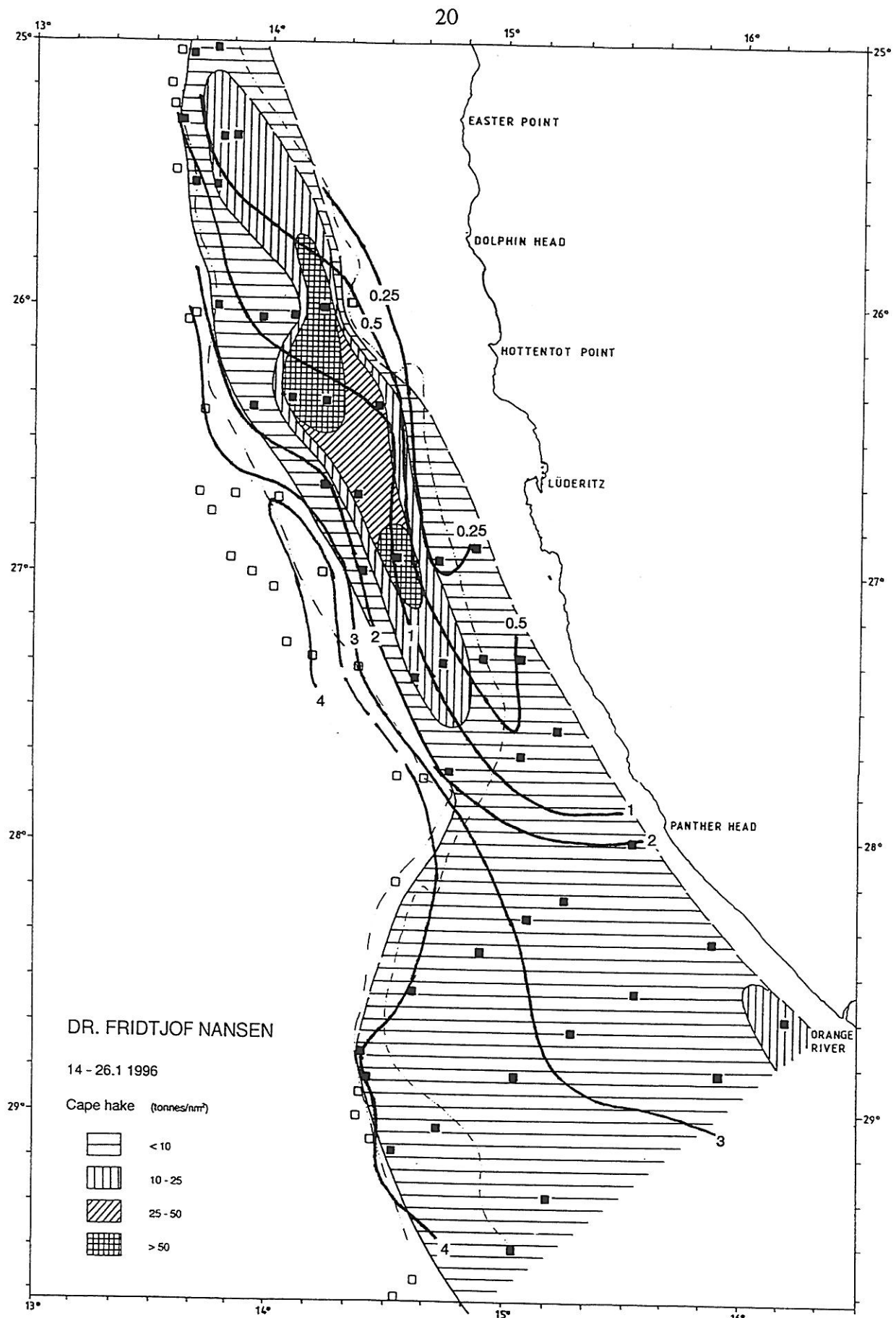


Figure 6a Orange River to St. Francis Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

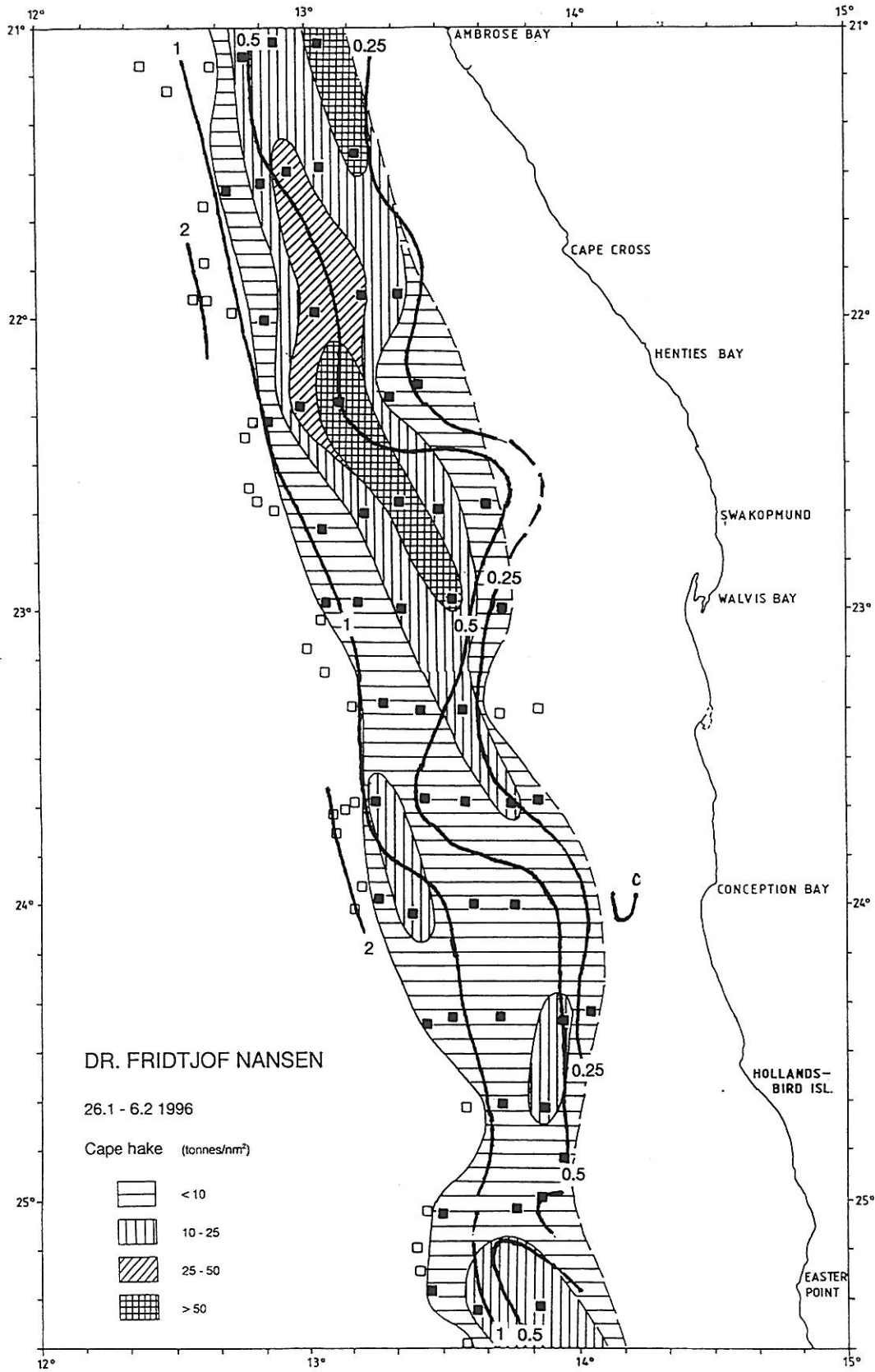


Figure 6b St. Francis Bay to Ambrose Bay. Distribution of Cape hake and oxygen (ml/l) near the bottom.

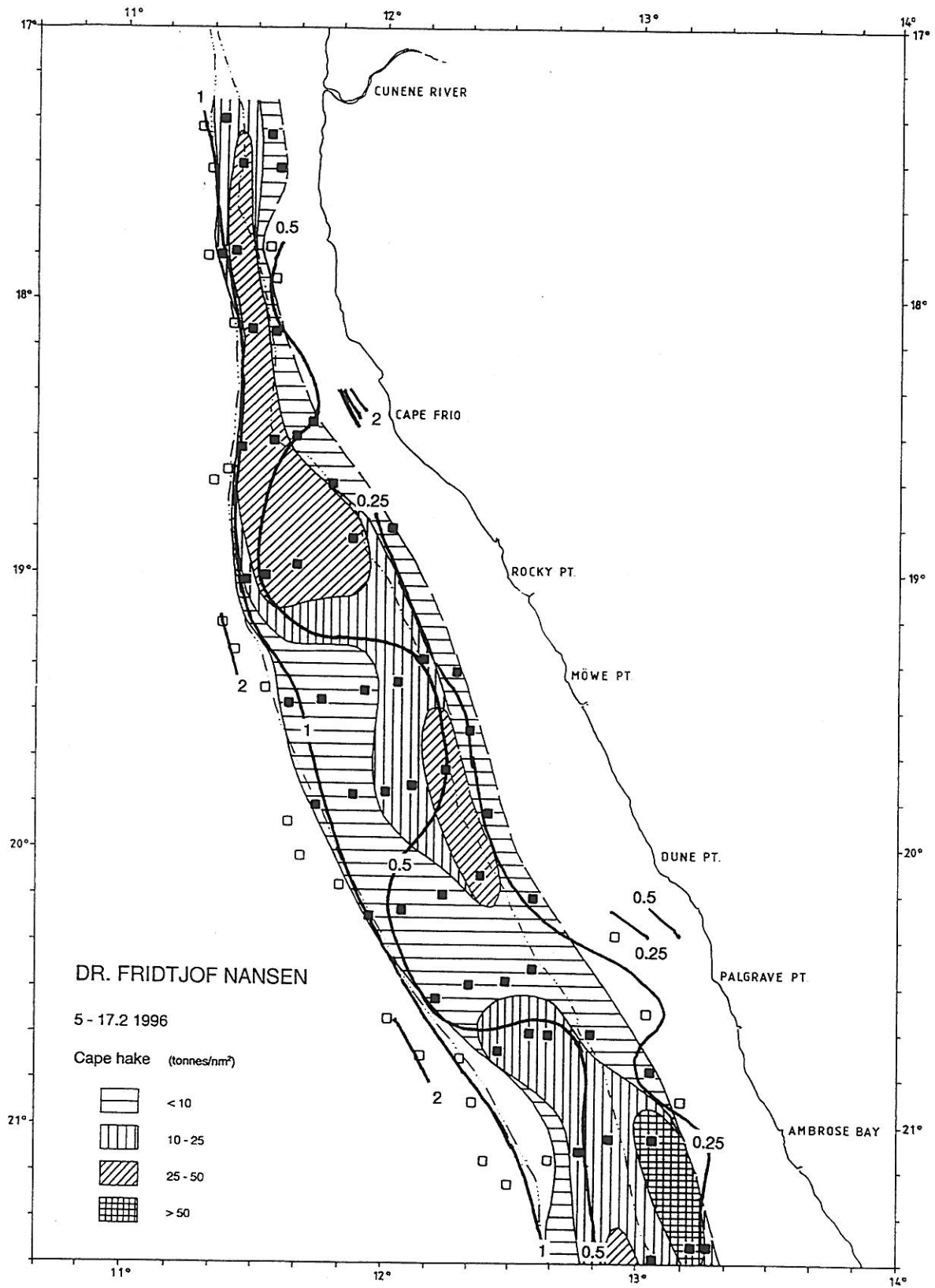


Figure 6c Ambrose Bay to Cunene River. Distribution of Cape hake and oxygen (ml/l) near the bottom.

## 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. For conversion of catch rates to fish densities the area between the wings is assumed to be equal to the effective fishing area and the retention factor  $q$  is equal to 1. With the new vessel, starting from January 1994, a new trawl gear was introduced with smaller bobbins. This gear is expected to give better bottom contact and higher catch rates for bottom dwelling species like monk and sole. For the hake species the new gear is assumed to have no difference in performance. The trawl doors are Thyborøen 7.9 m<sup>2</sup>, 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

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/nm <sup>2</sup> ).		
ORANGE RIVER - ST. FRANCIS BAY	DAY	NIGHT
Trawl		
No. stations	49	22
Mean density	32.8	10.1
Acoustic obs.		
No. stations	17	17
Mean density	4.9	8.1
Average acou. corr.	3 %	56 %
ST. FRANCIS BAY - AMBROSE BAY		
Trawl		
No. stations	50	22
Mean density	24.2	10.5
Acoustic obs.		
No. stations	26	18
Mean density	1.5	4.3
Average acou. corr.	3 %	33 %
AMBROSE BAY - CUNENE RIVER		
Trawl		
No. stations	50	11
Mean density	17.2	10.1
Acoustic obs.		
No. stations	25	9
Mean density	3.1	5.3
Average acou. corr.	9 %	43 %



investigations off-bottom hake in mid-water constituted only a minor problem in the south and in the central area. In the north it made up an average 9% addition to the demersal biomass in the day hauls. In a more limited number of night hauls the average correction were 56, 33 and 43% (Table 1).

Fish abundance (in weight and number) 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 factor, 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

The complete record of the fishing stations is shown in Annex III. 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 about the same level as during the previous survey in May 1996, while on the slope there is an increase of almost 50% which can be explained by seasonal migration from the south. Monk and kingklip show low catchrates on the shelf (50-259m) while there is a considerable increase in the catchrates, about 300% for both species in the deeper waters. The late summer season is known to be the best for fishing monk and the increased catchrates could be associated with seasonal behaviour, making it more vulnerable to the trawl.

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.	Hakes	Monk	Kingklip	Soles	Squid	Other
1184	88	163.9		0.8	1.3	0.9	529.4
1185	148	450.8		5.7		8.4	41.7
1186	180	322.2	0.6	3.6		5.1	347.5
1187	184	152.4	17.7	3.4		13.9	122.4
1188	170	16.0	4.1			2.4	436.4
1191	205	161.3	23.9	5.1		81.1	182.8
1192	174	134.3	3.4			3.6	598.5
1213	174	17.6					96.6
1214	229	3.4					62.5
1215	159	327.7	15.9	5.9		62.7	65.6
1216	98	452.0		27.9	16.1	122.4	5368.7
1217	110	110.3			2.8	2.3	259.0
1218	169	338.0	8.1	6.2		38.5	78.2
1219	170	325.2	2.3			46.6	534.3
1220	171	48.8	21.1	71.2		1.0	194.6
1221	229	12.9	23.7	30.7			81.3
1233	167	201.4		0.8			30.0
1234	129	7.1		0.5		0.8	10.4
1235	160	242.3					9.9
1236	193	231.4		1.9	0.2		9.3
1265	257	4982.0				27.2	4193.6
1266	205	360.0					6000.0
MEAN		411.9	5.5	7.4	0.9	19.0	875.1

SLOPE 260-700 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1189	531	299.0	2.9	5.8		4.5	318.3
1190	427	473.6	17.5	41.3		11.5	457.2
1222	316	66.9	5.5	47.5		2.5	169.6
1223	400	84.3		32.4		28.3	133.1
1224	525	263.0		21.5		3.1	129.3
1225	474	2214.8	179.1	60.9		6.1	223.1
1226	355	332.8	5.5	50.2			939.7
1227	401	1112.6	39.5	73.1		18.4	184.7
1229	385	192.2		214.5		2.5	159.1
1230	501	49.4		4.4			29.1
1231	414	97.6		46.5		1.2	34.5
1232	367	1343.2		49.0		19.0	224.4
1237	296	490.1	40.0	75.6	0.4	82.1	137.8
1238	336	139.8	6.7	26.6			35.8
1239	408	198.5	10.6	22.4			166.1
1240	500	36.3		4.8		0.2	106.7
1241	630	164.2					287.6
1242	302	1898.3	90.2	4.2		2.9	435.3
1243	350	3564.2	9.9	59.0		30.0	680.1
1244	364	1135.7	59.4	52.2		64.8	314.2
1245	449	246.4	15.2	14.0		9.5	133.6
1246	500	121.4	9.5			29.0	78.8
1247	604	128.6				5.7	373.5
1249	553	1173.3	28.3			15.3	266.7
1251	428	467.5		14.9		3.7	96.4
1252	405	653.4		49.0		1.7	125.2
1253	368	4985.6		70.6		24.9	422.1
1254	339	1415.8	5.5	104.0		28.6	228.2
1255	298	488.0	62.0	13.2	21.2		83.0
1256	324	8629.9	67.0				472.8
1257	349	1113.0	4.4			4.5	444.2
1258	384	491.2	8.3	50.6		1.1	372.6
1259	424	323.1	54.9	18.0		0.4	244.4
1260	535	495.8				126.5	575.0
1261	489	584.1	35.0	12.3		86.9	491.3
1262	402	4294.9	53.4	103.4		89.4	364.5
1263	331	170.1	189.6	2.0	1.4		148.1
1264	290	278.3	35.0		1.0	25.2	56.5
1267	331	987.8	122.2	38.8	2.3		309.9
1268	399	369.2	11.6	42.7		28.0	437.0
1269	506	2060.1	70.4			20.2	994.4
1270	274	351.9					46.3
1271	303	424.5	50.6		3.2		104.6
1273	453	298.8	58.4	89.3		44.4	363.5
1274	553	259.8	36.3				1475.2
1275	594	325.6	22.1			70.6	3912.5
1276	507	691.4	48.0			29.3	1483.8
1277	404	122.1	103.6	61.6			678.5
1278	273	131.0					72.2
MEAN		943.7	31.8	32.2	0.6	18.8	408.6

The depth distribution of the two hake species based on the catch rates converted to densities is shown in Table 3. A comparison with the previous survey shows that the catch rates for the Cape hake has more than doubled from 540 to 1210 kg/hour in the 250-350 m depth zone, while for the deep water hake the increase has occurred in the 350-450m zone (from 580 to 960 kg/h) and in the 450-550m zone (from 360 to 610 kg/h). In the 250-350 m zone, the zone of increase for the Cape hake, the deep water hake has shown a reduction in the catch rates (from 430 to 310 kg/h).

	75-250m	250-350m	350-450m	450-550m	550-650m
Cape hake					
Density	4.7	40.3	1.1	0.04	
Catch rate	140	1210	35	1	
Deep w. hake					
Density	1.0	10.5	32.1	20.4	13.0
Catch rate	30	310	960	610	390
No. of hauls	21	16	18	11	5

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 main concentrations of both hakes are from Lüderitz and northwards. In addition, the deep water hake extends in a narrow band around 500m bottom depth southwards.

Biomass estimates based on a post-stratification of the densities as shown in Figures 8 and 9, give 169 000 tonnes for the Cape and 202 000 tonnes for the deep water hake (Table 4), an increase of 16% for the Cape hake and 44% for the two species combined since the previous survey. The 95% confidence limits give a range of  $\pm 49\%$  on the estimate of the Cape hake and  $\pm 35\%$  of the deep water hake. The wide confidence limits on the Cape hake is mainly caused by two very high catches on young hake on the shelf, and a separate analysis on the fishable part of the population would probably give more narrow ranges.

Year/Survey	Cape hake	Deep water hake
90/1	130	22
90/3	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
94/4	150	121
95/2	145	140
96/1	169	202

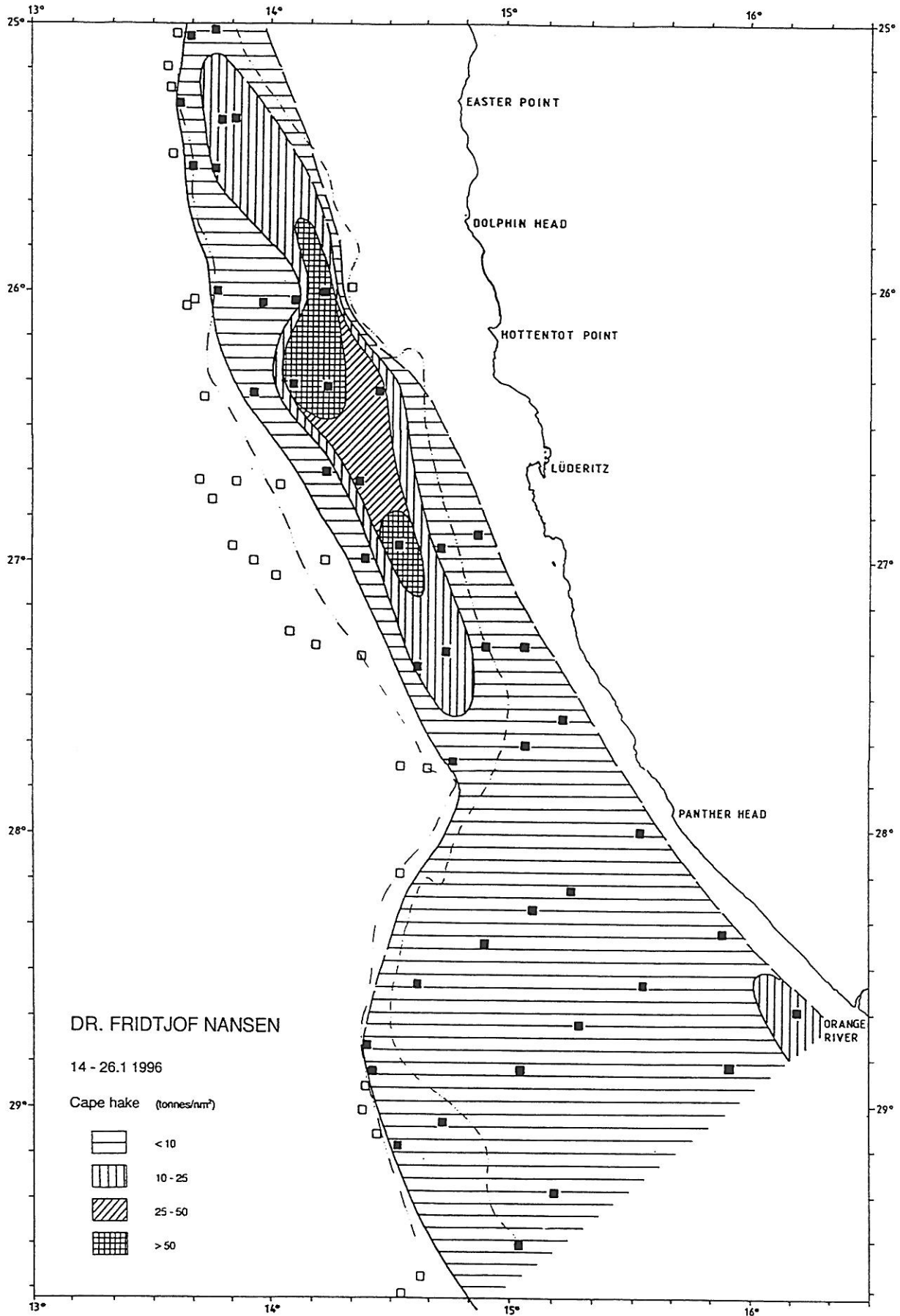


Figure 8 Orange River to Francis Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

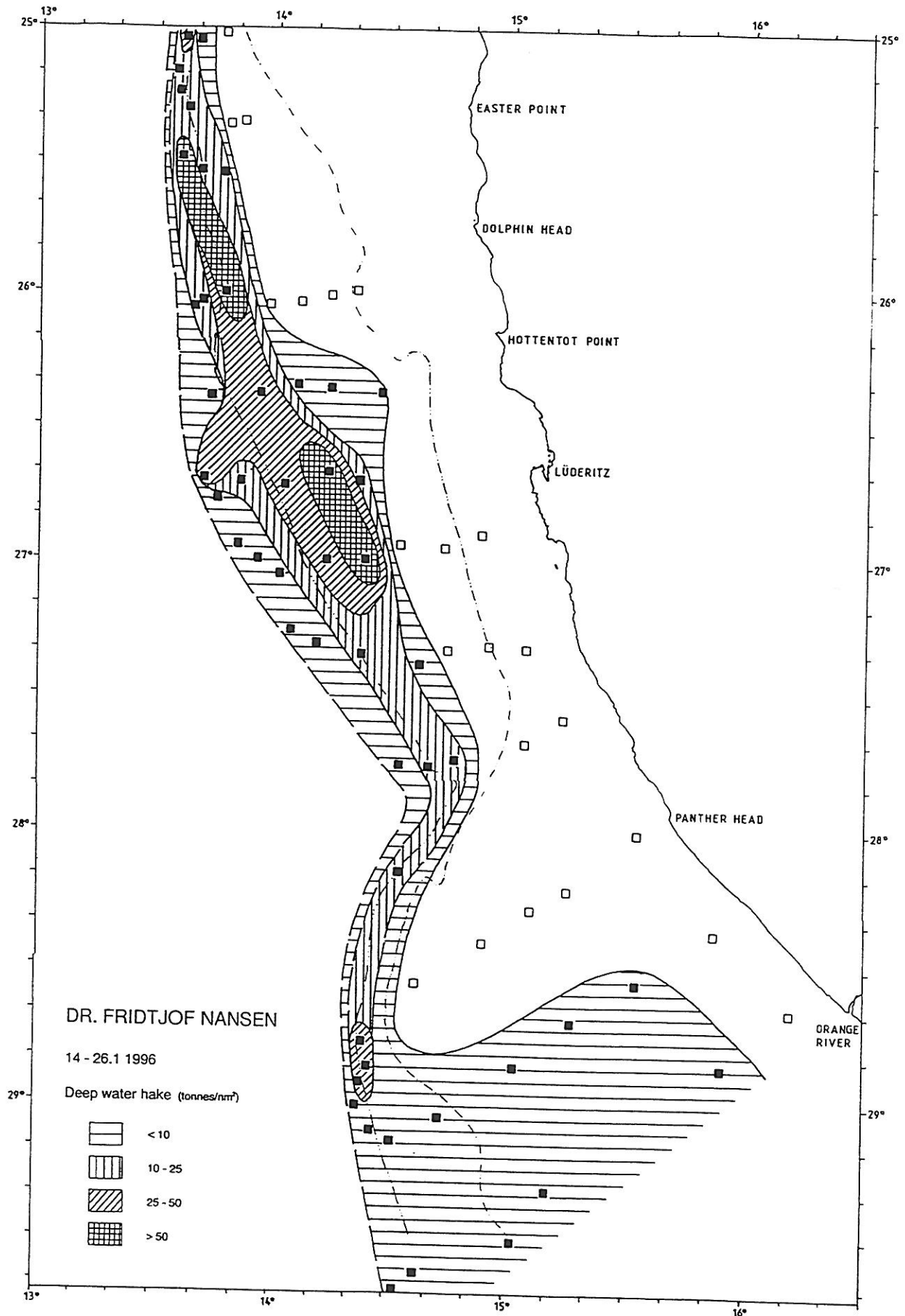


Figure 9 Orange River to St. Francis Bay. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.

The size compositions of the Cape hake from pooled samples weighted by catch rates are shown for each region by depth ranges in Annex I. There is, as usual an increase of size with depth. A length frequency analysis to identify cohorts in the stock, was performed in the same way as during the three previous surveys. The results are shown in Table 5.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	15.6	1.8	0.06	72	2
1994	24.0	2.5	0.46	486	45
1993	29.0	2.8	0.41	443	72
older			0.07	79	50

The data on 1995 year-class are not representative as the fish is still mostly in a pelagic state, and has been included here only for the completeness of the total biomass estimate. The main part of the biomass is made up of the 1994 and 1993 year-class, which has not yet started to recruit to the fisheries. The fishable biomass in the region is estimated to 50 thousand tonnes and 76 million fish. This is a not significant reduction from 61 thousand tonnes in May 1995.

Results from a length frequency analysis on the deep water hake is shown in Table 6. The fishable part of the stock in the region is estimated to about 114 thousand tonnes and 165 million fish. This constitutes a substantial increase in biomass from 65 thousand tonnes fishable in May 1995.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1994	14.9	2.0	0.3	292	7
1993	23.3	2.0	0.145	142	12
1992	30.7	3.0	0.395	380	76
older			0.16	144	107

### 3.3 CENTRAL REGION, ST. FRANCIS BAY TO AMBROSE BAY

Table 7 shows the catch composition for the shelf and the slope by main groups. The mean catch rates for both hakes combined have increased both on the shelf and on the slope since the last survey. The increase is 100% (from 375 to 780 kg/h) on the shelf and 75% (from 305 to 535 kg/h) on the slope. The on-shelf catches is mainly represented by young fish, so called 'non-fishable' biomass. For monk, the catch rates in the more shallow depth range have increased about five times from 1.3 to 6.8 kg/h, while beyond 250m bottom depth the mean rates have increased 3 times from 7.7 to 23 kg/h.

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

SHELF 100-259 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1279	202	349.9				4.6	19.1
1280	166	224.6					1.0
1281	239	1514.4			2.0		50.4
1287	233	359.2				0.4	100.9
1288	160	139.8					1217.5
1289	251	208.4	24.3		2.1	0.2	66.8
1300	258	203.0	20.3			1.3	910.7
1301	224	160.0	0.2				100.9
1302	194	525.4	0.2				54.6
1303	177	61.4					56.7
1304	160						
1305	159						
1306	184	420.9					12264.9
1316	196	2023.3	90.9		5.5	8.6	3180.1
1317	146	16.9	0.1				12.0
1318	135	330.6					
1319	209	600.4			4.5		686.4
1330	247	2197.5	30.5		2.7	6.4	1421.1
1331	215	132.2	3.2		2.4	0.3	51.9
1332	169	17.9					1.1
1334	164	775.1					117.3
1335	178	1081.9					1822.6
1346	221	451.6					323.7
1347	146	3017.2					12685.2
1348	137	4697.3					3492.6
MEAN		780.4	6.8		0.8	0.9	1545.5



## SLOPE 260-700 m

ST. NO.	DEP.	Hakes	Monk	Kingklip	Soles	Squid	Other
1282	370	100.0	190.4	9.6		12.2	416.0
1283	417	1265.7	43.8	75.5		35.7	957.3
1284	374	371.6	36.8	34.4		15.5	292.7
1285	340	805.0	48.7	55.9		7.2	626.4
1286	326	83.2	92.4		1.0	5.0	362.1
1290	271	96.2	4.2			0.1	56.2
1291	299	875.3	23.6	1.3			3363.6
1292	355	2546.8	24.3	27.8			550.2
1293	464	1998.1	64.9			15.8	837.0
1294	599	360.0	5.0				1451.8
1295	654	159.5	16.0			29.5	462.4
1296	457	592.1	8.2				366.6
1297	570	252.7	4.1				267.2
1298	410	361.6	14.8				285.6
1299	333	305.9	8.2	4.6			93.9
1307	272	166.8	4.8				21.1
1308	362	309.9	29.9	6.3			46.5
1309	406	930.0					138.2
1310	504	97.8				11.1	45.3
1311	600	71.7	3.9			8.3	116.6
1312	451	781.1	16.2			6.8	135.9
1313	366	1165.7	7.3	5.6			253.7
1314	324	221.0	4.3				224.5
1315	341	467.8	51.2	1.0			268.7
1320	266	1089.0	1.8			16.4	2060.8
1321	305	349.0				32.5	213.9
1322	311	277.1	4.8	0.2		10.4	161.5
1323	403	660.6		24.1		29.7	381.9
1324	524	30.4				6.8	139.8
1325	650	117.3					231.6
1326	542	267.1	5.5			11.7	316.2
1327	440	200.6				12.6	503.5
1328	373	543.5	27.0	18.2			302.9
1329	286	1530.0	47.2			19.9	600.1
1336	285	1345.4	7.1				377.2
1337	339	271.7	3.0	0.7		54.8	183.4
1338	424	591.0	3.4			16.6	392.2
1339	552	3.8				6.5	30.2
1340	662	190.3	44.8			53.2	379.2
1341	582	175.2	45.0			79.4	913.8
1342	478	504.9	28.4			9.0	290.3
1343	361	489.8	49.0			55.6	274.5
1344	310	430.7	6.1		1.1	10.3	102.0
1345	283	1225.7	3.3		6.5	2.3	181.5
1350	602	399.7	16.8			14.5	551.2
1351	505	442.8	57.0			85.8	763.6
1352	374	47.8	5.5			18.6	301.0
1353	330	628.5	70.6			7.8	135.4
1354	272	32.6				0.8	2.2
MEAN		535.3	23.0	5.4	0.2	14.3	437.3

The density index by depth ranges of the two hake species is shown in Table 8. The density for the Cape hake has been of a declining trend in all depth zones during two surveys after May 1994 and show now signs of recovery on the shelf and in the 250-350m zone, the main habitat for the adult Cape hake in the Central Region. The catch rates from the two last surveys are:

	May -95	Feb. -96
100-250m	390	800
250-350	300	430
350-450	45	20

This is still below the level prior to 1994. However, there is a seasonal trend in the abundance of Cape hake in the region with a bottom in the late summer season. The present increase is thus against the seasonal trend and could indicate stronger recovery.

The density of deep water hake in the Central Region continues to rise in its main depth zones, where it is now at record high levels. Compared to May 1995 the figures are:

	May -95	Feb. -96
250-350	60	70
350-450	230	610
450-550	250	560
550-650	285	190

It is interesting to note that the deep water hake now exceeds the Cape hake in catch rates beyond 250 m bottom depth.

	100-250m	250-350m	350-450m	450-550m	550-700m
Cape hake					
Density	26.7	14.4	0.8		
Catch rate	800	430	20		
Deep w. hake					
Density		2.3	20.2	18.7	6.4
Catch rate		70	610	560	190
No. of hauls	23	20	14	8	9

Figure 10 shows the distribution of Cape hake over this region. Compared with the previous survey the picture of a recovering trend is confirmed and high density clusters of young hake are observed on the shelf. The deep water hake (Figure 11) continues to increase northwards in its preferred depth range and are now forming bands of moderately high to high densities across the whole regional map.

The biomass estimate of Cape hake for the Central Region based on post stratification is 145 thousand tonnes (Table 9). As seen in the table this represents the first brake in the downward trend of biomass estimates in the region that started in November 1992. The recovery is however still moderate. The estimate on the deep water hake is 73 thousand tonnes, about 80% increase since May 1995, prolonging the trend of biomass increase that has persisted in the course of the survey programme since 1990

Year/Survey	Cape hake	Deep water hake
90/1	180	4
90/3	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
94/4	112	16
95/1	105	40
96/1	145	73

(Table 9). The 95% confidence limits on the estimates are  $\pm 15\%$  on the Cape hake and  $\pm 22\%$  on the deep water hake.

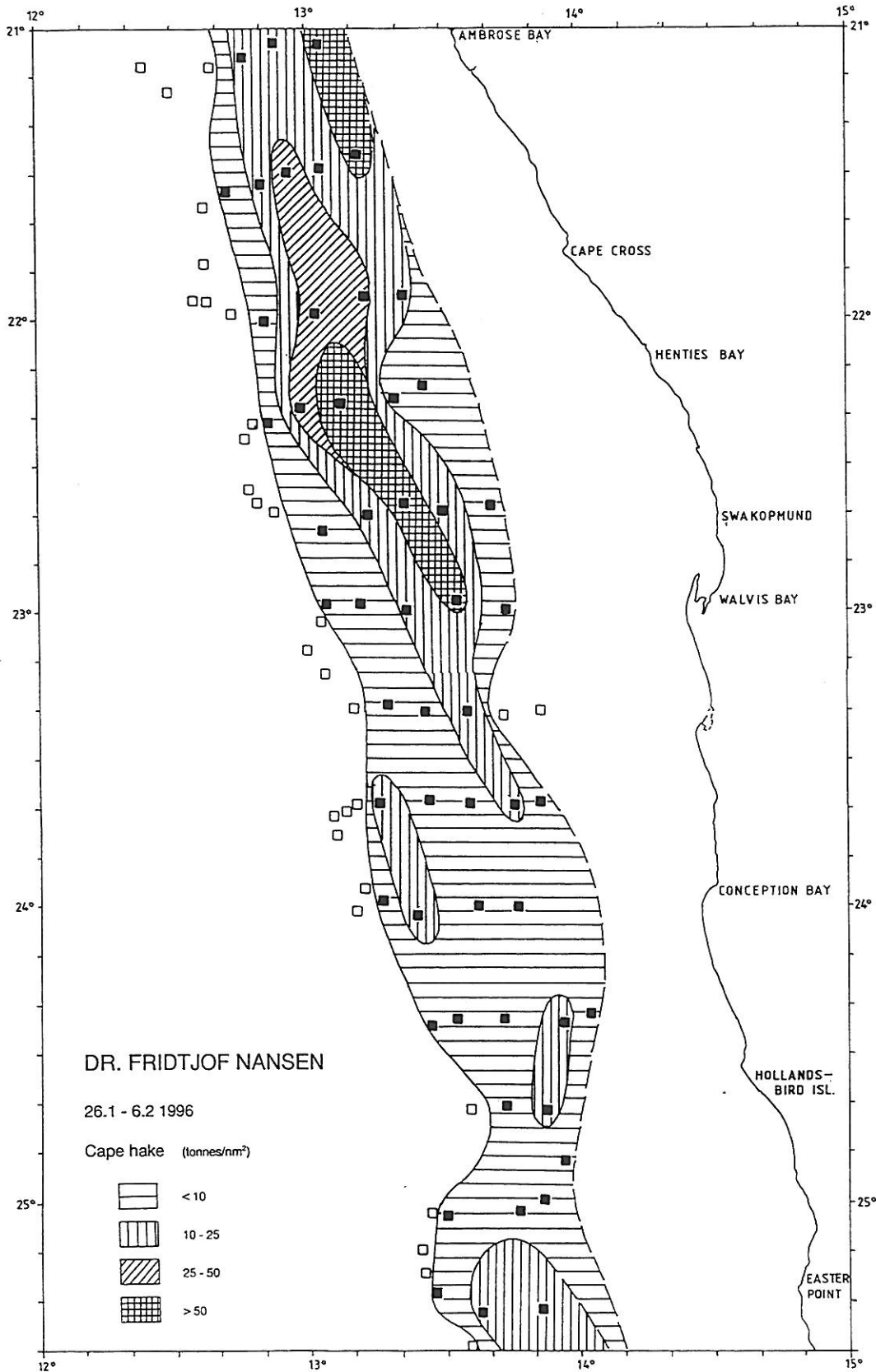


Figure 10 St. Francis Bay to Ambrose Bay. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

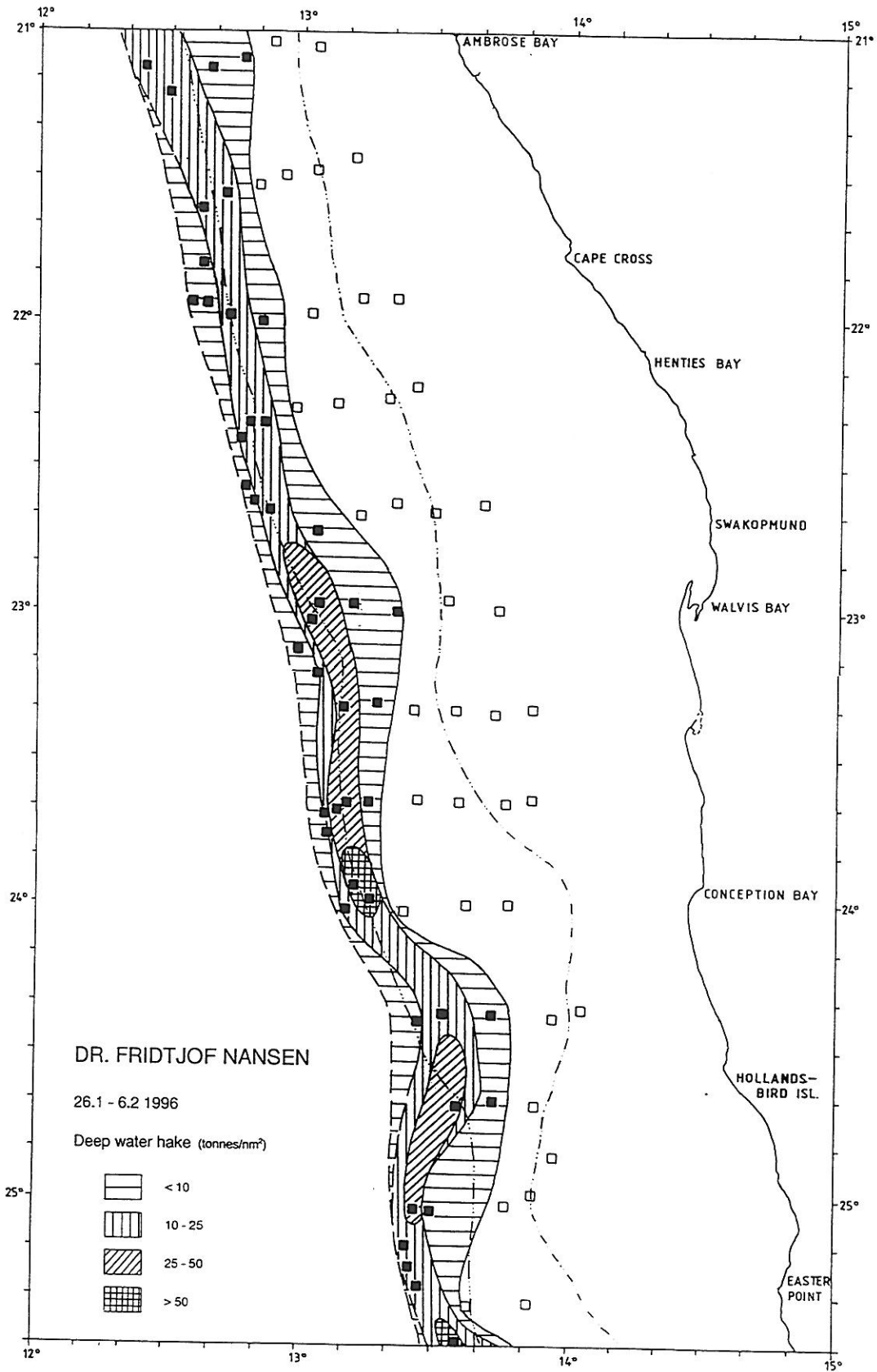


Figure 11 St. Francis Bay to Ambrose Bay. Distribution of deep water hake. Empty squares indicate stations where Cape hake was not caught.

The results from a cohort analysis on the length distribution are shown in Table 10.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	12	1.5	0.055	70	1
1994	23	2.0	0.830	1031	87
1993	31	3.0	0.078	94	18
older			0.037	48	39

The 1994 year-class dominates the fish population with 83% of the number and 60% of the biomass. The fishable part of the population is 41 000 tonnes and 54 mill fish. This represents a reduction in the fishable biomass by 13 000 tonnes since the last survey and the present figure is new record low in the course of the survey programme. On the other hand the recruits or the non-fishable biomass has increased from 51 000 to 104 000 tonnes.

Results from the length frequency analysis for the deep water hake are shown in Table 11. In this population the fishable biomass is 56 000 tonnes and is 76% of the total biomass. This is a 24 000 tonnes increase from the last survey and has more than replaced the loss of adult Cape hake in the same period.

Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1994	24.0	2.0	0.03	6	0.6
1993	30.4	3.0	0.49	79	17
older			0.47	77	56

### 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 hakes shows a slight increase in the shallower zone and in the deeper zone the rate has decreased by 25% compared to last survey. The average catch rate for monk in the slope is about 50% compared to the previous survey, and on the shelf the species was only caught on one station.

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

SHELF 100-259 m

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1356	121	0.7			15.2		2.3
1357	137	4.7					36.5
1358	124	2.3			20.2		60.4
1359	197	88.8			342.3		34.9
1370	249	44.8			1.0		2.1
1371	120				0.4		0.3
1374	235	1127.6		2490.9	3591.0		36.5
1385	217	4185.7		351.9	6925.2	115.5	92.7
1386	136	2.2			0.2		5.7
1387	209	354.2		842.4	5950.8	108.0	49.7
1398	224	1820.8		34.7	3851.1		27.1
1399	132	2.0			2.6		530.3
1400	198	104.4		1052.7	782.1		89.1
1401	145	27.9		3550.1	3302.3		23.1
1402	187	117.5		287.8	739.2	56.0	215.6
1403	227	969.5		928.0	731.5	0.7	233.6
1408	203	11.7		684.0	5.8	6.5	225.9
1410	171				3844.8	14.0	20.5
1411	164			57.3	9130.1	36.7	452.1
1412	240	555.2		206.5	370.5		708.0
1416	191	838.0	6.1	1195.8	385.0	18.9	397.0
1417	119	67.0		2263.0	1256.7		169.3
1418	136	261.3		5773.9	8873.1		743.1
1422	145	0.8				1.9	23.7
1423	163	4.1			0.6		2.8
1424	147	3.1					34.0
MEAN		407.5	0.2	758.4	1927.8	13.8	162.2

SLOPE 260-650 m

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1360	299	666.8		70.7		15.8	431.7
1361	316	811.1		7.6		8.3	32.6
1362	326	1336.7			9.0	15.2	62.1
1363	437	299.8	3.7			17.8	318.4
1364	535	302.2	3.8				454.6
1365	595	262.0				17.3	260.7
1367	333	19.4	0.4				159.3
1368	306	140.4					6.6
1369	290	41.1					2.0
1375	277	148.0		95.4	39.9	2.3	2.7
1376	327	287.5	19.5	140.1	30.2		81.7
1377	434	188.3	40.1			12.1	433.2
1378	477	377.2				26.6	671.2
1379	589	140.4	2.2				909.5
1380	559	5.4				2.1	81.2
1381	417	293.7	0.6			12.3	391.2
1382	361	50.7	22.9			2.2	145.2
1383	322	409.2	11.8	86.4		5.4	112.1
1384	283	555.8	9.4	231.2	63.8	15.3	167.5
1388	270	480.9	13.6	118.5	46.5	12.3	783.9
1389	305	94.1	11.3	3.4			58.4
1390	338	129.4	28.7			1.0	72.5
1391	390	348.7	57.8			4.0	567.2
1392	467	788.3	33.7				604.2
1393	549	361.3	15.2			30.7	311.2
1394	603	175.2	54.0			22.9	576.2
1395	365	309.1	30.2				349.2
1396	278	994.6	12.7	152.0	367.8	1.5	1039.7
1397	298	1087.3	42.4	112.8	235.6	0.5	332.0
1404	336	1296.7	16.4	12.3			572.9
1405	473	1175.2	17.3				1048.6
1406	607	25.7	2.1			6.6	149.9
1407	461	445.5	18.5		10.1	82.5	1611.8
1409	271	1302.5	8.3	209.2	4.6	2.1	2444.5
1413	338	478.0	60.0	74.1	228.0		1934.1
1414	646	357.8	79.4			177.8	1828.0
1415	433	611.7	63.1				1181.0
1420	296	405.5	2.3	3.5	7.0	3.2	696.9
1421	440	795.3				25.0	1553.2
MEAN		461.5	17.5	33.8	26.7	13.4	575.4

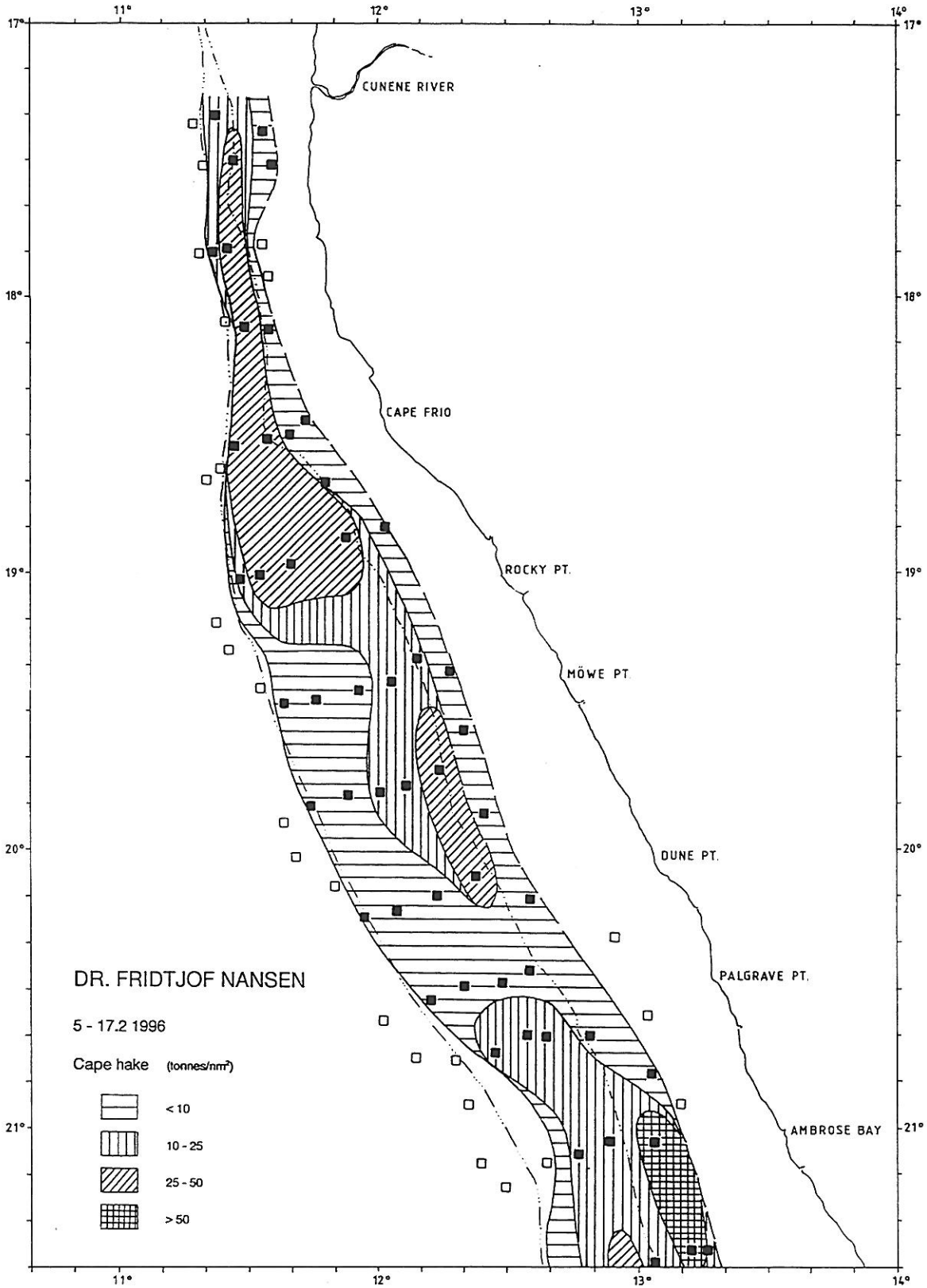


Figure 12 Ambrose Bay to Cunene River. Distribution of Cape hake. Empty squares indicate stations where Cape hake was not caught.

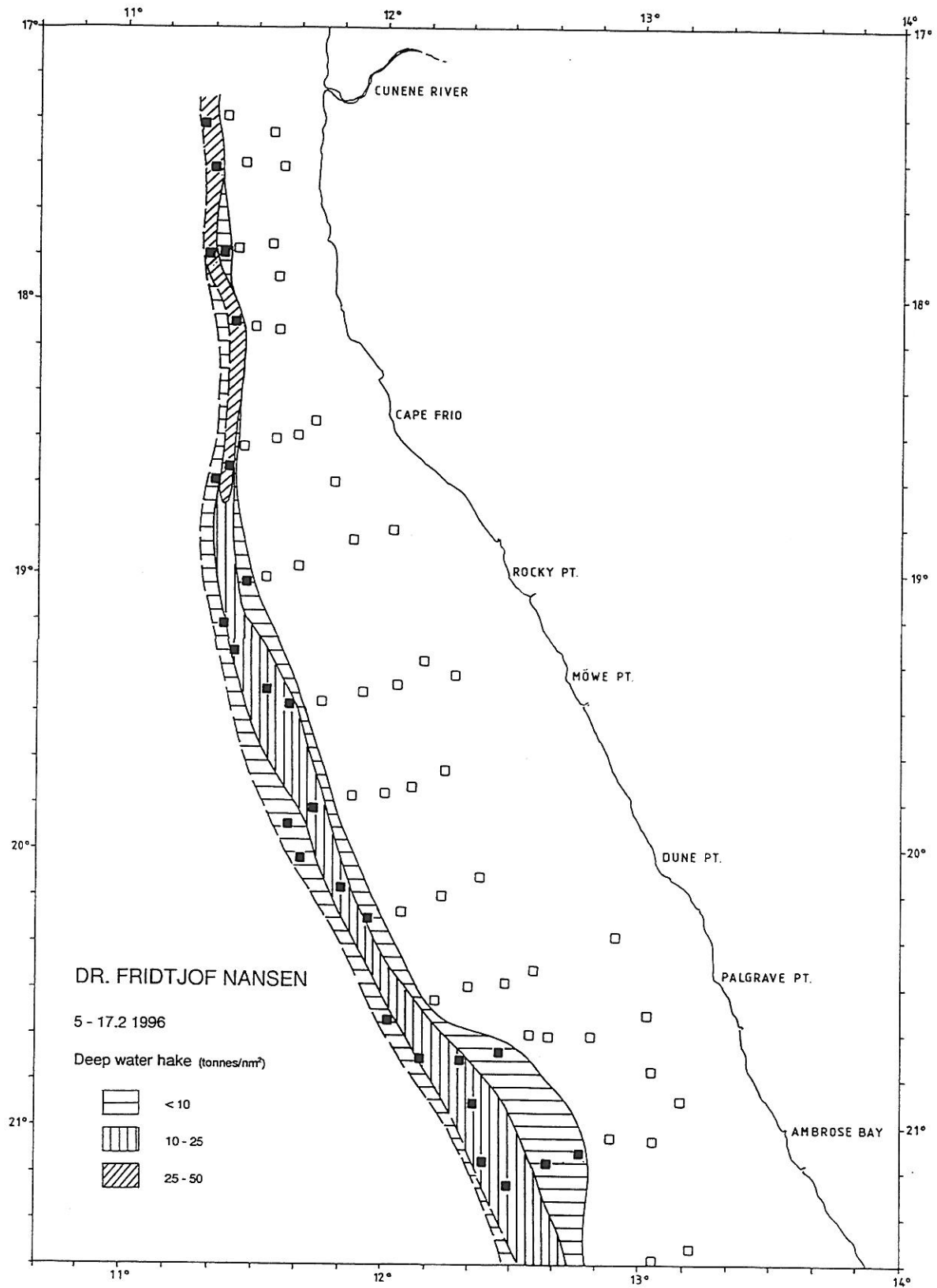


Figure 13 Ambrose Bay to Cunene River. Distribution of deep water hake. Empty squares indicate stations where deep water hake was not caught.



Figure 12 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. Extensive high-density aggregations beyond 50 tonnes/nm<sup>2</sup> were found between the Cunene and Möve Point during the previous survey. During the last survey these densities have been reduced. The deep water hake is forming a band of aggregation around 500m bottom depth and shows a marked increase (Figure 13) in these aggregations compared to the previous survey.

The depth distribution of the two hake species based on catch rates converted to densities is shown in Table 13. For Cape hake there was an increase in the 100-250 m depth zone and decrease between 250 and 450m. This corresponds generally to increase of young fish and decrease of older fish beyond 30 cm. The densities of deep water hake increased 180% in the 350-450 m zone and about 45% between 450 and 550m.

	100-250m	250-350m	350-450m	450-550m	550-650m
Cape hake Density	14.7	17.4	1.3		
Catch rate	440	520	40		
Deep w. hake Density		0.6	9.4	18.9	5.2
Catch rate		17	280	570	155
No. of hauls	26	19	8	6	6

Biomass estimates give a total of 132 000 tonnes of Cape hake and 31 000 tonnes of deep water hake (Table 14). For the Cape hake this represents an increase of 15 000 tonnes since the last survey. The increase is associated with young fish (see below). The deep water hake increased from 24 to 31 thousand tonnes. The 95% confidence limits on the estimates are  $\pm 40\%$  on the Cape hake and  $\pm 22\%$  on the deep water hake.

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

\* + hake in the mid-water

The size compositions of the two hake species are shown in Annex I. A cohort analysis was done on the two hake species and the results are shown in Tables 15 and 16. The so called 'fishable biomass' in the Northern Region, representing fish of 36 cm and larger, constitutes 88 000 tonnes and 150 mill. fish. This is close to the 93 000 tonnes fishable biomass estimated from the previous survey. The non-fishable biomass has increased about 15 000 tonnes in the same period.

Table 15 Northern Region. Cape hake. Estimated age-cohorts.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1995	13	1.5	0.01	4	
1994?	27.4	2.5	0.45	191	26
1993	34.0	3.5	0.29	125	33
older			0.251	108	73

A similar analysis on the older deep water hake in the region is shown in Table 16. The estimated fishable biomass of deep water hake is 28 thousand tonnes, an increase of 7000 tonnes since May 1995.

Table 16 Northern Region. Deep water hake. Estimated age-cohorts.					
Year class	Mean length	Sigma	Fraction of all fish	Population million N	Biomass 1 000 t
1993	31.0	2.5	0.15	10	2
1992	40.7	3.8	0.73	48	21
1991+				8	7

## CHAPTER 4 CONSIDERATIONS ON THE SURVEY RESULTS

### Survey effort

The present survey is the 13th in a series started in early 1990, covering the distribution of the hake stocks over the whole Namibian shelf. Figure 14 shows the effort spent in these investigations. The survey was done in 38 days, including 3 days for intercalibration with "Africana".

Mid-water behaviour of the hake can cause problems for the trawl survey methodology. However, improved acoustic technology has made it possible to establish a technique that can reduce the effect of this behaviour on the estimates. In previous surveys (1993 to Jan. 1994) the pelagic behaviour may have caused some underestimate in the biomass, especially in the Northern Region. During the recent survey the average acoustic corrections during day time were 3%, 4% and 9% for the southern, central and northern regions respectively. The corresponding figures for the night hauls are 56%, 33% and 43%. Night hauls are usually carried out only on the

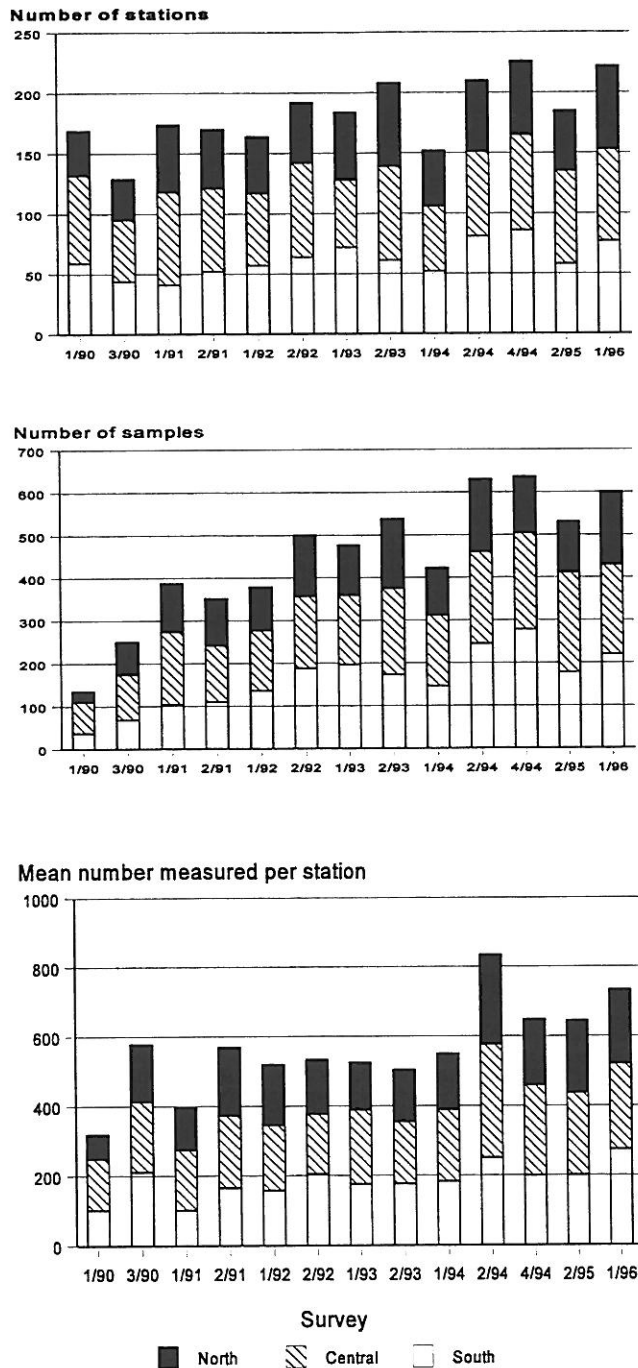


Figure 14 Hake survey effort 1990-94. a) Number of trawl stations by regions; b) Number of length frequency samples by regions; c) Mean number of fish in length sample.

fringes of the fish distributions where the densities are low. Thus the correction in absolute terms is small as well. The pelagic behaviour of the hake did not constitute a major problem when assessing the stock, and there are no signs that major aggregations of hake have avoided acoustic detection. Two stations with extraordinary high catches in the southern region and one similar station in the north give high contributions to the biomass estimates of young fish and therefore also lower the precision on these estimates.

### **Catch per unit effort**

A summary of the estimates of the mean density of the hakes by depth stratum is shown in Figure 15. 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. In the Central Region and Northern Region there are a partial recovery from the exceptionally low levels observed in May 1995. However, the densities in the recruiting biomass of Cape hake are still below the normal of the preceding 6 years. The structure of the recruit biomass will be discussed below. In the deeper waters, in the 250 -350m depth range there is an increase of densities of Cape hake in the Southern Region and a decrease in the Central and Northern Regions. This is partly explained by seasonal migration towards the south in the summer season, and Figure 15 shows a cyclic pattern in the densities where the south is in opposite phase to the Central and North Regions.

The deep water hake shows a rising trend in all three regions in its main habitat, the 350-550m depth range on the slope, Figure 15. It could be that, because of bad recruitment from the Cape hake in the later years, the deep water hake is now gradually filling in from south to the niche left open. This will be the subject of a separate study.

Observed catch rates in fisheries will only to a certain extent reflect the densities observed through surveys. As the fishing fleet tends to work on the highest fish aggregations, the so called hot spots, CPUE data tend to overestimate the mean densities in a fish population. As an example, during the recent survey a major aggregation of trawler fleet was observed northwest of Lüderitz, on one of the hot spots observed and measured by the trawl survey.

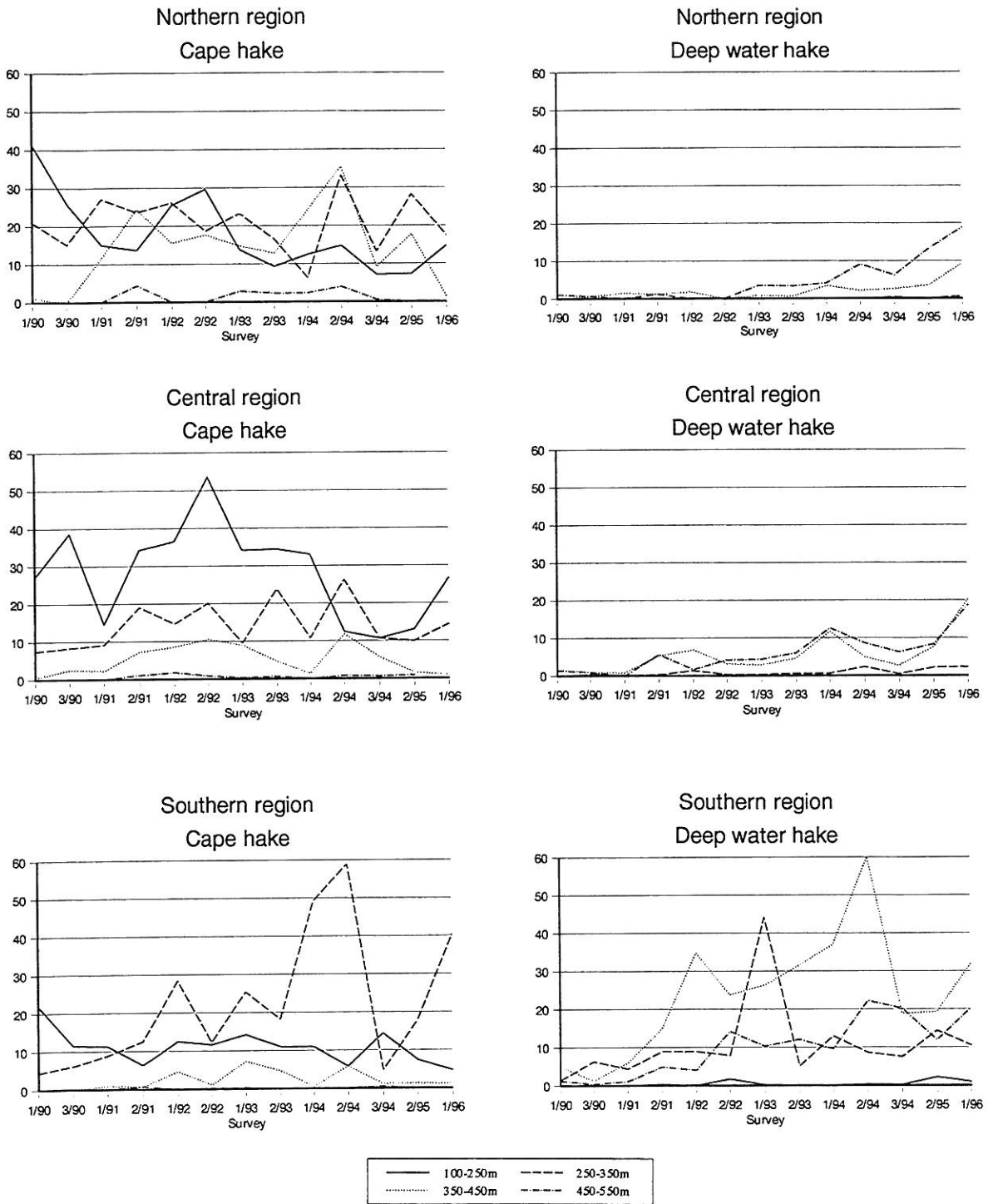


Figure 15 Estimated mean densities in depth strata by surveys. Mean densities in tonnes/nm<sup>2</sup>. Biomass estimates.

Table 17 and Figure 16 give a summary of the biomass estimates for the two hake stocks by regions and surveys since the beginning of the survey programme in 1990. Table 17 and the accompanying Figure 16 have been revised since the previous survey. During the first year of the programme a simple method for pooling the length samples was applied, and this has underrepresented the small and relative abundant small sized fish in the length based estimates. As a consequence the share of the fishable biomass in the total biomass was overestimated in the first two surveys. This has now been corrected and all the estimates are made by the same method.

Table 17 Summary of total, fishable and non-fishable biomass estimates for the two hake species by surveys and areas. 1 000 tonnes.													
TOTAL BIOMASS													
	Feb-Mar 1990	Sep-Oct 1990	Jan-Feb 1991	Oct-Nov 1991	Apr-May 1992	Oct-Nov 1992	Jan-Feb 1993	Apr-May 1993	Jan-Feb 1994	Apr-May 1994	Oct-Nov 1994	Apr-June 1995	Jan-Feb 1996
<b>SOUTHERN REGION</b>													
Cape hake	118	142	128	84	203	163	222	179	200	240	150	145	169
Deep water hake	21	30	34	83	145	125	150	115	160	215	120	140	202
<b>CENTRAL REGION</b>													
Cape hake	176	202	147	309	265	530	285	279	225	160	110	105	145
Deep water hake	4	5	6	15	15	17	16	19	30	30	15	40	73
<b>NORTHERN REGION</b>													
Cape hake	203	116*	195	140	190	199	147	110	92	130	90	120	132
Deep water hake				2	4	8	4	6	20	15	10	25	31
<b>TOTAL NAMIBIA</b>													
Cape hake	497	460*	470	533	658	892	654	568	520	530	350	370	446
Deep water hake	25	35	40	100	164	150	170	140	210	260	145	205	306
Both	522	485*	503	633	822	1042	824	708	737	790	495	575	752
FISHABLE BIOMASS													
<b>SOUTHERN REGION</b>													
Cape hake	20	44	54	50	145	69	92	99	112	130	35	62	51
Deep water hake	16	20	14	42	113	80	123	95	114	164	61	66	113
<b>CENTRAL REGION</b>													
Cape hake	20	76	67	147	108	180	133	121	50	65	58	54	41
Deep water hake	4	5	6	6	13	12	13	19	26	22	10	34	56
<b>NORTHERN REGION</b>													
Cape hake	66	62*	170	134	145	133	106	89	74	102	63	93	88
Deep water hake	-	-	-	2	4	8	4	6	19	13	8	21	28
Cape hake	106	182*	291	331	398	382	331	309	240	300	156	209	180
Deep water hake	20	25*	20	50	130	100	140	120	160	200	79	121	197
<b>TOTAL FISHABLE</b>	<b>126</b>	<b>207*</b>	<b>311</b>	<b>381</b>	<b>528</b>	<b>482</b>	<b>471</b>	<b>429</b>	<b>400</b>	<b>500</b>	<b>235</b>	<b>330</b>	<b>377</b>
NON-FISHABLE BIOMASS													
Cape hake	391	278	179	202	250	510	260	259	280	230	193	161	266
Deep water hake	5	15	20	50	34	50	30	20	50	60	66	84	109
<b>TOTAL NON-FISHABLE</b>	<b>396</b>	<b>293</b>	<b>199</b>	<b>252</b>	<b>284</b>	<b>560</b>	<b>290</b>	<b>279</b>	<b>330</b>	<b>290</b>	<b>259</b>	<b>245</b>	<b>375</b>

\* Unadjusted underestimate due to fish off the bottom.

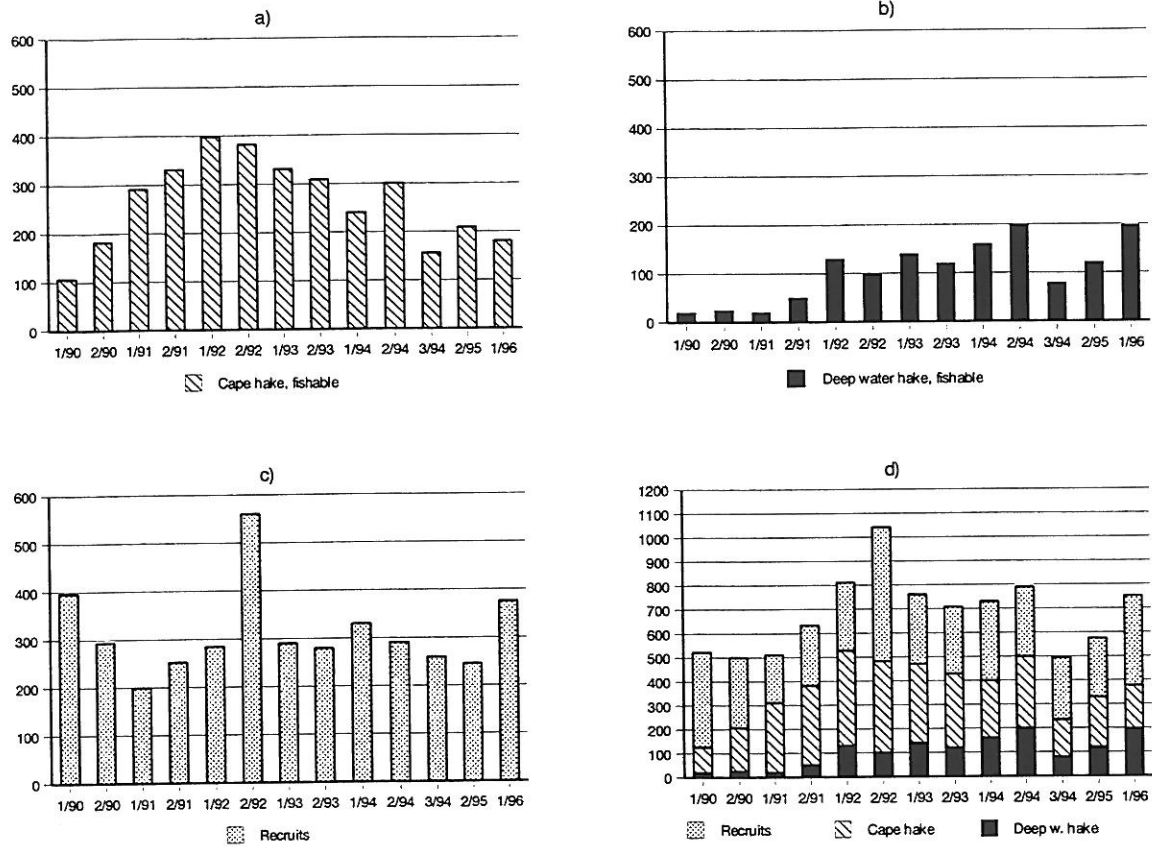


Figure 16 Trends in biomass estimates: a) Cape hake, 'fishable stock', b) deep water hake, 'fishable stock', c) recruits ('non-fishable' biomass) and d) total hake in Namibia. Thousand tonnes.

Figure 16d shows the development in the total hake biomass. There has been a trend of decline since late 1992 until late 1994. The two last surveys show an increasing trend and since November 1994 the total biomass has increased from its record low 235 000 tonnes to the recent 380 000 tonnes. The main part of the increase, however, is associated with growth in adult deep water hake (+118 000t) and recruits of both species (+73 000 and +43 000) while the Cape hake has only recovered 25 000 tonnes from its 155 thousand tonnes in late 1994. One has to look back to 1990 to find comparable figures on the state of the fishable biomass of Cape hake (Figure 16a). Figure 16b shows that the



deep water hake has now reached a level of 200 000 tonnes and the species is now surpassing the Cape hake in abundance of the adult stock in Namibia.

### Geographic shift in the fishable biomass

Figure 17 shows the development of the relative share of the fishable biomass of Cape hake in the regions for the last six years. The figure shows that the Northern Region during the last survey holds 49% of the fishable biomass and that the Northern and Southern Regions share of the Cape hake biomass has increased at the expense of the Central Region.

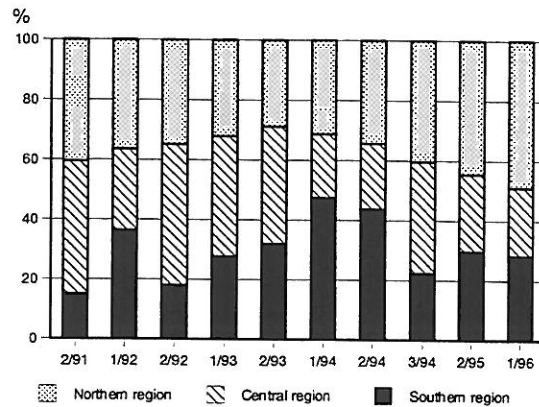


Figure 17 Relative regional share of fishable biomass of Cape hake 1991-94.

### Recruitment potential

The recruitment to the stock of Cape hake can be estimated from the numerical abundance of the 1.5-2 year old fish. November is usually the month when one first time through trawl surveys can estimate the strength of the year-class born the previous year, as it has then settled on bottom during the previous months. The estimates for the 1994 year-class, based on the current survey data, are shown in Table 20 together with previous observations. A 'normal' recruitment level after two years seems to be around 2 billion fish  $\pm$ 200 million (Table 18). The 1994 year-class is at present with 1.5 billion fish 25% below a 'normal' recruitment level.

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



The 1993 year-class was estimated to 1 billion fish in May 1995, and is now reduced to 0.8 billion fish. Even if the cohort analysis technique is considered rough and indicative the figures indicate low natural mortality on the 1993 year-class during 1995 and a small fraction of the year-class has already entered into the fishable biomass.

The recruit biomass for both species combined, Figure 16c and Table 17, has been in a slight downward trend during 1994 and 1995 but show now promising signs with about 50% increase in biomass since May 1995, from 245 to 375 thousand tonnes. In Table 19 the recruits are splitted by the age classes identified through the cohort analysis. The table shows that 220 000 tonnes or 75% of the recruit biomass belong to the cohort that is now 2.5 years, the 1993 year-class. This fish is now in the 27 to 37 cm length range and will recruit to the fishable biomass during the coming year. This indicates a relative strong growth potential in the fishable biomass on short term. In a 2-year perspective, recruitment will depend on the life history of the 1994 year-class, which at present is below normal. However it may, if given good survival conditions as the 1993 year-class has met, give important contributions to the rebuilding of the parent stock.

### Management considerations

The parent stock of the Cape hake is at a critically low level and measures should be taken to protect the stock and to build it to a higher level. There are signs that a relative high number of recruits will enter into the fishable biomass during the coming year and this offers an opportunity to increase the size of the parent stock.

The deep water hake continue to expand in Namibia and is filling in to the ecological niche previously occupied by the Cape hake. Most of the stock of deep water hake is of adult size and it is believed that most of the fish is recruited from south. It should be considered to introduce a management practice that would direct more of the fishing towards the deep water hake. Fishing in areas or depth zones with less than maximum catch rates are also recommended. Fishing beyond 350m in selected areas will mainly give deep water hake and protect the more shallow Cape hake.

Table 19 Recruit biomass by species and age groups. Thousand tonnes.			
	0.5 year	1.5 year	2.5 year
Cape hake	0	135	131
Deep water hake	7	13	89
Total	7	165	220

## 5 COMPARATIVE FISHING EXPERIMENTS WITH R/V “AFRICANA”

### 5.1 DESCRIPTION OF METHODS

“Dr. Fridtjof Nansen” arrived at the rendez-vous position (S 29°, E 16°) at 08:00 h on 16 January. After a planning meeting on board “Africana” the intercalibration started with parallel hauls 1.5-2 cables apart. Both vessels were maintaining normal trawling procedures respectively, according to Table 20.

	Tow time	Speed	Door spread	Wing spread	Vertical opening	Warp strapping*
“Africana”	20 min.	3.5 knots	>100 m	~27 m	~2 m	No
“Nansen”	20 min.	3.0 knots	~ 51 m	~ 21 m	~5.6 m	Yes

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

“Africana” was using heavy warps with diameter 32 mm, while “Nansen” was using lighter 26 mm warps. “Nansen” generally shot more warp than “Africana”. The “Africana” trawl was rigged without a groundgear, with only a heavy groundrope (“sabb”), while “Nansen” used a gear with low profile cylinders and rather few discs. “Africana” used 25 mm cod end mesh size while “Nansen” used 22 mm. Scanmar sensors were used on both ships to monitor door spread and vertical opening.

The intercalibrations lasted for three days. Personnel for intercalibration of fish classification and measurement were exchanged the last two days. Altogether, 19 parallel hauls were made, all between 120 and 200 m. Two hauls were discarded due to one problem on “Africana” and one problem on “Nansen”, giving a total of 17 usable pairs of hauls. Seven of these were made on the last day. Unfortunately “Africana” had a computer crash this day, and the data of these seven hauls were lost. This report will therefore deal with the first ten hauls.

All catch figures were corrected for swept area. “Africana’s” swept area was calculated with the following formula:

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

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

“Nansen’s” swept area was calculated with the following formula:

$$A_N = D * 1852 * S_N$$

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

$$N_A = N * 1000 / A$$

where  $N_A$  is the number of fish per 1000  $m^2$ ,  $N$  is the number of fish in question, and  $A$  is swept area either of “Africana” or “Nansen”. Fish weights were corrected in the same manner.

A two tailed Student’s t-test for paired samples was used for all comparisons of catch numbers, catch weights and length groups except for the length group of hake from 0-10 cm where a Wilcoxon non-parametric paired sample test was used.

## 5.2 RESULTS AND DISCUSSION

### Swept area

Normally in considering swept area of trawl gear, e.g. in cod assessment, bridle length and door spread are very important parameters. As hakes were the target species of this investigation, the herding of these species have to be considered in particular. From experiments carried out on the “Nansen” in 1995 it seems that the herding efficiency of doors/bridles is far less for hake than for e.g. cod. In experiments with a triple trawl for *Nephrops* in the North Sea it was observed that catches of silver hake (*Merluccius merluccius*) were evenly distributed between the three parallel trawls, while more herdable species like blue whiting were strongly overrepresented in the middle trawl. Monkfish (*Lophius piscatorius*) were evenly distributed like the hake (HUSE, unpublished). Although the 1995 results were to some degree internally conflicting, the overall impression was

that herding of hake by bridles, doors and sand clouds is of little importance. In the hake assessment carried out by the "Nansen", a sweeping width of 18.5 m has been applied. This is even less than the observed wing spread, based on the assumption that there may be some avoidance and possibly mesh selection in the wing area, and hardly any herding by bridles, sand cloud or doors.

In conclusion we have for this intercalibration chosen to adapt a swept width equal to wing spread as herding effect of bridles, doors and sand cloud may be of little importance for hake. In view of the implications of this aspect for trawl based assessment, herding efficiency should, however, be further elucidated through comprehensive trials at varying water depths and times of day, preferably with two ships using the same gear and procedures.

### Hake

Results for hake are given in Figure 18 and in Annex V, Table 1.

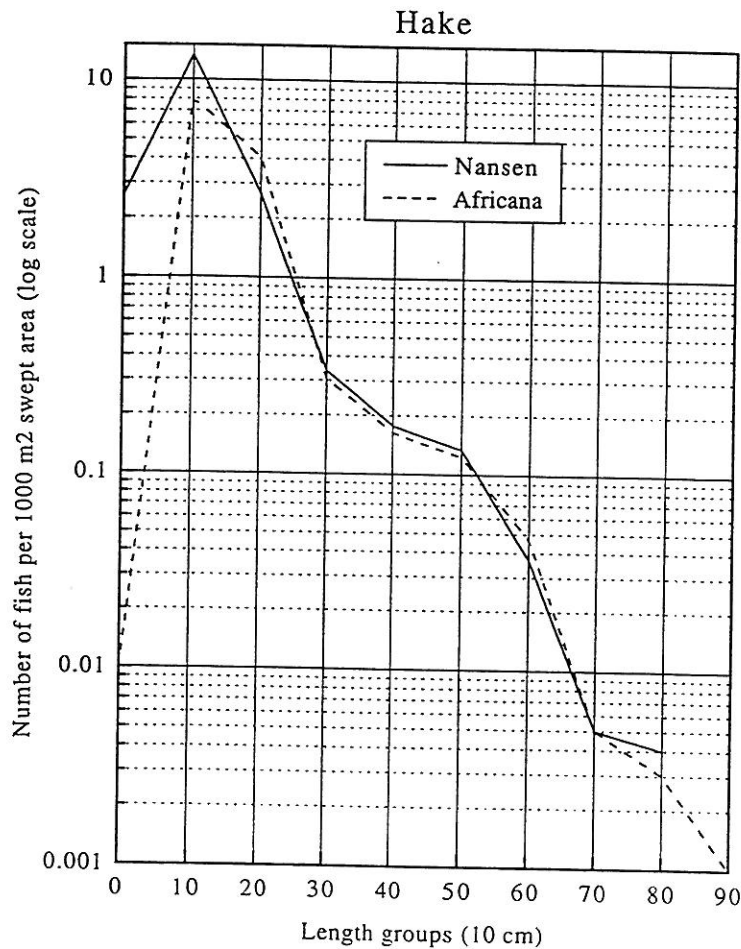


Figure 18 Numbers of hake per 1000 m<sup>2</sup> in 10 cm length groups. 0=0-10 cm, ---, 90=90-100 cm. Logarithmic Y-axis.

“Nansen” catches were significantly higher than “Africana” catches for 0-10 cm and 10-20 cm hake. For 0-10 cm this was probably due to mesh selection related to the difference in cod-end mesh size. For 10-20 cm this is less likely. The difference is more likely to be related to mesh selection further ahead in the trawl, or to escapement over the low opening “Africana” trawl. For other length groups there were no significant differences in catches. On the contrary the two vessels had quite coinciding catch rates for larger hake. But it should be noted that the catches of larger hake were smaller than one could have wanted in an exercise like this.

### **Other species**

Catches of monk and gurnard were considered as indicators of bottom contact of the two trawls. “Africana” had significantly higher catches of numbers of gurnards (Annex V, Table 2) and weights of monk (Annex V, Table 2) than “Nansen”. Differences in numbers of monk and weights of gurnards were not significant. These results indicate that the “Africana” trawl, with its ground rope as opposed to “Nansen”’s ground gear probably is superior in catching species normally resting on the bottom. The result could perhaps also be ascribed to the much wider door spread and potentially larger sweeping area of the “Africana”, but for slow swimming species like monk and gurnard this is not a likely explanation.

There were no significant differences in catches of horse mackerel or kingklip. “Nansen” caught somewhat more horse mackerel than “Africana” (Annex V, Table 3) and “Africana” caught slightly more kingklip than “Nansen” (Annex V, Table 3). The higher opening of the “Nansen” trawl might have been expected to catch more horse mackerel than the low opening “Africana” trawl, and the high bottom contact “Africana” trawl might have been expected to catch more kingklip than the “Nansen” trawl, which are indeed also the catch tendencies indicated. However, with the relatively small number of hauls no significant differences were demonstrated as mentioned above.

### **Total biomass**

“Africana” had significantly higher biomass per unit of swept area than “Nansen” (“Africana” higher in eight out of ten tows, Annex V, Table 2). The average total biomass for “Africana” was 5.80 kg/1000 m<sup>2</sup>, and 3.34 kg/1000 m<sup>2</sup> for “Nansen”. This was mostly due to higher catches of large sharks and skates, probably caused by the wider door spread of the “Africana”.

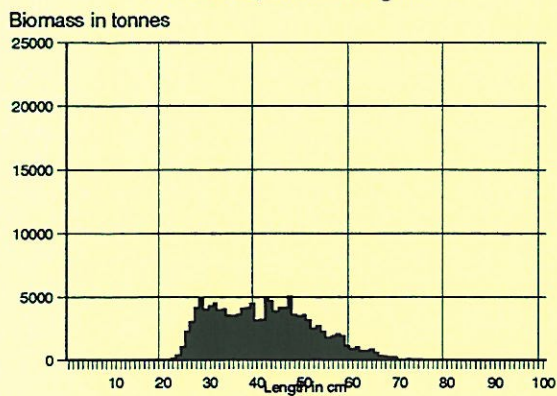
**Trawl height**

For the three last hauls “Africana” tested out a trawl which was supposed to give higher opening than their standard trawl. This expectancy did not materialize. The cause could be that the “Africana” trawl rigging seems to induce a high and unrestricted door spread with a large sweeping angle. This could reduce trawl height, and could also cause variations in trawl parameters with depth. One way of getting around this potential problem is to use warp strapping (see above, under Table 1). In the “Nansen” rigging this is used 130 m in front of the doors, giving a stable door spread of 51 m with 50 m bridles, and a stable height of 5.6 m, regardless of depth/warp length.

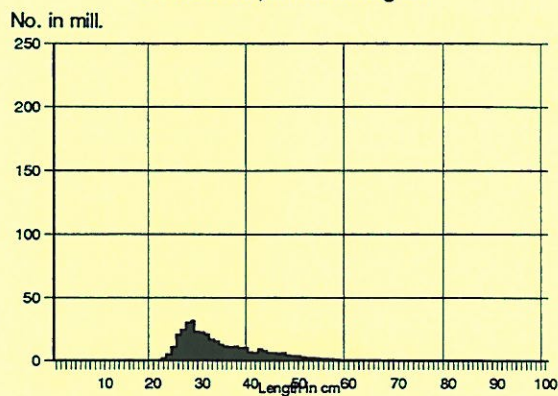


## Annex I Size composition of main stocks

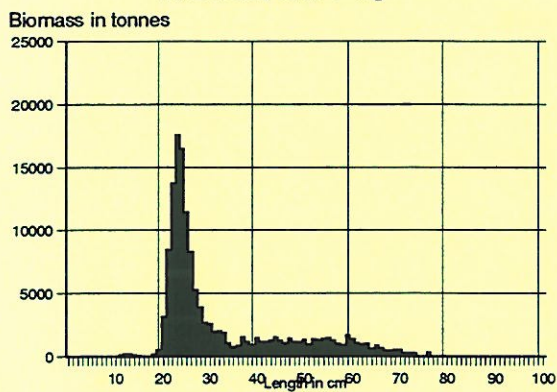
CAPE HAKE, Northern Region



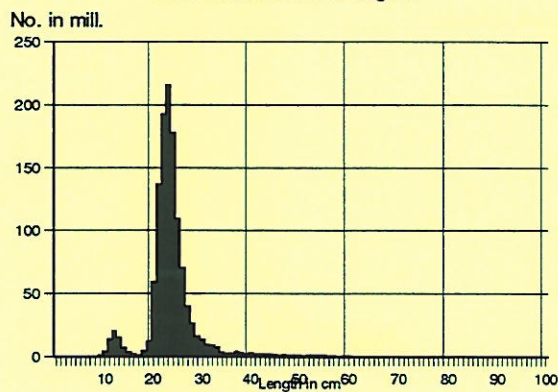
CAPE HAKE, Northern Region



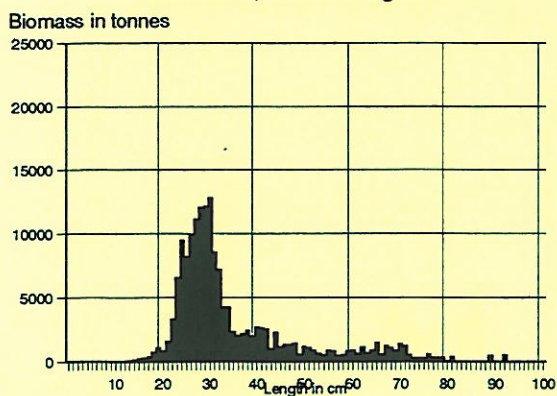
CAPE HAKE, Central Region



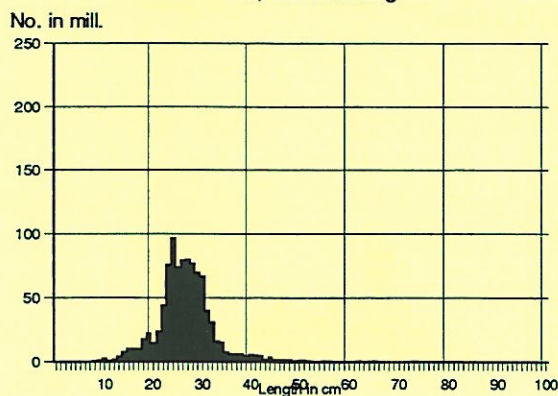
CAPE HAKE, Central Region



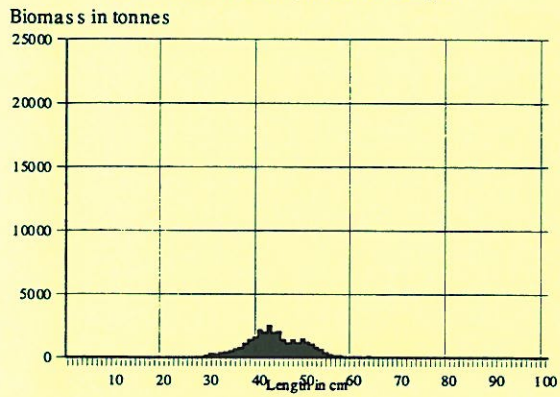
CAPE HAKE, Southern Region



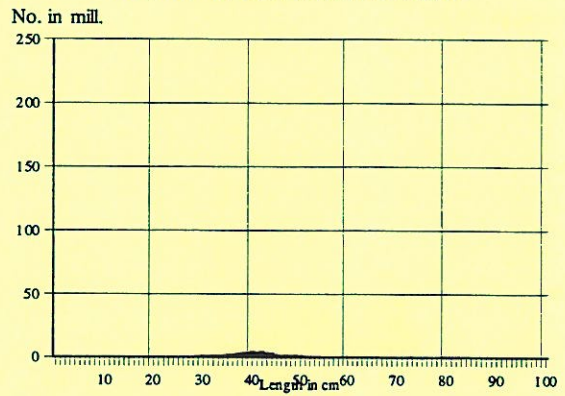
CAPE HAKE, Southern Region



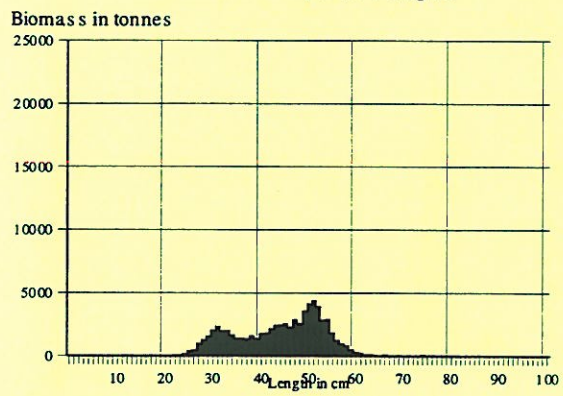
**DEEP WATER HAKE, Northern Region**



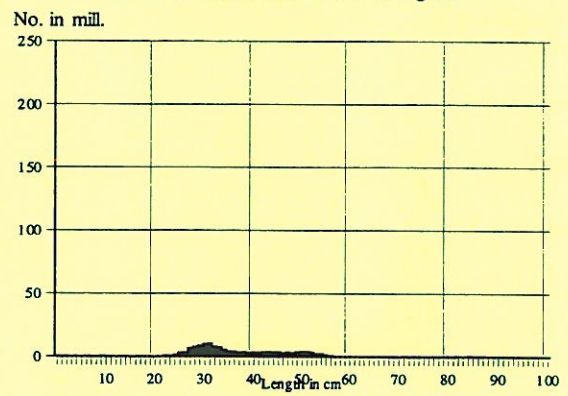
**DEEP WATER HAKE, Northern Region**



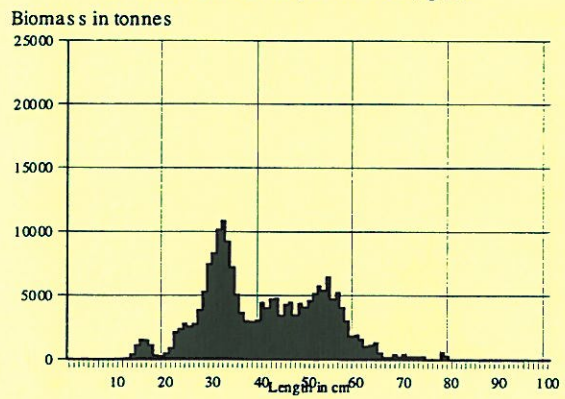
**DEEP WATER HAKE, Central Region**



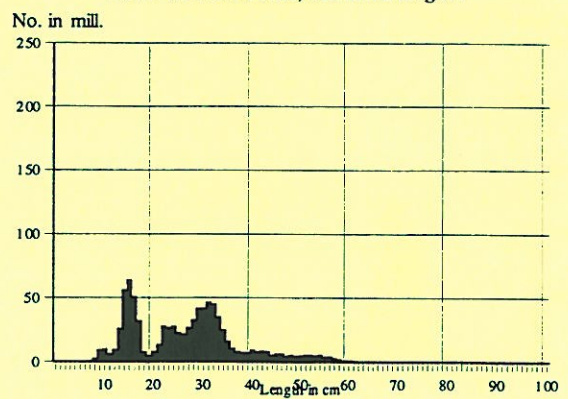
**DEEP WATER HAKE, Central Region**



**DEEP WATER HAKE, Southern Region**



**DEEP WATER HAKE, Southern Region**

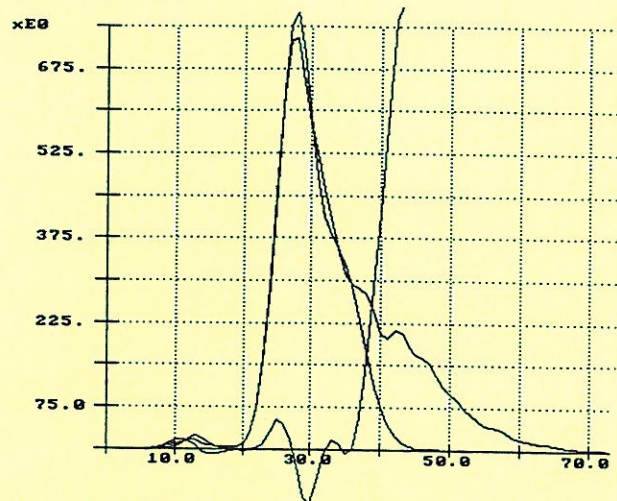
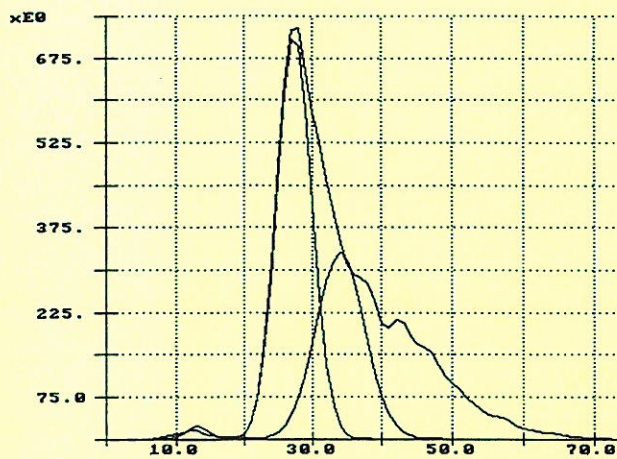




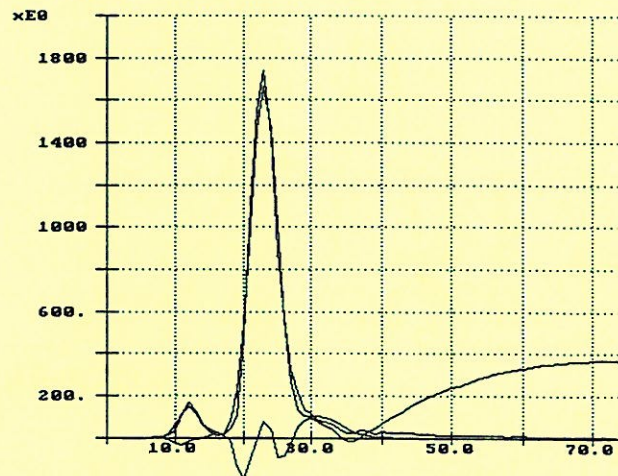
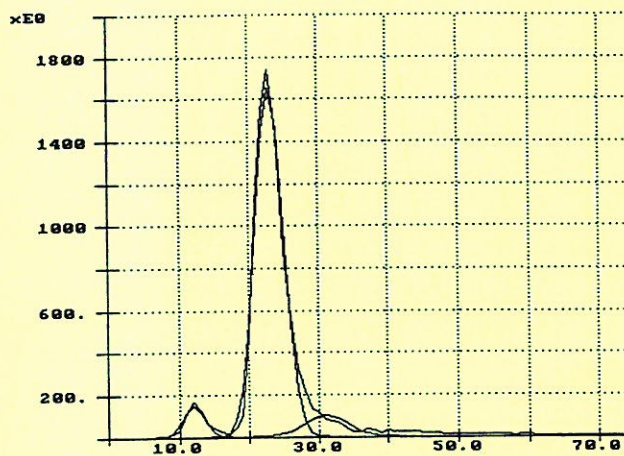
## Annex II The size composition of the hake stocks split into length cohorts through optimizing techniques

### CAPE HAKE

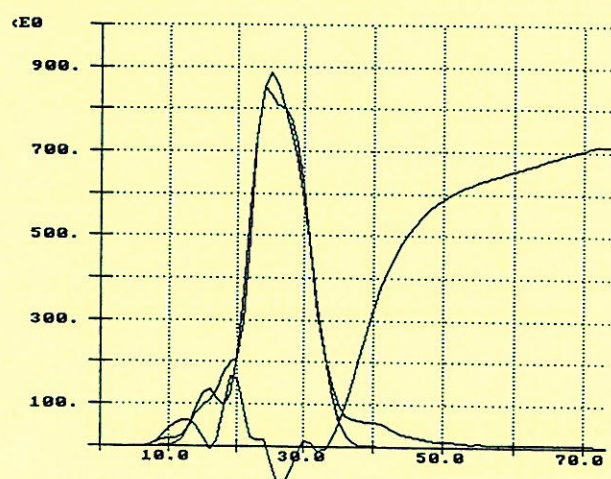
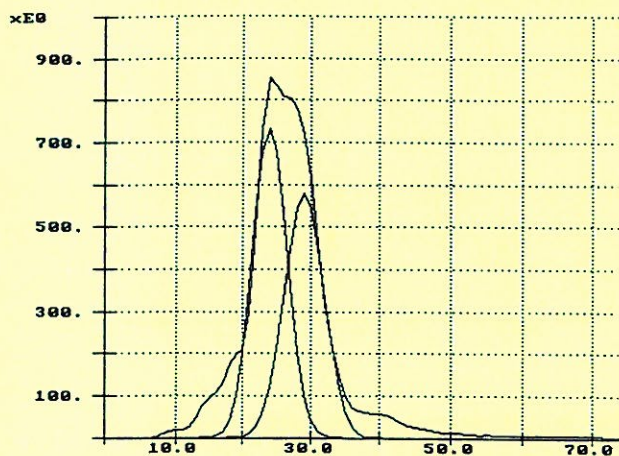
#### NORTHERN REGION



#### CENTRAL REGION



#### SOUTHERN REGION



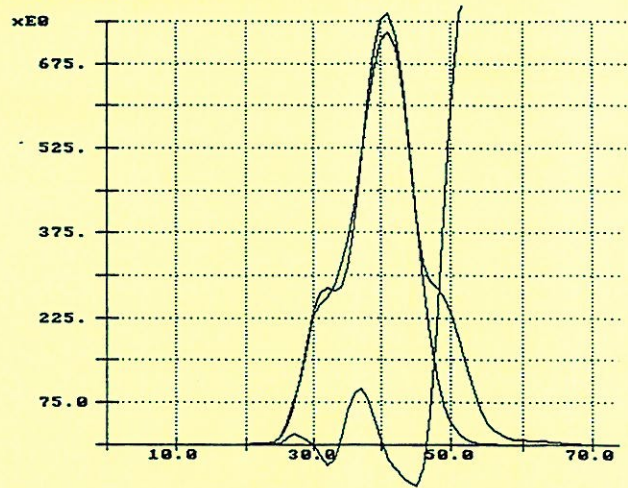
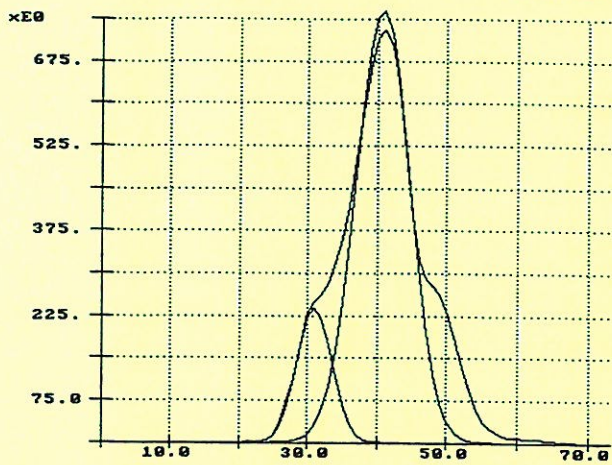
The length frequency distribution with the estimated cohorts.

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

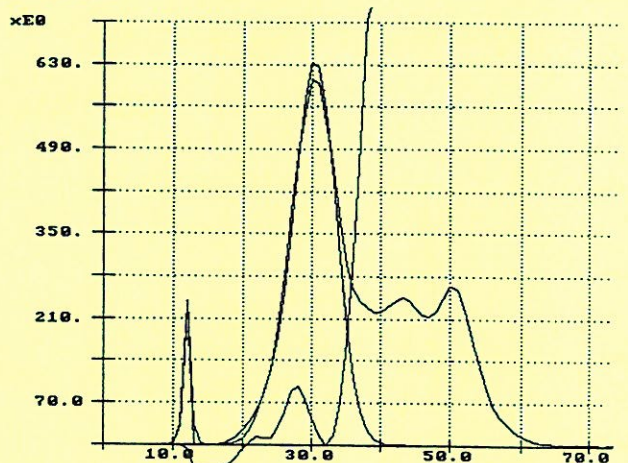
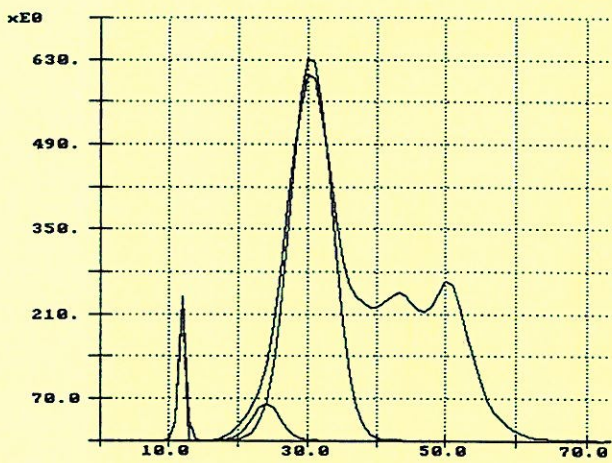


# DEEP WATER HAKE

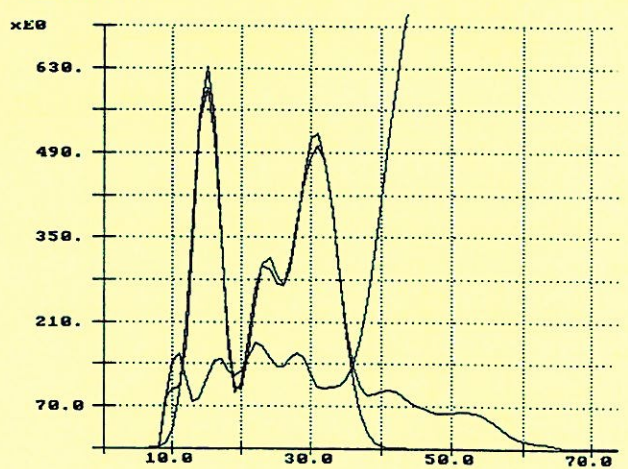
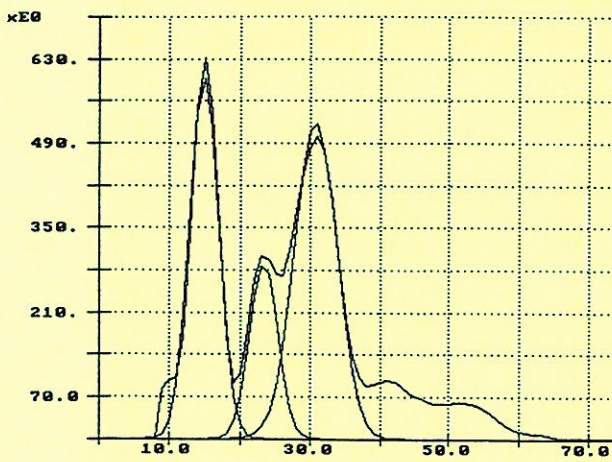
## NORTHERN REGION



## CENTRAL REGION



## SOUTHERN REGION



The length frequency distribution with the estimated cohorts.

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



## Annex III Records of fishing stations

PROJECT STATION:1184  
 DATE:10/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2800 Long E 1533  
 start stop duration  
 TIME :05:20:00 05:50:00 30 (min) Purpose code: 3  
 LOG :9128.80 9130.30 1.50 Area code : 1  
 FDEPTH: 89 87 GearCond.code:  
 BDEPTH: 89 87 Validity code:  
 Towing dir: 335° Wire out: 260 m Speed: 32 kn\*10  
 Sorted: 348 Kg Total catch: 348.11 CATCH/HOUR: 696.22

PROJECT STATION:1187  
 DATE:14/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2825 Long E 1454  
 start stop duration  
 TIME :13:44:00 14:14:00 30 (min) Purpose code: 3  
 LOG :9185.10 9186.70 1.60 Area code : 1  
 FDEPTH: 183 184 GearCond.code:  
 BDEPTH: 183 184 Validity code:  
 Towing dir: 330° Wire out: 580 m Speed: 35 kn\*10  
 Sorted: 154 Kg Total catch: 154.90 CATCH/HOUR: 309.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Galeorhinus galeus	219.00	12	31.46	
Thyrssites atun	157.60	118	22.64	3895
Merluccius capensis, female	95.80	670	13.76	3889
Chelidonichthys capensis	50.30	180	7.22	
Raja alba	50.00	2	7.18	
Merluccius capensis, male	45.40	478	6.52	3888
Callorhynchus capensis	23.00	22	3.30	
Merluccius capensis	22.70	516	3.26	3890
Etrumeus whiteheadi	22.50	342	3.23	3891
Mustelus mustelus	5.60	2	0.80	
Austroglossus microlepis	1.26	8	0.18	3892
Genypterus capensis	0.78	14	0.11	3893
Lolligoncula mercatoris	0.72	210	0.10	
Trachurus capensis	0.42	6	0.06	3894
Cynoglossus capensis	0.28	4	0.04	
Sepia australis	0.20	4	0.03	
Sufflogobius bibarbatu	0.16	30	0.02	
Squilla aculeata calmani	0.16	10	0.02	
Lepidopus caudatus	0.14	14	0.02	
C R A B S	0.08	6	0.01	
Zeus capensis	0.06	2	0.01	
Congiopodus spinifer	0.06	2	0.01	
<b>Total</b>	<b>696.22</b>		<b>99.98</b>	

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	97.90	90	31.60	3915
Merluccius capensis, male	53.70	50	17.33	3914
Chelidonichthys capensis	32.60	104	10.52	
Callorhynchus capensis	18.34	10	5.92	
Lophius vomerinus	17.70	10	5.71	3916
Lepidopus caudatus	16.90	196	5.46	
Raja leopardus	15.70	14	5.07	
Trachurus capensis	11.64	70	3.76	3912
Holohalaelurus regani	10.80	36	3.49	
Small squids	10.78	38	3.48	
Squalus megalops	8.56	16	2.76	
Zeus capensis	4.06	46	1.31	
Genypterus capensis	3.44	8	1.11	3911
Coelorinchus fasciatus	3.12	26	1.01	
Sepia australis	1.84	102	0.59	
Todarodes sagittatus	1.10	2	0.36	
Merluccius capensis	0.78	40	0.25	3913
Cynoglossus capensis	0.40	4	0.13	
Lolligoncula mercatoris	0.16	64	0.05	
C R A B S	0.14	10	0.05	
Sufflogobius bibarbatu	0.14	22	0.05	
<b>Total</b>	<b>309.80</b>		<b>100.01</b>	

PROJECT STATION:1185  
 DATE:14/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2813 Long E 1514  
 start stop duration  
 TIME :08:57:00 09:13:00 16 (min) Purpose code: 3  
 LOG :9154.80 9155.80 1.00 Area code : 1  
 FDEPTH: 151 144 GearCond.code:  
 BDEPTH: 151 144 Validity code:  
 Towing dir: 55° Wire out: 480 m Speed: 30 kn\*10  
 Sorted: 96 Kg Total catch: 135.10 CATCH/HOUR: 506.63

PROJECT STATION:1188  
 DATE:14/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2833 Long E 1438  
 start stop duration  
 TIME :17:00:00 17:30:00 30 (min) Purpose code: 3  
 LOG :9207.30 9209.00 1.70 Area code : 1  
 FDEPTH: 170 169 GearCond.code:  
 BDEPTH: 170 169 Validity code:  
 Towing dir: 330° Wire out: 480 m Speed: 33 kn\*10  
 Sorted: 229 Kg Total catch: 229.42 CATCH/HOUR: 458.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	206.59	1361	40.78	3898
Merluccius capensis, male	117.60	799	23.21	3896
Merluccius capensis, female	88.73	49	17.51	3897
Merluccius capensis	37.91	1238	7.48	3899
Chelidonichthys capensis	12.08	49	2.38	
Callorhynchus capensis	8.78	11	1.73	
Sepia australis	7.35	371	1.45	
Raja leopardus	6.94	11	1.37	
Genypterus capensis	5.74	11	1.13	3901
Etrumeus whiteheadi	4.73	64	0.93	
Trachurus capensis	2.89	23	0.57	3900
MYCTOPHIDAE	2.14	1088	0.42	
Sufflogobius bibarbatu	1.58	368	0.31	
Lepidopus caudatus	1.54	64	0.30	
Lolligoncula mercatoris	1.09	326	0.22	
Helicolenus dactylopterus	0.49	38	0.10	
Zeus capensis	0.49	8	0.10	
<b>Total</b>	<b>506.67</b>		<b>99.99</b>	

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lepidopus caudatus	123.60	114	26.94	
Chelidonichthys capensis	104.80	192	22.84	
Raja alba	70.00	2	15.26	
Trachurus capensis	39.10	482	8.52	3918
Squalus megalops	27.10	38	5.91	
Holohalaelurus regani	21.20	120	4.62	
Chelidonichthys quacketti	13.50	120	2.94	
Zeus capensis	9.48	48	2.07	
Merluccius capensis	8.70	4	1.90	3921
Emmelichthys nitidus	7.68	176	1.67	
Merluccius capensis, male	7.30	4	1.59	3920
Etrumeus whiteheadi	7.22	100	1.57	3917
Polyprion americanus	4.34	2	0.95	
Congiopodus spinifer	4.20	32	0.92	
Lophius vomerinus	4.12	2	0.90	3919
Callorhynchus capensis	3.02	6	0.66	
Loligo reynaudi	2.02	8	0.44	
Raja confundens	0.52	2	0.11	
Cynoglossus capensis	0.36	2	0.08	
Todarodes sagittatus	0.34	2	0.07	
Coelorinchus fasciatus	0.24	2	0.05	
<b>Total</b>	<b>458.84</b>		<b>100.01</b>	

PROJECT STATION:1186  
 DATE:14/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2818 Long E 1507  
 start stop duration  
 TIME :10:57:00 11:27:00 30 (min) Purpose code: 3  
 LOG :9167.50 9169.10 1.60 Area code : 1  
 FDEPTH: 179 180 GearCond.code:  
 BDEPTH: 179 180 Validity code:  
 Towing dir: 330° Wire out: 600 m Speed: 30 kn\*10  
 Sorted: 235 Kg Total catch: 339.46 CATCH/HOUR: 678.92

PROJECT STATION:1189  
 DATE:15/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2940 Long E 1432  
 start stop duration  
 TIME :05:46:00 06:17:00 31 (min) Purpose code: 3  
 LOG :9290.70 9292.40 1.70 Area code : 1  
 FDEPTH: 535 527 GearCond.code:  
 BDEPTH: 535 527 Validity code:  
 Towing dir: 170° Wire out:1550 m Speed: 30 kn\*10  
 Sorted: 288 Kg Total catch: 325.78 CATCH/HOUR: 630.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	221.96	602	32.69	3908
Merluccius capensis, female	143.40	52	21.12	3904
Merluccius capensis, female	94.06	384	13.85	3906
Chelidonichthys capensis	40.86	126	6.02	
Merluccius capensis, male	34.00	26	5.01	3905
Merluccius capensis	28.84	1202	4.25	3909
Callorhynchus capensis	26.88	14	3.96	
Merluccius capensis, male	21.88	90	3.22	3907
Etrumeus whiteheadi	13.38	172	1.97	3903
MYCTOPHIDAE	10.30		1.52	
Holohalaelurus regani	10.08	28	1.48	
Zeus capensis	8.10	86	1.19	
Lepidopus caudatus	7.02	42	1.03	
Sufflogobius bibarbatu	4.62	900	0.68	
Sepia australis	4.28	250	0.63	
Genypterus capensis	3.56	24	0.52	3902
Helicolenus dactylopterus	1.64	164	0.24	
Coelorinchus fasciatus	1.30	10	0.19	
C R A B S	1.06	76	0.16	
Lolligoncula mercatoris	0.82	302	0.12	
Lophius vomerinus	0.58	10	0.09	3910
Syngnathus kleini	0.30	4	0.04	
<b>Total</b>	<b>678.92</b>		<b>99.98</b>	

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	249.19	265	39.52	3924
Ruvettus pretiosus	174.19	12	27.63	
Merluccius paradoxus, male	49.84	99	7.90	3923
Helicolenus dactylopterus	26.54	70	4.21	
Bathyraxia smithii	23.42	4	3.71	
Trachyrincus scabrus	17.54	528	2.78	
Malacocephalus laevis	16.49	75	2.62	
Etmopterus lucifer	10.57	151	1.68	
Coelorinchus matama	9.00	70	1.43	
Selachophidium guentheri	8.30	122	1.32	
Cruriraja parconaculata	7.74	14	1.23	
Callorhynchus capensis	6.39	4	1.01	
Genypterus capensis	5.81	2	0.92	
Nezumia sp.	4.01	226	0.64	
C R A B S	3.31	35	0.52	
Lophius vomerinus	2.92	2	0.46	3922
Rossia enigmatica	2.61	99	0.41	
Photichthys sp.	2.44	122	0.39	
Chelidonichthys capensis	2.32	6	0.37	
Todarodes sagittatus	1.84	4	0.29	
S H R I M P S	1.74	151	0.28	
Notacanthus sexspinis	1.39	41	0.22	
Scopelogadus mearnsi	1.10	6	0.17	
CONGRIDAE	0.93	6	0.15	
Congiopodus spinifer	0.50	4	0.08	
Neocyttus rhomboidalis	0.41	6	0.07	
<b>Total</b>	<b>630.54</b>		<b>100.01</b>	



PROJECT STATION:1190  
 DATE:15/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2938 Long E 1438  
 start stop duration  
 TIME :08:15:00 08:45:00 30 (min) Purpose code: 3  
 LOG :9302.20 9303.70 1.50 Area code : 1  
 FDEPTH: 426 427 GearCond.code:  
 BDEPTH: 426 427 Validity code:  
 Towing dir: 340° Wire out:1200 m Speed: 32 kn\*10  
 Sorted: 264 Kg Total catch: 500.56 CATCH/HOUR: 1001.12

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	303.60 1016	30.33	3927
Lepidopus caudatus	272.60 268	27.23	
Merluccius paradoxus, male	170.00 548	16.98	3928
Coelorrhinchus fasciatus	132.60 1500	13.25	
Gerypteris capensis	41.30 24	4.13	3925
Helicolenus dactylopterus	26.40 100	2.64	
Lophius vomerinus	17.50 12	1.75	3926
Squalus megalops	15.04 12	1.50	
Todarodes sagittatus	11.48 24	1.15	
OPHIDIIDAE	4.64 12	0.46	
RAJIDAE	1.60 4	0.16	
Epigonus denticulatus	1.28 16	0.13	
Trachyrhynchus scabrus	0.96 16	0.10	
Malacocephalus laevis	0.88 4	0.09	
Holohalaelurus regani	0.64 12	0.06	
Beryx splendens	0.60 4	0.06	
Total	1001.12	100.02	

PROJECT STATION:1193  
 DATE:16/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2910 Long E 1545  
 start stop duration  
 TIME :10:46:00 11:06:00 20 (min) Purpose code: 2  
 LOG :9419.70 9420.60 0.95 Area code : 1  
 FDEPTH: 179 178 GearCond.code:  
 BDEPTH: 179 178 Validity code:  
 Towing dir: 221° Wire out: 580 m Speed: 30 kn\*10  
 Sorted: 125 Kg Total catch: 125.21 CATCH/HOUR: 375.63

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus	122.25 3579	32.55	3943
Sepia australis	63.90 3183	17.01	
Lophius vomerinus	41.25 96	10.98	3945
Chelidonichthys capensis	22.80 48	6.07	
Helicolenus dactylopterus	19.59 1128	5.22	
Merluccius capensis	17.40 30	4.63	3942
Etrumeus whiteheadi	15.57 192	4.15	3946
Maurollicus muelleri	14.70 6069	3.91	
Paracallionymus costatus	14.43 963	3.84	
Trachurus capensis	11.55 36	3.07	3944
Lepidopus caudatus	9.30 18	2.48	
Thyrssites atun	8.10 6	2.16	3947
Holohalaelurus regani	4.65 36	1.24	
Chelidonichthys queketti	2.28 15	0.61	
Gerypteris capensis	2.01 21	0.54	
Zeus capensis	1.62 18	0.43	
Todaropsis eblanae	1.38 21	0.37	
Cynoglossus zanzibarensis	1.29 45	0.34	
Congiopodus spinifer	0.99 15	0.26	
C R A B S	0.39 12	0.10	
Squilla sp.	0.18 15	0.05	
Total	375.63	100.01	

PROJECT STATION:1191  
 DATE:15/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2936 Long E 1502  
 start stop duration  
 TIME :12:23:00 12:53:00 30 (min) Purpose code: 3  
 LOG :9331.40 9332.80 1.40 Area code : 1  
 FDEPTH: 215 195 GearCond.code:  
 BDEPTH: 215 195 Validity code:  
 Towing dir: 340° Wire out: 720 m Speed: 30 kn\*10  
 Sorted: 92 Kg Total catch: 227.04 CATCH/HOUR: 454.08

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Octopus sp.	61.76 20	13.60	
Merluccius paradoxus, female	46.68 222	10.28	3932
Merluccius paradoxus	46.34 2212	10.21	3929
Merluccius capensis, female	36.00 12	7.93	3933
Helicolenus dactylopterus	35.30 598	7.77	
Merluccius paradoxus, male	32.24 202	7.10	3931
Zeus faber	29.84 98	6.57	
Holohalaelurus regani	24.58 66	5.41	
Lophius vomerinus	23.90 26	5.26	3934
Emmelichthys nitidus	20.80 58	4.58	
Malacocephalus laevis	18.60 176	4.10	
Congiopodus torvus	14.62 6	3.22	
Lepidopus caudatus	11.38 72	2.51	
Todarodes sagittatus	9.62 20	2.12	
Congiopodus spinifer	5.92 26	1.30	
Cynoglossus zanzibarensis	5.60 188	1.23	
Todaropsis eblanae	5.14 84	1.13	
Gerypteris capensis	5.06 10	1.11	3930
Callanthias legras	4.68 26	1.03	
Sepia australis	4.56 370	1.00	
Etrumeus whiteheadi	3.00 26	0.66	
Coelorrhinchus fasciatus	2.40 26	0.53	
Trachurus capensis	2.02 26	0.44	
Trigla lyra	1.88 6	0.41	
MACROBRANCHIOSIDAE	1.56 86	0.34	
Paracallionymus costatus	0.40 26	0.09	
Laemosa laureysi	0.20 6	0.04	
Total	454.08	99.97	

PROJECT STATION:1194  
 DATE:16/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2916 Long E 1539  
 start stop duration  
 TIME :12:36:00 12:56:00 20 (min) Purpose code: 2  
 LOG :9427.90 9428.80 1.05 Area code : 1  
 FDEPTH: 180 180 GearCond.code:  
 BDEPTH: 180 180 Validity code:  
 Towing dir: 221° Wire out: 580 m Speed: 30 kn\*10  
 Sorted: 104 Kg Total catch: 104.15 CATCH/HOUR: 312.45

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Etrumeus whiteheadi	78.75 1038	25.20	3951
Merluccius paradoxus	45.90 1617	14.69	3949
Trachurus capensis	36.30 114	11.62	3950
Chelidonichthys capensis	31.05 60	9.94	
Lepidopus caudatus	31.05 63	9.94	
Merluccius capensis	19.35 30	6.19	3948
Sepia australis	11.94 1023	3.82	
Paracallionymus costatus	8.04 681	2.57	
Lophius vomerinus	6.45 30	2.06	3952
Raja sp.	5.97 3	1.91	
Mustelus palumbes	5.85 3	1.87	
Callorhinchus capensis	5.76 3	1.84	
Coelorrhinchus fasciatus	4.11 57	1.32	
Holohalaelurus regani	3.84 21	1.23	
Chelidonichthys queketti	3.54 18	1.13	
Mustelus mustelus	3.45 3	1.10	
Squalus megalops	3.36 6	1.08	
Helicolenus dactylopterus	2.25 120	0.72	
Emmelichthys nitidus	1.74 3	0.56	
Gerypteris capensis	1.14 6	0.36	3953
Todarodes sagittatus	1.02 3	0.33	
Cynoglossus zanzibarensis	0.93 27	0.30	
Todaropsis eblanae	0.45 3	0.14	
Zeus capensis	0.21 6	0.07	
Total	312.45	99.99	

PROJECT STATION:1192  
 DATE:15/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2920 Long E 1510  
 start stop duration  
 TIME :15:32:00 16:02:00 30 (min) Purpose code: 3  
 LOG :9348.10 9349.70 1.60 Area code : 1  
 FDEPTH: 169 178 GearCond.code:  
 BDEPTH: 169 178 Validity code:  
 Towing dir: 10° Wire out: 560 m Speed: 32 kn\*10  
 Sorted: 132 Kg Total catch: 369.90 CATCH/HOUR: 739.80

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Etrumeus whiteheadi	130.00 1890	17.57	3941
Squalus megalops	115.00 290	15.54	
Chelidonichthys capensis	113.50 230	15.34	
Merluccius capensis, female	94.90 80	12.83	3935
Emmelichthys nitidus	89.60 1320	12.11	
Zeus capensis	57.40 470	7.76	
Trachurus capensis	44.70 280	6.04	3940
Merluccius capensis, male	38.60 34	5.22	3936
Holohalaelurus regani	17.60 70	2.38	
Callorhinchus capensis	16.10 10	2.18	
Thyrssites atun	7.50 8	1.01	3938
Trigla lyra	6.70 80	0.91	
Lophius vomerinus	3.38 4	0.46	3937
Todarodes sagittatus	2.40 10	0.32	
Lolligoncula mercatoris	1.20 20	0.16	
Merluccius paradoxus, female	0.82 2	0.11	3939
Cynoglossus capensis	0.40 10	0.05	
Total	739.80	99.99	

PROJECT STATION:1195  
 DATE:16/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2920 Long E 1540  
 start stop duration  
 TIME :14:20:00 14:40:00 20 (min) Purpose code: 2  
 LOG :9434.50 9435.50 1.05 Area code : 1  
 FDEPTH: 181 180 GearCond.code:  
 BDEPTH: 181 180 Validity code:  
 Towing dir: 150° Wire out: 580 m Speed: 30 kn\*10  
 Sorted: 137 Kg Total catch: 137.27 CATCH/HOUR: 411.81

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis	126.90 144	30.82	3954
Merluccius paradoxus	75.60 2940	18.36	3955
Lophius vomerinus	45.15 84	10.96	3956
Etrumeus whiteheadi	39.45 477	9.58	3957
Chelidonichthys capensis	27.15 48	6.59	
Callorhinchus capensis	24.45 12	5.94	
Trachurus capensis	14.85 54	3.61	3959
Paracallionymus costatus	9.93 813	2.41	
Gerypteris capensis	9.60 21	2.33	
Helicolenus dactylopterus	8.31 738	2.02	3958
Holohalaelurus regani	7.35 27	1.78	
Sepia australis	5.76 450	1.40	
Lepidopus caudatus	4.38 21	1.06	
Zeus capensis	2.49 6	0.60	
Todaropsis eblanae	2.31 12	0.56	
Mustelus mustelus	1.98 3	0.48	
Chelidonichthys queketti	1.80 18	0.44	
Cynoglossus zanzibarensis	1.74 54	0.42	
Todarodes sagittatus	1.29 3	0.31	
Squalus megalops	0.84 3	0.20	
Congiopodus spinifer	0.33 6	0.08	
C R A B S	0.15 9	0.04	
Total	411.81	99.99	



PROJECT STATION:1196  
 DATE:16/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2925 Long E 1545  
 start stop duration  
 TIME :16:33:00 17:03:00 30 (min) Purpose code: 2  
 LOG :9444.40 9445.70 1.32 Area code : 1  
 FDEPTH: 179 179 GearCond.code:  
 BDEPTH: 179 179 Validity code:  
 Towing dir: 165° Wire out: 560 m Speed: 26 kn\*10

Sorted: 248 Kg Total catch: 248.81 CATCH/HOUR: 497.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	190.50	206	38.28	3960
Lophius vomerinus	85.60	134	17.20	3962
Trachurus capensis	48.00	150	9.65	3963
Chelidonichthys capensis	47.40	96	9.53	
Merluccius paradoxus	40.70	2020	8.18	3961
Sepia australis	30.50	2230	6.13	
Squalus megalops	12.94	2	2.60	
Etrumeus whiteheadi	11.12	134	2.23	3965
Holohalaelurus regani	6.88	30	1.38	
Paracallionymus costatus	6.30	766	1.27	
Emmelichthys nitidus	4.76	8	0.96	3966
Todaropsis eblanae	2.88	72	0.58	
Raja leoparden	2.20	2	0.44	
Helicolenus dactylopterus	2.10	140	0.42	
Cynoglossus zanzibarensis	1.40	110	0.28	
Congiopeodus spinifer	1.22	10	0.25	
Raja miraletus	1.14	2	0.23	
Chelidonichthys queketti	0.58	6	0.12	
Zeus capensis	0.52	18	0.10	
Genypterus capensis	0.44	2	0.09	3964
Coelorinchus fasciatus	0.24	4	0.05	
Lolligosepala mercatoris	0.16	64	0.03	
Notopogon macrosoleus	0.02	2		
C R A B S	0.02	2		
Total	497.62		100.00	

PROJECT STATION:1199  
 DATE:17/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2953 Long E 1556  
 start stop duration  
 TIME :07:41:00 08:01:00 20 (min) Purpose code: 2  
 LOG :9532.70 9533.90 1.24 Area code : 1  
 FDEPTH: 195 194 GearCond.code:  
 BDEPTH: 195 194 Validity code:  
 Towing dir: 360° Wire out: 580 m Speed: 30 kn\*10

Sorted: 158 Kg Total catch: 158.43 CATCH/HOUR: 475.29

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Etrumeus whiteheadi	170.70	3294	35.91	3979
Trachurus capensis	60.45	228	12.72	3976
Merluccius capensis	48.60	54	10.23	3974
Helicolenus dactylopterus	27.75	591	5.84	
Chelidonichthys capensis	22.68	48	4.77	
Holohalaelurus regani	19.56	108	4.12	
Merluccius paradoxus	19.17	573	4.03	3975
Lophius vomerinus	18.90	21	3.98	3978
Sepia australis	17.49	1710	3.68	
Coelorinchus fasciatus	13.05	183	2.75	
Thyrsites atun	12.00	9	2.52	3977
Todarodes sagittatus	9.87	21	2.08	
Callorhynchus capensis	9.00	6	1.89	
Mustelus palumbes	7.47	3	1.57	
Lepidopus caudatus	6.90	63	1.45	
Maurollicus muelleri	2.19	1293	0.46	
Chelidonichthys queketti	1.89	12	0.40	
Paracallionymus costatus	1.80	111	0.38	
Lolligosepala mercatoris	1.44	720	0.30	
Congiopeodus spinifer	1.35	9	0.28	
Cynoglossus zanzibarensis	0.81	18	0.17	
Genypterus capensis	0.57	6	0.12	
Squilla sp.	0.51	48	0.11	
Todaropsis eblanae	0.45	48	0.09	
Zeus faber	0.42	3	0.08	
Mursia cristimanus	0.18	18	0.04	
Goneplax sp.	0.06	6	0.01	
Sepia hieronis	0.03	3	0.01	
Lampasycotodes hectoris	0.00	3		
Total	475.29		100.00	

PROJECT STATION:1197  
 DATE:16/ 1/96 GEAR TYPE: PT No:5 POSITION:Lat S 2925 Long E 1546  
 start stop duration  
 TIME :19:57:00 20:35:00 38 (min) Purpose code: 1  
 LOG :9457.20 9459.70 2.50 Area code : 1  
 FDEPTH: 35 35 GearCond.code:  
 BDEPTH: 180 179 Validity code:  
 Towing dir: 25° Wire out: 105 m Speed: 38 kn\*10

Sorted: 3 Kg Total catch: 34.00 CATCH/HOUR: 53.68

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	44.45	8138	82.81	3967
Sepia australis	9.24	118	17.21	
Total	53.69		100.02	

PROJECT STATION:1200  
 DATE:17/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2948 Long E 1544  
 start stop duration  
 TIME :09:35:00 09:55:00 20 (min) Purpose code: 2  
 LOG :9539.90 9541.00 1.15 Area code : 1  
 FDEPTH: 193 192 GearCond.code:  
 BDEPTH: 193 192 Validity code:  
 Towing dir: 360° Wire out: 580 m Speed: 30 kn\*10

Sorted: 150 Kg Total catch: 149.55 CATCH/HOUR: 448.65

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Etrumeus whiteheadi	221.25	4035	49.31	3982
Merluccius capensis	54.30	54	12.10	3985
Merluccius paradoxus	42.45	1062	9.46	3986
Helicolenus dactylopterus	15.51	567	3.46	
Holohalaelurus regani	15.27	75	3.40	
Trachurus capensis	14.22	39	3.17	3980
Lophius vomerinus	12.90	51	2.88	3983
Chelidonichthys capensis	11.76	27	2.62	
Lepidopus caudatus	11.73	99	2.61	
Thyrsites atun	9.00	6	2.01	3984
Todarodes sagittatus	7.95	21	1.77	
Sepia australis	7.92	687	1.77	
Raja straeleni	5.52	3	1.23	
Paracallionymus costatus	4.05	342	0.90	
Maurollicus muelleri	3.48	3	0.78	
Cynoglossus zanzibarensis	2.94	66	0.66	
Genypterus capensis	2.49	15	0.55	3981
Todaropsis eblanae	2.13	48	0.47	
Lolligosepala mercatoris	1.50	27	0.33	
Coelorinchus fasciatus	0.90	27	0.20	
Chelidonichthys queketti	0.66	3	0.15	
Sepia hieronis	0.24	9	0.05	
Zeus faber	0.15	3	0.03	
Rossia enigmatica	0.12	6	0.03	
Goneplax sp.	0.09	12	0.02	
Mursia cristimanus	0.09	6	0.02	
CRUSQ41	0.03	3	0.01	
Total	448.65		99.99	

PROJECT STATION:1198  
 DATE:17/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2958 Long E 1610  
 start stop duration  
 TIME :04:30:00 04:50:00 20 (min) Purpose code: 2  
 LOG :9512.70 9513.70 1.05 Area code : 1  
 FDEPTH: 184 184 GearCond.code:  
 BDEPTH: 184 184 Validity code:  
 Towing dir: 360° Wire out: 560 m Speed: 3 kn\*10

Sorted: 116 Kg Total catch: 131.62 CATCH/HOUR: 394.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus	225.33	5526	57.07	3971
Sepia australis	46.65	3318	11.81	
Lophius vomerinus	33.75	69	8.55	3972
Todarodes sagittatus	13.38	45	3.39	
Etrumeus whiteheadi	12.24	195	3.10	3968
Helicolenus dactylopterus	11.28	306	2.86	
Chelidonichthys capensis	8.55	18	2.17	
Holohalaelurus regani	7.56	60	1.91	
Cynoglossus zanzibarensis	7.02	129	1.78	
MICROPHIDAE	6.84	15	1.73	
Merluccius capensis	4.83	18	1.22	3973
Trachurus capensis	4.53	18	1.25	3970
Paracallionymus costatus	3.60	255	0.91	
Lepidopus caudatus	2.91	12	0.74	
Squilla aculeata calmani	1.68	132	0.43	
Genypterus capensis	1.62	12	0.41	3969
Coelorinchus fasciatus	1.47	33	0.37	
Todaropsis eblanae	0.96	39	0.24	
Chelidonichthys queketti	0.51	3	0.13	
Congiopeodus spinifer	0.15	9	0.04	
Total	394.86		100.01	

PROJECT STATION:1201  
 DATE:17/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2948 Long E 1549  
 start stop duration  
 TIME :11:19:00 11:39:00 20 (min) Purpose code: 2  
 LOG :9548.90 9549.90 1.10 Area code : 1  
 FDEPTH: 188 189 GearCond.code:  
 BDEPTH: 188 189 Validity code:  
 Towing dir: 360° Wire out: 600 m Speed: 30 kn\*10

Sorted: 133 Kg Total catch: 133.28 CATCH/HOUR: 399.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Etrumeus whiteheadi	183.90	3093	45.99	3991
Merluccius paradoxus	59.40	1080	14.86	3988
Merluccius capensis	36.90	42	9.23	3990
Chelidonichthys capensis	23.10	33	5.78	
Todarodes sagittatus	16.95	33	4.24	
Trachurus capensis	10.92	51	2.73	3987
Holohalaelurus regani	10.23	57	2.56	
Lophius vomerinus	7.80	30	1.95	3989
Raja wallacei	7.80	9	1.95	
Coelorinchus fasciatus	6.15	96	1.54	
Mustelus palumbes	6.00	3	1.50	
Sepia australis	5.73	480	1.43	
Squalus mitsukurii	5.40	3	1.35	
Todaropsis eblanae	5.16	114	1.29	
Paracallionymus costatus	4.11	438	1.03	
Lepidopus caudatus	3.18	51	0.80	
Chelidonichthys queketti	2.16	12	0.54	
Lolligosepala mercatoris	1.32	12	0.33	
Zeus capensis	1.02	9	0.26	
Helicolenus dactylopterus	0.78	69	0.20	
Emmelichthys nitidus	0.51	3	0.13	
Rossia enigmatica	0.42	15	0.11	
Cynoglossus zanzibarensis	0.33	9	0.08	
Parapagurus dimorphus	0.21	21	0.05	
Sepia hieronis	0.18	3	0.05	
Congiopeodus spinifer	0.15	3	0.04	
Zeus faber	0.03	3	0.01	
Total	399.84		100.03	



PROJECT STATION: 1202  
 DATE: 17/ 1/96 GEAR TYPE: BT No:1 POSITION: Lat S 2947 Long E 1546  
 start stop duration  
 TIME :12:42:00 13:02:00 20 (min) Purpose code: 2  
 LOG :9554.30 9555.40 1.00 Area code : 1  
 FDEPTH: 187 187 GearCond.code:  
 BDEPTH: 187 187 Validity code:  
 Towing dir: 360° Wire out: 600 m Speed: 35 kn\*10

Sorted: 92 Kg Total catch: 92.05 CATCH/HOUR: 276.15

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Etrumeus whiteheadi	64.20	1083	23.25	3992
Trachurus capensis	35.70	129	12.93	3993
Merluccius paradoxus	29.91	786	10.83	3995
Merluccius capensis	23.85	33	8.64	3994
Lophius vomerinus	21.60	42	7.82	3996
Mustelus palumbes	21.00	9	7.60	
Lepidopus caudatus	17.10	42	6.19	
Holohalaelurus regani	10.35	42	3.75	
Sepia australis	8.79	978	3.18	
Todarodes sagittatus	7.08	21	2.56	
Paracallionymus costatus	6.75	681	2.44	
Thyrssites atun	6.60	3	2.39	3997
Raja wallacei	5.85	3	2.12	
Maurollicus muelleri	3.54		1.28	
Helicolenus dactylopterus	2.76	141	1.00	
Chelidonichthys capensis	2.73	6	0.99	
Cynoglossus zanzibarensis	2.67	54	0.97	
Lelligoncula mercatoris	1.86		0.67	
Coelrorinchus fasciatus	1.32	27	0.48	
Todaropsis eblanae	1.17	42	0.42	
Gerypteris capensis	0.69	3	0.25	
Murina cristianus	0.30	15	0.11	
Sepia hieronis	0.12	3	0.04	
Rossia enigmatica	0.12	6	0.04	
Caristius groenlandicus	0.03	3	0.01	
Parapagurus dimorphus	0.03	3	0.01	
Zeus faber	0.03	9	0.01	
Total	276.15		99.98	

PROJECT STATION: 1203  
 DATE: 17/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2939 Long E 1551  
 start stop duration  
 TIME :14:06:00 14:26:00 20 (min) Purpose code: 2  
 LOG :9560.00 9561.10 1.10 Area code : 1  
 FDEPTH: 184 184 GearCond.code: 8  
 BDEPTH: 184 184 Validity code: 9  
 Towing dir: 360° Wire out: 600 m Speed: 32 kn\*10

Sorted: 5 Kg Total catch: 5.10 CATCH/HOUR: 15.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	6.42	3	41.96	3999
Merluccius paradoxus	2.43	102	15.88	4000
Lophius vomerinus	2.10	6	13.73	3998
Cynoglossus zanzibarensis	0.69	21	4.51	
Todarodes sagittatus	0.69	3	4.51	
Holohalaelurus regani	0.69	3	4.51	
Sepia australis	0.66	66	4.31	
Paracallionymus costatus	0.54	60	3.53	
Helicolenus dactylopterus	0.42	30	2.75	
Lepidopus caudatus	0.33	6	2.16	
Gerypteris capensis	0.18	3	1.18	
Todaropsis eblanae	0.15	3	0.98	
Total	15.30		100.01	

PROJECT STATION: 1204  
 DATE: 17/ 1/96 GEAR TYPE: BT No: POSITION: Lat S 2932 Long E 1601  
 start stop duration  
 TIME :16:36:00 17:06:00 30 (min) Purpose code: 2  
 LOG :9572.80 9574.60 1.77 Area code : 1  
 FDEPTH: 184 182 GearCond.code:  
 BDEPTH: 184 182 Validity code:  
 Towing dir: 360° Wire out: 580 m Speed: 32 kn\*10

Sorted: 266 Kg Total catch: 266.25 CATCH/HOUR: 532.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Raja alba	160.00	2	30.05	
Merluccius paradoxus	79.18	3502	14.87	3999
Sepia australis	64.90	3582	12.19	
Helicolenus dactylopterus	61.90	3236	11.62	
Etrumeus whiteheadi	60.70	1018	11.40	4002
Merluccius capensis	60.00	90	11.27	4000
Todarodes sagittatus	6.74	16	1.27	
Lophius vomerinus	5.86	10	1.10	4001
Chelidonichthys capensis	5.56	12	1.04	
Mustelus palumbes	5.44	2	1.02	
Lepidopus caudatus	4.70	102	0.88	
Thyrssites atun	3.80	2	0.71	4003
Trachurus capensis	3.16	16	0.59	4005
Paracallionymus costatus	2.70	182	0.51	
Gerypteris capensis	2.32	14	0.44	4004
Holohalaelurus regani	1.44	12	0.27	
Todaropsis eblanae	1.44	24	0.27	
Cynoglossus zanzibarensis	1.40	62	0.26	
Coelrorinchus fasciatus	0.40	10	0.08	
Congiopodus spinifer	0.32	2	0.06	
Chelidonichthys queketti	0.32	2	0.06	
MYCTOPHIDAE	0.24	140	0.05	
Sepia sp.	0.02	2		
Total	532.54		100.01	

PROJECT STATION: 1205  
 DATE: 18/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2853 Long E 1617  
 start stop duration  
 TIME :04:49:00 05:09:00 20 (min) Purpose code: 2  
 LOG :9617.90 9618.80 1.00 Area code : 1  
 FDEPTH: 126 124 GearCond.code:  
 BDEPTH: 126 124 Validity code:  
 Towing dir: \* Wire out: 400 m Speed: 29 kn\*10

Sorted: Kg Total catch: 224.75 CATCH/HOUR: 674.25

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	436.98	2787	64.81	3998
Miscellaneous fishes	121.35		18.00	
Chelidonichthys capensis	47.55	174	7.05	
Gerypteris capensis	21.60	135	3.20	4006
Trachurus capensis	18.75	90	2.78	4005
Etrumeus whiteheadi	14.55	213	2.16	4009
Austroglossus microlepis	4.59	12	0.68	4007
Thyrssites atun	3.81	3	0.57	4008
Lophius vomerinus	3.75	9	0.56	4010
Jasus lalandii	1.29	9	0.19	
Engraulis capensis	0.03	6		4011
Total	674.25		100.00	

PROJECT STATION: 1206  
 DATE: 10/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2852 Long E 1616  
 start stop duration  
 TIME :07:15:00 07:21:00 6 (min) Purpose code: 2  
 LOG :9624.30 9624.70 0.40 Area code : 1  
 FDEPTH: 124 125 GearCond.code: 9  
 BDEPTH: 124 125 Validity code: 9  
 Towing dir: 180° Wire out: 400 m Speed: 30 kn\*10

Sorted: 118 Kg Total catch: 117.98 CATCH/HOUR: 1179.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	614.50	4470	52.09	4012
Chelidonichthys capensis	193.00	410	16.36	
Miscellaneous fishes	181.20		15.36	
Etrumeus whiteheadi	96.00	1440	8.14	4013
Trachurus capensis	29.00	80	2.46	4018
Gerypteris capensis	24.70	50	2.09	4015
Austroglossus microlepis	24.20	80	2.05	4014
Thyrssites atun	18.60	10	1.58	4016
Jasus lalandii	3.50	20	0.30	4017
Engraulis capensis	0.50		0.04	
Total	1185.20		100.47	

PROJECT STATION: 1207  
 DATE: 18/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2854 Long E 1614  
 start stop duration  
 TIME :08:42:00 09:03:00 21 (min) Purpose code: 2  
 LOG :9629.40 9630.60 1.08 Area code : 1  
 FDEPTH: 130 129 GearCond.code:  
 BDEPTH: 130 129 Validity code:  
 Towing dir: 340° Wire out: 420 m Speed: 30 kn\*10

Sorted: 231 Kg Total catch: 231.45 CATCH/HOUR: 661.29

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	486.14	3069	73.51	4019
Miscellaneous fishes	89.86		13.59	
Chelidonichthys capensis	40.29	126	6.09	
Trachurus capensis	17.00	117	2.57	4020
Gerypteris capensis	12.86	131	1.94	4022
Etrumeus whiteheadi	12.43	186	1.88	4021
Austroglossus microlepis	2.29	17	0.35	4023
Lophius vomerinus	0.37	6	0.06	4024
Jasus lalandii	0.31	3	0.05	
Engraulis capensis	0.06	3	0.01	4025
Total	661.61		100.05	

PROJECT STATION: 1208  
 DATE: 18/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2853 Long E 1614  
 start stop duration  
 TIME :09:52:00 10:12:00 20 (min) Purpose code: 2  
 LOG :9634.10 9635.00 1.00 Area code : 1  
 FDEPTH: 130 129 GearCond.code:  
 BDEPTH: 130 129 Validity code:  
 Towing dir: 340° Wire out: 420 m Speed: 30 kn\*10

Sorted: 249 Kg Total catch: 249.03 CATCH/HOUR: 747.09

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	554.70	4440	74.25	4026
Miscellaneous fishes	91.65		12.27	
Chelidonichthys capensis	42.60	132	5.70	
Thyrssites atun	28.80	21	3.85	4031
Trachurus capensis	12.78	111	1.71	4029
Etrumeus whiteheadi	10.44	147	1.40	4027
Gerypteris capensis	5.76	96	0.77	4028
Austroglossus microlepis	0.72	3	0.10	4030
Total	747.45		100.05	

PROJECT STATION: 1209  
 DATE: 18/ 1/96 GEAR TYPE: BT No:4 POSITION: Lat S 2854 Long E 1615  
 start stop duration  
 TIME :10:58:00 11:18:00 20 (min) Purpose code: 2  
 LOG :9638.80 9639.50 1.07 Area code : 1  
 FDEPTH: 130 129 GearCond.code:  
 BDEPTH: 130 129 Validity code:  
 Towing dir: 340° Wire out: 420 m Speed: 30 kn\*10

Sorted: Kg Total catch: 132.47 CATCH/HOUR: 397.41

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	344.55	2451	86.70	4032
Thyrssites atun	15.90		4.00	
Chelidonichthys capensis	13.80	48	3.47	
Trachurus capensis	13.29	108	3.34	4033
Gerypteris capensis	5.70	96	1.43	4034
Austroglossus microlepis	1.65	12	0.42	4035
Etrumeus whiteheadi	1.53	24	0.38	4036
Lophius vomerinus	0.99	15	0.25	4037
Total	397.41		99.99	



PROJECT STATION:1210  
 DATE:18/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2853  
 start stop duration Long E 1614  
 TIME :12:30:00 12:50:00 20 (min) Purpose code: 2  
 LOG :9643.20 9644.10 1.02 Area code : 1  
 FDEPTH: 130 128 GearCond.code:  
 BDEPTH: 130 128 Validity code:  
 Towing dir: 340° Wire out: 420 m Speed: 30 kn\*10  
 Sorted: 142 Kg Total catch: 142.92 CATCHE/HOUR: 428.76

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Merluccius capensis	346.05	2763	80.71	4038
Chelidonichthys capensis	39.15	108	7.73	
Gerypteris capensis	13.38	153	3.12	4041
Trachurus capensis	12.66	87	2.95	4039
Callorhynchus capensis	8.40	6	1.96	
Etrumeus whiteheadi	7.65	111	1.78	4040
Thyrsites atun	6.45	3	1.50	
Austroglossus microlepis	0.87	3	0.20	
Lophius vomerinus	0.15	6	0.03	4042
Total	428.76		99.98	

PROJECT STATION:1211  
 DATE:18/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2853  
 start stop duration Long E 1614  
 TIME :14:44:00 15:04:00 20 (min) Purpose code: 2  
 LOG :9647.80 9648.90 1.00 Area code : 1  
 FDEPTH: 130 128 GearCond.code:  
 BDEPTH: 130 128 Validity code:  
 Towing dir: 340° Wire out: 420 m Speed: 30 kn\*10  
 Sorted: 201 Kg Total catch: 201.15 CATCHE/HOUR: 603.45

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Merluccius capensis	379.20	3006	62.84	4043
Miscellaneous fishes	134.25		22.25	
Chelidonichthys capensis	34.05	117	5.64	
Trachurus capensis	21.60	129	3.58	4044
Gerypteris capensis	17.16	255	2.84	4048
Thyrsites atun	13.11	12	2.17	4045
Etrumeus whiteheadi	2.43	36	0.40	4046
Austroglossus microlepis	1.65	6	0.27	4047
Total	603.45		99.99	

PROJECT STATION:1212  
 DATE:18/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2852  
 start stop duration Long E 1614  
 TIME :15:32:00 15:52:00 20 (min) Purpose code: 2  
 LOG :9654.50 9655.60 1.10 Area code : 1  
 FDEPTH: 130 126 GearCond.code:  
 BDEPTH: 130 126 Validity code:  
 Towing dir: 360° Wire out: 420 m Speed: 30 kn\*10  
 Sorted: 306 Kg Total catch: 306.37 CATCHE/HOUR: 919.11

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Merluccius capensis	708.75	4851	77.11	4049
Galeorhinus galeus	60.00	3	6.53	
Miscellaneous fishes	53.55		5.83	
Thyrsites atun	41.85	42	4.55	4053
Chelidonichthys capensis	22.32	78	2.43	
Trachurus capensis	17.19	105	1.87	4050
Gerypteris capensis	10.74	171	1.17	4051
Etrumeus whiteheadi	2.97	45	0.32	4052
Jasus lalandii	0.72		0.08	
Austroglossus microlepis	0.60	6	0.07	4054
Lophius vomerinus	0.42	9	0.05	4055
Total	919.11		100.01	

PROJECT STATION:1213  
 DATE:10/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2654  
 start stop duration Long E 1430  
 TIME :14:00:00 14:30:00 30 (min) Purpose code: 3  
 LOG :9849.40 9851.10 1.70 Area code : 1  
 FDEPTH: 167 180 GearCond.code:  
 BDEPTH: 167 180 Validity code:  
 Towing dir: 247° Wire out: 520 m Speed: 30 kn\*10  
 Sorted: 12 Kg Total catch: 57.11 CATCHE/HOUR: 114.22

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Sufflogobius bibarbus	93.44	21608	81.81	
Merluccius capensis, female	14.26	106	12.48	4057
Merluccius capensis, male	3.32	34	2.91	4056
C R A B S	3.20	174	2.80	
Total	114.22		100.00	

PROJECT STATION:1214  
 DATE:10/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2656  
 start stop duration Long E 1444  
 TIME :15:48:00 16:18:00 30 (min) Purpose code: 3  
 LOG :9859.60 9861.30 1.70 Area code : 1  
 FDEPTH: 225 232 GearCond.code:  
 BDEPTH: 225 232 Validity code:  
 Towing dir: 180° Wire out: 700 m Speed: 34 kn\*10  
 Sorted: 17 Kg Total catch: 32.86 CATCHE/HOUR: 65.72

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Sufflogobius bibarbus	62.36	15042	94.89	
Merluccius capensis, female	2.36	16	3.59	4059
Merluccius capensis	0.50	36	0.76	4060
Merluccius capensis, male	0.50	4	0.76	4058
Squilla aculeata calmani	0.16	4	0.24	
Total	65.88		100.24	

PROJECT STATION:1215  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2851  
 start stop duration Long E 1553  
 TIME :04:27:00 04:57:00 30 (min) Purpose code: 3  
 LOG :9993.70 9995.30 1.60 Area code : 1  
 FDEPTH: 163 154 GearCond.code:  
 BDEPTH: 163 154 Validity code:  
 Towing dir: 50° Wire out: 500 m Speed: 30 kn\*10  
 Sorted: 238 Kg Total catch: 238.89 CATCHE/HOUR: 477.78

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Merluccius paradoxus	211.90	7762	44.35	4063
Merluccius capensis, female	85.60	270	17.92	4061
Sepia australis	60.10	2914	12.58	
Merluccius paradoxus, female	20.00	160	4.19	4064
Lepidopus caudatus	18.90	800	3.96	
Raja leopardus	15.90	46	3.33	4069
Chelidonichthys capensis	14.90	40	3.12	
Trachurus capensis	11.92	76	2.49	4068
Merluccius capensis, male	9.60	36	2.01	4062
Gerypteris capensis	5.86	46	1.23	4067
Helicolenus dactylopterus	5.28	318	1.11	
Raja leopardus	4.22	4	0.88	
Paracalliopygus constatus	2.82	132	0.59	
Etrumeus whiteheadi	2.48	30	0.52	4066
Cynoglossus xanibaresis	2.46	88	0.51	
Todarodes sagittatus	1.98	6	0.41	
Holohalaelurus regasi	1.66	18	0.35	
Todaropsis eblanac	0.66	12	0.14	
Merluccius paradoxus, male	0.56	6	0.12	4065
Congipodops spinifer	0.44	10	0.09	
Squilla aculeata calmani	0.16	8	0.03	
Sufflogobius bibarbus	0.14	28	0.03	
C R A B S	0.12	8	0.03	
Zeus capensis	0.08	2	0.02	
Coelirinchus fasciatus	0.04	2	0.01	
Total	477.78		100.02	

PROJECT STATION:1216  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2839  
 start stop duration Long E 1611  
 TIME :08:00:00 08:20:00 20 (min) Purpose code: 3  
 LOG :17.40 18.40 1.00 Area code : 1  
 FDEPTH: 102 93 GearCond.code:  
 BDEPTH: 102 93 Validity code:  
 Towing dir: 335° Wire out: 320 m Speed: 30 kn\*10  
 Sorted: Kg Total catch: 1995.69 CATCHE/HOUR: 5987.07

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Trachurus capensis	4578.00	14466	76.46	4075
Callorhynchus capensis	550.20	159	9.19	
Merluccius capensis, female	305.70	1809	5.11	4070
Galeorhinus galeus	186.00	15	3.11	
Sepia australis	122.43	4929	2.04	
Merluccius capensis, male	75.00	891	1.25	4071
Merluccius capensis	71.25	1611	1.19	4072
Squilla aculeata calmani	30.21	3657	0.50	
Gerypteris capensis	27.90	45	0.47	4073
Austroglossus microlepis	16.05	69	0.27	4074
Etrumeus whiteheadi	12.72	159	0.21	
Sufflogobius bibarbus	11.13	1113	0.19	
Jasus lalandii	0.48	3	0.01	
Total	5987.07		100.00	

PROJECT STATION:1217  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2822  
 start stop duration Long E 1611  
 TIME :11:10:00 11:29:00 19 (min) Purpose code: 3  
 LOG :42.50 43.30 0.80 Area code : 1  
 FDEPTH: 108 111 GearCond.code: 9  
 BDEPTH: 108 111 Validity code: 1  
 Towing dir: 250° Wire out: 350 m Speed: 3 kn\*10  
 Sorted: 106 Kg Total catch: 118.61 CATCHE/HOUR: 374.56

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP	
weight	numbers			
Chelidonichthys capensis	194.21	767	51.85	
Merluccius capensis, female	58.42	426	15.60	4079
Merluccius capensis, male	51.95	688	13.87	4078
Raja leopardus	37.26	22	9.95	
Brama brama	15.03	6	4.01	
Etrumeus whiteheadi	7.61	133	2.03	4077
Austroglossus microlepis	2.84	16	0.76	4076
Thyrsites atun	2.37	3	0.63	
Lepidopus caudatus	2.34	69	0.62	
Sepia australis	2.34	3	0.62	
SCORPAENIDAE	0.19	3	0.05	
Total	374.56		99.99	



PROJECT STATION:1218  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2833 Long E 1533  
 start stop duration  
 TIME :14:08:00 14:38:00 30 (min) Purpose code: 3  
 LOG : 63.60 65.10 1.50 Area code : 1  
 FDEPTH: 167 171 GearCond.code:  
 BDEPTH: 167 171 Validity code:  
 Towing dir: 250° Wire out: 540 m Speed: 30 kn\*10  
 Sorted: 89 Kg Total catch: 234.47 CATCH/HOUR: 468.94

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	119.56	438	25.50	4081
Merluccius paradoxus	97.66	3554	20.83	4085
Merluccius paradoxus, female	55.72	670	11.88	4083
Sepia australis	36.50	2434	7.78	
Merluccius capensis, male	32.86	144	7.01	4082
Merluccius capensis, female	26.20	14	5.59	4080
Sufflogobius bibarbatu	20.34	4362	4.34	
Chelidonichthys capensis	19.40	88	4.14	
Etrumeus whiteheadi	12.20	182	2.60	4086
Coelorrinchus fasciatus	10.90	320	2.32	
Trachurus capensis	9.20	18	1.96	4087
Lophius vomerinus	8.06	30	1.72	4090
Gerypteris capensis	6.22	70	1.33	4089
Merluccius paradoxus, male	6.00	94	1.28	4084
Thyrssites atun	3.38	2	0.72	4088
Todaropsis eblanae	2.00	50	0.43	
Helicolenus dactylopterus	1.32	88	0.28	
Holohalaelurus regani	1.12	6	0.24	
C R A B S	0.12	6	0.03	
Zeus capensis	0.12	12	0.03	
Congiopodus spinifer	0.06	6	0.01	
Total	468.94		100.02	

PROJECT STATION:1221  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2903 Long E 1445  
 start stop duration  
 TIME :23:10:00 23:40:00 30 (min) Purpose code: 3  
 LOG : 127.30 128.80 1.50 Area code : 1  
 FDEPTH: 227 231 GearCond.code:  
 BDEPTH: 227 231 Validity code:  
 Towing dir: 260° Wire out: 700 m Speed: 30 kn\*10  
 Sorted: 74 Kg Total catch: 74.30 CATCH/HOUR: 148.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Gerypteris capensis	30.70	30	20.66	4110
Helicolenus dactylopterus	27.10	190	18.24	
Lophius vomerinus	23.70	14	15.95	4112
Holohalaelurus regani	14.68	48	9.88	
Trachurus capensis	13.62	56	9.17	4109
Merluccius capensis, female	10.70	4	7.20	4111
Zeus faber	9.40	44	6.33	
Squalus megalops	6.62	10	4.45	
Cynoglossus zanzibarensis	5.98	106	4.02	
Coelorrinchus fasciatus	1.72	12	1.16	
Merluccius paradoxus, female	1.68	18	1.13	4107
Lepidopus caudatus	0.70	6	0.47	
Shrimps, small, non comm.	0.54	132	0.36	
Merluccius paradoxus, juvenile	0.54	20	0.36	4108
MORIDAE	0.36	4	0.24	
CONGRIDAE	0.30	10	0.20	
Congiopodus spinifer	0.22	6	0.15	
C R A B S	0.04	2	0.03	
Total	148.60		100.00	

PROJECT STATION:1219  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2842 Long E 1517  
 start stop duration  
 TIME :17:07:00 17:23:00 16 (min) Purpose code: 3  
 LOG : 83.20 83.90 0.70 Area code : 1  
 FDEPTH: 169 170 GearCond.code:  
 BDEPTH: 169 170 Validity code:  
 Towing dir: 335° Wire out: 530 m Speed: 30 kn\*10  
 Sorted: 118 Kg Total catch: 242.22 CATCH/HOUR: 908.33

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Emmelichthys nitidus	315.00	518	34.68	4099
Merluccius capensis, female	166.69	364	18.35	4091
Trachurus capensis	90.00	315	9.91	4098
Merluccius paradoxus	67.88	3709	7.47	4095
Merluccius capensis, male	65.25	120	7.18	4092
Sepia australis	41.18	2318	4.53	
Chelidonichthys capensis	32.85	90	3.62	
Helicolenus dactylopterus	26.33	608	2.90	
Merluccius paradoxus, female	24.11	161	2.65	4093
Etrumeus whiteheadi	23.18	270	2.55	4100
Thyrssites atun	17.81	15	1.96	4096
Lepidopus caudatus	6.53	90	0.72	
Paracallionymus costatus	6.30	518	0.69	
Torpedo nobiliana	5.51	8	0.61	
Holohalaelurus regani	5.18	23	0.57	
Chelidonichthys queketti	4.50	23	0.50	
Todarodes sagittatus	4.50	23	0.50	
Lophius vomerinus	2.29	8	0.25	4097
Merluccius paradoxus, male	1.24	15	0.14	4094
Cynoglossus zanzibarensis	1.13	23	0.12	
Todaropsis eblanae	0.90	23	0.10	
Total	908.36		100.00	

PROJECT STATION:1222  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2909 Long E 1432  
 start stop duration  
 TIME :01:31:00 02:00:00 29 (min) Purpose code: 3  
 LOG : 140.50 142.50 2.00 Area code : 1  
 FDEPTH: 316 316 GearCond.code:  
 BDEPTH: 316 316 Validity code:  
 Towing dir: 350° Wire out: 950 m Speed: 30 kn\*10  
 Sorted: 109 Kg Total catch: 188.82 CATCH/HOUR: 290.49

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Coelorrinchus fasciatus	85.77	935	22.64	
Gerypteris capensis	47.46	42	16.34	4119
Helicolenus dactylopterus	34.58	194	11.90	
Merluccius paradoxus, female	21.63	128	7.45	4115
Merluccius paradoxus, male	18.35	111	6.32	4116
Callorhynchus capensis	17.75	8	6.11	
Holohalaelurus regani	16.00	48	5.51	
Merluccius capensis, female	13.38	8	4.61	4117
Zeus capensis	12.54	17	4.32	
Isurus oxyrinchus	9.00	2	3.10	
MORIDAE	7.51	28	2.59	
Lophius vomerinus	5.48	2	1.89	4120
Merluccius paradoxus, male	5.29	6	1.82	4114
Merluccius capensis, male	4.65	3	1.60	4118
Merluccius paradoxus, female	3.58	3	1.23	4113
Epigonus denticulatus	2.94	146	1.01	
Cynoglossus zanzibarensis	2.32	35	0.80	
SEPIOLIDAE	1.69	45	0.58	
Todaropsis eblanae	0.80	11	0.28	
ZEIDAE	0.49	8	0.17	
CONGRIDAE	0.38	17	0.13	
Paracallionymus costatus	0.28	28	0.10	
Total	291.87		100.50	

PROJECT STATION:1220  
 DATE:20/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2852 Long E 1502  
 start stop duration  
 TIME :19:55:00 20:25:00 30 (min) Purpose code: 3  
 LOG : 103.60 105.30 1.70 Area code : 1  
 FDEPTH: 171 171 GearCond.code:  
 BDEPTH: 171 171 Validity code:  
 Towing dir: 330° Wire out: 570 m Speed: 34 kn\*10  
 Sorted: 168 Kg Total catch: 168.37 CATCH/HOUR: 336.74

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	142.10	618	42.20	4106
Gerypteris capensis	71.20	108	21.14	4105
Merluccius capensis, female	32.30	22	9.59	4101
Lophius vomerinus	21.10	8	6.27	4104
Helicolenus dactylopterus	15.26	168	4.53	
Merluccius capensis, male	11.70	6	3.47	4102
Emmelichthys nitidus	10.64		3.16	
Cynoglossus zanzibarensis	5.98	78	1.78	
Holohalaelurus regani	5.20	18	1.54	
Squalus megalops	5.16	10	1.53	
Merluccius paradoxus, juvenile	4.84	320	1.44	4103
S H R I M P S	4.58	610	1.36	
Chelidonichthys capensis	2.10	4	0.62	
Lepidopus caudatus	1.16	8	0.34	
Todarodes sagittatus	1.00	2	0.30	
Callorhynchus capensis	0.86	2	0.26	
Congiopodus spinifer	0.78	8	0.23	
Zeus capensis	0.60	8	0.18	
Laemonea laureysi	0.10	2	0.03	
NEMICHTHYIDAE	0.08	2	0.02	
Total	336.74		99.99	

PROJECT STATION:1223  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2906 Long E 1427  
 start stop duration  
 TIME :03:06:00 03:20:00 14 (min) Purpose code: 3  
 LOG : 147.10 147.80 0.70 Area code : 1  
 FDEPTH: 397 403 GearCond.code: 9  
 BDEPTH: 397 403 Validity code: 1  
 Towing dir: 350° Wire out: 1200 m Speed: 30 kn\*10  
 Sorted: 64 Kg Total catch: 64.89 CATCH/HOUR: 278.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Coelorrinchus fasciatus	81.21	699	29.20	
Merluccius paradoxus, female	49.07	99	17.64	4121
Helicolenus dactylopterus	36.47	120	13.11	
Merluccius paradoxus, male	35.23	69	12.67	4122
Gerypteris capensis	32.36	9	11.64	4123
Octopus sp.	24.64	4	8.86	
Malacocephalus laevis	6.60	47	2.37	
Notacanthus sexspinis	3.60	34	1.29	
SEPIIDAE	2.19	56	0.79	
Todarodes sagittatus	1.41	4	0.51	
Epigonus denticulatus	1.33	73	0.48	
MYCTOPHIDAE	0.99	86	0.36	
Yarella blackfordi	0.81	56	0.29	
Cynoglossus zanzibarensis	0.69	13	0.25	
Coelorrinchus matamua	0.51	30	0.18	
Munida sp. "	0.39	111	0.14	
Bassanago albescens	0.21	13	0.08	
Laemonea laureysi	0.17	21	0.06	
C R A B S	0.13	4	0.05	
C E P H A L O P O D A	0.09	9	0.03	
Total	278.10		100.00	



PROJECT STATION:1224  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2901 Long E 1423  
 start stop duration  
 TIME :05:23:00 05:53:00 30 (min) Purpose code: 3  
 LOG : 156.90 158.40 1.50 Area code : 1  
 FDEPTH: 521 529 GearCond.code:  
 BDEPTH: 521 529 Validity code:  
 Towing dir: 360° Wire out:1500 m Speed: 28 kn\*10  
 Sorted: 179 Kg Total catch: 208.43 CATCH/HOUR: 416.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	225.50	168	54.09	4126
Merluccius paradoxus, male	37.50	62	9.00	4124
Ruvettus pretiosus	34.20	2	8.20	
Neocyttus rhomboidalis	22.00	164	5.28	
Genypterus capensis	21.50	8	5.16	4125
Etmopterus lucifer	15.70	344	3.77	
Coelorinchus braueri	14.06	44	3.37	
Hydrolagus sp.	8.56	10	2.05	
Notacanthus sexspinis	7.50	116	1.80	
Helicolenus dactylopterus	7.00	24	1.68	
Selachophidium guentheri	4.80	54	1.15	
Trachyrincus scabrus	3.50	60	0.84	
Raja confundens	3.20	4	0.77	
Coelorinchus fasciatus	3.00	30	0.72	
Todarodes sagittatus	2.40	4	0.58	
Ebinania costaecanarie	1.80	10	0.43	
Lepidion capensis	1.10	2	0.23	
Yarella blackfordi	0.96	90	0.23	
SEPIIDAE	0.70	24	0.17	
Nezumia sp.	0.70	80	0.17	
C R A B S	0.56	4	0.13	
S H R I M P S	0.26	42	0.06	
Epigonus denticulatus	0.20	4	0.05	
Laemonema laureysi	0.16	16	0.04	
Total	416.86		100.00	

PROJECT STATION:1225  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2855 Long E 1423  
 start stop duration  
 TIME :07:31:00 07:41:00 10 (min) Purpose code: 3  
 LOG : 165.80 166.30 0.50 Area code : 1  
 FDEPTH: 468 480 GearCond.code:  
 BDEPTH: 468 480 Validity code:  
 Towing dir: 5° Wire out:1350 m Speed: 30 kn\*10  
 Sorted: 434 Kg Total catch: 447.34 CATCH/HOUR: 2684.04

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1786.80	1482	66.57	4127
Merluccius paradoxus, male	406.80	612	15.16	4128
Lophius vomerinus	179.10	42	6.67	4132
Helicolenus dactylopterus	93.30	156	3.48	
Raja confundens	64.32	114	2.40	
Genypterus capensis	60.90	36	2.27	4131
Coelorinchus fasciatus	51.06	594	1.90	
Merluccius paradoxus, female	13.14	84	0.49	4129
Merluccius paradoxus, male	8.10	48	0.30	4130
Hydrolagus sp.	7.08	6	0.26	
Todarodes sagittatus	6.06	12	0.23	
C R A B S	2.10	180	0.08	
Yarella blackfordi	1.32	114	0.05	
Coelorinchus sp.	1.26	48	0.05	
Nezumia sp.	1.14	102	0.04	
Etmopterus lucifer	0.78	48	0.03	
Laemonema laureysi	0.48	48	0.02	
Epigonus denticulatus	0.30	18	0.01	
Total	2684.04		100.01	

PROJECT STATION:1226  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2853 Long E 1426  
 start stop duration  
 TIME :08:59:00 09:29:00 30 (min) Purpose code: 3  
 LOG : 173.10 174.60 1.50 Area code : 1  
 FDEPTH: 352 358 GearCond.code:  
 BDEPTH: 352 358 Validity code:  
 Towing dir: 350° Wire out:1050 m Speed: 30 kn\*10  
 Sorted: 155 Kg Total catch: 664.06 CATCH/HOUR: 1328.12

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Epigonus denticulatus	580.80	25928	43.73	
Merluccius paradoxus, female	216.00	1276	16.26	4135
Helicolenus dactylopterus	103.36	368	7.78	
Merluccius paradoxus, male	101.60	520	7.65	4136
Coelorinchus fasciatus	85.28	1280	6.42	
Holohalaelurus regani	69.28	192	5.22	
Genypterus capensis	50.20	32	3.78	4133
Galeus polli	46.24	432	3.48	
Brama brama	24.00	16	1.81	
MORIDAE	16.32	128	1.23	
Merluccius capensis, female	15.16	8	1.14	4137
Lepidopus caudatus	11.68	16	0.88	
Lophius vomerinus	5.48	4	0.41	4134
Beryx splendens	2.72	32	0.20	
Total	1328.12		99.99	

PROJECT STATION:1227  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2846 Long E 1423  
 start stop duration  
 TIME :12:44:00 13:14:00 30 (min) Purpose code: 3  
 LOG : 400.00 401.00 1.70 Area code : 1  
 FDEPTH: 400 401 GearCond.code:  
 BDEPTH: 400 401 Validity code:  
 Towing dir: 170° Wire out:1180 m Speed: 30 kn\*10  
 Sorted: 266 Kg Total catch: 714.15 CATCH/HOUR: 1428.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	559.96	1840	39.20	4141
Merluccius paradoxus, male	511.12	1578	35.79	4142
Genypterus capensis	73.10	52	5.12	4138
Coelorinchus fasciatus	60.66	902	4.25	
Merluccius capensis, female	41.50	18	2.91	4140
Lophius vomerinus	39.50	14	2.77	4139
Epigonus denticulatus	31.56	788	2.21	
Holohalaelurus regani	31.30	68	2.19	
Lepidopus caudatus	28.98	32	2.03	
Todarodes sagittatus	18.40	44	1.29	
Helicolenus dactylopterus	17.40	68	1.22	
Brama brama	9.32	6	0.65	
MORIDAE	4.20	50	0.29	
Beryx splendens	1.18	12	0.08	
C R A B S	0.12	6	0.01	
Total	1428.30		100.01	

PROJECT STATION:1228  
 DATE:21/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2830 Long E 1428  
 start stop duration  
 TIME :16:41:00 16:58:00 17 (min) Purpose code: 3  
 LOG : 228.80 229.70 0.90 Area code : 1  
 FDEPTH: 326 313 GearCond.code: 8  
 BDEPTH: 326 313 Validity code: 9  
 Towing dir: 25° Wire out:1000 m Speed: 35 kn\*10  
 Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:1229  
 DATE:21/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2808 Long E 1433  
 start stop duration  
 TIME :20:28:00 20:58:00 30 (min) Purpose code: 3  
 LOG : 257.30 259.00 1.70 Area code : 1  
 FDEPTH: 387 382 GearCond.code:  
 BDEPTH: 387 382 Validity code:  
 Towing dir: 210° Wire out:1150 m Speed: 32 kn\*10  
 Sorted: 227 Kg Total catch: 284.13 CATCH/HOUR: 568.26

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Genypterus capensis	214.50	104	37.75	4145
Merluccius paradoxus, female	154.98	136	27.27	4143
Coelorinchus fasciatus	143.40	1392	25.23	
Merluccius paradoxus, male	37.20	52	6.55	4144
Holohalaelurus regani	6.18	18	1.09	
Helicolenus dactylopterus	3.84	12	0.68	
Malacocephalus laevis	3.72	18	0.65	
Todarodes sagittatus	2.34	6	0.41	
Notacanthus sexspinis	0.90	12	0.16	
Etmopterus lucifer	0.54	12	0.10	
MYCTOPHIDAE	0.48	156	0.08	
Sepia elegans	0.18	6	0.03	
Total	568.26		100.00	

PROJECT STATION:1230  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2745 Long E 1433  
 start stop duration  
 TIME :00:18:00 00:48:00 30 (min) Purpose code: 3  
 LOG : 286.00 287.60 1.60 Area code : 1  
 FDEPTH: 501 500 GearCond.code:  
 BDEPTH: 501 500 Validity code:  
 Towing dir: 340° Wire out:1400 m Speed: 30 kn\*10  
 Sorted: 41 Kg Total catch: 41.42 CATCH/HOUR: 82.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	41.80	162	50.46	4147
Merluccius paradoxus, male	7.60	24	9.17	4146
Coelorinchus fasciatus	6.86	76	8.28	
Genypterus capensis	4.36	2	5.26	4148
CHIMAERIDAE	3.70	4	4.47	
Selachophidium guentheri	3.46	50	4.18	
Raja confundens	2.86	6	3.45	
Chaceon maritae	2.70	2	3.26	
Nezumia sp.	2.58	156	3.11	
Shrimps, small, non comm.	2.28	352	2.75	
Ebinania costaecanarie	1.52	10	1.83	
Galeus polli	1.44	14	1.74	
C R A B S	0.42	8	0.51	
Yarella blackfordi	0.38	30	0.46	
Helicolenus dactylopterus	0.36	2	0.43	
MORIDAE	0.34	32	0.41	
Myxine capensis	0.10	4	0.12	
Epigonus denticulatus	0.06	2	0.07	
Hoplostethus cadenati	0.02	2	0.02	
Total	82.84		99.98	



PROJECT STATION:1231  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2746  
 start stop duration Long E 1441  
 TIME :02:51:00 03:21:00 30 (min) Purpose code: 3  
 LOG : 299.80 301.30 1.50 Area code : 1  
 FDEPTH: 417 411 GearCond.code:  
 BDEPTH: 417 411 Validity code:  
 Towing dir: 330° Wire out:1180 m Speed: 30 kn\*10

Sorted: 89 Kg Total catch: 89.93 CATCH/HOUR: 179.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	74.20	200	41.25	4149
Gerypterus capensis	46.50	24	25.85	4151
Merluccius paradoxus, male	23.40	62	13.01	4150
Holohalaelurus regani	13.16	42	7.32	
Coelorrinchus fasciatus	9.62	226	5.35	
Trachyrincus scabrus	2.56	90	1.42	
NEMICHTHYIDAE	1.82	22	1.01	
MYCTOPHIDAE	1.80	692	1.00	
S R I M P S	1.40	400	0.78	
Galeus polli	1.38	14	0.77	
Todarodes sagittatus	1.22	4	0.68	
Helicolenus dactylopterus	0.78	4	0.43	
C R A B S	0.58	12	0.32	
Stereomastis sp.	0.54	184	0.30	
Paracallionymus costatus	0.36	36	0.20	
Nezumia sp.	0.18	8	0.10	
Malacocephalus laevis	0.16	4	0.09	
Selachophidium guentheri	0.14	2	0.08	
Epigonus denticulatus	0.04	4	0.02	
Coelorrinchus sp.	0.02	2	0.01	
Scomberesox saurus	0.00	2		
Total	179.86		99.99	

PROJECT STATION:1235  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2719  
 start stop duration Long E 1505  
 TIME :12:55:00 13:25:00 30 (min) Purpose code: 3  
 LOG : 363.90 365.50 1.60 Area code : 1  
 FDEPTH: 158 161 GearCond.code:  
 BDEPTH: 158 161 Validity code:  
 Towing dir: 330° Wire out: 520 m Speed: 30 kn\*10

Sorted: 67 Kg Total catch: 126.12 CATCH/HOUR: 252.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	159.10	1202	63.07	4167
Merluccius capensis, male	83.20	706	32.98	4166
Sufflogobius bibarbus	5.06	898	2.01	
Chelidonichthys capensis	3.72	14	1.47	
Callorhynchus capensis	1.16	2	0.46	
Total	252.24		99.99	

PROJECT STATION:1236  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2719  
 start stop duration Long E 1445  
 TIME :14:53:00 15:23:00 30 (min) Purpose code: 3  
 LOG : 375.30 376.90 1.60 Area code : 1  
 FDEPTH: 194 191 GearCond.code:  
 BDEPTH: 194 191 Validity code:  
 Towing dir: 360° Wire out: 600 m Speed: 30 kn\*10

Sorted: 121 Kg Total catch: 121.42 CATCH/HOUR: 242.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	137.50	1132	56.62	4169
Merluccius capensis, male	85.30	796	35.13	4168
Merluccius capensis	8.60	174	3.54	4169
Chelidonichthys capensis	5.92	20	2.44	
Sufflogobius bibarbus	3.24	472	1.33	
Gerypterus capensis	1.94	16	0.80	4170
Austroglossus microlepis	0.24	2	0.10	4171
Coelorrinchus fasciatus	0.10	4	0.04	
Total	242.84		100.00	

PROJECT STATION:1232  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2745  
 start stop duration Long E 1448  
 TIME :05:03:00 05:18:00 15 (min) Purpose code: 3  
 LOG : 311.10 311.90 0.80 Area code : 1  
 FDEPTH: 369 365 GearCond.code:  
 BDEPTH: 369 365 Validity code:  
 Towing dir: 355° Wire out:1100 m Speed: 32 kn\*10

Sorted: 409 Kg Total catch: 408.89 CATCH/HOUR: 1635.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	976.60	2800	59.71	4152
Merluccius paradoxus, male	241.00	916	14.74	4153
Merluccius capensis, female	91.80	40	5.61	4154
Raja leopardus	68.00	16	4.16	
Coelorrinchus fasciatus	52.60	3644	3.22	
Scomber japonicus	50.00	32	3.06	4159
Gerypterus capensis	49.00	32	3.00	4157
Merluccius capensis, male	27.20	16	1.66	4155
Todarodes sagittatus	19.00	28	1.16	
Trachurus capensis	15.76	48	0.96	4158
Raja miraletus	11.60	4	0.71	
Centrolophus niger	7.44	4	0.45	
Merluccius paradoxus	6.56	148	0.40	4156
Helicolenus dactylopterus	5.88	28	0.36	
C R A B S	3.60	88	0.22	
Squalus megalops	2.56	8	0.16	
Holohalaelurus regani	2.44	8	0.15	
Galeus polli	1.76	28	0.11	
MYCTOPHIDAE	1.72	612	0.11	
Epigonus denticulatus	0.32	8	0.02	
Trachyrincus scabrus	0.28	8	0.02	
Stereomastis sp.	0.24	76	0.01	
Etmopterus lucifer	0.20	4	0.01	
Total	1635.56		100.01	

PROJECT STATION:1237  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2721  
 start stop duration Long E 1445  
 TIME :17:04:00 17:34:00 30 (min) Purpose code: 3  
 LOG : 388.50 390.20 1.70 Area code : 1  
 FDEPTH: 296 296 GearCond.code:  
 BDEPTH: 296 296 Validity code:  
 Towing dir: 340° Wire out: 920 m Speed: 30 kn\*10

Sorted: 196 Kg Total catch: 413.00 CATCH/HOUR: 826.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	333.80	1348	40.41	4172
Merluccius capensis, male	150.40	744	18.21	4173
Todarodes sagittatus	81.80	256	9.90	
Gerypterus capensis	75.60	176	9.15	4174
Coelorrinchus fasciatus	63.20	1864	7.65	
Lophius vomerinus	40.00	14	4.84	4176
Trachurus capensis	39.00	224	4.72	4175
Helicolenus dactylopterus	24.12	144	2.92	
Merluccius paradoxus, female	5.64	68	0.68	4178
Sufflogobius bibarbus	3.40	1072	0.41	
Galeus polli	2.80	40	0.34	
Raja confundens	1.68	8	0.20	
Squilla aculeata calmani	1.28	80	0.15	
C R A B S	1.04	40	0.13	
MYCTOPHIDAE	0.80	388	0.10	
Austroglossus microlepis	0.40	4	0.05	
Sepia elegans	0.32	12	0.04	
Merluccius capensis, juveniles	0.28	12	0.03	4177
Chlorophthalmus punctatus	0.24	44	0.03	
Lepidopus caudatus	0.20	4	0.02	
Total	826.00		99.98	

PROJECT STATION:1233  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2739  
 start stop duration Long E 1505  
 TIME :07:53:00 08:24:00 31 (min) Purpose code: 3  
 LOG : 330.40 332.10 1.70 Area code : 1  
 FDEPTH: 165 169 GearCond.code:  
 BDEPTH: 165 169 Validity code:  
 Towing dir: 250° Wire out: 500 m Speed: 34 kn\*10

Sorted: 120 Kg Total catch: 119.96 CATCH/HOUR: 232.18

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	147.58	1107	63.56	4160
Merluccius capensis, male	34.16	441	14.71	4161
Sufflogobius bibarbus	29.52	6050	12.71	
Merluccius capensis	19.65	387	8.46	4162
Gerypterus capensis	0.83	4	0.36	4163
C R A B S	0.41	12	0.18	
Stereomastis sp.	0.04	15	0.02	
Total	232.19		100.00	

PROJECT STATION:1238  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2723  
 start stop duration Long E 1438  
 TIME :19:14:00 19:44:00 30 (min) Purpose code: 3  
 LOG : 400.30 401.90 1.60 Area code : 1  
 FDEPTH: 337 335 GearCond.code:  
 BDEPTH: 337 335 Validity code:  
 Towing dir: 360° Wire out:1050 m Speed: 30 kn\*10

Sorted: 104 Kg Total catch: 104.46 CATCH/HOUR: 208.92

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	94.00	128	44.99	4179
Deepwater fish mixture	30.00		14.36	
Gerypterus capensis	26.60	34	12.73	4182
Merluccius capensis, male	23.30	42	11.15	4180
Merluccius paradoxus, female	22.50	114	10.77	4181
Trachurus capensis	5.78	20	2.77	4183
Lophius vaillanti	5.44	2	2.60	4185
Lophius vomerinus	1.30	2	0.62	4184
Total	208.92		99.99	

PROJECT STATION:1234  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2735  
 start stop duration Long E 1513  
 TIME :10:10:00 10:40:00 30 (min) Purpose code: 3  
 LOG : 345.20 346.80 1.60 Area code : 1  
 FDEPTH: 130 128 GearCond.code:  
 BDEPTH: 130 128 Validity code:  
 Towing dir: 350° Wire out: 370 m Speed: 30 kn\*10

Sorted: 9 Kg Total catch: 9.43 CATCH/HOUR: 18.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Brama brama	10.00	4	53.02	
Merluccius capensis, female	5.08	52	26.94	4164
Merluccius capensis, male	2.06	24	10.92	4165
Todarodes sagittatus	0.68	2	3.61	
Gerypterus capensis	0.50	2	2.65	
Lepidopus caudatus	0.44	26	2.33	
Todaropsis eblanae	0.10	6	0.53	
Total	18.86		100.00	



PROJECT STATION:1239  
 DATE:22/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2721 Long E 1423  
 start stop duration  
 TIME :21:50:00 22:20:00 30 (min) Purpose code: 3  
 LOG : 417.00 418.70 1.70 Area code : 1  
 FDEPTH: 407 408 GearCond.code:  
 BDEPTH: 407 408 Validity code:  
 Towing dir: 335° Wire out:1220 m Speed: 30 kn\*10

Sorted: 157 Kg Total catch: 198.81 CATCH/HOUR: 397.62

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	132.50 450	33.32	4187
Coelorrinchus fasciatus	119.20 1470	29.98	
Merluccius paradoxus, male	66.00 234	16.60	4186
Raja confundens	23.00 16	5.78	
Genypterus capensis	22.40 12	5.63	4189
Lophius vomerinus	10.60 4	2.67	4188
Helicolenus dactylopterus	5.12 28	1.29	
Holohalaelurus regani	4.84 12	1.22	
C R A B S	4.00 88	1.01	
S H R I M P S	3.52 904	0.89	
Galeus polli	2.96 24	0.74	
MYCTOPHIDAE	2.00 244	0.50	
Selachophidium guentheri	1.48 24	0.37	
Total	397.62	100.00	

PROJECT STATION:1242  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2656 Long E 1431  
 start stop duration  
 TIME :06:05:00 06:35:00 30 (min) Purpose code: 3  
 LOG : 472.40 473.90 1.50 Area code : 1  
 FDEPTH: 298 306 GearCond.code:  
 BDEPTH: 298 306 Validity code:  
 Towing dir: 280° Wire out: 930 m Speed: 30 kn\*10

Sorted: 166 Kg Total catch: 1215.48 CATCH/HOUR: 2430.96

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	1092.70 7394	44.95	4196
Merluccius capensis, male	805.56 4450	33.14	4195
Coelorrinchus fasciatus	313.60 11280	12.90	
Lophius vomerinus	90.20 60	3.71	4198
MYCTOPHIDAE	74.28 37140	3.06	
Squilla acuelata calmani	31.56 1830	1.30	
Galeus polli	6.66 78	0.27	
Trachurus capensis	5.10 20	0.21	4199
Genypterus capensis	4.24 12	0.17	4197
Todarodes sagittatus	2.90 20	0.12	
Bathynectes piperitus	1.76 20	0.07	
Centroscyllium fabricii	1.72 20	0.07	
Sufflogobius bibarbatatus	0.40 160	0.02	
Trachyrincus scabrus	0.20 20	0.01	
Total	2430.92	100.00	

PROJECT STATION:1243  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2659 Long E 1423  
 start stop duration  
 TIME :07:56:00 08:14:00 18 (min) Purpose code: 3  
 LOG : 481.60 482.50 0.90 Area code : 1  
 FDEPTH: 348 351 GearCond.code:  
 BDEPTH: 348 351 Validity code:  
 Towing dir: 280° Wire out:1050 m Speed: 30 kn\*10

Sorted: 192 Kg Total catch: 1301.97 CATCH/HOUR: 4339.90

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	2421.57 9663	55.80	4204
Merluccius paradoxus, male	1061.40 6470	24.46	4205
Coelorrinchus fasciatus	572.70 13.20	13.20	
Genypterus capensis	59.00 67	1.36	4202
Merluccius capensis, female	54.67 27	1.26	4200
Helicolenus dactylopterus	31.40 247	0.72	
Nezumia sp.	30.30 853	0.70	
Todarodes sagittatus	30.00 57	0.69	
MYCTOPHIDAE	22.30 497	0.51	
Merluccius paradoxus, juvenile	19.27 43	0.44	4206
Bathynectes piperitus	13.77 413	0.32	
Lophius vomerinus	9.90 7	0.23	4203
Merluccius capensis, male	7.33 10	0.17	4201
Squilla sp.	4.13 277	0.10	
Galeus polli	3.57 27	0.08	
Centroscyllium fabricii	1.93 57	0.04	
Total	4343.24	100.08	

PROJECT STATION:1244  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2700 Long E 1414  
 start stop duration  
 TIME :09:46:00 10:16:00 30 (min) Purpose code: 3  
 LOG : 492.30 493.80 1.50 Area code : 1  
 FDEPTH: 389 339 GearCond.code:  
 BDEPTH: 389 339 Validity code:  
 Towing dir: 340° Wire out:1150 m Speed: 30 kn\*10

Sorted: 356 Kg Total catch: 813.15 CATCH/HOUR: 1626.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	868.80 2334	53.42	4209
Merluccius paradoxus, male	266.88 916	16.41	4210
Coelorrinchus fasciatus	240.90 2684	14.81	
Todarodes sagittatus	64.80 96	3.98	
Lophius vomerinus	59.40 14	3.65	4208
Genypterus capensis	52.20 26	3.21	4207
Deepwater fish mixture	45.12 2.77	2.77	
Helicolenus dactylopterus	11.22 66	0.69	
C R A B S	7.98 132	0.49	
Nezumia sp.	7.14 192	0.44	
MYCTOPHIDAE	1.86 300	0.11	
Total	1626.30	99.98	

PROJECT STATION:1241  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2716 Long E 1405  
 start stop duration  
 TIME :02:58:00 03:28:00 30 (min) Purpose code: 3  
 LOG : 436.00 437.70 1.70 Area code : 1  
 FDEPTH: 631 628 GearCond.code:  
 BDEPTH: 631 628 Validity code:  
 Towing dir: 330° Wire out:1600 m Speed: 30 kn\*10

Sorted: 123 Kg Total catch: 225.92 CATCH/HOUR: 451.84

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	160.50 110	35.52	4193
Centroscyllium crepidater	110.26 8	24.40	
Deania calcea	51.66 36	11.43	
Trachyrincus scabrus	33.12 364	7.33	
Notacanthus sexspinis	21.08 378	4.67	
Nezumia sp.	19.12 448	4.23	
Chaceon maritae	12.88 98	2.85	
Etmopterus pusillus	11.48 182	2.54	
Raja confundens	11.42 64	2.53	
Coelorrinchus braueri	5.04 28	1.12	
Lithodes ferox	3.78 8	0.84	
Merluccius paradoxus, male	3.72 2	0.82	4194
Trachyscorpia capensis	2.88 22	0.64	
OREOSTOMATIDAE	2.52 42	0.56	
S H R I M P S	1.26 274	0.28	
Epigonus telescopus	0.84 8	0.19	
Ebinania costaeccanarie	0.14 8	0.03	
Yarrella blackfordi	0.14 22	0.03	
Total	451.84	100.01	

PROJECT STATION:1245  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2702 Long E 1402  
 start stop duration  
 TIME :12:12:00 12:42:00 30 (min) Purpose code: 3  
 LOG : 507.30 509.00 1.70 Area code : 1  
 FDEPTH: 449 449 GearCond.code:  
 BDEPTH: 449 449 Validity code:  
 Towing dir: 350° Wire out:1250 m Speed: 30 kn\*10

Sorted: 162 Kg Total catch: 209.35 CATCH/HOUR: 418.70

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius paradoxus, female	223.90 222	53.48	4211
Coelorrinchus fasciatus	88.92 21.24	21.24	
Merluccius paradoxus, male	22.50 28	5.37	4212
Miscellaneous fishes	19.98 4.77	4.77	
Lophius vomerinus	15.20 6	3.63	4213
Genypterus capensis	14.00 10	3.34	4214
Helicolenus dactylopterus	13.74 66	3.28	
Todarodes sagittatus	9.48 24	2.26	
Yarrella blackfordi	2.88 192	0.69	
Selachophidium guentheri	2.58 36	0.62	
S H R I M P S	1.98 246	0.47	
C R A B S	1.74 24	0.42	
Nezumia sp.	1.02 18	0.24	
Galeus polli	0.78 6	0.19	
Total	418.70	100.00	



PROJECT STATION:1246  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2700 Long E 1357  
 start stop duration Purpose code: 3  
 TIME :13:59:00 14:29:00 30 (min) Area code : 1  
 LOG : 514.00 515.70 1.70 GearCond.code: 1  
 FDEPTH: 500 499 Validity code:  
 BDEPTH: 500 499  
 Towing dir: 350° Wire out:1400 m Speed: 30 kn\*10

Sorted: 118 Kg Total catch: 119.31 CATCH/HOUR: 238.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	119.20	104	49.95	4215
Todarodes sagittatus	29.00	50	12.15	
S H R I M P S	27.90		11.69	
Raja confundens	11.22	18	4.70	
Lophius vomerinus	9.50	2	3.98	4217
Coelorinchus fasciatus	8.66	114	3.63	
Solenocera africana	5.08	696	2.13	
Yarrella blackfordi	3.76	226	1.58	
Lithodes ferox	3.76	4	1.58	
Selachophidium guentheri	3.66	50	1.53	
Ebinania costaecanarie	2.94	20	1.23	
Helicolenus dactylopterus	2.58	8	1.08	
Nezumia sp.	2.42	200	1.01	
Notacanthus sexspinis	2.24	50	0.94	
Merluccius paradoxus, male	2.16	2	0.91	4216
Etmopterus pusillus	1.80	12	0.75	
CHIMAERIDAE	1.56	2	0.65	
C R A B S	1.18	16	0.49	
Total	238.62		99.98	

PROJECT STATION:1249  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2642 Long E 1342  
 start stop duration Purpose code: 3  
 TIME :20:07:00 20:37:00 30 (min) Area code : 1  
 LOG : 540.00 541.60 1.60 GearCond.code: 1  
 FDEPTH: 555 550 Validity code:  
 BDEPTH: 555 550  
 Towing dir: 335° Wire out:1600 m Speed: 30 kn\*10

Sorted: 377 Kg Total catch: 741.81 CATCH/HOUR: 1483.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1168.80	940	78.78	4223
Nezumia sp.	103.00		6.94	
Trachyrincus scabrus	59.20		3.99	
Selachophidium guentheri	29.40		1.98	
Lophius vomerinus	28.30	2	1.91	4225
Krill	15.96		1.08	
Todarodes sagittatus	15.32	36	1.03	
Hydrolagus sp.	14.28	28	0.96	
Raja confundens	8.20	36	0.55	
Lithodes ferox	8.12	16	0.55	
Notacanthus sexspinis	7.00	132	0.47	
Etmopterus lucifer	6.32	44	0.43	
Ebinania costaecanarie	6.08	4	0.41	
Merluccius paradoxus, male	4.48	8	0.30	4224
Yarrella blackfordi	2.84	256	0.19	
Deania calcea	2.48	4	0.17	
Cruriraja parcomaculata	2.20	8	0.15	
Trachyscorpia capensis	0.60	8	0.04	
Galeus polli	0.48	8	0.03	
Coelorinchus fasciatus	0.32	4	0.02	
Epigonus telescopus	0.24	4	0.02	
Total	1483.62		100.00	

PROJECT STATION:1247  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2657 Long E 1351  
 start stop duration Purpose code: 3  
 TIME :15:55:00 16:25:00 30 (min) Area code : 1  
 LOG : 521.50 523.20 1.70 GearCond.code: 1  
 FDEPTH: 597 610 Validity code:  
 BDEPTH: 597 610  
 Towing dir: 310° Wire out:1600 m Speed: 33 kn\*10

Sorted: 94 Kg Total catch: 253.94 CATCH/HOUR: 507.88

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Nezumia sp.	177.10	6812	34.87	
Merluccius paradoxus, female	125.30	92	24.67	4218
Trachyrincus scabrus	50.12	112	9.87	
Coelorinchus matama	31.64	196	6.23	
Deania calcea	28.84	28	5.68	
Raja confundens	15.82	42	3.11	
Selachophidium guentheri	14.42	168	2.84	
Hydrolagus sp.	10.36	14	2.04	
Hoplostethus cadenati	8.26	406	1.63	
Yarrella blackfordi	6.72	938	1.32	
Lithodes ferox	6.60	10	1.30	
Ebinania costaecanarie	6.30	126	1.24	
Todarodes sagittatus	5.74	14	1.13	
Notacanthus sexspinis	4.62	112	0.91	
Raja leopardus	4.20	56	0.83	
Merluccius paradoxus, male	3.30	2	0.65	4219
Neoscopelus macrolepidotus	2.94	182	0.58	
Etmopterus lucifer	2.52	28	0.50	
S H R I M P S	1.12	532	0.22	
Lycodes agulhensis	0.98	14	0.19	
Allocyttus verrucosus	0.98	14	0.19	
Total	507.88		100.00	

PROJECT STATION:1250  
 DATE:23/ 1/96 GEAR TYPE: BT No:7 POSITION:Lat S 2642 Long E 1340  
 start stop duration Purpose code: 3  
 TIME :21:56:00 22:26:00 30 (min) Area code : 1  
 LOG : 548.90 550.50 1.60 GearCond.code: 8  
 FDEPTH: 654 650 Validity code: 9  
 BDEPTH: 654 650  
 Towing dir: 160° Wire out:1800 m Speed: 30 kn\*10

Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:1251  
 DATE:24/ 1/96 GEAR TYPE: BT No:1 POSITION:Lat S 2643 Long E 1351  
 start stop duration Purpose code: 3  
 TIME :00:36:00 01:06:00 30 (min) Area code : 1  
 LOG : 562.80 564.40 1.60 GearCond.code: 1  
 FDEPTH: 428 427 Validity code:  
 BDEPTH: 428 427  
 Towing dir: 350° Wire out:1250 m Speed: 30 kn\*10

Sorted: 286 Kg Total catch: 291.25 CATCH/HOUR: 582.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	330.90	752	56.81	4226
Merluccius paradoxus, male	136.60	340	23.45	4227
Coelorinchus fasciatus	61.00	622	10.47	
Helicolenus dactylopterus	24.50	118	4.21	
Gerypteris capensis	14.90	8	2.56	4228
Nezumia sp.	4.26	158	0.73	
Krill	3.90		0.67	
Todarodes sagittatus	3.74	10	0.64	
Selachophidium guentheri	1.96	36	0.34	
Yarrella blackfordi	0.58	48	0.10	
MORIDAE	0.16	8	0.03	
Total	582.50		100.01	

PROJECT STATION:1248  
 DATE:23/ 1/96 GEAR TYPE: BT No:1 POSITION:Lat S 2646 Long E 1345  
 start stop duration Purpose code: 2  
 TIME :18:11:00 18:41:00 30 (min) Area code : 1  
 LOG : 533.10 534.60 1.50 GearCond.code: 1  
 FDEPTH: 509 506 Validity code:  
 BDEPTH: 509 506  
 Towing dir: 330° Wire out:1500 m Speed: 30 kn\*10

Sorted: 148 Kg Total catch: 184.58 CATCH/HOUR: 369.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	240.80	202	65.23	4220
Coelorinchus fasciatus	28.00	618	7.58	
Merluccius paradoxus, male	17.40	22	4.71	4221
Lophius vomerinus	14.06	4	3.81	4222
Lithodes ferox	11.56	14	3.13	
Krill	10.40		2.82	
Selachophidium guentheri	10.40	164	2.82	
Helicolenus dactylopterus	8.16	40	2.21	
Nezumia sp.	7.90	344	2.14	
Raja leopardus	7.56	10	2.05	
Galeus polli	6.56	44	1.78	
Etmopterus lucifer	2.16	20	0.59	
Notacanthus sexspinis	1.06	40	0.29	
Yarrella blackfordi	0.66	60	0.18	
Trachyrincus scabrus	0.66	10	0.18	
Malacocephalus laevis	0.56	20	0.15	
S H R I M P S	0.50	124	0.14	
Bathypectes piperitus	0.50	4	0.14	
Epigonus denticulatus	0.26	4	0.07	
Total	369.16		100.02	

PROJECT STATION:1252  
 DATE:24/ 1/96 GEAR TYPE: BT No:1 POSITION:Lat S 2644 Long E 1403  
 start stop duration Purpose code: 3  
 TIME :03:03:00 03:33:00 30 (min) Area code : 1  
 LOG : 588.30 579.90 1.60 GearCond.code: 1  
 FDEPTH: 405 405 Validity code:  
 BDEPTH: 405 405  
 Towing dir: 350° Wire out:1200 m Speed: 30 kn\*10

Sorted: 219 Kg Total catch: 414.62 CATCH/HOUR: 829.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	481.00	1240	58.00	4229
Merluccius paradoxus, male	172.40	452	20.79	4230
Gerypteris capensis	49.00	22	5.91	4231
Coelorinchus fasciatus	47.60	474	5.74	
Nezumia sp.	36.80	954	4.44	
Helicolenus dactylopterus	22.80	132	2.75	
MYCTOPHIDAE	16.00		1.93	
Todarodes sagittatus	1.68	8	0.20	
Selachophidium guentheri	1.32	16	0.16	
Galeus polli	0.52	4	0.06	
Ebinania costaecanarie	0.12	4	0.01	
Total	829.24		99.99	



PROJECT STATION:1253  
 DATE:24/ 1/96 GEAR TYPE: BT No: POSITION:Lat S 2640  
 start stop duration Long E 1414  
 TIME :06:10:00 06:27:00 17 (min) Purpose code: 3  
 LOG : 591.00 591.80 0.80 Area code : 1  
 FDEPTH: 369 366 GearCond.code:  
 BDEPTH: 369 366 Validity code:  
 Towing dir: 50° Wire out:1050 m Speed: 30 kn=10

Sorted: 293 Kg Total catch: 1559.25 CATCH/HOUR: 5503.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	4034.82	11008	73.32	4235
Merluccius paradoxus, male	699.53	2425	12.71	4234
Merluccius capensis, female	251.29	120	4.57	4233
Helicolenus dactylopterus	171.18	1172	3.11	
Coelorinchus fasciatus	156.00	2820	2.83	
Genypterus capensis	70.59	60	1.28	4232
Nezumia sp.	49.76	1172	0.90	
MYCTOPHIDAE	30.00		0.55	
Todarodes sagittatus	24.88	60	0.45	
Galeus polli	9.88	81	0.18	
Krill	3.88		0.07	
Selachophidium guentheri	1.41	21	0.03	
Total	5503.22		100.00	

PROJECT STATION:1257  
 DATE:24/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2620  
 start stop duration Long E 1406  
 TIME :18:15:00 18:35:00 20 (min) Purpose code: 3  
 LOG : 668.70 669.90 1.20 Area code : 1  
 FDEPTH: 350 347 GearCond.code:  
 BDEPTH: 350 347 Validity code:  
 Towing dir: 350° Wire out:1100 m Speed: 35 kn=10

Sorted: 182 Kg Total catch: 522.03 CATCH/HOUR: 1566.09

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	568.65	1530	36.31	4261
Coelorinchus fasciatus	348.00	2748	22.22	
Merluccius capensis, female	210.60	102	13.45	4259
Merluccius capensis, male	181.05	486	11.56	4260
Merluccius paradoxus, female	124.95	561	7.98	4263
Helicolenus dactylopterus	43.50	357	2.78	
Galeus polli	28.50	420	1.82	
Merluccius capensis, male	16.50	9	1.05	4258
Bathynectes piperitus	14.40	498	0.92	
Merluccius paradoxus, male	11.22	78	0.72	4262
Nezumia sp.	9.00	318	0.57	
Todarodes sagittatus	4.50	27	0.29	
Lophius vomerinus	4.44	3	0.28	4257
Epigonus denticulatus	0.78	27	0.05	
Total	1566.09		100.00	

PROJECT STATION:1254  
 DATE:24/ 1/96 GEAR TYPE: BT No: POSITION:Lat S 2641  
 start stop duration Long E 1421  
 TIME :07:53:00 08:13:00 20 (min) Purpose code: 3  
 LOG : 600.00 601.00 1.00 Area code : 1  
 FDEPTH: 340 338 GearCond.code:  
 BDEPTH: 340 338 Validity code:  
 Towing dir: 150° Wire out:1000 m Speed: 30 kn=10

Sorted: 200 Kg Total catch: 594.01 CATCH/HOUR: 1782.03

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	587.52	1755	32.97	4239
Merluccius paradoxus, female	540.60	3549	30.34	4241
Merluccius capensis, male	190.74	723	10.70	4238
Genypterus capensis	103.95	96	5.83	4236
Merluccius paradoxus, male	96.90	603	5.44	4240
Coelorinchus fasciatus	68.94	18507	3.87	
Helicolenus dactylopterus	67.62	327	3.79	
Raja straeleni	34.26	9	1.92	
MYCTOPHIDAE	30.60		1.72	
Todarodes sagittatus	28.56	51	1.60	
Trachurus capensis	19.47	51	1.09	
Lophius vomerinus	5.52	3	0.31	4237
Galeus polli	4.17	21	0.23	
Brama brama	2.97	9	0.17	
Bathynectes piperitus	0.21	9	0.01	
Total	1782.03		99.99	

PROJECT STATION:1258  
 DATE:24/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2622  
 start stop duration Long E 1356  
 TIME :20:27:00 20:57:00 30 (min) Purpose code: 3  
 LOG : 681.50 683.20 1.70 Area code : 1  
 FDEPTH: 386 382 GearCond.code:  
 BDEPTH: 386 382 Validity code:  
 Towing dir: 345° Wire out:1120 m Speed: 32 kn=10

Sorted: 187 Kg Total catch: 461.84 CATCH/HOUR: 923.68

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	350.00	1380	37.89	4269
Coelorinchus fasciatus	232.76		25.20	
Nezumia sp.	59.50		6.44	
Genypterus capensis	50.60	30	5.48	4267
Merluccius paradoxus, female	48.80	38	5.28	4266
Helicolenus dactylopterus	48.66	316	5.27	
Merluccius paradoxus, male	45.16	176	4.89	4270
Merluccius capensis, female	43.60	24	4.72	4264
Bathynectes piperitus	20.30	210	2.20	
Lophius vomerinus	8.26	6	0.89	4268
Selachophidium guentheri	4.90	120	0.53	
MYCTOPHIDAE	4.00	1036	0.43	
Merluccius capensis, male	3.60	2	0.39	4265
S H R I M P S	1.34	602	0.15	
Todarodes sagittatus	1.06	8	0.11	
Scorpaenopsis aurata	0.64	8	0.07	
Ebinania costaecanariae	0.28	22	0.03	
Epigonus telescopus	0.22	8	0.02	
Total	923.68		99.99	

PROJECT STATION:1255  
 DATE:24/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2623  
 start stop duration Long E 1427  
 TIME :14:22:00 14:50:00 28 (min) Purpose code: 3  
 LOG : 644.90 646.50 1.60 Area code : 1  
 FDEPTH: 301 294 GearCond.code:  
 BDEPTH: 301 294 Validity code:  
 Towing dir: 330° Wire out: 920 m Speed: 30 kn=10

Sorted: 210 Kg Total catch: 311.44 CATCH/HOUR: 667.37

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	285.92	1341	42.84	4246
Merluccius capensis, male	112.18	611	16.81	4247
Lophius vomerinus	62.04	86	9.30	4243
Merluccius paradoxus, female	55.65	480	8.34	4248
Coelorinchus fasciatus	44.89	4189	6.73	
Merluccius capensis, female	32.04	15	4.80	4242
Squilla aculeata calmani	23.51	1764	3.52	
Austroglossus microlepis	21.21	19	3.18	4244
Genypterus capensis	13.18	21	1.97	4245
Krill	5.08		0.76	
Sufflogobius bibarbatus	4.59	1224	0.69	
Trachurus capensis	2.61	11	0.39	4250
MYCTOPHIDAE	2.29	1273	0.34	
Merluccius paradoxus, male	2.19	21	0.33	4249
Total	667.38		100.00	

PROJECT STATION:1259  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2623  
 start stop duration Long E 1343  
 TIME :00:10:00 00:40:00 30 (min) Purpose code: 3  
 LOG : 700.70 702.40 1.70 Area code : 1  
 FDEPTH: 422 425 GearCond.code:  
 BDEPTH: 422 425 Validity code:  
 Towing dir: 350° Wire out:1250 m Speed: 30 kn=10

Sorted: 215 Kg Total catch: 320.43 CATCH/HOUR: 640.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	302.80	448	47.25	4271
Coelorinchus fasciatus	132.30		20.64	
Lophius vomerinus	54.90	12	8.57	4274
Nezumia sp.	44.80	714	6.99	
Helicolenus dactylopterus	32.20	168	5.02	
MYCTOPHIDAE	21.00		3.28	
Merluccius paradoxus, male	20.30	34	3.17	4272
Genypterus capensis	18.00	10	2.81	4273
Selachophidium guentheri	9.94	224	1.55	
Bathynectes piperitus	1.82	56	0.28	
Notacanthus sexspinis	1.68	28	0.26	
Ebinania costaecanariae	0.70	28	0.11	
Todarodes sagittatus	0.42	8	0.07	
Total	640.86		100.00	

PROJECT STATION:1256  
 DATE:24/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2621  
 start stop duration Long E 1414  
 TIME :16:34:00 16:44:00 10 (min) Purpose code: 3  
 LOG : 659.40 659.90 0.50 Area code : 1  
 FDEPTH: 326 322 GearCond.code:  
 BDEPTH: 326 322 Validity code:  
 Towing dir: 350° Wire out:1000 m Speed: 30 kn=10

Sorted: 146 Kg Total catch: 1528.29 CATCH/HOUR: 9169.74

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	5891.28	27828	64.25	4251
Merluccius capensis, male	2552.58	13656	27.84	4252
Coelorinchus fasciatus	296.28	11928	3.23	
Merluccius paradoxus, female	162.24	876	1.77	4253
Lophius vomerinus	67.02	126	0.73	4255
Galeus polli	61.38	750	0.67	
Bathynectes piperitus	34.44	2004	0.38	
Merluccius paradoxus, male	23.82	120	0.26	4254
Helicolenus dactylopterus	21.90	126	0.24	
Trachurus capensis	18.78	60	0.20	4256
Squilla aculeata calmani	16.26	1314	0.18	
Nezumia sp.	16.26	1188	0.18	
Lepidopus caudatus	4.38	60	0.05	
Epigonus denticulatus	3.12	126	0.03	
Total	9169.74		100.01	

PROJECT STATION:1260  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2603  
 start stop duration Long E 1339  
 TIME :05:19:00 05:39:00 20 (min) Purpose code: 3  
 LOG : 738.00 739.00 1.00 Area code : 1  
 FDEPTH: 532 537 GearCond.code:  
 BDEPTH: 532 537 Validity code:  
 Towing dir: 5° Wire out:1400 m Speed: 30 kn=10

Sorted: 194 Kg Total catch: 399.09 CATCH/HOUR: 1197.27

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	478.95	411	40.00	4275
Todarodes sagittatus	126.48	192	10.56	
Coelorinchus natana	115.20	312	9.62	
Etmopterus lucifer	108.00	360	9.02	
Trachyrhynchus scabrus	104.16	744	8.70	
Nezumia sp.	61.44	696	5.13	
Crania calcea	55.20	24	4.61	
Dzuriraja parcomaculata	25.44	24	2.12	
Selachophidium guentheri	24.48	264	2.04	
Shrimps, small, non comm.	21.60	3858	1.80	
Merluccius paradoxus, male	16.80	15	1.40	4276
Deania profundorum	14.88	24	1.24	
Lithodes ferox	11.76	24	0.98	
Ebinania costaecanariae	10.80	24	0.90	
Epigonus telescopus	7.44	48	0.62	
Notacanthus sexspinis	5.28	96	0.44	
Coelorinchus fasciatus	4.32	24	0.36	
Yarella blackfordi	4.08	288	0.34	
Alloctytus verrucosus	0.96	24	0.08	
Scopelosaurus meadi	0.00	3		
Hoplostethus cadenati	0.00	6		
Total	1197.27		99.96	



PROJECT STATION:1261  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2602  
 start stop duration Long E 1341  
 TIME :06:52:00 07:12:00 20 (min) Purpose code: 3  
 LOG : 744.70 745.80 1.10 Area code : 1  
 FDEPTH: 487 491 GearCond.code: 9  
 BDEPTH: 487 491 Validity code: 1  
 Towing dir: 5° Wire out:1400 m Speed: 30 kn=10

Sorted: 252 Kg Total catch: 403.15 CATCH/HOUR: 1209.45

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	553.05	765	45.73	4280
Cruzeira paracomaculata	162.00	120	13.39	
Coelorrhinus fasciatus	105.00	1317	8.68	
Todarodes sagittatus	86.85	165	7.18	
Etmopterus lucifer	67.35	270	5.57	
Nezumia sp.	50.70	1395	4.19	
Selachophidium guentheri	49.05	615	4.06	
Lophius vomerinus	34.95	15	2.89	4278
Merluccius paradoxus, male	31.05	54	2.57	4279
Genypterus capensis	12.30	3	1.02	4277
Lithodes ferax	9.90	9	0.82	
Bassanago albescens	9.15	15	0.76	
Deania profundorum	8.55	15	0.71	
Helicolenus dactylopterus	7.95	15	0.66	
Notacanthus sexspinis	6.75	240	0.56	
Tarrella blackfordi	3.15	390	0.26	
Galeus polli	3.15	30	0.26	
Coelorrhinus matama	3.00	30	0.25	
Trachyrhynchus scabrus	2.70	35	0.22	
Shrimps, small, non comm.	2.40	645	0.20	
MYCTOPHIDAE	0.45	285	0.04	
Total	1209.45		100.02	

PROJECT STATION:1262  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2600  
 start stop duration Long E 1346  
 TIME :08:35:00 08:50:00 15 (min) Purpose code: 3  
 LOG : 754.50 755.10 0.60 Area code : 1  
 FDEPTH: 401 403 GearCond.code: 9  
 BDEPTH: 401 403 Validity code: 1  
 Towing dir: 10° Wire out:1160 m Speed: 30 kn=10

Sorted: 197 Kg Total catch: 1226.41 CATCH/HOUR: 4905.64

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	3655.36	11220	74.51	4287
Merluccius paradoxus, male	555.92	1564	11.33	4286
Coelorrhinus fasciatus	170.00	1464	3.47	
Genypterus capensis	103.40	36	2.11	4281
Todarodes sagittatus	89.44	172	1.82	
Nezumia sp.	77.88	1396	1.12	
Helicolenus dactylopterus	55.08	240	1.12	
Lophius vomerinus	53.40	32	1.09	4282
Merluccius capensis, female	42.80	12	0.87	4284
Merluccius paradoxus, female	31.40	8	0.64	4285
MYCTOPHIDAE	23.80		0.49	
Krill	18.36		0.37	
Merluccius capensis, male	9.40	4	0.19	4283
Bathynectes piperitus	6.80	204	0.14	
Myxine capensis	6.12	68	0.12	
Notacanthus sexspinis	4.08	104	0.08	
Epigonus denticulatus	1.36	36	0.03	
Selachophidium guentheri	1.04	36	0.02	
Total	4905.64		99.99	

PROJECT STATION:1263  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2603  
 start stop duration Long E 1358  
 TIME :11:12:00 11:42:00 30 (min) Purpose code: 3  
 LOG : 772.00 773.50 1.50 Area code : 1  
 FDEPTH: 331 331 GearCond.code: 9  
 BDEPTH: 331 331 Validity code: 1  
 Towing dir: 350° Wire out:1161 m Speed: 30 kn=10

Sorted: 196 Kg Total catch: 255.61 CATCH/HOUR: 511.22

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lophius vomerinus	189.60	238	37.09	4290
Merluccius capensis, female	134.30	374	26.27	4288
Coelorrhinus fasciatus	131.90		25.80	
Merluccius capensis, male	35.80	158	7.00	4289
Nezumia sp.	8.00	560	1.56	
Bathynectes piperitus	6.80	380	1.33	
Genypterus capensis	1.98	4	0.39	4291
Austroglossus microlepis	1.44	2	0.28	4292
Squilla acuelata calmani	0.80	40	0.16	
Galeus polli	0.60	10	0.12	
Total	511.22		100.00	

PROJECT STATION:1264  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2602  
 start stop duration Long E 1405  
 TIME :12:58:00 13:28:00 30 (min) Purpose code: 3  
 LOG : 781.30 782.80 1.50 Area code : 1  
 FDEPTH: 294 285 GearCond.code: 9  
 BDEPTH: 294 285 Validity code: 1  
 Towing dir: 90° Wire out: 920 m Speed: 30 kn=10

Sorted: 125 Kg Total catch: 197.97 CATCH/HOUR: 395.94

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	189.36	956	47.83	4295
Merluccius capensis, male	71.92	430	18.16	4296
Squilla acuelata calmani	45.16	1750	11.41	
Lophius vomerinus	35.00	48	8.84	4294
Todarodes sagittatus	25.24	94	6.37	
Merluccius capensis, female	17.00	12	4.29	4293
Lepidopus caudatus	5.78	136	1.46	
Trachurus capensis	3.02	10	0.76	
Coelorrhinus fasciatus	1.36	24	0.34	
Austroglossus microlepis	0.96	4	0.24	
Sufflogobius bibarbatatus	0.92	288	0.23	
Bathynectes piperitus	0.22	4	0.06	
Total	395.94		99.99	

PROJECT STATION:1265  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2601  
 start stop duration Long E 1413  
 TIME :14:42:00 14:57:00 15 (min) Purpose code: 3  
 LOG : 257.00 256.00 0.80 Area code : 1  
 FDEPTH: 257 256 GearCond.code: 9  
 BDEPTH: 257 256 Validity code: 1  
 Towing dir: 360° Wire out: 800 m Speed: 30 kn=10

Sorted: 179 Kg Total catch: 2300.71 CATCH/HOUR: 9202.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	4193.60	14696	45.57	4300
Merluccius capensis, female	2620.68	24392	28.48	4297
Merluccius capensis, male	2332.76	24384	25.35	4298
Merluccius capensis, female	28.60	12	0.31	4299
Todarodes sagittatus	27.20	108	0.30	
Total	9202.84		100.01	

PROJECT STATION:1266  
 DATE:25/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2600  
 start stop duration Long E 1420  
 TIME :16:00:00 16:15:00 15 (min) Purpose code: 3  
 LOG : 799.20 800.00 0.80 Area code : 1  
 FDEPTH: 205 204 GearCond.code: 9  
 BDEPTH: 205 204 Validity code: 1  
 Towing dir: 355° Wire out: 660 m Speed: 30 kn=10

Sorted: Kg Total catch: 1590.00 CATCH/HOUR: 6360.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	6000.00	1290320	94.34	
Merluccius capensis, juveniles	360.00	42000	5.66	4301
Total	6360.00		100.00	

PROJECT STATION:1267  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2533  
 start stop duration Long E 1446  
 TIME :01:20:00 01:35:00 15 (min) Purpose code: 3  
 LOG : 885.30 886.10 0.80 Area code : 1  
 FDEPTH: 331 331 GearCond.code: 9  
 BDEPTH: 331 331 Validity code: 1  
 Towing dir: 350° Wire out:1000 m Speed: 30 kn=10

Sorted: 176 Kg Total catch: 365.26 CATCH/HOUR: 1461.04

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	513.16	2496	35.12	4309
Merluccius capensis, female	256.32	572	17.54	4307
Lophius vomerinus	122.20	88	8.36	4302
Coelorrhinus fasciatus	114.96		7.87	
Helicolenus dactylopterus	113.32		7.76	
Merluccius capensis, female	104.00	56	7.12	4304
Merluccius capensis, male	89.64	188	6.14	4308
Genypterus capensis	38.80	36	2.66	4303
Nezumia sp.	37.28		2.55	
Bathynectes piperitus	23.12	792	1.58	
Merluccius paradoxus, male	19.36	88	1.33	4310
Epigonus denticulatus	8.68	376	0.59	
Galeus polli	8.24	88	0.56	
Merluccius capensis, male	5.32	4	0.36	4305
MYCTOPHIDAE	2.88	704	0.20	
Austroglossus microlepis	2.32	4	0.16	4306
Squilla acuelata calmani	1.44	100	0.10	
Total	1461.04		100.00	

PROJECT STATION:1268  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2532  
 start stop duration Long E 1441  
 TIME :02:52:00 03:22:00 30 (min) Purpose code: 3  
 LOG : 893.30 894.50 1.20 Area code : 1  
 FDEPTH: 395 403 GearCond.code: 9  
 BDEPTH: 395 403 Validity code: 1  
 Towing dir: 350° Wire out:1150 m Speed: 30 kn=10

Sorted: 237 Kg Total catch: 444.23 CATCH/HOUR: 888.46

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	327.50	498	36.86	4311
Raja confusus	88.96	48	10.01	
Cruzeira paracomaculata	71.04	48	8.00	
Raja alba	56.00	2	6.30	
Genypterus capensis	42.70	24	4.81	4314
Deania profundorum	42.24	32	4.75	
Coelorrhinus fasciatus	38.08	640	4.29	
Centrolophus niger	37.60	16	4.23	
Nezumia sp.	37.60	1088	4.23	
Helicolenus dactylopterus	36.48	208	4.11	
Merluccius capensis, female	29.50	12	3.32	4313
Todarodes sagittatus	28.00	32	3.15	
Notacanthus sexspinis	18.88	800	2.13	
Merluccius paradoxus, male	12.20	32	1.37	4312
Lophius vomerinus	11.60	8	1.31	4315
Epigonus denticulatus	3.52	176	0.40	
Galeus polli	2.40	32	0.27	
Selachophidium guentheri	1.76	32	0.20	
Ebinania costaecanarie	1.44	32	0.16	
Hoplostethus cadonati	0.96	32	0.11	
Total	888.46		100.01	



PROJECT STATION:1269  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2529 Long E 1336  
 start stop duration Purpose code: 3  
 TIME :04:51:00 05:11:00 20 (min) Area code : 1  
 LOG : 901.20 902.30 1.11 GearCond.code: 1  
 FDEPTH: 498 513 Validity code:  
 BDEPTH: 498 513  
 Towing dir: 5° Wire out:1350 m Speed: 31 kn=10

Sorted: 416 Kg Total catch: 1048.33 CATCH/HOUR: 3144.99

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	2009.40	2040	63.89	4316
Hoplostethus cadenati	575.10	31437	18.29	
Nezumia sp.	97.50	1674	3.10	
RAJIDAE	77.49	84	2.46	
Lophius vomerinus	70.35	21	2.24	4318
Trachyrincus scabrus	58.98	294	1.88	
Merluccius paradoxus, male	50.70	72	1.61	4317
Ebinaia costaeacanarie	29.85	126	0.95	
Selachophidium guentheri	29.55	615	0.94	
Notacanthus sexspinis	28.71	1428	0.91	
Deania calcea	25.77	15	0.82	
Raja confundens	20.73	15	0.66	
Todarodes sagittatus	20.16	42	0.64	
Schedophilus huttoni	11.91	15	0.38	
Lithodes ferox	11.07	15	0.35	
Deania profundorum	8.13	15	0.26	
Epigoanus denticulatus	5.73	141	0.18	
Helicolenus dactylopterus	4.62	42	0.15	
Etmopterus lucifer	3.78	15	0.12	
Myxine capensis	3.09	15	0.10	
Galeus polli	2.37	27	0.08	
Total	3144.99		100.01	

PROJECT STATION:1273  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2518 Long E 1337  
 start stop duration Purpose code: 3  
 TIME :12:37:00 12:57:00 20 (min) Area code : 1  
 LOG : 944.60 945.50 0.90 GearCond.code: 1  
 FDEPTH: 452 454 Validity code: 9  
 BDEPTH: 452 454  
 Towing dir: 350° Wire out:1280 m Speed: 30 kn=10

Sorted: 179 Kg Total catch: 284.76 CATCH/HOUR: 854.28

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	286.35	282	33.52	4337
Hoplostethus cadenati	189.30		22.16	
Gerypteris capensis	89.25	45	10.45	4336
Lophius vomerinus	58.35	15	6.83	4335
Galeus polli	48.15	540	5.64	
Nezumia sp.	44.85	1275	5.25	
Todarodes sagittatus	44.40	75	5.20	
Raja confundens	41.10	45	4.81	
Coelorrhinus fasciatus	12.60	105	1.47	
Merluccius capensis, female	12.48	6	1.46	4338
Centropristis squamosus	12.45	3	1.46	
Helicolenus dactylopterus	6.60	45	0.77	
Selachophidium guentheri	4.20	45	0.49	
Myxine capensis	2.55	60	0.30	
Notacanthus sexspinis	1.05	60	0.12	
Epigoanus denticulatus	0.60	75	0.07	
Total	854.28		100.00	

PROJECT STATION:1270  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2525 Long E 1351  
 start stop duration Purpose code: 3  
 TIME :07:37:00 07:59:00 22 (min) Area code : 1  
 LOG : 921.80 923.10 1.30 GearCond.code: 1  
 FDEPTH: 268 279 Validity code:  
 BDEPTH: 268 279  
 Towing dir: 240° Wire out: 800 m Speed: 30 kn=10

Sorted: 31 Kg Total catch: 145.99 CATCH/HOUR: 398.15

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	206.78	1413	51.94	4321
Merluccius capensis, male	111.30	1088	27.95	4322
Sufflogobius bibarbat	36.25	3357	9.10	
Merluccius capensis, female	22.96	22	5.77	4319
Merluccius capensis, juveniles	9.19	1276	2.31	4323
Squilla acuelata calmani	5.95	305	1.49	
Pterothrissus bellioi	2.89	16	0.73	
Merluccius capensis, male	1.64	3	0.41	4320
Coelorrhinus fasciatus	1.20	52	0.30	
Total	398.16		100.00	

PROJECT STATION:1274  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2514 Long E 1335  
 start stop duration Purpose code: 3  
 TIME :14:31:00 15:01:00 30 (min) Area code : 1  
 LOG : 951.00 952.50 1.50 GearCond.code: 1  
 FDEPTH: 551 554 Validity code:  
 BDEPTH: 551 554  
 Towing dir: 360° Wire out:1400 m Speed: 30 kn=10

Sorted: 176 Kg Total catch: 885.68 CATCH/HOUR: 1771.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	258.90	232	14.62	4339
Hoplostethus cadenati	257.92	9130	14.56	
Notacanthus sexspinis	238.16	1716	13.45	
Raja doutrei	187.72	52	10.60	
Selachophidium guentheri	149.76	1924	8.45	
Lithodes ferox	141.96	260	8.01	
Centroscymnus crepidater	124.28	104	7.02	
Nezumia sp.	106.08	3224	5.99	
Deania calcea	69.68	52	3.93	
Cruriraja parcomaculata	55.64	104	3.14	
Trachyrincus scabrus	54.08	364	3.05	
Yarella blackfordi	39.00	2444	2.20	
Lophius vomerinus	36.30	8	2.05	4341
Etmopterus lucifer	27.04	52	1.53	
Alloctytus verrucosus	7.80	104	0.44	
Dicrolene intronigra	6.76	104	0.38	
Careproctus griseldae	4.68	52	0.26	
Ebinaia costaeacanarie	4.68	52	0.26	
Merluccius paradoxus, male	0.92	2	0.05	4340
Total	1771.36		99.99	

PROJECT STATION:1271  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2522 Long E 1347  
 start stop duration Purpose code: 3  
 TIME :09:00:00 09:20:00 20 (min) Area code : 1  
 LOG : 927.90 928.90 1.00 GearCond.code: 1  
 FDEPTH: 302 303 Validity code:  
 BDEPTH: 302 303  
 Towing dir: 5° Wire out: 920 m Speed: 30 kn=10

Sorted: 92 Kg Total catch: 194.29 CATCH/HOUR: 582.87

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	165.99	831	28.48	4328
Merluccius capensis, female	125.10	117	21.46	4324
Merluccius capensis, male	104.13	720	17.87	4329
Squilla acuelata calmani	64.83		11.12	
Lophius vomerinus	50.55	138	8.67	4326
Coelorrhinus fasciatus	36.96	969	6.34	
Merluccius capensis, male	25.05	36	4.30	4325
Merluccius capensis	4.23	627	0.73	4330
Austroglossus microlepis	3.21	6	0.55	4327
Sufflogobius bibarbat	2.82	1002	0.48	
Total	582.87		100.00	

PROJECT STATION:1275  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2509 Long E 1334  
 start stop duration Purpose code: 3  
 TIME :16:16:00 16:26:00 10 (min) Area code : 1  
 LOG : 956.50 957.00 0.50 GearCond.code: 1  
 FDEPTH: 595 592 Validity code:  
 BDEPTH: 595 592  
 Towing dir: 5° Wire out:1650 m Speed: 30 kn=10

Sorted: 177 Kg Total catch: 721.79 CATCH/HOUR: 4330.74

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Notacanthus sexspinis	932.40	5040	21.53	
Bathyrhaja smithii	756.00	126	17.46	
Lithodes ferox	540.00	1116	12.47	
Dicrolene intronigra	439.74	7182	10.15	
Merluccius paradoxus, female	314.70	252	7.27	4344
Deania calcea	291.06	252	6.72	
Cruriraja parcomaculata	230.58	1260	5.32	
Nezumia sp.	214.20	3654	4.95	
Selachophidium guentheri	127.26	1890	2.94	
Centroscymnus crepidater	107.10	126	2.47	
Coelorrhinus matama	94.50	252	2.18	
Todarodes sagittatus	70.56	126	1.63	
Trachyrincus scabrus	66.78	252	1.54	
Alepocephalus sp.	41.58	126	0.96	
Alloctytus verrucosus	32.76	252	0.76	
Lophius vomerinus	22.08	6	0.51	4345
Yarella blackfordi	18.90	882	0.44	
Hoplostethus atlanticus	14.64	198	0.34	4342
Merluccius paradoxus, male	10.86	12	0.25	4343
Careproctus griseldae	5.04	126	0.12	
Total	4330.74		100.01	

PROJECT STATION:1272  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2521 Long E 1341  
 start stop duration Purpose code: 3  
 TIME :10:38:00 10:58:00 20 (min) Area code : 1  
 LOG : 936.60 937.60 1.00 GearCond.code: 7  
 FDEPTH: 366 355 Validity code: 9  
 BDEPTH: 366 355  
 Towing dir: 5° Wire out:1100 m Speed: 30 kn=10

Sorted: 30 Kg Total catch: 35.30 CATCH/HOUR: 105.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Lophius vomerinus	60.60	9	57.22	4332
Squilla acuelata calmani	15.54		14.67	
Merluccius capensis, female	10.80	6	10.20	4331
Coelorrhinus fasciatus	5.04	234	4.76	
Todarodes sagittatus	4.80	12	4.53	
Bathyrhaja smithii	3.30	180	3.12	
Helicolenus dactylopterus	1.92	18	1.81	
Merluccius paradoxus, female	1.83	9	1.73	4333
Nezumia sp.	0.78	60	0.74	
Hoplostethus cadenati	0.72	30	0.68	
Merluccius paradoxus, male	0.57	3	0.54	4334
Total	105.90		100.00	



PROJECT STATION:1276  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2503  
 start stop duration Long E 1336  
 TIME :17:41:00 18:01:00 20 (min) Purpose code: 3  
 LOG : 963.80 965.00 1.20 Area code : 1  
 FDEPTH: 511 503 GearCond.code:  
 BDEPTH: 511 503 Validity code:  
 Towing dir: \* Wire out:1460 m Speed: 33 kn\*10

Sorted: 331 Kg Total catch: 750.80 CATCH/HOUR: 2252.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	681.00	774	30.23	4346
Cruriraja parcomaculata	372.45	429	16.54	
Nezumia sp.	247.26	6906	10.98	
Selachophidium guentheri	223.08	3939	9.90	
Deania calcea	171.60	78	7.62	
Roplostethus cadenati	121.29	3549	5.38	
Raja confundens	93.60	39	4.16	
Lithodes ferox	91.50	144	4.06	
Notacanthus sexspinis	59.28	663	2.63	
Centroscymnus crepidater	48.36	39	2.15	
Lophius vomerinus	48.00	15	2.13	4348
Todarodes sagittatus	29.25	39	1.30	
Yarellia blackfordi	16.77	819	0.74	
Coelorrinchus matamua	11.70	156	0.52	
Dicrolene intronigra	11.70	234	0.52	
Merluccius paradoxus, male	10.35	15	0.46	4347
Helicolenus dactylopterus	5.85	39	0.26	
Ebiwania costaeannarie	3.51	39	0.16	
Bassanago albescens	3.12	78	0.14	
Epigonus telescopus	2.73	39	0.12	
Total	2252.40		100.00	

PROJECT STATION:1277  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2502  
 start stop duration Long E 1339  
 TIME :19:31:00 20:01:00 30 (min) Purpose code: 3  
 LOG : 971.10 972.70 1.60 Area code : 1  
 FDEPTH: 408 400 GearCond.code:  
 BDEPTH: 408 400 Validity code:  
 Towing dir: \* Wire out:1200 m Speed: 30 kn\*10

Sorted: Kg Total catch: 482.91 CATCH/HOUR: 965.82

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Nezumia sp.	200.40	9936	20.75	
Coelorrinchus fasciatus	129.12	3972	13.37	
Helicolenus dactylopterus	118.56	1464	12.28	
Lophius vomerinus	103.60	54	10.73	4351
Galeus polli	79.20	2136	8.20	
Merluccius paradoxus, female	73.30	286	7.59	4349
Gerypteris capensis	61.60	54	6.38	4352
Epigonus denticulatus	42.96	936	4.45	
Roplostethus cadenati	36.72	912	3.80	
Merluccius capensis, female	36.20	62	3.75	4353
Bathynectes piperitus	23.28	1056	2.41	
Squalus megalops	12.96	24	1.34	
Squilla aculeata calmani	12.24	864	1.27	
Brama brama	10.36	12	1.07	
Trachurus capensis	9.60	24	0.99	4355
Merluccius capensis, male	8.80	28	0.91	4354
Merluccius paradoxus, male	3.80	14	0.39	4350
Ebiwania costaeannarie	2.16	24	0.22	
S H R I M P S	0.96	264	0.10	
Total	965.82		100.00	

PROJECT STATION:1278  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2502  
 start stop duration Long E 1346  
 TIME :21:55:00 22:25:00 30 (min) Purpose code: 3  
 LOG : 981.20 982.60 1.40 Area code : 1  
 FDEPTH: 272 274 GearCond.code:  
 BDEPTH: 272 274 Validity code:  
 Towing dir: 5° Wire out: 850 m Speed: 31 kn\*10

Sorted: 73 Kg Total catch: 101.60 CATCH/HOUR: 203.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	75.40	620	37.11	4356
Merluccius capensis, female	55.60	450	27.36	4355
Squilla aculeata calmani	46.00	2040	22.64	
Sufflogobius bibarbatas	24.50	5160	12.06	
Pterothrissus belloci	1.70	10	0.84	
Total	203.20		100.01	

PROJECT STATION:1279  
 DATE:26/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2500  
 start stop duration Long E 1352  
 TIME :23:58:00 24:28:00 30 (min) Purpose code: 3  
 LOG : 989.80 991.50 1.70 Area code : 1  
 FDEPTH: 201 203 GearCond.code:  
 BDEPTH: 201 203 Validity code:  
 Towing dir: 5° Wire out: 650 m Speed: 31 kn\*10

Sorted: 62 Kg Total catch: 186.80 CATCH/HOUR: 373.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	164.86	1464	44.13	4358
Merluccius capensis, male	161.30	1582	43.17	4360
Merluccius capensis, female	22.40	28	6.00	4357
Sufflogobius bibarbatas	13.10	2850	3.51	
Todarodes sagittatus	4.56	8	1.22	
Lepidopus caudatus	2.38	56	0.64	
Pterothrissus belloci	2.04	14	0.55	
Trachurus capensis	1.62	14	0.43	
Merluccius capensis, male	1.34	2	0.36	4359
Total	373.60		100.01	

PROJECT STATION:1280  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2452  
 start stop duration Long E 1357  
 TIME :01:52:00 02:12:00 20 (min) Purpose code: 3  
 LOG :1000.00 1001.00 1.00 Area code : 1  
 FDEPTH: 166 166 GearCond.code:  
 BDEPTH: 166 166 Validity code:  
 Towing dir: 360° Wire out: 550 m Speed: 31 kn\*10

Sorted: 25 Kg Total catch: 75.18 CATCH/HOUR: 225.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	117.45	1332	52.08	4362
Merluccius capensis, female	107.10	1062	47.49	4361
Sufflogobius bibarbatas	0.99	180	0.44	
Total	225.54		100.01	

PROJECT STATION:1281  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2441  
 start stop duration Long E 1352  
 TIME :03:48:00 04:08:00 20 (min) Purpose code: 3  
 LOG :1011.30 1012.50 1.30 Area code : 2  
 FDEPTH: 239 238 GearCond.code:  
 BDEPTH: 239 238 Validity code:  
 Towing dir: 360° Wire out: 750 m Speed: 33 kn\*10

Sorted: 38 Kg Total catch: 522.27 CATCH/HOUR: 1566.81

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	912.00	7728	58.21	4365
Merluccius capensis, male	585.60	5856	37.38	4366
Sufflogobius bibarbatas	48.96	12960	3.12	
Merluccius capensis, female	16.80	9	1.07	4363
Austroglossus microlepis	2.01	6	0.13	4364
Squilla aculeata calmani	1.44	96	0.09	
Total	1566.81		100.00	

PROJECT STATION:1282  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2440  
 start stop duration Long E 1439  
 TIME :06:00:00 06:20:00 20 (min) Purpose code: 3  
 LOG :1023.70 1024.90 1.20 Area code : 2  
 FDEPTH: 370 369 GearCond.code:  
 BDEPTH: 370 369 Validity code:  
 Towing dir: 350° Wire out:1100 m Speed: 32 kn\*10

Sorted: 120 Kg Total catch: 242.69 CATCH/HOUR: 728.07

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	231.00	3261	31.73	
Lophius vomerinus	190.35	171	26.14	4370
Coelorrinchus fasciatus	80.64	3336	11.08	
Nezumia sp.	66.36	2247	9.11	
Merluccius paradoxus, female	58.95	369	8.10	4368
Merluccius capensis, female	35.70	18	4.90	4367
Galeus polli	24.36	378	3.35	
Todarodes sagittatus	12.18	21	1.67	
Gerypteris capensis	9.57	12	1.31	4371
Merluccius paradoxus, male	5.31	39	0.73	4369
Bathynectes piperitus	5.04	210	0.69	
Squilla aculeata calmani	4.62	294	0.63	
Epigonus denticulatus	3.36	147	0.46	
Shrimps, small, non comm.	0.63	399	0.09	
Total	728.07		99.99	

PROJECT STATION:1283  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2441  
 start stop duration Long E 1336  
 TIME :07:57:00 08:27:00 30 (min) Purpose code: 3  
 LOG :1034.40 1036.10 1.70 Area code : 2  
 FDEPTH: 419 414 GearCond.code:  
 BDEPTH: 419 414 Validity code:  
 Towing dir: 360° Wire out:1250 m Speed: 30 kn\*10

Sorted: 327 Kg Total catch: 1188.98 CATCH/HOUR: 2377.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1236.30	1308	51.99	4372
Helicolenus dactylopterus	318.00		13.37	
Nezumia sp.	202.20		8.50	
RAJIDAE	94.80		3.99	
Gerypteris capensis	75.50		3.17	4374
Trachyrhynchus scabrus	48.00		2.02	
Centrolophus squamosus	48.00		2.02	
Selachophidium guentheri	44.70		1.88	
Lophius vomerinus	43.76		1.84	4375
Epigonus denticulatus	39.30		1.65	
Todarodes sagittatus	35.70		1.50	
Cruriraja parcomaculata	31.80		1.34	
Coelorrinchus fasciatus	30.30		1.27	
Merluccius paradoxus, male	29.40		1.24	4373
Deania profundorum	21.90		0.92	
Schedophilus huttoni	20.70		0.87	
Bassanago albescens	12.00		0.50	
Ebiwania costaeannarie	9.30		0.39	
Galeus polli	7.80		0.33	
Yarellia blackfordi	7.50		0.32	
Etmopterus lucifer	5.70		0.24	
Beryx splendens	5.40		0.23	
Notacanthus sexspinis	5.40		0.23	
Bathynectes piperitus	3.60		0.15	
Malacocephalus laevis	0.90		0.04	
Total	2377.96		100.00	



PROJECT STATION:1284  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2425  
 start stop duration Long E 1327  
 TIME :10:34:00 11:04:00 30 (min) Purpose code: 3  
 LOG :1053.40 1055.10 1.70 Area code : 2  
 FDEPTH: 373 374 GearCond.code:  
 BDEPTH: 373 374 Validity code:  
 Towing dir: 330° Wire out:1150 m Speed: 31 kn\*10  
 Sorted: 252 Kg Total catch: 375.50 CATCH/HOUR: 751.00

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	270.50 492	36.02	4377
Merluccius capensis, female	81.30 22	10.83	4376
Schedophilus huttoni	69.30 30	9.23	
Helicolenus dactylopterus	56.20 380	7.48	
Coelorrinchus fasciatus	54.40	7.24	
Centrolophus niger	46.40 20	6.18	
Lophius vomerinus	36.80 18	4.90	4379
Genypterus capensis	34.40 18	4.58	4380
Deania profundorum	33.50 30	4.46	
Merluccius paradoxus, male	19.80 38	2.64	4378
Raja confundens	18.70 10	2.49	
Todarodes sagittatus	15.50 40	2.06	
Nezumia sp.	10.70 250	1.42	
Epigonus denticulatus	3.50 120	0.47	
<b>Total</b>	<b>751.00</b>	<b>100.00</b>	

PROJECT STATION:1285  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2423  
 start stop duration Long E 1332  
 TIME :12:36:00 13:06:00 30 (min) Purpose code: 3  
 LOG :1064.20 1065.80 1.60 Area code : 2  
 FDEPTH: 342 338 GearCond.code:  
 BDEPTH: 342 338 Validity code:  
 Towing dir: 350° Wire out:1050 m Speed: 31 kn\*10  
 Sorted: 247 Kg Total catch: 771.60 CATCH/HOUR: 1543.20

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	597.00 3230	38.69	4386
Helicolenus dactylopterus	260.00 2754	16.85	
Coelorrinchus fasciatus	192.00 4750	12.44	
Merluccius capensis, female	96.60 46	6.26	4381
Merluccius paradoxus, male	81.50 470	5.28	4387
Schedophilus huttoni	72.70 20	4.71	
Genypterus capensis	55.90 40	3.62	4384
Lophius vomerinus	48.70 42	3.16	4385
Nezumia sp.	45.50 958	2.95	
Centrolophus niger	28.20 10	1.83	
Merluccius paradoxus, female	20.04 16	1.30	4383
Lepidopus caudatus	18.40 20	1.19	
Merluccius capensis, male	9.86 6	0.64	4382
Epigonus denticulatus	7.40 390	0.48	
Todarodes sagittatus	7.20 20	0.47	
C R A B S	2.20 120	0.14	
<b>Total</b>	<b>1543.20</b>	<b>100.01</b>	

PROJECT STATION:1286  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2423  
 start stop duration Long E 1342  
 TIME :14:52:00 15:07:00 15 (min) Purpose code: 3  
 LOG :1077.10 1077.90 0.80 Area code : 2  
 FDEPTH: 328 324 GearCond.code: 9  
 BDEPTH: 328 324 Validity code: 1  
 Towing dir: 70° Wire out: 960 m Speed: 31 kn\*10  
 Sorted: 68 Kg Total catch: 135.92 CATCH/HOUR: 543.68

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Coelorrinchus fasciatus	150.88 6760	27.75	
Helicolenus dactylopterus	110.08 2884	20.25	
Lophius vomerinus	92.40 100	17.00	4388
Merluccius paradoxus, female	78.60 628	14.46	4390
Schedophilus huttoni	45.44 16	8.36	
Nezumia sp.	20.80 816	3.83	
Neoharriotta pinnata	13.28 16	2.44	
Squilla acuelata calmani	8.16 864	1.50	
Trachurus capensis	5.92 12	1.09	4389
Todarodes sagittatus	4.96 16	0.91	
Galeus polli	3.68 80	0.68	
Bathynectes piperitus	2.88 160	0.53	
Merluccius paradoxus, male	2.20 16	0.40	4391
Merluccius capensis, female	1.28 4	0.24	4393
Merluccius capensis, male	1.12 4	0.21	4394
Austroglossus microlepis	1.04 12	0.19	4392
Shrimps, small, non comm.	0.96 304	0.18	
<b>Total</b>	<b>543.68</b>	<b>100.02</b>	

PROJECT STATION:1287  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2423  
 start stop duration Long E 1355  
 TIME :16:43:00 17:13:00 30 (min) Purpose code: 3  
 LOG :1089.60 1091.20 1.60 Area code : 2  
 FDEPTH: 244 222 GearCond.code:  
 BDEPTH: 244 222 Validity code:  
 Towing dir: 90° Wire out: 850 m Speed: 30 kn\*10  
 Sorted: 46 Kg Total catch: 230.26 CATCH/HOUR: 460.52

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius capensis, female	189.70 1834	41.19	4397
Merluccius capensis, male	136.50 1498	29.64	4398
Trachurus capensis	82.04 560	17.81	4400
Merluccius capensis, female	26.90 22	5.84	4395
Pterothrissus bellocci	9.52 84	2.07	
Sufflogobius bibarbatius	5.60 1778	1.22	
Chelidonichthys capensis	3.78 14	0.82	
Merluccius capensis, male	3.40 2	0.74	4396
Merluccius capensis, juveniles	2.66 252	0.58	4399
Todarodes sagittatus	0.42 14	0.09	
<b>Total</b>	<b>460.52</b>	<b>100.00</b>	

PROJECT STATION:1288  
 DATE:27/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2421  
 start stop duration Long E 1402  
 TIME :18:11:00 18:21:00 10 (min) Purpose code: 3  
 LOG :1096.40 1097.00 0.60 Area code : 2  
 FDEPTH: 159 160 GearCond.code:  
 BDEPTH: 159 160 Validity code:  
 Towing dir: \* Wire out: 550 m Speed: 35 kn\*10  
 Sorted: 22 Kg Total catch: 226.21 CATCH/HOUR: 1357.26

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Sufflogobius bibarbatius	1200.00 427500	88.41	
Merluccius capensis, female	71.76 798	5.29	4401
Merluccius capensis, male	56.04 738	4.13	4402
MYCTOPHIDAE	17.46 2190	1.29	
Merluccius capensis, juveniles	12.00 762	0.88	4403
<b>Total</b>	<b>1357.26</b>	<b>100.00</b>	

PROJECT STATION:1289  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2400  
 start stop duration Long E 1347  
 TIME :01:41:00 02:11:00 30 (min) Purpose code: 3  
 LOG :1167.50 1168.90 1.40 Area code : 2  
 FDEPTH: 248 253 GearCond.code:  
 BDEPTH: 248 253 Validity code:  
 Towing dir: 250° Wire out: 800 m Speed: 31 kn\*10  
 Sorted: 93 Kg Total catch: 150.89 CATCH/HOUR: 301.78

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius capensis, female	115.00 1004	38.11	4408
Merluccius capensis, male	57.00 580	18.89	4409
Merluccius capensis, female	32.60 24	10.80	4404
Coelorrinchus fasciatus	25.80	8.55	
Lophius vomerinus	24.30 76	8.05	4406
Trachurus capensis	16.60 60	5.50	4410
Sufflogobius bibarbatius	13.80	4.57	
Raja leopardus	5.58 2	1.85	
Merluccius capensis, male	3.80 6	1.26	4405
Chelidonichthys capensis	2.72 4	0.90	
Austroglossus microlepis	2.06 6	0.68	4407
Squilla acuelata calmani	1.32 72	0.44	
Pterothrissus bellocci	1.00 4	0.33	
Todaropsis eblanae	0.20 4	0.07	
<b>Total</b>	<b>301.78</b>	<b>100.00</b>	

PROJECT STATION:1290  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2400  
 start stop duration Long E 1337  
 TIME :03:26:00 03:56:00 30 (min) Purpose code: 3  
 LOG :1176.60 1178.10 1.50 Area code : 2  
 FDEPTH: 269 273 GearCond.code:  
 BDEPTH: 269 273 Validity code:  
 Towing dir: 250° Wire out: 820 m Speed: 31 kn\*10  
 Sorted: 64 Kg Total catch: 78.34 CATCH/HOUR: 156.68

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius capensis, female	68.10 490	43.46	4411
Coelorrinchus fasciatus	48.20 1478	30.76	
Merluccius capensis, male	28.10 218	17.93	4412
Lophius vomerinus	4.20 24	2.68	4413
Sufflogobius bibarbatius	4.16 760	2.66	
Squilla acuelata calmani	2.24 80	1.43	
Galeus polli	1.48 52	0.94	
Todaropsis eblanae	0.12 4	0.08	
Chlorophthalmus atlanticus	0.08 12	0.05	
<b>Total</b>	<b>156.68</b>	<b>99.99</b>	

PROJECT STATION:1291  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2401  
 start stop duration Long E 1322  
 TIME :06:06:00 06:36:00 30 (min) Purpose code: 3  
 LOG :1192.90 1194.50 1.60 Area code : 2  
 FDEPTH: 298 300 GearCond.code:  
 BDEPTH: 298 300 Validity code:  
 Towing dir: 180° Wire out: 920 m Speed: 30 kn\*10  
 Sorted: 273 Kg Total catch: 2131.87 CATCH/HOUR: 4263.74

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachurus capensis	2419.44 6662	56.74	4419
Helicolenus dactylopterus	590.24 13226	13.84	
Merluccius capensis, female	455.60 2476	10.69	4418
Merluccius capensis, female	226.60 98	5.31	4414
Merluccius capensis, male	193.12 1360	4.53	4417
Chlorophthalmus atlanticus	166.46 6322	3.90	
Coelorrinchus fasciatus	93.84 2492	2.20	
Galeus polli	63.38 680	1.49	
Lophius vomerinus	23.56 38	0.55	4415
Coelorrinchus coelorrinch. polli	17.40 490	0.41	
Squilla acuelata calmani	7.08 300	0.17	
PORTUNIDAE	5.72 300	0.13	
Genypterus capensis	1.30 2	0.03	4416
<b>Total</b>	<b>4263.74</b>	<b>99.99</b>	



PROJECT STATION:1292  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2359  
 start stop duration Long E 1316  
 TIME :07:48:00 08:18:00 30 (min) Purpose code: 3  
 LOG :1203.40 1205.00 1.60 Area code : 2  
 FDEPTH: 359 351 GearCond.code:  
 BDEPTH: 359 351 Validity code:  
 Towing dir: 350° Wire out:1150 m Speed: 32 kn\*10

Sorted: 136 Kg Total catch: 1577.56 CATCH/HOUR: 3155.12

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	2385.46	8164	75.61	4426
Helicolenus dactylopterus	321.94	2832	10.20	
Coelorinchus fasciatus	112.02	1980	3.55	
Merluccius paradoxus, male	84.82	318	2.69	4425
Merluccius capensis, female	47.90	18	1.52	4422
Epigonus denticulatus	36.04	954	1.14	
Genypterus capensis	27.80	18	0.88	4420
Lophius vomerinus	24.30	14	0.77	4421
MYCTOPHIDAE	23.68	6648	0.75	
Trachurus capensis	19.80	36	0.63	
Merluccius capensis, female	18.38	142	0.58	4424
Coelorinchus coelorhinc polli	10.24	460	0.32	
Merluccius capensis, male	10.24	70	0.32	4423
Selachophidium guentheri	9.90	212	0.31	
Nezumia sp.	8.84	530	0.28	
Shrimps, small, non comm.	4.94	990	0.16	
PORTUNIDAE	2.82	106	0.09	
Total	3149.12		99.80	

PROJECT STATION:1295  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2346  
 start stop duration Long E 1304  
 TIME :15:18:00 15:48:00 30 (min) Purpose code: 3  
 LOG :1245.10 1246.70 1.60 Area code : 2  
 FDEPTH: 657 650 GearCond.code:  
 BDEPTH: 657 650 Validity code:  
 Towing dir: 40° Wire out:1650 m Speed: 30 kn\*10

Sorted: 119 Kg Total catch: 333.71 CATCH/HOUR: 667.42

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	159.50	122	23.90	4432
Selachophidium guentheri	144.00		21.58	
Nezumia sp.	68.76	2340	10.30	
Deania calcea	51.84	36	7.77	
Dicrolene intronigra	51.48	1062	7.71	
Hoplostethus cadenati	37.26	1044	5.58	
Todarodes sagittatus	29.52	36	4.42	
RAJIDAE	27.00	36	4.05	
Yarella blackfordi	19.08	900	2.86	
Alepocephalus sp.	17.82	378	2.67	
Lamprogrammus exutus	17.46	126	2.62	
Lophius vomerinus	16.00	8	2.40	4433
Lithodes ferox	8.10	10	1.21	
Coelorinchus matamua	5.22	90	0.78	
Bathyrcongus vicinus	3.24	36	0.49	
Solenocera africana	2.88	126	0.43	
Stereomastis sp.	2.88	126	0.43	
MACROURIDAE	2.34	18	0.35	
Chaceon maritae	1.60	2	0.24	
Shrimps, small, non comm.	1.44	270	0.22	
Total	667.42		100.01	

PROJECT STATION:1293  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2356  
 start stop duration Long E 1311  
 TIME :09:48:00 10:18:00 30 (min) Purpose code: 3  
 LOG :1212.90 1214.50 1.60 Area code : 2  
 FDEPTH: 464 463 GearCond.code:  
 BDEPTH: 464 463 Validity code:  
 Towing dir: 340° Wire out:1350 m Speed: 30 kn\*10

Sorted: 410 Kg Total catch: 1457.90 CATCH/HOUR: 2915.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1966.80	2096	67.45	4428
Trachyrincus scabrus	478.42		16.41	
Nezumia sp.	143.64		4.93	
Lophius vomerinus	64.90	28	2.23	4427
RAJIDAE	56.18	8	1.93	
Helicolenus dactylopterus	48.86	310	1.68	
Krill	42.46		1.46	
Merluccius paradoxus, male	31.30	38	1.07	4429
CHIMAERIDAE	20.58	22	0.71	
Epigonus denticulatus	17.86	90	0.61	
Todarodes sagittatus	15.76	90	0.54	
Raja confundens	13.94	22	0.48	
Selachophidium guentheri	4.76	76	0.16	
Galeus polli	3.62	8	0.12	
Notacanthus sexspinis	3.62	98	0.12	
Lithodes ferox	3.10	16	0.11	
Total	2915.80		100.01	

PROJECT STATION:1296  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2340  
 start stop duration Long E 1307  
 TIME :17:19:00 17:49:00 30 (min) Purpose code: 3  
 LOG :1253.20 1254.80 1.60 Area code : 2  
 FDEPTH: 461 453 GearCond.code:  
 BDEPTH: 461 453 Validity code:  
 Towing dir: 350° Wire out:1350 m Speed: 30 kn\*10

Sorted: 323 Kg Total catch: 483.43 CATCH/HOUR: 966.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	585.60	590	60.57	4434
Trachyrincus scabrus	188.00	880	19.44	
Squalus megalops	57.92	16	5.99	
Deania calcea	36.80	64	3.81	
Nezumia sp.	32.80	992	3.39	
Helicolenus dactylopterus	22.72	208	2.35	
Lithodes ferox	16.16	32	1.67	
Lophius vomerinus	8.20	6	0.85	4436
Merluccius paradoxus, male	6.50	10	0.67	4435
Selachophidium guentheri	3.20	48	0.33	
Ebinania costaecanarie	3.04	16	0.31	
Epigonus denticulatus	2.56	48	0.26	
Notacanthus sexspinis	1.60	64	0.17	
Hoplostethus cadenati	0.96	16	0.10	
Dicrolene intronigra	0.80	16	0.08	
Total	966.86		99.99	

PROJECT STATION:1294  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2400  
 start stop duration Long E 1310  
 TIME :11:30:00 12:00:00 30 (min) Purpose code: 3  
 LOG :1221.00 1222.40 1.40 Area code : 2  
 FDEPTH: 598 600 GearCond.code:  
 BDEPTH: 598 600 Validity code:  
 Towing dir: 165° Wire out:1650 m Speed: 30 kn\*10

Sorted: 238 Kg Total catch: 908.42 CATCH/HOUR: 1816.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Centroscymnus crepidater	402.22	78	22.14	
Merluccius paradoxus, female	360.00	280	19.81	4430
Deania profundorum	273.00	104	15.03	
Nezumia sp.	225.42		12.41	
Deania calcea	104.00	52	5.72	
Raja confundens	80.60	52	4.44	
Selachophilius huttoni	75.40	78	4.15	
Selachophidium guentheri	69.94	1092	3.85	
Raja caudaspinosa	62.14	78	3.42	
Lithodes ferox	37.96	78	2.09	
Coelorinchus braueri	36.66	312	2.02	
Centrolophus niger	29.12	26	1.60	
Hoplostethus cadenati	22.36	1482	1.23	
Yarella blackfordi	16.12	884	0.89	
Notacanthus sexspinis	7.54	182	0.42	
Etmopterus pusillus	7.28	26	0.40	
Lophius vomerinus	5.00	4	0.28	4431
OREOSTOMATIDAE	1.04	26	0.06	
Bathyrcongus vicinus	1.04	104	0.06	
Total	1816.84		100.02	

PROJECT STATION:1297  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2341  
 start stop duration Long E 2343  
 TIME :19:10:00 19:40:00 30 (min) Purpose code: 3  
 LOG :1259.80 1261.20 1.60 Area code : 2  
 FDEPTH: 570 569 GearCond.code:  
 BDEPTH: 570 569 Validity code:  
 Towing dir: 180° Wire out:1500 m Speed: 32 kn\*10

Sorted: 155 Kg Total catch: 262.01 CATCH/HOUR: 524.02

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	251.20	204	47.94	4439
Nezumia sp.	61.20	1636	11.68	
Deania calcea	49.92	24	9.53	
Selachophidium guentheri	39.36	732	7.51	
Yarella blackfordi	26.64	1488	5.08	
Trachyrincus scabrus	26.52	132	5.06	
Coelorinchus matamua	24.00	288	4.58	
Lithodes ferox	13.70	52	2.61	
Hoplostethus cadenati	10.56	636	2.02	
Epigonus denticulatus	7.20	192	1.37	
Lophius vomerinus	4.10	4	0.78	4437
Raja pullopectata	3.60	48	0.69	
Chaceon maritae	2.48	2	0.47	
Merluccius paradoxus, male	1.50	2	0.29	4438
Notacanthus sexspinis	0.96	48	0.18	
Aristeus varidens	0.60	72	0.11	
Bassanago albescens	0.48	24	0.09	
Total	524.02		99.99	



PROJECT STATION:1298  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2339 Long E 1310  
 start stop duration  
 TIME :21:14:00 21:44:00 30 (min) Purpose code: 3  
 LOG :1268.40 1270.00 1.60 Area code : 2  
 FDEPTH: 409 411 GearCond.code:  
 BDEPTH: 409 411 Validity code:  
 Towing dir: 350° Wire out:1150 m Speed: 32 kn\*10  
 Sorted: 214 Kg Total catch: 331.00 CATCH/HOUR: 662.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	344.90	686	52.10	4440
Helicolenus dactylopterus	136.40		20.60	
Deania profundorum	59.62	100	9.01	
Nezumia sp.	42.24	946	6.38	
Merluccius paradoxus, male	16.70	34	2.52	4441
Lophius vomerinus	14.80	16	2.24	4442
Selachophidium guentheri	12.00	254	1.81	
Coelorinchus fasciatus	10.90	210	1.65	
Raja caudaspinosa	5.72	12	0.86	
Trachyrincus scabrus	4.62	198	0.70	
Galeus polli	4.18	22	0.63	
Etmopterus pusillus	2.98	12	0.45	
Bathynectes piperitus	2.42	100	0.37	
Notacanthus sexspinis	1.76	132	0.27	
Epigonus denticulatus	1.66	22	0.25	
Bathyroconger vicinus	1.10	12	0.17	
Total	662.00		100.01	

PROJECT STATION:1299  
 DATE:28/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2339 Long E 1315  
 start stop duration  
 TIME :23:23:00 23:53:00 30 (min) Purpose code: 3  
 LOG :1278.90 1280.40 1.50 Area code : 2  
 FDEPTH: 334 331 GearCond.code:  
 BDEPTH: 334 331 Validity code:  
 Towing dir: 10° Wire out:1000 m Speed: 30 kn\*10  
 Sorted: 179 Kg Total catch: 206.33 CATCH/HOUR: 412.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	136.20	486	33.01	4444
Merluccius capensis, female	126.00	70	30.53	4443
Coelorinchus fasciatus	41.00		9.94	
Merluccius capensis, male	40.40	224	9.79	4445
Helicolenus dactylopterus	21.80	280	5.28	
Chlorophthalmus atlanticus	9.80	336	2.37	
Galeus polli	9.76	96	2.37	
Lophius vomerinus	8.20	10	1.99	4448
Raja confundens	6.06	16	1.47	
Genypterus capensis	4.62	4	1.12	4447
Merluccius paradoxus, female	3.32	24	0.80	4446
Bathynectes piperitus	1.26	70	0.31	
Brama brama	1.16	4	0.28	
Epigonus denticulatus	0.86	46	0.21	
Nezumia sp.	0.60	26	0.15	
Coelorinchus coelorhinc. polli	0.56	56	0.14	
Malacocephalus laevis	0.40	10	0.10	
S H R I M P S	0.40	46	0.10	
Squilla acuelata calmani	0.26	10	0.06	
Total	412.66		100.02	

PROJECT STATION:1300  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2339 Long E 1326  
 start stop duration  
 TIME :01:44:00 02:14:00 30 (min) Purpose code: 3  
 LOG :1293.50 1295.10 1.60 Area code : 2  
 FDEPTH: 258 257 GearCond.code:  
 BDEPTH: 258 257 Validity code:  
 Towing dir: 350° Wire out: 800 m Speed: 30 kn\*10  
 Sorted: 121 Kg Total catch: 567.68 CATCH/HOUR: 1135.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	768.36	6908	67.68	4454
Merluccius capensis, female	102.30	792	9.01	4452
Coelorinchus fasciatus	99.56	3004	8.77	
Merluccius capensis, male	78.66	672	6.93	4453
Lophius vomerinus	20.30	80	1.79	4449
Pterothrissus bellocci	19.58	320	1.72	
Sufflogobius bibarbatatus	19.04	1628	1.68	
Merluccius capensis, female	14.00	14	1.23	4450
Merluccius capensis, male	8.04	10	0.71	4451
Squilla acuelata calmani	3.64	144	0.32	
Todaropsis eblanae	1.32	34	0.12	
Bathynectes piperitus	0.34	12	0.03	
Galeus polli	0.22	12	0.02	
Total	1135.36		100.01	

PROJECT STATION:1301  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2339 Long E 1335  
 start stop duration  
 TIME :03:54:00 04:24:00 30 (min) Purpose code: 3  
 LOG :1306.20 1307.80 1.60 Area code : 2  
 FDEPTH: 225 223 GearCond.code:  
 BDEPTH: 225 223 Validity code:  
 Towing dir: 350° Wire out: 750 m Speed: 32 kn\*10  
 Sorted: 38 Kg Total catch: 130.56 CATCH/HOUR: 261.12

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	98.00	968	37.53	4459
Merluccius capensis, male	76.40	984	29.26	4458
Merluccius capensis, female	69.20	840	26.50	4457
Merluccius capensis, female	13.12	18	5.02	4455
Sufflogobius bibarbatatus	2.72	336	1.04	
Merluccius capensis, male	1.30	2	0.50	4456
Lophius vomerinus	0.22	6	0.08	4460
Galeus polli	0.08	8	0.03	
Pterothrissus bellocci	0.08	8	0.03	
Total	261.12		99.99	

PROJECT STATION:1302  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2340 Long E 1345  
 start stop duration  
 TIME :06:06:00 06:23:00 17 (min) Purpose code: 3  
 LOG :1318.10 1319.00 0.90 Area code : 2  
 FDEPTH: 195 192 GearCond.code:  
 BDEPTH: 195 192 Validity code:  
 Towing dir: 90° Wire out: 700 m Speed: 32 kn\*10  
 Sorted: 36 Kg Total catch: 164.41 CATCH/HOUR: 580.27

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	268.94	3282	46.35	4463
Merluccius capensis, female	221.29	2520	38.14	4464
Pterothrissus bellocci	52.09	466	8.98	
Merluccius capensis, female	33.56	53	5.78	4462
Sufflogobius bibarbatatus	2.54	847	0.44	
Merluccius capensis, male	1.62	4	0.28	4461
Lophius vomerinus	0.21	4	0.04	4465
Total	580.25		100.01	

PROJECT STATION:1303  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2339 Long E 1351  
 start stop duration  
 TIME :07:31:00 08:01:00 30 (min) Purpose code: 3  
 LOG :1325.20 1326.80 1.60 Area code : 2  
 FDEPTH: 178 175 GearCond.code:  
 BDEPTH: 178 175 Validity code:  
 Towing dir: 10° Wire out: 540 m Speed: 32 kn\*10  
 Sorted: 59 Kg Total catch: 59.03 CATCH/HOUR: 118.06

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	50.00	13334	42.35	
Merluccius capensis, male	31.00	434	26.26	4467
Merluccius capensis, female	28.20	298	23.89	4468
Thyrssites atun	6.70	2	5.68	4466
Merluccius capensis, juveniles	2.16	148	1.83	4469
Total	118.06		100.01	

PROJECT STATION:1304  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2320 Long E 1352  
 start stop duration  
 TIME :10:06:00 10:36:00 30 (min) Purpose code: 3  
 LOG :1345.70 1347.50 1.80 Area code : 2  
 FDEPTH: 161 159 GearCond.code:  
 BDEPTH: 161 159 Validity code:  
 Towing dir: 270° Wire out: 400 m Speed: 30 kn\*10  
 Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:1305  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2321 Long E 1343  
 start stop duration  
 TIME :11:42:00 12:12:00 30 (min) Purpose code: 3  
 LOG :1354.10 1355.70 1.60 Area code : 2  
 FDEPTH: 158 160 GearCond.code:  
 BDEPTH: 158 160 Validity code:  
 Towing dir: 270° Wire out: 520 m Speed: 30 kn\*10  
 Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:1306  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2321 Long E 1334  
 start stop duration  
 TIME :13:24:00 13:54:00 30 (min) Purpose code: 3  
 LOG :1363.70 1365.40 1.70 Area code : 2  
 FDEPTH: 185 183 GearCond.code:  
 BDEPTH: 185 183 Validity code:  
 Towing dir: 360° Wire out: 600 m Speed: 30 kn\*10  
 Sorted: 63 Kg Total catch: 6342.91 CATCH/HOUR: 12685.82

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	12174.00	116034	95.97	4470
Merluccius capensis, male	215.52	2680	1.70	4472
Merluccius capensis, female	172.80	2718	1.36	4471
Sufflogobius bibarbatatus	67.58	17472	0.53	
Merluccius capensis, juveniles	32.62	2564	0.26	4473
Pterothrissus bellocci	23.30	234	0.18	
Total	12685.82		100.00	



PROJECT STATION:1307  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2321  
 start stop duration Long E 1325  
 TIME :15:37:00 16:07:00 30 (min) Purpose code: 3  
 LOG :1377.30 1378.90 1.60 Area code : 2  
 FDEPTH: 272 272 GearCond.code:  
 BDEPTH: 272 272 Validity code:  
 Towing dir: 5° Wire out: 850 m Speed: 32 kn\*10

Sorted: 26 Kg Total catch: 96.37 CATCH/HOUR: 192.74

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	84.24	936	43.71	4478
Merluccius capensis, male	70.56	784	36.61	4477
Merluccius capensis, female	9.92	8	5.15	4475
Trachurus capensis	9.84	72	5.11	4479
Lophius vomerinus	4.80	16	2.49	4476
Sufflogobius bibarbatu	4.56	1136	2.37	
Scomber japonicus	3.92	2	2.03	
Merluccius capensis, male	2.10	2	1.09	4474
Stereomastis sp.	0.96	80	0.50	
Pterothrissus belloci	0.88	56	0.46	
MYCTOPHIDAE	0.64	264	0.33	
Synagrops microlepis	0.32	24	0.17	
Merluccius capensis, juveniles	0.00	4		
Total	192.74		100.02	

PROJECT STATION:1308  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2319  
 start stop duration Long E 1316  
 TIME :17:24:00 17:54:00 30 (min) Purpose code: 3  
 LOG :1388.80 1390.60 1.80 Area code : 2  
 FDEPTH: 360 363 GearCond.code:  
 BDEPTH: 360 363 Validity code:  
 Towing dir: 360° Wire out: 105 m Speed: 36 kn\*10

Sorted: 114 Kg Total catch: 196.28 CATCH/HOUR: 392.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	133.60	744	34.03	4485
Merluccius capensis, female	107.90	68	27.49	4480
Lophius vomerinus	29.90	22	7.62	4483
Coelorinchus fasciatus	25.36	544	6.46	
Merluccius capensis, male	21.90	18	5.58	4481
Merluccius capensis, male	16.40	72	4.18	4488
Merluccius capensis, female	15.28	48	3.89	4487
Merluccius paradoxus, male	8.00	40	2.04	4486
Nezumia sp.	7.76	336	1.98	
Merluccius paradoxus, female	6.80	6	1.73	4482
Genypterus capensis	6.30	8	1.60	4484
Helicolenus dactylopterus	5.60	64	1.43	
Galeus polli	4.88	64	1.24	
Epigonus denticulatus	1.04	64	0.26	
Malacocephalus laevis	0.88	16	0.22	
Selachophidium guentheri	0.56	24	0.14	
Bathynectes piperitus	0.32	8	0.08	
Ebinaia costaeacanarie	0.08	8	0.02	
Total	392.56		99.99	

PROJECT STATION:1309  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2320  
 start stop duration Long E 1309  
 TIME :19:57:00 20:27:00 30 (min) Purpose code: 3  
 LOG :1402.00 1403.70 1.70 Area code : 2  
 FDEPTH: 406 406 GearCond.code:  
 BDEPTH: 406 406 Validity code:  
 Towing dir: 5° Wire out:1150 m Speed: 34 kn\*10

Sorted: 500 Kg Total catch: 534.10 CATCH/HOUR: 1068.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	891.70	1426	83.48	4489
Helicolenus dactylopterus	86.00		8.05	
Merluccius paradoxus, male	38.30	74	3.59	4490
Nezumia sp.	19.00		1.78	
Galeus polli	13.16	112	1.23	
Coelorinchus fasciatus	8.96	128	0.84	
Raja confundens	5.24	8	0.49	
Etmopterus lucifer	2.80	8	0.26	
Epigonus denticulatus	1.16	8	0.11	
Selachophidium guentheri	0.96	28	0.09	
Bathynectes piperitus	0.56	36	0.05	
Notacanthus sexspinis	0.24	12	0.02	
S H R I M P S	0.12	24	0.01	
Total	1068.20		100.00	

PROJECT STATION:1310  
 DATE:29/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2313  
 start stop duration Long E 1304  
 TIME :22:15:00 22:45:00 30 (min) Purpose code: 3  
 LOG :1414.10 1415.80 1.70 Area code : 2  
 FDEPTH: 508 500 GearCond.code:  
 BDEPTH: 508 500 Validity code:  
 Towing dir: 350° Wire out:1400 m Speed: 30 kn\*10

Sorted: 77 Kg Total catch: 77.10 CATCH/HOUR: 154.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	95.20	102	61.74	4491
Todarodes sagittatus	11.10	26	7.20	
Helicolenus dactylopterus	10.46	48	6.78	
Nezumia sp.	8.62	164	5.59	
Trachyrincus scabrus	8.32	38	5.40	
Yarella blackfordi	8.16	840	5.29	
Deania profundorum	4.60	8	2.98	
Merluccius paradoxus, male	2.60	4	1.69	4492
Centroscyllum fabricii	1.64	2	1.06	
Etmopterus pusillus	1.08	2	0.70	
PHOTICHTHYIDAE	0.68	70	0.44	
Lithodes ferox	0.42	2	0.27	
Beryx splendens	0.40	2	0.26	
Galeus polli	0.30	6	0.19	
Notacanthus sexspinis	0.26	8	0.17	
Raja confundens	0.22	2	0.14	
Hoplostethus cadenati	0.14	4	0.09	
Total	154.20		99.99	

PROJECT STATION:1311  
 DATE:30/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2308  
 start stop duration Long E 1259  
 TIME :00:18:00 00:48:00 30 (min) Purpose code: 3  
 LOG :1422.60 1424.40 1.80 Area code : 2  
 FDEPTH: 600 600 GearCond.code:  
 BDEPTH: 600 600 Validity code:  
 Towing dir: 350° Wire out:1600 m Speed: 30 kn\*10

Sorted: 69 Kg Total catch: 100.25 CATCH/HOUR: 200.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	71.70	66	35.76	4493
Deania calcea	23.52	16	11.73	
Deepwater fish mixture	21.76		10.85	
Yarella blackfordi	20.56		10.25	
Trachyrincus scabrus	17.00	40	8.48	
Hoplostethus cadenati	12.20		6.08	
Todarodes sagittatus	8.28	12	4.13	
Raja confundens	6.20	8	3.09	
Nezumia sp.	5.52	168	2.75	
Lophius vomerinus	3.88	2	1.94	4494
Deania profundorum	2.52	4	1.26	
Lamprogrammus exutus	1.80	8	0.90	
Selachophidium guentheri	1.68	28	0.84	
Lithodes ferox	1.64	12	0.82	
Heterocarpus grimaldii	1.36	40	0.68	
Epigonus denticulatus	0.64	4	0.32	
POLYCHAELIDAE	0.24	16	0.12	
Total	200.50		100.00	

PROJECT STATION:1312  
 DATE:30/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2302  
 start stop duration Long E 1302  
 TIME :02:41:00 03:01:00 20 (min) Purpose code: 3  
 LOG :1433.00 1434.10 1.10 Area code : 2  
 FDEPTH: 451 450 GearCond.code:  
 BDEPTH: 451 450 Validity code:  
 Towing dir: 345° Wire out:1250 m Speed: 30 kn\*10

Sorted: 290 Kg Total catch: 313.33 CATCH/HOUR: 939.99

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	725.10	1155	77.14	4496
Merluccius paradoxus, male	55.95	93	5.95	4497
Trachyrincus scabrus	49.08	372	5.22	
Helicolenus dactylopterus	27.60	288	2.94	
Lophius vomerinus	16.17	6	1.72	4495
Lithodes ferox	14.22	18	1.51	
Nezumia sp.	11.46	216	1.22	
Deania profundorum	10.62	18	1.13	
Todarodes sagittatus	6.84	12	0.73	
Brama brama	6.33	6	0.67	
Centroscyllum fabricii	4.50	6	0.48	
Etmopterus lucifer	3.72	12	0.40	
Tetragonurus atlanticus	2.64	6	0.28	
Coelorinchus matama	1.62	6	0.17	
MYCTOPHIDAE	1.50	450	0.16	
Galeus polli	0.84	6	0.09	
Yarella blackfordi	0.78	60	0.08	
Epigonus denticulatus	0.54	12	0.06	
Selachophidium guentheri	0.48	12	0.05	
Total	939.99		100.00	

PROJECT STATION:1313  
 DATE:30/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2259  
 start stop duration Long E 1303  
 TIME :04:22:00 04:52:00 30 (min) Purpose code: 3  
 LOG :1439.70 1441.40 1.70 Area code : 2  
 FDEPTH: 366 366 GearCond.code:  
 BDEPTH: 366 366 Validity code:  
 Towing dir: 340° Wire out:1100 m Speed: 34 kn\*10

Sorted: 323 Kg Total catch: 716.23 CATCH/HOUR: 1432.46

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	1062.00	3370	74.14	4498
Helicolenus dactylopterus	166.66	1538	11.63	
Merluccius paradoxus, male	96.40	288	6.73	4499
Schedophilus huttoni	42.24	22	2.95	
Coelorinchus fasciatus	12.62	304	0.88	
Selachophidium guentheri	10.68	210	0.75	
Epigonus denticulatus	10.02	264	0.70	
Merluccius capensis, female	7.32	4	0.51	4502
Lophius vomerinus	7.26	4	0.51	4500
Genypterus capensis	5.60	4	0.39	4501
Nezumia sp.	2.98	166	0.21	
Beryx splendens	2.54	12	0.18	
Malacocephalus laevis	1.66	22	0.12	
Galeus polli	1.54	12	0.11	
NEMICHTHYIDAE	1.10	12	0.08	
Chlorophthalmus atlanticus	1.10	34	0.08	
MYCTOPHIDAE	0.56	90	0.04	
Total	1432.28		100.01	



PROJECT STATION:1314  
 DATE:30/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2258  
 start stop duration Long E 1310  
 TIME :06:18:00 06:48:00 30 (min) Purpose code: 3  
 LOG :1449.70 1451.20 1.50 Area code : 2  
 FDEPTH: 316 331 GearCond.code:  
 BDEPTH: 316 331 Validity code:  
 Towing dir: 90° Wire out: 930 m Speed: 30 kn\*10  
 Sorted: 80 Kg Total catch: 224.90 CATCH/HOUR: 449.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	122.50	840	27.23	4505
Helicolenus dactylopterus	81.60	1350	18.14	
Merluccius capensis, female	78.80	66	17.52	4503
Centrolophus niger	67.10	20	14.92	
Coelorinchus fasciatus	34.40	1050	7.65	
Trachurus capensis	17.30	40	3.85	4508
Merluccius paradoxus, male	14.80	40	3.29	4506
Epigonus denticulatus	6.30	440	1.40	
Beryx splendens	5.20	50	1.16	
Merluccius capensis, male	4.90	6	1.09	4504
Galeus polli	4.50	50	1.00	
Lophius vomerinus	4.30	8	0.96	4507
Malacocephalus laevis	2.40	40	0.53	
Bathynectes piperitus	2.30	90	0.51	
Chlorophthalmus atlanticus	2.10	60	0.47	
Selachophidium guentheri	0.70	10	0.16	
MYCTOPHIDAE	0.60	200	0.13	
Total	449.80		100.01	

PROJECT STATION:1315  
 DATE:30/ 1/96 GEAR TYPE: BT No:4 POSITION:Lat S 2300  
 start stop duration Long E 1320  
 TIME :08:18:00 08:48:00 30 (min) Purpose code: 3  
 LOG :1460.40 1462.00 1.60 Area code : 2  
 FDEPTH: 346 335 GearCond.code:  
 BDEPTH: 346 335 Validity code:  
 Towing dir: 90° Wire out:1330 m Speed: 32 kn\*10  
 Sorted: 394 Kg Total catch: 394.35 CATCH/HOUR: 788.70

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Schedophilus huttoni	188.70	102	23.93	
Merluccius capensis, female	137.80	110	17.47	4511
Merluccius paradoxus, female	126.60	594	16.05	4509
Merluccius capensis, female	124.50	458	15.79	4516
Merluccius capensis, male	78.20	556	9.92	4512
Deepwater fish mixture	60.00		7.61	
Lophius vomerinus	51.20	62	6.49	4513
Trachurus capensis	20.00	36	2.54	4515
Genypterus capensis	0.98	2	0.12	4514
Merluccius paradoxus, male	0.72	6	0.09	4510
Total	788.70		100.01	

PROJECT STATION:1316  
 DATE: 1/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2257  
 start stop duration Long E 1332  
 TIME :17:23:00 17:33:00 10 (min) Purpose code: 3  
 LOG :1611.50 1612.10 0.60 Area code : 2  
 FDEPTH: 195 197 GearCond.code:  
 BDEPTH: 195 197 Validity code:  
 Towing dir: 360° Wire out: 660 m Speed: 32 kn\*10  
 Sorted: 98 Kg Total catch: 884.71 CATCH/HOUR: 5308.26

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	2488.20	24336	46.87	4522
Merluccius capensis, female	994.50	11388	18.73	4520
Merluccius capensis, male	881.40	11076	16.60	4519
MYCTOPHIDAE	560.04	162396	10.55	
Sufflogobius bibarbatatus	99.06	19422	1.87	
Merluccius capensis, female	93.90	90	1.77	4518
Lophius vomerinus	90.90	78	1.71	4521
Merluccius capensis, juveniles	46.02	2886	0.87	4523
Pterothrissus bellocci	31.20	312	0.59	
Todaropsis eblanae	8.58	156	0.16	
Merluccius capensis, male	7.50	6	0.14	4517
Austroglossus microlepis	5.46	18	0.10	4524
Synagrops microlepis	1.56	78	0.03	
Total	5308.32		99.99	

PROJECT STATION:1317  
 DATE: 1/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2300  
 start stop duration Long E 1343  
 TIME :19:10:00 19:40:00 30 (min) Purpose code: 3  
 LOG :1623.90 1625.50 1.60 Area code : 2  
 FDEPTH: 147 145 GearCond.code:  
 BDEPTH: 147 145 Validity code:  
 Towing dir: 90° Wire out: 500 m Speed: 32 kn\*10  
 Sorted: 9 Kg Total catch: 14.48 CATCH/HOUR: 28.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	12.00	3700	41.44	
Merluccius capensis, female	9.80	140	33.84	4526
Merluccius capensis, male	7.10	100	24.52	4525
Lophius vomerinus	0.66	2	0.21	4527
Total	28.96		100.01	

PROJECT STATION:1318  
 DATE: 2/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2238  
 start stop duration Long E 1340  
 TIME :04:45:00 04:50:00 5 (min) Purpose code: 3  
 LOG :1657.50 1657.80 0.30 Area code : 2  
 FDEPTH: 135 135 GearCond.code:  
 BDEPTH: 135 135 Validity code:  
 Towing dir: 200° Wire out: 400 m Speed: 32 kn\*10  
 Sorted: 27 Kg Total catch: 27.55 CATCH/HOUR: 330.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	142.80	1788	43.19	4528
Merluccius capensis, female	117.00	1392	35.39	4529
Merluccius capensis, juveniles	70.80	3420	21.42	4530
Total	330.60		100.00	

PROJECT STATION:1319  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2239  
 start stop duration Long E 1330  
 TIME :06:16:00 06:46:00 30 (min) Purpose code: 3  
 LOG :1667.30 1669.00 1.70 Area code : 2  
 FDEPTH: 197 220 GearCond.code:  
 BDEPTH: 197 220 Validity code:  
 Towing dir: 205° Wire out: 570 m Speed: 34 kn\*10  
 Sorted: 81 Kg Total catch: 645.65 CATCH/HOUR: 1291.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	508.00	5160	39.34	4534
Merluccius capensis, male	244.40	2640	18.93	4531
Merluccius capensis, female	244.00	2280	18.90	4532
Pterothrissus bellocci	164.00	1200	12.70	
Merluccius capensis, female	56.80	64	4.40	4536
Merluccius capensis, male	41.60	56	3.22	4535
Sufflogobius bibarbatatus	14.40	2640	1.12	
Merluccius capensis, juveniles	13.60	760	1.05	4533
Austroglossus microlepis	4.50	10	0.35	4537
Total	1291.30		100.01	

PROJECT STATION:1320  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2238  
 start stop duration Long E 1321  
 TIME :08:20:00 08:41:00 21 (min) Purpose code: 3  
 LOG :1677.70 1678.80 1.10 Area code : 2  
 FDEPTH: 267 264 GearCond.code:  
 BDEPTH: 267 264 Validity code:  
 Towing dir: 350° Wire out: 810 m Speed: 30 kn\*10  
 Sorted: 361 Kg Total catch: 1108.81 CATCH/HOUR: 3168.03

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	1835.71	13303	57.94	4542
Merluccius capensis, female	717.71	469	22.65	4541
Merluccius capensis, female	138.09	1251	4.30	4539
MYCTOPHIDAE	129.66		4.09	
Merluccius capensis, male	127.00	140	4.01	4540
Merluccius capensis, male	108.23	894	3.42	4538
Coelorinchus fasciatus	73.23	1037	2.31	
Sufflogobius bibarbatatus	20.37	4037	0.64	
Todarodes sagittatus	16.43	37	0.52	
Lophius vomerinus	1.80	6	0.06	4543
Pterothrissus bellocci	1.43	109	0.05	
Helicolenus dactylopterus	0.37	180	0.01	
Total	3168.03		100.00	

PROJECT STATION:1321  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2239  
 start stop duration Long E 1313  
 TIME :10:09:00 10:42:00 33 (min) Purpose code: 3  
 LOG :1687.00 1688.50 1.50 Area code : 2  
 FDEPTH: 301 308 GearCond.code:  
 BDEPTH: 301 308 Validity code:  
 Towing dir: 194° Wire out: 900 m Speed: 30 kn\*10  
 Sorted: 191 Kg Total catch: 327.43 CATCH/HOUR: 595.33

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	138.89	696	23.33	4547
Merluccius capensis, female	137.73	91	23.14	4545
Trachurus capensis	130.71	455	21.96	4548
Merluccius capensis, male	67.09	520	11.27	4546
Coelorinchus fasciatus	58.09		9.76	
Todarodes sagittatus	32.04	45	5.38	
MYCTOPHIDAE	11.22		1.88	
Brama brama	6.55	4	1.10	
Merluccius capensis, male	5.27	5	0.89	4544
Galeus polli	2.09	45	0.35	
Hyperoglyphe moselii	1.93	4	0.32	
Chlorophthalmus atlanticus	1.76	107	0.30	
Coelorinchus coelorhinc. polli	1.02	53	0.17	
Lepidopus caudatus	0.49	4	0.08	
Todaropsis eblanae	0.45	4	0.08	
Total	595.33		100.01	



PROJECT STATION:1322  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2242 Long E 1303  
 start stop duration  
 TIME :12:20:00 12:52:00 32 (min) Purpose code: 3  
 LOG :1696.90 1698.80 1.90 Area code : 2  
 FDEPTH: 314 308 GearCond.code:  
 BDEPTH: 314 308 Validity code:  
 Towing dir: 257° Wire out: 950 m Speed: 30 kn\*10

Sorted: 108 Kg Total catch: 242.04 CATCH/HOUR: 453.83

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	133.88	748	29.50	4554
Merluccius capensis, female	87.19	71	19.21	4549
Coelorinchus fasciatus	72.19		15.91	
Helicolenus dactylopterus	37.88	729	8.35	
Merluccius capensis, female	30.53	131	6.73	4552
Coelorinchus coelorhinc. polli	19.03	709	4.19	
Chlorophthalmus atlanticus	13.39	1609	2.95	
Merluccius capensis, male	13.07	60	2.88	4553
Todarodes sagittatus	10.37	4	2.28	
Merluccius capensis, male	9.56	8	2.11	4550
Lepidopus caudatus	5.64	8	1.24	
Zeus faber	5.59	8	1.23	
Lophius vomerinus	4.78	2	1.05	4551
MYCTOPHIDAE	4.41	1326	0.97	
Merluccius paradoxus, male	2.83	21	0.62	4555
Torpedo nobiliana	2.31	8	0.51	
MORIDAE	0.53	13	0.32	
Synagrops microlepis	0.34	21	0.07	
Genypteris capensis	0.19	2	0.04	
Galeus polli	0.08	8	0.02	
Beryx splendens	0.08	8	0.02	
Total		453.87		100.00

PROJECT STATION:1325  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2235 Long E 1246  
 start stop duration  
 TIME :18:30:00 19:00:00 30 (min) Purpose code: 3  
 LOG :1720.90 1722.50 1.60 Area code : 2  
 FDEPTH: 649 650 GearCond.code:  
 BDEPTH: 649 650 Validity code:  
 Towing dir: 360° Wire out:1600 m Speed: 32 kn\*10

Sorted: 84 Kg Total catch: 174.43 CATCH/HOUR: 348.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	117.30	112	33.62	4560
Deania quadrispinosum	75.06	118	21.52	
Deania calcea	46.36	28	13.29	
Allocyttus verrucosus	32.76	306	9.39	
Nezumia sp.	30.16	666	8.65	
Neocyttus rhomboidalis	11.88	28	3.41	
Trachyrincus scabrus	6.66	90	1.91	
Selachophidium guentheri	5.94	100	1.70	
Schedophilus huttoni	5.68	10	1.63	
Notacanthus sexspinis	5.14	208	1.47	
Helicolenus dactylopterus	4.60	10	1.32	
Coelorinchus matama	2.98	10	0.85	
S H R I M P S	1.18	342	0.34	
Raja confundens	1.08	10	0.31	
Aristeus varidens	0.72	54	0.21	
MYCTOPHIDAE	0.54	144	0.15	
Laemonema laureysi	0.46	10	0.13	
Yarrella blackfordi	0.36	18	0.10	
Total		348.86		100.00

PROJECT STATION:1323  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2240 Long E 1252  
 start stop duration  
 TIME :14:36:00 15:06:00 30 (min) Purpose code: 3  
 LOG :1709.00 1710.50 1.50 Area code : 2  
 FDEPTH: 396 410 GearCond.code:  
 BDEPTH: 396 410 Validity code:  
 Towing dir: 340° Wire out:1150 m Speed: 30 kn\*10

Sorted: 380 Kg Total catch: 548.14 CATCH/HOUR: 1096.28

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	635.30	774	57.95	4557
Krill	161.70	13	14.75	
Helicolenus dactylopterus	88.44	616	8.07	
Schedophilus huttoni	62.60	34	5.71	
Todarodes sagittatus	29.70	44	2.71	
Merluccius paradoxus, male	25.30	34	2.31	4556
Nezumia sp.	24.98	606	2.28	
Genypteris capensis	24.10	12	2.20	4558
Cruriraja parcomaculata	11.78	12	1.07	
Centrolophus niger	11.56	12	1.05	
Trachurus capensis	5.72	12	0.52	
Etmopterus lucifer	4.96	12	0.45	
Selachophidium guentheri	4.84	56	0.44	
Coelorinchus fasciatus	3.42	34	0.31	
Epigonus denticulatus	1.32	22	0.12	
Notacanthus sexspinis	0.34	22	0.03	
C R A B S	0.22	12	0.02	
Total		1096.28		99.99

PROJECT STATION:1326  
 DATE: 2/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2224 Long E 1246  
 start stop duration  
 TIME :21:13:00 21:33:00 20 (min) Purpose code: 3  
 LOG :1732.20 1733.30 1.10 Area code : 2  
 FDEPTH: 547 537 GearCond.code:  
 BDEPTH: 547 537 Validity code:  
 Towing dir: 1° Wire out:1450 m Speed: 32 kn\*10

Sorted: 118 Kg Total catch: 200.17 CATCH/HOUR: 600.51

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	264.45	255	44.04	4561
Deania calcea	109.50	75	18.23	
Trachyrincus scabrus	78.00	300	12.99	
Nezumia sp.	44.55	810	7.42	
Selachophidium guentheri	24.75	435	4.12	
Coelorinchus braueri	23.70	75	3.95	
Todarodes sagittatus	11.70	18	1.95	
Chaceon maritae	7.32	6	1.22	
Notacanthus sexspinis	6.60	120	1.10	
Lophius vomerinus	5.52	3	0.92	4563
Etmopterus lucifer	4.20	15	0.70	
Hoplostethus cadenati	4.05	240	0.67	
Bassanago albenscens	3.30	105	0.55	
Epigonus telescopus	3.00	15	0.50	
Merluccius paradoxus, male	2.61	3	0.43	4562
Lithodes ferox	2.31	6	0.38	
Ebinania costaecanarie	2.25	45	0.37	
Galeus polli	1.65	15	0.27	
OROSTOMATIDAE	1.05	15	0.17	
Total		600.51		99.98

PROJECT STATION:1324  
 DATE: 2/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2238 Long E 1249  
 start stop duration  
 TIME :16:27:00 16:57:00 30 (min) Purpose code: 3  
 LOG :1715.10 1716.60 1.50 Area code : 2  
 FDEPTH: 524 524 GearCond.code:  
 BDEPTH: 524 524 Validity code:  
 Towing dir: 350° Wire out:1400 m Speed: 30 kn\*10

Sorted: 88 Kg Total catch: 88.52 CATCH/HOUR: 177.04

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	43.70	158	24.68	
Merluccius paradoxus, female	30.40	30	17.17	4559
Nezumia sp.	29.90	488	16.89	
Centrophorus squamosus	25.80	2	14.57	
Helicolenus dactylopterus	7.08	44	4.00	
Todarodes sagittatus	6.82	10	3.85	
Schedophilus huttoni	5.36	4	3.03	
Deepwater fish mixture	4.38		2.47	
Hoplostethus cadenati	4.16	66	2.35	
S H R I M P S	3.92	1350	2.21	
Selachophidium guentheri	3.74	66	2.11	
Deania profundorum	2.78	4	1.57	
Epigonus telescopus	2.10	10	1.19	
Raja confundens	1.64	4	0.93	
Etmopterus lucifer	1.26	4	0.71	
Aristeus varidens	1.12	86	0.63	
Deania calcea	0.86	2	0.49	
MYCTOPHIDAE	0.80	152	0.45	
Notacanthus sexspinis	0.32	14	0.18	
Nephropsis atlantica	0.30	18	0.17	
Epigonus denticulatus	0.24	6	0.14	
Raja doutrei	0.14	2	0.08	
Allocyttus verrucosus	0.12	2	0.07	
Yarrella blackfordi	0.10	10	0.06	
Total		177.04		100.00

PROJECT STATION:1327  
 DATE: 2/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2221 Long E 1247  
 start stop duration  
 TIME :23:23:00 23:45:00 22 (min) Purpose code: 3  
 LOG :1739.00 1740.00 1.00 Area code : 2  
 FDEPTH: 439 440 GearCond.code: 9  
 BDEPTH: 439 440 Validity code: 1  
 Towing dir: \* Wire out:1250 m Speed: 30 kn\*10

Sorted: 102 Kg Total catch: 262.80 CATCH/HOUR: 716.73

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	222.41		31.03	
Merluccius paradoxus, female	192.95	237	26.92	4564
Nezumia sp.	102.33	1928	14.28	
Helicolenus dactylopterus	80.95	458	11.29	
Deania profundorum	32.26	57	4.50	
Epigonus telescopus	13.75	95	1.92	
Coelorinchus braueri	13.55	19	1.88	
Todarodes sagittatus	12.60	38	1.76	
Etmopterus pusillus	9.74	19	1.36	
Merluccius paradoxus, male	7.66	11	1.07	4565
Etmopterus lucifer	6.68	19	0.93	
Coelorinchus fasciatus	6.11	95	0.85	
Chaceon maritae	4.09	5	0.57	
Hoplostethus cadenati	4.01	210	0.56	
Lithodes ferox	3.25	19	0.45	
Epigonus denticulatus	2.67	57	0.37	
Galeus polli	1.72	19	0.24	
Total		716.73		99.99



PROJECT STATION:1328  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2221  
 start stop duration Long E 1251  
 TIME :04:41:00 05:11:00 30 (min) Purpose code: 3  
 LOG :1749.30 1750.90 1.60 Area code : 2  
 FDEPTH: 375 370 GearCond.code:  
 BDEPTH: 375 370 Validity code:  
 Towing dir: 30° Wire out:1050 m Speed: 32 kn\*10

Sorted: 311 Kg Total catch: 445.83 CATCH/HOUR: 891.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	495.20	754	55.54	4569
Helicolenus dactylopterus	179.10	1872	20.09	
Merluccius paradoxus, male	45.00	76	5.05	4568
Coelorinchus fasciatus	27.90	612	3.13	
Lophius vomerinus	27.00	22	3.03	4570
Genypterus capensis	18.20	14	2.04	4567
Etmopterus lucifer	16.74	54	1.88	
Nezumia sp.	14.58	612	1.64	
Selachophidium guentheri	13.86	252	1.55	
Cruriraja parcomaculata	13.14	18	1.47	
Galeus polli	9.90	108	1.11	
Trachyrincus scabrus	9.54	36	1.07	
C R A B S	7.02	378	0.79	
Guentherus altivela	3.42	18	0.38	
Merluccius capensis, female	3.32	2	0.37	4566
Laemonema laureysi	2.88	54	0.32	
Aristeus varidens	1.98	54	0.22	
Echinania costaeacanarie	1.80	54	0.20	
MYCTOPHIDAE	0.54	54	0.06	
Epigonus denticulatus	0.54	36	0.06	
Total	891.66		100.00	

PROJECT STATION:1329  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2219  
 start stop duration Long E 1258  
 TIME :06:58:00 07:28:00 30 (min) Purpose code: 3  
 LOG :1760.30 1762.00 1.70 Area code : 2  
 FDEPTH: 284 288 GearCond.code:  
 BDEPTH: 284 288 Validity code:  
 Towing dir: 5° Wire out: 850 m Speed: 34 kn\*10

Sorted: 228 Kg Total catch: 1098.62 CATCH/HOUR: 2197.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	1318.52	2802	60.01	4572
Merluccius capensis, male	211.48	1048	9.62	4571
MYCTOPHIDAE	191.12	59120	8.70	
Chlorophthalmus punctatus	119.68	5182	5.45	
Brama brama	87.80	86	4.00	
Coelorinchus coelorhinc. polli	70.32	3448	3.20	
Lophius vomerinus	47.20	38	2.15	4574
Coelorinchus fasciatus	34.54	558	1.57	
Galeus polli	31.00	490	1.41	
Helicolenus dactylopterus	28.70	844	1.31	
Todaropsis sagittatus	19.90	48	0.91	
C R A B S	12.38	966	0.56	
Spondylosoma cantharus	10.74	14	0.49	
Trachurus capensis	4.76	14	0.22	4573
Dentex macrophthalmus	4.62	14	0.21	
Synagrops microlepis	4.48	286	0.20	
Total	2197.24		100.01	

PROJECT STATION:1330  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2218  
 start stop duration Long E 1308  
 TIME :09:23:00 09:53:00 30 (min) Purpose code: 3  
 LOG :1773.30 1774.90 1.60 Area code : 2  
 FDEPTH: 249 244 GearCond.code:  
 BDEPTH: 249 244 Validity code:  
 Towing dir: 30° Wire out: 750 m Speed: 32 kn\*10

Sorted: 216 Kg Total catch: 1829.09 CATCH/HOUR: 3658.18

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	1257.06	1534	34.36	4579
Trachurus capensis	884.12	8354	24.17	4578
Merluccius capensis, male	536.30	728	14.66	4580
Coelorinchus fasciatus	293.88		8.03	
Merluccius capensis, female	226.30	2170	6.19	4581
Merluccius capensis, male	174.38	1968	4.77	4582
Dentex macrophthalmus	81.34	322	2.22	4575
C R A B S	38.20	3026	1.04	
Synagrops microlepis	37.20	2704	1.02	
Galeus polli	31.50	918	0.86	
Lophius vomerinus	30.50	74	0.83	4583
Pterothrissus bellocci	29.52	174	0.81	
Sufflogobius bibarbatatus	25.30	3992	0.69	
Todaropsis eblanae	6.44	272	0.18	
Merluccius capensis	3.48	272	0.10	4576
Austroglossus microlepis	2.66	6	0.07	4584
Total	3658.18		100.00	

PROJECT STATION:1331  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2216  
 start stop duration Long E 1318  
 TIME :11:45:00 12:17:00 32 (min) Purpose code: 3  
 LOG :1785.50 1787.00 1.50 Area code : 2  
 FDEPTH: 218 211 GearCond.code:  
 BDEPTH: 218 211 Validity code:  
 Towing dir: 90° Wire out: 700 m Speed: 30 kn\*10

Sorted: 52 Kg Total catch: 101.32 CATCH/HOUR: 189.98

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	68.63	649	36.12	4589
Merluccius capensis, female	58.13	368	30.60	4588
Trachurus capensis	33.19	356	17.47	4587
Sufflogobius bibarbatatus	9.60		5.05	
Pterothrissus bellocci	8.44	19	4.44	
Merluccius capensis	5.44	398	2.86	4590
Lophius vomerinus	3.17	8	1.67	4585
Austroglossus microlepis	2.42	8	1.27	4586
Trigla lyra	0.71	4	0.37	
Todaropsis eblanae	0.26	4	0.14	
Total	189.99		99.99	

PROJECT STATION:1332  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2214  
 start stop duration Long E 1325  
 TIME :13:44:00 14:14:00 30 (min) Purpose code: 3  
 LOG :1793.00 1794.70 1.70 Area code : 2  
 FDEPTH: 173 164 GearCond.code:  
 BDEPTH: 173 164 Validity code:  
 Towing dir: 55° Wire out: 560 m Speed: 30 kn\*10

Sorted: 5 Kg Total catch: 9.51 CATCH/HOUR: 19.02

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis	16.40	1080	86.23	4591
Merluccius capensis, female	1.50	2	7.89	4592
Sufflogobius bibarbatatus	1.12	316	5.89	
Total	19.02		100.01	

PROJECT STATION:1333  
 DATE: 3/ 2/96 GEAR TYPE: BT No:4 POSITION:Lat S 2214  
 start stop duration Long E 1334  
 TIME :15:58:00 16:21:00 23 (min) Purpose code: 3  
 LOG :1804.70 1805.80 1.10 Area code : 2  
 FDEPTH: 136 133 GearCond.code: 8  
 BDEPTH: 136 133 Validity code: 9  
 Towing dir: 78° Wire out: 420 m Speed: 30 kn\*10

Sorted: 2 Kg Total catch: 1.57 CATCH/HOUR: 4.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	2.48	29	60.49	4593
Merluccius capensis, juveniles	0.94	60	22.93	4595
Merluccius capensis, female	0.68	10	16.59	4594
Total	4.10		100.01	

PROJECT STATION:1334  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2155  
 start stop duration Long E 1321  
 TIME :04:41:00 04:49:00 8 (min) Purpose code: 3  
 LOG :1872.10 1872.50 0.40 Area code : 2  
 FDEPTH: 163 164 GearCond.code:  
 BDEPTH: 163 164 Validity code:  
 Towing dir: 185° Wire out: 480 m Speed: 30 kn\*10

Sorted: 53 Kg Total catch: 118.99 CATCH/HOUR: 892.43

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	330.75	3413	37.06	4597
Merluccius capensis, male	285.23	3578	31.96	4596
Merluccius capensis, juveniles	115.95	8550	12.99	4599
Trachurus capensis	109.73	1253	12.30	4600
Merluccius capensis, female	43.20	105	4.84	4598
Sufflogobius bibarbatatus	6.90	1470	0.77	
Pterothrissus bellocci	0.68	15	0.08	
Total	892.44		100.00	

PROJECT STATION:1335  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2156  
 start stop duration Long E 1312  
 TIME :06:17:00 06:22:00 5 (min) Purpose code: 3  
 LOG :1881.10 1881.40 0.30 Area code : 2  
 FDEPTH: 178 178 GearCond.code:  
 BDEPTH: 178 178 Validity code:  
 Towing dir: 350° Wire out: 530 m Speed: 30 kn\*10

Sorted: 61 Kg Total catch: 242.04 CATCH/HOUR: 2904.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	1812.00	20592	62.39	4604
Merluccius capensis, female	525.60	4320	18.10	4602
Merluccius capensis, male	374.40	4560	12.89	4601
Merluccius capensis, juveniles	181.92	12336	6.26	4603
Sufflogobius bibarbatatus	10.08	1344	0.35	
Trachurus capensis, juvenile	0.48	96	0.02	4605
Total	2904.48		100.01	

PROJECT STATION:1336  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2158  
 start stop duration Long E 1301  
 TIME :08:09:00 08:29:00 20 (min) Purpose code: 3  
 LOG :1892.90 1893.90 1.00 Area code : 2  
 FDEPTH: 280 290 GearCond.code:  
 BDEPTH: 280 290 Validity code:  
 Towing dir: 260° Wire out: 810 m Speed: 30 kn\*10

Sorted: 163 Kg Total catch: 576.53 CATCH/HOUR: 1729.59

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	732.39	4209	42.34	4609
Merluccius capensis, male	312.75	2004	18.08	4608
Merluccius capensis, female	251.85	225	14.56	4607
MYCTOPHIDAE	160.65	67299	9.29	
Dentex macrophthalmus	152.55	474	8.82	4612
Coelorinchus fasciatus	38.25	765	2.21	
Merluccius capensis, male	38.25	57	2.21	4606
Merluccius capensis, juveniles	10.14	675	0.59	4610
Lophius vomerinus	7.05	15	0.41	4611
Brama brama	6.75	24	0.39	
Synagrops microlepis	5.40	360	0.31	
Sufflogobius bibarbatatus	4.74	1035	0.27	
C R A B S	3.84	270	0.22	
Chlorophthalmus punctatus	2.94	90	0.17	
Coelorinchus coelorhinc. polli	1.14	45	0.07	
S H R I M P S	0.90	225	0.05	
Total	1729.59		99.99	



PROJECT STATION:1337  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2200 Long E 1250  
 start stop duration  
 TIME :10:24:00 10:54:00 30 (min) Purpose code: 3  
 LOG :1905.40 1907.00 1.60 Area code : 2  
 FDEPTH: 340 337 GearCond.code:  
 BDEPTH: 340 337 Validity code:  
 Towing dir: 340° Wire out:1020 m Speed: 30 kn\*10

Sorted: 162 Kg Total catch: 256.78 CATCH/HOUR: 513.56

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	236.10	934	45.97
Helicolenus dactylopterus	111.50		21.71
Todarodes sagittatus	54.80	90	10.67
Merluccius capensis, female	25.70	20	5.00
MYCTOPHIDAE	24.40		4.75
Coelorinchus fasciatus	22.50	430	4.38
Merluccius paradoxus, male	9.90	34	1.93
Centrolophus niger	9.80	10	1.91
C R A B S	6.30	420	1.23
Squalus megalops	3.40	10	0.66
Lophius vomerinus	3.00	2	0.58
Chlorophthalmus atlanticus	2.40	80	0.47
Epigonus denticulatus	1.70	70	0.33
Beryx splendens	0.90	10	0.18
Genypterus capensis	0.66	2	0.13
Galeus polli	0.50	10	0.10
Total	513.56		100.00

PROJECT STATION:1340  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2155 Long E 1235  
 start stop duration  
 TIME :17:40:00 18:10:00 30 (min) Purpose code: 3  
 LOG :1936.00 1937.60 1.60 Area code : 2  
 FDEPTH: 658 665 GearCond.code:  
 BDEPTH: 658 665 Validity code:  
 Towing dir: 10° Wire out:1650 m Speed: 32 kn\*10

Sorted: 166 Kg Total catch: 333.77 CATCH/HOUR: 667.54

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	190.30	180	28.51
Trachyrincus scabrus	136.98	360	20.52
Nezumia sp.	93.60	2196	14.02
Todarodes sagittatus	53.20	84	7.97
Neocyttus rhomboidalis	52.20	126	7.82
Deania calcea	39.42	90	5.91
Lophius vaillanti	32.30	6	4.84
Hoplostethus cadenati	16.56	450	2.48
Yarella blackfordi	13.50	648	2.02
Lophius vomerinus	12.50	4	1.87
Deania profundorum	10.26	18	1.54
Selachophidium guentheri	4.68	108	0.70
Bassanago albescens	2.52	18	0.38
Chaceon maritae	2.50	2	0.37
Nephropsis atlantica	2.34	108	0.35
Aristeus varidens	1.44	108	0.22
Galeus polli	1.08	36	0.16
Dicrolene intronigra	0.72	36	0.11
Nemichthys scolopaceus	0.72	72	0.11
Shrimps, small, non comm.	0.72	162	0.11
Total	667.54		100.01

PROJECT STATION:1338  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2159 Long E 1242  
 start stop duration  
 TIME :12:38:00 13:08:00 30 (min) Purpose code: 3  
 LOG :1916.20 1917.80 1.60 Area code : 2  
 FDEPTH: 418 429 GearCond.code:  
 BDEPTH: 418 429 Validity code:  
 Towing dir: 340° Wire out:1200 m Speed: 30 kn\*10

Sorted: 252 Kg Total catch: 501.64 CATCH/HOUR: 1003.28

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	552.00	736	55.02
Helicolenus dactylopterus	155.20		15.47
Trachyrincus scabrus	61.60		6.14
Merluccius paradoxus, male	39.00	60	3.89
Schedophilus huttoni	29.80	16	2.97
Nezumia sp.	26.60		2.65
Deepwater fish mixture	25.20		2.51
Etmopterus pusillus	23.12	76	2.30
Centrolophus niger	18.04	8	1.80
Todarodes sagittatus	16.64	38	1.66
Deania profundorum	14.48	16	1.44
Squalus megalops	7.24	4	0.72
Hoplostethus cadenati	6.92	336	0.69
Ruvettus pretiosus	6.56	4	0.65
Lithodes ferox	6.12	4	0.61
Coelorinchus fasciatus	5.48	92	0.55
Lophius vomerinus	3.44	4	0.34
Beryx splendens	1.24	8	0.12
Notacanthus sexspinis	0.84	36	0.08
Epigonus denticulatus	0.80	24	0.08
Selachophidium guentheri	0.80	24	0.08
C R A B S	0.64	36	0.06
Yarella blackfordi	0.56	32	0.06
Galeus polli	0.48	4	0.05
Ebinania costaecanarie	0.32	8	0.03
S H R I M P S	0.16	12	0.02
Total	1003.28		99.99

PROJECT STATION:1341  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2148 Long E 1237  
 start stop duration  
 TIME :20:23:00 20:53:00 30 (min) Purpose code: 3  
 LOG :1944.50 1946.00 1.50 Area code : 2  
 FDEPTH: 586 577 GearCond.code:  
 BDEPTH: 586 577 Validity code:  
 Towing dir: 5° Wire out:1550 m Speed: 30 kn\*10

Sorted: 149 Kg Total catch: 606.72 CATCH/HOUR: 1213.44

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachyrincus scabrus	608.00	2090	50.11
Merluccius paradoxus, female	175.20	166	14.44
Todarodes sagittatus	79.42	152	6.55
Nezumia sp.	76.38	1900	6.29
Hoplostethus cadenati	60.80	1634	5.01
Lophius vomerinus	45.00	10	3.71
Yarella blackfordi	34.58	2128	2.85
Lithodes ferox	26.90	54	2.22
Cruriraja parcomaculata	23.56	38	1.94
Alepocephalus sp.	20.14	456	1.66
Deania profundorum	18.62	38	1.53
Raja leoparden	9.88	152	0.81
Bassanago albescens	6.08	76	0.50
Neocyttus rhomboidalis	5.70	38	0.47
Notacanthus sexspinis	5.32	76	0.44
Dicrolene intronigra	4.94	38	0.41
Shrimps, small, non comm.	4.94	608	0.41
Lamprogrammus exutus	4.56	38	0.38
Selachophidium guentheri	3.42	76	0.28
Total	1213.44		100.01

PROJECT STATION:1339  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2156 Long E 1238  
 start stop duration  
 TIME :14:42:00 15:13:00 31 (min) Purpose code: 3  
 LOG :1924.60 1926.50 1.90 Area code : 2  
 FDEPTH: 553 551 GearCond.code:  
 BDEPTH: 553 551 Validity code:  
 Towing dir: 350° Wire out:1400 m Speed: 30 kn\*10

Sorted: 21 Kg Total catch: 20.91 CATCH/HOUR: 40.47

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Schedophilus huttoni	11.09	6	27.40
Todarodes sagittatus	5.88	23	14.53
Centrolophus niger	5.32	10	13.15
Yarella blackfordi	4.39	387	10.85
Merluccius paradoxus, female	3.77	4	9.32
Neoharriotta pinnata	2.69	2	6.65
Bathylagus glacialis	2.54	101	6.28
Trachipterus jacksonensis	1.82	2	4.50
Hoplostethus cadenati	1.39	114	3.43
Todaropsis eblanae	0.58	23	1.43
Lampadena sp.	0.19	27	0.47
Shrimps, small, non comm.	0.19	81	0.47
Scopelosaurus meadi	0.19	8	0.47
Nemichthys scolopaceus	0.17	23	0.42
MYCTOPHIDAE	0.15	21	0.37
MERLUCCIIDAE	0.04	2	0.10
Notacanthus sexspinis	0.04	2	0.10
Total	40.44		99.94

PROJECT STATION:1342  
 DATE: 4/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2137 Long E 1236  
 start stop duration  
 TIME :23:02:00 23:32:00 30 (min) Purpose code: 3  
 LOG :1956.00 1957.70 1.70 Area code : 2  
 FDEPTH: 486 470 GearCond.code:  
 BDEPTH: 486 470 Validity code:  
 Towing dir: \* Wire out:1450 m Speed: 30 kn\*10

Sorted: 287 Kg Total catch: 416.26 CATCH/HOUR: 832.52

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	492.40	632	59.15
Trachyrincus scabrus	170.40		20.47
Schedophilus huttoni	22.24	32	2.67
Nezumia sp.	21.44	480	2.58
Yarella blackfordi	20.16	3504	2.42
Lophius vaillanti	17.60	2	2.11
Raja confundens	16.00	64	1.92
Merluccius paradoxus, male	12.50	18	1.50
Deepwater fish mixture	12.48		1.50
Lophius vomerinus	10.80	6	1.30
Helicolenus dactylopterus	9.44	80	1.13
Todarodes sagittatus	8.96	32	1.08
Epigonus telescopus	6.24	64	0.75
Hoplostethus cadenati	4.00	528	0.48
Lithodes ferox	2.74	2	0.33
S H R I M P S	1.76	144	0.21
Bassanago albescens	1.60	64	0.19
Galeus polli	1.28	16	0.15
Ebinania costaecanarie	0.48	16	0.06
Total	832.52		100.00



PROJECT STATION:1343  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2134 Long E 1242  
 start stop duration  
 TIME :04:48:00 05:18:00 30 (min) Purpose code: 3  
 LOG :1968.00 1969.60 1.60 Area code : 2  
 FDEPTH: 361 360 GearCond.code:  
 BDEPTH: 361 360 Validity code:  
 Towing dir: 340° Wire out:1050 m Speed: 32 kn\*10  
 Sorted: 276 Kg Total catch: 432.68 CATCH/HOUR: 865.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	454.70	1238	52.54	4632
Helicolenus dactylopterus	75.40	1040	8.71	
Nezumia sp.	62.40	2652	7.21	
Todarodes sagittatus	55.64	104	6.43	
Ruvettus pretiosus	46.80	52	5.41	
Galeus polli	41.08	624	4.75	
Lophius vomerinus	39.20	22	4.53	4633
Merluccius paradoxus, male	32.10	72	3.71	4631
Chlorophthalmus punctatus	17.16	520	1.98	
Coelorinchus coelorhinc. polli	12.96	212	1.50	
Lophius vaillanti	9.80	4	1.13	4634
Coelorinchus fasciatus	6.24	260	0.72	
Epigonus denticulatus	4.68	312	0.54	
Ebinania costaecanarie	4.68	104	0.54	
Synagrops microlepis	3.12	156	0.36	
Merluccius capensis, female	3.00	2	0.35	4635
Total	868.96		100.41	

PROJECT STATION:1344  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2132 Long E 1250  
 start stop duration  
 TIME :07:02:00 07:32:00 30 (min) Purpose code: 3  
 LOG :1979.00 1980.70 1.70 Area code : 2  
 FDEPTH: 311 309 GearCond.code:  
 BDEPTH: 311 309 Validity code:  
 Towing dir: 10° Wire out: 900 m Speed: 34 kn\*10  
 Sorted: 109 Kg Total catch: 275.11 CATCH/HOUR: 550.22

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	178.66	684	32.47	4639
Merluccius capensis, male	105.76	450	19.22	4638
Merluccius capensis, female	99.40	70	18.07	4637
Chlorophthalmus punctatus	48.78	2080	8.87	
Merluccius capensis, juveniles	40.68	3834	7.39	4640
Coelorinchus fasciatus	23.22	504	4.22	
Todarodes sagittatus	10.32	24	1.88	
Galeus polli	7.56	118	1.37	
Dentex macrophthalmus	7.38	28	1.34	4642
Merluccius capensis, male	6.20	6	1.13	4636
Lophius vomerinus	6.14	18	1.12	4643
C R A B S	4.60	334	0.84	
Helicolenus dactylopterus	3.88	190	0.71	
S H R I M P S	2.26	702	0.41	
Coelorinchus coelorhinc. polli	1.98	72	0.36	
Synagrops microlepis	1.62	136	0.29	
Austroglossus microlepis	1.06	2	0.19	4641
MYCTOPHIDAE	0.72	136	0.13	
Total	550.22		100.01	

PROJECT STATION:1345  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2130 Long E 1256  
 start stop duration  
 TIME :08:57:00 09:27:00 30 (min) Purpose code: 3  
 LOG :1987.70 1989.30 1.60 Area code : 2  
 FDEPTH: 283 282 GearCond.code:  
 BDEPTH: 283 282 Validity code:  
 Towing dir: 360° Wire out: 840 m Speed: 32 kn\*10  
 Sorted: 88 Kg Total catch: 709.68 CATCH/HOUR: 1419.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	698.10	5122	49.18	4648
Merluccius capensis, male	431.60	3926	30.41	4649
Merluccius capensis, female	59.90	48	4.22	4644
Sufflogobius bibarbatu	50.44	3	3.55	
Pterothrissus bellocci	42.38	1430	2.99	
Coelorinchus fasciatus	39.78	910	2.80	
Merluccius capensis	33.02	2990	2.33	4650
Galeus polli	20.54	364	1.45	
Dentex macrophthalmus	12.74	52	0.90	
C R A B S	10.92	1066	0.77	
Austroglossus microlepis	6.50	18	0.46	4646
Lophius vomerinus	3.32	6	0.23	4647
Merluccius capensis, male	3.10	4	0.22	4645
Todaropsis eblanae	2.34	52	0.16	
S H R I M P S	2.08	546	0.15	
Chlorophthalmus atlanticus	1.56	26	0.11	
Synagrops microlepis	1.04	104	0.07	
Total	1419.36		100.00	

PROJECT STATION:1346  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2129 Long E 1302  
 start stop duration  
 TIME :11:00:00 11:25:00 25 (min) Purpose code: 3  
 LOG :1998.30 1999.20 1.40 Area code : 2  
 FDEPTH: 223 219 GearCond.code:  
 BDEPTH: 223 219 Validity code:  
 Towing dir: \* Wire out: 700 m Speed: 30 kn\*10  
 Sorted: 27 Kg Total catch: 323.04 CATCH/HOUR: 775.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	316.80	3859	40.86	4653
Merluccius capensis, male	316.80	2938	40.86	4652
Merluccius capensis, female	128.16	835	16.53	4651
Merluccius capensis	6.62	490	0.85	4654
Sufflogobius bibarbatu	4.03	864	0.52	
C R A B S	2.88	346	0.37	
Total	775.29		99.99	

PROJECT STATION:1347  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2126 Long E 1311  
 start stop duration  
 TIME :12:56:00 13:02:00 6 (min) Purpose code: 3  
 LOG :2009.00 2009.20 0.20 Area code : 2  
 FDEPTH: 146 146 GearCond.code: 9  
 BDEPTH: 146 146 Validity code: 1  
 Towing dir: \* Wire out: 500 m Speed: 30 kn\*10  
 Sorted: 168 Kg Total catch: 1570.24 CATCH/HOUR: 15702.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	11517.90	158140	73.35	4657
Merluccius capensis, female	1833.30	13620	11.68	4655
Merluccius capensis, male	1086.90	11760	6.92	4656
Pterothrissus bellocci	1077.60		6.86	
Merluccius capensis	97.00	6720	0.62	4658
Sufflogobius bibarbatu	32.70	5690	0.21	
Chelidonicichthys capensis	27.10	190	0.17	
Synagrops microlepis	22.40	3640	0.14	
Lepidopus caudatus	7.50	80	0.05	
Total	15702.40		100.00	

PROJECT STATION:1348  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2102 Long E 1303  
 start stop duration  
 TIME :17:27:00 17:49:00 22 (min) Purpose code: 3  
 LOG :2049.50 2050.70 1.20 Area code : 2  
 FDEPTH: 134 140 GearCond.code:  
 BDEPTH: 134 140 Validity code:  
 Towing dir: 330° Wire out: 400 m Speed: 30 kn\*10  
 Sorted: 63 Kg Total catch: 3002.95 CATCH/HOUR: 8189.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	3478.31	57259	42.47	4662
Merluccius capensis, female	3037.85	32905	37.09	4660
Merluccius capensis, male	1599.90	19563	19.54	4659
Merluccius capensis, juveniles	59.59	3758	0.73	4661
Synagrops microlepis	7.77	649	0.09	
Sufflogobius bibarbatu	6.49	1685	0.08	
Total	8189.91		100.00	

PROJECT STATION:1349  
 DATE: 5/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2057 Long E 1221  
 start stop duration  
 TIME :22:46:00 22:50:00 4 (min) Purpose code: 3  
 LOG :2094.60 2095.10 0.50 Area code : 3  
 FDEPTH: 547 546 GearCond.code: 9  
 BDEPTH: 547 546 Validity code: 9  
 Towing dir: 140° Wire out:1650 m Speed: 30 kn\*10  
 Sorted: 239 Kg Total catch: 357.72 CATCH/HOUR: 5365.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	3087.75	3810	57.55	4663
Trachyrincus scabrus	1118.25		20.84	
Deania calcea	548.10	210	10.21	
Nezumia sp.	103.05	2100	1.92	
Schedophilus huttoni	94.50	105	1.76	
Lophius vomerinus	80.25	45	1.50	4665
Todarodes sagittatus	75.60	210	1.41	
Helicolenus dactylopterus	57.75	210	1.08	
Merluccius paradoxus, male	57.75	90	1.08	4664
Lophius vaillanti	54.75	15	1.02	4666
Hoplostethus cadenati	34.65	1470	0.65	
Lamprogrammum exutus	14.70	210	0.27	
Raja confundens	12.60	105	0.23	
Yarellia blackfordi	9.45	630	0.18	
Ebinania costaecanarie	9.45	105	0.18	
Selachophidium guentheri	5.25	105	0.10	
Alepocephalus sp.	2.10	315	0.04	
Total	5365.95		100.02	

PROJECT STATION:1350  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2107 Long E 1223  
 start stop duration  
 TIME :01:23:00 01:50:00 27 (min) Purpose code: 3  
 LOG :2107.00 2108.30 1.30 Area code : 3  
 FDEPTH: 602 601 GearCond.code:  
 BDEPTH: 602 601 Validity code:  
 Towing dir: 140° Wire out:1800 m Speed: 30 kn\*10  
 Sorted: 218 Kg Total catch: 441.95 CATCH/HOUR: 982.11

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	394.56	438	40.17	4667
Trachyrincus scabrus	226.11	807	23.02	
Deania profundorum	161.82	73	16.48	
Raja confundens	59.89	49	6.10	
Hoplostethus cadenati	42.78	758	4.36	
Nezumia sp.	35.69	978	3.63	
Lophius vomerinus	16.78	7	1.71	4669
Todarodes sagittatus	14.51	36	1.48	
Alepocephalus sp.	10.76	269	1.10	
Ebinania costaecanarie	5.13	24	0.52	
Merluccius paradoxus, male	5.11	7	0.52	4668
Lamprogrammum exutus	3.18	24	0.32	
Galeus polli	2.93	24	0.30	
Chaceon maritae	2.87	2	0.29	
Total	982.12		100.00	



PROJECT STATION:1351  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2111 Long E 1229  
 start stop duration  
 TIME :03:36:00 04:00:00 24 (min) Purpose code: 3  
 LOG :2115.90 2116.90 1.00 Area code : 2  
 FDEPTH: 508 501 GearCond.code: 9  
 BDEPTH: 508 501 Validity code: 1  
 Towing dir: 145° Wire out:1500 m Speed: 30 kn\*10

Sorted: 225 Kg Total catch: 539.64 CATCH/HOUR: 1349.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	493.50	2975	36.58	
Merluccius paradoxus, female	430.00	618	31.87	4671
Nezumia sp.	107.10	1855	7.94	
Todarodes sagittatus	85.75	245	6.36	
Lophius vomerinus	57.00	23	4.23	4672
Helicolenus dactylopterus	47.60	315	3.53	
Lithodes ferox	36.40	70	2.70	
Hoplostethus cadenati	33.25	1155	2.46	
Yarella blackfordi	13.65	1120	1.01	
Merluccius paradoxus, male	12.75	20	0.95	4670
MYCTOPHIDAE	11.90	6405	0.88	
Raja confundens	9.80	105	0.73	
Selachophidium guentheri	3.50	70	0.26	
Notacanthus sexspinis	2.80	70	0.21	
Chaceon maritae	2.70	3	0.20	
Bassanago albescens	1.40	35	0.10	
Total	1349.10		100.01	

PROJECT STATION:1352  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2108 Long E 1238  
 start stop duration  
 TIME :05:53:00 06:23:00 30 (min) Purpose code: 3  
 LOG :2128.10 2129.60 1.50 Area code : 2  
 FDEPTH: 373 374 GearCond.code: 2  
 BDEPTH: 373 374 Validity code: 2  
 Towing dir: 90° Wire out:1050 m Speed: 30 kn\*10

Sorted: 43 Kg Total catch: 186.43 CATCH/HOUR: 372.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	117.20	1340	31.43	
Hexanchus griseus	81.00	20	21.72	
Merluccius paradoxus, female	44.90	122	12.04	4674
Guentherus altivela	42.80	20	11.48	
Galeus polli	25.20	320	6.76	
Nezumia sp.	18.80	760	5.04	
Todarodes sagittatus	18.60	80	4.99	
Lophius vomerinus	5.50	14	1.48	4675
C R A B S	4.40	60	1.18	
Merluccius paradoxus, male	2.86	8	0.77	4673
Cruriraja paromaculata	2.80	20	0.75	
Selachophidium guentheri	2.40	160	0.64	
Coelorinchus coelorhinc. polli	2.20	40	0.59	
Shrimps, small, non comm.	2.20	800	0.59	
Chlorophthalmus punctatus	1.00	40	0.27	
Epigonus denticulatus	1.00	120	0.27	
Total	372.86		100.00	

PROJECT STATION:1353  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2106 Long E 1247  
 start stop duration  
 TIME :10:05:00 10:35:00 30 (min) Purpose code: 3  
 LOG :2140.90 2142.50 1.60 Area code : 2  
 FDEPTH: 329 331 GearCond.code: 2  
 BDEPTH: 329 331 Validity code: 2  
 Towing dir: 340° Wire out: 950 m Speed: 30 kn\*10

Sorted: 247 Kg Total catch: 421.13 CATCH/HOUR: 842.26

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	327.20	218	38.85	4676
Merluccius capensis, female	181.00	540	21.49	4680
Merluccius capensis, male	95.50	290	11.34	4681
Lophius vomerinus	62.90	132	7.47	4678
Chlorophthalmus atlanticus	36.90	10	4.38	
Centrolophus niger	29.60	10	3.51	
Neoharriotta pinnata	27.80	10	3.30	
Helicolenus dactylopterus	12.70	320	1.51	
Merluccius paradoxus, female	11.30	40	1.34	4682
Merluccius capensis, male	10.40	8	1.23	4677
Synagrops microlepis	9.80	680	1.16	
Todarodes sagittatus	7.76	20	0.92	
Lophius vaillanti	7.70	2	0.91	4679
Dentex macrophthalmus	5.90	10	0.70	
Coelorinchus fasciatus	5.10	90	0.61	
Merluccius capensis	3.10	250	0.37	4683
Trigla lyra	2.00	40	0.24	
MYCTOPHIDAE	1.60	380	0.19	
Coelorinchus coelorhinc. polli	1.30	40	0.15	
S H R I M P S	1.30	320	0.15	
C R A B S	0.90	70	0.11	
Nezumia sp.	0.50	40	0.06	
Total	842.26		99.99	

PROJECT STATION:1354  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2102 Long E 1253  
 start stop duration  
 TIME :12:12:00 12:34:00 22 (min) Purpose code: 3  
 LOG :2151.00 2152.60 1.60 Area code : 2  
 FDEPTH: 275 268 GearCond.code: 9  
 BDEPTH: 275 268 Validity code: 1  
 Towing dir: \* Wire out: 800 m Speed: 30 kn\*10

Sorted: 13 Kg Total catch: 13.04 CATCH/HOUR: 35.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	21.79	128	61.28	4684
Merluccius capensis, male	9.25	60	26.01	4685
Merluccius capensis	1.53	120	4.30	4686
C R A B S	0.98	76	2.76	
Sufflogobius bibarbatatus	0.71	185	2.00	
Todarodes sagittatus	0.60	3	1.69	
Hyperolyphe moselii	0.52	3	1.46	
Todaropsis eblanae	0.19	5	0.53	
Total	35.57		100.03	

PROJECT STATION:1355  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2100 Long E 1310  
 start stop duration  
 TIME :14:56:00 15:00:00 4 (min) Purpose code: 3  
 LOG :2170.30 2170.60 0.30 Area code : 2  
 FDEPTH: 120 120 GearCond.code: 9  
 BDEPTH: 120 120 Validity code: 9  
 Towing dir: \* Wire out: 360 m Speed: 30 kn\*10

Sorted: 30 Kg Total catch: 30.13 CATCH/HOUR: 451.95

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	266.25	2850	58.91	4687
Merluccius capensis, male	157.50	1965	34.85	4688
Sufflogobius bibarbatatus	16.50	3045	3.65	
Merluccius capensis, juveniles	11.40	675	2.52	4690
Trachurus capensis, juvenile	0.30	120	0.07	4689
Total	451.95		100.00	

PROJECT STATION:1356  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2054 Long E 1309  
 start stop duration  
 TIME :15:57:00 16:27:00 30 (min) Purpose code: 3  
 LOG :2176.60 2178.30 1.70 Area code : 2  
 FDEPTH: 120 121 GearCond.code: 2  
 BDEPTH: 120 121 Validity code: 2  
 Towing dir: 344° Wire out: 360 m Speed: 33 kn\*10

Sorted: 9 Kg Total catch: 9.09 CATCH/HOUR: 18.18

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis, juvenile	15.16	690	83.39	4691
Sufflogobius bibarbatatus	2.28	394	12.54	
Merluccius capensis, juveniles	0.74	46	4.07	4692
Total	18.18		100.00	

PROJECT STATION:1357  
 DATE: 6/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2048 Long E 1302  
 start stop duration  
 TIME :17:37:00 18:07:00 30 (min) Purpose code: 3  
 LOG :2186.60 2188.30 1.70 Area code : 2  
 FDEPTH: 135 139 GearCond.code: 2  
 BDEPTH: 135 139 Validity code: 2  
 Towing dir: 330° Wire out: 400 m Speed: 33 kn\*10

Sorted: 6 Kg Total catch: 20.60 CATCH/HOUR: 41.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	35.90	4920	87.14	
Merluccius capensis	2.42	2	5.87	4694
Merluccius capensis, juveniles	2.32	154	5.63	4693
Perulibatrachus rosignoli	0.56	2	1.36	
Total	41.20		100.00	

PROJECT STATION:1358  
 DATE: 7/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2036 Long E 1301  
 start stop duration  
 TIME :04:43:00 04:50:00 7 (min) Purpose code: 3  
 LOG :2202.70 2203.00 0.30 Area code : 2  
 FDEPTH: 123 124 GearCond.code: 2  
 BDEPTH: 123 124 Validity code: 2  
 Towing dir: 350° Wire out: 400 m Speed: 30 kn\*10

Sorted: 10 Kg Total catch: 9.68 CATCH/HOUR: 82.97

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	60.43	6326	72.83	
Trachurus capensis, juvenile	20.23	446	24.38	4695
Merluccius capensis, juveniles	2.31	146	2.78	4695
Total	82.97		99.99	

PROJECT STATION:1359  
 DATE: 7/ 2/96 GEAR TYPE: BT No:7 POSITION:Lat S 2039 Long E 1248  
 start stop duration  
 TIME :06:54:00 07:24:00 30 (min) Purpose code: 3  
 LOG :2217.80 2219.50 1.70 Area code : 2  
 FDEPTH: 194 199 GearCond.code: 2  
 BDEPTH: 194 199 Validity code: 2  
 Towing dir: 160° Wire out: 600 m Speed: 34 kn\*10

Sorted: 71 Kg Total catch: 232.99 CATCH/HOUR: 465.98

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	342.30	5810	73.46	4700
Merluccius capensis, male	45.20	228	9.70	4699
Merluccius capensis, female	43.30	168	9.29	4698
Sufflogobius bibarbatatus	34.86	5628	7.48	
Merluccius capensis, juveniles	0.32	22	0.07	4697
Total	465.98		100.00	



PROJECT STATION:1360  
 DATE: 7/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2041 Long E 1239  
 start stop duration Purpose code: 3  
 TIME :09:43:00 10:13:00 30 (min) Area code : 3  
 LOG :2231.60 2233.20 1.60 GearCond.code:  
 FDEPTH: 301 296 Validity code:  
 BDEPTH: 301 296  
 Towing dir: 345° Wire out: 900 m Speed: 30 kn\*10

Sorted: 249 Kg Total catch: 592.50 CATCH/HOUR: 1185.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Pterothrissus bellocci	382.86		32.31	
Merluccius capensis, female	261.10	716	22.03	4704
Merluccius capensis, male	210.84	558	17.79	4705
Merluccius capensis, female	180.60	142	15.24	4701
Dentex macrophthalmus	70.74	244	5.97	4706
Todarodes sagittatus	15.20	28	1.28	
Merluccius capensis, male	14.00	16	1.18	4702
Synagrops microlepis	13.78	1244	1.16	
Neoharriotta pinnata	12.36	10	1.04	
Austroglossus microlepis	10.20	28	0.86	4703
Coelorinchus fasciatus	4.28	66	0.36	
Chlorophthalmus atlanticus	2.94	124	0.25	
Trigla lyra	2.76	20	0.23	
Galeus polli	1.42	38	0.12	
Todaropsis eblanae	0.58	20	0.05	
Sufflogobius bibarbatatus	0.58	48	0.05	
Shrimps, small, non comm.	0.48	152	0.04	
Merluccius capensis	0.28	22	0.02	4707
<b>Total</b>	<b>1185.00</b>		<b>99.98</b>	

PROJECT STATION:1363  
 DATE: 7/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2046 Long E 1218  
 start stop duration Purpose code: 3  
 TIME :16:22:00 16:52:00 30 (min) Area code : 3  
 LOG :2266.90 2268.60 1.70 GearCond.code:  
 FDEPTH: 440 433 Validity code:  
 BDEPTH: 440 433  
 Towing dir: 330° Wire out:1250 m Speed: 30 kn\*10

Sorted: 169 Kg Total catch: 319.83 CATCH/HOUR: 639.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	283.30	700	44.29	4721
Helicolenus dactylopterus	143.00	1280	22.36	
Trachyrincus scabrus	91.60	480	14.32	
Raja doutrei	27.60	20	4.31	
Shrimps, small, non comm.	26.00	18600	4.06	
Todarodes sagittatus	17.80	40	2.78	
Merluccius paradoxus, male	16.50	42	2.58	4720
Nezumia sp.	9.80	260	1.53	
Hoplostethus cadenati	6.20	560	0.97	
Galeus polli	5.60	60	0.88	
Lophius vomerinus	3.66	2	0.57	4722
Yarrella blackfordi	2.00	220	0.31	
Malacocephalus laevis	2.00	20	0.31	
Ebinania costaecanarie	1.60	20	0.25	
Epigonus denticulatus	1.20	60	0.19	
Chlorophthalmus atlanticus	1.00	40	0.16	
Notacanthus sexspinis	0.60	40	0.09	
Selachophidium guentheri	0.20	20	0.03	
<b>Total</b>	<b>639.66</b>		<b>99.99</b>	

PROJECT STATION:1364  
 DATE: 7/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2053 Long E 1220  
 start stop duration Purpose code: 3  
 TIME :18:50:00 19:30:00 40 (min) Area code : 3  
 LOG :2279.60 2281.80 2.20 GearCond.code:  
 FDEPTH: 520 550 Validity code:  
 BDEPTH: 520 550  
 Towing dir: 320° Wire out:1400 m Speed: 33 kn\*10

Sorted: 244 Kg Total catch: 507.00 CATCH/HOUR: 760.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	323.70	1346	42.56	
Merluccius paradoxus, female	294.08	359	38.67	4724
Hoplostethus cadenati	46.61	3042	6.13	
Hexanchus griseus	27.53	2	3.62	
Yarrella blackfordi	14.82	1404	1.95	
Helicolenus dactylopterus	13.85	78	1.82	
Nezumia sp.	10.92	273	1.44	
Schedophilus huttoni	8.78	20	1.15	
Merluccius paradoxus, male	8.10	12	1.07	4723
Lophius vomerinus	3.75	2	0.49	4725
Notacanthus sexspinis	2.73	20	0.36	
Selachophidium guentheri	2.54	59	0.33	
Shrimps, small, non comm.	1.56	1170	0.21	
Lamprogrammus exutus	0.78	39	0.10	
Raja leoparden	0.39	20	0.05	
Alepocephalus sp.	0.39	20	0.05	
<b>Total</b>	<b>760.53</b>		<b>100.00</b>	

PROJECT STATION:1365  
 DATE: 7/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2045 Long E 1209  
 start stop duration Purpose code: 3  
 TIME :22:09:00 22:46:00 37 (min) Area code : 3  
 LOG :2298.20 2300.00 1.80 GearCond.code:  
 FDEPTH: 595 594 Validity code:  
 BDEPTH: 595 594  
 Towing dir: 310° Wire out:1550 m Speed: 30 kn\*10

Sorted: 191 Kg Total catch: 332.96 CATCH/HOUR: 539.94

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	260.51	308	48.25	4726
Trachyrincus scabrus	108.21	358	20.04	
Hoplostethus cadenati	82.85		15.34	
Nezumia sp.	31.70	965	5.87	
Todarodes sagittatus	17.27	31	3.20	
Yarrella blackfordi	15.58	937	2.89	
Deania profundorum	9.10	28	1.69	
Lamprogrammus exutus	8.14	110	1.51	
Alepocephalus sp.	2.21	138	0.41	
Merluccius paradoxus, male	1.46	2	0.27	4727
Selachophidium guentheri	1.38	28	0.26	
Notacanthus sexspinis	0.97	15	0.18	
MELANOCETIDAE	0.28	15	0.05	
POLYCHAETIDAE	0.28	28	0.05	
<b>Total</b>	<b>539.94</b>		<b>100.01</b>	

PROJECT STATION:1362  
 DATE: 7/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2044 Long E 1228  
 start stop duration Purpose code: 3  
 TIME :14:02:00 14:32:00 30 (min) Area code : 3  
 LOG :2254.00 2255.40 1.40 GearCond.code:  
 FDEPTH: 328 323 Validity code:  
 BDEPTH: 328 323  
 Towing dir: \* Wire out:1000 m Speed: 30 kn\*10

Sorted: 707 Kg Total catch: 711.48 CATCH/HOUR: 1422.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	1040.80	936	73.14	4715
Merluccius paradoxus, female	206.90	728	14.54	4717
Merluccius capensis, male	78.80	98	5.54	4714
Helicolenus dactylopterus	22.36	358	1.57	
Todarodes sagittatus	15.18	50	1.07	
Genypterus capensis	14.82	18	1.04	4719
Merluccius paradoxus, male	10.22	44	0.72	4716
Trachurus capensis	8.96	22	0.63	4718
Schedophilus huttoni	7.02	2	0.49	
Lepidopus caudatus	3.94	4	0.28	
Chlorophthalmus atlanticus	2.92	96	0.21	
Centrolophus niger	2.70	2	0.19	
Raja straeleni	1.74	2	0.12	
Squalus megalops	1.64	2	0.12	
Coelorinchus fasciatus	1.60	16	0.11	
Nezumia sp.	1.32	42	0.09	
Galeus polli	0.98	14	0.07	
Malacocephalus laevis	0.64	10	0.04	
MYCTOPHIDAE	0.34	112	0.02	
Bassanago albescens	0.08	2	0.01	
<b>Total</b>	<b>1422.96</b>		<b>100.00</b>	

PROJECT STATION:1366  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2037 Long E 1201  
 start stop duration Purpose code: 3  
 TIME :00:47:00 01:14:00 27 (min) Area code : 3  
 LOG :2310.00 2311.60 1.60 GearCond.code:  
 FDEPTH: 652 658 Validity code:  
 BDEPTH: 652 658  
 Towing dir: 331° Wire out:1650 m Speed: 30 kn\*10

Sorted: 36 Kg Total catch: 47.06 CATCH/HOUR: 104.58

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	27.11	29	25.92	4728
Deepwater fish mixture	16.13		15.42	
Deania calcea	12.78	2	12.22	
Hoplostethus cadenati	11.60	311	11.09	
OPISTHOTEUTHIDAE	5.84	2	5.58	
Schedophilus huttoni	4.93	9	4.71	
Todarodes sagittatus	4.80	9	4.59	
Yarrella blackfordi	4.53	231	4.33	
Nezumia sp.	4.22	120	4.04	
ALEPOCEPHALIDAE	3.11	262	2.97	
GONOSTOMATIDAE	2.22	111	2.12	
Trachipterus jacksonensis	1.67	2	1.60	
Thysanoteuthis rhombus	1.40	22	1.34	
DICERATIIDAE	1.13	7	1.08	
Paradiplosinus gracilis	1.04	16	0.99	
S H R I M P S	1.02	169	0.98	
MERLUCCIIDAE	1.02	27	0.98	
<b>Total</b>	<b>104.55</b>		<b>99.96</b>	



PROJECT STATION:1367  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2033  
 start stop duration Long E 1213  
 TIME :03:33:00 04:03:00 30 (min) Purpose code: 3  
 LOG :2326.10 2327.80 1.70 Area code : 3  
 FDEPTH: 341 325 GearCond.code:  
 BDEPTH: 341 325 Validity code:  
 Towing dir: 90° Wire out:1000 m Speed: 34 kn\*10

Sorted: 38 Kg Total catch: 89.55 CATCH/HOUR: 179.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Pterothrissus bellocci	102.56	978	57.26	
Neoharriotta pinnata	27.52	14	15.37	
Merluccius capensis, female	16.40	10	9.16	4730
Austroglossus microlepis	13.82	34	7.72	4731
Yarella blackfordi	6.44	428	3.60	
Aristeus varidens	4.20	1442	2.35	
Merluccius capensis, male	2.96	4	1.65	4729
Galeus polli	1.76	36	0.98	
Chlorophthalmus atlanticus	1.06	36	0.59	
Coelorinchus fasciatus	0.78	22	0.44	
MYCTOPHIDAE	0.70	302	0.39	
Helicolenus dactylopterus	0.50	36	0.28	
Lophius vomerinus	0.40	8	0.22	4732
Total	179.10		100.01	

PROJECT STATION:1368  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2030  
 start stop duration Long E 1220  
 TIME :05:42:00 06:12:00 30 (min) Purpose code: 3  
 LOG :2337.40 2339.20 1.50 Area code : 3  
 FDEPTH: 307 304 GearCond.code:  
 BDEPTH: 307 304 Validity code:  
 Towing dir: 10° Wire out: 900 m Speed: 30 kn\*10

Sorted: 74 Kg Total catch: 73.48 CATCH/HOUR: 146.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	76.00	172	51.71	4733
Merluccius capensis, female	64.30	110	43.75	4734
Sufflogobius bibarbatatus	6.56	1066	4.46	
Merluccius capensis, juveniles	0.10	10	0.07	4735
Total	146.96		99.99	

PROJECT STATION:1369  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2029  
 start stop duration Long E 1228  
 TIME :08:11:00 08:41:00 30 (min) Purpose code: 3  
 LOG :2348.40 2349.90 1.50 Area code : 3  
 FDEPTH: 293 287 GearCond.code:  
 BDEPTH: 293 287 Validity code:  
 Towing dir: 60° Wire out: 900 m Speed: 30 kn\*10

Sorted: 22 Kg Total catch: 21.52 CATCH/HOUR: 43.04

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	21.20	54	49.26	4737
Merluccius capensis, male	19.80	62	46.00	4736
Sufflogobius bibarbatatus	1.96	336	4.55	
Merluccius capensis, juveniles	0.08	6	0.19	4738
Total	43.04		100.00	

PROJECT STATION:1370  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2025  
 start stop duration Long E 1235  
 TIME :09:59:00 10:05:00 6 (min) Purpose code: 3  
 LOG :2356.30 2356.50 0.20 Area code : 3  
 FDEPTH: 254 244 GearCond.code: 9  
 BDEPTH: 254 244 Validity code: 1  
 Towing dir: 50° Wire out: 750 m Speed: 30 kn\*10

Sorted: 5 Kg Total catch: 4.79 CATCH/HOUR: 47.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, male	23.30	110	48.64	4740
Merluccius capensis, female	18.40	110	38.41	4739
Merluccius capensis	3.10	170	6.47	4741
Sufflogobius bibarbatatus	2.10	240	4.38	
Trachurus capensis	1.00	50	2.09	4742
Total	47.90		99.99	

PROJECT STATION:1371  
 DATE: 8/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2019  
 start stop duration Long E 1255  
 TIME :13:05:00 13:26:00 21 (min) Purpose code: 3  
 LOG :2379.50 2380.50 1.00 Area code : 3  
 FDEPTH: 122 118 GearCond.code:  
 BDEPTH: 122 118 Validity code:  
 Towing dir: 250° Wire out: 380 m Speed: 30 kn\*10

Sorted: Kg Total catch: 0.23 CATCH/HOUR: 0.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis, juvenile	0.37	83	56.06	4743
Sufflogobius bibarbatatus	0.29	31	43.94	
Total	0.66		100.00	

PROJECT STATION:1372  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2002  
 start stop duration Long E 1229  
 TIME :04:53:00 04:57:00 4 (min) Purpose code: 3  
 LOG :2439.90 2440.10 0.20 Area code : 3  
 FDEPTH: 159 160 GearCond.code:  
 BDEPTH: 159 160 Validity code: 4  
 Towing dir: 168° Wire out: 480 m Speed: 30 kn\*10

Sorted: 6 Kg Total catch: 5.69 CATCH/HOUR: 85.35

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	49.05	405	57.47	4745
Merluccius capensis, male	35.25	345	41.30	4744
Merluccius capensis, juveniles	1.05	45	1.23	4746
Total	85.35		100.00	

PROJECT STATION:1373  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2006  
 start stop duration Long E 1222  
 TIME :06:28:00 06:32:00 4 (min) Purpose code: 3  
 LOG :2248.70 2249.00 0.30 Area code : 3  
 FDEPTH: 234 235 GearCond.code:  
 BDEPTH: 234 235 Validity code: 4  
 Towing dir: 250° Wire out: 750 m Speed: 30 kn\*10

Sorted: 176 Kg Total catch: 576.11 CATCH/HOUR: 8641.65

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalmus	4860.00	26700	56.24	4748
Trachurus capensis	1725.00	22500	19.96	4749
Merluccius capensis, female	1148.70	3915	13.29	4747
Merluccius capensis, male	815.25	2640	9.43	4746
Todarodes sagittatus	90.00	150	1.04	
Merluccius capensis, juveniles	2.70	180	0.03	4750
Total	8641.65		99.99	

PROJECT STATION:1374  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2007  
 start stop duration Long E 1221  
 TIME :07:19:00 07:34:00 15 (min) Purpose code: 3  
 LOG :2451.40 2452.30 0.90 Area code : 3  
 FDEPTH: 239 230 GearCond.code:  
 BDEPTH: 239 230 Validity code:  
 Towing dir: 76° Wire out: 750 m Speed: 34 kn\*10

Sorted: 188 Kg Total catch: 1811.50 CATCH/HOUR: 7246.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	3591.00	42524	49.56	4757
Dentex macrophthalmus	2490.92	14252	34.38	4754
Merluccius capensis, female	426.00	480	5.88	4752
Merluccius capensis, female	410.40	1712	5.66	4756
Merluccius capensis, male	191.52	912	2.64	4755
Merluccius capensis, male	89.40	132	1.23	4751
Squalus megalops	36.48	116	0.50	
Merluccius capensis, juveniles	10.28	1028	0.14	4753
Total	7246.00		99.99	

PROJECT STATION:1375  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2009  
 start stop duration Long E 1214  
 TIME :09:12:00 09:42:00 30 (min) Purpose code: 3  
 LOG :2461.50 2463.10 1.60 Area code : 3  
 FDEPTH: 272 281 GearCond.code:  
 BDEPTH: 272 281 Validity code:  
 Towing dir: 235° Wire out: 810 m Speed: 32 kn\*10

Sorted: 98 Kg Total catch: 144.16 CATCH/HOUR: 288.32

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalmus	95.40	354	33.09	4762
Merluccius capensis, female	61.30	50	21.26	4758
Merluccius capensis, male	40.50	132	14.05	4761
Trachurus capensis	39.90	216	13.84	4763
Merluccius capensis, female	23.80	88	8.25	4760
Merluccius capensis, male	22.40	24	7.77	4759
Sufflogobius bibarbatatus	1.74	408	0.60	
Todarodes sagittatus	1.32	6	0.46	
Todaropsis eblanæ	1.02	24	0.35	
Squalus megalops	0.94	2	0.33	
Total	288.32		100.00	

PROJECT STATION:1376  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2013  
 start stop duration Long E 1204  
 TIME :11:15:00 11:46:00 31 (min) Purpose code: 3  
 LOG :2471.90 2473.40 1.50 Area code : 3  
 FDEPTH: 321 333 GearCond.code:  
 BDEPTH: 321 333 Validity code:  
 Towing dir: 245° Wire out: 950 m Speed: 30 kn\*10

Sorted: 177 Kg Total catch: 288.78 CATCH/HOUR: 558.93

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	207.68	488	37.16	4764
Dentex macrophthalmus	140.13	495	25.07	4769
Merluccius capensis, male	74.23	213	13.28	4765
Neoharriotta pinnata	58.84	31	10.53	
Trachurus capensis	30.19	139	5.40	4768
Lophius vomerinus	19.45	14	3.48	4767
Austroglossus microlepis	9.29	19	1.66	4766
Pterothrissus bellocci	6.19	232	1.11	
Merluccius capensis	5.57	372	1.00	4770
Bathynectes piperitus	3.25	124	0.58	
Taractes sp.	2.25	2	0.40	
Synagrops microlepis	0.93	77	0.17	
S H R I M P S	0.93	124	0.17	
Total	558.93		100.01	



PROJECT STATION:1377  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2015 Long E 1156  
 start stop duration  
 TIME :13:41:00 14:11:00 30 (min) Purpose code: 3  
 LOG :2483.00 2484.70 1.70 Area code : 3  
 FDEPTH: 443 425 GearCond.code:  
 BDEPTH: 443 425 Validity code:  
 Towing dir: 355° Wire out:1380 m Speed: 30 kn\*10  
 Sorted: 153 Kg Total catch: 336.88 CATCH/HOUR: 673.76

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	177.60	400	26.36	4771
Trachyrincus scabrus	174.40		25.88	
Shrimps, small, non comm.	60.16		8.93	
Helicolenus dactylopterus	48.00	4490	7.12	
Nezumia sp.	41.60		6.17	
Schedophilus huttoni	34.40	16	5.11	
Lophius vomerinus	27.30	22	4.05	4774
Epigonus denticulatus	17.92	928	2.66	
Lophius vaillanti	12.80	2	1.90	4775
Todarodes sagittatus	12.12	26	1.80	
Ebinania costaecanarie	11.68	80	1.73	
Galeus polli	8.80	128	1.31	
Merluccius paradoxus, male	8.60	20	1.28	4772
Hoplostethus cadenati	8.32	544	1.23	
Centrophorus sp.	7.52	2	1.12	
Synagrops microlepis	7.20	416	1.07	
Heptranchias perlo	3.66	2	0.54	
Chlorophthalmus atlanticus	3.04	80	0.45	
Squalus megalops	2.68	2	0.40	
Merluccius capensis, female	2.12	2	0.31	4773
Solenocera africana	2.08	80	0.31	
NOTOSUIDAE	0.64	16	0.09	
Notacanthus sexspinis	0.64	16	0.09	
Selachophidium guentheri	0.48	16	0.07	
Total	673.76		99.98	

PROJECT STATION:1380  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1955 Long E 1138  
 start stop duration  
 TIME :22:41:00 23:14:00 33 (min) Purpose code: 3  
 LOG :2521.30 2523.10 1.80 Area code : 3  
 FDEPTH: 555 562 GearCond.code:  
 BDEPTH: 555 562 Validity code:  
 Towing dir: 335° Wire out:1400 m Speed: 30 kn\*10  
 Sorted: 14 Kg Total catch: 48.77 CATCH/HOUR: 88.67

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Yarrella blackfordi	35.75		40.32	
Hoplostethus cadenati	16.11	1138	18.17	
Deania calcea	5.47	2	6.17	
Merluccius paradoxus, female	5.40	7	6.09	4780
ALEPOCEPHALIDAE	3.80	249	4.29	
GONOSTOMATIDAE	3.67	156	4.14	
Paradiplosinus gracilis	3.53	40	3.98	
OPHICHTHIDAE	3.27	65	3.69	
Nezumia sp.	2.75	144	3.10	
Lamprogrammus exutus	2.09	40	2.36	
Todarodes sagittatus	1.20	5	1.35	
Epigonus pandionis	1.05	25	1.18	
Thysanoteuthis rhombus	0.89	13	1.00	
Ebinania costaecanarie	0.89	25	1.00	
Tetragonurus atlanticus	0.75	4	0.85	
Trachipterus jacksonensis	0.58	2	0.65	
Notacanthus sexspinis	0.53	13	0.60	
Hyperoglyphe moselii	0.29	2	0.33	
SHASQBI	0.27	2	0.30	
Solenocera groenlandicus	0.18	4	0.20	
Macroparalepis macrogeneion	0.13	25	0.15	
CERATIIDAE	0.07	4	0.08	
Total	88.67		100.00	

PROJECT STATION:1378  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2008 Long E 1151  
 start stop duration  
 TIME :15:56:00 16:26:00 30 (min) Purpose code: 3  
 LOG :2493.60 2495.30 1.70 Area code : 3  
 FDEPTH: 477 477 GearCond.code:  
 BDEPTH: 477 477 Validity code:  
 Towing dir: 324° Wire out:1400 m Speed: 34 kn\*10  
 Sorted: 214 Kg Total catch: 537.48 CATCH/HOUR: 1074.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	383.60	2296	35.69	
Merluccius paradoxus, female	366.40	614	34.08	4777
Shrimps, small, non comm.	94.64	39452	8.80	
Hoplostethus cadenati	57.96	5824	5.39	
Nezumia sp.	52.08	2324	4.84	
Helicolenus dactylopterus	31.64	588	2.94	
Todarodes sagittatus	26.60	84	2.47	
Yarrella blackfordi	16.80	1988	1.56	
Merluccius paradoxus, male	10.80	20	1.00	4776
Epigonus denticulatus	10.36	504	0.96	
Aristeus varidens	8.68	1736	0.81	
Chlorophthalmus atlanticus	7.00	196	0.65	
Ebinania costaecanarie	3.64	56	0.34	
Lamprogrammus exutus	3.08	28	0.29	
Scopelosaurus meadi	0.84	28	0.08	
Bassanago albescens	0.84	28	0.08	
Total	1074.96		99.98	

PROJECT STATION:1381  
 DATE:10/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1951 Long E 1145  
 start stop duration  
 TIME :01:11:00 01:43:00 32 (min) Purpose code: 3  
 LOG :2534.60 2536.20 1.60 Area code : 3  
 FDEPTH: 418 416 GearCond.code:  
 BDEPTH: 418 416 Validity code:  
 Towing dir: \* Wire out:1200 m Speed: 30 kn\*10  
 Sorted: 184 Kg Total catch: 372.19 CATCH/HOUR: 697.86

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	274.41	778	39.32	4781
Trachyrincus scabrus	156.94		22.49	
Helicolenus dactylopterus	127.74	1603	18.30	
Centroscyllium crepidater	39.38	4	5.64	
Raja sp.	22.28	17	3.19	
Merluccius paradoxus, male	16.69	45	2.39	4782
Todarodes sagittatus	12.28	26	1.76	
Nezumia sp.	10.80	405	1.55	
Deania profundorum	9.11	17	1.31	
Galeus polli	8.27	84	1.19	
Hyperoglyphe moselii	7.76	17	1.11	
Coelorinchus fasciatus	4.39	101	0.63	
Merluccius capensis, female	2.64	2	0.38	4783
Solenocera africana	1.86	321	0.27	
Laemonea laureysi	1.69	17	0.24	
Selachophidium guentheri	1.01	34	0.14	
Lophius vomerinus	0.62	2	0.09	4784
Total	697.87		100.00	

PROJECT STATION:1379  
 DATE: 9/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 2002 Long E 1141  
 start stop duration  
 TIME :18:38:00 19:08:00 30 (min) Purpose code: 3  
 LOG :2506.50 2508.20 1.70 Area code : 3  
 FDEPTH: 589 589 GearCond.code:  
 BDEPTH: 589 589 Validity code:  
 Towing dir: 315° Wire out:1500 m Speed: 34 kn\*10  
 Sorted: 98 Kg Total catch: 526.04 CATCH/HOUR: 1052.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	520.20	2006	49.44	
Merluccius paradoxus, female	140.40	132	13.34	4778
Yarrella blackfordi	124.10	9860	11.80	
Nezumia sp.	88.74	3944	8.43	
Hoplostethus cadenati	87.38	5610	8.31	
Lamprogrammus exutus	30.94	408	2.94	
Alepocephalus sp.	20.74	1428	1.97	
Bassanago albescens	8.16	68	0.78	
Cruriraja parcomaculata	7.14	34	0.68	
Epigonus denticulatus	6.46	136	0.61	
Galeus polli	6.12	34	0.58	
Ebinania costaecanarie	5.44	68	0.52	
Selachophidium guentheri	4.08	34	0.39	
Lophius vomerinus	2.18	2	0.21	4779
Total	1052.08		100.00	

PROJECT STATION:1382  
 DATE:10/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1949 Long E 1153  
 start stop duration  
 TIME :04:52:00 05:22:00 30 (min) Purpose code: 3  
 LOG :2549.50 2551.10 1.60 Area code : 2  
 FDEPTH: 360 362 GearCond.code:  
 BDEPTH: 360 362 Validity code:  
 Towing dir: 350° Wire out:1050 m Speed: 32 kn\*10  
 Sorted: 56 Kg Total catch: 110.50 CATCH/HOUR: 221.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	59.84	1888	27.08	
C R A B S	44.64	928	20.20	
Merluccius capensis, female	39.00	50	17.65	4786
Lophius vomerinus	22.90	34	10.36	4788
Chlorophthalmus atlanticus	15.20	480	6.88	
Merluccius capensis, male	11.70	22	5.29	4785
Cruriraja parcomaculata	6.56	8	2.97	
Coelorinchus fasciatus	6.32	128	2.86	
Galeus polli	4.00	56	1.81	
Coelorinchus coelorhinc. polli	3.28	128	1.48	
Todarodes sagittatus	2.24	8	1.01	
Chelidonichthys queketti	1.76	16	0.80	
Shrimps, small, non comm.	1.20	384	0.54	
Nezumia sp.	0.88	72	0.40	
Austrogllossus microlepis	0.76	2	0.34	4787
Synagrops microlepis	0.72	48	0.33	
Total	221.00		100.00	



PROJECT STATION:1383  
 DATE:10/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1948  
 start stop duration Long E 1200  
 TIME :07:07:00 07:37:00 30 (min) Purpose code: 3  
 LOG :2559.50 2561.00 1.50 Area code : 3  
 FDEPTH: 326 317 GearCond.code:  
 BDEPTH: 326 317 Validity code:  
 Towing dir: 60° Wire out: 960 m Speed: 30 kn\*10

Sorted: 237 Kg Total catch: 312.50 CATCH/HOUR: 625.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	182.20	204	29.15	4792
Merluccius capensis, female	119.30	456	19.09	4790
Dentex macrophthalmus	86.40	248	13.82	4795
Pterothrissus belloci	72.56	880	11.61	
Merluccius capensis, male	69.70	284	11.15	4789
Merluccius capensis, male	37.80	52	6.05	4791
Lophius vomerinus	11.84	8	1.89	4793
Synagrops microlepis	10.64	1024	1.70	
Galeus polli	7.20	136	1.15	
C R A B S	5.84	104	0.93	
Squalus megalops	5.36	8	0.86	
Todarodes sagittatus	4.96	16	0.79	
Austroglossus microlepis	3.78	10	0.60	4794
Krill	2.72	0	0.44	
Coelorrhinchus coelorrhinc. polli	1.28	56	0.20	
Chlorophthalmus atlanticus	1.20	80	0.19	
MYCTOPHIDAE	0.72	248	0.12	
Helicolenus dactylopterus	0.64	8	0.10	
Todaropsis eblanae	0.48	24	0.08	
Merluccius capensis, juveniles	0.22	20	0.04	4796
Squilla mantis	0.16	8	0.03	
Total	625.00		99.99	

PROJECT STATION:1384  
 DATE:10/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1947  
 start stop duration Long E 1205  
 TIME :08:48:00 09:18:00 30 (min) Purpose code: 3  
 LOG :2565.70 2567.20 1.50 Area code : 3  
 FDEPTH: 288 278 GearCond.code:  
 BDEPTH: 288 278 Validity code:  
 Towing dir: 70° Wire out: 840 m Speed: 30 kn\*10

Sorted: 229 Kg Total catch: 521.53 CATCH/HOUR: 1043.06

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	313.28	1402	30.03	4798
Dentex macrophthalmus	231.20	816	22.17	4801
Merluccius capensis, male	152.08	648	14.58	4797
Pterothrissus belloci	124.32	64	11.92	
Merluccius capensis, female	90.40	88	8.67	4799
Trachurus capensis	63.84	224	6.12	4803
Neoharriotta pinnata	23.20	16	2.22	
Todarodes sagittatus	13.90	26	1.33	
Austroglossus microlepis	9.92	16	0.95	4802
Lophius vomerinus	9.40	6	0.90	4800
Galeus polli	8.16	160	0.78	
Todaropsis eblanae	1.44	48	0.14	
Chlorophthalmus atlanticus	0.80	96	0.08	
Synagrops microlepis	0.64	48	0.06	
Sufflogobius bibarbus	0.48	48	0.05	
Total	1043.06		100.00	

PROJECT STATION:1385  
 DATE:10/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1943  
 start stop duration Long E 1214  
 TIME :10:37:00 10:54:00 17 (min) Purpose code: 3  
 LOG :2574.80 2575.50 0.70 Area code : 3  
 FDEPTH: 219 214 GearCond.code: 9  
 BDEPTH: 219 214 Validity code: 1  
 Towing dir: 59° Wire out: 640 m Speed: 30 kn\*10

Sorted: 243 Kg Total catch: 3306.75 CATCH/HOUR: 11670.88

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	6925.17	94274	59.34	4806
Merluccius capensis, male	2237.22	5873	19.17	4805
Merluccius capensis, female	1948.45	5386	16.69	4804
Dentex macrophthalmus	351.85	2912	3.01	4808
Todarodes sagittatus	113.58	194	0.97	
Pterothrissus belloci	52.41	438	0.45	
Squalus megalops	17.47	49	0.15	
Synagrops microlepis	14.58	3639	0.12	
Austroglossus microlepis	8.22	14	0.07	4807
Todaropsis eblanae	1.94	99	0.02	
Total	11670.89		99.99	

PROJECT STATION:1386  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1922  
 start stop duration Long E 1216  
 TIME :06:53:00 07:23:00 30 (min) Purpose code: 3  
 LOG :2633.50 2635.00 1.50 Area code : 3  
 FDEPTH: 138 134 GearCond.code:  
 BDEPTH: 138 134 Validity code:  
 Towing dir: 90° Wire out: 450 m Speed: 30 kn\*10

Sorted: 3 Kg Total catch: 4.08 CATCH/HOUR: 8.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbus	3.40	888	41.67	
Chatrabus melanurus	2.32	6	28.43	
Merluccius capensis, female	2.04	14	25.00	4810
Trachurus capensis, juvenile	0.20	148	2.45	4811
Merluccius capensis, male	0.18	2	2.21	4809
Merluccius capensis, juveniles	0.02	2	0.25	4812
Total	8.16		100.01	

PROJECT STATION:1387  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1919  
 start stop duration Long E 1209  
 TIME :08:50:00 09:05:00 15 (min) Purpose code: 3  
 LOG :2644.60 2645.30 0.70 Area code : 3  
 FDEPTH: 209 209 GearCond.code:  
 BDEPTH: 209 209 Validity code:  
 Towing dir: 350° Wire out: 650 m Speed: 34 kn\*10

Sorted: 121 Kg Total catch: 1826.27 CATCH/HOUR: 7305.08

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	5950.80	89040	81.46	4815
Dentex macrophthalmus	842.40	6480	11.53	4816
Merluccius capensis, female	268.20	1464	3.67	4813
Todarodes sagittatus	108.00	216	1.48	
Merluccius capensis, male	86.00	596	1.18	4814
Perulibrachius rossignoli	49.68	432	0.68	
Total	7305.08		100.00	

PROJECT STATION:1388  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1924  
 start stop duration Long E 1202  
 TIME :10:39:00 10:49:00 10 (min) Purpose code: 3  
 LOG :2654.60 2655.10 0.50 Area code : 3  
 FDEPTH: 270 269 GearCond.code: 9  
 BDEPTH: 270 269 Validity code: 1  
 Towing dir: 173° Wire out: 800 m Speed: 30 kn\*10

Sorted: 114 Kg Total catch: 242.62 CATCH/HOUR: 1455.72

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
MYCTOPHIDAE	487.50		33.49	
Merluccius capensis, female	284.70	258	19.56	4817
Pterothrissus belloci	210.00	1530	14.43	
Merluccius capensis, female	133.50	456	9.17	4818
Dentex macrophthalmus	118.50	450	8.14	4821
Merluccius capensis, male	62.70	240	4.31	4819
Trachurus capensis	46.50	240	3.19	4822
Squalus megalops	39.60	120	2.72	
Callorhynchus capensis	29.10	30	2.00	
Synagrops microlepis	16.50	1350	1.13	
Lophius vomerinus	13.62	6	0.94	4820
Todarodes sagittatus	11.40	30	0.78	
Chlorophthalmus atlanticus	1.20	120	0.08	
Todaropsis eblanae	0.90	30	0.06	
Total	1455.72		100.00	

PROJECT STATION:1389  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1926  
 start stop duration Long E 1155  
 TIME :12:36:00 13:06:00 30 (min) Purpose code: 3  
 LOG :2663.80 2665.20 1.40 Area code : 3  
 FDEPTH: 305 304 GearCond.code:  
 BDEPTH: 305 304 Validity code:  
 Towing dir: \* Wire out: 900 m Speed: 30 kn\*10

Sorted: 92 Kg Total catch: 111.44 CATCH/HOUR: 167.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	75.83	146	45.36	4823
Pterothrissus belloci	34.65	156	20.73	
Merluccius capensis, male	18.30	54	10.95	4824
Lophius vomerinus	11.33	9	6.78	4825
Coelorrhinchus coelorrhinc. polli	6.81		4.07	
Neoharriotta pinnata	4.14	3	2.48	
Dentex macrophthalmus	3.36	12	2.01	4827
Centrolophus niger	2.91	3	1.74	
Austroglossus microlepis	2.49	8	1.49	4826
Galeus polli	2.40	36	1.44	
Synagrops microlepis	2.04	129	1.22	
Chlorophthalmus atlanticus	1.98	129	1.18	
Solenocera africana	0.66	141	0.39	
Trigla lyra	0.27	6	0.16	
Total	167.17		100.00	

PROJECT STATION:1390  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1928  
 start stop duration Long E 1146  
 TIME :14:52:00 15:22:00 30 (min) Purpose code: 3  
 LOG :2677.00 2678.40 1.40 Area code : 3  
 FDEPTH: 338 338 GearCond.code:  
 BDEPTH: 338 338 Validity code:  
 Towing dir: 346° Wire out:1050 m Speed: 30 kn\*10

Sorted: 98 Kg Total catch: 115.81 CATCH/HOUR: 231.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	117.50	126	50.73	4827
Lophius vomerinus	28.70	38	12.39	4828
Helicolenus dactylopterus	26.72	524	11.54	
Chlorophthalmus atlanticus	17.16	560	7.41	
Merluccius capensis, male	11.90	18	5.14	4826
Coelorrhinchus coelorrhinc. polli	10.04	368	4.33	
Neoharriotta pinnata	8.76	4	3.78	
Nezumia sp.	2.32	76	1.00	
Galeus polli	1.76	20	0.76	
Squalus megalops	1.56	4	0.67	
Synagrops microlepis	1.44	144	0.62	
Coelorrhinchus fasciatus	1.04	20	0.45	
Todarodes sagittatus	1.04	2	0.45	
C R A B S	0.84	44	0.36	
Malacocephalus laevis	0.32	12	0.14	
Shrimps, small, non comm.	0.24	120	0.10	
Ebinania costaeanae	0.16	4	0.07	
Aristeus varidens	0.12	24	0.05	
Total	231.62		99.99	



PROJECT STATION:1391  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1929 Long E 1138  
 start stop duration  
 TIME :17:24:00 17:54:00 30 (min) Purpose code: 3  
 LOG :2689.20 2690.60 1.40 Area code : 3  
 FDEPTH: 390 389 GearCond.code:  
 BDEPTH: 390 389 Validity code:  
 Towing dir: 10° Wire out:1150 m Speed: 28 kn\*10

Sorted: 229 Kg Total catch: 488.81 CATCH/HOUR: 977.62

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	410.30	5082	41.97	
Merluccius paradoxus, female	330.96	760	33.85	4832
Squalus megalops	67.54	88	6.91	
Galeus polli	52.80	484	5.40	
Lophius vomerinus	44.60	38	4.56	4830
Merluccius paradoxus, male	13.66	28	1.40	4831
Lophius vaillanti	13.20	6	1.35	4833
Coelorinchus fasciatus	7.48	110	0.77	
Coelorinchus coelorrhinc. polli	5.06	176	0.52	
Shrimps, small, non comm.	4.18	1716	0.43	
Nezumia sp.	4.18	264	0.43	
Merluccius capensis, female	4.08	2	0.42	4829
Todarodes sagittatus	3.96	22	0.41	
Ebinania costaecanarie	3.96	110	0.41	
Epigonus denticulatus	3.08	154	0.32	
C R A B S	2.86	66	0.29	
Chlorophthalmus atlanticus	2.20	66	0.23	
Yarrella blackfordi	1.98	220	0.20	
Laemonema laureysi	1.54	44	0.16	
Total	977.62		100.03	

PROJECT STATION:1394  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1911 Long E 1121  
 start stop duration  
 TIME :00:23:00 00:48:00 25 (min) Purpose code: 3  
 LOG :2717.80 2719.00 1.20 Area code : 3  
 FDEPTH: 602 603 GearCond.code:  
 BDEPTH: 602 603 Validity code:  
 Towing dir: 354° Wire out:1550 m Speed: 30 kn\*10

Sorted: 154 Kg Total catch: 345.17 CATCH/HOUR: 828.41

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachyrincus scabrus	225.72	821	27.25	
Merluccius paradoxus, female	175.20	192	21.15	4841
Nezumia sp.	100.22	3089	12.10	
Centroscymnus crepidater	61.08	5	7.37	
Hoplostethus cadenati	60.48		7.30	
Lophius vomerinus	54.00	17	6.52	4842
Todarodes sagittatus	22.08	50	2.67	
Tetrazonurus atlanticus	22.03	108	2.66	
ALEPOCEPHALIDAE	19.44	778	2.35	
Deepwater fish mixture	18.36		2.22	
Raja caudaspinosa	16.85	238	2.03	
Yarrella blackfordi	16.42	1858	1.98	
Selachophidium guentheri	12.96	216	1.56	
Trachipterus jacksonensis	7.13	22	0.86	
MYCTOPHIDAE	5.62	1123	0.68	
Shrimps, small, non comm.	4.10	1339	0.49	
GONOSTOMATIDAE	2.38	194	0.29	
Paradiplospinus gracilis	1.73	22	0.21	
Ebinania costaecanarie	1.30	43	0.16	
Thysanoteuthis rhombus	0.86	22	0.10	
Dibranchius atlanticus	0.24	2	0.03	
NEMICHTHYIDAE	0.22	2	0.03	
Total	828.42		100.01	

PROJECT STATION:1392  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1926 Long E 1132  
 start stop duration  
 TIME :19:31:00 20:01:00 30 (min) Purpose code: 3  
 LOG :2697.40 2698.90 1.50 Area code : 3  
 FDEPTH: 467 466 GearCond.code:  
 BDEPTH: 467 466 Validity code:  
 Towing dir: 345° Wire out:1300 m Speed: 30 kn\*10

Sorted: 290 Kg Total catch: 713.12 CATCH/HOUR: 1426.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	758.00	1312	53.15	4835
Trachyrincus scabrus	338.80	3304	23.75	
Helicolenus dactylopterus	137.76	1316	9.66	
Nezumia sp.	51.80	2184	3.63	
Hoplostethus cadenati	38.36	952	2.69	
Lophius vomerinus	33.70	12	2.36	4836
Merluccius paradoxus, male	30.30	56	2.12	4834
Ebinania costaecanarie	13.16	224	0.92	
Galeus polli	7.28	56	0.51	
Notacanthus sexspinis	6.72	140	0.47	
Epigonus denticulatus	2.52	112	0.18	
Yarrella blackfordi	1.96	196	0.14	
Selachophidium guentheri	1.96	28	0.14	
Shrimps, small, non comm.	1.40	560	0.10	
Aristeus varidens	1.40	168	0.10	
C R A B S	1.12	28	0.08	
Total	1426.24		100.00	

PROJECT STATION:1395  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1903 Long E 1127  
 start stop duration  
 TIME :04:55:00 05:25:00 30 (min) Purpose code: 3  
 LOG :2734.40 2736.00 1.60 Area code : 3  
 FDEPTH: 369 360 GearCond.code:  
 BDEPTH: 369 360 Validity code:  
 Towing dir: 10° Wire out:1080 m Speed: 32 kn\*10

Sorted: 199 Kg Total catch: 344.24 CATCH/HOUR: 688.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	236.00	236	34.28	4846
Helicolenus dactylopterus	199.80	2592	29.02	
Nezumia sp.	44.16	2160	6.41	
Merluccius paradoxus, female	39.90	82	5.80	4844
Merluccius capensis, male	31.10	34	4.52	4845
Coelorinchus fasciatus	20.16	384	2.93	
Laemonema laureysi	19.68	528	2.86	
Lophius vomerinus	17.90	8	2.60	4848
Squalus megalops	15.84	24	2.30	
Trachyrincus scabrus	13.32	36	1.93	
Galeus polli	13.08	192	1.90	
Lophius vaillanti	12.26	4	1.78	4847
Centrolophus niger	11.16	12	1.62	
Malacocephalus laevis	5.88	84	0.85	
Merluccius paradoxus, male	2.12	4	0.31	4843
Raja confundens	1.44	36	0.21	
MYCTOPHIDAE	1.20	264	0.17	
Chlorophthalmus atlanticus	0.96	24	0.14	
Alepocephalus sp.	0.60	12	0.09	
Synagrops microlepis	0.48	24	0.07	
Ebinania costaecanarie	0.48	12	0.07	
Aristeus varidens	0.24	60	0.03	
Shrimps, small, non comm.	0.24	264	0.03	
Cruriraja parcomaculata	0.24	12	0.03	
Raja leopardus	0.24	12	0.03	
Total	688.48		99.98	

PROJECT STATION:1393  
 DATE:11/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1917 Long E 1125  
 start stop duration  
 TIME :22:12:00 22:42:00 30 (min) Purpose code: 3  
 LOG :2709.70 2711.20 1.50 Area code : 3  
 FDEPTH: 548 549 GearCond.code:  
 BDEPTH: 548 549 Validity code:  
 Towing dir: 345° Wire out:1450 m Speed: 30 kn\*10

Sorted: 254 Kg Total catch: 359.22 CATCH/HOUR: 718.44

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	353.70	484	49.23	4837
Trachyrincus scabrus	107.00	450	14.89	
Centroscymnus crepidater	55.40	4	7.71	
Nezumia sp.	40.20		5.46	
Hoplostethus cadenati	39.20		5.46	
Todarodes sagittatus	22.60		3.15	
Deania calcea	21.50	10	2.99	
Deepwater fish mixture	15.70		2.19	
Lophius vomerinus	13.88	4	1.93	4839
Helicolenus dactylopterus	12.10	70	1.68	
OPISTHOTEUTHIDAE	8.10	10	1.13	
Merluccius paradoxus, male	7.60	12	1.06	4838
Yarrella blackfordi	5.30	270	0.74	
Ebinania costaecanarie	4.60	60	0.64	
Lamprogrammus exutus	3.40	90	0.47	
ALEPOCEPHALIDAE	2.80	190	0.39	
Raja caudaspinosa	2.00	20	0.28	
Selachophidium guentheri	1.70	40	0.24	
Lophius vaillanti	1.36	2	0.19	4840
GONOSTOMATIDAE	0.30	50	0.04	
Total	718.44		100.01	

PROJECT STATION:1396  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1901 Long E 1133  
 start stop duration  
 TIME :07:03:00 07:33:00 30 (min) Purpose code: 3  
 LOG :2743.30 2744.80 1.50 Area code : 3  
 FDEPTH: 279 276 GearCond.code:  
 BDEPTH: 279 276 Validity code:  
 Towing dir: 30° Wire out: 840 m Speed: 30 kn\*10

Sorted: 189 Kg Total catch: 1284.19 CATCH/HOUR: 2568.38

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chlorophthalmus atlanticus	604.20	20824	23.52	
Merluccius capensis, female	574.56	1884	22.37	4852
Trachurus capensis	367.84	2158	14.32	4853
Merluccius capensis, male	291.08	1094	11.33	4851
Helicolenus dactylopterus	216.60	6308	8.43	
Dentex macrophthalmus	152.00	592	5.92	4854
Merluccius capensis, female	122.40	106	4.77	4850
Synagrops microlepis	119.70	7904	4.66	
Pterothrissus belloci	49.78	228	1.94	
MYCTOPHIDAE	18.24	6840	0.71	
Chelidonichthys queketti	13.68	38	0.53	
Lophius vomerinus	12.70	12	0.49	4855
Coelorinchus coelorrhinc. polli	10.26	456	0.40	
C R A B S	7.22	608	0.28	
Merluccius capensis, male	6.60	8	0.26	4849
Todaropsis eblanae	1.52	38	0.06	
Total	2568.38		99.99	



PROJECT STATION:1397  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1859  
 start stop duration Long E 1139  
 TIME :09:08:00 09:38:00 30 (min) Purpose code: 3  
 LOG :2752.50 2754.00 1.50 Area code : 3  
 FDEPTH: 297 298 GearCond.code:  
 BDEPTH: 297 298 Validity code:  
 Towing dir: 50° Wire out: 900 m Speed: 30 kn\*10  
 Sorted: 237 Kg Total catch: 905.29 CATCH/HOUR: 1810.58

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	671.08 3214	37.06	4860
Merluccius capensis, male	295.88 1446	16.34	4861
Trachurus capensis	235.56 1736	13.01	4864
MYCTOPHIDAE	130.52	7.21	
Dentex macrophthalms	112.84 458	6.23	4863
Merluccius capensis, female	104.80 110	5.79	4856
Pterothrissus belloci	68.12 354	3.76	
Lophius vomerinus	42.40 36	2.34	4858
Synagrops microlepis	39.52	2.18	
Trigla lyra	16.44 52	0.91	
Galeus polli	14.76 240	0.82	
Coelorinchus coelorhinc. polli	14.14 500	0.78	
Callorhynchus capensis	14.04 10	0.78	
Chlorophthalmus atlanticus	13.72 748	0.76	
Merluccius polli, juveniles	10.82 302	0.60	4862
Bathynectes piperitus	6.24 426	0.34	
Solenocera africana	6.14 2152	0.34	
Merluccius capensis, male	4.70 6	0.26	4857
Austroglossus microlepis	4.60 8	0.25	4859
Squalus megalops	3.12 10	0.17	
Helicolenus dactylopterus	0.62 228	0.03	
Todaropsis eblanae	0.52 20	0.03	
Total	1810.58	99.99	

PROJECT STATION:1398  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1853  
 start stop duration Long E 1153  
 TIME :12:50:00 13:09:00 19 (min) Purpose code: 3  
 LOG :2767.80 2768.60 0.80 Area code : 3  
 FDEPTH: 227 221 GearCond.code: 9  
 BDEPTH: 227 221 Validity code: 1  
 Towing dir: 36° Wire out: 700 m Speed: 30 kn\*10  
 Sorted: 303 Kg Total catch: 1815.66 CATCH/HOUR: 5733.66

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachurus capensis	3851.05 63455	67.17	4868
Merluccius capensis, female	1501.58 6928	26.19	4865
Merluccius capensis, male	319.26 1952	5.57	4866
Dentex macrophthalms	34.67 246	0.60	4867
Callorhynchus capensis	19.89 19	0.35	
Chelidonichthys capensis	6.25 38	0.11	
CONGRIDAE	0.95 19	0.02	
Total	5733.65	100.01	

PROJECT STATION:1399  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1851  
 start stop duration Long E 1202  
 TIME :13:40:00 14:10:00 30 (min) Purpose code: 3  
 LOG :2778.00 2779.30 1.30 Area code : 3  
 FDEPTH: 136 127 GearCond.code:  
 BDEPTH: 136 127 Validity code:  
 Towing dir: 22° Wire out: 450 m Speed: 30 kn\*10  
 Sorted: 38 Kg Total catch: 267.43 CATCH/HOUR: 534.86

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Sufflogobius bibarbatas	530.26 29314	99.14	
Trachurus capensis	2.60 46	0.49	4873
Merluccius capensis, female	1.46 10	0.27	4869
Merluccius capensis, male	0.36 4	0.07	4870
Merluccius capensis	0.10 8	0.02	4871
Merluccius polli, juveniles	0.08 2	0.01	4872
Total	534.86	100.00	

PROJECT STATION:1400  
 DATE:12/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1841  
 start stop duration Long E 1148  
 TIME :16:28:00 16:58:00 30 (min) Purpose code: 3  
 LOG :2796.90 2798.40 1.50 Area code : 3  
 FDEPTH: 203 192 GearCond.code:  
 BDEPTH: 203 192 Validity code:  
 Towing dir: 20° Wire out: 600 m Speed: 30 kn\*10  
 Sorted: 81 Kg Total catch: 1014.14 CATCH/HOUR: 2028.28

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Dentex macrophthalms	1052.70 9900	51.90	4877
Trachurus capensis	782.10 13662	38.56	4876
Merluccius capensis, female	82.70 474	4.08	4875
Pterothrissus belloci	64.02 1254	3.16	
Merluccius capensis, male	21.40 148	1.06	4874
Chatrabus melanurus	19.80 66	0.98	
Synagrops microlepis	3.96 990	0.20	
Sufflogobius bibarbatas	1.32 264	0.07	
Merluccius polli, female	0.18 4	0.01	4879
Merluccius polli, male	0.08 2	0.01	4878
Merluccius polli, juveniles	0.02 2	0.00	4880
Total	2028.28	100.02	

PROJECT STATION:1401  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1826  
 start stop duration Long E 1144  
 TIME :04:49:00 05:08:00 19 (min) Purpose code: 3  
 LOG :2841.40 2842.40 1.00 Area code : 3  
 FDEPTH: 142 147 GearCond.code:  
 BDEPTH: 142 147 Validity code:  
 Towing dir: 200° Wire out: 500 m Speed: 30 kn\*10  
 Sorted: 60 Kg Total catch: 2186.08 CATCH/HOUR: 6903.41

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Dentex macrophthalms	3550.11 53943	51.43	4882
Trachurus capensis	3302.31 66969	47.84	4881
Merluccius capensis, male	15.00 117	0.22	4883
Cynoglossus capensis	12.69 578	0.18	
Merluccius capensis, female	12.69 117	0.18	4884
Pterothrissus belloci	8.08 117	0.12	
Sufflogobius bibarbatas	2.31 231	0.03	
Merluccius capensis, juveniles	0.22 117		4885
Total	6903.41	100.00	

PROJECT STATION:1402  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1829  
 start stop duration Long E 1140  
 TIME :06:18:00 06:48:00 30 (min) Purpose code: 3  
 LOG :2847.20 2848.70 1.50 Area code : 3  
 FDEPTH: 183 190 GearCond.code:  
 BDEPTH: 183 190 Validity code:  
 Towing dir: 230° Wire out: 600 m Speed: 30 kn\*10  
 Sorted: 82 Kg Total catch: 708.09 CATCH/HOUR: 1416.18

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Trachurus capensis	739.20 12768	52.20	4888
Dentex macrophthalms	287.84 2800	20.33	4889
Synagrops microlepis	124.32 60144	8.78	
Merluccius capensis, female	95.70 614	6.76	4887
Pterothrissus belloci	73.36 1904	5.18	
Octopus sp.	56.00 56	3.95	
Merluccius capensis, male	21.80 156	1.54	4886
Chelidonichthys queketti	8.96 56	0.63	
Cynoglossus capensis	5.04 56	0.36	
C R A B S	3.92 336	0.28	
Merluccius polli, juveniles	0.04 2		4890
Total	1416.18	100.01	

PROJECT STATION:1403  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1830  
 start stop duration Long E 1134  
 TIME :07:53:00 08:18:00 25 (min) Purpose code: 3  
 LOG :2852.90 2854.30 1.40 Area code : 3  
 FDEPTH: 223 230 GearCond.code:  
 BDEPTH: 223 230 Validity code:  
 Towing dir: 265° Wire out: 700 m Speed: 31 kn\*10  
 Sorted: 129 Kg Total catch: 1192.99 CATCH/HOUR: 2863.18

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Dentex macrophthalms	927.96 7171	32.41	4894
Merluccius capensis, female	777.00 4596	27.14	4892
Trachurus capensis	731.50 6617	25.55	4893
Merluccius capensis, male	182.04 1332	6.36	4891
Synagrops microlepis	107.45 9168	3.75	
Pterothrissus belloci	63.05 910	2.20	
MYCTOPHIDAE	18.65 6528	0.65	
Chelidonichthys capensis	13.10 22	0.46	
Chelidonichthys queketti	11.54 46	0.40	
Merluccius polli, juveniles	10.44 511	0.36	4895
Chlorophthalmus atlanticus	8.21 600	0.29	
Helicolenus dactylopterus	7.56 199	0.26	
C R A B S	3.55 312	0.12	
Sepia australis	0.67 22	0.02	
Austroglossus microlepis	0.46 22	0.02	4896
Total	2863.18	99.99	

PROJECT STATION:1404  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1832  
 start stop duration Long E 1126  
 TIME :09:59:00 10:22:00 23 (min) Purpose code: 3  
 LOG :2863.70 2864.80 1.10 Area code : 3  
 FDEPTH: 336 335 GearCond.code: 9  
 BDEPTH: 336 335 Validity code: 1  
 Towing dir: 21° Wire out: 1000 m Speed: 31 kn\*10  
 Sorted: 520 Kg Total catch: 727.68 CATCH/HOUR: 1898.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
	weight numbers		
Merluccius capensis, female	1073.87 1174	56.57	4897
Helicolenus dactylopterus	295.30	15.56	
Merluccius capensis, male	187.57 237	9.88	4898
Raja leopards	40.07 21	2.11	
Chlorophthalmus atlanticus	39.65 981	2.09	
Synagrops microlepis	33.39 2066	1.76	
Callorhynchus capensis	31.51 21	1.66	
Galeus polli	28.38 417	1.50	
Squalus megalops	27.55 167	1.42	
Trigla lyra	26.92 167	1.42	
Merluccius polli, male	17.74 292	0.93	4901
Merluccius polli, female	17.53 250	0.92	4900
Raja miraletus	16.07 21	0.85	
Lophius vomerinus	15.70 18	0.83	4899
Coelorinchus coelorhinc. polli	14.40 605	0.76	
Dentex macrophthalms	12.31 21	0.65	
MORIDAE	8.77 188	0.46	
Bathynectes piperitus	6.26 167	0.33	
MYCTOPHIDAE	4.59 1127	0.24	
Lophius vaillanti	0.70 3	0.04	4902
Total	1898.28	100.01	



PROJECT STATION:1405  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1837 Long E 1123  
 start stop duration Purpose code: 3  
 TIME :11:55:00 12:14:00 19 (min) Area code : 3  
 LOG :2872.00 2872.90 0.90 GearCond.code: 9  
 FDEPTH: 468 478 Validity code: 1  
 BDEPTH: 468 478  
 Towing dir: 173° Wire out:1300 m Speed: 31 kn\*10

Sorted: 409 Kg Total catch: 709.69 CATCH/HOUR: 2241.13

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Merluccius paradoxus, female	1132.89	2612	50.55
Shrimps, small, non comm.	369.95		16.51
Trachyrincus scabrus	352.58		15.73
Nezumia sp.	122.97		5.49
Hoplostethus cadenati	84.41	4238	3.77
Helicolenus dactylopterus	51.41	486	2.29
Merluccius paradoxus, male	42.32	107	1.89
Epigonus denticulatus	30.92	1528	1.38
Galeus polli	24.32	313	1.09
Lophius vomerinus	17.31	6	0.77
MORIDAE	4.17	69	0.19
Aristeus varidens	2.78	660	0.12
Chlamydoselachus anguineus	1.99	3	0.09
Ebinania costaecanarie	1.74	69	0.08
Yarella blackfordi	0.69	174	0.03
Notacanthus sexspinis	0.35	35	0.02
Nemichthys scolopaceus	0.35	35	0.02
Total	2241.15		100.02

PROJECT STATION:1408  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1807 Long E 1134  
 start stop duration Purpose code: 3  
 TIME :04:48:00 05:09:00 21 (min) Area code : 3  
 LOG :2934.20 2935.30 1.10 GearCond.code: 3  
 FDEPTH: 206 200 Validity code:  
 BDEPTH: 206 200  
 Towing dir: 360° Wire out: 600 m Speed: 32 kn\*10

Sorted: 30 Kg Total catch: 326.89 CATCH/HOUR: 933.97

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Dentex macrophthalmus	684.00	10903	73.24
Pterothrissus bellocci	213.60	4354	22.87
Merluccius capensis, female	8.14	43	0.87
Chelidonichthys queketti	6.51	274	0.70
Octopus sp.	6.51	34	0.70
Trachurus capensis	5.83	103	0.62
Synagrops microlepis	3.09	2880	0.33
C R A B S	2.40	206	0.26
Merluccius polli, juveniles	2.06	480	0.22
Merluccius capensis, male	0.94	6	0.10
Cynoglossus capensis	0.34	69	0.04
Merluccius polli, juveniles	0.23	9	0.02
Merluccius polli, male	0.20	3	0.02
Merluccius polli, female	0.11	3	0.01
Total	933.96		100.00

PROJECT STATION:1409  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1806 Long E 1130  
 start stop duration Purpose code: 3  
 TIME :06:18:00 06:48:00 30 (min) Area code : 3  
 LOG :2941.80 2943.40 1.60 GearCond.code: 3  
 FDEPTH: 282 260 Validity code:  
 BDEPTH: 282 260  
 Towing dir: 20° Wire out: 900 m Speed: 32 kn\*10

Sorted: 184 Kg Total catch: 1985.57 CATCH/HOUR: 3971.14

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Helicolenus dactylopterus	934.74	32760	23.54
Chlorophthalmus atlanticus	872.90	37956	21.98
Merluccius capensis, female	724.48	1662	18.24
Merluccius capensis, male	335.74	706	8.45
Dentex macrophthalmus	209.22	812	5.27
Synagrops microlepis	140.30	17600	3.53
Merluccius capensis, female	119.60	136	3.01
Chelidonichthys queketti	94.72	884	2.39
Oxynotus centrina	88.70	36	2.23
Raja straeleni	84.82	36	2.14
Squalus megalops	81.28	248	2.05
Galeorhinus galeus	67.50	36	1.70
Merluccius polli, male	39.94	600	1.01
Merluccius polli, female	38.52	600	0.97
Pterothrissus bellocci	29.34	142	0.74
Merluccius capensis, male	23.70	34	0.60
Merluccius polli, juveniles	20.50	672	0.52
Aristeus varidens	16.60	4772	0.42
Coelorrhinus coelorrhinus polli	15.90	742	0.40
Lophius vomerinus	8.26	6	0.21
Galeus polli	7.06	70	0.18
C R A B S	6.00	248	0.15
Trachurus capensis	4.60	36	0.12
MYCTOPHIDAE	3.18	812	0.08
Sepia australis	2.12	70	0.05
Malacocephalus laevis	1.42	70	0.04
Total	3971.14		100.02

PROJECT STATION:1410  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1756 Long E 1135  
 start stop duration Purpose code: 3  
 TIME :08:55:00 09:15:00 20 (min) Area code : 3  
 LOG :2954.30 2955.40 1.10 GearCond.code: 3  
 FDEPTH: 170 171 Validity code:  
 BDEPTH: 170 171  
 Towing dir: 350° Wire out: 555 m Speed: 30 kn\*10

Sorted: 36 Kg Total catch: 1293.12 CATCH/HOUR: 3879.36

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachurus capensis	3844.80	64908	99.11
Octopus sp.	10.80	108	0.28
Austroglossus microlepis	7.56	108	0.19
Squilla sp.	6.48	324	0.17
Anthias anthias	5.40	108	0.14
Todaropsis eblanae	3.24	108	0.08
C R A B S	1.08	108	0.03
Total	3879.36		100.00

PROJECT STATION:1407  
 DATE:13/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1806 Long E 1126  
 start stop duration Purpose code: 3  
 TIME :18:40:00 19:00:00 20 (min) Area code : 3  
 LOG :2916.60 2917.60 1.00 GearCond.code: 3  
 FDEPTH: 488 433 Validity code:  
 BDEPTH: 488 433  
 Towing dir: 10° Wire out:1250 m Speed: 30 kn\*10

Sorted: 186 Kg Total catch: 722.79 CATCH/HOUR: 2168.37

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachyrincus scabrus	812.70	5418	37.48
Merluccius paradoxus, female	391.65	603	18.06
Deania profundorum	322.56	189	14.88
Helicolenus dactylopterus	197.19	1638	9.09
Nezumia sp.	176.40	3906	8.14
Todaropsis sagittatus	82.53	189	3.81
Merluccius polli, female	34.95	36	1.61
Notacanthus sexspinis	22.68	252	1.05
Merluccius paradoxus, male	18.90	33	0.87
Laemonema laureysi	17.01	189	0.78
Chaceon maritae	13.50	63	0.62
Yarella blackfordi	13.23	1071	0.61
Ebinania costaecanarie	11.34	189	0.52
Lophius vaillanti	11.10	3	0.51
Trachurus capensis	10.08	126	0.46
Lophius vomerinus	7.35	3	0.34
Shrimps, small, non comm.	6.93	3780	0.32
Aristeus varidens	6.30	819	0.29
Hoplostethus cadenati	3.15	315	0.15
Scopelosaurus meadi	2.52	126	0.12
MYCTOPHIDAE	1.89	504	0.09
Alepocephalus sp.	1.89	63	0.09
Epigonus denticulatus	1.26	126	0.06
Nemichthys scolopaceus	1.26	189	0.06
Total	2168.37		100.01

PROJECT STATION:1411  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1748 Long E 1133  
 start stop duration Purpose code: 3  
 TIME :10:38:00 11:06:00 28 (min) Area code : 3  
 LOG :2961.80 1963.00 8.80 GearCond.code: 3  
 FDEPTH: 160 167 Validity code:  
 BDEPTH: 160 167  
 Towing dir: 354° Wire out: 600 m Speed: 30 kn\*10

Sorted: 66 Kg Total catch: 4515.55 CATCH/HOUR: 9676.18

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP
weight numbers			
Trachurus capensis	9130.07	203610	94.36
Callorhynchus capensis	140.91	148	1.46
Myxtriophtis rostellatus	73.39	294	0.76
Chelidonichthys capensis	61.65	148	0.64
Dentex macrophthalmus	57.26	881	0.59
Perulibatrachus rossignoli	55.78	441	0.58
Anthias anthias	45.51	587	0.47
Galeichthys feliceps	39.64	148	0.41
Octopus sp.	26.42	148	0.27
SCRSB01	22.03	148	0.23
Squilla acuelata calmani	13.22	441	0.14
Todaropsis eblanae	10.29	148	0.11
Total	9676.17		100.02



PROJECT STATION:1412  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1749 Long E 1126  
 start stop duration  
 TIME :12:39:00 12:56:00 17 (min) Purpose code: 3  
 LOG :2972.50 2973.30 0.80 Area code : 3  
 FDEPTH: 241 238 GearCond.code: 9  
 BDEPTH: 241 238 Validity code: 1  
 Towing dir: \* Wire out: 750 m Speed: 30 kn\*10

Sorted: 215 Kg Total catch: 521.38 CATCH/HOUR: 1840.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	450.18	1175	24.46	4936
Trachurus capensis	370.52	2686	20.14	4940
Dentex macrophthalms	206.47	1055	11.22	4941
Helicolenus dactylopterus	198.46		10.78	
Synagrops microlepis	161.96		8.80	
Merluccius capensis, male	100.41	275	5.46	4937
Pterothrissus bellocci	57.81	300	3.14	
Raja miraletus	55.98	71	3.04	
Chelidonichthys capensis	45.88	116	2.49	
Chlorophthalmus atlanticus	36.04	1860	1.96	
Callorhynchus capensis	36.04	25	1.96	
Hexanchus griseus	32.36	25	1.76	
Hyperoglyphe moselii	28.45	25	1.55	
Trigla lyra	24.56	92	1.33	
Squalus megalops	13.09	46	0.71	
Coelorinchus coelorhinc. polli	6.67	116	0.36	
Oxynotus centrina	5.65	4	0.31	
PORTUNIDAE	5.05	300	0.27	
Merluccius polli, female	2.86	21	0.16	4938
Merluccius polli, male	1.73	14	0.09	4939
Total	1840.17		99.99	

PROJECT STATION:1413  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1750 Long E 1122  
 start stop duration  
 TIME :14:28:00 14:42:00 14 (min) Purpose code: 3  
 LOG :2980.00 2980.80 0.80 Area code : 3  
 FDEPTH: 331 344 GearCond.code: 9  
 BDEPTH: 331 344 Validity code: 1  
 Towing dir: 328° Wire out:1200 m Speed: 30 kn\*10

Sorted: 197 Kg Total catch: 647.30 CATCH/HOUR: 2774.14

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	1047.43		37.76	
Merluccius capensis, female	322.29	317	11.62	4942
Trachurus capensis	228.00	754	8.22	4949
Squalus megalops	176.57	206	6.36	
Galeus polli	159.09	1440	5.73	
Raja confundens	123.43	34	4.45	
Zeus capensis	121.71	137	4.39	
Merluccius paradoxus, female	99.64	184	3.59	4944
Heptranchias perlo	99.43	103	3.58	
Dentex macrophthalms	74.06	171	2.67	4950
Chlorophthalmus atlanticus	49.71	1303	1.79	
Lophius vomerinus	35.57	4	1.28	4947
Mustelus palumbes	29.14	13	1.05	
Raja miraletus	28.46	34	1.03	
Merluccius capensis, male	27.21	30	0.98	4943
Lophius vaillanti	24.43	9	0.88	4948
Trachipterus jacksonensis	24.00	34	0.87	
Merluccius polli, female	20.91	21	0.75	4946
Laemonema laureysi	19.20	240	0.69	
Synagrops microlepis	16.11	960	0.58	
Chelidonichthys capensis	15.77	34	0.57	
Malacocephalus laevis	11.66	206	0.42	
Merluccius paradoxus, male	7.97	17	0.29	4945
Coelorinchus coelorhinc. polli	5.83	103	0.21	
Coelorinchus fasciatus	4.46	34	0.16	
PORTUNIDAE	2.06	137	0.07	
Total	2774.14		99.99	

PROJECT STATION:1414  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1750 Long E 1119  
 start stop duration  
 TIME :16:22:00 16:52:00 30 (min) Purpose code: 3  
 LOG :2988.30 2989.90 1.60 Area code : 3  
 FDEPTH: 654 638 GearCond.code: 9  
 BDEPTH: 654 638 Validity code: 1  
 Towing dir: 360° Wire out:1650 m Speed: 32 kn\*10

Sorted: 249 Kg Total catch: 1221.50 CATCH/HOUR: 2443.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Nezumia sp.	853.20	26280	34.92	
Trachyrincus scabrus	391.68	1224	16.03	
Merluccius paradoxus, female	335.90	424	13.75	4952
Todarodes sagittatus	177.84	288	7.28	
Bassanago albescens	157.68	1440	6.45	
Alepocephalus sp.	84.96	3024	3.42	
Neoharriotta pinnata	83.52	72	3.48	
Alloctythus verrucosus	77.04	864	3.15	
Lamprogrammus exutus	66.24	360	2.71	
Lophius vomerinus	49.80	10	2.04	4955
Lophius vaillanti	29.60	6	1.21	4954
S H A R K S	24.48	72	1.00	
Notacanthus sexspinis	23.04	144	0.94	
Ebinania costaecanarie	21.60	72	0.88	
Raja caudaspinosa	13.68	144	0.56	
Helicolenus dactylopterus	13.68	2232	0.56	
Merluccius polli, female	13.00	12	0.53	4953
Merluccius paradoxus, male	8.90	16	0.36	4951
Hoplostethus cadenati	6.48	216	0.27	
Selachophidium guentheri	6.48	72	0.27	
Lithodes ferox	4.20	2	0.17	
Total	2443.00		99.98	

PROJECT STATION:1415  
 DATE:14/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1732 Long E 1120  
 start stop duration  
 TIME :21:00:00 21:30:00 30 (min) Purpose code: 3  
 LOG :3007.50 3009.10 1.60 Area code : 3  
 FDEPTH: 412 453 GearCond.code: 9  
 BDEPTH: 412 453 Validity code: 1  
 Towing dir: 350° Wire out:1200 m Speed: 32 kn\*10

Sorted: 367 Kg Total catch: 927.94 CATCH/HOUR: 1855.88

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius paradoxus, female	592.26	1138	31.91	4956
Helicolenus dactylopterus	336.00	1512	18.10	
Trachyrincus scabrus	296.10	2142	15.95	
Deania calcea	258.30	84	13.92	
Nezumia sp.	138.18	3150	7.45	
Chaceon maritae	65.52	378	3.53	
Laemonema laureysi	42.42	462	2.29	
Lophius vaillanti	38.30	8	2.06	4960
Lophius vomerinus	24.80	8	1.34	4959
Merluccius paradoxus, male	17.78	42	0.96	4957
Epigonus denticulatus	17.64	714	0.95	
Etmopterus lucifer	12.18	42	0.66	
Aristeus varidens	8.40	1008	0.45	
PORTUNIDAE	6.30	168	0.34	
Merluccius polli, female	1.70	2	0.09	4958
Total	1855.88		100.00	

PROJECT STATION:1416  
 DATE:15/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1731 Long E 1127  
 start stop duration  
 TIME :04:53:00 05:23:00 30 (min) Purpose code: 3  
 LOG :3032.30 3033.90 1.60 Area code : 3  
 FDEPTH: 187 195 GearCond.code: 9  
 BDEPTH: 187 195 Validity code: 1  
 Towing dir: 360° Wire out: 600 m Speed: 32 kn\*10

Sorted: 188 Kg Total catch: 1420.38 CATCH/HOUR: 2840.76

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalms	1195.76	10630	42.09	4965
Merluccius capensis, female	756.26	2378	26.62	4962
Trachurus capensis	385.04	4218	13.55	4966
Pterothrissus bellocci	117.36	1550	4.13	
Squalus megalops	79.76	246	2.81	
Chelidonichthys capensis	66.42	108	2.34	
Merluccius capensis, male	61.36	200	2.16	4961
Mustelus mustelus	45.56	16	1.60	
Chelidonichthys queketti	41.62	246	0.97	
Mustelus palumbes	25.32	16	0.89	
Octopus sp.	16.42	16	0.58	
Merluccius polli, male	12.74	214	0.45	4963
Synagrops microlepis	10.28	2378	0.36	
Merluccius polli, female	6.14	108	0.22	4964
Lophius vomerinus	6.06	2	0.21	4967
Chattrabus melanurus	5.36	46	0.19	
OPHIDIIDAE	4.14	16	0.15	
Zeus faber	3.06	16	0.11	
SCORPAENIDAE	2.76	230	0.10	
Austroglossus microlepis	2.46	92	0.09	
Chlorophthalmus atlanticus	1.84	476	0.06	
Sepia australis	1.68	46	0.06	
Helicolenus dactylopterus	1.54	62	0.05	
Merluccius polli, juveniles	1.54	92	0.05	4968
Aristeus varidens	1.22	460	0.04	
Lepidopus caudatus	0.92	16	0.03	
Todarodes sagittatus	0.76	16	0.03	
Bassanago albescens	0.62	16	0.02	
Genypteris capensis	0.46	16	0.02	
C R A B S	0.30	16	0.01	
Cynoglossus capensis	0.16	16	0.01	
Total	2840.76		100.00	

PROJECT STATION:1417  
 DATE:15/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1732 Long E 1135  
 start stop duration  
 TIME :07:22:00 07:52:00 30 (min) Purpose code: 3  
 LOG :3044.70 3046.20 1.50 Area code : 3  
 FDEPTH: 118 119 GearCond.code: 9  
 BDEPTH: 118 119 Validity code: 1  
 Towing dir: 360° Wire out: 450 m Speed: 30 kn\*10

Sorted: 61 Kg Total catch: 1877.98 CATCH/HOUR: 3755.96

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Dentex macrophthalms	2263.00	22692	60.25	4972
Trachurus capensis	1249.30	20770	33.26	4970
Spondyliosa cantharus	88.04	62	2.34	
Merluccius capensis, female	66.96	310	1.78	4969
Pterothrissus bellocci	45.26	744	1.21	
Galeichthys feliceps	22.94	124	0.61	
Zeus capensis	8.06	62	0.21	
Trachurus trecae	7.44	310	0.20	4971
Cynoglossus capensis	3.10	62	0.08	
Lepidopus caudatus	1.86	62	0.05	
Total	3755.96		99.99	

PROJECT STATION:1418  
 DATE:15/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1724 Long E 1135  
 start stop duration  
 TIME :09:15:00 09:28:00 13 (min) Purpose code: 3  
 LOG :3054.10 3054.80 0.70 Area code : 3  
 FDEPTH: 132 139 GearCond.code: 9  
 BDEPTH: 132 139 Validity code: 1  
 Towing dir: 340° Wire out: 500 m Speed: 30 kn\*10

Sorted: 78 Kg Total catch: 3391.11 CATCH/HOUR: 15651.28

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Trachurus capensis	8873.08	139911	56.69	4973
Dentex macrophthalms	5773.85	68358	36.89	4974
Pterothrissus bellocci	627.69	10615	4.01	
Merluccius capensis, female	254.22	1648	1.62	4976
Galeichthys feliceps	87.69	231	0.56	
Atractoscion aequidens	27.69	18	0.18	4975
Merluccius capensis, male	7.06	46	0.05	4977
Total	15651.28		100.00	



PROJECT STATION:1419  
 DATE:15/ 2/96 GEAR TYPE: BT No:9 POSITION:Lat S 1724 Long E 1125  
 start stop duration  
 TIME :11:07:00 11:13:00 6 (min) Purpose code: 3  
 LOG :3063.50 3063.90 0.40 Area code : 3  
 FDEPTH: 244 244 GearCond.code: 8  
 BDEPTH: 244 244 Validity code: 9  
 Towing dir: 346° Wire out: 700 m Speed: 30 kn\*10

Sorted: 191 Kg Total catch: 277.45 CATCH/HOUR: 2774.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	1314.50	3070	47.38	4978
Dentex macrophthalmus	370.00	2160	13.34	4982
Merluccius capensis, male	301.00	670	10.85	4979
Synagrops microlepis	184.00		6.63	
Chlorophthalmus atlanticus	158.80		5.72	
Trachurus capensis	156.00	1520	5.62	4983
Helicolenus dactylopterus	152.00	1640	5.48	
Octopus sp.	29.20	40	1.05	
Pterothrissus belloci	29.20	160	1.05	
Hyperglyphe moselii	28.00	40	1.01	
Squalus megalops	20.40	80	0.74	
SCRS00	8.00	40	0.29	
Coelorrhinus coelorhinc. polli	6.00	160	0.22	
Sepia sp.	4.80	40	0.17	
Merluccius polli, female	4.20	50	0.15	4980
Merluccius polli, male	3.60	50	0.13	4981
Austroglossus microlepis	2.40	40	0.09	
OMMASTREPIDAE	1.60	40	0.06	
Solenocera africana	0.80	160	0.03	
Total	2774.50		100.01	

PROJECT STATION:1420  
 DATE:15/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 1721 Long E 1122  
 start stop duration  
 TIME :14:08:00 14:38:00 30 (min) Purpose code: 3  
 LOG :3075.00 3076.30 1.30 Area code : 3  
 FDEPTH: 295 296 GearCond.code:  
 BDEPTH: 295 296 Validity code:  
 Towing dir: 360° Wire out: 850 m Speed: 30 kn\*10

Sorted: 248 Kg Total catch: 559.22 CATCH/HOUR: 1118.44

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Chlorophthalmus atlanticus	391.60	13880	35.01	
Merluccius capensis, female	219.20	324	19.60	4985
Helicolenus dactylopterus	173.60	3112	15.52	
Merluccius polli, female	68.00	984	6.08	4987
Merluccius capensis, male	66.70	116	5.96	4984
Merluccius polli, male	51.60	712	4.61	4986
Chelidonichthys queketti	27.52	112	2.46	
Laemonema laureysi	23.76	464	2.12	
Synagrops microlepis	15.52	1200	1.39	
Squalus megalops	13.84	40	1.24	
Pterothrissus belloci	13.12	56	1.17	
MYCTOPHIDAE	11.84	2320	1.06	
Trachurus capensis	7.04	80	0.63	
Galeus polli	7.04	96	0.63	
Coelorrhinus coelorhinc. polli	6.64	152	0.59	
Raja miraletus	6.40	8	0.57	
Raja leoparden	3.84	8	0.34	
Dentex macrophthalmus	3.52	16	0.31	
Todarodes sagittatus	3.20	8	0.29	
Lophius vomerinus	2.30	2	0.21	4988
Aristeus varidens	1.44	328	0.13	
Malacocephalus laevis	0.72	24	0.06	
Total	1118.44		99.98	

PROJECT STATION:1421  
 DATE:15/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 1614 Long E 1117  
 start stop duration  
 TIME :16:14:00 16:44:00 30 (min) Purpose code: 3  
 LOG :3084.10 3085.70 1.60 Area code : 3  
 FDEPTH: 433 447 GearCond.code:  
 BDEPTH: 433 447 Validity code:  
 Towing dir: 351° Wire out:1250 m Speed: 32 kn\*10

Sorted: 428 Kg Total catch: 1186.77 CATCH/HOUR: 2373.54

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Helicolenus dactylopterus	1071.20	5564	45.13	
Merluccius paradoxus, female	576.40	1058	24.28	4990
Merluccius polli, female	212.20	268	8.94	4992
Nezumia sp.	187.20	5200	7.89	
Trachyrincus scabrus	118.04	832	4.97	
Chlorophthalmus atlanticus	93.60	2444	3.94	
Laemonema laureysi	44.20	468	1.86	
Todarodes sagittatus	24.96	104	1.05	
Hoplostethus cadonati	15.60	520	0.66	
Aristeus varidens	11.44	2080	0.48	
Merluccius paradoxus, male	5.40	12	0.23	4989
Epigonus denticulatus	4.68	208	0.20	
Galeus polli	4.68	52	0.20	
MYCTOPHIDAE	2.60	468	0.11	
Merluccius polli, male	1.34	2	0.06	4991
Total	2373.54		100.00	

PROJECT STATION:1422  
 DATE:16/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 1935 Long E 1221  
 start stop duration  
 TIME :08:22:00 08:49:00 27 (min) Purpose code: 3  
 LOG :3236.20 3237.60 1.40 Area code : 3  
 FDEPTH: 144 145 GearCond.code:  
 BDEPTH: 144 145 Validity code:  
 Towing dir: 320° Wire out: 500 m Speed: 30 kn\*10

Sorted: 5 Kg Total catch: 11.86 CATCH/HOUR: 26.36

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	22.27	2580	84.48	
Todarodes sagittatus	1.89	2	7.17	
Galeichthys feliceps	0.87	2	3.30	
Helicolenus dactylopterus	0.58	7	2.20	
Merluccius capensis, juveniles	0.33	18	1.25	4993
Merluccius capensis, male	0.24	2	0.91	4994
Merluccius capensis, female	0.18	2	0.68	4995
Total	26.36		99.99	

PROJECT STATION:1423  
 DATE:16/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 1954 Long E 1224  
 start stop duration  
 TIME :11:32:00 12:14:00 32 (min) Purpose code: 3  
 LOG :3260.40 3262.40 1.50 Area code : 3  
 FDEPTH: 163 163 GearCond.code:  
 BDEPTH: 163 163 Validity code:  
 Towing dir: 316° Wire out: 500 m Speed: 30 kn\*10

Sorted: 3 Kg Total catch: 3.98 CATCH/HOUR: 5.69

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	2.81	548	49.38	
Merluccius capensis, male	2.31	17	40.60	4998
Merluccius capensis, female	1.01	8	17.75	4997
Merluccius capensis, juveniles	0.73	36	12.83	4996
Trachurus capensis, juvenile	0.60	435	10.54	4999
Total	7.46		131.10	

PROJECT STATION:1424  
 DATE:16/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2009 Long E 1236  
 start stop duration  
 TIME :15:03:00 15:33:00 30 (min) Purpose code: 3  
 LOG :3285.00 3286.50 1.50 Area code : 3  
 FDEPTH: 148 148 GearCond.code:  
 BDEPTH: 148 148 Validity code:  
 Towing dir: 168° Wire out: 500 m Speed: 30 kn\*10

Sorted: 19 Kg Total catch: 18.55 CATCH/HOUR: 37.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	34.00	2616	91.64	
Merluccius capensis, juveniles	2.76	144	7.44	4501
Merluccius capensis, male	0.34	4	0.92	4500
Total	37.10		100.00	

PROJECT STATION:1425  
 DATE:17/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2057 Long E 1309  
 start stop duration  
 TIME :06:30:00 06:45:00 15 (min) Purpose code: 3  
 LOG :3354.20 3355.00 0.80 Area code : 3  
 FDEPTH: 121 121 GearCond.code: 8  
 BDEPTH: 121 121 Validity code: 9  
 Towing dir: 160° Wire out: 450 m Speed: 30 kn\*10

Sorted: Kg Total catch: CATCH/HOUR:

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

PROJECT STATION:1426  
 DATE:17/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2113 Long E 1304  
 start stop duration  
 TIME :10:57:00 11:02:00 5 (min) Purpose code: 3  
 LOG :3375.50 3375.70 0.20 Area code : 2  
 FDEPTH: 144 144 GearCond.code: 9  
 BDEPTH: 144 144 Validity code: 4  
 Towing dir: 331° Wire out: 450 m Speed: 30 kn\*10

Sorted: 3 Kg Total catch: 2.54 CATCH/HOUR: 30.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Merluccius capensis, female	12.24	144	40.16	5002
Merluccius capensis, male	7.20	96	23.62	5003
Sufflogobius bibarbatatus	4.32	720	14.17	
Merluccius capensis, juveniles	3.72	228	12.20	5004
Hyperglyphe moselii	3.00	12	9.84	
Total	30.48		99.99	

PROJECT STATION:1427  
 DATE:17/ 2/96 GEAR TYPE: BT No: POSITION:Lat S 2124 Long E 1317  
 start stop duration  
 TIME :13:36:00 13:46:00 10 (min) Purpose code: 3  
 LOG :3395.20 3395.60 0.40 Area code : 2  
 FDEPTH: 131 130 GearCond.code: 9  
 BDEPTH: 131 130 Validity code: 1  
 Towing dir: 23° Wire out: 400 m Speed: 30 kn\*10

Sorted: 3 Kg Total catch: 4.26 CATCH/HOUR: 25.56

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP
	weight	numbers		
Sufflogobius bibarbatatus	24.00	4278	93.90	
Merluccius capensis, juveniles	1.14	60	4.46	5006
Merluccius capensis, male	0.42	6	1.64	5005
Total	25.56		100.00	







## Annex IV Instruments and fishing gear used

### Acoustic instruments

The SIMRAD EK500/38 KHZ scientific sounder was used during the survey for estimation of fish density. The EK500 has a built- in digital echo integrator, but the Bergen Echo Integrator system (BEI) was used throughout the survey. The details of the instrument settings are as follows:

#### Transceiver settings:

Bandwidth	Wide (3.8 KHz)
Pulse length	Medium (1 ms)
Max Power	2000 Watt
Sv Transducer gain	27.8 dB
Ts Transducer gain	28.1 dB

#### Printer settings:

Range	0 - 100 or 0 - 250 m
TVG	20 log R
TS Colour min	- 50 dB
Sv Colour min	- 64 dB

An ES38B with a 6.8° -3dB beamwith transducer was used for integration.

A calibration experiment using a standard copper sphere, performed in Baia dos Tigres 23/2 1994 gave the following results: Sv Transducer gain 27.8 dB, Ts Transducer gain 28.1 dB.

#### Glossary:

Sv Transducer gain: Peak transducer gain assumed during computation of volume backscattering strength.

Ts Transducer gain: Peak transducer gain assumed during computation of target strength.

Ts Colour min: Lower limit of colour scale relative to target strength.

Sv Colour min: Lower limit of colour scale relative to volume back scattering.

## **Hydrography**

Conductivity, temperature, density and oxygen were sampled regularly at CTD stations with a Seabird CTD-sonde. The salinity was calculated by a computer.

## **Fishing gear**

The vessel has two different sized 'Åkrahamn' pelagic trawls and one Gisund super bottom trawl. Only the bottom trawl was used during the survey.

The bottom trawl has a headline of 31m, footrope 47m and 20mm meshsize in the codend with an innernet of 10mm meshsize. The estimated headline height is 5m and distance between the wings during towing about 18m. The trawl is equipped with a 12" rubber bobbins gear and 7.8m<sup>2</sup>, 1670kg 'Tyborøn' trawl doors. The sweeps are 40m long.

The following drawings show the size of these trawls.



# F/F Dr. Fridtjof Nansen

OVER/UNDER/SIDER

OVERDEL  
50 STK 11' PLASTKULER

UNDERDEL  
14 M/M WIRE OMSP. MED

14 M/M BLYTAU

+ KJETTING.

TOTAL VEKT UNDER 400 KG.

SIDER.

MASKER TRAAD LENGDE MASKER  
M/M NR. I MTR. I EVING

1/2 HOGG 5,00 MTR  
STRF. 6,00 MTR  
ARM 6,00 MTR  
TAMP 2,60 MTR  
TOT. 36,00 MTR  
22 M/M Ø COMB. TAU

1/2 HOGG 4,00 MTR  
STRF. 6,00 MTR  
ARM 22,40 MTR  
TAMP 2,60 MTR  
TOT. 35,00 MTR  
28 M/M Ø  
FL. DANLINE

2H1-2  
3H1-1

3200.0 240 22.4 4

3200.0 240 32.0 4 9.5L

1620.0 160 13.0 4

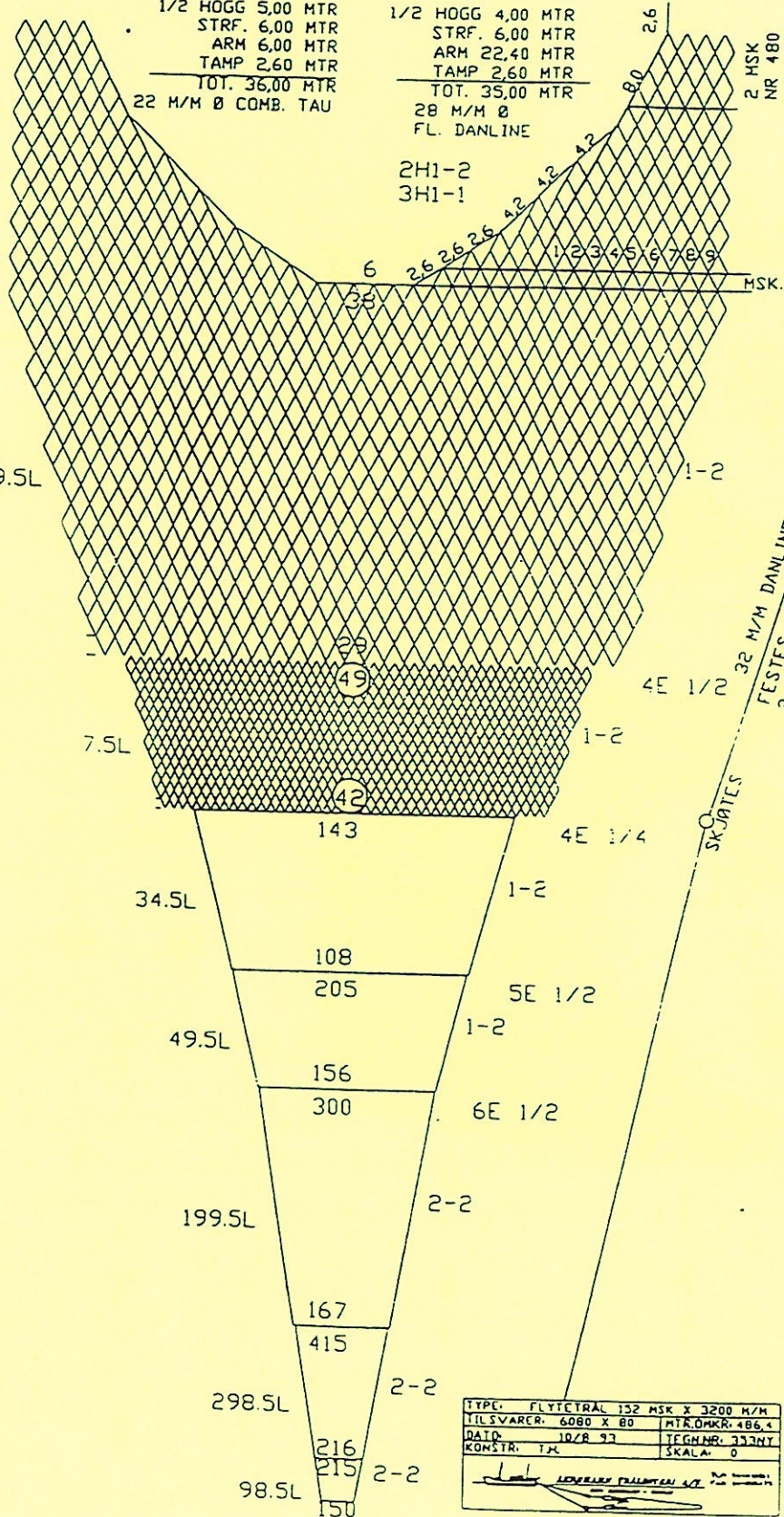
400.0 48 14.0 4

200.0 32 10.00 4

100.0 24 20.0 4

38.0 12 11.4 4

38.0 18 3.76 4



32 M/M DANLINETAU  
FESTES FOR HVER 40 CM  
2 1/2 KORTERE ENN NOTLIN

TYPE:	FLYTETRAL 152 MSK X 3200 M/M
MILSVARER:	6080 X 80
DATE:	10/8 97
KONSTR. T.M.	
MTR.OMKR:	486,4
TEGN NR:	333NY
SKALA:	0



# F/F Dr. Fridtjof Nansen

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

MASKER  
M/H

TRAAD  
NR.

LENGDE  
1 HTR. 1 EVING

OVER/UNDER

OVERDELL  
30 STK. 11 KULER  
OMSLUTTET AV NETT.

UNDERDELL  
14 M/H VIRE OMSP. MED  
14 M/H BLYTAU.  
+ KJETTING.

TOT. VEKT UNDER 400 KG.

TAMP. 1,90 MTR

TOT. 29,00 MTR

22 H.H. COMB. TAU.

1/2 HOGG 3,20 MTR  
STRF. 4,50 MTR  
ARHL. 19,40 MTR  
TAMP. 1,90 MTR  
TOT. 29,00 MTR

4 MSK  
NR 240

7,5 L

MASKING

15.5L

SE 1/4

1-2

108

205

156

300

167

415

216

215

150

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

1/2 HOGG 0,40 MTR  
STRF. 2,50 MTR  
ARHL. 19,40 MTR  
TAMP. 1,90 MTR  
TOT. 24,20 MTR

4 MSK  
NR 240

7,5 L

MASKING

15.5L

SE 1/4

1-2

108

205

156

300

167

415

216

215

150

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

2-2

SIDER

1/2 HOGG 0,40 MTR  
STRF. 2,50 MTR  
ARHL. 19,40 MTR  
TAMP. 1,90 MTR  
TOT. 24,20 MTR

4 MSK  
NR 240

7,5 L

MASKING

15.5L

SE 1/4

1-2

108

205

156

300

167

415

216

215

150

2-2

2-2

2-2

2-2

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
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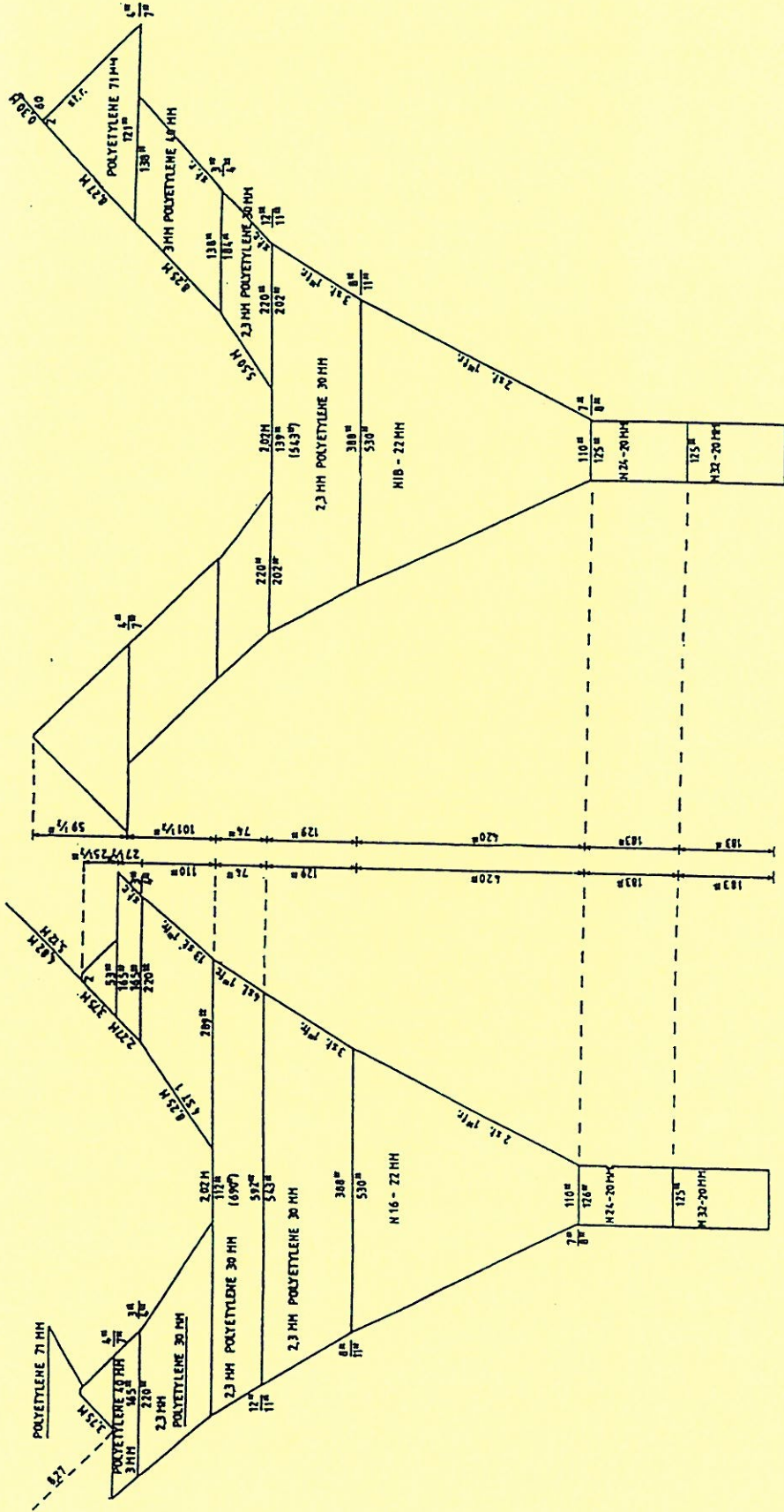
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DATE:	23/6 93
KONSTR:	T-H
TEGNING:	510
SKALA:	0


  
 JENTAM FLYBETEN A/S  
 TVE 100-0300  
 TVE 100-0303

SKJØTES  
32 M/H BÅNLINE TAU  
TESTES FOR HVER 40 CM  
2 1/2 KORTERE ENN KOTLIN



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 height  
 6m and distance between wings during towing 18-20m.







## Annex V Comparative fishing "Africana" and "Dr. Fridtjof Nansen" 16-18 January 1996.

Table 1. Trawl station numbers and numbers of hake per 1000 m<sup>2</sup> swept area in different length groups. Mean values and p-values for T-tests are also given.

	HAKE									
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	1194	1195	1196	1198	1199	1200	1201	1202	1204
<b>Numbers</b>										
<b>&lt; 10 cm</b>										
A swept	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.02	0.05
N swept	0.49	0.13	0.83	9.05	1.11	0.19	0.67	0.33	1.85	11.26
Diff.	-0.49	-0.13	-0.83	-9.04	-1.11	-0.19	-0.65	-0.33	-1.83	-11.21
Mean A:	0.01		Mean N:	2.59		T- test:	0.07			
<b>10 - 20 cm</b>										
A swept	34.20	10.47	10.51	2.20	13.71	2.30	2.35	0.65	0.81	2.78
N swept	27.79	11.95	22.35	9.11	33.87	3.15	5.60	4.66	3.19	11.40
Diff.	6.42	-1.47	-11.84	-6.91	-20.16	-0.85	-3.25	-4.02	-2.38	-8.62
Mean A:	8.00		Mean N:	13.31		T- test:	0.04			
<b>20 - 30 cm</b>										
A swept	16.91	1.60	0.78	1.04	5.20	1.18	3.42	2.17	1.49	6.94
N swept	4.02	1.13	0.83	1.37	10.02	0.62	1.31	3.23	1.54	2.65
Diff.	12.89	0.47	-0.05	-0.33	-4.82	0.55	2.11	-1.06	-0.05	4.29
Mean A:	4.07		Mean N:	2.67		T- test:	0.37			
<b>30 - 40 cm</b>										
A swept	0.25	0.28	0.28	0.29	0.07	0.18	0.38	0.27	0.31	0.75
N swept	0.22	0.15	0.29	0.78	0.21	0.15	0.45	0.34	0.31	0.48
Diff.	0.03	0.13	-0.01	-0.49	-0.14	0.04	-0.06	-0.07	0.01	0.27
Mean A:	0.31		Mean N:	0.34		T- test:	0.63			
<b>40 - 50 cm</b>										
A swept	0.13	0.15	0.38	0.42	0.00	0.08	0.17	0.07	0.08	0.16
N swept	0.05	0.05	0.44	0.70	0.02	0.06	0.09	0.09	0.05	0.20
Diff.	0.08	0.10	-0.06	-0.28	-0.02	0.02	0.08	-0.03	0.03	-0.05
Mean A:	0.16		Mean N:	0.18		T- test:	0.70			
<b>50 - 60 cm</b>										
A swept	0.05	0.03	0.30	0.31	0.00	0.10	0.13	0.05	0.08	0.18
N swept	0.00	0.02	0.34	0.49	0.00	0.12	0.13	0.05	0.08	0.10
Diff.	0.05	0.00	-0.04	-0.18	0.00	-0.03	0.00	0.00	0.01	0.08
Mean A:	0.12		Mean N:	0.13		T- test:	0.61			
<b>60 - 70 cm</b>										
A swept	0.00	0.03	0.13	0.10	0.00	0.08	0.07	0.05	0.02	0.00
N swept	0.00	0.02	0.07	0.14	0.00	0.04	0.07	0.02	0.00	0.00
Diff.	0.00	0.00	0.06	-0.04	0.00	0.04	0.00	0.03	0.02	0.00
Mean A:	0.05		Mean N:	0.04		T- test:	0.23			
<b>70 - 80 cm</b>										
A swept	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00
N swept	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Diff.	0.00	0.01	-0.02	0.00	0.00	0.02	0.00	-0.01	0.00	0.00
Mean A:	0.00		Mean N:	0.00		T- test:	0.97			
<b>80 - 90 cm</b>										
A swept	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00
N swept	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Diff.	0.00	0.00	0.00	-0.03	0.00	0.00	0.00	0.02	0.00	0.00
Mean A:	0.00		Mean N:	0.00		T- test:	0.75			
<b>&gt; 90 cm</b>										
A swept	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
N swept	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Diff.	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Mean A:	0.00		Mean N:	0.00		T test:	0.34			



Table 2. Trawl station numbers and total biomass, numbers of monk, and numbers of gurnards per 1000 m<sup>2</sup> swept area. Mean values and p-values for T-tests are also given.

<b>TOTAL BIOMASS</b>										
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	1194	1195	1196	1198	1199	1200	1201	1202	1204
A swept	6.11	5.15	7.79	9.11	2.01	5.75	6.54	7.03	6.13	2.41
N swept	3.39	2.55	3.36	4.85	3.22	3.28	3.34	3.12	2.37	3.87
	Mean A:	5.80		Mean N:	3.34		T-test:	0.01		
<b>MONK</b>										
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	1194	1195	1196	1198	1199	1200	1201	1202	1204
<b>Number</b>										
A swept	1.08	1.34	2.55	1.19	0.05	1.26	0.45	0.86	0.17	0.06
N swept	0.57	0.64	0.54	0.99	0.17	0.41	0.22	0.35	0.05	0.10
Diff.	0.51	0.70	2.01	0.19	-0.12	0.84	0.22	0.51	0.11	-0.05
	Mean A:	0.90		Mean N:	0.41		T-test:	0.03		
<b>Weight</b>										
A swept	0.36	0.64	1.21	0.52	0.02	0.53	0.18	0.34	0.06	0.02
N swept	0.23	0.28	0.24	0.47	0.07	0.17	0.09	0.20	0.02	0.04
Diff.	0.14	0.35	0.97	0.05	-0.05	0.36	0.08	0.15	0.04	-0.02
	Mean A:	0.39		Mean N:	0.18		T-test:	0.06		
<b>GURNARD</b>										
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	1194	1195	1196	1198	1199	1200	1201	1202	1204
<b>Number</b>										
A swept	1.08	1.34	2.55	1.19	0.05	1.26	0.45	0.86	0.17	0.06
N swept	0.57	0.64	0.54	0.99	0.17	0.41	0.22	0.35	0.05	0.10
Diff.	0.51	0.70	2.01	0.19	-0.12	0.84	0.22	0.51	0.11	-0.05
	Mean A:	0.90		Mean N:	0.41		T-test:	0.03		
<b>Weight</b>										
A swept	0.36	0.64	1.21	0.52	0.02	0.53	0.18	0.34	0.06	0.02
N swept	0.23	0.28	0.24	0.47	0.07	0.17	0.09	0.20	0.02	0.04
Diff.	0.14	0.35	0.97	0.05	-0.05	0.36	0.08	0.15	0.04	-0.02
	Mean A:	0.39		Mean N:	0.18		T-test:	0.06		



Table 3. Trawl station numbers and numbers of horse mackerel kingklip per 1000 m<sup>2</sup> swept area. Mean values and p-values for T-tests are also given.

<b>HORSE MACKEREL</b>										
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	2	1195	1196	1198	1199	1200	1201	1202	1204
<b>Numbers</b>										
A swept	0.25	0.29	0.53	0.00	0.12	0.61	0.41	0.71	1.52	0.08
N swept	0.32	0.93	0.44	1.46	0.15	1.58	0.29	0.40	1.11	0.12
Diff.	-0.08	-0.64	0.09	-1.46	-0.03	-0.96	0.12	0.31	0.42	-0.04
	Mean A:	0.45		Mean N:	0.68		T-test:	0.27		
<b>Weight</b>										
A swept	0.10	0.11	0.22	0.18	0.05	0.18	0.11	0.20	0.45	0.03
N swept	0.10	0.30	0.12	0.47	0.04	0.42	0.11	0.09	0.31	0.02
Diff.	0.00	-0.19	0.09	-0.29	0.01	-0.24	0.00	0.11	0.14	0.01
	Mean A:	0.16		Mean N:	0.20		T-test:	0.49		
<b>KINGKLIP</b>										
St.Nr."A"	17938	17939	17940	17941	17942	17943	17944	17945	17946	17948
St.Nr."N"	1193	1194	1195	1196	1198	1199	1200	1201	1202	1204
<b>Number</b>										
A swept	0.05	0.00	0.10	0.04	0.23	0.13	0.05	0.03	0.00	0.30
N swept	0.19	0.05	0.17	0.02	0.10	0.04	0.11	0.00	0.03	0.10
Diff.	-0.14	-0.05	-0.07	0.02	0.13	0.09	-0.06	0.03	-0.03	0.20
	Mean A:	0.09		Mean N:	0.08		T-test:	0.70		
<b>Weight</b>										
A swept	0.01	0.00	0.03	0.01	0.03	0.01	0.00	0.04	0.00	0.08
N swept	0.02	0.01	0.08	0.00	0.01	0.00	0.02	0.00	0.01	0.02
Diff.	-0.01	-0.01	-0.05	0.00	0.02	0.01	-0.01	0.04	-0.01	0.07
	Mean A:	0.02		Mean N:	0.02		T-test:	0.58		

