NORAD - FAO/UNDP GLO 82/001

CRUISE REPORTS "DR. FRIDTJOF NANSEN"

SURVEYS OF THE FISH RESOURCES OF NAMIBIA

Preliminary Report Cruise No 1/92

Part I
Surveys of the hake stocks
23 April - 22 May 1992

and

Part II
Surveys of the pelagic stocks
24 May - 21 June

Ministry of Fisheries
& Marine Resources
Namibia

Institute of Marine Research
Bergen
Norway

The DR. FRIDTJOF NANSEN RESEARCH PROGRAMME is sponsored by the Norwegian Agency for Development Assistance NORAD, the Food and Agriculture Organization of the United Nations FAO, and the United Nations Development Programme UNDP. The programme in Namibia is being 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

Reports were submitted after the completion of each survey. This cruise report describes the work and some of the findings of Survey 1 1992.

PART I

SURVEYS OF THE HAKE STOCKS

23 April - 22 May 1992

TABLE OF CONTENTS

PART I

CHAPTER 1 INTRODUCTION

1.1 GENERAL OBJECTIVES

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

The purpose of the programme was agreed as follows:

> The main objectives are descriptions of the distribution, composition and abundance of the most important resources of fish. The small pelagic fish horse mackerel, pilchard and anchovy will be investigated by the acoustic integration method combined with sampling with mid-water and bottom trawls. A swept area trawl survey programme will be used for the demersal stocks. All catches will be sampled to species by weight and numbers and biological sampling will be made of the commercially important stocks.
>
> Environmental studies will include recording of surface temperature on a continuous basis and occupation of hydrographic stations in a series of fixed profiles.
>
> Possible taxonomic problems will be studied by sampling and examination by experts in cooperation with FAO's Fisheries Department.

1.2 SPECIFIC OBJECTIVES OF PART 1

During the first part, 23 April to 22 May the main objective is investigations of hakes and associated species covering the whole shelf. The acoustic system will be used to observe possible mid water occurrence of the hakes. The survey design for the swept area trawl programme will be based on a semi-random distribution of hauls intended to cover the depth ranges of the two hake species and with a density of stations adapted to the expected fish densities. Biomass estimates of Cape hake will be based on post stratification by density areas. If time permits trawl selectivity experiments of hake will be made with a metal frame fish separator installed in the trawl.

1.3 PARTICIPATION

The scientific staff from Namibia up to 7 May were:

Hashali Hamukuaya, Helen Boyer, Filimon Dausab, Malakia Shimanda and Victor Hashoongo.

From 8 to 22 May:

Willem Nauiseb, Bennie Ushona, Kosmas Nikackmus, Joryt Traut, Chris Bartholomas and Jonny Gamataham.

The scientific staff from the Institute of Marine Research up to 22 May were:

G. Saetersdal, O. Alvheim, T. Haugland, R. Johannesen and A. Valentine (from 7 May).

K. Carpenter from FAO participated up to 6 May.

1.4 NARRATIVE

Figures 1 a-c show the course tracks with the positions of the fishing and hydrographic stations.

After departure from Walvis Bay on 23 April work started near Lüderitz on 24 April with some trawl hauls in order to make use of daylight. The southernmost line of trawl stations covering the shelf was started near the Orange River on 25 April and the programme largely followed the course tracks and station grids used in the three previous surveys. The hydrographic section off Panther Head was worked on 28 April. The shelf up to St Francis Bay including the hydrographic profile to Hottentot Point was completed by 3 May with a total of 56 successful swept area hauls. The weather conditions were generally unfavourable in this southern area with several periods of wind force 7.

The profile off Conception Bay was worked on 5 May and the swept area trawling programme continued northwards with lines of stations about every 20 nm taking care to locate both the inner and the outer limits of the distribution of the hakes. A call was made on Walvis Bay on 7 May in order to change participating scientific staff.

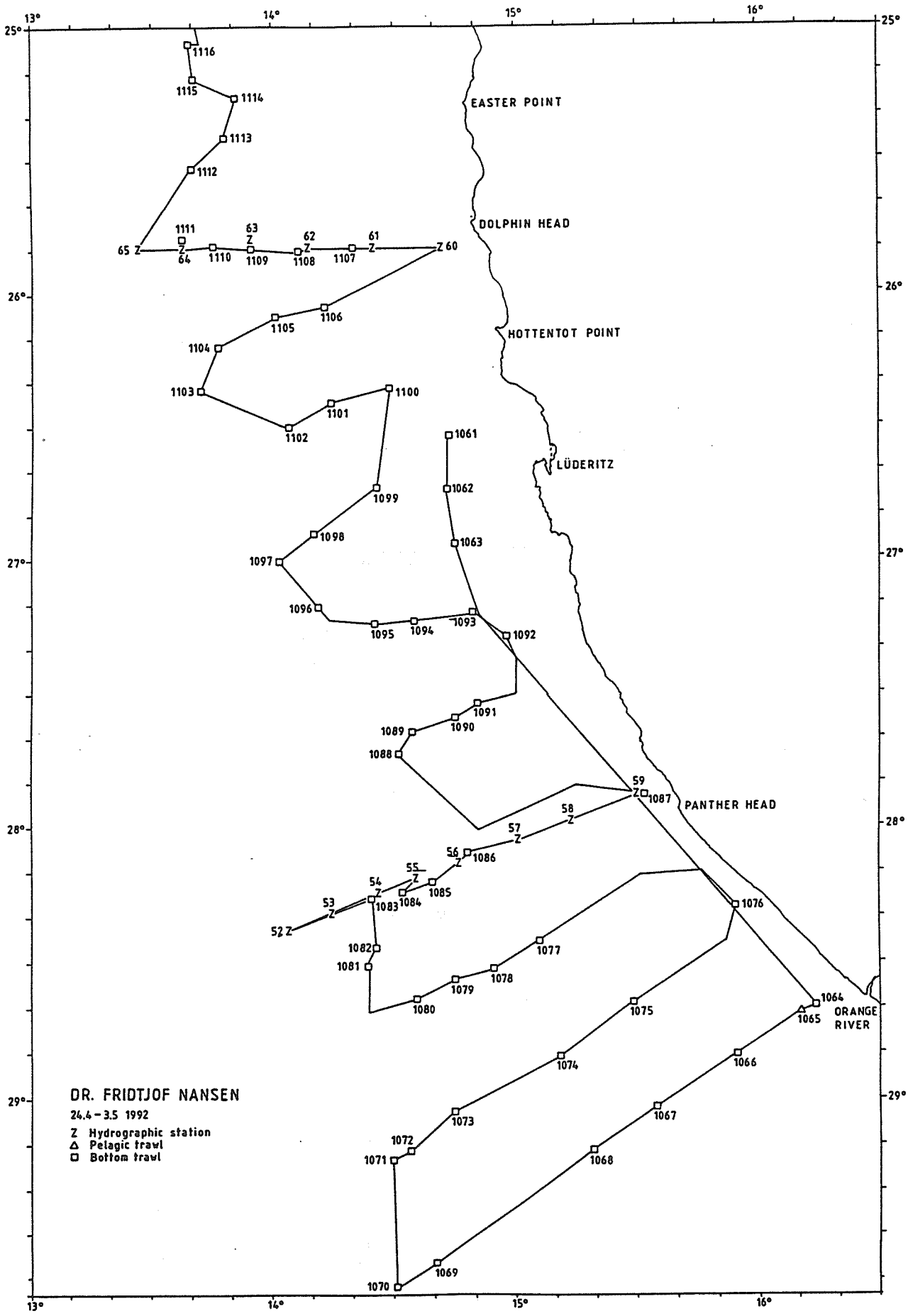


Figure 1a. Southern Region, Orange River to St. Francis Bay. Course tracks, fishing stations and hydrographic profiles.

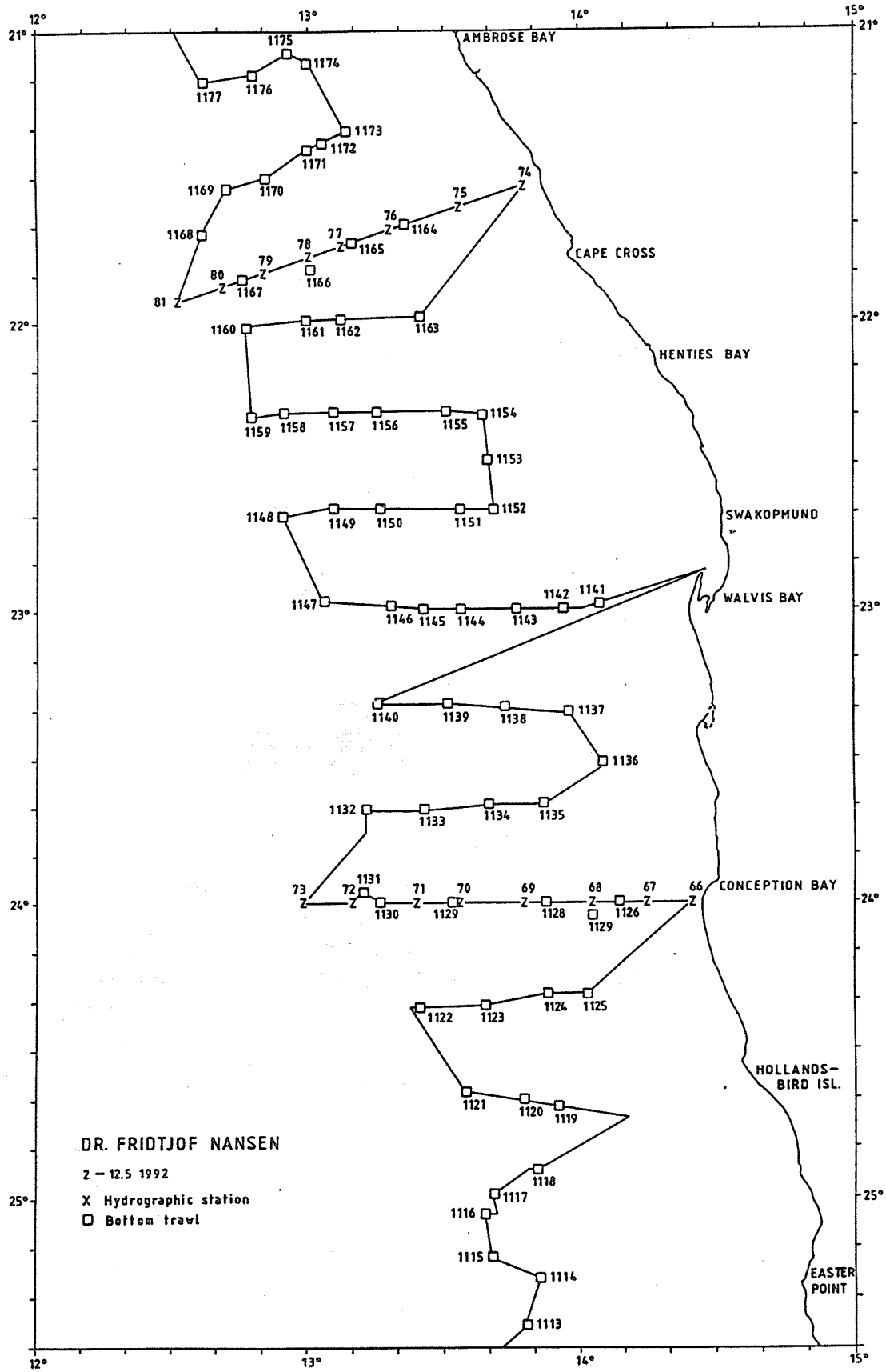


Figure 1b. Central Region, St. Francis Bay to Ambrose Bay. Course tracks, fishing stations and hydrographic profiles.

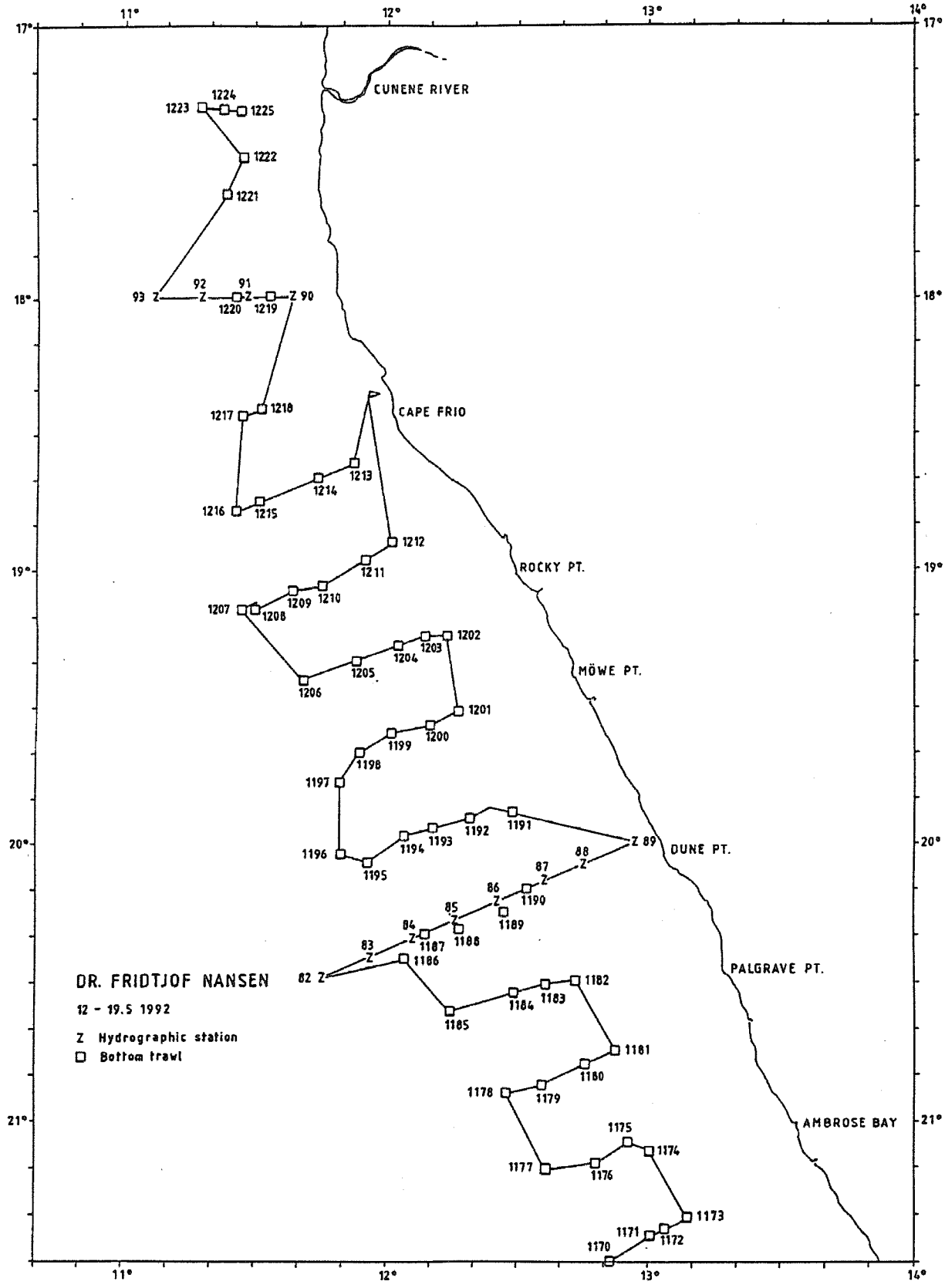


Figure 1c. Northern Region, Ambrose Bay to Cunene River. Course tracks, fishing stations and hydrographic profiles.

In the continued survey starting from Walvis Bay on 8 May northwards both the shallow water distribution of the 2 year old hake from 130 to 180m of depth and that of the large sized hake from 250-350m were covered and some test hauls were made at 400-450m for the deep water species. The weather conditions were favourable and by 12 May the central region up to Ambrose Bay had been completed with a total of 59 swept area hauls.

Small sized 2 year old hake was also found in spots of high density in the northern region and both the shallower and deeper parts of this area was covered with a total of 47 swept area hauls. The survey ended at Cunene on 19 May and Walvis Bay was reached on 21 May.

CHAPTER 2 HYDROGRAPHY

Figures 2 a-c show the sea temperature at 4m of depth as observed with the ships thermograph and Figures 3 a-b show the distribution of temperature, salinity and oxygen in the five hydrographic transects worked. The findings indicate lively upwelling particularly in the southern region.

CHAPTER 3 RESULTS OF THE ACOUSTIC AND TRAWL SURVEY

3.1 DISCUSSION OF METHODS

A description of the fishing gear and the acoustic instruments and their state is shown in Annex I.

In the trawl survey programme all catches were sampled for composition in weight and numbers by species. The bottom trawl has a headline of 31m (float line), footrope 47m, estimated headline hight 6 m and distance between wings during towing about 18m. Observations on the geometry of this type of trawl were made during Survey 2/90 and are described in the corresponding report. For conversion of catch rates to fish densities the area between the wings is assumed to be the effective fishing area i.e. q is equal to 1.

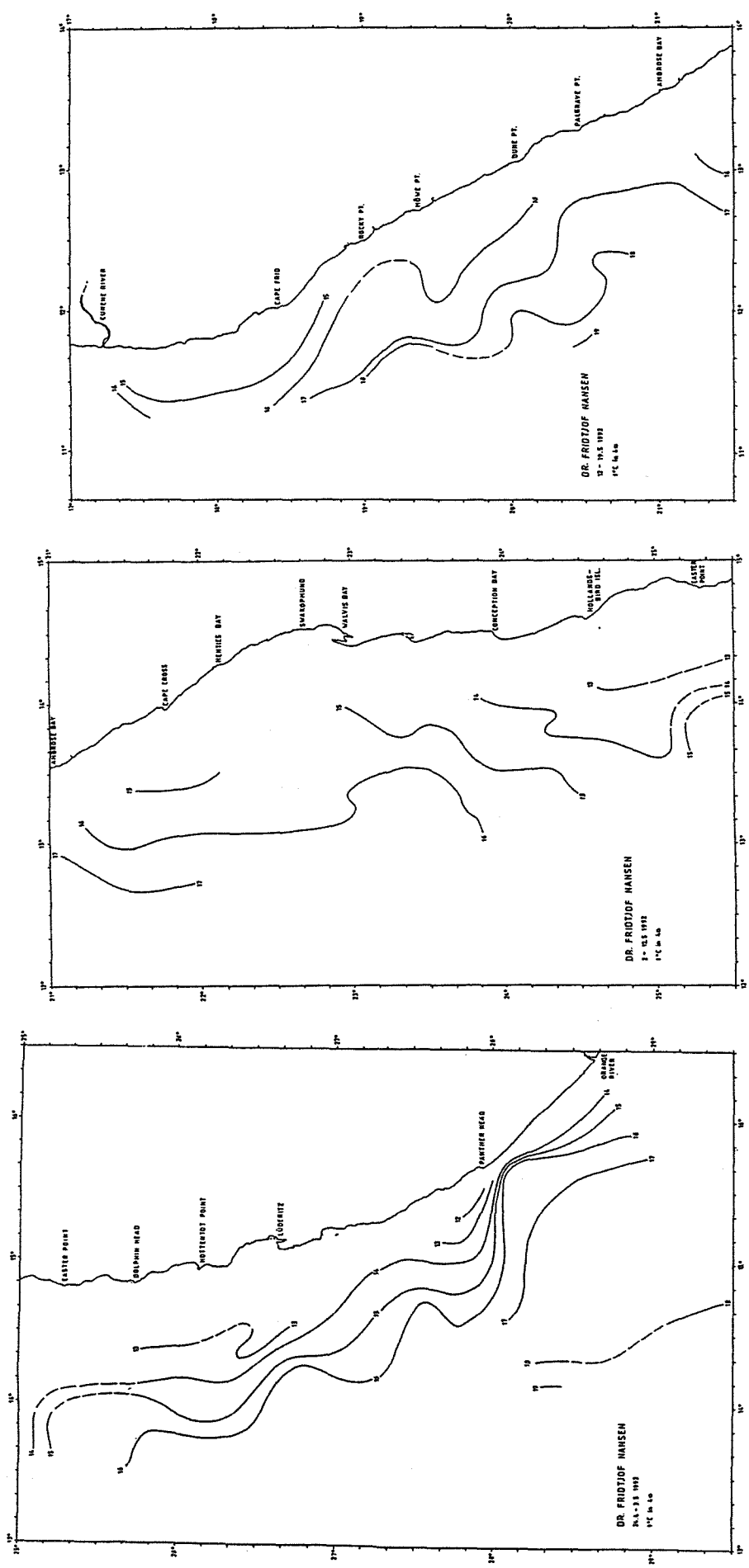


Figure 2 a-c. Distribution of temperature at 4m of depth based on observations from the ships thermograph.

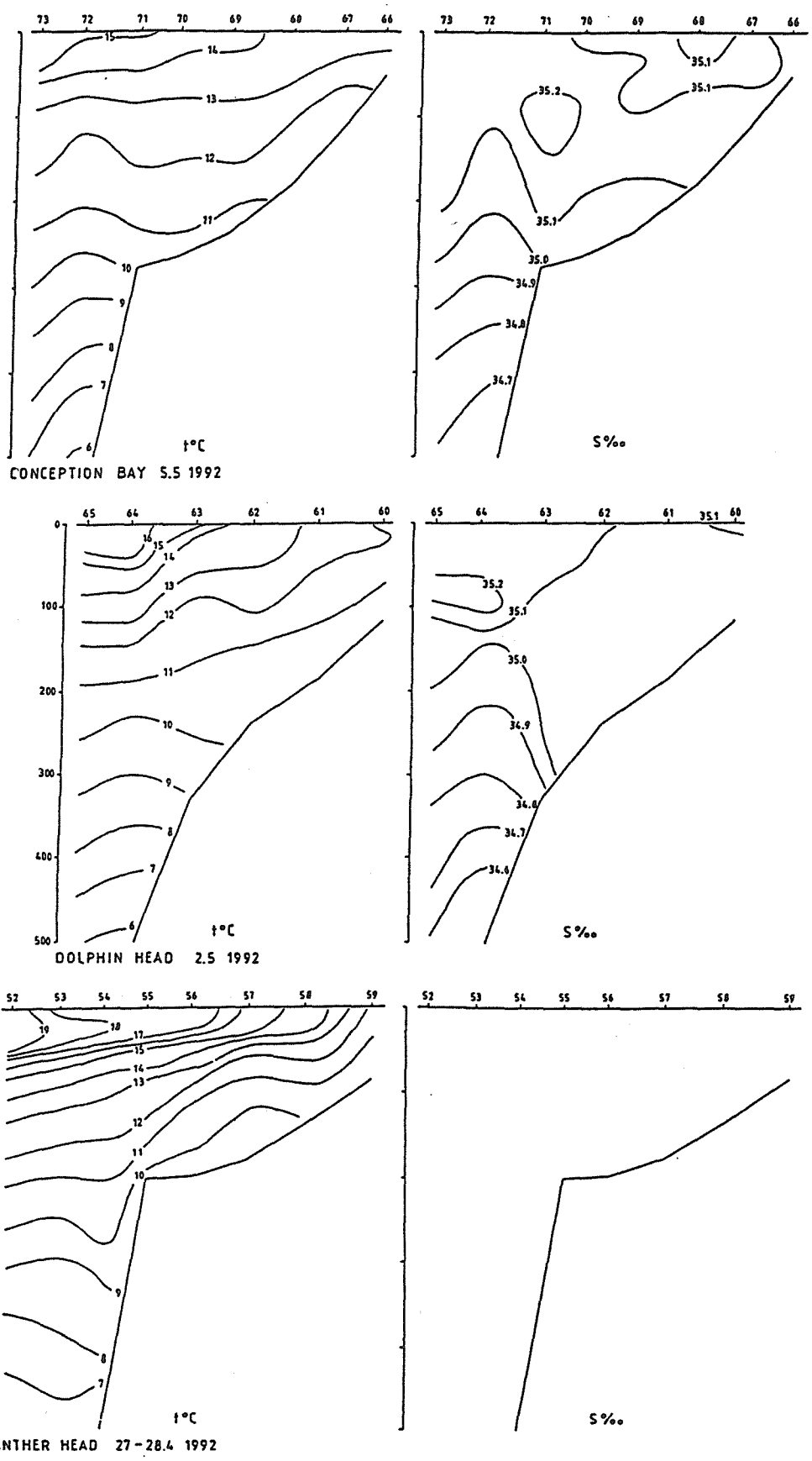


Figure 3a. Temperature and salinity in the profiles worked, Panther Head to Conception Bay.

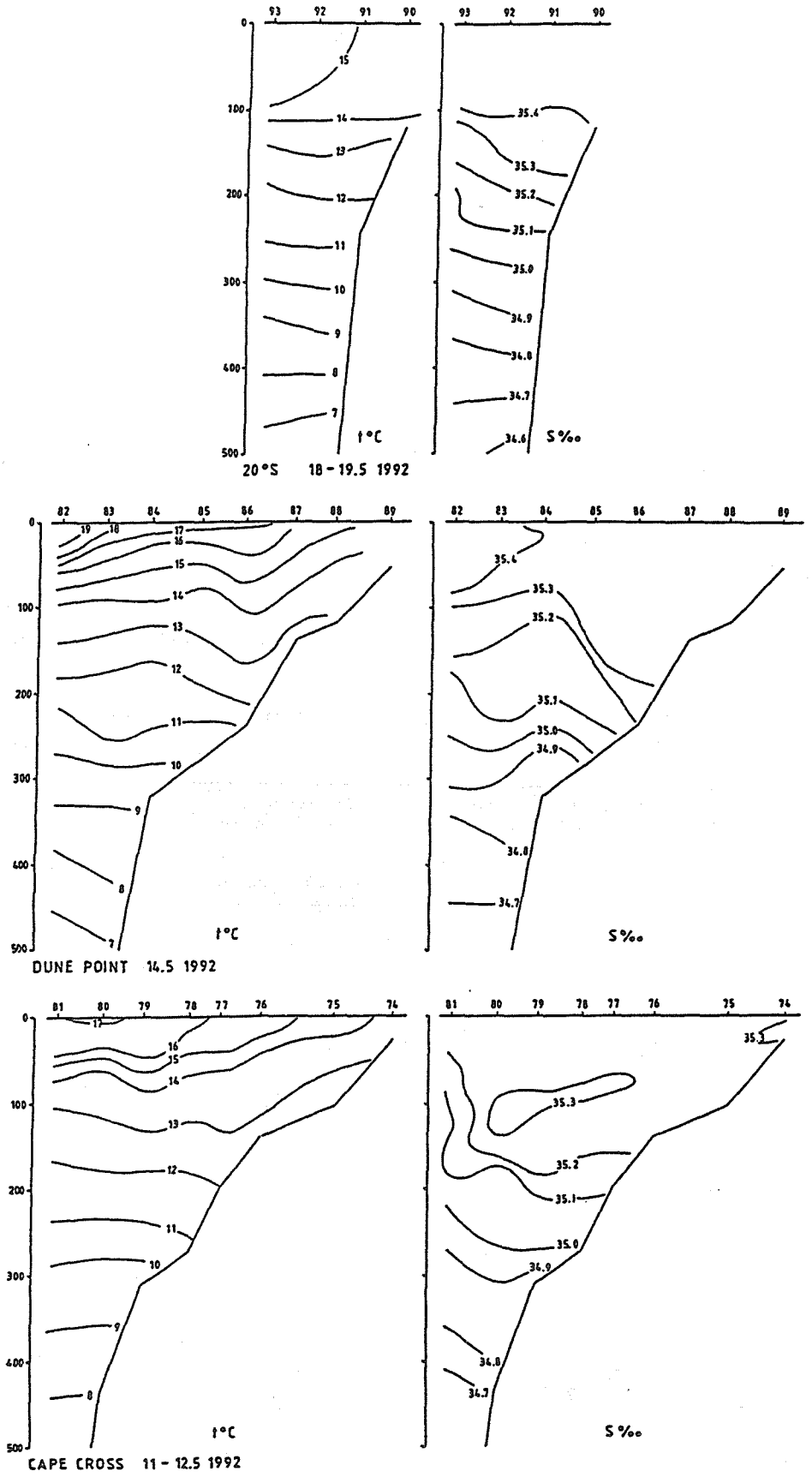


Figure 3b. Temperature and salinity in the profiles worked, Cape Cross to Cape Frio.

The problem of mid-water occurrence of hake and the effect on the swept area assessments were discussed in the report of Survey 1/91. Fish occurring above the headline of the trawl, more than 5m from the bottom must be assumed to cause an under-estimate. The extent of this behaviour seems to have varied between the surveys. Mid-water occurrence during the night has always been observed although with varying frequency. Fishing has, however, been restricted to day time as much as possible, and mid-water occurrence during the day was first found as a problem for the assessment in the northern region during the September-October survey 1990 when abundant echo traces of hake were observed both day and night. Quantification was, however, difficult with the instrumentation then available, but the new SIMRAD EK 500 system which was taken into use in the first 1991 survey provided improved means of observing and measuring the densities of hake in mid-water. A correction for the bias in the swept area estimates was then introduced using the acoustic estimates of fish found more than 5 m from the bottom. The frequent presence of spurious recordings such as of myctophids, gobies, euphaucids and others often complicates the acoustic density estimates of hakes and prevents an ordinary acoustic biomass estimate of mid water hake in the area, but special attempts were made to separate and assess mid-water hake during trawling.

During the January-February 1991 survey mid-water occurrence was common. Of the day time hauls about half was given an acoustic correction in the southern and central regions and about 2/3 in the northern region. In the October-November 1991 survey mid water occurrence was less common, there was hardly any need for adjustment of daylight hauls in the southern and central regions while about half the hauls in the northern region were given an acoustic correction. Table 1 shows the observations and measurements of density

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. Density tonnes/nm².

ORANGE RIVER - ST. FRANCIS BAY	DAY	NIGHT
Trawl		
No. stations	43	14
Mean density	30.0	20.0
Acoustic obs.		
No. stations	5	6
Mean density	11.5	9.7
ST. FRANCIS BAY - AMBROSE BAY	DAY	NIGHT
Trawl		
No. stations	44	15
Mean density	28.8	17.0
Acoustic obs.		
No. stations	4	14
Mean density	6.3	6.5
AMBROSE BAY - CUNENE RIVER	DAY	NIGHT
Trawl		
No. stations	36	11
Mean density	22.7	25.5
Acoustic obs.		
No. stations	10	7
Mean density	7.2	7.1

of fish in mid-water during trawling in this survey. Mid-water occurrence during daytime was common in the high density areas in the southern region. In addition to the cases recorded comes a similar number of stations where mid water occurrence was suspected, but could not be clearly demonstrated due to spurious recordings of other organisms at the critical depths. In the central region mid water occurrence during the day was not common and only few of the density estimates by swept area had to be given minor adjustments. In the northern region more of the hake remained above the bottom during the day and about 1/3 of the hauls were adjusted, but the amount of the adjustment represents as for the other regions only a small part of the estimates of total density.

Since estimates of the target strength of Namibian hake are not available a target strength relation used for a similar species, cod in the North Atlantic, TS = 20logl-68 was applied in the calculations of acoustic densities. Where good single fish recordings were obtained some trace counts were made in the channel 5 - 10m above the bottom for comparison with the integrator output in attempts to provide a rough check on the level of target strength. Actual practical examples of the expected relationships are as follows:

For 1.2 kg fish at 300m of depth (55cm fish)
29 fish traces: 1 integrator unit
58 " " : 2 " "

For 1 kg fish at 300m of depth (50cm fish)
32 fish traces: 1 integrator unit
64 " " : 2 " "

For 1 kg fish at 200m of depth (50cm fish)
21 fish traces: 1 integrator unit
42 " " : 2 " "

Only relatively few good recordings of single fish traces were obtained and the counts made are not thought to have a high precision. Ten sets of observations of fish of 1.0-1.2 kg of weight at 275-360m of depth gave a mean fish count about 25% less than that expected. The sources of error are, however, likely to cause an underestimate.

3.2 SOUTHERN REGION, ORANGE RIVER TO ST. FRANCIS BAY

The complete record of the fishing stations are shown in ANNEX II.

Table 2 shows the catch rates standardized to kg/hour by main groups for the shelf and the slope separately. Compared with the previous survey the mean catch rates for hake are more than doubled both on the shelf and in the slope hauls. This will be discussed further below. Some good catches of monk and sole were obtained in intermediate waters and a few high rates of kingklip were unexpectedly made in shallow waters. The higher incidence and rates of monk and kingklip may indicate the start of a recovery of these stocks. Catches of squids remained largely unchanged as did those of horse mackerels.

Table 2. Southern Region. Catch rates by main groups by bottom trawl for the shelf and slope. Kg/hour.

SHELF 50-259 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles etc.	Squid	Other
1061	167	1.0					540.0
1062	204	2490.0					510.0
1063	210	579.1					
1064	81	350.0		343.8	13.0	62.0	216.6
1065	5						
1066	152	78.2			1.6	6.4	64.0
1067	174	277.6		0.6	3.6	14.4	108.0
1068	176	232.4		67.2	8.1		93.9
1073	219	210.8					2816.4
1074	158	203.1				7.8	111.3
1075	177	220.6		2.6	1.0	98.4	156.0
1076	86	136.8		25.0	1.3	11.7	31.6
1077	168	198.8		1.8	1.8	33.6	108.8
1078	176	122.5			0.5	4.5	259.6
1079	194	176.3	1.6			3.0	143.4
1080	168	529.7				1.0	7700.4
1085	195	573.4				1.4	515.8
1086	194	227.6			1.0		367.2
1087	85	253.0	1.0		1.5	5.2	62.5
1092	179	226.0		7.0		0.8	3.0
1093	250	280.6	0.8	13.8		2.0	17.6
1106	250	1229.4	115.0		110.0		2400.0
1107	207	5.4					2037.4
1108	254	1223.5	83.5		66.0		307.5
1114	247	1179.6	18.0				215.6
MEAN		440.2	8.8	18.5	8.4	10.1	751.5

SLOPE 260-600 m

ST.NO.	DEP.	Hakes	Monk	Kingklip	Soles etc.	Squid	Other
1069	388	409.6				3.2	49.6
1070	550	111.0					48.6
1071	411	348.6		12.0			30.0
1072	304	950.6		52.4	3.0	10.8	349.4
1081	449	205.6		3.6		4.5	46.6
1082	409	530.4		14.0		3.6	13.8
1083	553	22.0					49.3
1084	301	1434.0					103.2
1088	504	55.4				5.8	70.5
1089	395	525.0				26.2	19.2
1090	328	788.8				13.6	131.2
1091	300	1025.0				9.0	13.9
1094	321	831.6	10.8	7.4		2.0	23.2
1095	370	737.3		3.2			45.8
1096	421	412.0		20.0		6.4	93.2
1097	428	119.2				6.4	46.3
1098	379	1837.5		4.0			61.5
1099	318	2012.4		9.8			6.6
1100	284	1149.4		1.6			56.0
1101	328	1259.6				19.2	132.2
1102	378	1666.2				52.7	155.0
1103	421	347.0				20.2	56.0
1104	381	7958.0					42.0
1105	315	601.4		6.5		11.1	82.2
1109	331	3841.2					158.8
1110	381	3950.2		31.4		23.6	30.8
1111	533	313.8				17.6	329.2
1112	404	534.0				24.6	71.4
1113	295	802.8					180.9
1115	357	606.0				44.4	154.3
1116	415	656.4				10.4	44.4
1117	356	828.6					154.2
MEAN		1152.2	0.3	5.2	0.1	9.9	89.0

The depth distribution of the two hake species based on the catch rates converted to densities are shown in Table 3. For both species the densities are higher than in any previous survey while as before the Cape hake shows the highest rates in the 250-350m range and the deep water hake in the 350-450m range.

Table 3. Depth distribution of the two hake species, Orange River to St. Francis Bay. Mean densities tonnes/nm² and mean catch rates kg/hour.

	100-250m	250-350m	350-450m	450-550
Cape hake				
Density	12.6	28.4	4.6	
Catch rate	380	850	140	
Deep w. hake				
Density		8.9	34.8	4.0
Catch rate		270	1040	120
No. of hauls	18	14	17	4

The distribution of the two hake species based on plots of densities by fishing stations are shown in Figures 4 and 5. These include the acoustic estimates of fish present above the 5 m bottom channel during trawling as discussed above. There was a wide high density area of Cape hake offshore from 27° to 25°S which represents a new feature in the distribution of this species compared with previous surveys. The deep water hake shows the same characteristics of distribution as in the October-November 1991 survey, but the densities are now considerably higher.

Biomass estimates based on a poststratification of the estimated densities as shown in Figure 4 and 5 give 200 000 tonnes for the Cape hake and 145 000 tonnes for the deep water hake, see Table 4. These estimates represent significant increases of biomass for both species compared with the findings of the previous surveys.

Table 4 Orange River to St. Francis Bay. Estimates of total biomass by surveys, 1 000 tonnes.

	Cape hake	Deep water hake
1/90	130	22
3/90	130	25
1/91	113	31
2/91	80	82
1/92	200	145

The size compositions of the Cape hake from pooled samples weighted by catch rates are shown by depth ranges and total for the region in Figure 6. There is as usual an increase of size with depth. The dominating cohort with a modal size around 30cm must be identical to that found in this region in the October-November 1991 survey with a mode of 25-27cm. This is assumed to originate from the 1990 spawning. The great increase in biomass now observed can not, however, be explained by the growth of this cohort over 6 months. The bulk of the increased biomass consists, as shown in Figure 6 presenting the distribution of biomass by fish length, of adult fish which must have migrated into the region most likely from the north. The fishable part of the Cape hake in this region defined as fish 36cm and larger is estimated at 37% by numbers and 72% by weight.

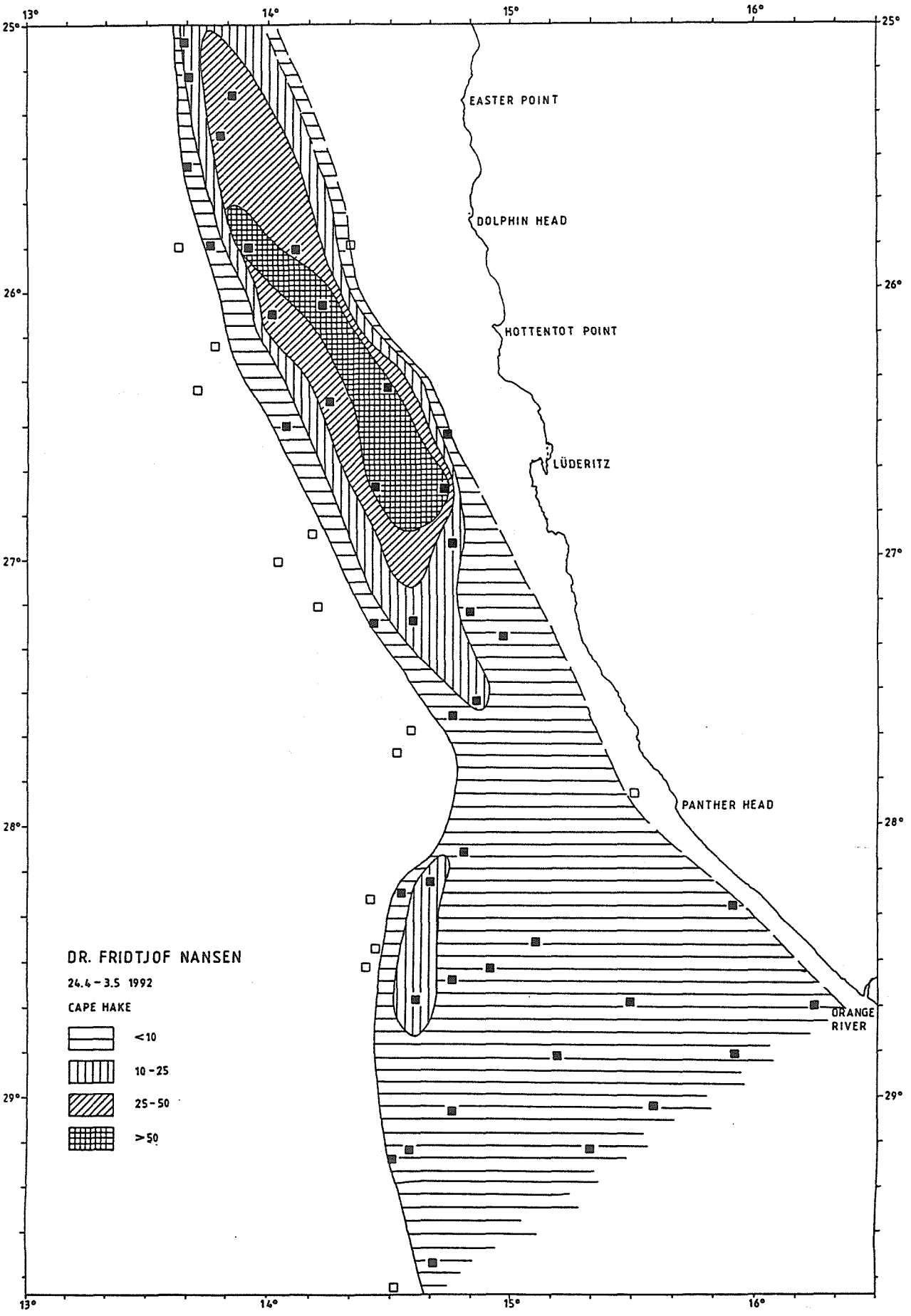


Figure 4. Southern Region. Distribution of Cape hake.

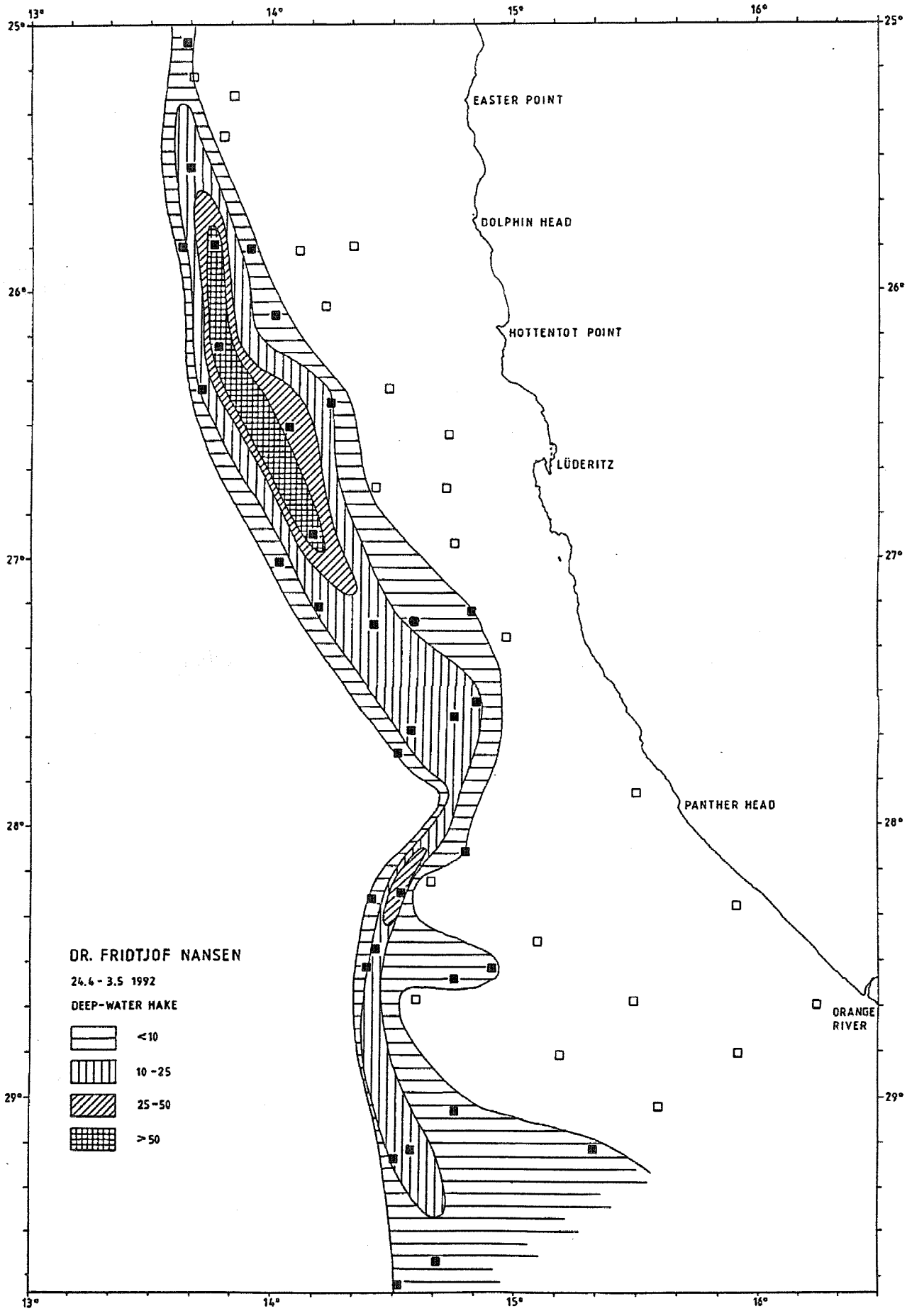


Figure 5. Southern Region. Distribution of deep water hake.

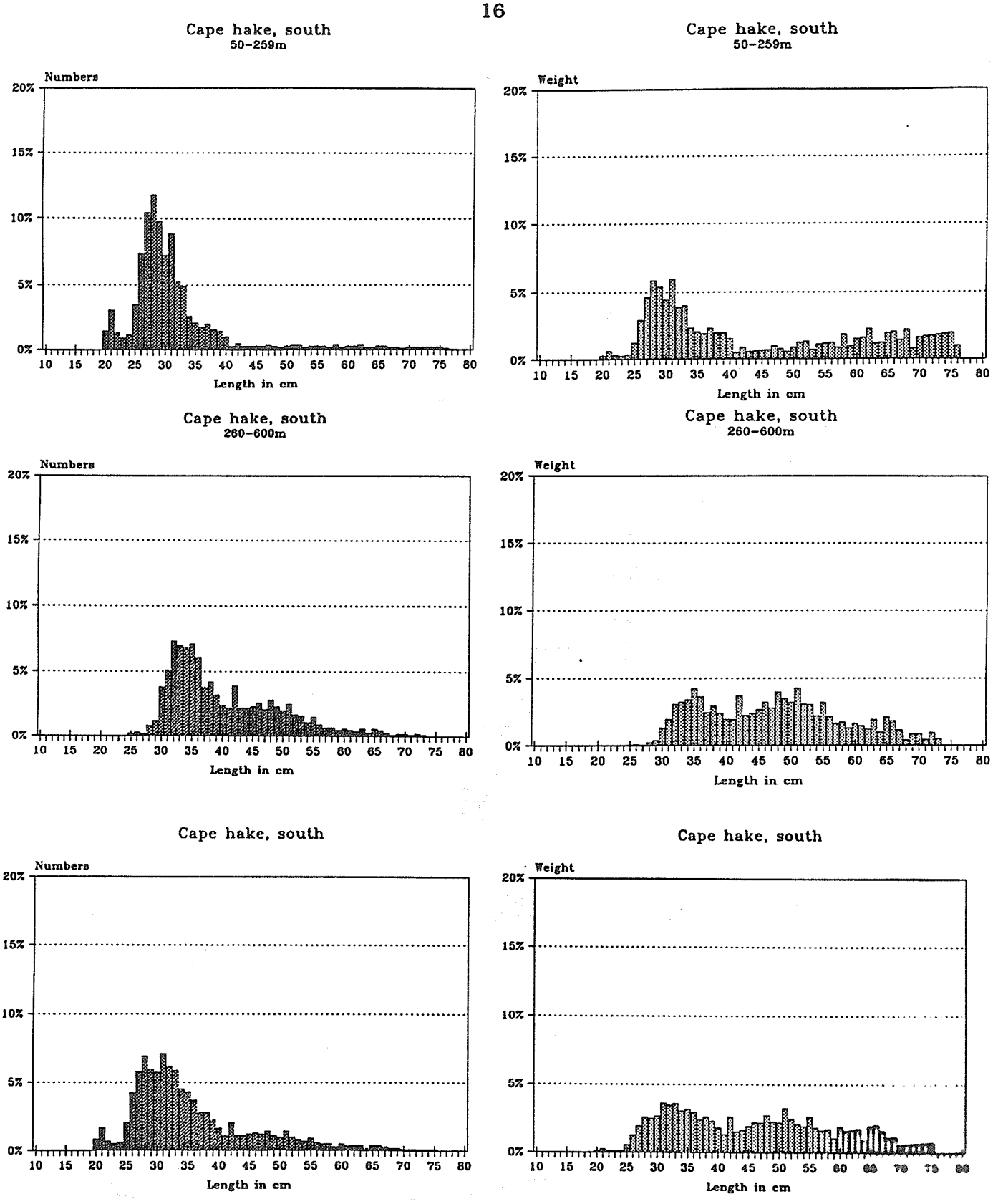


Figure 6. Southern region. Size compositions of Cape hake by depth ranges. Pooled samples weighted by catch rates. Distributions by numbers and biomass.

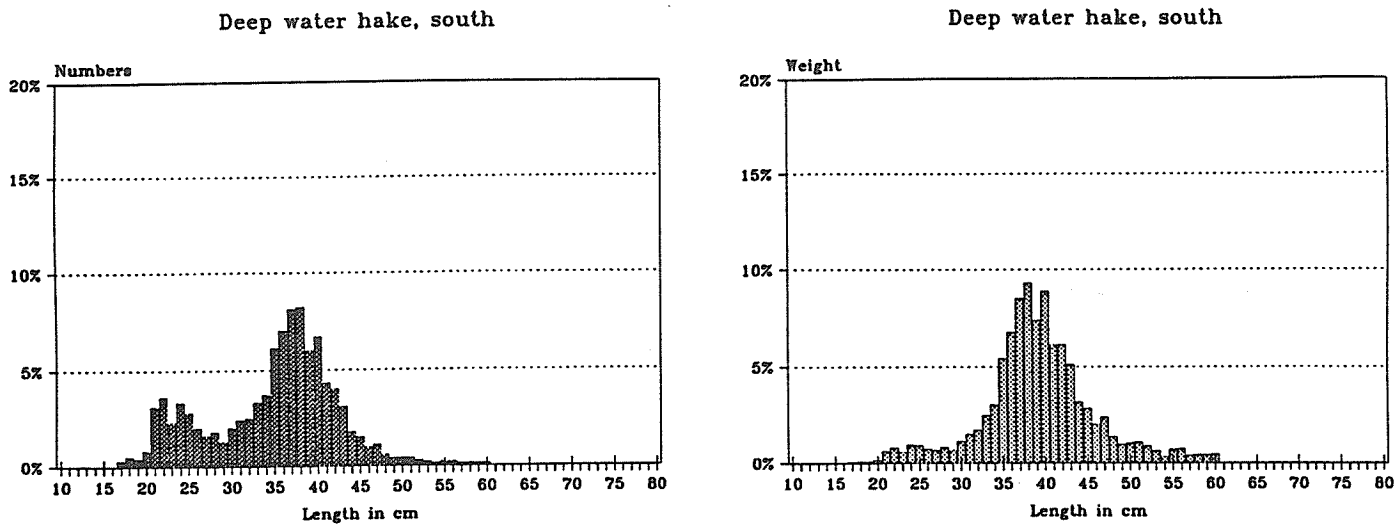


Figure 7. Southern Region. Size composition of deep water hake. Pooled samples weighted by catch rates. Distributions by numbers and biomass.

The size composition of the deep water hake, see Figure 7 shows a dominating group with a modal size of about 38cm. The main group in the October-November 1991 survey, presumably the same cohort, had a mode of about 32cm. The increase of biomass of this stock between the two surveys is greater than that expected from growth of the fish and there is no great addition of small sized recruits. Estimates of the total population number from stock biomass and size composition shows an increase since the last survey from about 370 million to about 430 million fish. This may be the effect of survey variability or perhaps more likely of immigration from outside areas. None of the surveys have shown substantial concentrations of juvenile deep water hake. There may have existed problems of identifying the juvenile stages of this species, but the most likely explanation is that the principal areas of recruitment are found outside the survey coverage.

In the present stock, fish of sizes 36cm and larger represent 56% by numbers and 78% by weight.

Some special sampling was made of the state of maturity of the gonads of female fish. A maturity scale used for blue whiting in the North Atlantic was made use of in a slightly modified form, see Annex 1. Two samples of Cape hake of large sized fish, mainly 40-70cm from deeper waters showed the following state of maturity:

Maturity stage:	2	3	4	5	6
%	38	14	32	4	12

From this it seems that more than 80% of the fish were in a resting or prespawning condition. Some spawning has started, but the main spawning is still ahead.

3.3 CENTRAL REGION, ST. FRANCIS BAY TO AMBROSE BAY

Table 5 shows the catch composition for the shelf and the slope by main groups. The mean catch rates for hake are similar to those obtained in the October-November 1991 survey. There are increased rates for monk, squid rates are largely unchanged and horse mackerel are reduced to less than half.

The depth distribution of the two hake species is shown in Table 6. These are largely unchanged from the previous survey with the high rates on the juvenile Cape hake in shallow waters.

Table 6. Depth distribution of the two hake species St. Francis Bay to Ambrose Bay. Mean densities: tonnes/nm^2 and mean catch rates, kg/hour.

	100-250m	250-350m	350-450m	450-550m
Cape hake				
Density	36.5	14.6	8.5	1.7
Catch rate	1 100	440	255	50
Deep w. hake				
Density		1.3	6.8	1.6
Catch rate		40	200	50
No. of hauls	29	17	12	1

Figure 8 shows the distribution of Cape hake over this region. This has the same features as that of the last survey. The belts of high density towards the coast represent the new recruitclass identified in the last survey and assumed to derive from the 1990 spawning. This group has now a modal length of 25cm, about 4cm higher than in October-November. The size composition of pooled samples from fishing stations weighted by the catch rates are shown by depth ranges and for the total region in Figure 10. The high numerical abundance of the recruit class causes a juvenile dominance of the composition for the region.

The biomass estimate of Cape hake for this region based on the post stratification shown in Figure 8 is 261 000 tonnes of which 184 000 tonnes inside the 250m depth line and 77 000 tonnes outside. The fishable part of the biomass defined as fish of 36cm and larger can be estimated from the biomass by depth ranges and the corresponding size compositions and is 13 000 tonnes inside 250m and 72 000 tonnes outside, a total of 85 000 tonnes.

The deep-water hake was found in a narrow belt along the slope at 350-450m of depth, see Figure 9. The size composition is as shown in Figure 11 similar to that found in the southern region. Of the 15 000 tonnes biomass 96% was of fishable size.

Table 5. Central Region. Catch rates by main groups by bottom trawl for the shelf and slope. Kg/hour.

SHELF 100-259

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1118	255	445.2					31.2
1119	207	1411.2					11.2
1125	184	1265.2			663.2	39.8	31.8
1126	141	66.0					600.0
1127	183	1058.0			6.0	1.0	137.0
1128	226	325.9	1.4		2.1	13.0	59.9
1133	255	479.0	25.4				198.0
1134	201	357.0	1.8				70.8
1135	171	1237.2	1.2		1.2	1.2	121.2
1136	140	761.2					267.4
1137	149	1262.3					76.5
1138	154	1495.0			13.0		78.0
1139	205	61.0	2.6		0.4		9.2
1141	122	15.7					1384.6
1142	133	1425.6					19.2
1143	140	710.1			1.0	0.2	37.8
1144	158	1900.0			570.0		1.6
1151	141	2023.8			976.2		
1152	129	136.9					44.2
1153	126	1697.3				6.8	20.3
1154	126	254.0					16.0
1155	150	659.1	2.6		54.6		26.0
1156	227	736.4			5.6		59.1
1157	249	681.6	23.8		54.0	0.7	75.1
1162	225	817.2	8.4	0.8	36.0		74.0
1163	154	553.0	1.0		4.0	0.4	54.0
1164	134	193.2					132.0
1165	180	4555.6			393.2		51.2
1171	232	435.0	3.4	0.8	106.4		9.0
1172	175	4906.8			636.8		56.2
1173	139	107.7					31.2
1174	178	2718.8		8.4	8.4		166.6
1175	250	446.3		18.9	45.2	2.6	6.3
MEAN		1066.6	2.2	0.9	108.4	2.0	119.9

SLOPE 260-600

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1120	294	330.0	10.8		2.8	4.4	109.0
1121	389	344.6	3.2			16.6	122.8
1122	368	1516.0				17.4	56.6
1123	320	389.4				9.8	101.6
1124	266	708.4	52.2				279.2
1129	265	334.0			9.3	0.9	86.5
1130	349	1121.0	10.4			15.2	140.2
1131	449	13.2	0.6			4.4	91.8
1132	351	870.7	13.5			4.5	133.7
1140	355	643.0				42.6	137.5
1145	306	168.6	3.6		5.2	14.8	73.4
1146	352	360.7			0.4		83.2
1147	403	424.0	22.5			35.0	121.0
1148	350	134.9				8.1	133.6
1149	301	774.4	3.8		3.8	11.4	128.0
1150	281	623.2	12.4		4.0	11.8	141.2
1158	327	268.0	4.0		2.6	14.0	63.4
1159	421	91.2	4.0			42.0	202.4
1160	350	282.2	1.2			13.0	80.5
1161	300	389.0	5.0		7.0	18.6	105.6
1166	269	1051.2		6.0	294.6	4.3	108.1
1167	331	562.6			1.2	1.2	128.1
1168	504	97.6				14.0	216.6
1169	351	512.8				14.6	106.0
1170	301	179.6	8.4	3.6	21.6	1.8	70.2
1176	320	360.0			25.6	1.4	22.9
1177	374	554.6	4.6			1.8	118.1
MEAN		485.4	5.9	0.4	14.0	12.0	117.1

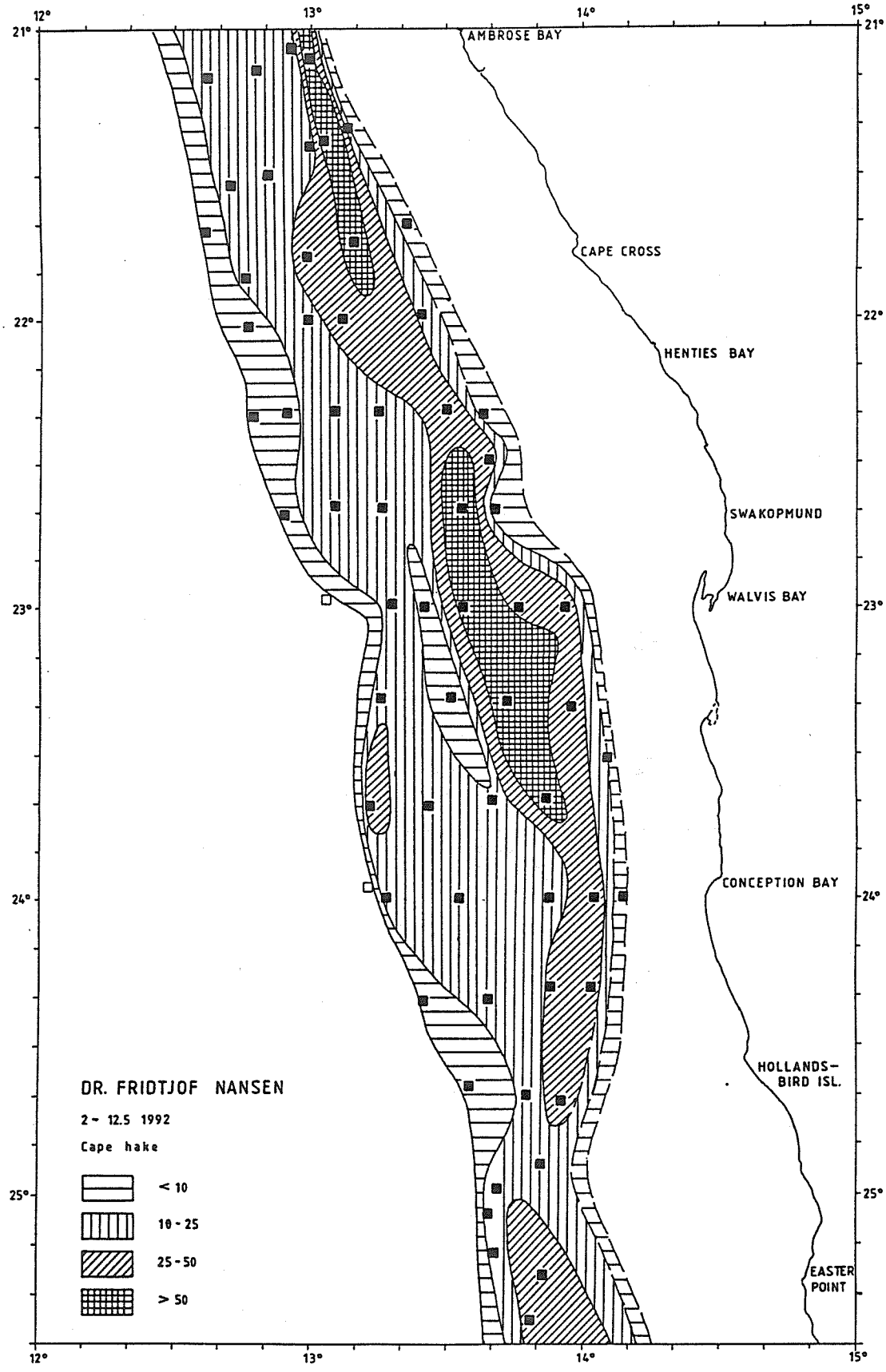


Figure 8. Central Region. Distribution of Cape hake.

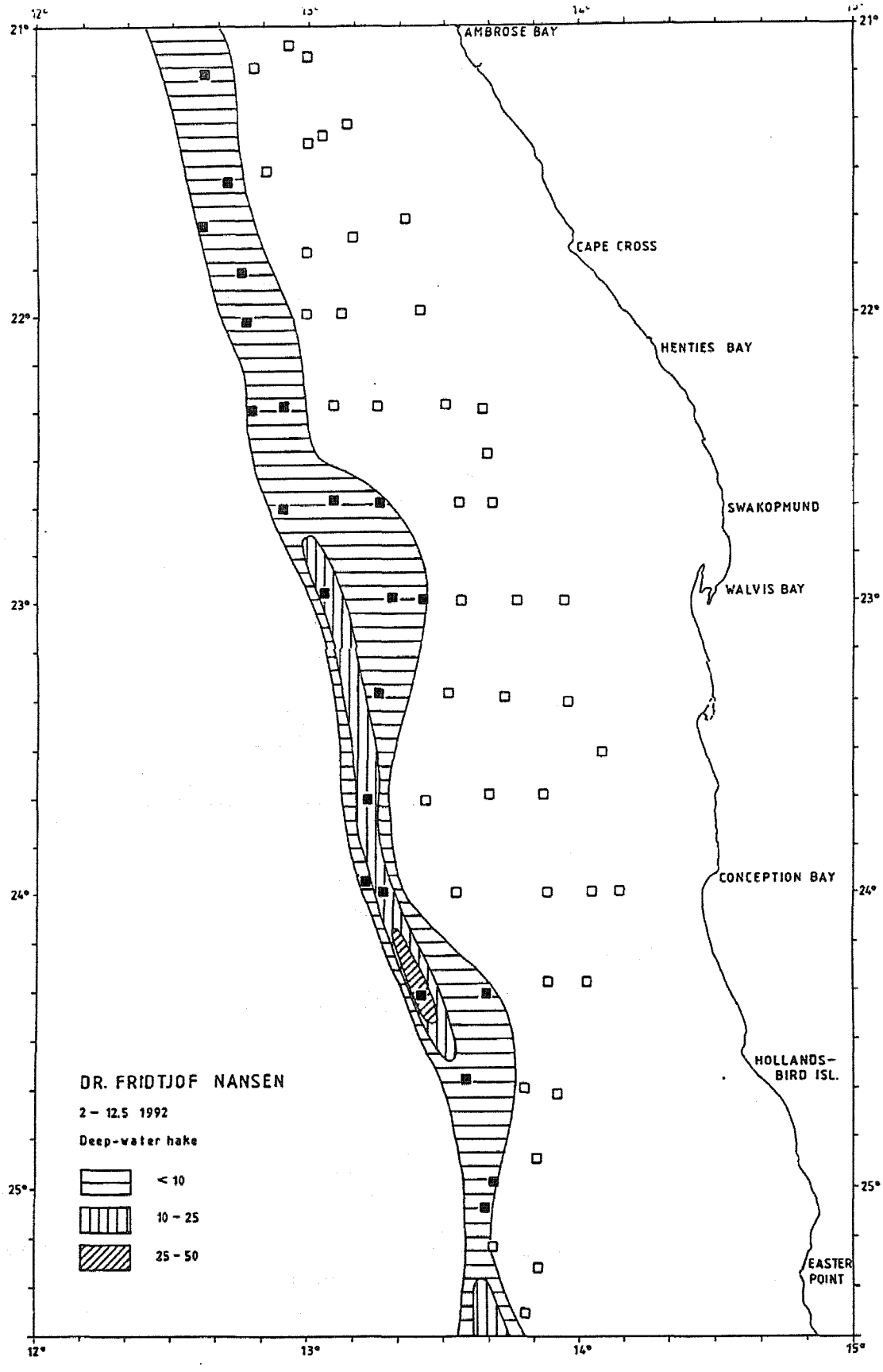
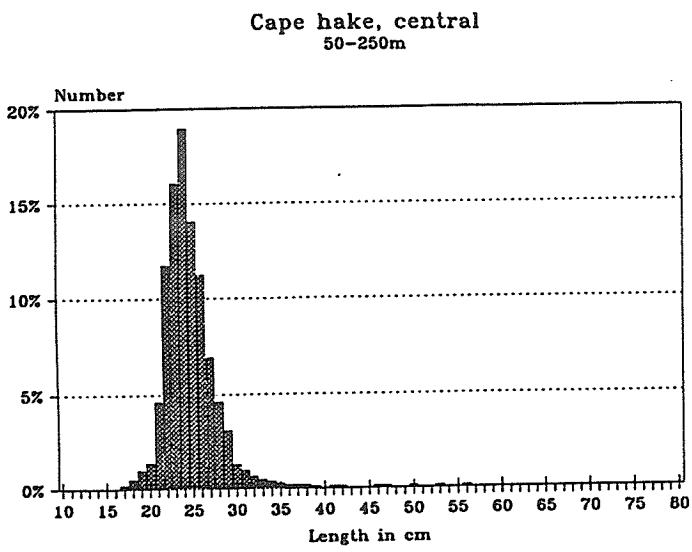
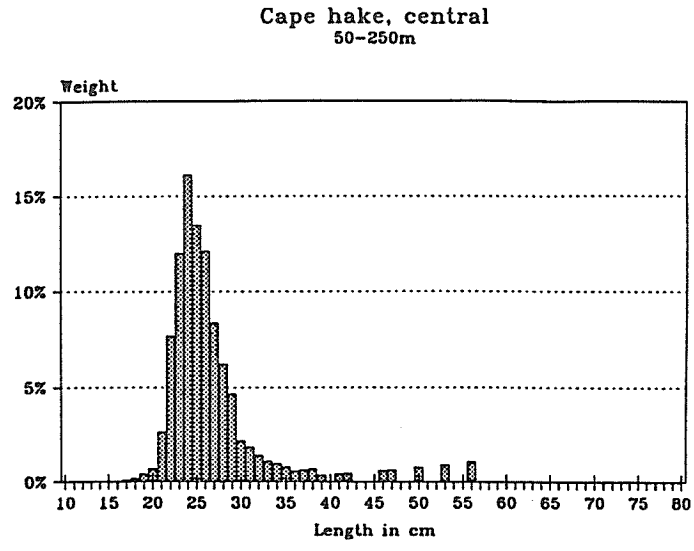
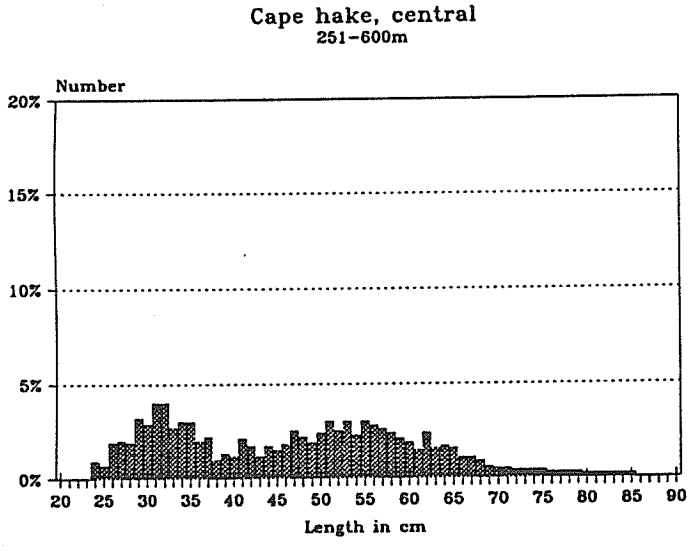
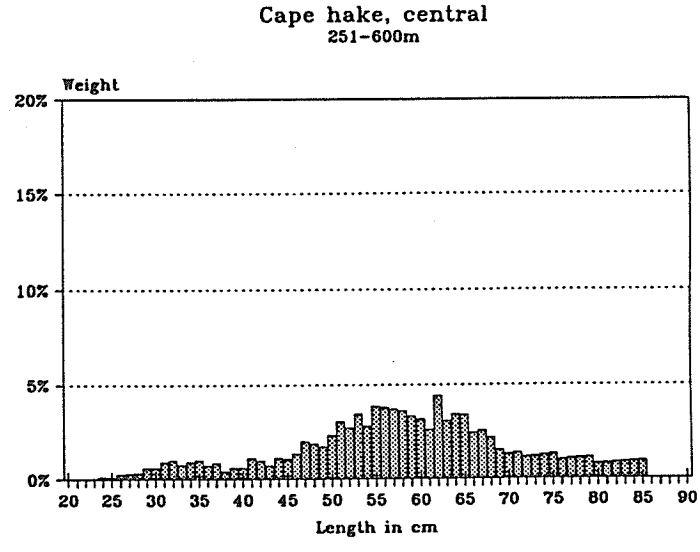


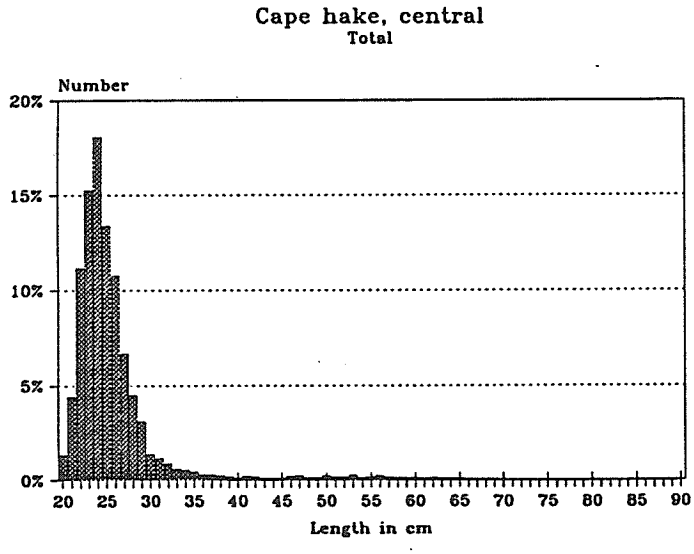
Figure 9. Central Region. Distribution of deep water hake.











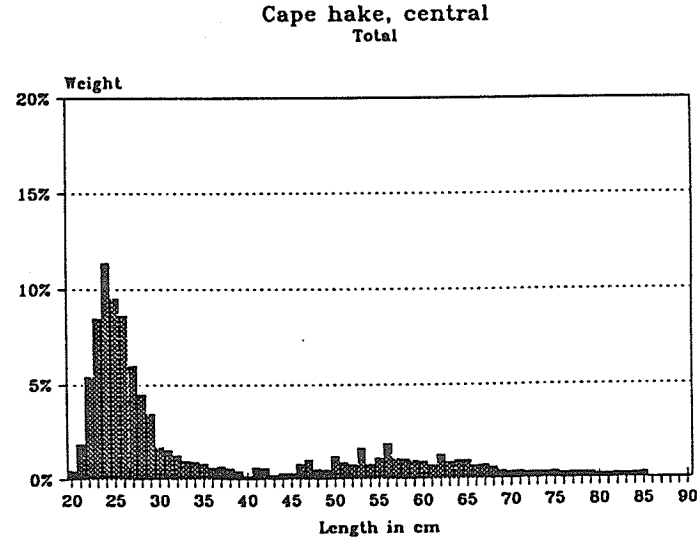


Figure 10. Central Region. Size compositions of Cape hake by depth ranges. Pooled samples weighted by catch rates. Distributions by numbers and biomass.

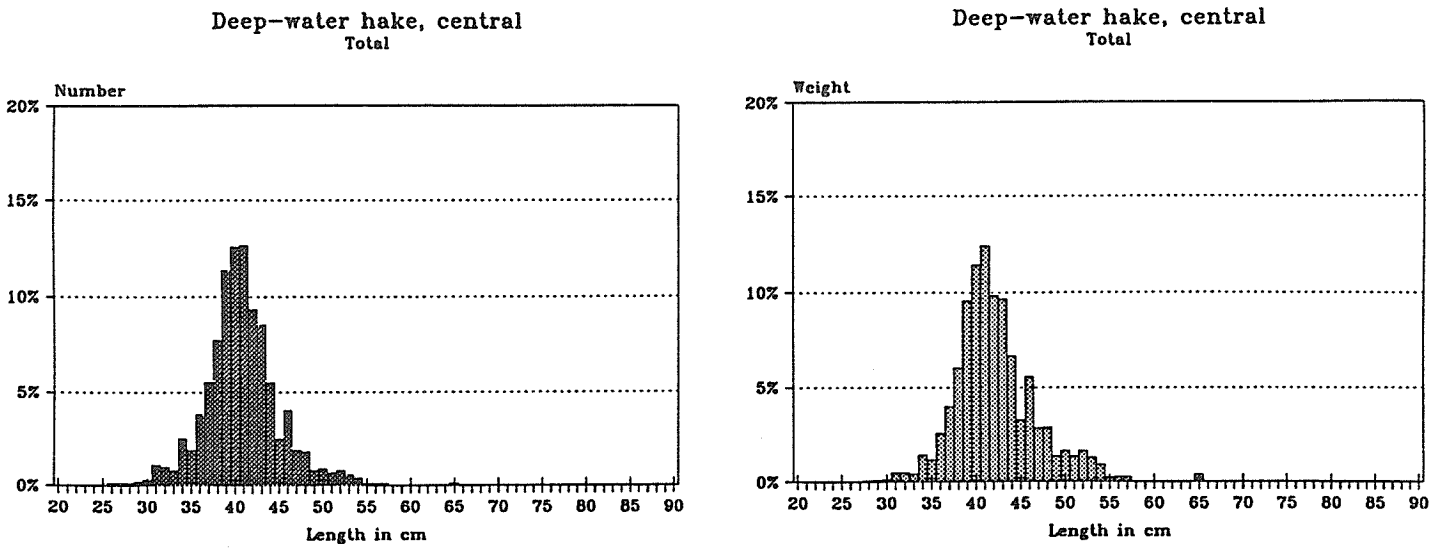


Figure 11. Central Region. Size compositions of deep water hake. Pooled samples weighted by catch rates. Distributions by numbers and biomass.

Table 7 shows the biomass estimates for this region by surveys. It seems probable that the decline from 302 000 tonnes of Cape hake in survey 2/91 to 261 000 tonnes in survey 1/92 results mainly from a migration of adult fish to the southern region where this component has increased significantly.

Table 7. Central Region. St. Francis Bay to Ambrose Bay. Estimates of total biomass by surveys, 1 000 tonnes.

	Cape hake	Deep water hake
1/90	180	4
3/90	219	6
1/91	150	6
2/91	302	13
1/92	261	15

Maturity sampling of female fish of Cape hake of 30-70cm of length (st nos 1145, 1150, 1161; N = 228) showed the following state:

Maturity stage:	2	3	4	5	6
%	64	29			7

This indicate that the adult fish in the Central Region is about to start a new spawning cycle with about 30% showing active gonad development. The spawning season is farther off than in the south. Sampling of the 2 year old fish, 25-35cm showed that a majority of both females and males had advanced gonad development. This confirms previous similar observations of this size group. The significance of the spawning of these fish for the stock propagation is uncertain.

3.4 NORTHERN REGION, AMBROSE BAY TO CUNENE RIVER.

Table 8 shows the catch rates by main groups for the shelf and slope separately. The mean rates for hake are somewhat higher than in the previous surveys. Catches of monk shows an increase also in this region both in incidence and rates. There is a sharp increase for dentex in shallow water.

Table 8. Northern Region. Catch rates by main groups by bottom trawl for the shelf and slope. Kg/hour.

SHELF 50-259

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1181	174	805.6	3.4	106.4	7.6		33.4
1182	182	684.2		52.8	591.8	8.8	16.5
1183	259	235.0		2.8	397.6	2.8	68.6
1189	235	553.4		207.5	494.1	2.8	24.2
1190	160	251.2		229.6	616.0		14.8
1191	141	863.2			306.6		94.2
1192	196	241.4	3.0	146.4	30.0		64.8
1193	254	78.2	2.8	32.6	17.6	4.6	9.0
1200	233	338.8	5.4	200.0	74.0	1.0	229.0
1201	154	716.8	3.2	1462.4	278.4		398.4
1202	141	1185.0					
1203	190	405.6		84.0	114.0		20.6
1204	249	685.5	30.8	83.4	22.5		48.0
1211	228	903.9	3.8	97.4	121.9		106.1
1212	162	1335.5		480.2	4456.8		127.5
1213	136	86.8		1590.0	340.0		120.0
1214	223	667.8		75.6	27.0		50.0
1215	249	4134.0		333.1	185.0		351.3
1219	201	378.0		194.4	403.2		504.0
1222	203	656.0		200.0	772.8	1.6	448.8
MEAN		787.9	2.6	302.3	496.0	1.2	173.9

SLOPE 259-600

ST.NO.	DEP.	Hakes	Monk	Dentex	Horse mck.	Squid	Other
1178	394	1291.8				15.8	177.0
1179	337	524.2	10.4			6.2	109.6
1180	281	697.6	1.2	47.6	140.0	7.4	50.2
1183	259	235.0		2.8	397.6	2.8	68.6
1184	296	609.6	16.8		5.6	5.2	56.2
1185	356	1003.8	11.4			3.0	163.9
1186	402	179.8				24.0	361.6
1187	300	395.8	14.2				51.7
1188	275	705.0	3.8	12.0	12.5	8.2	12.6
1194	303	244.4	2.4	0.6		2.2	12.0
1195	362	479.7	27.8			0.8	64.5
1196	410	145.6				2.2	184.3
1197	371	396.0	4.2			3.2	218.6
1198	337	339.2	12.0			2.2	134.8
1199	294	844.4	9.0	32.0	8.0		48.0
1205	299	954.0	3.0	1.8	10.1	1.9	86.6
1206	349	1568.0					305.0
1207	412	152.6				9.6	290.6
1208	356	845.4	15.0		6.2	1.8	89.6
1209	275	1452.8	3.0	25.8	39.2		304.8
1210	302	609.8	2.8	15.8	4.6	1.6	125.2
1216	360	514.0				12.6	147.6
1217	355	637.0	16.0		11.8	25.6	168.0
1220	302	1888.7			8.1		159.3
1221	303	1306.8	5.7				254.4
1223	406	608.8	5.4			21.6	712.8
1224	299	1441.0		52.9	80.5		125.6
MEAN		743.4	6.1	7.1	26.8	5.9	166.0

Table 9 shows the depth distribution of the hakes. There is an increased rate for Cape hake in the shallow range. From Figure 13 which gives the weighted size compositions of the samples of Cape hake it is evident that the main component in this shallow range is small sized fish with a mode close to 30cm. This must be 2 year old fish of the 1990 cohort that have migrated up from the Central Region since the last survey. The size composition in the deep range shows as in the previous survey mainly large sized fish that now has a mode around 50cm slightly higher than in November.

Table 9. Depth distribution of the hake species, Ambrose Bay to Cunene River. Mean densities: tonnes/nm² and mean catch rates, kg/hour.

	100-250m	250-350m	350-450m
Cape hake			
Density	25.4	26.1	15.5
Catch rate	760	780	460
Deep w. hake			
Density			1.7
Benguela hake			1.4
No of hauls	19	17	11

Figure 12 shows the distribution of Cape hake in the northern region by levels of density calculated from the catch rates and with adjustments for fish in mid water. The pattern of distribution is similar to that found previously in this region with bands of high density in deeper waters extending right up to Cunene. The addition of the juvenile fish in shallower waters is demonstrated.

Biomass estimates give a total of 185 000 tonnes, see Table 10 with 70 000 tonnes inside and 115 000 tonnes outside 250m of depth, with fishable parts (36cm and larger) of 30 000 tonnes and 113 000 tonnes respectively. The estimate of total fishable stock in this region, 143 000 tonnes is close to the estimate of 134 000 tonnes obtained in November.

Table 10 Northern region, Ambrose Bay to Cunene. Estimates of total biomass by surveys. 1 000 tonnes.

	Cape hake	Deep sea hake
1/90	180	
3/90	105+ midw.	
1/91	200	
2/91	140	2
1/92	185	4

Maturity sampling of female fish of Cape hake of 30-70cm of length (st nos 1183, 1205, 1224; N = 335) showed the following state:

Maturity stage:	2	3	4	5	6
%	92	7	0.3		0.3

This indicate that the adult fish in the Northern region was in a resting stage at this time. The few fish that had started a new gonad development were from the southernmost stations. Similar observations from the October-November 1991 survey (1514 fish from 36 stations at depths of 210-460m, maturity scale 1 - 4) showed 1% running and 32% postspawning.

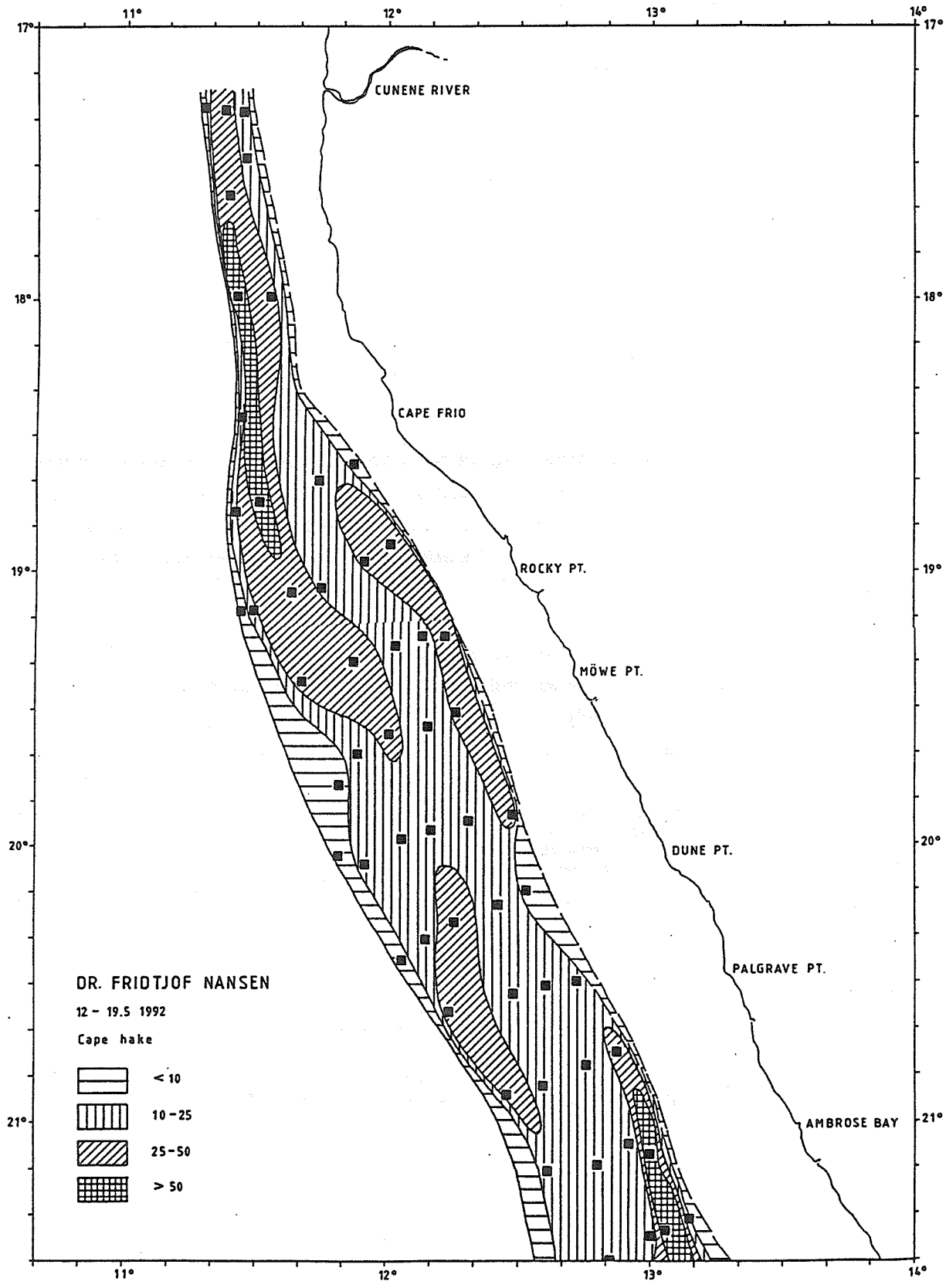
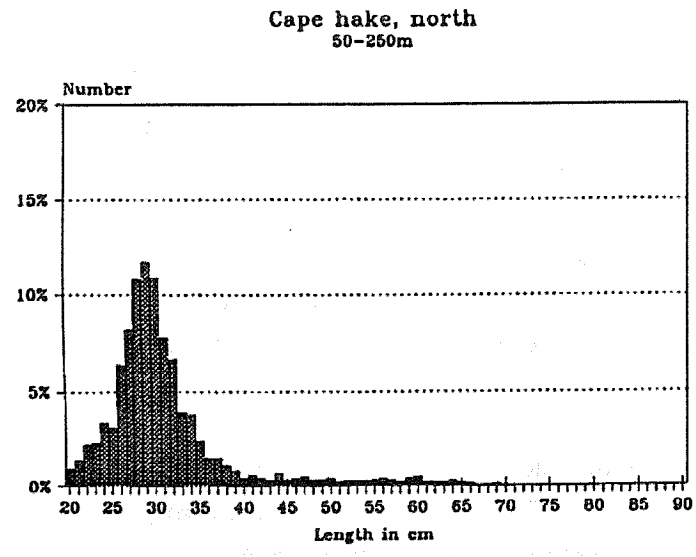
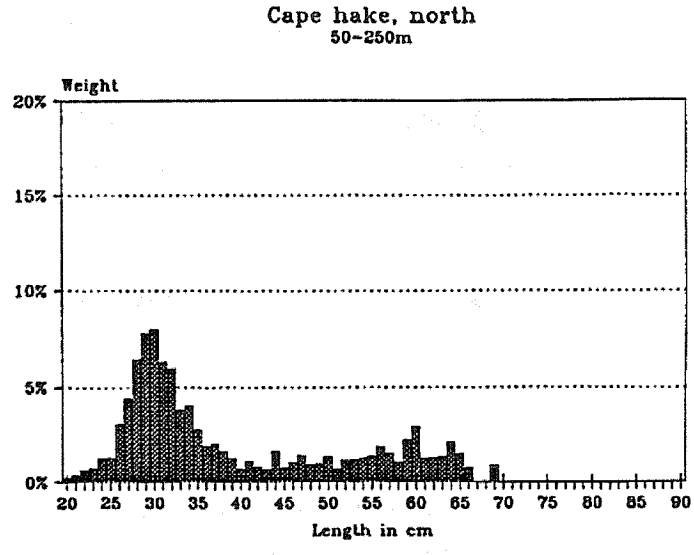
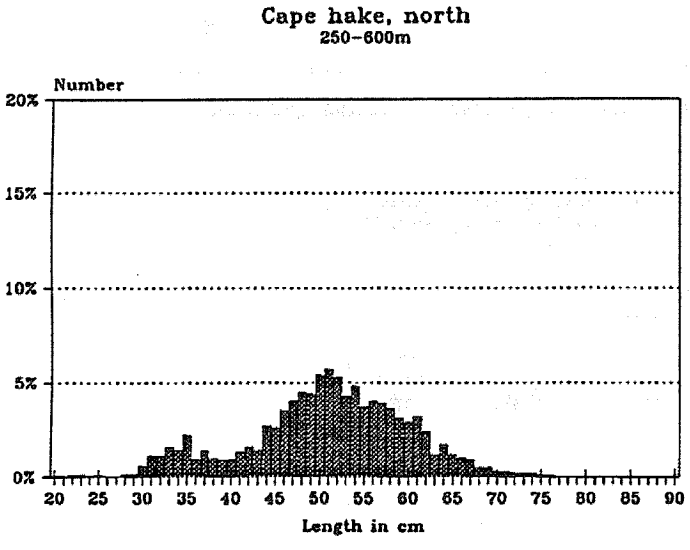
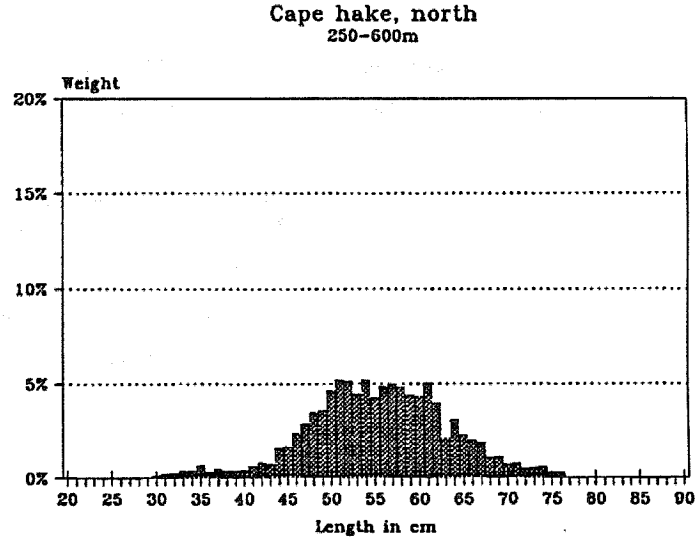


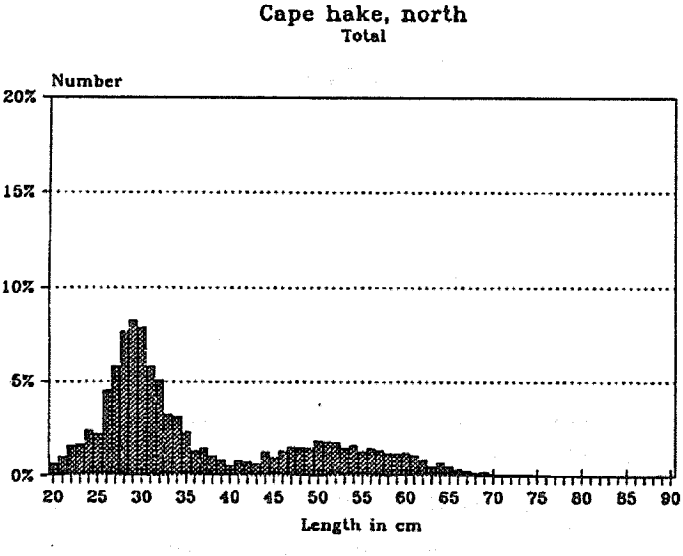
Figure 12. Northern Region. Distribution of Cape hake.











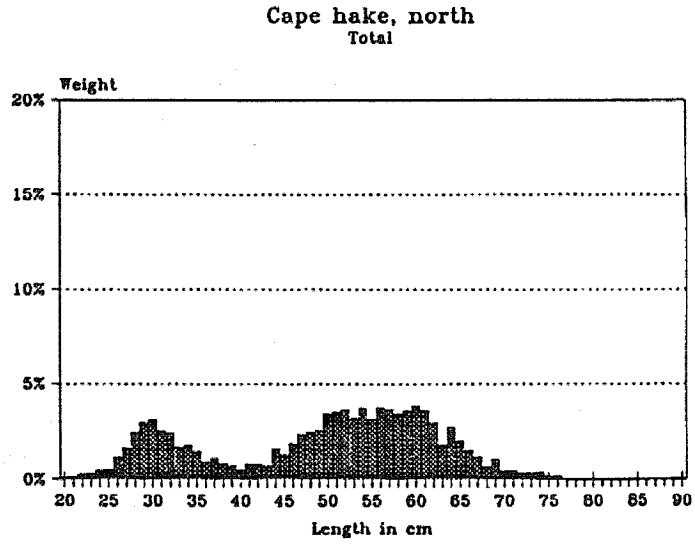


Figure 13. Northern Region. Size compositions of Cape hake by depth ranges. Pooled samples weighted by catch rates. Distributions by numbers and biomass.

CHAPTER 4 CONSIDERATIONS OF THE SURVEY RESULTS

The present survey is the 5th in a series started in early 1990 and in each of which the distribution of the hake stocks over the whole Namibian shelf has been covered. Table 11 shows the effort that has been spent in these hake investigations. The meaningful and largely consistent results obtained in these investigations with regard to the distribution, size composition and biomass of the hake stocks indicate that the methods used are reliable and that the efforts expanded have been at an adequate level. The mid water behaviour of the hake caused a problem of biomass estimate in survey 3/1990, but this was at least partly overcome through the use of new acoustic instrumentation in the following surveys.

The trends in the findings for the deep water hake seems to indicate that this stock has received parts of its recruitment from areas outside the Namibian EEZ. This is evidently not the case for the Cape hake where recruitment cycles have been observed and described.

Table 11 Effort in Namibian hake surveys 1990-1991. Number of swept area fishing stations, number of samples (mostly by sex) and number of length measurements in thousands.

Survey		Orange R.- St. Francis	St. Francis Ambrose	Ambrose-Cunene	Total
1/1990					
25/1-10/3	No. stations	59	73	37	169
	" samples	37	73	25	114
	" measured	6.0	10.7	2.6	18.6
3/1990					
11/9-6/10	No. stations	44	51	34	129
	" samples	68	106	77	251
	" measured	9.3	10.3	5.6	25.2
1/1991					
25/1-28/2	No. stations	41	77	56	174
	" samples	104	170	114	388
	" measured	6.8	13.3	6.9	27.0
2/1991					
23/10-21/11	No. stations	52	69	49	170
	" samples	110	132	110	352
	" measured	7.1	14.3	9.6	31.0
1/1992					
23/4-21/5	No. stations	57	60	47	164
	" samples	136	141	102	379
	" measured	9.0	11.2	8.2	28.4

A summary of the estimates of the mean density of the hakes by depth strata is shown in Table 12. The difference in depth distribution between the two species is clearly demonstrated especially in the southern region where the deep water hake has its highest abundance. There as been a change in density by depth over the survey period with increasing densities at greater depths. This demonstrates an increasing amount of large sized hake in the stocks. For the Cape hake the density in the shallow range, 100-250m is mainly determined by the abundance of the young recruits, fish of less than about 30 cm of length which is restricted to a depth range of between 130 and 200-250m. In the central region

densities were high in this range in the last two surveys and also in the northern region in the last survey.

Table 12 Depth distribution of the hake species. Mean densities in tonnes/nm^2.

	100-250m	250-350m	350-450m	450-550m
SOUTHERN REGION				
Cape hake				
1/90	21.9	4.4		
3/90	11.5	6.1	0.1	
1/91	11.3	8.8	0.9	
2/91	6.3	12.5	0.7	0.7
1/92	12.6	28.4	4.6	
Deep water hake				
1/90		1.4	5.0	1.2
3/90	0.1	6.3	1.2	0.4
1/91		4.4	6.0	1.1
2/91	0.3	8.9	14.9	4.9
1/92		8.9	34.8	4.0
CENTRAL REGION				
Cape hake				
1/90	27.1	7.4	0.4	
3/90	38.6	8.3	2.5	
1/91	14.5	9.1	2.2	
2/91	34.2	19.0	7.2	1.0
1/92	36.5	14.6	8.5	1.7
Deep water hake				
1/90			1.6	1.4
3/90	0.2	0.4	0.9	0.9
1/91	0.2	0.1	0.8	
2/91		0.3	5.3	5.6
1/92		1.3	6.8	1.6
NORTHERN REGION				
Cape hake				
1/90	41.3	20.9	1.0	
3/90	25.9	15.1		
1/91	15.0	27.0	11.5	
2/91	13.6	23.5	24.3	4.3
1/92	25.4	26.1	15.5	

Table 13 shows the biomass estimates for the two stocks by regions and the corresponding data for the four previous surveys. The results demonstrate that the stocks are in continued growth with a present level of about 800 000t for all fish larger than about 20cm and about 500 000t for the fishable stock of sizes 36cm and larger. The hakes are now spread more evenly on the regions with high density areas along the whole shelf from off Luderitz up to Cunene. Adult hake is especially abundant on the deeper part of the shelf from Lüderitz to Easter Point and from Ambrose Bay to Cunene. Juvenile hake is abundant inside 200-250m in the Central and parts of the northern regions.

The bulk of the biomass of deep water hake is as previously found in the southern region. The stock estimate is up from about 100 to about 160 000t since November 1991, an unexpectedly high increase.

The Cape hake figures for the two last surveys show an increase since the last survey from about 520 to about 650 000 tonnes with 315 and 370 000 tonnes for the fishable parts.

About 60% of the increase of the total biomass comes from the juvenile stock and is related to the high abundance of the 1990 cohort.

Table 13 Summary of estimates of biomass of the two hake species by surveys and areas. Tonnes.

	TOTAL BIOMASS				
	Feb-Mar 1990	Sept-Oct 1990	Jan-Feb 1991	Oct-Nov 1991	Apr-May 1992
SOUTHERN REGION					
Cape hake	130 000	130 000	126 000	80 000	200 000
Deep w. hake	22 000	25 000	31 000	83 000	145 000
CENTRAL REGION					
Cape hake	180 000	219 000	150 000	302 000	261 000
Deep w. hake	4 000	6 000	6 000	13 000	15 000
NORTHERN REGION					
Cape hake	180 000	105 000 + mid w.	200 000	140 000	185 000
Deep w. hake				2 000	4 000
TOTAL	516 000		513 000	620 000	810 000
TOTAL FISHABLE	220 000		300 000	370 000	503 000

The recruitment to the stock of Cape hake can be estimated from the numerical abundance of the 2 year old fish. The estimates for the 1990 yearclass based on the current survey data are shown in Table 14 together with previous observations. The new estimate which is close to that of the last survey confirms the high abundance of the 1990 yearclass. This fish is now 20 to 35 cm of length and is still distributed inside the 200-250m depth line.

The 1991 yearclass was represented by small numbers of about 15cm fish in some catches in the Central and Southern Regions. This age groups is not yet fully settled on the bottom and its abundance will be better estimated in the next surveys, but the first impression is of a group of low abundance.

Table 14 Estimates of strength of recent yearclasses of Cape hake. Cohort population numbers at about two years of age for the groups assumed to have been spawned in 1988, 1989 and 1990. Millions of fish.

Yearclass	1988	1989	1990*	1990**
Region south	980	100	160	300
centre	1 320	170	1 710	1 620
north	10	10	20	240
Total	2 310	280	1 890	2 160

* From survey 2/91
** " " 1/92

Observations on the gonad state of adult female Cape hake are still incomplete, but may support an hypothesis of main spawning in winter (southern) and with the bulk of the spawning restricted to the Southern and Central Regions. The Central Region spawning may take place somewhat later than that in the south, perhaps late winter. This would correspond with the observed difference in the size of the recruit groups between the two regions.

ANNEX 1 MATURITY SCALE FOR FEMALE HAKE

(Adapted from scale used for blue whiting, North Atlantic)

Code		F
None	Not determined	
1	**Immature** Ovaries transparent and white. No visible eggs.	< 1/4
2	**Spent (maturing again) and first time maturing** Ovaries transparent orange/red, somewhat spotted.	1/3
3	**Maturing** Ovaries orange/rose. Opaque eggs visible.	1/2-2/3
4	**Maturing/mature** Ovaries firm, orange/rose. Some hyaline eggs.	> 3/4
5	**Spawning, running** Ovaries rose/white. Mainly hyaline eggs, easily pressed out.	1
6	**Spent** Ovaries spotted, rose/red, blood vessels visible. Some remaining eggs.	< 1/2

F = length of gonad as part of length of body cavity

ANNEX II RECORDS OF FISHING STATIONS

PROJECT STATION:1061

DATE:24/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2633
start stop Long E 1444
TIME :11:16:00 11:46:00 dur. : 30min Purpose code: 3
LOG :2978.10 2979.30 dist.:1.60nm Area code : 1
FDEPTH: 166 167 GearCond.code:
BDEPTH: 166 167 Validity code:
Towing dir: 335 Wire out: 750 m Speed: 3 kn*10

Sorted: 2 Kg Total catch: 270.50 CATCH/HOUR: 541.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	540.00	92160	99.82	
Merluccius capensis	1.00	30	0.18	1
Total	541.00		100.00	

PROJECT STATION:1062

DATE:24/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2644
start stop Long E 1442
TIME :13:55:00 14:25:00 dur. : 30min Purpose code: 3
LOG :2994.70 2995.90 dist.:1.48nm Area code : 1
FDEPTH: 203 204 GearCond.code:
BDEPTH: 203 204 Validity code:
Towing dir: 345 Wire out: 750 m Speed: 3 kn*10

Sorted: 47 Kg Total catch: 1500.00 CATCH/HOUR: 3000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1728.00	8300	57.60	3
Merluccius capensis, male	762.00	3924	25.40	2
Trachurus capensis	502.40	3412	16.75	4
Sufflogobius bibarbatus	3.80		0.13	
MYCTOPHIDAE	3.80		0.13	
Total	3000.00		100.01	

PROJECT STATION:1063

DATE:24/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2657
start stop Long E 1445
TIME :16:32:00 17:03:00 dur. : 31min Purpose code: 3
LOG :3011.20 3012.30 dist.:1.55nm Area code : 1
FDEPTH: 208 212 GearCond.code:
BDEPTH: 208 212 Validity code:
Towing dir: 340 Wire out: 750 m Speed: 29 kn*10

Sorted: 27 Kg Total catch: 299.20 CATCH/HOUR: 579.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	357.68	2150	61.76	6
Merluccius capensis, male	221.42	1448	38.24	5
Total	579.10		100.00	

PROJECT STATION:1064

DATE:25/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2840
start stop Long E 1613
TIME :07:58:00 08:28:00 dur. : 30min Purpose code: 3
LOG :3138.20 3139.30 dist.:1.50nm Area code : 1
FDEPTH: 90 71 GearCond.code:
BDEPTH: 90 71 Validity code:
Towing dir: 90 Wire out: 450 m Speed: 32 kn*10

Sorted: 31 Kg Total catch: 492.70 CATCH/HOUR: 985.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	350.00	13176	35.52	9
Genypterus capensis	343.80	146	34.89	7
Chelidonichthys capensis	186.00		18.88	
Lolliguncula mercatoris	50.00		5.07	
Austroglossus microlepis	13.00	48	1.32	8
Todaropsis eblanae	10.00		1.01	
Sufflogobius bibarbatus	10.00	840	1.01	
Callorhinchus capensis	10.00	4	1.01	
Lepidopus caudatus	8.00	560	0.81	
Sepia australis	2.00	140	0.20	
Trachurus capensis	2.00	20	0.20	
Mustelus palumbes	0.60	2	0.06	
Squilla aculeata calmani	0.00	20		
Total	985.40		99.98	

PROJECT STATION:1065

DATE:25/ 4/92 GEAR TYPE: PT No: POSITION:Lat S 2840
start stop Long E 1611
TIME :10:22:00 10:52:00 dur. : 30min Purpose code: 1
LOG :3149.90 3153.40 dist.:1.50nm Area code : 1
FDEPTH: 5 5 GearCond.code: 8
BDEPTH: 100 103 Validity code: 9
Towing dir: 239 Wire out: 200 m Speed: 30 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
N O C A T C H	0.00			
Total				

PROJECT STATION:1066

DATE:25/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2851
start stop Long E 1554
TIME :12:56:00 13:26:00 dur. : 30min Purpose code: 3
LOG :3169.30 3170.80 dist.:1.50nm Area code : 1
FDEPTH: 152 152 GearCond.code:
BDEPTH: 152 152 Validity code:
Towing dir: Wire out: 600 m Speed: 30 kn*10

Sorted: 75 Kg Total catch: 75.10 CATCH/HOUR: 150.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Etrumeus whiteheadi	48.80	732	32.49	
Merluccius capensis, female	40.60	120	27.03	11
Merluccius capensis	28.40		18.91	
Merluccius capensis, male	9.20	34	6.13	10
Brama brama	7.00	4	4.66	
Sepia australis	5.80	228	3.86	
Chelidonichthys capensis	5.00	14	3.33	
Paracallionymus costatus	2.40	212	1.60	
Austroglossus microlepis	1.60	54	1.07	
Todaropsis eblanae	0.60	22	0.40	
Trachurus capensis	0.40	2	0.27	
Helicolenus dactylopterus	0.20	8	0.13	
Lepidopus caudatus	0.20	8	0.13	
Total	150.20		100.01	

PROJECT STATION:1067

DATE:25/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2903
start stop Long E 1535
TIME :16:04:00 16:34:00 dur. : 30min Purpose code: 3
LOG :3191.90 3193.30 dist.:1.58nm Area code : 1
FDEPTH: 175 173 GearCond.code:
BDEPTH: 175 173 Validity code:
Towing dir: Wire out: 700 m Speed: 3 kn*10

Sorted: 22 Kg Total catch: 201.50 CATCH/HOUR: 403.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	202.80	624	50.32	14
Galeorhinus galeus	60.00	2	14.89	
Merluccius capensis, female	57.60	98	14.29	13
Etrumeus whiteheadi	34.80	480	8.64	15
Merluccius capensis, male	17.20	30	4.27	12
Sepia australis	14.40	697	3.57	
Paracallionymus costatus	12.00	1020	2.98	
Austroglossus microlepis	3.60	132	0.89	
Helicolenus dactylopterus	1.20	168	0.30	
Genypterus capensis	0.60	2	0.15	
Holohalaelurus regani	0.00	2		
Todaropsis eblanae	0.00	10		
Lophius upsicephalus	0.00	2		
Total	404.20		100.30	

PROJECT STATION:1068

DATE:25/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2912
start stop Long E 1519
TIME :19:52:00 20:18:00 dur. : 26min Purpose code: 3
LOG :3212.60 3213.70 dist.:1.30nm Area code : 1
FDEPTH: 177 175 GearCond.code:
BDEPTH: 177 175 Validity code:
Towing dir: Wire out: 750 m Speed: 3 kn*10

Sorted: 11 Kg Total catch: 173.98 CATCH/HOUR: 401.49

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	126.00	9030	31.38	21
Merluccius capensis, female	86.31	83	21.50	20
Genypterus capensis	67.15	108	16.73	16
Trachurus capensis	41.54	198	10.35	18
Helicolenus dactylopterus	25.85	517	6.44	
Merluccius capensis, male	17.08	23	4.25	19
Holohalaelurus regani	14.54	97	3.62	
Cynoglossus capensis	8.08	113	2.01	
Zeus capensis	8.08	65	2.01	
Merluccius paradoxus	3.00	12	0.75	17
Coelorinchus fasciatus	1.62	16	0.40	
Congiopodus spinifer	1.62	16	0.40	
Solenocera africana	0.65	145	0.16	
Total	401.52		100.00	

PROJECT STATION:1069

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2938
start stop Long E 1441
TIME :00:48:00 01:18:00 dur. : 30min Purpose code: 3
LOG :3258.10 3259.40 dist.:1.64nm Area code : 1
FDEPTH: 387 389 GearCond.code:
BDEPTH: 387 389 Validity code:
Towing dir: 325 Wire out:1250 m Speed: 33 kn*10

Sorted: 58 Kg Total catch: 231.20 CATCH/HOUR: 462.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	148.80	496	32.18	25
Merluccius capensis, female	129.60	56	28.03	23
Merluccius paradoxus, male	124.00	440	26.82	24
Holohalaelurus regani	12.80	56	2.77	
Zeus capensis	12.80	24	2.77	
Trachurus capensis	12.00	40	2.60	
Merluccius capensis, male	7.20	24	1.56	22
Squalus mitsukurii	4.80	8	1.04	
Helicolenus dactylopterus	4.80	72	1.04	
Todaropsis eblanae	3.20	24	0.69	
Halaelurus laevis	1.60	40	0.35	
Epigonus denticulatus	0.80	48	0.17	
PORTUNIDAE	0.00	16		
Total	462.40		100.02	

PROJECT STATION:1070

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2943
start stop Long E 1431
TIME :03:08:00 03:40:00 dur. : 32min Purpose code: 3
LOG :3272.00 3272.90 dist.:1.61nm Area code : 1
FDEPTH: 550 549 GearCond.code:
BDEPTH: 550 549 Validity code:
Towing dir: 360 Wire out:1500 m Speed: 31 kn*10

Sorted: 42 Kg Total catch: 85.10 CATCH/HOUR: 159.56

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	101.60	98	63.69	27
Coelorinchus sp.	22.13	563	13.87	
Malacocephalus laevis	10.88	60	6.82	
Merluccius paradoxus, male	9.38	23	5.88	26
Photichthys argenteus	5.25	353	3.29	
Helicolenus dactylopterus	3.38	11	2.12	
CARIDEA	2.63	248	1.65	
Deania profundorum	2.25	4	1.41	
Selachophidium guentheri	1.88	23	1.18	
Oreosoma atlanticum	0.19	4	0.12	
Total	159.60		100.03	

PROJECT STATION:1071

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2914
start stop Long E 1430
TIME :07:00:00 07:30:00 dur. : 30min Purpose code: 3
LOG :3298.50 3299.60 dist.:1.60nm Area code : 1
FDEPTH: 423 398 GearCond.code:
BDEPTH: 423 398 Validity code:
Towing dir: 360 Wire out:1250 m Speed: 31 kn*10

Sorted: 106 Kg Total catch: 195.30 CATCH/HOUR: 390.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	274.40	346	70.25	30
Merluccius paradoxus, male	58.80	108	15.05	29
Merluccius capensis	13.60	4	3.48	
Genypterus capensis	12.00	4	3.07	
Holohalaelurus regani	7.00	46	1.79	
Ruvettus pretiosus	6.40	2	1.64	
Coelorinchus fasciatus	5.60	102	1.43	
Helicolenus dactylopterus	5.60	38	1.43	
Malacocephalus laevis	1.80	8	0.46	
Merluccius paradoxus	1.80	24	0.46	28
Raja confundens	1.80	2	0.46	
Coelorinchus sp.	0.70	18	0.18	
Epigonus denticulatus	0.50	70	0.13	
Paracallionymus costatus	0.20	18	0.05	
Photichthys argenteus	0.20	18	0.05	
Nezumia leonis	0.20	10	0.05	
Total	390.60		99.98	

PROJECT STATION:1072

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2912
start stop Long E 1434
TIME :08:35:00 09:05:00 dur. : 30min Purpose code: 3
LOG :3305.70 3306.90 dist.:1.60nm Area code : 1
FDEPTH: 305 302 GearCond.code:
BDEPTH: 305 302 Validity code:
Towing dir: 335 Wire out:1000 m Speed: 32 kn*10

Sorted: 84 Kg Total catch: 683.10 CATCH/HOUR: 1366.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus	828.00	3342	60.61	32
Zeus faber	176.40	384	12.91	
Merluccius capensis	122.60	46	8.97	33
Genypterus capensis	52.40	48	3.84	31
Malacocephalus laevis	52.20	214	3.82	
Coelorinchus fasciatus	43.00	628	3.15	
Lepidopus caudatus	26.00	108	1.90	
Helicolenus dactylopterus	24.60	154	1.80	
Thyrsites atun	13.20	6	0.97	
Todaropsis eblanae	10.80	92	0.79	
Holohalaelurus regani	7.60	30	0.56	
Cynoglossus capensis	3.00	76	0.22	
Scomber japonicus	2.60	2	0.19	
Brama brama	2.60	4	0.19	
Scyliorhinus capensis	1.20	4	0.09	
Total	1366.20		100.01	

PROJECT STATION:1073

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2903
start stop Long E 1446
TIME :11:12:00 11:42:00 dur. : 30min Purpose code: 3
LOG :3323.90 3324.90 dist.:1.60nm Area code : 1
FDEPTH: 217 220 GearCond.code:
BDEPTH: 217 220 Validity code:
Towing dir: 240 Wire out: 800 m Speed: 31 kn*10

Sorted: 32 Kg Total catch: 1513.60 CATCH/HOUR: 3027.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	2576.00	14720	85.10	37
Helicolenus dactylopterus	156.40	1012	5.17	
Merluccius paradoxus, juvenile	115.00	3036	3.80	36
Merluccius capensis, female	92.60	58	3.06	35
Etrumeus whiteheadi	46.00	368	1.52	
Zeus capensis	27.60	92	0.91	
Thyrsites atun	10.40	6	0.34	
Merluccius capensis, male	3.20	4	0.11	34
Total	3027.20		100.01	

PROJECT STATION:1074

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2850
start stop Long E 1511
TIME :14:45:00 15:05:00 dur. : 20min Purpose code: 3
LOG :3353.70 3354.70 dist.:1.10nm Area code : 1
FDEPTH: 158 157 GearCond.code: 5
BDEPTH: 158 157 Validity code:
Towing dir: 225 Wire out: 600 m Speed: 32 kn*10

Sorted: 107 Kg Total catch: 107.40 CATCH/HOUR: 322.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	178.50	117	55.40	39
Chelidonichthys capensis	57.30	132	17.78	
Squalus megalops	28.20	72	8.75	
Merluccius capensis, male	24.60	24	7.64	38
Brama brama	18.30	6	5.68	
Zeus capensis	7.20	48	2.23	
Sepia australis	5.10	234	1.58	
Todaropsis eblanae	2.70	36	0.84	
Lepidopus caudatus	0.30	12	0.09	
Total	322.20		99.99	

PROJECT STATION:1075

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2838
start stop Long E 1530
TIME :17:26:00 17:56:00 dur. : 30min Purpose code: 3
LOG :3376.30 3377.90 dist.:1.57nm Area code : 1
FDEPTH: 177 176 GearCond.code:
BDEPTH: 177 176 Validity code:
Towing dir: 230 Wire out: 700 m Speed: 31 kn*10

Sorted: 34 Kg Total catch: 239.30 CATCH/HOUR: 478.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, juvenile	128.80	3006	26.91	43
Sepia australis	93.60	5558	19.56	
Merluccius capensis, female	72.60	90	15.17	41
Brama brama	62.00	34	12.95	
Thyrsites atun	45.60	16	9.53	42
Etrumeus whiteheadi	19.20	240	4.01	44
Merluccius capensis, male	19.20	22	4.01	40
Helicolenus dactylopterus	13.60	656	2.84	
Maurolicus muelleri	6.40		1.34	
Paracallionymus costatus	4.00	200	0.84	
Genypterus capensis	2.60	4	0.54	
Squalus megalops	2.40	8	0.50	
Lolligoncula mercatoris	2.40		0.50	
Todaropsis eblanae	2.40	56	0.50	
Sardinops ocellata	1.60	8	0.33	
Lepidopus caudatus	1.20	48	0.25	
Cynoglossus capensis	0.60	8	0.13	
Austroglossus microlepis	0.40	2	0.08	
Total	478.60		99.99	

PROJECT STATION:1076

DATE:26/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2817
start stop Long E 1554
TIME :21:41:00 22:11:00 dur. : 30min Purpose code: 3
LOG :3410.80 3412.00 dist.:1.50nm Area code : 1
FDEPTH: 83 88 GearCond.code:
BDEPTH: 83 88 Validity code:
Towing dir: 154 Wire out: 400 m Speed: 30 kn*10

Sorted: 28 Kg Total catch: 103.20 CATCH/HOUR: 206.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	136.80	2374	66.28	46
Genypterus capensis	25.00	18	12.11	45
Chelidonichthys capensis	20.40	102	9.88	
Sepia australis	11.40	462	5.52	
Thyrsites atun	7.60	8	3.68	
Raja clavata	1.20	2	0.58	
Trachurus capensis	1.20	6	0.58	
Etrumeus whiteheadi	1.20	54	0.58	
Austroglossus microlepis	1.00	2	0.48	
Cynoglossus capensis	0.30	6	0.15	
Todaropsis eblanae	0.30	12	0.15	
Paracallionymus costatus	0.00	6		
Total	206.40		99.99	

PROJECT STATION:1077

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2826
start stop Long E 1506
TIME :07:00:00 07:30:00 dur. : 30min Purpose code: 3
LOG :3459.70 3461.00 dist.:1.60nm Area code : 1
FDEPTH: 167 169 GearCond.code:
BDEPTH: 167 169 Validity code:
Towing dir: 350 Wire out: 650 m Speed: 31 kn*10

Sorted: 28 Kg Total catch: 172.40 CATCH/HOUR: 344.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	133.60	74	38.75	48
Merluccius capensis, juveniles	42.00	3360	12.18	49
Lepidopus caudatus	33.00	484	9.57	
Sepia australis	30.00	1590	8.70	
Chelidonichthys capensis	27.00	108	7.83	
Merluccius capensis, male	23.20	18	6.73	47
Brama brama	17.00	8	4.93	
Etrumeus whiteheadi	10.80	138	3.13	50
Callorhinchus capensis	7.20	6	2.09	
Helicolenus dactylopterus	4.80	120	1.39	
Todaropsis eblanae	3.60	72	1.04	
Zeus capensis	3.00	54	0.87	
Mustelus palumbes	1.80	6	0.52	
Holohalaelurus regani	1.80	12	0.52	
Cynoglossus capensis	1.80	18	0.52	
Genypterus capensis	1.80	2	0.52	
Congiopodus spinifer	1.20	6	0.35	
Trachurus capensis	1.20	6	0.35	
Total	344.80		99.99	

PROJECT STATION:1078

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2832
start stop Long E 1454
TIME :09:16:00 09:46:00 dur. : 30min Purpose code: 3
LOG :3474.80 3475.90 dist.:1.60nm Area code : 1
FDEPTH: 176 176 GearCond.code:
BDEPTH: 176 176 Validity code:
Towing dir: 350 Wire out: 650 m Speed: 32 kn*10

Sorted: 32 Kg Total catch: 193.55 CATCH/HOUR: 387.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Etrumeus whiteheadi	115.00	1216	29.71	56
Thyrsites atun	97.00	28	25.06	53
Merluccius capensis, female	78.80	54	20.36	52
Merluccius capensis, male	39.60	30	10.23	51
Chelidonichthys capensis	13.00	46	3.36	
Squalus megalops	11.00	26	2.84	
Trachurus capensis	9.00	40	2.32	54
Raja wallacei	8.40	2	2.17	
Merluccius capensis	3.50	240	0.90	55
Zeus capensis	3.00	66	0.77	
Holohalaelurus regani	2.50	10	0.65	
Lolligoncula mercatoris	2.00		0.52	
Todaropsis eblanae	1.50	26	0.39	
Sepia australis	1.00	106	0.26	
Merluccius paradoxus	0.60	2	0.15	
Cynoglossus capensis	0.50	26	0.13	
Helicolenus dactylopterus	0.50		0.13	
Paracallionymus costatus	0.20	40	0.05	
Total	387.10		100.00	

PROJECT STATION:1079

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2834
start stop Long E 1445
TIME :11:10:00 11:40:00 dur. : 30min Purpose code: 3
LOG :3485.90 3487.30 dist.:1.70nm Area code : 1
FDEPTH: 195 193 GearCond.code:
BDEPTH: 195 193 Validity code:
Towing dir: 60 Wire out: 750 m Speed: 33 kn*10

Sorted: 112 Kg Total catch: 162.11 CATCH/HOUR: 324.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	155.80	80	48.05	58
Etrumeus whiteheadi	37.40	440	11.54	60
Galeorhinus galeus	35.20	2	10.86	
Chelidonichthys capensis	22.20	66	6.85	
Merluccius capensis, male	20.00	14	6.17	57
Lepidopus caudatus	15.00	22	4.63	
Trachurus capensis	11.60	36	3.58	59
Squalus megalops	10.84	18	3.34	
Zeus capensis	5.60	38	1.73	
Emmelichthys nitidus	3.72	150	1.15	
Todaropsis eblanae	3.00	30	0.93	
Holohalaelurus regani	1.80	8	0.56	
Lophius upsicephalus	1.60	2	0.49	
Merluccius paradoxus, female	0.46	2	0.14	
Total	324.22		100.02	

PROJECT STATION:1080

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2839
start stop Long E 1436
TIME :13:22:00 13:47:00 dur. : 25min Purpose code: 3
LOG :3499.30 3500.30 dist.:1.34nm Area code : 1
FDEPTH: 169 167 GearCond.code:
BDEPTH: 169 167 Validity code:
Towing dir: 40 Wire out: 650 m Speed: 31 kn*10

Sorted: 245 Kg Total catch: 3429.60 CATCH/HOUR: 8231.04

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Squalus acanthias	7200.00	3144	87.47	
Trachurus capensis	411.60	521	5.00	63
Merluccius capensis, female	355.20	151	4.32	62
Merluccius capensis, male	174.48	106	2.12	61
Chelidonichthys capensis	47.04	134	0.57	
Polyprion americanus	19.20	7	0.23	
Zeus capensis	16.80	50	0.20	
Raja straeleni	5.04	2	0.06	
Todaropsis eblanae	1.01	17	0.01	
Emmelichthys nitidus	0.67	118	0.01	
Total	8231.04		99.99	

PROJECT STATION:1081

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2833
start stop Long E 1423
TIME :16:59:00 17:29:00 dur. : 30min Purpose code: 3
LOG :3523.70 3524.90 dist.:1.59nm Area code : 1
FDEPTH: 447 451 GearCond.code:
BDEPTH: 447 451 Validity code:
Towing dir: 10 Wire out:1300 m Speed: 32 kn*10

Sorted: 130 Kg Total catch: 130.15 CATCH/HOUR: 260.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	174.00	200	66.85	65
Merluccius paradoxus, male	31.60	48	12.14	64
Raja confundens	24.00	18	9.22	
Etmopterus lucifer	8.60	302	3.30	
Deania profundorum	6.00	4	2.31	
Ornithoteuthis antillarum	4.40	10	1.69	
Photichthys argenteus	4.00	400	1.54	
Genypterus capensis	3.60	2	1.38	
Helicolenus dactylopterus	1.40	6	0.54	
Coelorinchus fasciatus	1.20	12	0.46	
Scopelosaurus meadi	0.40	6	0.15	
MYCTOPHIDAE	0.40		0.15	
Notacanthus sexspinis	0.20	4	0.08	
Beryx splendens	0.20	2	0.08	
Malacocephalus laevis	0.20	6	0.08	
Todaropsis eblanae	0.10	2	0.04	
Coelorinchus sp.	0.00	2		
Epigonus denticulatus	0.00	2		
Total	260.30		100.01	

PROJECT STATION:1082

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2828
start stop Long E 1426
TIME :18:45:00 19:15:00 dur. : 30min Purpose code: 3
LOG :3530.20 3531.50 dist.:1.60nm Area code : 1
FDEPTH: 407 410 GearCond.code:
BDEPTH: 407 410 Validity code:
Towing dir: 350 Wire out:1150 m Speed: 31 kn*10

Sorted: 91 Kg Total catch: 280.90 CATCH/HOUR: 561.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	429.60	642	76.47	68
Merluccius paradoxus, male	100.80	204	17.94	67
Genypterus capensis	14.00	8	2.49	66
Etmopterus lucifer	9.60	144	1.71	
Ornithoteuthis antillarum	3.60	6	0.64	
Coelorinchus fasciatus	2.40	36	0.43	
Holohalaelurus regani	0.60	6	0.11	
Notacanthus sexspinis	0.60	6	0.11	
Epigonus denticulatus	0.60	36	0.11	
Photichthys argenteus	0.00	24		
Ebinania costaecanarie	0.00	6		
Total	561.80		100.01	

PROJECT STATION:1083

DATE:27/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2817
start stop Long E 1424
TIME :20:50:00 21:50:00 dur. : 60min Purpose code: 3
LOG :3539.50 3541.90 dist.:2.70nm Area code : 1
FDEPTH: 556 549 GearCond.code:
BDEPTH: 556 549 Validity code:
Towing dir: 30 Wire out:1450 m Speed: 29 kn*10

Sorted: 71 Kg Total catch: 71.30 CATCH/HOUR: 71.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Oreosoma atlanticum	22.50	56	31.56	
Merluccius paradoxus, female	22.00	11	30.86	69
Deania calcea	8.50	6	11.92	
Coelorinchus sp.	7.60	107	10.66	
Nezumia leonis	3.20	75	4.49	
CARIDEA	1.90	176	2.66	
Photichthys argenteus	1.30	49	1.82	
Raja confundens	0.90	3	1.26	
Selachophidium guentheri	0.80	8	1.12	
RAJIDAE	0.70	5	0.98	
Etmopterus pusillus	0.60	2	0.84	
Etmopterus lucifer	0.60	19	0.84	
MYCTOPHIDAE	0.30	17	0.42	
Shrimps, small, non comm.	0.30	44	0.42	
Notacanthus sexspinis	0.10	3	0.14	
Lestrolepis intermedia	0.00	1		
Total	71.30		99.99	

PROJECT STATION:1084

DATE:28/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2815
start stop Long E 1432
TIME :07:10:00 07:20:00 dur. : 10min Purpose code: 3
LOG :3598.10 3598.50 dist.:0.50nm Area code : 1
FDEPTH: 300 301 GearCond.code:
BDEPTH: 300 301 Validity code:
Towing dir: 10 Wire out: 950 m Speed: 30 kn*10

Sorted: 50 Kg Total catch: 256.20 CATCH/HOUR: 1537.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, male	672.00	2520	43.72	70
Merluccius paradoxus, female	615.00	2670	40.01	71
Merluccius capensis	147.00	120	9.56	72
Trachurus capensis	69.00	180	4.49	73
Raja wallacei	28.20	6	1.83	
Beryx splendens	3.00	30	0.20	
Coelorinchus sp.	1.50	30	0.10	
Etmopterus lucifer	1.50	30	0.10	
Total	1537.20		100.01	

PROJECT STATION:1085

DATE:28/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2813
start stop Long E 1440
TIME :09:58:00 10:28:00 dur. : 30min Purpose code: 3
LOG :3611.00 3612.20 dist.:1.70nm Area code : 1
FDEPTH: 192 197 GearCond.code:
BDEPTH: 192 197 Validity code:
Towing dir: 330 Wire out: 750 m Speed: 35 kn*10

Sorted: 163 Kg Total catch: 545.30 CATCH/HOUR: 1090.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	573.40	354	52.58	75
Trachurus capensis	214.60	800	19.68	74
Zeus capensis	202.60	1136	18.58	
Squalus megalops	43.40	106	3.98	
Lepidopus caudatus	18.60	14	1.71	
Chelidonichthys capensis	14.00	34	1.28	
Etrumeus whiteheadi	13.40	140	1.23	76
Raja wallacei	5.20	4	0.48	
Emmelichthys nitidus	4.00	154	0.37	
Todaropsis eblanae	1.40	14	0.13	
Total	1090.60		100.02	

PROJECT STATION:1086

DATE:28/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2807
start stop Long E 1448
TIME :14:16:00 14:46:00 dur. : 30min Purpose code: 3
LOG :3624.90 3625.90 dist.:1.74nm Area code : 1
FDEPTH: 193 194 GearCond.code:
BDEPTH: 193 194 Validity code:
Towing dir: 315 Wire out: 750 m Speed: 32 kn*10

Sorted: 137 Kg Total catch: 297.90 CATCH/HOUR: 595.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Lepidopus caudatus	240.00	948	40.28	
Merluccius capensis, female	194.40	126	32.63	78
Thyrsites atun	77.00	38	12.92	81
Trachurus capensis	46.00	100	7.72	80
Merluccius capensis, male	32.00	38	5.37	77
Raja straeleni	3.80	2	0.64	
Merluccius paradoxus	1.20	16	0.20	79
Austroglossus microlepis	1.00	2	0.17	
Etrumeus whiteheadi	0.40	4	0.07	
Total	595.80		100.00	

PROJECT STATION:1087

DATE:28/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2754
start stop Long E 1531
TIME :23:06:00 23:36:00 dur. : 30min Purpose code: 3
LOG :3672.80 3674.20 dist.:1.70nm Area code : 1
FDEPTH: 83 86 GearCond.code:
BDEPTH: 83 86 Validity code:
Towing dir: 325 Wire out: 400 m Speed: 34 kn*10

Sorted: 32 Kg Total catch: 161.60 CATCH/HOUR: 323.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, juveniles	253.00	9170	78.28	82
Chelidonichthys capensis	37.00	170	11.45	
Raja clavata	22.00	10	6.81	
Sepia australis	5.00	230	1.55	
Trachurus trecae	3.00	36	0.93	
Austroglossus microlepis	1.50	36	0.46	
Lophius upsicephalus	1.00	10	0.31	
Etrumeus whiteheadi	0.50	36	0.15	
Todaropsis eblanae	0.20	30	0.06	
Sufflogobius bibarbatus	0.00	20		
Total	323.20		100.00	

PROJECT STATION:1088

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2744
start stop Long E 1432
TIME :08:35:00 09:05:00 dur. : 30min Purpose code: 3
LOG :3729.10 3730.40 dist.:1.60nm Area code : 1
FDEPTH: 509 498 GearCond.code:
BDEPTH: 509 498 Validity code:
Towing dir: 335 Wire out:1350 m Speed: 31 kn*10

Sorted: 65 Kg Total catch: 65.85 CATCH/HOUR: 131.70

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	52.00	36	39.48	84
Coelorinchus sp.	38.60	610	29.31	
Shrimps, small, non comm.	16.80	4480	12.76	
Ornithoteuthis antillarum	5.80	14	4.40	
Photichthys argenteus	5.20	338	3.95	
Merluccius paradoxus, male	3.40	2	2.58	83
Nezumia leonis	2.20	58	1.67	
CARIDEA	1.60	214	1.21	
Selachophidium guentheri	1.40	24	1.06	
Trachurus capensis	1.20	12	0.91	
Photonectes braueri	1.20	26	0.91	
Etmopterus pusillus	1.00	2	0.76	
Raja straeleni	0.40	16	0.30	
Etmopterus lucifer	0.40	10	0.30	
Scopelosaurus meadi	0.40	10	0.30	
Nemichthys curvirostris	0.10	10	0.08	
Ceratias holboelli	0.00	2		
Total	131.70		99.98	

PROJECT STATION:1089

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2739
start stop Long E 1436
TIME :10:30:00 11:00:00 dur. : 30min Purpose code: 3
LOG :3736.60 3738.00 dist.:1.70nm Area code : 1
FDEPTH: 395 395 GearCond.code:
BDEPTH: 395 395 Validity code:
Towing dir: 335 Wire out:1100 m Speed: 35 kn*10

Sorted: 106 Kg Total catch: 285.20 CATCH/HOUR: 570.40

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	274.00	536	48.04	86
Merluccius paradoxus, male	251.00	494	44.00	85
Ornithoteuthis antillarum	26.20	52	4.59	
Centrophorus squamosus	13.00	2	2.28	
Coelorinchus sp.	1.60	26	0.28	
Photichthys argenteus	1.60	142	0.28	
Coelorinchus fasciatus	1.00	26	0.18	
Photonectes braueri	1.00	22	0.18	
Lestidium atlanticum	0.50	6	0.09	
Scopelosaurus meadi	0.50	26	0.09	
Total	570.40		100.01	

PROJECT STATION:1090

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2737
start stop Long E 1446
TIME :14:08:00 14:38:00 dur. : 30min Purpose code: 3
LOG :3749.80 3751.10 dist.:1.78nm Area code : 1
FDEPTH: 331 325 GearCond.code:
BDEPTH: 331 325 Validity code:
Towing dir: 340 Wire out:1100 m Speed: 34 kn*10

Sorted: 109 Kg Total catch: 466.80 CATCH/HOUR: 933.60

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	297.50	732	31.87	88
Merluccius paradoxus, male	212.50	570	22.76	87
Merluccius paradoxus	187.00	2128	20.03	89
Trachurus capensis	121.60	452	13.02	91
Merluccius capensis, female	91.80	42	9.83	90
Octopus vulgaris	11.00	8	1.18	
Centrolophus niger	5.40	2	0.58	
Coelorinchus fasciatus	3.40	42	0.36	
Todarodes sagittatus	2.60	8	0.28	
Malacocephalus laevis	0.40	8	0.04	
Photichthys argenteus	0.40	42	0.04	
Total	933.60		99.99	

PROJECT STATION:1091

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2734
start stop Long E 1452
TIME :16:13:00 16:43:00 dur. : 30min Purpose code: 3
LOG :3758.10 3759.30 dist.:1.75nm Area code : 1
FDEPTH: 295 305 GearCond.code:
BDEPTH: 295 305 Validity code:
Towing dir: 330 Wire out:1000 m Speed: 34 kn*10

Sorted: 104 Kg Total catch: 523.95 CATCH/HOUR: 1047.90

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus	472.00	510	45.04	96
Merluccius capensis, female	292.00	290	27.87	93
Merluccius paradoxus, female	110.00	270	10.50	95
Merluccius capensis, male	87.00	120	8.30	92
Merluccius paradoxus, male	64.00	140	6.11	94
Todarodes sagittatus	9.00	10	0.86	
Centrolophus niger	7.80	2	0.74	
Trachurus capensis	3.00	20	0.29	
Raja straeleni	2.60	2	0.25	
Helicolenus dactylopterus	0.50	20	0.05	
Total	1047.90		100.01	

PROJECT STATION:1092

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2718
start stop Long E 1458
TIME :19:50:00 20:20:00 dur. : 30min Purpose code: 3
LOG :3778.00 3779.20 dist.:1.70nm Area code : 1
FDEPTH: 179 178 GearCond.code:
BDEPTH: 179 178 Validity code:
Towing dir: 339 Wire out: 750 m Speed: 35 kn*10

Sorted: 23 Kg Total catch: 118.40 CATCH/HOUR: 236.80

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	200.00	1538	84.46	97
Merluccius paradoxus, juvenile	26.00	806	10.98	98
Genypterus capensis	7.00	18	2.96	
Trachurus capensis	3.00	20	1.27	
Todarodes sagittatus	0.80	2	0.34	
Sufflogobius bibarbatus	0.00	10		
Total	236.80		100.01	

PROJECT STATION:1093

DATE:29/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2713
start stop Long E 1449
TIME :22:12:00 22:42:00 dur. : 30min Purpose code: 3
LOG :3787.40 3788.60 dist.:1.70nm Area code : 1
FDEPTH: 252 247 GearCond.code:
BDEPTH: 252 247 Validity code:
Towing dir: 340 Wire out: 850 m Speed: 35 kn*10

Sorted: 123 Kg Total catch: 157.40 CATCH/HOUR: 314.80

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	203.00	360	64.49	100
Merluccius capensis, male	71.20	200	22.62	99
Genypterus capensis	13.80	32	4.38	
Trachurus capensis	12.80	50	4.07	103
Merluccius paradoxus, juvenile	5.20	76	1.65	102
Callorhinchus capensis	4.40	2	1.40	
Todarodes sagittatus	2.00	2	0.64	
Merluccius capensis, juveniles	1.20	28	0.38	101
Lophius upsicephalus	0.80	2	0.25	
Coelorinchus fasciatus	0.20	4	0.06	
Sufflogobius bibarbatus	0.20	24	0.06	
Solenocera africana	0.00	2		
Squilla sp.	0.00	2		
Total	314.80		100.00	

PROJECT STATION:1094

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2714
start stop Long E 1436
TIME :07:03:00 07:33:00 dur. : 30min Purpose code: 3
LOG :3807.20 3808.50 dist.:1.60nm Area code : 1
FDEPTH: 320 322 GearCond.code:
BDEPTH: 320 322 Validity code:
Towing dir: 340 Wire out: 950 m Speed: 34 kn*10

Sorted: 127 Kg Total catch: 437.50 CATCH/HOUR: 875.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	512.00	490	58.51	105
Merluccius capensis, male	168.00	184	19.20	104
Merluccius paradoxus, female	115.60	232	13.21	107
Merluccius paradoxus	27.80	300	3.18	108
Coelorinchus fasciatus	11.60	122	1.33	
Lophius upsicephalus	10.80	6	1.23	
Trachurus capensis	8.20	40	0.94	
Merluccius paradoxus, male	8.20	14	0.94	106
Genypterus capensis	7.40	10	0.85	
Helicolenus dactylopterus	2.80	68	0.32	
Todarodes sagittatus	2.00	6	0.23	
Galeus polli	0.60	6	0.07	
Total	875.00		100.01	

PROJECT STATION:1095

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2715
start stop Long E 1426
TIME :08:53:00 09:23:00 dur. : 30min Purpose code: 3
LOG :3817.50 3818.70 dist.:1.40nm Area code : 1
FDEPTH: 370 370 GearCond.code:
BDEPTH: 370 370 Validity code:
Towing dir: 330 Wire out:1100 m Speed: 30 kn*10

Sorted: 123 Kg Total catch: 393.15 CATCH/HOUR: 786.30

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	426.80	1418	54.28	110
Merluccius capensis, female	151.20	206	19.23	112
Merluccius paradoxus, male	75.30	286	9.58	109
Merluccius capensis, male	74.00	124	9.41	111
Trachurus capensis	26.20	112	3.33	113
Raja straeleni	11.20	2	1.42	
Merluccius paradoxus	10.00	56	1.27	114
Centrophorus granulosus	7.20	2	0.92	
Genypterus capensis	3.20	2	0.41	
Coelorinchus fasciatus	0.60	18	0.08	
Selachophidium guentheri	0.30	6	0.04	
Helicolenus dactylopterus	0.30	6	0.04	
Total	786.30		100.01	

PROJECT STATION:1096

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2712
start stop Long E 1413
TIME :15:27:00 15:57:00 dur. : 30min Purpose code: 3
LOG :3839.80 3841.30 dist.:1.52nm Area code : 1
FDEPTH: 420 422 GearCond.code:
BDEPTH: 420 422 Validity code:
Towing dir: 310 Wire out:1250 m Speed: 30 kn*10

Sorted: 128 Kg Total catch: 265.80 CATCH/HOUR: 531.60

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	331.60	896	62.38	116
Merluccius paradoxus, male	80.40	232	15.12	115
Coelorinchus fasciatus	32.00	364	6.02	
Raja confundens	28.00	20	5.27	
Genypterus capensis	20.00	2	3.76	
Helicolenus dactylopterus	12.00	56	2.26	
Todarodes sagittatus	6.40	28	1.20	
Etmopterus lucifer	5.60	8	1.05	
Hydrolagus sp.	4.80	8	0.90	
Holohalaelurus regani	4.00	12	0.75	
Selachophidium guentheri	3.60	80	0.68	
Deania calcea	1.20	8	0.23	
Ebinania costaecanarie	1.20	4	0.23	
Myxine capensis	0.40	8	0.08	
Raja straeleni	0.40	4	0.08	
Hoplostethus mediterraneus	0.00	4		
Total	531.60		100.01	

PROJECT STATION:1097

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2702
start stop Long E 1402
TIME :17:53:00 18:23:00 dur. : 30min Purpose code: 3
LOG :3854.70 3856.10 dist.:1.40nm Area code : 1
FDEPTH: 430 426 GearCond.code:
BDEPTH: 430 426 Validity code:
Towing dir: 340 Wire out:1300 m Speed: 29 kn*10

Sorted: 86 Kg Total catch: 85.95 CATCH/HOUR: 171.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	112.80	208	65.62	118
Helicolenus dactylopterus	17.20	28	10.01	
Coelorinchus fasciatus	16.20	190	9.42	
Todarodes sagittatus	6.40	10	3.72	
Merluccius paradoxus, male	6.40	14	3.72	117
Raja confundens	5.00	4	2.91	
Raja leopardus	3.00	2	1.75	
Malacocephalus laevis	2.00	10	1.16	
Selachophidium guentheri	1.20	20	0.70	
Photichthys argenteus	1.20	74	0.70	
Raja straeleni	0.20	2	0.12	
Epigonus denticulatus	0.10	8	0.06	
Lestidium atlanticum	0.10	4	0.06	
Myxine capensis	0.10	2	0.06	
Photonectes braueri	0.00	2		
Tripterophycis gilchristi	0.00	2		
Total	171.90		100.01	

PROJECT STATION:1098

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2655
start stop Long E 1410
TIME :20:41:00 21:11:00 dur. : 30min Purpose code: 3
LOG :3869.20 3870.60 dist.:1.60nm Area code : 1
FDEPTH: 380 378 GearCond.code:
BDEPTH: 380 378 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 32 kn*10

Sorted: 127 Kg Total catch: 951.50 CATCH/HOUR: 1903.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	1465.50	3630	77.01	120
Merluccius paradoxus, male	372.00	916	19.55	119
CARIDEA	27.00		1.42	
Coelorinchus fasciatus	15.00	196	0.79	
Helicolenus dactylopterus	10.50	120	0.55	
Genypterus capensis	4.00	2	0.21	
Galeus polli	3.00	30	0.16	
Nezumia leonis	3.00	46	0.16	
MYCTOPHIDAE	1.50		0.08	
Selachophidium guentheri	1.50	30	0.08	
Total	1903.00		100.01	

PROJECT STATION:1099

DATE:30/ 4/92 GEAR TYPE: BT No:1 POSITION:Lat S 2645
start stop Long E 1426
TIME :23:54:00 00:24:00 dur. : 30min Purpose code: 3
LOG :3888.80 3890.40 dist.:1.68nm Area code : 1
FDEPTH: 319 316 GearCond.code:
BDEPTH: 319 316 Validity code:
Towing dir: 360 Wire out:1000 m Speed: 33 kn*10

Sorted: 103 Kg Total catch: 1014.40 CATCH/HOUR: 2028.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1302.60	3744	64.21	122
Merluccius capensis, male	709.80	2028	34.99	121
Genypterus capensis	9.80	8	0.48	
Scomber japonicus	3.60	2	0.18	
Coelorinchus fasciatus	2.00	40	0.10	
Helicolenus dactylopterus	1.00	40	0.05	
Total	2028.80		100.01	

PROJECT STATION:1100

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2623
start stop Long E 1429
TIME :07:00:00 07:30:00 dur. : 30min Purpose code: 3
LOG :3912.80 3914.10 dist.:1.60nm Area code : 1
FDEPTH: 287 281 GearCond.code:
BDEPTH: 287 281 Validity code:
Towing dir: 355 Wire out: 950 m Speed: 32 kn*10

Sorted: 86 Kg Total catch: 603.50 CATCH/HOUR: 1207.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	840.00	2240	69.59	124
Merluccius capensis, male	309.40	1176	25.63	123
Trachurus capensis	32.20	140	2.67	
Coelorinchus fasciatus	11.20	126	0.93	
Sufflogobius bibarbatus	8.40		0.70	
Genypterus capensis	1.60	2	0.13	
Squilla sp.	1.40	98	0.12	
Maurolicus muelleri	1.40		0.12	
MYCTOPHIDAE	1.40		0.12	
Total	1207.00		100.01	

PROJECT STATION:1101

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2626
start stop Long E 1415
TIME :09:23:00 09:53:00 dur. : 30min Purpose code: 3
LOG :3929.30 3930.70 dist.:1.60nm Area code : 1
FDEPTH: 330 325 GearCond.code:
BDEPTH: 330 325 Validity code:
Towing dir: 360 Wire out:1000 m Speed: 33 kn*10

Sorted: 148 Kg Total catch: 705.50 CATCH/HOUR: 1411.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	565.80	966	40.10	126
Merluccius capensis, male	336.80	818	23.87	125
Merluccius paradoxus, female	289.80	818	20.54	128
Merluccius paradoxus, male	66.20	174	4.69	127
MYCTOPHIDAE	36.80		2.61	
Scomber japonicus	30.00	22	2.13	
Helicolenus dactylopterus	21.20	396	1.50	
Todarodes sagittatus	19.20	40	1.36	
Maurolicus muelleri	18.40		1.30	
Coelorinchus fasciatus	13.80	120	0.98	
Galeus polli	12.00	166	0.85	
Merluccius paradoxus, juvenile	1.00	46	0.07	
Total	1411.00		100.00	

PROJECT STATION:1102

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2631
start stop Long E 1404
TIME :11:41:00 12:11:00 dur. : 30min Purpose code: 3
LOG :3945.00 3946.30 dist.:1.54nm Area code : 1
FDEPTH: 380 375 GearCond.code:
BDEPTH: 380 375 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 31 kn*10

Sorted: 121 Kg Total catch: 936.95 CATCH/HOUR: 1873.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	1250.80	3410	66.75	130
Merluccius paradoxus, male	238.70	620	12.74	129
Merluccius capensis, female	176.70	94	9.43	131
Krill	93.00		4.96	
Todarodes sagittatus	52.70	140	2.81	
Helicolenus dactylopterus	37.20	558	1.99	
Coelorinchus fasciatus	9.30	78	0.50	
Nezumia leonis	9.30	186	0.50	
Galeus polli	6.20	62	0.33	
Total	1873.90		100.01	

PROJECT STATION:1103

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2623
start stop Long E 1342
TIME :14:30:00 15:00:00 dur. : 30min Purpose code: 3
LOG :3966.40 3967.80 dist.:1.57nm Area code : 1
FDEPTH: 420 422 GearCond.code:
BDEPTH: 420 422 Validity code:
Towing dir: 5 Wire out:1250 m Speed: 32 kn*10

Sorted: 116 Kg Total catch: 211.60 CATCH/HOUR: 423.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	315.40	428	74.53	133
Merluccius paradoxus, male	31.60	46	7.47	132
Todarodes sagittatus	20.20	34	4.77	
Coelorinchus fasciatus	13.80	352	3.26	
Helicolenus dactylopterus	13.10	60	3.10	
Raja confundens	9.00	8	2.13	
Selachophidium guentheri	7.50	82	1.77	
CARIDEA	6.80		1.61	
Photichthys argenteus	2.20	228	0.52	
PORTUNIDAE	1.80	26	0.43	
MYCTOPHIDAE	0.40		0.09	
Nezumia leonis	0.40	18	0.09	
Etmopterus lucifer	0.40	4	0.09	
Malacocephalus laevis	0.20	4	0.05	
Lestidium atlanticum	0.20	4	0.05	
Galeus polli	0.20	8	0.05	
Epigonus denticulatus	0.00	4		
Hoplostethus mediterraneus	0.00	4		
Total	423.20		100.01	

PROJECT STATION:1104

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2613
start stop Long E 1347
TIME :16:26:00 16:56:00 dur. : 30min Purpose code: 3
LOG :3977.60 3978.90 dist.:1.61nm Area code : 1
FDEPTH: 380 382 GearCond.code:
BDEPTH: 380 382 Validity code:
Towing dir: 350 Wire out:1150 m Speed: 33 kn*10

Sorted: 153 Kg Total catch: 4000.00 CATCH/HOUR: 8000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	6664.00	15456	83.30	135
Merluccius paradoxus, male	1294.00	3092	16.18	134
Helicolenus dactylopterus	26.20	524	0.33	
Galeus polli	10.60	52	0.13	
Nezumia leonis	5.20	104	0.07	
Total	8000.00		100.01	

PROJECT STATION:1105

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2607
start stop Long E 1401
TIME :18:47:00 19:13:00 dur. : 26min Purpose code: 3
LOG :3993.60 3994.90 dist.:1.40nm Area code : 1
FDEPTH: 318 312 GearCond.code:
BDEPTH: 318 312 Validity code:
Towing dir: 360 Wire out:1000 m Speed: 32 kn*10

Sorted: 82 Kg Total catch: 303.80 CATCH/HOUR: 701.08

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	458.54	787	65.40	137
Merluccius capensis, male	120.92	279	17.25	136
Coelorinchus fasciatus	57.46	558	8.20	
Merluccius paradoxus, female	21.92	51	3.13	138
Helicolenus dactylopterus	17.77	228	2.53	
Todarodes sagittatus	11.08	16	1.58	
Genypterus capensis	6.46	2	0.92	
MYCTOPHIDAE	1.62		0.23	
Trachurus capensis	1.62	5	0.23	
Krill	0.92		0.13	
Maurolicus muelleri	0.92		0.13	
Galeus polli	0.92	9	0.13	
Nezumia leonis	0.92	9	0.13	
Total	701.07		99.99	

PROJECT STATION:1106

DATE: 1/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2604
start stop Long E 1413
TIME :21:03:00 21:33:00 dur. : 30min Purpose code: 3
LOG :4008.70 4010.10 dist.:1.60nm Area code : 1
FDEPTH: 248 251 GearCond.code:
BDEPTH: 248 251 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 34 kn*10

Sorted: 230 Kg Total catch: 1927.20 CATCH/HOUR: 3854.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	2400.00	450000	62.27	
Merluccius capensis, female	1072.60	1518	27.83	140
Merluccius capensis, male	156.80	234	4.07	139
Lophius upsicephalus	115.00		2.98	
Austroglossus microlepis	110.00		2.85	
Total	3854.40		100.00	

PROJECT STATION:1107

DATE: 2/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2551
start stop Long E 1420
TIME :06:58:00 07:28:00 dur. : 30min Purpose code: 3
LOG :4064.40 4065.60 dist.:1.70nm Area code : 1
FDEPTH: 209 205 GearCond.code:
BDEPTH: 209 205 Validity code:
Towing dir: 360 Wire out: 800 m Speed: 33 kn*10

Sorted: 3 Kg Total catch: 1021.40 CATCH/HOUR: 2042.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	2000.00		97.90	
Thyrsites atun	37.00	18	1.81	
Merluccius capensis, juveniles	5.40	112	0.26	141
Trachurus capensis	0.40	2	0.02	
Total	2042.80		99.99	

PROJECT STATION:1108

DATE: 2/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2552
start stop Long E 1407
TIME :09:30:00 09:42:00 dur. : 12min Purpose code: 3
LOG :4080.60 4081.30 dist.:0.90nm Area code : 1
FDEPTH: 256 252 GearCond.code:
BDEPTH: 256 252 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 32 kn*10

Sorted: 336 Kg Total catch: 336.10 CATCH/HOUR: 1680.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	950.50	1370	56.56	143
Merluccius capensis, male	273.00	605	16.25	142
Sufflogobius bibarbatus	250.00		14.88	
Lophius upsicephalus	83.50	70	4.97	
Austroglossus microlepis	66.00	85	3.93	
MYCTOPHIDAE	50.00		2.98	
Trachurus capensis	7.50	15	0.45	
Total	1680.50		100.02	

PROJECT STATION:1109

DATE: 2/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2551
start stop Long E 1354
TIME :11:36:00 12:06:00 dur. : 30min Purpose code: 3
LOG :4095.70 4097.20 dist.:1.68nm Area code : 1
FDEPTH: 333 328 GearCond.code:
BDEPTH: 333 328 Validity code:
Towing dir: 360 Wire out:1000 m Speed: 33 kn*10

Sorted: 146 Kg Total catch: 2000.00 CATCH/HOUR: 4000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	2669.40	3750	66.74	145
Merluccius capensis, male	1133.40	1834	28.34	144
Coelorinchus fasciatus	52.00	302	1.30	
Helicolenus dactylopterus	52.00	220	1.30	
Krill	35.60		0.89	
Merluccius paradoxus, female	27.40	136	0.69	146
MYCTOPHIDAE	19.20		0.48	
Merluccius paradoxus, male	11.00	28	0.28	
Epigonus denticulatus	0.00	28		
Total	4000.00		100.02	

PROJECT STATION:1110

DATE: 2/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2550
start stop Long E 1345
TIME :13:50:00 14:20:00 dur. : 30min Purpose code: 3
LOG :4107.30 4108.30 dist.:1.73nm Area code : 1
FDEPTH: 381 380 GearCond.code:
BDEPTH: 381 380 Validity code:
Towing dir: 345 Wire out:1150 m Speed: 34 kn*10

Sorted: 152 Kg Total catch: 2018.00 CATCH/HOUR: 4036.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	3562.20	6318	88.26	150
Merluccius paradoxus, male	217.60	446	5.39	149
Merluccius capensis, female	123.20	78	3.05	148
Merluccius capensis, male	47.20	52	1.17	147
Genypterus capensis	31.40	6	0.78	
Todarodes sagittatus	23.60	52	0.58	
Helicolenus dactylopterus	23.60	104	0.58	
Schedophilus huttoni	4.60	2	0.11	
Krill	2.60		0.06	
Total	4036.00		99.98	

PROJECT STATION:1111

DATE: 2/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2550
start stop Long E 1338
TIME :16:03:00 16:33:00 dur. : 30min Purpose code: 3
LOG :4116.90 4118.00 dist.:1.61nm Area code : 1
FDEPTH: 532 534 GearCond.code:
BDEPTH: 532 534 Validity code:
Towing dir: 350 Wire out:1550 m Speed: 33 kn*10

Sorted: 21 Kg Total catch: 330.30 CATCH/HOUR: 660.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	311.40	192	47.14	151
Trachyrinus scabrus	158.40	620	23.98	
Nezumia leonis	68.80	608	10.41	
Deania calcea	48.00	16	7.27	
Todarodes sagittatus	17.60	48	2.66	
Bathyraja smithii	14.80	2	2.24	
Raja confundens	11.20	16	1.70	
Shrimps, small, non comm.	9.60		1.45	
Hoplostethus melanopus	6.40	528	0.97	
Photichthys argenteus	4.80	496	0.73	
MYCTOPHIDAE	3.20	240	0.48	
Merluccius paradoxus, male	2.40	2	0.36	
Stonias boa boa	0.80	64	0.12	
Photonectes braueri	0.80	64	0.12	
Yarella blackfordi	0.80	64	0.12	
Selachophidium guentheri	0.80	16	0.12	
Ectreposebastes imus	0.48	16	0.07	
Xenodermichthys copei	0.32	16	0.05	
Galeus polli	0.00	16		
Total	660.60		99.99	

PROJECT STATION:1112

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat N 2533
start stop Long E 1340
TIME :07:05:00 07:35:00 dur. : 30min Purpose code: 3
LOG :4163.60 4165.20 dist.:1.60nm Area code : 1
FDEPTH: 401 406 GearCond.code:
BDEPTH: 401 406 Validity code:
Towing dir: 360 Wire out:1150 m Speed: 33 kn*10

Sorted: 105 Kg Total catch: 315.00 CATCH/HOUR: 630.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	402.60	756	63.90	155
Merluccius capensis, female	79.20	114	12.57	153
Merluccius paradoxus, male	43.80	102	6.95	154
Helicolenus dactylopterus	31.20	228	4.95	
Nezumia leonis	25.20	384	4.00	
Todarodes sagittatus	24.60	66	3.90	
Merluccius capensis, male	8.40	6	1.33	152
Raja confundens	6.00	12	0.95	
Krill	2.40		0.38	
MYCTOPHIDAE	2.40		0.38	
Selachophidium guentheri	2.40	36	0.38	
Galeus polli	1.80	24	0.29	
Total	630.00		99.98	

PROJECT STATION:1113

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat N 2526
start stop Long E 1348
TIME :09:25:00 09:55:00 dur. : 30min Purpose code: 3
LOG :4175.40 4176.80 dist.:1.60nm Area code : 1
FDEPTH: 295 295 GearCond.code:
BDEPTH: 295 295 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 34 kn*10

Sorted: 109 Kg Total catch: 491.85 CATCH/HOUR: 983.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	514.80	1144	52.33	157
Merluccius capensis, male	288.00	702	29.28	156
Krill	90.00		9.15	
MYCTOPHIDAE	45.00		4.57	
Trachurus capensis	31.50	90	3.20	
Coelorinchus fasciatus	5.40	72	0.55	
Helicolenus dactylopterus	4.50	100	0.46	
Galeus polli	3.60	28	0.37	
Nezumia leonis	0.90	36	0.09	
Total	983.70		100.00	

PROJECT STATION:1114

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2517
start stop Long E 1351
TIME :11:26:00 11:56:00 dur. : 30min Purpose code: 3
LOG :4185.70 4187.10 dist.:1.80nm Area code : 1
FDEPTH: 249 244 GearCond.code:
BDEPTH: 249 244 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 36 kn*10

Sorted: 118 Kg Total catch: 706.60 CATCH/HOUR: 1413.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	745.20	3108	52.73	159
Merluccius capensis, male	422.40	2052	29.89	158
MYCTOPHIDAE	184.80		13.08	
Trachurus capensis	25.20	48	1.78	160
Lophius upsicephalus	18.00	12	1.27	
Merluccius capensis, juveniles	12.00	420	0.85	161
Sufflogobius bibarbatus	3.60	372	0.25	
Trachipterus trachypterus	2.00	2	0.14	
Total	1413.20		99.99	

PROJECT STATION:1115

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2513
start stop Long E 1340
TIME :14:14:00 14:42:00 dur. : 28min Purpose code: 3
LOG :4201.00 4202.20 dist.:1.51nm Area code : 1
FDEPTH: 351 363 GearCond.code:
BDEPTH: 351 363 Validity code:
Towing dir: 10 Wire out:1100 m Speed: 31 kn*10

Sorted: 131 Kg Total catch: 375.50 CATCH/HOUR: 804.64

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	414.00	553	51.45	163
Merluccius capensis, male	192.00	264	23.86	162
Galeus polli	49.29	523	6.13	
Todarodes sagittatus	44.36	126	5.51	
MYCTOPHIDAE	26.36		3.28	
Coelorinchus fasciatus	22.71	240	2.82	
Centrophorus squamosus	16.29	2	2.02	
Deania calcea	12.00	6	1.49	
Helicolenus dactylopterus	12.00	167	1.49	
Raja confundens	6.64	6	0.83	
Trachurus capensis	6.00	13	0.75	
Selachophidium guentheri	1.71	73	0.21	
Nezumia leonis	1.29	73	0.16	
Merluccius capensis, juveniles	0.00	43		
Total	804.65		100.00	

PROJECT STATION:1116

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2506
start stop Long E 1339
TIME :15:59:00 16:29:00 dur. : 30min Purpose code: 3
LOG :4207.70 4209.00 dist.:1.61nm Area code : 1
FDEPTH: 407 423 GearCond.code:
BDEPTH: 407 423 Validity code:
Towing dir: 360 Wire out:1300 m Speed: 33 kn*10

Sorted: 134 Kg Total catch: 355.60 CATCH/HOUR: 711.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	305.80	292	43.00	165
Merluccius paradoxus, female	265.80	526	37.37	166
Merluccius capensis, male	84.80	78	11.92	164
Raja confundens	16.40	8	2.31	
Todarodes sagittatus	10.40	46	1.46	
Galeus polli	7.80	78	1.10	
Helicolenus dactylopterus	7.80	78	1.10	
Selachophidium guentheri	4.60	78	0.65	
Coelorinchus fasciatus	4.20	52	0.59	
Nezumia leonis	3.60	78	0.51	
Total	711.20		100.01	

PROJECT STATION:1117

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2500
start stop Long E 1341
TIME :18:14:00 18:44:00 dur. : 30min Purpose code: 3
LOG :4216.10 4217.60 dist.:1.70nm Area code : 1
FDEPTH: 354 357 GearCond.code:
BDEPTH: 354 357 Validity code:
Towing dir: 5 Wire out:1150 m Speed: 35 kn*10

Sorted: 136 Kg Total catch: 491.40 CATCH/HOUR: 982.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	550.80	568	56.04	168
Merluccius capensis, male	188.60	194	19.19	167
Merluccius paradoxus, female	85.60	238	8.71	169
Helicolenus dactylopterus	59.00	712	6.00	
Galeus polli	36.00	396	3.66	
Nezumia leonis	28.80	548	2.93	
Coelorinchus fasciatus	15.20	166	1.55	
Ebinania costaecanarie	10.80	14	1.10	
Krill	3.60		0.37	
Merluccius paradoxus, male	3.60	8	0.37	
Notacanthus sexspinis	0.80	36	0.08	
Total	982.80		100.00	

PROJECT STATION:1118

DATE: 3/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2451
start stop Long E 1349
TIME :21:00:00 21:30:00 dur. : 30min Purpose code: 3
LOG :4229.20 4230.60 dist.:1.70nm Area code : 2
FDEPTH: 254 255 GearCond.code:
BDEPTH: 254 255 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 35 kn*10

Sorted: 105 Kg Total catch: 238.20 CATCH/HOUR: 476.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	335.80	766	70.49	171
Merluccius capensis, male	109.40	356	22.96	170
Sufflogobius bibarbatus	23.40	2164	4.91	
MYCTOPHIDAE	4.50		0.94	
Barbourisia rufa	1.60	2	0.34	
Lepidopus caudatus	1.40	4	0.29	
Galeus polli	0.20	20	0.04	
Squilla sp.	0.10	6	0.02	
Total	476.40		99.99	

PROJECT STATION:1119

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2442
start stop Long E 1356
TIME :07:26:00 07:56:00 dur. : 30min Purpose code: 3
LOG :4269.70 4271.00 dist.:1.60nm Area code : 2
FDEPTH: 205 209 GearCond.code:
BDEPTH: 205 209 Validity code:
Towing dir: 355 Wire out: 600 m Speed: 32 kn*10

Sorted: 51 Kg Total catch: 711.20 CATCH/HOUR: 1422.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	910.00	5488	63.98	173
Merluccius capensis, male	492.80	3136	34.65	172
Sufflogobius bibarbatus	11.20	1036	0.79	
Merluccius capensis, juveniles	8.40	672	0.59	174
Total	1422.40		100.01	

PROJECT STATION:1120

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2440
start stop Long E 1348
TIME :09:10:00 09:40:00 dur. : 30min Purpose code: 3
LOG :4279.90 4281.30 dist.:1.60nm Area code : 2
FDEPTH: 302 286 GearCond.code:
BDEPTH: 302 286 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 33 kn*10

Sorted: 111 Kg Total catch: 228.50 CATCH/HOUR: 457.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	252.80	292	55.32	176
Merluccius capensis, male	77.20	84	16.89	175
Coelorinchus fasciatus	49.60	590	10.85	
Nezumia leonis	22.40	800	4.90	
Helicolenus dactylopterus	12.40	160	2.71	
Neoharriotta pinnata	12.00	6	2.63	
Lophius upsicephalus	10.80	12	2.36	
Galeus polli	6.80	84	1.49	
Squilla sp.	4.40	136	0.96	
Todarodes sagittatus	4.40	20	0.96	
Trachurus capensis	2.80	4	0.61	
Barbourisia rufa	1.00	2	0.22	
Notacanthus sexspinis	0.40	32	0.09	
Total	457.00		99.99	

PROJECT STATION:1121

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2439
start stop Long E 1335
TIME :11:21:00 11:51:00 dur. : 30min Purpose code: 3
LOG :4294.30 4295.80 dist.:1.60nm Area code : 2
FDEPTH: 393 385 GearCond.code:
BDEPTH: 393 385 Validity code:
Towing dir: 345 Wire out:1200 m Speed: 31 kn*10

Sorted: 108 Kg Total catch: 243.60 CATCH/HOUR: 487.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	165.60	148	33.99	178
Merluccius paradoxus, female	140.00	220	28.74	180
Merluccius capensis, male	37.00	32	7.59	177
Hoplostethus melanopus	36.00		7.39	
Helicolenus dactylopterus	35.60		7.31	
Nezumia leonis	27.40		5.62	
Todarodes sagittatus	16.60	64	3.41	
Coelorinchus fasciatus	7.20		1.48	
Galeus polli	5.40		1.11	
Ebinania costaecanarie	3.60	4	0.74	
Lophius upsicephalus	3.20	4	0.66	
Schedophilus huttoni	2.00	4	0.41	
Merluccius paradoxus, male	2.00	4	0.41	179
Selachophidium guentheri	1.80	28	0.37	
Yarella blackfordi	1.40	76	0.29	
MYCTOPHIDAE	1.40		0.29	
Notacanthus sexspinis	0.40	20	0.08	
Lestidium atlanticum	0.20	18	0.04	
Malacocephalus laevis	0.20	4	0.04	
Photichthys argenteus	0.20	20	0.04	
Stonias boa boa	0.00	22		
Epigonus denticulatus	0.00	4		
Merluccius paradoxus, juvenile	0.00	108		
Total	487.20		100.01	

PROJECT STATION:1122

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2423
start stop Long E 1325
TIME :14:34:00 15:04:00 dur. : 30min Purpose code: 3
LOG :4318.50 4319.90 dist.:1.65nm Area code : 2
FDEPTH: 369 366 GearCond.code:
BDEPTH: 369 366 Validity code:
Towing dir: 350 Wire out:1200 m Speed: 32 kn*10

Sorted: 109 Kg Total catch: 795.00 CATCH/HOUR: 1590.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	1283.20	2350	80.70	184
Merluccius capensis, female	174.00	116	10.94	182
Merluccius paradoxus, male	33.40	58	2.10	183
Coelorinchus fasciatus	30.40	334	1.91	
Merluccius capensis, male	25.40	14	1.60	181
Todarodes sagittatus	17.40	30	1.09	
Helicolenus dactylopterus	14.60	304	0.92	
Epigonus denticulatus	10.20	594	0.64	
Selachophidium guentheri	1.40	14	0.09	
Total	1590.00		99.99	

PROJECT STATION:1123

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2422
start stop Long E 1340
TIME :17:10:00 17:40:00 dur. : 30min Purpose code: 3
LOG :4335.80 4337.20 dist.:1.71nm Area code : 2
FDEPTH: 322 317 GearCond.code:
BDEPTH: 322 317 Validity code:
Towing dir: 340 Wire out:1100 m Speed: 33 kn*10

Sorted: 139 Kg Total catch: 250.40 CATCH/HOUR: 500.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	270.80	292	54.07	186
Merluccius capensis, male	99.40	158	19.85	185
Helicolenus dactylopterus	61.20	1458	12.22	
Coelorinchus fasciatus	19.00	256	3.79	
Merluccius paradoxus, female	18.00	50	3.59	188
Galeus polli	11.80	140	2.36	
Todarodes sagittatus	9.80	22	1.96	
Hoplostethus melanopus	4.00	64	0.80	
Deania profundorum	4.00	4	0.80	
Nezumia leonis	1.40	64	0.28	
Merluccius paradoxus, male	1.20	8	0.24	187
Squilla sp.	0.20	22	0.04	
Total	500.80		100.00	

PROJECT STATION:1124

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2419
start stop Long E 1353
TIME :19:35:00 20:05:00 dur. : 30min Purpose code: 3
LOG :4351.50 4352.90 dist.:1.70nm Area code : 2
FDEPTH: 266 265 GearCond.code:
BDEPTH: 266 265 Validity code:
Towing dir: 350 Wire out: 900 m Speed: 34 kn*10

Sorted: 115 Kg Total catch: 519.90 CATCH/HOUR: 1039.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	489.60	802	47.09	190
Merluccius capensis, male	218.80	486	21.04	189
Sufflogobius bibarbatus	209.80	27274	20.18	
Lophius upsicephalus	52.20	46	5.02	
Coelorinchus fasciatus	47.80	540	4.60	
Galeus polli	15.60	252	1.50	
Scomber japonicus	4.60	2	0.44	
Squilla sp.	1.00	100	0.10	
Helicolenus dactylopterus	0.40	36	0.04	
Total	1039.80		100.01	

PROJECT STATION:1125

DATE: 4/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2419
start stop Long E 1402
TIME :21:33:00 22:03:00 dur. : 30min Purpose code: 3
LOG :4363.20 4364.50 dist.:1.60nm Area code : 2
FDEPTH: 181 187 GearCond.code:
BDEPTH: 181 187 Validity code:
Towing dir: 360 Wire out: 600 m Speed: 32 kn*10

Sorted: 75 Kg Total catch: 1000.00 CATCH/HOUR: 2000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	700.20	4376	35.01	192
Trachurus capensis	663.20		33.16	193
Merluccius capensis, male	565.00	4006	28.25	191
Todarodes sagittatus	39.80	186	1.99	
Sufflogobius bibarbatus	31.80	5066	1.59	
Total	2000.00		100.00	

PROJECT STATION:1126

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2400
start stop Long E 1409
TIME :07:38:00 08:08:00 dur. : 30min Purpose code: 3
LOG :4409.50 4410.90 dist.:1.60nm Area code : 2
FDEPTH: 140 142 GearCond.code:
BDEPTH: 140 142 Validity code:
Towing dir: 350 Wire out: 600 m Speed: 32 kn*10

Sorted: 333 Kg Total catch: 333.00 CATCH/HOUR: 666.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	600.00	162858	90.09	
Merluccius capensis, male	36.00	314	5.41	194
Merluccius capensis, female	23.80	178	3.57	195
Merluccius capensis, juveniles	6.20	184	0.93	196
Total	666.00		100.00	

PROJECT STATION:1127

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2400
start stop Long E 1403
TIME :09:23:00 09:53:00 dur. : 30min Purpose code: 3
LOG :4417.80 4419.30 dist.:1.60nm Area code : 2
FDEPTH: 182 183 GearCond.code:
BDEPTH: 182 183 Validity code:
Towing dir: 360 Wire out: 600 m Speed: 32 kn*10

Sorted: 60 Kg Total catch: 601.00 CATCH/HOUR: 1202.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	552.00	3320	45.92	198
Merluccius capensis, male	488.00	3260	40.60	197
Sufflogobius bibarbatus	130.00	65000	10.82	
Merluccius capensis, juveniles	18.00	520	1.50	199
Chelidonichthys capensis	6.00	20	0.50	
Trachurus capensis	6.00	40	0.50	
MYCTOPHIDAE	1.00	580	0.08	
Todaropsis eblanae	1.00	80	0.08	
Total	1202.00		100.00	

PROJECT STATION:1128

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2401
start stop Long E 1353
TIME :11:13:00 11:43:00 dur. : 30min Purpose code: 3
LOG :4430.10 4431.40 dist.:1.50nm Area code : 2
FDEPTH: 228 223 GearCond.code:
BDEPTH: 228 223 Validity code:
Towing dir: 360 Wire out: 750 m Speed: 30 kn*10

Sorted: 112 Kg Total catch: 201.10 CATCH/HOUR: 402.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	247.80	522	61.61	200
Merluccius capensis, male	77.70	260	19.32	201
Sufflogobius bibarbatus	27.66	3540	6.88	
Helicolenus dactylopterus	12.26	382	3.05	
Todarodes sagittatus	11.20	22	2.78	
Coelorinchus fasciatus	11.20	174	2.78	
Lepidopus caudatus	8.76	242	2.18	
Trachurus capensis	2.10	8	0.52	
Todaropsis eblanae	1.76	70	0.44	
Lophius upsicephalus	1.40	8	0.35	
Merluccius capensis, juveniles	0.36	24	0.09	202
Total	402.20		100.00	

PROJECT STATION:1129

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2400
start stop Long E 1333
TIME :14:14:00 14:44:00 dur. : 30min Purpose code: 3
LOG :4450.40 4451.90 dist.:1.61nm Area code : 2
FDEPTH: 266 264 GearCond.code:
BDEPTH: 266 264 Validity code:
Towing dir: 350 Wire out: 950 m Speed: 31 kn*10

Sorted: 99 Kg Total catch: 215.37 CATCH/HOUR: 430.74

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	259.66	320	60.28	203
Merluccius capensis, male	74.36	132	17.26	204
Helicolenus dactylopterus	45.04	1296	10.46	
Coelorinchus fasciatus	12.74	204	2.96	
Trachipterus trachypterus	11.10	2	2.58	
Sufflogobius bibarbatus	10.62	1312	2.47	
Trachurus capensis	9.34	22	2.17	205
Squalus megalops	2.56	8	0.59	
MYCTOPHIDAE	2.12		0.49	
Lepidopus caudatus	1.70	4	0.39	
Todaropsis eblanae	0.86	48	0.20	
Galeus polli	0.42	22	0.10	
Chlorophthalmus punctatus	0.22	18	0.05	
Notacanthus sexspinis	0.00	6		
Total	430.74		100.00	

PROJECT STATION:1130

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2401
start stop Long E 1316
TIME :16:58:00 17:28:00 dur. : 30min Purpose code: 3
LOG :4468.20 4469.60 dist.:1.75nm Area code : 2
FDEPTH: 350 347 GearCond.code:
BDEPTH: 350 347 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 34 kn*10

Sorted: 135 Kg Total catch: 643.40 CATCH/HOUR: 1286.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	638.40	1150	49.61	209
Merluccius capensis, female	354.40	228	27.54	207
Merluccius capensis, male	114.00	96	8.86	206
Helicolenus dactylopterus	105.40	1606	8.19	
Coelorinchus fasciatus	19.00	256	1.48	
Todarodes sagittatus	15.20	20	1.18	
Merluccius paradoxus, male	14.20	48	1.10	208
Epigonus denticulatus	12.40	504	0.96	
Lophius upsicephalus	10.40	20	0.81	
MYCTOPHIDAE	1.00		0.08	
Selachophidium guentheri	1.00	76	0.08	
Lestidium atlanticum	1.00	28	0.08	
Nezumia leonis	0.40	10	0.03	
Galeus polli	0.00	10		
Total	1286.80		100.00	

PROJECT STATION:1131

DATE: 5/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2358
start stop Long E 1312
TIME :18:27:00 18:57:00 dur. : 30min Purpose code: 3
LOG :4475.10 4476.40 dist.:1.60nm Area code : 2
FDEPTH: 452 446 GearCond.code:
BDEPTH: 452 446 Validity code:
Towing dir: 345 Wire out:1250 m Speed: 32 kn*10

Sorted: 55 Kg Total catch: 55.00 CATCH/HOUR: 110.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Hoplostethus melanopus	21.40	670	19.45	
Helicolenus dactylopterus	17.60	48	16.00	
Trachyrinus scabrus	14.60	86	13.27	
Merluccius paradoxus, female	13.20	14	12.00	210
MYCTOPHIDAE	10.00		9.09	
Nezumia leonis	6.40	122	5.82	
Deania calcea	4.60	2	4.18	
Todarodes sagittatus	4.40	18	4.00	
Epigonus denticulatus	4.00	108	3.64	
Selachophidium guentheri	3.00	48	2.73	
Etmopterus pusillus	2.80	4	2.55	
Yarella blackfordi	2.60	174	2.36	
Shrimps, small, non comm.	2.00		1.82	
Deania profundorum	2.00	2	1.82	
Lophius upsicephalus	0.60	2	0.55	
Notacanthus sexspinis	0.40	8	0.36	
Myxine capensis	0.20	2	0.18	
Galeus polli	0.20	2	0.18	
Neoscopelus macrolepidotus	0.00	2		
Total	110.00		100.00	

PROJECT STATION:1132

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2342
start stop Long E 1312
TIME :00:18:00 00:48:00 dur. : 30min Purpose code: 3
LOG :4512.30 4513.90 dist.:1.54nm Area code : 2
FDEPTH: 352 349 GearCond.code:
BDEPTH: 352 349 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 30 kn*10

Sorted: 114 Kg Total catch: 511.18 CATCH/HOUR: 1022.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	448.20	298	43.84	211
Merluccius paradoxus, female	297.90	594	29.14	213
Merluccius capensis, male	106.60	90	10.43	212
Helicolenus dactylopterus	48.60	680	4.75	
Coelorinchus fasciatus	29.70	390	2.91	
Krill	22.50		2.20	
Deania calcea	22.50	28	2.20	
Merluccius paradoxus, male	18.00	28	1.76	214
Lophius upsicephalus	13.50	18	1.32	
Epigonus denticulatus	5.40	172	0.53	
Todarodes sagittatus	4.50	28	0.44	
Hoplostethus melanopus	1.80	190	0.18	
Galeus polli	1.80	18	0.18	
Selachophidium guentheri	0.90	46	0.09	
MYCTOPHIDAE	0.46	46	0.04	
Total	1022.36		100.01	

PROJECT STATION:1133

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2341
start stop Long E 1326
TIME :07:24:00 07:54:00 dur. : 30min Purpose code: 3
LOG :4531.80 4533.20 dist.:1.60nm Area code : 2
FDEPTH: 256 254 GearCond.code:
BDEPTH: 256 254 Validity code:
Towing dir: 340 Wire out: 900 m Speed: 32 kn*10

Sorted: 105 Kg Total catch: 351.20 CATCH/HOUR: 702.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	336.00	612	47.84	216
Merluccius capensis, male	142.40	410	20.27	215
Coelorinchus fasciatus	83.20	1248	11.85	
Helicolenus dactylopterus	52.00	1224	7.40	
Lophius upsicephalus	25.40	20	3.62	
Echinorhinus brucus	20.60	2	2.93	
Brama brama	15.60	14	2.22	
Chlorophthalmus punctatus	13.60	760	1.94	
Galeus polli	9.80	404	1.40	
Squalus megalops	3.20	6	0.46	
Merluccius capensis, juveniles	0.60	36	0.09	217
Total	702.40		100.02	

PROJECT STATION:1134

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2340
start stop Long E 1340
TIME :09:38:00 10:08:00 dur. : 30min Purpose code: 3
LOG :4547.60 4548.90 dist.:1.50nm Area code : 2
FDEPTH: 202 200 GearCond.code:
BDEPTH: 202 200 Validity code:
Towing dir: 340 Wire out: 700 m Speed: 30 kn*10

Sorted: 72 Kg Total catch: 214.80 CATCH/HOUR: 429.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	228.00	834	53.07	219
Merluccius capensis, male	128.40	720	29.89	218
Sufflogobius bibarbatus	30.00	3000	6.98	
Pterothrissus belloci	21.60	78	5.03	
PORTUNIDAE	12.60	444	2.93	
Galeus polli	3.00	150	0.70	
Helicolenus dactylopterus	1.80	126	0.42	
Coelorinchus fasciatus	1.80	6	0.42	
Lophius upsicephalus	1.80	12	0.42	
Merluccius capensis, juveniles	0.60	48	0.14	220
Squilla sp.	0.00	6		
Total	429.60		100.00	

PROJECT STATION:1135

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2340
start stop Long E 1352
TIME :11:37:00 12:07:00 dur. : 30min Purpose code: 3
LOG :4561.30 4562.80 dist.:1.41nm Area code : 2
FDEPTH: 172 170 GearCond.code:
BDEPTH: 172 170 Validity code:
Towing dir: 350 Wire out: 750 m Speed: 28 kn*10

Sorted: 113 Kg Total catch: 681.00 CATCH/HOUR: 1362.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	675.60	4728	49.60	222
Merluccius capensis, female	556.80	3108	40.88	221
Sufflogobius bibarbatus	57.60	5926	4.23	
Coelorinchus fasciatus	31.20	660	2.29	
Chelidonichthys capensis	24.00	60	1.76	
PORTUNIDAE	6.00	144	0.44	
Merluccius capensis, juveniles	4.80	288	0.35	223
Emmelichthys nitidus	2.40	288	0.18	
Todaropsis eblanae	1.20	96	0.09	
Lophius upsicephalus	1.20	12	0.09	
Trachurus capensis	1.20	12	0.09	
Total	1362.00		100.00	

PROJECT STATION:1136

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2331
start stop Long E 1406
TIME :13:58:00 14:05:00 dur. : 7min Purpose code: 3
LOG :4578.60 4578.90 dist.:0.30nm Area code : 2
FDEPTH: 140 140 GearCond.code: 8
BDEPTH: 140 140 Validity code:
Towing dir: 350 Wire out: 600 m Speed: 24 kn*10

Sorted: 30 Kg Total catch: 120.00 CATCH/HOUR: 1028.57

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	296.57	3154	28.83	224
B I V A L V E S	257.14		25.00	
Merluccius capensis, juveniles	250.29	2366	24.33	226
Merluccius capensis, male	214.29	2571	20.83	225
Austroglossus microlepis	6.86	34	0.67	
Sufflogobius bibarbatus	3.43	2023	0.33	
Total	1028.58		99.99	

PROJECT STATION:1137

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2321
start stop Long E 1358
TIME :16:08:00 16:38:00 dur. : 30min Purpose code: 3
LOG :4592.30 4593.80 dist.:1.56nm Area code : 2
FDEPTH: 150 148 GearCond.code:
BDEPTH: 150 148 Validity code:
Towing dir: 330 Wire out: 500 m Speed: 31 kn*10

Sorted: 59 Kg Total catch: 669.40 CATCH/HOUR: 1338.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	711.00	7290	53.11	228
Merluccius capensis, male	537.80	6166	40.17	227
Sufflogobius bibarbatus	76.50	20564	5.71	
Merluccius capensis, juveniles	13.50	630	1.01	229
Total	1338.80		100.00	

PROJECT STATION:1138

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2320
start stop Long E 1344
TIME :18:09:00 18:39:00 dur. : 30min Purpose code: 3
LOG :4606.50 4608.00 dist.:1.60nm Area code : 2
FDEPTH: 155 152 GearCond.code:
BDEPTH: 155 152 Validity code:
Towing dir: 270 Wire out: 550 m Speed: 32 kn*10

Sorted: 61 Kg Total catch: 793.00 CATCH/HOUR: 1586.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	915.20	8502	57.70	230
Merluccius capensis, female	572.00	4628	36.07	231
Sufflogobius bibarbatus	39.00	3640	2.46	
Chelidonichthys capensis	39.00	156	2.46	
Trachurus capensis	13.00	104	0.82	
Merluccius capensis, juveniles	7.80	650	0.49	232
Total	1586.00		100.00	

PROJECT STATION:1139

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2319
start stop Long E 1331
TIME :20:17:00 20:47:00 dur. : 30min Purpose code: 3
LOG :4620.00 4621.10 dist.:1.60nm Area code : 2
FDEPTH: 204 206 GearCond.code:
BDEPTH: 204 206 Validity code:
Towing dir: 360 Wire out: 700 m Speed: 32 kn*10

Sorted: 37 Kg Total catch: 36.60 CATCH/HOUR: 73.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	36.00	96	49.18	234
Merluccius capensis, male	25.00	74	34.15	233
Pterothrissus belloci	6.80	56	9.29	
Lophius upsicephalus	2.60	6	3.55	
Sufflogobius bibarbatus	2.00		2.73	
Trachurus capensis	0.40	4	0.55	
Chelidonichthys capensis	0.40	2	0.55	
Total	73.20		100.00	

PROJECT STATION:1140

DATE: 6/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2319
start stop Long E 1316
TIME :22:43:00 23:13:00 dur. : 30min Purpose code: 3
LOG :4636.60 4637.80 dist.:1.60nm Area code : 2
FDEPTH: 354 356 GearCond.code:
BDEPTH: 354 356 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 33 kn*10

Sorted: 137 Kg Total catch: 411.60 CATCH/HOUR: 823.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	430.20	324	52.26	236
Merluccius capensis, male	155.80	150	18.93	237
Merluccius paradoxus, female	57.00	108	6.92	235
Hoplostethus melanopus	45.60	868	5.54	
Todarodes sagittatus	42.60	120	5.17	
Deania calcea	33.00	60	4.01	
Helicolenus dactylopterus	19.80	456	2.41	
Galeus polli	14.40	144	1.75	
Yarella blackfordi	11.40	936	1.38	
Etmopterus pusillus	5.40	18	0.66	
Coelorinchus fasciatus	4.20	54	0.51	
Nezumia leonis	1.80	72	0.22	
Selachophidium guentheri	1.80	48	0.22	
Ebinania costaecanarie	0.18	6	0.02	
Notacanthus sexspinis	0.00	6		
Total	823.18		100.00	

PROJECT STATION:1141

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2259
start stop Long E 1404
TIME :11:36:00 11:49:00 dur. : 13min Purpose code: 1
LOG :4746.90 4747.60 dist.:0.60nm Area code : 2
FDEPTH: 122 121 GearCond.code:
BDEPTH: 122 121 Validity code:
Towing dir: 70 Wire out: 550 m Speed: 29 kn*10

Sorted: 2 Kg Total catch: 303.40 CATCH/HOUR: 1400.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	1384.62		98.88	
Merluccius capensis, juveniles	9.23	748	0.66	238
Merluccius capensis	6.46	46	0.46	239
Total	1400.31		100.00	

PROJECT STATION:1142

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2300
start stop Long E 1357
TIME :12:47:00 13:17:00 dur. : 30min Purpose code: 3
LOG :4755.60 4757.10 dist.:1.43nm Area code : 2
FDEPTH: 133 133 GearCond.code:
BDEPTH: 133 133 Validity code:
Towing dir: 270 Wire out: 500 m Speed: 29 kn*10

Sorted: 30 Kg Total catch: 722.40 CATCH/HOUR: 1444.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	878.40	9408	60.80	241
Merluccius capensis, male	499.20	5472	34.55	240
Merluccius capensis, juveniles	48.00	1872	3.32	242
Sufflogobius bibarbatus	19.20	3840	1.33	
Total	1444.80		100.00	

PROJECT STATION:1143

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2300
start stop Long E 1347
TIME :14:20:00 14:50:00 dur. : 30min Purpose code: 3
LOG :4766.30 4767.80 dist.:1.50nm Area code : 2
FDEPTH: 139 140 GearCond.code:
BDEPTH: 139 140 Validity code:
Towing dir: 270 Wire out: 500 m Speed: 29 kn*10

Sorted: 28 Kg Total catch: 374.55 CATCH/HOUR: 749.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	388.80	3450	51.90	244
Merluccius capensis, male	307.80	3564	41.09	243
Chelidonichthys capensis	18.90	108	2.52	
Sufflogobius bibarbatus	18.90	2322	2.52	
Merluccius capensis, juveniles	13.50	1162	1.80	245
Trachurus capensis	1.00	8	0.13	
Todaropsis eblanae	0.20	12	0.03	
Squilla sp.	0.00	2		
Total	749.10		99.99	

PROJECT STATION:1144

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2301
start stop Long E 1333
TIME :16:24:00 16:54:00 dur. : 30min Purpose code: 3
LOG :4782.80 4784.30 dist.:1.60nm Area code : 2
FDEPTH: 160 156 GearCond.code:
BDEPTH: 160 156 Validity code:
Towing dir: 350 Wire out: 600 m Speed: 30 kn*10

Sorted: 38 Kg Total catch: 1235.80 CATCH/HOUR: 2471.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	1064.00	11680	43.05	246
Merluccius capensis, female	820.00	8560	33.18	247
Trachurus capensis	570.00	4840	23.06	249
Merluccius capensis, juveniles	16.00	1040	0.65	248
Chelidonichthys capensis	1.60	4	0.06	
Total	2471.60		100.00	

PROJECT STATION:1145

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2300
start stop Long E 1325
TIME :18:13:00 18:43:00 dur. : 30min Purpose code: 3
LOG :4795.30 4796.80 dist.:1.60nm Area code : 2
FDEPTH: 303 308 GearCond.code:
BDEPTH: 303 308 Validity code:
Towing dir: 260 Wire out: 900 m Speed: 33 kn*10

Sorted: 24 Kg Total catch: 132.80 CATCH/HOUR: 265.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	135.20	98	50.90	250
Galeus polli	35.60	832	13.40	
Merluccius capensis, male	30.40	30	11.45	251
Helicolenus dactylopterus	27.20	1088	10.24	
Todarodes sagittatus	14.80	36	5.57	
Coelorinchus fasciatus	5.20	112	1.96	
Trachurus capensis	5.20	20	1.96	
Lophius upsicephalus	3.60	4	1.36	
Chlorophthalmus punctatus	3.60	280	1.36	
Merluccius paradoxus	3.00	8	1.13	252
Hoplostethus melanopus	1.20	28	0.45	
Nezumia leonis	0.40	8	0.15	
Epigonus denticulatus	0.20	24	0.08	
Squilla sp.	0.00	4		
MYCTOPHIDAE	0.00	20		
Total	265.60		100.01	

PROJECT STATION:1146

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2300
start stop Long E 1318
TIME :20:02:00 20:32:00 dur. : 30min Purpose code: 3
LOG :4805.90 4807.50 dist.:1.70nm Area code : 2
FDEPTH: 352 352 GearCond.code:
BDEPTH: 352 352 Validity code:
Towing dir: 335 Wire out:1100 m Speed: 33 kn*10

Sorted: 124 Kg Total catch: 222.16 CATCH/HOUR: 444.32

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	259.92	180	58.50	254
Merluccius capensis, male	90.36	90	20.34	253
Schedophilus huttoni	17.28	8	3.89	
Hoplostethus melanopus	16.20	292	3.65	
Coelorinchus fasciatus	12.24	162	2.75	
Galeus polli	11.16	154	2.51	
Merluccius paradoxus, female	10.44	28	2.35	255
Helicolenus dactylopterus	6.48	180	1.46	
Brama brama	5.40	6	1.22	
Epigonus denticulatus	4.68	256	1.05	
Yarella blackfordi	3.60		0.81	
Genypterus capensis	2.60	2	0.59	
MYCTOPHIDAE	1.80		0.41	
Nezumia leonis	1.08	50	0.24	
Trachurus capensis	0.36	4	0.08	
Notacanthus sexspinis	0.36	22	0.08	
Chlorophthalmus punctatus	0.36	28	0.08	
Total	444.32		100.01	

PROJECT STATION:1147

DATE: 8/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2259
start stop Long E 1302
TIME :22:41:00 23:11:00 dur. : 30min Purpose code: 3
LOG :4823.80 4825.20 dist.:1.60nm Area code : 2
FDEPTH: 400 405 GearCond.code:
BDEPTH: 400 405 Validity code:
Towing dir: 340 Wire out:1200 m Speed: 31 kn*10

Sorted: 123 Kg Total catch: 301.27 CATCH/HOUR: 602.54

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	418.50	512	69.46	257
Helicolenus dactylopterus	63.00	410	10.46	
Todarodes sagittatus	35.00	100	5.81	
Lophius upsicephalus	22.50	30	3.73	
Nezumia leonis	14.76	404	2.45	
Epigonus denticulatus	9.72	242	1.61	
Selachophidium guentheri	8.28	140	1.37	
Deania profundorum	7.50	10	1.24	
Galeus polli	6.50	86	1.08	
Merluccius paradoxus, male	5.50	10	0.91	256
Etmopterus pusillus	4.00	16	0.66	
Coelorinchus fasciatus	3.24	58	0.54	
Prionace glauca	2.50	6	0.41	
Hoplostethus melanopus	1.00	56	0.17	
Notacanthus sexspinis	0.18	10	0.03	
Chlorophthalmus punctatus	0.18	20	0.03	
Trachyrinus scabrus	0.18	8	0.03	
Total	602.54		99.99	

PROJECT STATION:1148

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2241
start stop Long E 1254
TIME :07:21:00 07:51:00 dur. : 30min Purpose code: 3
LOG :4850.80 4852.50 dist.:1.70nm Area code : 2
FDEPTH: 351 349 GearCond.code:
BDEPTH: 351 349 Validity code:
Towing dir: 340 Wire out:1100 m Speed: 34 kn*10

Sorted: 103 Kg Total catch: 138.30 CATCH/HOUR: 276.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	84.90	168	30.69	259
Merluccius capensis, female	42.50	24	15.37	260
Helicolenus dactylopterus	34.50	376	12.47	
Coelorinchus fasciatus	12.50	24	4.52	
Schedophilus huttoni	9.90	6	3.58	
Deania profundorum	8.90	8	3.22	
Krill	8.70		3.15	
Raja confundens	8.70	8	3.15	
Epigonus denticulatus	8.50	140	3.07	
Todarodes sagittatus	8.10	12	2.93	
Merluccius paradoxus, male	7.50	12	2.71	258
Nezumia leonis	7.10	112	2.57	
Neoharriotta pinnata	5.90	6	2.13	
Galeus polli	5.50	26	1.99	
Selachophidium guentheri	4.50	34	1.63	
Etmopterus pusillus	4.10	8	1.48	
Laemonema laureysi	3.90	16	1.41	
Chlorophthalmus punctatus	3.70	14	1.34	
Hoplostethus melanopus	3.60	8	1.30	
Malacocephalus laevis	3.60	6	1.30	
Total	276.60		100.01	

PROJECT STATION:1149

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2239
start stop Long E 1305
TIME :09:37:00 10:07:00 dur. : 30min Purpose code: 3
LOG :4866.40 4868.00 dist.:1.60nm Area code : 2
FDEPTH: 303 299 GearCond.code:
BDEPTH: 303 299 Validity code:
Towing dir: 330 Wire out: 900 m Speed: 32 kn*10

Sorted: 145 Kg Total catch: 460.67 CATCH/HOUR: 921.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	560.40	360	60.82	261
Merluccius capensis, female	172.20	146	18.69	262
Chlorophthalmus punctatus	46.24	1792	5.02	
Merluccius paradoxus, female	41.78	126	4.53	263
Helicolenus dactylopterus	31.68	1482	3.44	
Schedophilus huttoni	30.40	12	3.30	
Raja confundens	11.40	12	1.24	
Todarodes sagittatus	11.40	12	1.24	
Lophius upsicephalus	3.80	12	0.41	
Trachurus capensis	3.80	6	0.41	
Galeus polli	3.16	88	0.34	
Squalus megalops	3.16	6	0.34	
Beryx splendens	1.28	6	0.14	
Coelorinchus fasciatus	0.64	6	0.07	
Total	921.34		99.99	

PROJECT STATION:1150

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2240
start stop Long E 1316
TIME :11:55:00 12:25:00 dur. : 30min Purpose code: 3
LOG :4882.10 4883.90 dist.:1.70nm Area code : 2
FDEPTH: 284 278 GearCond.code:
BDEPTH: 284 278 Validity code:
Towing dir: 330 Wire out: 900 m Speed: 33 kn*10

Sorted: 141 Kg Total catch: 396.30 CATCH/HOUR: 792.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	450.80	320	56.88	265
Merluccius capensis, male	156.80	196	19.78	264
Helicolenus dactylopterus	66.60	2664	8.40	
Schedophilus huttoni	24.00	6	3.03	
Chlorophthalmus punctatus	21.80	1134	2.75	
Merluccius paradoxus, female	12.80	40	1.61	267
Lophius upsicephalus	12.40	16	1.56	
Todarodes sagittatus	11.80	28	1.49	
Genypterus capensis	7.80	6	0.98	
Coelorinchus fasciatus	7.20	156	0.91	
Galeus polli	6.80	96	0.86	
Trachurus capensis	4.00	12	0.50	
Hyperoglyphe moselii	3.60	6	0.45	
MYCTOPHIDAE	3.40	628	0.43	
Merluccius paradoxus, male	2.80	16	0.35	266
Total	792.60		99.98	

PROJECT STATION:1151

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2241
start stop Long E 1333
TIME :14:34:00 15:04:00 dur. : 30min Purpose code: 3
LOG :4903.70 4905.10 dist.:1.48nm Area code : 2
FDEPTH: 140 142 GearCond.code:
BDEPTH: 140 142 Validity code:
Towing dir: 360 Wire out: 550 m Speed: 29 kn*10

Sorted: 84 Kg Total catch: 1500.00 CATCH/HOUR: 3000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	1133.40	9190	37.78	268
Trachurus capensis	976.20	8156	32.54	270
Merluccius capensis, female	890.40	9012	29.68	269
Total	3000.00		100.00	

PROJECT STATION:1152

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2240
start stop Long E 1341
TIME :16:20:00 16:50:00 dur. : 30min Purpose code: 3
LOG :4915.90 4917.40 dist.:1.50nm Area code : 2
FDEPTH: 129 129 GearCond.code:
BDEPTH: 129 129 Validity code:
Towing dir: 350 Wire out: 500 m Speed: 30 kn*10

Sorted: 21 Kg Total catch: 90.56 CATCH/HOUR: 181.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, juveniles	77.98	3466	43.05	
Sufflogobius bibarbatus	44.20	3224	24.40	
Merluccius capensis, female	43.34	434	23.93	272
Merluccius capensis, male	15.60	164	8.61	271
Total	181.12		99.99	

PROJECT STATION:1153

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2229
start stop Long E 1339
TIME :18:13:00 18:21:00 dur. : 8min Purpose code: 3
LOG :4929.70 4930.00 dist.:0.50nm Area code : 2
FDEPTH: 125 127 GearCond.code:
BDEPTH: 125 127 Validity code:
Towing dir: 170 Wire out: 500 m Speed: 30 kn*10

Sorted: 12 Kg Total catch: 229.90 CATCH/HOUR: 1724.25

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	800.25	8280	46.41	274
Merluccius capensis, male	786.75	9248	45.63	273
Merluccius capensis, juveniles	110.25	5243	6.39	275
Sufflogobius bibarbatus	13.50	2895	0.78	
Pterothrissus belloci	6.75	278	0.39	
Todaropsis eblanae	6.75	278	0.39	
Total	1724.25		99.99	

PROJECT STATION:1154

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2221
start stop Long E 1338
TIME :19:32:00 20:02:00 dur. : 30min Purpose code: 3
LOG :4939.00 4940.60 dist.:1.70nm Area code : 2
FDEPTH: 126 125 GearCond.code:
BDEPTH: 126 125 Validity code:
Towing dir: 350 Wire out: 500 m Speed: 34 kn*10

Sorted: 13 Kg Total catch: 135.00 CATCH/HOUR: 270.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	144.00	1220	53.33	277
Merluccius capensis, male	110.00	1220	40.74	276
Sufflogobius bibarbatus	16.00	4040	5.93	
Todaropsis eblanae	0.00	20		
Total	270.00		100.00	

PROJECT STATION:1155

DATE: 9/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2220
start stop Long E 1330
TIME :21:19:00 21:49:00 dur. : 30min Purpose code: 3
LOG :4950.80 4952.20 dist.:1.70nm Area code : 2
FDEPTH: 150 150 GearCond.code:
BDEPTH: 150 150 Validity code:
Towing dir: 350 Wire out: 650 m Speed: 34 kn*10

Sorted: 28 Kg Total catch: 371.15 CATCH/HOUR: 742.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	332.80	2648	44.83	279
Merluccius capensis, male	325.00	3476	43.78	278
Trachurus capensis	54.60	468	7.36	280
Sufflogobius bibarbatus	20.80		2.80	
Pterothrissus belloci	5.20	26	0.70	
Lophius upsicephalus	2.60	52	0.35	
Merluccius capensis, juveniles	1.30	130	0.18	
Total	742.30		100.00	

PROJECT STATION:1156

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2220
start stop Long E 1315
TIME :07:29:00 07:59:00 dur. : 30min Purpose code: 3
LOG :4975.00 4976.60 dist.:1.60nm Area code : 2
FDEPTH: 227 226 GearCond.code:
BDEPTH: 227 226 Validity code:
Towing dir: 340 Wire out: 750 m Speed: 33 kn*10

Sorted: 29 Kg Total catch: 400.55 CATCH/HOUR: 801.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	372.40	2128	46.49	282
Merluccius capensis, male	364.00	3024	45.44	281
Pterothrissus belloci	53.20	616	6.64	
Trachurus capensis	5.60	28	0.70	
Sufflogobius bibarbatus	5.60	1176	0.70	
Solenocera africana	0.30	200	0.04	
Total	801.10		100.01	

PROJECT STATION:1157

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2220
start stop Long E 1306
TIME :09:10:00 09:46:00 dur. : 30min Purpose code: 3
LOG :4986.60 4988.20 dist.:1.60nm Area code : 2
FDEPTH: 249 248 GearCond.code:
BDEPTH: 249 248 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 32 kn*10

Sorted: 107 Kg Total catch: 417.61 CATCH/HOUR: 835.22

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	453.00	886	54.24	284
Merluccius capensis, male	225.60	406	27.01	283
Trachurus capensis	54.00	188	6.47	286
Coelorinchus fasciatus	42.00	1208	5.03	
Lophius upsicephalus	23.80	34	2.85	
Galeus polli	16.60	226	1.99	
Austroglossus microlepis	5.40	12	0.65	
MYCTOPHIDAE	4.50		0.54	
Merluccius capensis, juveniles	3.00	202	0.36	285
Sufflogobius bibarbatus	1.50	248	0.18	
Solenocera africana	1.50	398	0.18	
Pterothrissus belloci	1.50	8	0.18	
Todaropsis eblanae	0.74	52	0.09	
Chlorophthalmus punctatus	0.74	106	0.09	
Helicolenus dactylopterus	0.74	90	0.09	
Trigla lyra	0.60	2	0.07	
PORTUNIDAE	0.00	16		
Total	835.22		100.02	

PROJECT STATION:1158

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2220
start stop Long E 1254
TIME :11:32:00 12:02:00 dur. : 30min Purpose code: 3
LOG :5002.30 5003.90 dist.:1.50nm Area code : 2
FDEPTH: 324 330 GearCond.code:
BDEPTH: 324 330 Validity code:
Towing dir: 360 Wire out: 950 m Speed: 30 kn*10

Sorted: 19 Kg Total catch: 176.00 CATCH/HOUR: 352.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	186.00	118	52.84	288
Merluccius capensis, male	63.60	62	18.07	287
Helicolenus dactylopterus	43.60	1884	12.39	
Merluccius paradoxus, female	18.40	40	5.23	289
Todarodes sagittatus	14.00	16	3.98	
Schedophilus huttoni	4.20	12	1.19	
Lophius upsicephalus	4.00	4	1.14	
MYCTOPHIDAE	4.00		1.14	
Chlorophthalmus punctatus	3.60	124	1.02	
Galeus polli	3.20	64	0.91	
Trachurus capensis	2.60	6	0.74	
Coelorinchus fasciatus	2.00	36	0.57	
Etmopterus pusillus	1.20	4	0.34	
Aristeus varidens	0.80	212	0.23	
Nezumia leonis	0.40	20	0.11	
Epigonus denticulatus	0.40	28	0.11	
Total	352.00		100.01	

PROJECT STATION:1159

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2221
start stop Long E 1248
TIME :13:25:00 13:55:00 dur. : 30min Purpose code: 3
LOG :5013.80 5015.30 dist.:1.44nm Area code : 2
FDEPTH: 420 422 GearCond.code:
BDEPTH: 420 422 Validity code:
Towing dir: 360 Wire out:1200 m Speed: 28 kn*10

Sorted: 9 Kg Total catch: 169.80 CATCH/HOUR: 339.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Deania calcea	154.00	88	45.35	
Merluccius capensis, female	50.60	80	14.90	290
Todarodes sagittatus	42.00	96	12.37	
Merluccius paradoxus, female	40.60	30	11.96	291
Trachyrinus scabrus	20.80	112	6.12	
Schedophilus huttoni	6.40	2	1.88	
Hoplostethus melanopus	5.20	384	1.53	
Chlamydoselachus anguineus	4.80	2	1.41	
Shrimps, small, non comm.	4.00		1.18	
Squalus megalops	4.00	2	1.18	
Lophius upsicephalus	4.00	8	1.18	
Nezumia leonis	2.00	40	0.59	
MYCTOPHIDAE	1.20		0.35	
Epigonus denticulatus	0.00	8		
Total	339.60		100.00	

PROJECT STATION:1160

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2203
start stop Long E 1246
TIME :15:59:00 16:29:00 dur. : 30min Purpose code: 3
LOG :5033.30 5034.60 dist.:1.40nm Area code : 2
FDEPTH: 349 350 GearCond.code:
BDEPTH: 349 350 Validity code:
Towing dir: 345 Wire out:1050 m Speed: 28 kn*10

Sorted: 11 Kg Total catch: 188.45 CATCH/HOUR: 376.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	128.60	242	34.12	295
Merluccius capensis, female	121.60	98	32.26	293
Helicolenus dactylopterus	37.20	552	9.87	
Merluccius capensis, male	30.00	32	7.96	292
MYCTOPHIDAE	20.40		5.41	
Todarodes sagittatus	13.00	28	3.45	
Galeus polli	8.40	102	2.23	
Trachipterus trachypterus	8.00	2	2.12	
Schedophilus huttoni	5.60	6	1.49	
Merluccius paradoxus, male	2.00	4	0.53	294
Lophius upsicephalus	1.20	4	0.32	
Epigonus denticulatus	0.60	36	0.16	
Shrimps, small, non comm.	0.30	96	0.08	
Nezumia leonis	0.00	6		
Coelorinchus fasciatus	0.00	12		
Chlorophthalmus punctatus	0.00	6		
Total	376.90		100.00	

PROJECT STATION:1161

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2201
start stop Long E 1259
TIME :18:17:00 18:47:00 dur. : 30min Purpose code: 3
LOG :5050.30 5051.80 dist.:1.50nm Area code : 2
FDEPTH: 300 299 GearCond.code:
BDEPTH: 300 299 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 30 kn*10

Sorted: 228 Kg Total catch: 262.60 CATCH/HOUR: 525.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	268.80	250	51.18	297
Merluccius capensis, male	120.20	146	22.89	296
Helicolenus dactylopterus	39.60	2336	7.54	
Chlorophthalmus punctatus	34.80	1298	6.63	
Todarodes sagittatus	18.60	38	3.54	
Schedophilus huttoni	15.00	6	2.86	
Genypterus capensis	8.40	2	1.60	
Trachurus capensis	7.00	16	1.33	
Lophius upsicephalus	5.00	6	0.95	
Shrimps, small, non comm.	4.80		0.91	
MYCTOPHIDAE	1.20		0.23	
Galeus polli	1.20	36	0.23	
Coelorinchus fasciatus	0.60	24	0.11	
Total	525.20		100.00	

PROJECT STATION:1162

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2201
start stop Long E 1307
TIME :20:12:00 20:42:00 dur. : 30min Purpose code: 3
LOG :5062.10 5063.70 dist.:1.50nm Area code : 2
FDEPTH: 225 224 GearCond.code:
BDEPTH: 225 224 Validity code:
Towing dir: 350 Wire out: 750 m Speed: 31 kn*10

Sorted: 26 Kg Total catch: 468.20 CATCH/HOUR: 936.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	565.20	2880	60.36	299
Merluccius capensis, male	252.00	1980	26.91	298
Pterothrissus belloci	61.20	576	6.54	
Trachurus capensis	36.00	180	3.84	
Lophius upsicephalus	8.40	6	0.90	
Solenocera africana	3.60	1044	0.38	
Helicolenus dactylopterus	3.60	252	0.38	
Sufflogobius bibarbatus	3.60	648	0.38	
Austroglossus microlepis	1.60	4	0.17	
Dentex macrophthalmus	0.80	2	0.09	
Trigla lyra	0.40	2	0.04	
Coelorinchus fasciatus	0.00	36		
Total	936.40		99.99	

PROJECT STATION:1163

DATE:10/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2200
start stop Long E 1324
TIME :22:53:00 23:23:00 dur. : 30min Purpose code: 3
LOG :5082.20 5083.60 dist.:1.50nm Area code : 2
FDEPTH: 155 153 GearCond.code:
BDEPTH: 155 153 Validity code:
Towing dir: 350 Wire out: 600 m Speed: 30 kn*10

Sorted: 31 Kg Total catch: 306.20 CATCH/HOUR: 612.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	294.00	2760	48.01	301
Merluccius capensis, male	258.00	2560	42.13	300
Sufflogobius bibarbatus	52.00	11912	8.49	
Trachurus capensis	4.00	40	0.65	
Sardinops ocellata	2.00	20	0.33	
Lophius upsicephalus	1.00	20	0.16	
Merluccius capensis, juveniles	1.00	60	0.16	
Todaropsis eblanae	0.40	20	0.07	
Total	612.40		100.00	

PROJECT STATION:1164

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2141
start stop Long E 1321
TIME :08:02:00 08:32:00 dur. : 30min Purpose code: 3
LOG :5152.30 5153.70 dist.:1.50nm Area code : 2
FDEPTH: 136 131 GearCond.code:
BDEPTH: 136 131 Validity code:
Towing dir: 360 Wire out: 600 m Speed: 30 kn*10

Sorted: 27 Kg Total catch: 162.60 CATCH/HOUR: 325.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	132.00	30526	40.59	
Merluccius capensis, female	124.80	960	38.38	303
Merluccius capensis, male	67.20	588	20.66	302
Merluccius capensis, juveniles	1.20	144	0.37	304
Total	325.20		100.00	

PROJECT STATION:1165

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2143
start stop Long E 1309
TIME :10:27:00 10:57:00 dur. : 30min Purpose code: 3
LOG :5168.90 5170.30 dist.:1.60nm Area code : 2
FDEPTH: 180 180 GearCond.code:
BDEPTH: 180 180 Validity code:
Towing dir: 350 Wire out: 700 m Speed: 31 kn*10

Sorted: 58 Kg Total catch: 2500.00 CATCH/HOUR: 5000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	2931.60	25042	58.63	306
Merluccius capensis, male	1624.00	17352	32.48	305
Trachurus capensis	393.20	3590	7.86	307
Chelidonichthys capensis	34.20	170	0.68	
Pterothrissus belloci	12.80	86	0.26	
Sufflogobius bibarbatus	4.20	342	0.08	
Total	5000.00		99.99	

PROJECT STATION:1166

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2146
start stop Long E 1301
TIME :12:54:00 13:24:00 dur. : 30min Purpose code: 3
LOG :5182.70 5184.20 dist.:1.50nm Area code : 2
FDEPTH: 270 267 GearCond.code:
BDEPTH: 270 267 Validity code:
Towing dir: 360 Wire out: 900 m Speed: 30 kn*10

Sorted: 155 Kg Total catch: 732.13 CATCH/HOUR: 1464.26

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	775.60	1422	52.97	309
Trachurus capensis	294.60	962	20.12	310
Merluccius capensis, male	275.60	936	18.82	308
Galeus polli	77.80	1188	5.31	
Chlorophthalmus punctatus	12.20	1214	0.83	
Schedophilus huttoni	12.00	6	0.82	
Dentex macrophthalmus	6.00	18	0.41	
Nezumia leonis	4.40	78	0.30	
Todarodes sagittatus	4.34	70	0.30	
Solenocera africana	1.72	112	0.12	
Sufflogobius bibarbatus	0.00	18		
Helicolenus dactylopterus	0.00	26		
PORTUNIDAE	0.00	4		
MYCTOPHIDAE	0.00	26		
Total	1464.26		100.00	

PROJECT STATION:1167

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2152
start stop Long E 1245
TIME :15:48:00 16:18:00 dur. : 30min Purpose code: 3
LOG :5204.30 5205.70 dist.:1.40nm Area code : 2
FDEPTH: 330 331 GearCond.code:
BDEPTH: 330 331 Validity code:
Towing dir: 360 Wire out:1000 m Speed: 28 kn*10

Sorted: 149 Kg Total catch: 346.55 CATCH/HOUR: 693.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	468.00	380	67.52	312
Merluccius capensis, male	89.80	86	12.96	311
Helicolenus dactylopterus	47.00	1610	6.78	
Krill	31.60		4.56	
Chlorophthalmus punctatus	15.40	388	2.22	
Galeus polli	12.00	226	1.73	
Schedophilus huttoni	9.00	2	1.30	
Epigonus denticulatus	6.20	212	0.89	
Merluccius paradoxus, female	4.80	14	0.69	313
Heptranchias perlo	4.60	2	0.66	
Coelorinchus fasciatus	1.40	48	0.20	
Trachurus capensis	1.20	4	0.17	
Todarodes sagittatus	1.20	2	0.17	
Malacocephalus occidentalis	0.50	10	0.07	
MYCTOPHIDAE	0.20	48	0.03	
Nezumia leonis	0.20	34	0.03	
Total	693.10		99.98	

PROJECT STATION:1168

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2139
start stop Long E 1237
TIME :20:54:00 21:24:00 dur. : 30min Purpose code: 3
LOG :5241.20 5242.80 dist.:1.50nm Area code : 2
FDEPTH: 504 504 GearCond.code:
BDEPTH: 504 504 Validity code:
Towing dir: 350 Wire out:1400 m Speed: 28 kn*10

Sorted: 75 Kg Total catch: 164.10 CATCH/HOUR: 328.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachyrinus scabrus	174.00		53.02	
Merluccius paradoxus, female	48.00	56	14.63	316
Merluccius capensis, female	32.00	26	9.75	315
Merluccius capensis, male	17.60	14	5.36	314
Hoplostethus melanopus	14.40	240	4.39	
Todarodes sagittatus	13.00	42	3.96	
MYCTOPHIDAE	6.00	660	1.83	
Yarella blackfordi	6.00	252	1.83	
Shrimps, small, non comm.	4.80		1.46	
Etmopterus pusillus	3.60	6	1.10	
Aristeus varidens	3.00	152	0.91	
Nezumia leonis	2.40	120	0.73	
Galeus polli	1.20	24	0.37	
Lamprogrammus exutus	1.20	60	0.37	
OPISTHOTEUTHIDAE	1.00	2	0.30	
Total	328.20		100.01	

PROJECT STATION:1169

DATE:11/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2133
start stop Long E 1242
TIME :22:55:00 23:25:00 dur. : 30min Purpose code: 3
LOG :5252.20 5253.60 dist.:1.40nm Area code : 2
FDEPTH: 350 352 GearCond.code:
BDEPTH: 350 352 Validity code:
Towing dir: 350 Wire out:1100 m Speed: 28 kn*10

Sorted: 121 Kg Total catch: 316.70 CATCH/HOUR: 633.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	404.60	374	63.88	318
Merluccius capensis, male	81.20	104	12.82	317
Helicolenus dactylopterus	57.20	738	9.03	
Merluccius paradoxus, female	27.00	58	4.26	319
Todarodes sagittatus	14.60	32	2.31	
Raja confundens	12.40	16	1.96	
Chlorophthalmus punctatus	7.20	228	1.14	
Galeus polli	6.80	120	1.07	
Raja straeleni	6.60	6	1.04	
Epigonus denticulatus	5.80	198	0.92	
Squalus megalops	4.80	6	0.76	
Trachyrinus scabrus	3.20	16	0.51	
Shrimps, small, non comm.	0.60		0.09	
Coelorinchus fasciatus	0.60	36	0.09	
Yarella blackfordi	0.20	20	0.03	
Laemonema laureysi	0.20	6	0.03	
Selachophidium guentheri	0.20	16	0.03	
Nezumia leonis	0.20	32	0.03	
Total	633.40		100.00	

PROJECT STATION:1170

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2131
start stop Long E 1251
TIME :07:25:00 07:55:00 dur. : 30min Purpose code: 3
LOG :5271.10 5272.80 dist.:1.50nm Area code : 2
FDEPTH: 300 302 GearCond.code:
BDEPTH: 300 302 Validity code:
Towing dir: 350 Wire out: 900 m Speed: 30 kn*10

Sorted: 117 Kg Total catch: 142.60 CATCH/HOUR: 285.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	116.20	154	40.74	321
Merluccius capensis, male	63.40	106	22.23	320
Chlorophthalmus punctatus	46.80	1930	16.41	
Trachurus capensis	21.60	56	7.57	322
Helicolenus dactylopterus	17.40	720	6.10	
Lophius upsicephalus	8.40	12	2.95	
Schedophilus huttoni	6.00	2	2.10	
Dentex macrophthalmus	3.60	12	1.26	
Todarodes sagittatus	1.80	2	0.63	
Galeus polli	0.00	6		
Nezumia leonis	0.00	6		
PORTUNIDAE	0.00	6		
Trigla lyra	0.00	6		
Nemichthys scolopacea	0.00	6		
Total	285.20		99.99	

PROJECT STATION:1171

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2125
start stop Long E 1300
TIME :09:34:00 10:04:00 dur. : 30min Purpose code: 3
LOG :5286.60 5288.10 dist.:1.50nm Area code : 2
FDEPTH: 231 233 GearCond.code:
BDEPTH: 231 233 Validity code:
Towing dir: 340 Wire out: 750 m Speed: 30 kn*10

Sorted: 77 Kg Total catch: 277.30 CATCH/HOUR: 554.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	337.40	1312	60.84	325
Trachurus capensis	106.40	542	19.18	323
Merluccius capensis, male	97.60	448	17.60	324
Pterothrissus belloci	4.40	30	0.79	
Lophius upsicephalus	3.40	4	0.61	
Coelorinchus fasciatus	2.20	36	0.40	
Chlorophthalmus punctatus	0.80	96	0.14	
Dentex macrophthalmus	0.80	8	0.14	
Lepidopus caudatus	0.80	8	0.14	
Sufflogobius bibarbatus	0.80		0.14	
Galeus polli	0.00	8		
Merluccius capensis, juveniles	0.00	8		
Total	554.60		99.98	

PROJECT STATION:1172

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2124
start stop Long E 1303
TIME :11:00:00 11:30:00 dur. : 30min Purpose code: 3
LOG :5294.10 5295.70 dist.:1.60nm Area code : 2
FDEPTH: 176 173 GearCond.code:
BDEPTH: 176 173 Validity code:
Towing dir: 350 Wire out: 650 m Speed: 31 kn*10

Sorted: 30 Kg Total catch: 2799.88 CATCH/HOUR: 5599.76

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	2809.20	29592	50.17	327
Merluccius capensis, male	1985.20	20790	35.45	326
Trachurus capensis	636.80	4870	11.37	329
Merluccius capensis, juveniles	112.36	2810	2.01	328
Pterothrissus belloci	56.20	374	1.00	
Total	5599.76		100.00	

PROJECT STATION:1173

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2122
start stop Long E 1308
TIME :12:34:00 13:04:00 dur. : 30min Purpose code: 3
LOG :5303.30 5305.00 dist.:1.50nm Area code : 2
FDEPTH: 140 138 GearCond.code:
BDEPTH: 140 138 Validity code:
Towing dir: 10 Wire out: 550 m Speed: 30 kn*10

Sorted: 23 Kg Total catch: 69.45 CATCH/HOUR: 138.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	69.90	528	50.32	331
Merluccius capensis, male	33.00	252	23.76	330
Sufflogobius bibarbatus	30.00	6492	21.60	
Merluccius capensis, juveniles	4.80	216	3.46	332
Austroglossus microlepis	1.20	12	0.86	
Total	138.90		100.00	

PROJECT STATION:1174

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2105
start stop Long E 1300
TIME :15:04:00 15:34:00 dur. : 30min Purpose code: 3
LOG :5324.90 5326.50 dist.:1.50nm Area code : 2
FDEPTH: 174 182 GearCond.code:
BDEPTH: 174 182 Validity code:
Towing dir: 190 Wire out: 650 m Speed: 29 kn*10

Sorted: 52 Kg Total catch: 1451.10 CATCH/HOUR: 2902.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1568.00	12936	54.03	334
Merluccius capensis, male	1148.00	10360	39.56	333
Chelidonichthys capensis	162.40	560	5.60	
Dentex macrophthalmus	8.40	56	0.29	
Trachurus capensis	8.40	56	0.29	
Sufflogobius bibarbatus	2.80	560	0.10	
Merluccius capensis, juveniles	2.80	280	0.10	335
Raja miraletus	1.40	2	0.05	
Total	2902.20		100.02	

PROJECT STATION:1175

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2106
start stop Long E 1256
TIME :16:23:00 16:53:00 dur. : 30min Purpose code: 3
LOG :5331.60 5333.10 dist.:1.56nm Area code : 2
FDEPTH: 248 251 GearCond.code:
BDEPTH: 248 251 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 31 kn*10

Sorted: 99 Kg Total catch: 259.65 CATCH/HOUR: 519.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	330.80	520	63.70	337
Merluccius capensis, male	115.50	346	22.24	336
Trachurus capensis	45.20	288	8.70	338
Dentex macrophthalmus	18.90	68	3.64	
Pterothrissus belloci	2.60	10	0.50	
Todarodes sagittatus	2.60	32	0.50	
Sufflogobius bibarbatus	2.10	526	0.40	
Chelidonichthys capensis	1.60	4	0.31	
Merluccius capensis, juveniles	0.00	16		
Total	519.30		99.99	

PROJECT STATION:1176

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2110
start stop Long E 1248
TIME :18:26:00 18:56:00 dur. : 30min Purpose code: 3
LOG :5346.00 5347.40 dist.:1.50nm Area code : 2
FDEPTH: 319 320 GearCond.code:
BDEPTH: 319 320 Validity code:
Towing dir: 345 Wire out:1000 m Speed: 30 kn*10

Sorted: 120 Kg Total catch: 204.94 CATCH/HOUR: 409.88

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	292.80	250	71.44	340
Merluccius capensis, male	67.20	84	16.40	339
Trachurus capensis	25.60	64	6.25	341
Chlorophthalmus punctatus	14.72	508	3.59	
Helicolenus dactylopterus	3.84	260	0.94	
Galeus polli	2.24	28	0.55	
Austroglossus microlepis	1.60	2	0.39	
Todarodes sagittatus	1.40	2	0.34	
Solenocera africana	0.32	118	0.08	
Nezumia leonis	0.16	16	0.04	
Coelorinchus fasciatus	0.00	4		
Total	409.88		100.02	

PROJECT STATION:1177

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2111
start stop Long E 1237
TIME :20:39:00 21:09:00 dur. : 30min Purpose code: 3
LOG :5360.20 5361.70 dist.:1.50nm Area code : 2
FDEPTH: 373 375 GearCond.code:
BDEPTH: 373 375 Validity code:
Towing dir: 350 Wire out:1100 m Speed: 30 kn*10

Sorted: 135 Kg Total catch: 339.55 CATCH/HOUR: 679.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	428.60	430	63.11	343
Merluccius capensis, male	101.00	96	14.87	342
Helicolenus dactylopterus	80.00	730	11.78	
Merluccius paradoxus, female	25.00	36	3.68	344
Galeus polli	10.00	116	1.47	
Neoharriotta pinnata	6.60	6	0.97	
Lophius upsicephalus	4.60	10	0.68	
Raja confundens	4.20	6	0.62	
Etmopterus pusillus	3.60	6	0.53	
Nezumia leonis	3.00	70	0.44	
Deania profundorum	3.00	6	0.44	
Selachophidium guentheri	2.60	50	0.38	
Epigonus denticulatus	2.00	56	0.29	
Todarodes sagittatus	1.80	6	0.27	
MYCTOPHIDAE	1.00		0.15	
Yarella blackfordi	0.80	76	0.12	
Ebinania costaecanarie	0.60	6	0.09	
Hoplostethus melanopus	0.30	16	0.04	
Shrimps, small, non comm.	0.30		0.04	
Maurolicus muelleri	0.10	50	0.01	
Todaropsis eblanae	0.00	6		
Coelorinchus fasciatus	0.00	6		
Total	679.10		99.98	

PROJECT STATION:1178

DATE:12/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2054
start stop Long E 1228
TIME :23:32:00 00:02:00 dur. : 30min Purpose code: 3
LOG :5381.70 5383.20 dist.:1.40nm Area code : 2
FDEPTH: 394 393 GearCond.code:
BDEPTH: 394 393 Validity code:
Towing dir: 330 Wire out:1200 m Speed: 27 kn*10

Sorted: 159 Kg Total catch: 742.30 CATCH/HOUR: 1484.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	980.00	634	66.01	346
Merluccius capensis, male	199.80	158	13.46	345
Merluccius paradoxus, female	112.00	242	7.54	347
Helicolenus dactylopterus	69.00	358	4.65	
Trachyrinus scabrus	49.40	592	3.33	
Deania profundorum	23.40	38	1.58	
Todarodes sagittatus	15.80	28	1.06	
MYCTOPHIDAE	9.40		0.63	
Epigonus denticulatus	6.60	150	0.44	
Nezumia leonis	5.60	178	0.38	
Raja confundens	5.00	10	0.34	
Galeus polli	3.80	178	0.26	
Zenopsis conchifer	3.00	2	0.20	
Aristeus varidens	1.80	592	0.12	
Total	1484.60		100.00	

PROJECT STATION:1179

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2052
start stop Long E 1237
TIME :07:27:00 07:57:00 dur. : 30min Purpose code: 3
LOG :5401.20 5402.70 dist.:1.50nm Area code : 2
FDEPTH: 337 336 GearCond.code:
BDEPTH: 337 336 Validity code:
Towing dir: 280 Wire out:1000 m Speed: 29 kn*10

Sorted: 185 Kg Total catch: 325.20 CATCH/HOUR: 650.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	377.60	272	58.06	349
Merluccius capensis, male	146.60	140	22.54	348
Helicolenus dactylopterus	61.60	2678	9.47	
Chlorophthalmus punctatus	23.40	854	3.60	
Lophius upsicephalus	10.40	8	1.60	
Centrolophus niger	9.00	2	1.38	
Schedophilus huttoni	6.80	2	1.05	
Todarodes sagittatus	6.20	14	0.95	
Coelorinchus fasciatus	3.20	56	0.49	
Galeus polli	3.00	58	0.46	
Epigonus denticulatus	0.80	56	0.12	
MYCTOPHIDAE	0.80		0.12	
Nezumia leonis	0.80	44	0.12	
Shrimps, small, non comm.	0.20		0.03	
Notacanthus sexspinis	0.00	4		
Hoplostethus melanopus	0.00	8		
Total	650.40		99.99	

PROJECT STATION:1180

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2048
start stop Long E 1246
TIME :09:48:00 10:18:00 dur. : 30min Purpose code: 3
LOG :5417.20 5418.60 dist.:1.55nm Area code : 2
FDEPTH: 281 280 GearCond.code:
BDEPTH: 281 280 Validity code:
Towing dir: 345 Wire out: 900 m Speed: 31 kn*10

Sorted: 211 Kg Total catch: 472.00 CATCH/HOUR: 944.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	553.00	630	58.58	351
Merluccius capensis, male	144.60	290	15.32	350
Trachurus capensis	140.00	420	14.83	353
Dentex macrophthalmus	47.60	136	5.04	352
Schedophilus huttoni	13.60	4	1.44	
Neoharriotta pinnata	8.80	8	0.93	
Krill	7.00		0.74	
Todarodes sagittatus	7.00	14	0.74	
MYCTOPHIDAE	4.60		0.49	
Sufflogobius bibarbatus	4.60		0.49	
Chlorophthalmus punctatus	3.20	168	0.34	
Coelorinchus fasciatus	2.40	24	0.25	
Galeus polli	2.40	42	0.25	
Helicolenus dactylopterus	1.80	70	0.19	
Squalus megalops	1.60	4	0.17	
Lophius upsicephalus	1.20	2	0.13	
Todaropsis eblanae	0.40	18	0.04	
Solenocera africana	0.20	32	0.02	
Total	944.00		99.99	

PROJECT STATION:1181

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2046
start stop Long E 1253
TIME :11:42:30 12:10:00 dur. : 30min Purpose code: 3
LOG :5427.00 5428.50 dist.:1.50nm Area code : 3
FDEPTH: 173 174 GearCond.code:
BDEPTH: 173 174 Validity code:
Towing dir: 345 Wire out: 750 m Speed: 30 kn*10

Sorted: 25 Kg Total catch: 478.20 CATCH/HOUR: 956.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, male	551.00	5054	57.61	354
Merluccius capensis, female	254.60	1748	26.62	355
Dentex macrophthalmus	106.40	494	11.13	
Chelidonichthys capensis	19.00	38	1.99	
Sufflogobius bibarbatus	11.40	2660	1.19	
Trachurus capensis	7.60	38	0.79	
Lophius upsicephalus	3.40	6	0.36	
Austroglossus microlepis	3.00	4	0.31	
Todaropsis eblanae	0.00	38		
Merluccius capensis, juveniles	0.00	38		
Total	956.40		100.00	

PROJECT STATION:1182

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2029
start stop Long E 1242
TIME :14:15:00 14:45:00 dur. : 30min Purpose code: 3
LOG :5443.50 5445.30 dist.:1.50nm Area code : 2
FDEPTH: 178 186 GearCond.code:
BDEPTH: 178 186 Validity code:
Towing dir: 150 Wire out: 700 m Speed: 30 kn*10

Sorted: 62 Kg Total catch: 677.05 CATCH/HOUR: 1354.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	591.80	2926	43.70	358
Merluccius capensis, male	352.00	2222	26.00	356
Merluccius capensis, female	332.20	1584	24.53	357
Dentex macrophthalmus	52.80	220	3.90	
Todaropsis eblanae	8.80	286	0.65	
Lepidopus caudatus	7.70	132	0.57	
PORTUNIDAE	5.50	242	0.41	
Pterothrissus belloci	3.30	66	0.24	
Total	1354.10		100.00	

PROJECT STATION:1183

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2032
start stop Long E 1237
TIME :15:58:00 16:28:00 dur. : 30min Purpose code: 3
LOG :5454.90 5456.20 dist.:1.45nm Area code : 2
FDEPTH: 260 258 GearCond.code:
BDEPTH: 260 258 Validity code:
Towing dir: 340 Wire out: 850 m Speed: 29 kn*10

Sorted: 151 Kg Total catch: 353.40 CATCH/HOUR: 706.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	397.60	1722	56.25	361
Merluccius capensis, female	157.20	1750	22.24	360
Merluccius capensis, male	77.80	1526	11.01	359
Pterothrissus belloci	33.60	154	4.75	
Sufflogobius bibarbatus	33.60	5892	4.75	
Todaropsis eblanae	2.80	84	0.40	
Dentex macrophthalmus	2.80	14	0.40	
Coelorinchus fasciatus	0.70	14	0.10	
PORTUNIDAE	0.70	42	0.10	
Chlorophthalmus punctatus	0.00	14		
Solenocera africana	0.00	8		
Total	706.80		100.00	

PROJECT STATION:1184

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2033
start stop Long E 1229
TIME :17:48:00 18:18:00 dur. : 30min Purpose code: 3
LOG :5466.60 5467.80 dist.:1.60nm Area code : 2
FDEPTH: 299 292 GearCond.code:
BDEPTH: 299 292 Validity code:
Towing dir: 345 Wire out: 950 m Speed: 31 kn*10

Sorted: 172 Kg Total catch: 346.70 CATCH/HOUR: 693.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	565.80	462	81.60	363
Merluccius capensis, male	43.80	38	6.32	362
Krill	25.00		3.61	
Lophius upsicephalus	16.80	6	2.42	
Galeus polli	16.60	366	2.39	
Chlorophthalmus punctatus	10.40	610	1.50	
Trachurus capensis	5.60	20	0.81	
Todarodes sagittatus	5.20	8	0.75	
Coelorinchus fasciatus	2.00	30	0.29	
Solenocera africana	1.20	284	0.17	
Sufflogobius bibarbatus	0.40		0.06	
Maurolicus muelleri	0.40		0.06	
Helicolenus dactylopterus	0.20	16	0.03	
Total	693.40		100.01	

PROJECT STATION:1185

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2037
start stop Long E 1215
TIME :20:18:00 20:48:00 dur. : 30min Purpose code: 3
LOG :5483.60 5485.00 dist.:1.40nm Area code : 2
FDEPTH: 355 357 GearCond.code:
BDEPTH: 355 357 Validity code:
Towing dir: 330 Wire out:1000 m Speed: 28 kn*10

Sorted: 191 Kg Total catch: 591.05 CATCH/HOUR: 1182.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	775.80	608	65.63	365
Merluccius capensis, male	228.00	234	19.29	364
Helicolenus dactylopterus	150.80	2068	12.76	
Lophius upsicephalus	11.40	4	0.96	
Galeus polli	5.70	102	0.48	
Todarodes sagittatus	3.00	12	0.25	
Aristeus varidens	1.90	666	0.16	
Nezumia leonis	1.60	222	0.14	
Trachyrinus scabrus	1.20	18	0.10	
Laemonema laureysi	0.60	18	0.05	
Selachophidium guentheri	0.60	12	0.05	
Shrimps, small, non comm.	0.60	316	0.05	
MYCTOPHIDAE	0.60		0.05	
Chlorophthalmus punctatus	0.30	12	0.03	
Total	1182.10		100.00	

PROJECT STATION:1186

DATE:13/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2026
start stop Long E 1204
TIME :22:38:00 23:08:00 dur. : 30min Purpose code: 3
LOG :5499.20 5500.70 dist.:1.40nm Area code : 2
FDEPTH: 400 403 GearCond.code:
BDEPTH: 400 403 Validity code:
Towing dir: 335 Wire out:1200 m Speed: 26 kn*10

Sorted: 114 Kg Total catch: 282.70 CATCH/HOUR: 565.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Hoplostethus melanopus	150.40	9090	26.60	
Trachyrinus scabrus	128.00	1138	22.64	
Merluccius capensis, female	123.00	88	21.75	367
Galeus polli	30.40	320	5.38	
Merluccius paradoxus, female	28.00	46	4.95	369
Merluccius capensis, male	27.00	24	4.78	366
Todarodes sagittatus	24.00	32	4.24	
Yarella blackfordi	12.80	592	2.26	
Aristeus varidens	12.00	1232	2.12	
Nezumia leonis	11.20	528	1.98	
Helicolenus dactylopterus	7.20	96	1.27	
Shrimps, small, non comm.	5.60	2432	0.99	
Epigonus denticulatus	4.00	304	0.71	
Merluccius paradoxus, male	1.80	2	0.32	368
Total	565.40		99.99	

PROJECT STATION:1187

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2021
start stop Long E 1210
TIME :07:25:00 07:55:00 dur. : 30min Purpose code: 3
LOG :5546.30 5547.90 dist.:1.60nm Area code : 2
FDEPTH: 300 299 GearCond.code:
BDEPTH: 300 299 Validity code:
Towing dir: 345 Wire out: 900 m Speed: 31 kn*10

Sorted: 231 Kg Total catch: 230.85 CATCH/HOUR: 461.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	308.00	282	66.71	371
Merluccius capensis, male	87.80	94	19.02	370
Schedophilus huttoni	20.40	8	4.42	
Helicolenus dactylopterus	18.60	938	4.03	
Lophius upsicephalus	14.20	10	3.08	
Chlorophthalmus punctatus	10.60	456	2.30	
Galeus polli	1.00	12	0.22	
Coelorinchus fasciatus	0.40	20	0.09	
Nezumia leonis	0.40	24	0.09	
Solenocera africana	0.20	50	0.04	
Malacocephalus occidentalis	0.10	2	0.02	
Sufflogobius bibarbatus	0.00	4		
Epigonus denticulatus	0.00	2		
MYCTOPHIDAE	0.00	10		
Total	461.70		100.02	

PROJECT STATION:1188

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2017
start stop Long E 1217
TIME :09:32:00 10:02:00 dur. : 30min Purpose code: 3
LOG :5558.10 5559.80 dist.:1.40nm Area code : 2
FDEPTH: 276 273 GearCond.code:
BDEPTH: 276 273 Validity code:
Towing dir: 340 Wire out: 850 m Speed: 28 kn*10

Sorted: 159 Kg Total catch: 377.05 CATCH/HOUR: 754.10

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	616.00	546	81.69	373
Merluccius capensis, male	89.00	110	11.80	372
Trachurus capensis	12.50	56	1.66	
Dentex macrophthalmus	12.00	26	1.59	
Todarodes sagittatus	8.20	20	1.09	
Lophius upsicephalus	3.80	6	0.50	
Galeus polli	2.50	50	0.33	
Pterothrissus belloci	2.50	26	0.33	
Hyperoglyphe moselii	1.60	2	0.21	
Coelorinchus fasciatus	1.50	10	0.20	
Chlorophthalmus punctatus	1.00	90	0.13	
MYCTOPHIDAE	1.00		0.13	
Solenocera africana	1.00	296	0.13	
Austroglossus microlepis	1.00	2	0.13	
Sufflogobius bibarbatus	0.50	140	0.07	
Merluccius capensis, juveniles	0.00	10		
Total	754.10		99.99	

PROJECT STATION:1189

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2013
start stop Long E 1226
TIME :11:44:00 12:01:00 dur. : 17min Purpose code: 3
LOG :5570.90 5571.70 dist.:0.90nm Area code : 2
FDEPTH: 236 234 GearCond.code:
BDEPTH: 236 234 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 33 kn*10

Sorted: 29 Kg Total catch: 363.26 CATCH/HOUR: 1282.09

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	494.12	2372	38.54	377
Merluccius capensis, female	366.35	840	28.57	375
Dentex macrophthalmus	207.53	692	16.19	376
Merluccius capensis, male	187.06	593	14.59	374
Pterothrissus belloci	19.76	148	1.54	
Galeus polli	3.71	148	0.29	
Todarodes sagittatus	2.82	7	0.22	
Sufflogobius bibarbatus	0.74	420	0.06	
Coelorinchus fasciatus	0.00	49		
Chlorophthalmus punctatus	0.00	49		
Todaropsis eblanae	0.00	25		
Merluccius capensis, juveniles	0.00	25		
Total	1282.09		100.00	

PROJECT STATION:1190

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2010
start stop Long E 1232
TIME :13:34:00 14:04:00 dur. : 30min Purpose code: 3
LOG :5580.10 5581.60 dist.:1.66nm Area code : 2
FDEPTH: 160 160 GearCond.code:
BDEPTH: 160 160 Validity code:
Towing dir: 340 Wire out: 600 m Speed: 33 kn*10

Sorted: 31 Kg Total catch: 555.80 CATCH/HOUR: 1111.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	616.00	4200	55.42	380
Dentex macrophthalmus	229.60	1064	20.65	381
Merluccius capensis, female	176.40	760	15.87	379
Merluccius capensis, male	74.80	652	6.73	378
Pterothrissus belloci	8.40	112	0.76	
Lepidopus caudatus	5.60	28	0.50	
Squalus megalops	0.80	2	0.07	
PORTUNIDAE	0.00	6		
Sufflogobius bibarbatus	0.00	140		
Chlorophthalmus punctatus	0.00	112		
Total	1111.60		100.00	

PROJECT STATION:1191

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1953
start stop Long E 1228
TIME :19:45:00 20:15:00 dur. : 30min Purpose code: 3
LOG :5637.20 5638.90 dist.:1.60nm Area code : 3
FDEPTH: 145 136 GearCond.code:
BDEPTH: 145 136 Validity code:
Towing dir: 105 Wire out: 600 m Speed: 31 kn*10

Sorted: 83 Kg Total catch: 632.00 CATCH/HOUR: 1264.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	647.00	2284	51.19	383
Trachurus capensis	306.60	2116	24.26	384
Merluccius capensis, male	216.20	782	17.10	382
Pterothrissus belloci	87.40	904	6.91	
Chaetrabus melanurus	6.20	30	0.49	
Austroglossus microlepis	0.60	2	0.05	
Total	1264.00		100.00	

PROJECT STATION:1192

DATE:14/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1955
start stop Long E 1219
TIME :22:00:00 22:30:00 dur. : 30min Purpose code: 3
LOG :5653.20 5654.50 dist.:1.50nm Area code : 3
FDEPTH: 195 196 GearCond.code:
BDEPTH: 195 196 Validity code:
Towing dir: 350 Wire out: 700 m Speed: 30 kn*10

Sorted: 142 Kg Total catch: 242.80 CATCH/HOUR: 485.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	204.60	352	42.13	386
Dentex macrophthalmus	146.40	612	30.15	387
Pterothrissus belloci	64.80	432	13.34	
Merluccius capensis, male	36.80	130	7.58	385
Trachurus capensis	30.00	168	6.18	
Lophius upsicephalus	3.00	2	0.62	
Total	485.60		100.00	

PROJECT STATION:1193

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1957
start stop Long E 1211
TIME :07:34:00 08:04:00 dur. : 30min Purpose code: 3
LOG :5673.40 5674.70 dist.:1.40nm Area code : 3
FDEPTH: 253 255 GearCond.code:
BDEPTH: 253 255 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 29 kn*10

Sorted: 72 Kg Total catch: 72.40 CATCH/HOUR: 144.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	60.20	82	41.57	389
Dentex macrophthalmus	32.60	94	22.51	390
Merluccius capensis, male	18.00	22	12.43	388
Trachurus capensis	17.60	100	12.15	391
Todarodes sagittatus	4.60	10	3.18	
Echinorhinus brucus	3.20	2	2.21	
Lophius upsicephalus	2.80	4	1.93	
Neoharriotta pinnata	2.80	2	1.93	
Pterothrissus belloci	2.20	10	1.52	
Galeus polli	0.40	8	0.28	
Trigla lyra	0.40	2	0.28	
Solenocera africana	0.00	4		
Synagrops microlepis	0.00	2		
Total	144.80		99.99	

PROJECT STATION:1194

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1959
start stop Long E 1204
TIME :09:22:00 09:52:00 dur. : 30min Purpose code: 3
LOG :5684.20 5685.40 dist.:1.60nm Area code : 3
FDEPTH: 301 305 GearCond.code:
BDEPTH: 301 305 Validity code:
Towing dir: 340 Wire out: 900 m Speed: 32 kn*10

Sorted: 131 Kg Total catch: 130.80 CATCH/HOUR: 261.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	170.80	148	65.29	393
Merluccius capensis, male	73.60	66	28.13	392
Chlorophthalmus punctatus	10.00		3.82	
Lophius upsicephalus	2.40	4	0.92	
Todarodes sagittatus	2.20	4	0.84	
Helicolenus dactylopterus	2.00		0.76	
Dentex macrophthalmus	0.60	2	0.23	
Total	261.60		99.99	

PROJECT STATION:1195

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2004
start stop Long E 1156
TIME :11:29:00 11:59:00 dur. : 30min Purpose code: 3
LOG :5697.50 5699.00 dist.:1.57nm Area code : 2
FDEPTH: 360 364 GearCond.code:
BDEPTH: 360 364 Validity code:
Towing dir: 340 Wire out:1000 m Speed: 31 kn*10

Sorted: 162 Kg Total catch: 286.39 CATCH/HOUR: 572.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	359.36	340	62.74	395
Merluccius capensis, male	120.32	138	21.01	394
Helicolenus dactylopterus	50.00	1066	8.73	
Lophius upsicephalus	27.80	8	4.85	
Neoharriotta pinnata	3.60	2	0.63	
Nezumia leonis	3.00	40	0.52	
Squalus megalops	2.40	2	0.42	
Laemonema laureysi	1.50	26	0.26	
Epigonus denticulatus	1.50	50	0.26	
Malacocephalus occidentalis	1.00	16	0.17	
Galeus polli	1.00	16	0.17	
Todarodes sagittatus	0.80	2	0.14	
Chlorophthalmus punctatus	0.50	16	0.09	
Coelorinchus fasciatus	0.00	10		
Solenocera africana	0.00	26		
Total	572.78		99.99	

PROJECT STATION:1196

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2004
start stop Long E 1150
TIME :12:56:00 13:26:00 dur. : 30min Purpose code: 3
LOG :5704.40 5706.00 dist.:1.60nm Area code : 2
FDEPTH: 411 409 GearCond.code:
BDEPTH: 411 409 Validity code:
Towing dir: 345 Wire out:1200 m Speed: 30 kn*10

Sorted: 14 Kg Total catch: 166.06 CATCH/HOUR: 332.12

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	138.80	296	41.79	398
Trachyrinus scabrus	118.20	1380	35.59	
Hoplostethus melanopus	24.96	460	7.52	
Nezumia leonis	11.82	552	3.56	
MYCTOPHIDAE	7.88	814	2.37	
Galeus polli	7.88	66	2.37	
Raja confundens	4.40	4	1.32	
Epigonus denticulatus	3.94	158	1.19	
Aristeus varidens	3.94	684	1.19	
Merluccius capensis, male	3.80	2	1.14	396
Merluccius capensis, female	3.00	2	0.90	397
Todarodes sagittatus	2.20	4	0.66	
Shrimps, small, non comm.	1.30	262	0.39	
Ebinania costaecanariae	0.00	2		
Total	332.12		99.99	

PROJECT STATION:1197

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1946
start stop Long E 1148
TIME :15:15:00 15:45:00 dur. : 30min Purpose code: 3
LOG :5720.10 5721.50 dist.:1.63nm Area code : 3
FDEPTH: 371 370 GearCond.code:
BDEPTH: 371 370 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 33 kn*10

Sorted: 158 Kg Total catch: 311.00 CATCH/HOUR: 622.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Helicolenus dactylopterus	179.60	2806	28.87	
Merluccius paradoxus, female	168.40	296	27.07	401
Merluccius capensis, female	136.00	148	21.86	400
Merluccius capensis, male	91.60	112	14.73	399
Epigonus denticulatus	11.60	732	1.86	
Galeus polli	7.20	80	1.16	
Nezumia leonis	6.00	180	0.96	
Coelorinchus fasciatus	5.60	100	0.90	
Lophius upsicephalus	4.20	4	0.68	
Todarodes sagittatus	3.20	8	0.51	
Raja confundens	2.60	2	0.42	
MYCTOPHIDAE	2.00		0.32	
Trachyrinus scabrus	1.20	24	0.19	
Chlorophthalmus punctatus	1.20	68	0.19	
Laemonema laureysi	1.20	20	0.19	
Shrimps, small, non comm.	0.40	200	0.06	
Total	622.00		99.97	

PROJECT STATION:1198

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1942
start stop Long E 1154
TIME :17:11:00 17:41:00 dur. : 30min Purpose code: 3
LOG :5730.60 5731.90 dist.:1.63nm Area code : 3
FDEPTH: 337 336 GearCond.code:
BDEPTH: 337 336 Validity code:
Towing dir: 350 Wire out:1050 m Speed: 33 kn*10

Sorted: 192 Kg Total catch: 244.10 CATCH/HOUR: 488.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	244.00	250	49.98	403
Merluccius capensis, male	95.20	112	19.50	402
Helicolenus dactylopterus	92.00	3358	18.84	
Chlorophthalmus punctatus	16.00	560	3.28	
Galeus polli	13.00	170	2.66	
Lophius upsicephalus	12.00	10	2.46	
Coelorinchus fasciatus	4.00	110	0.82	
Frionace glauca	3.40	2	0.70	
Raja confundens	2.40	2	0.49	
Todarodes sagittatus	2.20	4	0.45	
Laemonema laureysi	2.00	80	0.41	
Nezumia leonis	2.00	100	0.41	
PORTUNIDAE	0.00	10		
Munida sp.	0.00	20		
Total	488.20		100.00	

PROJECT STATION:1199

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1937
start stop Long E 1201
TIME :19:04:00 19:34:00 dur. : 30min Purpose code: 3
LOG :5742.10 5743.60 dist.:1.60nm Area code : 3
FDEPTH: 294 293 GearCond.code:
BDEPTH: 294 293 Validity code:
Towing dir: 345 Wire out: 900 m Speed: 31 kn*10

Sorted: 238 Kg Total catch: 470.70 CATCH/HOUR: 941.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	608.40	650	64.63	405
Merluccius capensis, male	236.00	296	25.07	404
Helicolenus dactylopterus	48.00		5.10	
Dentex macrophthalmus	32.00		3.40	
Lophius upsicephalus	9.00	16	0.96	
Trachurus capensis	8.00		0.85	
Total	941.40		100.01	

PROJECT STATION:1200

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1934
start stop Long E 1210
TIME :21:04:00 21:34:00 dur. : 30min Purpose code: 3
LOG :5754.70 5756.10 dist.:1.50nm Area code : 3
FDEPTH: 232 233 GearCond.code:
BDEPTH: 232 233 Validity code:
Towing dir: 345 Wire out: 750 m Speed: 31 kn*10

Sorted: 200 Kg Total catch: 424.10 CATCH/HOUR: 848.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	254.80	544	30.04	407
Dentex macrophthalmus	200.00	700	23.58	
Pterothrissus belloci	140.00	600	16.51	
Merluccius capensis, male	84.00	256	9.90	406
Trachurus capensis	74.00	380	8.72	
Sufflogobius bibarbatus	60.00	10200	7.07	
Solenocera africana	20.00	6400	2.36	
Lophius upsicephalus	5.40	6	0.64	
Austroglossus microlepis	5.00	6	0.59	
Galeus polli	2.00	20	0.24	
Chlorophthalmus punctatus	2.00	120	0.24	
Todarodes sagittatus	1.00	2	0.12	
Synagrops microlepis	0.00	20		
Trigla lyra	0.00	20		
Coelorinchus fasciatus	0.00	20		
PORTUNIDAE	0.00	40		
Total	848.20		100.01	

PROJECT STATION:1201

DATE:15/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1932
start stop Long E 1218
TIME :23:06:00 23:36:00 dur. : 30min Purpose code: 3
LOG :5768.00 5769.50 dist.:1.60nm Area code : 3
FDEPTH: 145 162 GearCond.code:
BDEPTH: 145 162 Validity code:
Towing dir: 335 Wire out: 600 m Speed: 31 kn*10

Sorted: 89 Kg Total catch: 1429.60 CATCH/HOUR: 2859.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Dentex macrophthalmus	1462.40	6840	51.15	410
Merluccius capensis, female	499.20	2688	17.46	409
Pterothrissus belloci	384.00	3406	13.43	
Trachurus capensis	278.40	1920	9.74	411
Merluccius capensis, male	217.60	1120	7.61	408
Chelidonichthys capensis	6.40	32	0.22	
Austroglossus microlepis	6.40	64	0.22	
Lophius upsicephalus	3.20	32	0.11	
Sufflogobius bibarbatus	1.60	320	0.06	
Total	2859.20		100.00	

PROJECT STATION:1202

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1915
start stop Long E 1214
TIME :07:25:00 07:55:00 dur. : 30min Purpose code: 3
LOG :5792.80 5794.10 dist.:1.40nm Area code : 3
FDEPTH: 141 141 GearCond.code:
BDEPTH: 141 141 Validity code:
Towing dir: 340 Wire out: 600 m Speed: 28 kn*10

Sorted: 24 Kg Total catch: 592.50 CATCH/HOUR: 1185.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	885.00	4950	74.68	413
Merluccius capensis, male	300.00	1900	25.32	412
Total	1185.00		100.00	

PROJECT STATION:1203

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1915
start stop Long E 1209
TIME :08:56:00 09:26:00 dur. : 30min Purpose code: 3
LOG :5800.80 5802.30 dist.:1.50nm Area code : 3
FDEPTH: 189 190 GearCond.code:
BDEPTH: 189 190 Validity code:
Towing dir: 325 Wire out: 700 m Speed: 30 kn*10

Sorted: 52 Kg Total catch: 312.10 CATCH/HOUR: 624.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	276.00	1464	44.22	415
Merluccius capensis, male	129.60	660	20.76	414
Trachurus capensis	114.00	840	18.26	416
Dentex macrophthalmus	84.00	336	13.46	
Pterothrissus belloci	20.40	132	3.27	
Sufflogobius bibarbatus	0.20	72	0.03	
Synagrops microlepis	0.00	24		
Total	624.20		100.00	

PROJECT STATION:1204

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1917
start stop Long E 1202
TIME :10:47:00 10:55:00 dur. : 8min Purpose code: 3
LOG :5811.80 5812.10 dist.:0.50nm Area code : 3
FDEPTH: 249 249 GearCond.code: 8
BDEPTH: 249 249 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 27 kn*10

Sorted: 116 Kg Total catch: 116.00 CATCH/HOUR: 870.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	582.75	945	66.98	418
Merluccius capensis, male	102.75	195	11.81	417
Dentex macrophthalmus	83.25	233	9.57	419
Pterothrissus belloci	42.00	180	4.83	
Lophius upsicephalus	30.75	15	3.53	
Trachurus capensis	22.50	120	2.59	420
Coelorinchus fasciatus	2.25	8	0.26	
Squalus megalops	2.25	8	0.26	
Chlorophthalmus punctatus	0.75	30	0.09	
Galeus polli	0.75	8	0.09	
Total	870.00		100.01	

PROJECT STATION:1205

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1921
start stop Long E 1152
TIME :13:50:00 14:22:00 dur. : 32min Purpose code: 3
LOG :5825.00 5826.40 dist.:1.73nm Area code : 3
FDEPTH: 300 298 GearCond.code:
BDEPTH: 300 298 Validity code:
Towing dir: 355 Wire out: 950 m Speed: 33 kn*10

Sorted: 177 Kg Total catch: 563.93 CATCH/HOUR: 1057.37

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	760.50	581	71.92	422
Merluccius capensis, male	193.50	208	18.30	421
Helicolenus dactylopterus	73.61	4969	6.96	
Trachurus capensis	10.09	17	0.95	
Chlorophthalmus punctatus	7.73	332	0.73	
Coelorinchus fasciatus	3.56	131	0.34	
Lophius upsicephalus	3.00	6	0.28	
Todarodes sagittatus	1.88	6	0.18	
Dentex macrophthalmus	1.78	6	0.17	
Squalus megalops	1.13	2	0.11	
Galeus polli	0.60	11	0.06	
Total	1057.38		100.00	

PROJECT STATION:1206

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1925
start stop Long E 1140
TIME :16:14:00 16:44:00 dur. : 30min Purpose code: 3
LOG :5841.60 5842.50 dist.:1.70nm Area code : 3
FDEPTH: 350 348 GearCond.code:
BDEPTH: 350 348 Validity code:
Towing dir: 360 Wire out:1050 m Speed: 33 kn*10

Sorted: 176 Kg Total catch: 936.49 CATCH/HOUR: 1872.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	838.40	854	44.76	424
Merluccius capensis, male	729.58	810	38.95	423
Helicolenus dactylopterus	298.60	6176	15.94	
Galeus polli	2.14	32	0.11	
Chlorophthalmus punctatus	2.14	128	0.11	
Coelorinchus fasciatus	1.06	32	0.06	
Nezumia leonis	0.54	42	0.03	
Laemonema laureysi	0.52	10	0.03	
Histioteuthis reversa	0.00	10		
Epigonus denticulatus	0.00	10		
Total	1872.98		99.99	

PROJECT STATION:1207

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1910
start stop Long E 1127
TIME :18:59:00 19:29:00 dur. : 30min Purpose code: 3
LOG :5859.50 5860.80 dist.:1.70nm Area code : 3
FDEPTH: 410 414 GearCond.code:
BDEPTH: 410 414 Validity code:
Towing dir: 360 Wire out:1200 m Speed: 32 kn*10

Sorted: 106 Kg Total catch: 226.40 CATCH/HOUR: 452.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Helicolenus dactylopterus	232.80	1626	51.41	
Merluccius paradoxus, female	127.60	270	28.18	427
Galeus polli	25.20	300	5.57	
Merluccius capensis, female	15.00	12	3.31	426
Nezumia leonis	13.20	360	2.92	
Merluccius capensis, male	10.00	6	2.21	425
Todarodes sagittatus	9.60	20	2.12	
Coelorinchus coelorinch. polli	4.80	132	1.06	
Aristeus varidens	4.80	576	1.06	
Shrimps, small, non comm.	3.60	1284	0.80	
MYCTOPHIDAE	2.40		0.53	
Raja confundens	2.00	2	0.44	
Laemonema laureysi	0.60	12	0.13	
Notacanthus sexspinis	0.60	24	0.13	
Epigonus denticulatus	0.60	36	0.13	
Total	452.80		100.00	

PROJECT STATION:1208

DATE:16/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1909
start stop Long E 1129
TIME :21:02:00 21:32:00 dur. : 30min Purpose code: 3
LOG :5870.80 5872.10 dist.:1.70nm Area code : 3
FDEPTH: 355 356 GearCond.code:
BDEPTH: 355 356 Validity code:
Towing dir: 360 Wire out:1100 m Speed: 33 kn*10

Sorted: 175 Kg Total catch: 479.00 CATCH/HOUR: 958.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	635.80	578	66.37	429
Merluccius capensis, male	209.60	220	21.88	428
Helicolenus dactylopterus	62.40	1192	6.51	
Lophius upsicephalus	15.00	2	1.57	
Nezumia leonis	11.40	662	1.19	
Trachurus capensis	6.20	34	0.65	
Coelorinchus coelorinch. polli	5.60	148	0.58	
Laemonema laureysi	5.20	102	0.54	
Zenopsis conchifer	2.20	2	0.23	
Chlorophthalmus punctatus	2.20	86	0.23	
Todarodes sagittatus	1.80	6	0.19	
Galeus polli	0.60	6	0.06	
Notacanthus sexspinis	0.00	6		
Epigonus denticulatus	0.00	6		
Total	958.00		100.00	

PROJECT STATION:1209

DATE:17/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1905
start stop Long E 1138
TIME :07:29:00 07:59:00 dur. : 30min Purpose code: 3
LOG :5891.10 5892.50 dist.:1.70nm Area code : 3
FDEPTH: 276 274 GearCond.code:
BDEPTH: 276 274 Validity code:
Towing dir: 340 Wire out: 850 m Speed: 35 kn*10

Sorted: 178 Kg Total catch: 912.80 CATCH/HOUR: 1825.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1105.60	1064	60.56	431
Merluccius capensis, male	347.20	548	19.02	430
Chlorophthalmus punctatus	171.60	6092	9.40	
Helicolenus dactylopterus	113.60	4462	6.22	
Trachurus capensis	39.20	82	2.15	
Dentex macrophthalmus	25.80	62	1.41	
Squalus megalops	12.00	10	0.66	
Lophius upsicephalus	3.00	2	0.16	
MYCTOPHIDAE	2.00		0.11	
Coelorinchus coelorinch. polli	2.00	104	0.11	
Synagrops microlepis	1.60	32	0.09	
Nezumia leonis	1.00	104	0.05	
Galeus polli	1.00	20	0.05	
Total	1825.60		99.99	

PROJECT STATION:1210

DATE:17/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1904
start stop Long E 1145
TIME :09:32:00 10:02:00 dur. : 30min Purpose code: 3
LOG :5904.30 5905.60 dist.:1.60nm Area code : 3
FDEPTH: 303 301 GearCond.code:
BDEPTH: 303 301 Validity code:
Towing dir: 340 Wire out: 900 m Speed: 32 kn*10

Sorted: 163 Kg Total catch: 379.90 CATCH/HOUR: 759.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	364.40	332	47.96	433
Merluccius capensis, male	245.40	298	32.30	432
Helicolenus dactylopterus	88.60	4534	11.66	
Coelorinchus coelorinch. polli	20.60	652	2.71	
Dentex macrophthalmus	15.80	28	2.08	
Chlorophthalmus punctatus	12.60	598	1.66	
Trachurus capensis	4.60	18	0.61	
Lophius upsicephalus	2.80	4	0.37	
Todarodes sagittatus	1.60	4	0.21	
Galeus polli	1.00	18	0.13	
Sufflogobius bibarbatus	1.00	220	0.13	
MYCTOPHIDAE	0.40		0.05	
Synagrops microlepis	0.40	46	0.05	
Coelorinchus fasciatus	0.40	4	0.05	
Malacocephalus occidentalis	0.20	8	0.03	
Ebinania costaecanariae	0.00	4		
Solenocera africana	0.00	10		
PORTUNIDAE	0.00	10		
Total	759.80		100.00	

PROJECT STATION:1211

DATE:17/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1858
start stop Long E 1155
TIME :11:48:00 12:18:00 dur. : 30min Purpose code: 3
LOG :5919.90 5921.30 dist.:1.54nm Area code : 3
FDEPTH: 230 226 GearCond.code:
BDEPTH: 230 226 Validity code:
Towing dir: 340 Wire out: 750 m Speed: 31 kn*10

Sorted: 158 Kg Total catch: 616.51 CATCH/HOUR: 1233.02

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	777.40	2238	63.05	435
Merluccius capensis, male	126.50	522	10.26	434
Trachurus capensis	121.90	836	9.89	436
Dentex macrophthalmus	97.36	422	7.90	437
Pterothrissus belloci	83.56	368	6.78	
Raja miraletus	15.60	20	1.27	
Synagrops microlepis	4.60	268	0.37	
Lophius upsicephalus	3.80	2	0.31	
Sufflogobius bibarbatus	1.54	260	0.12	
Galeus polli	0.76	16	0.06	
Aristeus varidens	0.00	8		
PORTUNIDAE	0.00	16		
Todaropsis eblanae	0.00	8		
Total	1233.02		100.01	

PROJECT STATION:1212

DATE:17/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1855
start stop Long E 1201
TIME :13:25:00 13:55:00 dur. : 30min Purpose code: 3
LOG :5929.50 5930.80 dist.:1.65nm Area code : 3
FDEPTH: 162 162 GearCond.code:
BDEPTH: 162 162 Validity code:
Towing dir: 340 Wire out: 650 m Speed: 32 kn*10

Sorted: 85 Kg Total catch: 3200.03 CATCH/HOUR: 6400.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	4456.80	34438	69.64	441
Merluccius capensis, female	990.38	6452	15.47	439
Dentex macrophthalmus	480.20	3302	7.50	440
Merluccius capensis, male	337.64	2100	5.28	438
Pterothrissus belloci	112.54	300	1.76	
Chatrabus melanurus	15.00	76	0.23	
Merluccius capensis, juveniles	7.50	226	0.12	
PORTUNIDAE	0.00	76		
Sufflogobius bibarbatus	0.00	376		
Total	6400.06		100.00	

PROJECT STATION:1213

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1838
start stop Long E 1152
TIME :07:55:00 08:25:00 dur. : 30min Purpose code: 3
LOG :5986.40 5987.60 dist.:1.50nm Area code : 3
FDEPTH: 136 135 GearCond.code:
BDEPTH: 136 135 Validity code:
Towing dir: 350 Wire out: 550 m Speed: 29 kn*10

Sorted: 64 Kg Total catch: 1068.40 CATCH/HOUR: 2136.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Dentex macrophthalmus	1590.00	11000	74.41	444
Trachurus capensis	340.00	3300	15.91	445
Pterothrissus belloci	70.00	500	3.28	
Merluccius capensis, female	64.80	294	3.03	443
Trigla lyra	50.00	200	2.34	
Merluccius capensis, male	22.00	116	1.03	442
Total	2136.80		100.00	

PROJECT STATION:1214

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1841
start stop Long E 1144
TIME :09:57:00 10:17:00 dur. : 20min Purpose code: 3
LOG :5999.50 6000.40 dist.:1.10nm Area code : 3
FDEPTH: 225 221 GearCond.code:
BDEPTH: 225 221 Validity code:
Towing dir: 350 Wire out: 750 m Speed: 33 kn*10

Sorted: 91 Kg Total catch: 273.45 CATCH/HOUR: 820.35

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	503.10	2136	61.33	447
Merluccius capensis, male	164.70	720	20.08	446
Dentex macrophthalmus	75.60	468	9.22	449
Pterothrissus belloci	47.70	261	5.81	
Trachurus capensis	27.00	252	3.29	448
Synagrops microlepis	2.25	207	0.27	
Solenocera africana	0.00	9		
Sufflogobius bibarbatus	0.00	27		
Merluccius polli, juveniles	0.00	9		
Total	820.35		100.00	

PROJECT STATION:1215

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1846
start stop Long E 1131
TIME :12:19:00 12:49:00 dur. : 30min Purpose code: 3
LOG :6016.20 6017.60 dist.:1.70nm Area code : 3
FDEPTH: 249 249 GearCond.code:
BDEPTH: 249 249 Validity code:
Towing dir: 340 Wire out: 800 m Speed: 32 kn*10

Sorted: 135 Kg Total catch: 2501.69 CATCH/HOUR: 5003.38

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	3471.50	6514	69.38	451
Merluccius capensis, male	662.48	2072	13.24	450
Dentex macrophthalmus	333.08	1184	6.66	453
Helicolenus dactylopterus	259.06	5884	5.18	
Trachurus capensis	185.04	740	3.70	452
Chlorophthalmus punctatus	62.92	2554	1.26	
MYCTOPHIDAE	18.50		0.37	
Synagrops microlepis	7.40	444	0.15	
Hyperoglyphe moselii	2.20	4	0.04	
Squalus megalops	1.20	2	0.02	
Sufflogobius bibarbatus	0.00	74		
Coelorinchus coelorinch. polli	0.00	38		
Total	5003.38		100.00	

PROJECT STATION:1216

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1848
start stop Long E 1125
TIME :14:10:00 14:40:00 dur. : 30min Purpose code: 3
LOG :6026.30 6027.60 dist.:1.66nm Area code : 3
FDEPTH: 358 361 GearCond.code:
BDEPTH: 358 361 Validity code:
Towing dir: 360 Wire out:1050 m Speed: 34 kn*10

Sorted: 172 Kg Total catch: 337.10 CATCH/HOUR: 674.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	336.00	308	49.84	455
Merluccius capensis, male	178.00	180	26.40	454
Helicolenus dactylopterus	122.00	1586	18.10	
Todarodes sagittatus	12.60	54	1.87	
Chlorophthalmus punctatus	12.40	344	1.84	
Coelorinchus coelorinch. polli	4.00	140	0.59	
Laemonema laureysi	3.20	120	0.47	
Galeus polli	3.20	44	0.47	
Nezumia leonis	1.60	72	0.24	
Aristeus varidens	1.20	240	0.18	
Synagrops microlepis	0.00	8		
Total	674.20		100.00	

PROJECT STATION:1217

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1828
start stop Long E 1127
TIME :16:50:00 17:20:00 dur. : 30min Purpose code: 3
LOG :6046.10 6047.50 dist.:1.64nm Area code : 3
FDEPTH: 349 360 GearCond.code:
BDEPTH: 349 360 Validity code:
Towing dir: 15 Wire out:1050 m Speed: 33 kn*10

Sorted: 175 Kg Total catch: 429.20 CATCH/HOUR: 858.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	487.00	416	56.73	457
Merluccius capensis, male	150.00	150	17.47	456
Helicolenus dactylopterus	95.00		11.07	
Todarodes sagittatus	25.60	42	2.98	
Laemonema laureysi	20.20	368	2.35	
Epigonus denticulatus	17.60	822	2.05	
Lophius upsicephalus	16.00	2	1.86	
Trachurus capensis	11.80	134	1.37	
Chlorophthalmus punctatus	10.20	310	1.19	
Coelorinchus coelorinch. polli	6.40	246	0.75	
Galeus polli	5.40	32	0.63	
Nezumia leonis	5.40	138	0.63	
Neoharriotta pinnata	4.60	2	0.54	
Aristeus varidens	2.20	374	0.26	
Malacocephalus occidentalis	1.00	22	0.12	
Total	858.40		100.00	

PROJECT STATION:1218

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1825
start stop Long E 1131
TIME :18:45:00 19:15:00 dur. : 30min Purpose code: 3
LOG :6056.50 6057.60 dist.:1.50nm Area code : 3
FDEPTH: 240 255 GearCond.code:
BDEPTH: 240 255 Validity code: 9
Towing dir: 350 Wire out: 750 m Speed: 29 kn*10

Sorted: 65 Kg Total catch: 65.20 CATCH/HOUR: 130.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	102.40	170	78.53	459
Merluccius capensis, male	28.00	62	21.47	458
Total	130.40		100.00	

PROJECT STATION:1219

DATE:18/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1801
start stop Long E 1133
TIME :23:06:00 23:21:00 dur. : 15min Purpose code: 3
LOG :6090.90 6091.50 dist.:0.70nm Area code : 3
FDEPTH: 200 202 GearCond.code:
BDEPTH: 200 202 Validity code:
Towing dir: 350 Wire out: 700 m Speed: 30 kn*10

Sorted: 109 Kg Total catch: 369.90 CATCH/HOUR: 1479.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	403.20	4320	27.25	462
Merluccius capensis, female	310.00	812	20.95	461
Pterothrissus belloci	309.60	1584	20.92	
Dentex macrophthalmus	194.40	1152	13.14	
Helicolenus dactylopterus	93.60	1368	6.33	
Merluccius capensis, male	66.00	248	4.46	460
Chlorophthalmus punctatus	57.60	2160	3.89	
Trigla lyra	36.00	216	2.43	
Synagrops microlepis	7.20	1152	0.49	
Merluccius polli, juveniles	2.00	504	0.14	
Total	1479.60		100.00	

PROJECT STATION:1220

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1801
start stop Long E 1126
TIME :01:07:00 01:27:00 dur. : 20min Purpose code: 3
LOG :6101.70 6102.70 dist.:1.00nm Area code : 3
FDEPTH: 298 305 GearCond.code:
BDEPTH: 298 305 Validity code:
Towing dir: 320 Wire out: 950 m Speed: 30 kn*10

Sorted: 152 Kg Total catch: 685.35 CATCH/HOUR: 2056.05

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1564.65	1203	76.10	464
Merluccius capensis, male	324.00	351	15.76	463
Helicolenus dactylopterus	91.80	1458	4.46	
Laemonema laureysi	40.50	972	1.97	
Chlorophthalmus punctatus	9.45	231	0.46	
Trachurus capensis	8.10	81	0.39	
Raja confundens	5.40	3	0.26	
Aristeus varidens	4.05	366	0.20	
Galeus polli	4.05	42	0.20	
Coelorinchus coelorinch. polli	2.70	108	0.13	
Malacocephalus occidentalis	1.35	27	0.07	
PORTUNIDAE	0.00	15		
Total	2056.05		100.00	

PROJECT STATION:1221

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1738
start stop Long E 1123
TIME :07:45:00 08:05:00 dur. : 20min Purpose code: 3
LOG :6154.30 6155.30 dist.:1.00nm Area code : 3
FDEPTH: 306 300 GearCond.code:
BDEPTH: 306 300 Validity code:
Towing dir: 10 Wire out: 900 m Speed: 30 kn*10

Sorted: 159 Kg Total catch: 522.30 CATCH/HOUR: 1566.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1073.70	945	68.52	466
Merluccius capensis, male	233.10	234	14.88	465
Helicolenus dactylopterus	104.40	1584	6.66	
Laemonema laureysi	64.80	2088	4.14	
Chlorophthalmus punctatus	21.60	576	1.38	
Zenopsis conchifer	14.40	576	0.92	
Galeus polli	14.40	144	0.92	
Centrophorus squamosus	13.50	3	0.86	
Malacocephalus occidentalis	10.80	108	0.69	
Coelorinchus coelorinch. polli	7.20	324	0.46	
Lophius upsicephalus	5.70	6	0.36	
Squalus megalops	2.70	3	0.17	
Lepidopus caudatus	0.60	3	0.04	
Total	1566.90		100.00	

PROJECT STATION:1222

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1730
start stop Long E 1127
TIME :09:31:00 09:46:00 dur. : 15min Purpose code: 3
LOG :6165.70 6166.40 dist.:0.80nm Area code : 3
FDEPTH: 202 204 GearCond.code:
BDEPTH: 202 204 Validity code:
Towing dir: 360 Wire out: 700 m Speed: 31 kn*10

Sorted: 130 Kg Total catch: 519.80 CATCH/HOUR: 2079.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	772.80	3824	37.17	469
Merluccius capensis, female	516.80	1312	24.86	468
Chlorophthalmus punctatus	328.00	12928	15.78	
Dentex macrophthalmus	200.00	1024	9.62	470
Merluccius capensis, male	137.60	464	6.62	467
Pterothrissus belloci	80.00	496	3.85	
Synagrops microlepis	24.00	2384	1.15	
Helicolenus dactylopterus	11.20	288	0.54	
Raja miraletus	1.60	4	0.08	
Sepia orbignyana	1.60	32	0.08	
PORTUNIDAE	1.60	240	0.08	
Malacocephalus occidentalis	1.60	80	0.08	
Merluccius polli, juveniles	1.60	400	0.08	
Coelorinchus coelorinch. polli	0.80	32	0.04	
Munida sp.	0.00	16		
Total	2079.20		100.03	

PROJECT STATION:1223

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1719
start stop Long E 1118
TIME :11:26:00 11:56:00 dur. : 30min Purpose code: 3
LOG :6179.40 6181.00 dist.:1.60nm Area code : 3
FDEPTH: 402 410 GearCond.code:
BDEPTH: 402 410 Validity code:
Towing dir: 360 Wire out:1200 m Speed: 31 kn*10

Sorted: 163 Kg Total catch: 674.30 CATCH/HOUR: 1348.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius polli, female	408.00	640	30.25	474
Helicolenus dactylopterus	324.80	1752	24.08	
Shrimps, small, non comm.	153.36		11.37	
Merluccius capensis, female	93.60	88	6.94	472
Merluccius polli, male	75.20	184	5.58	473
Chlorophthalmus punctatus	48.80	1408	3.62	
Nezumia leonis	42.40	992	3.14	
Etmopterus pusillus	40.00	10	2.97	
Laemonema laureysi	33.60	512	2.49	
Merluccius capensis, male	32.00	24	2.37	471
Todarodes sagittatus	21.60	80	1.60	
Coelorinchus coelorinch. polli	20.80	560	1.54	
Lamprogrammus exutus	16.80	48	1.25	
Neoharriotta pinnata	13.60	8	1.01	
Aristeus varidens	8.24	1616	0.61	
Galeus polli	6.40	240	0.47	
Lophius upsicephalus	5.40	4	0.40	
Epigonus denticulatus	1.60	144	0.12	
Halosaurus ovenii	0.80	56	0.06	
MYCTOPHIDAE	0.80	176	0.06	
Synagrops microlepis	0.80	120	0.06	
PORTUNIDAE	0.00	16		
Total	1348.60		99.99	

PROJECT STATION:1224

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1720
start stop Long E 1122
TIME :13:11:00 13:31:00 dur. : 20min Purpose code: 3
LOG :6188.50 6189.50 dist.:1.00nm Area code : 3
FDEPTH: 302 295 GearCond.code:
BDEPTH: 302 295 Validity code:
Towing dir: 360 Wire out: 950 m Speed: 29 kn*10

Sorted: 147 Kg Total catch: 566.64 CATCH/HOUR: 1699.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis, female	1216.71	1506	71.57	476
Merluccius capensis, male	211.59	552	12.45	475
Trachurus capensis	80.49	231	4.73	477
Helicolenus dactylopterus	56.10	921	3.30	
Dentex macrophthalmus	52.89	126	3.11	
Laemonema laureysi	26.46	942	1.56	
Malacocephalus occidentalis	20.70	288	1.22	
Merluccius polli, juveniles	12.66	171	0.74	
Zenopsis conchifer	5.40	9	0.32	
Atractoscion aequidens	5.10	3	0.30	
Chlorophthalmus punctatus	3.45	138	0.20	
MYCTOPHIDAE	3.45	540	0.20	
Hyperoglyphe moselii	1.50	3	0.09	
Galeus polli	1.14	12	0.07	
Coelorinchus coelorinch. polli	1.14	57	0.07	
Nezumia leonis	1.14	57	0.07	
Synagrops microlepis	0.00	45		
Total	1699.92		100.00	

PROJECT STATION:1225

DATE:19/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 1720
start stop Long E 1126
TIME :14:41:00 15:01:00 dur. : 20min Purpose code: 3
LOG :6196.90 6198.00 dist.:1.10nm Area code : 3
FDEPTH: 200 201 GearCond.code:
BDEPTH: 200 201 Validity code:
Towing dir: 360 Wire out: 650 m Speed: 30 kn*10

Sorted: 187 Kg Total catch: 811.10 CATCH/HOUR: 2433.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	662.97	6435	27.25	480
Dentex macrophthalmus	467.97	2223	19.23	481
Merluccius capensis, female	455.01	1065	18.70	479
Chlorophthalmus punctatus	350.97	14847	14.42	
Zenopsis conchifer	233.97	819	9.62	
Merluccius capensis, male	97.50	261	4.01	478
Pterothrissus belloci	66.30	363	2.72	
Raja miraletus	32.49	39	1.34	
Helicolenus dactylopterus	30.90	339	1.27	
Squalus megalops	18.30	27	0.75	
Synagrops microlepis	11.67	1392	0.48	
Trigla lyra	2.61	12	0.11	
Malacocephalus occidentalis	1.32	39	0.05	
Todaropsis eblanae	1.32	51	0.05	
Monolene microstoma	0.00	12		
Merluccius polli, juveniles	0.00	12		
Total	2433.30		100.00	

ANNEX III INSTRUMENTS AND FISHING GEAR USED

ACOUSTIC INSTRUMENTS

A SIMRAD scientific echo sounder, EK 500/38kHz, was used during the survey for estimation of fish density.

Based on a calibration experiment using a standard copper sphere in Baia dos Tigres on 26th November 1991, the following settings were used:

Absorption Coeff.	10 dB/km
Pulse length	Medium
Bandwidth	Wide
Max. Power	2000 W
Angle sensitivity	21.9
2-way Beam Angle	-21.0 dB
Sv Transd. Gain	28.0 dB
Ts Transd. Gain	28.0 dB
3 dB Beamwidth	6.9°
Along-ship Offset	0°
Athwart-ship	0°

FISHING GEAR

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. This gear was also used for some of the mid-water trawls.

Pelagic trawl: Swedish type mid-water trawl with a vertical opening of 20-25m.

Cod ends of trawls with fine meshed inner lining.

PART II

SURVEYS OF THE PELAGIC STOCKS
24 MAY - 21 JUNE 1992

TABLE OF CONTENTS

PART II

1 INTRODUCTION

1.1 Objectives of the Cruise

To produce a biomass estimate for three of the commercially important pelagic fish species; pilchard *Sardinops ocellata*, anchovy *Engraulis capensis* and round herring *Etrumeus whiteheadi*.

To determine the distribution of pelagic horse mackerel *Trachurus capensis* and to produce a biomass estimate of this stock.

1.2 Participation

The scientific staff from Namibia on the "DR. FRIDTJOF NANSEN" were:

Janet Coetzee, Bernatitus Birisamub, Victor Hashoongo, Dawid Gawaseb, Benediktus Ushona (until 30 May), and Willem Nauiseb (from 31 May).

The scientific staff from the Institute of Marine Research were:

Johannes Hamre, Terje Haugland, Oddgeir Alvheim, Valantine Anthonypillai and Reidar Johannesen.

2 METHODS

From the general knowledge of pelagic fish distribution and from reports of commercial fishing vessels, the survey area is in general limited to the area from Dolphin Head (26°00') to the Cunene River (17°15') and from the shore to the 120 m bathometric line. The southern limit is formed by the cold and oxygen deficient upwelling region centred around Lüderitz and the northern boundary by Namibia's border with Angola. Since the pelagic fish distribution also extends into Angolan waters, permission was obtained from Angolan

authorities to extend the present survey northward to the area west of Tombua (16°00'). To allow comparison with the previous "DR. FRIDTJOF NANSEN" survey, the region was divided into three areas:

1	26°00' to 21°00'	Dolphin Head to Ambrose Bay
2	21°00' to 17°15'	Ambrose Bay to Cunene River
3	17°15' to 16°00'	Cunene River to Tombua

Although horse mackerel catches recently have been reported from an area 60 nm. off Walvis Bay it is assumed that the main distribution area of Cape horse mackerel *Trachurus capensis* is from Ambrose Bay to Tombua.

The "DR. FRIDTJOF NANSEN" left Walvis Bay at 17h00 on 24th May and surveyed the shallow coastal water from Walvis Bay southward to Dolphin Head and returned to Walvis Bay to exchange Norwegian officers and Namibian scientific staff at 07h00 on May 30th. She departed at 12h00 on May 31st. and surveyed the northern region including Angolan waters north to Tombua. The survey was carried out in cooperation with R/V "BENGUELA". The acoustic instruments were calibrated in Baia dos Tigres on the 9th June. An intercalibration with R/V "BENGUELA" was undertaken on the 15th June (Annex IV). The vessel arrived in Walvis Bay on 21th June at 15h00. 5 300 nautical miles were steamed and 102 trawl stations worked.

The course tracks with the fishing stations from Dolphin Head to Ambrose Bay, from Ambrose Bay to Cunene River and from Cunene River to Tombua are shown in Figures 1a, 1b, 1c and 1d. Additional northward and southward coverages of the shallow coastal area Ambrose Bay to Cunene River are shown in Figure 1b. Course tracks worked by R/V "BENGUELA" and used in the biomass estimates are included in the latter Figure.

The distribution and biomass of offshore horse mackerel were assessed by east-west transects, 10nm between the lines. Dr. "FRIDTJOF NANSEN" worked transects with 20nm between the lines and R/V "BENGUELA" worked the intervening transects. The distribution and biomass of small horse mackerel in inshore waters were assessed on the basis of data obtained during the coverage of the clupeids.

All catches were sampled for composition by weight and numbers of each species and the size distribution of commercially important species, using total length, was determined. The length frequencies of these species are given in ANNEX I. The complete records of fishing stations are shown in ANNEX II. Relevant samples from the R/V "BENGUELA" trawl stations were used in the assessment of the stocks.

ANNEX III gives a description of the instruments and the fishing gear used.

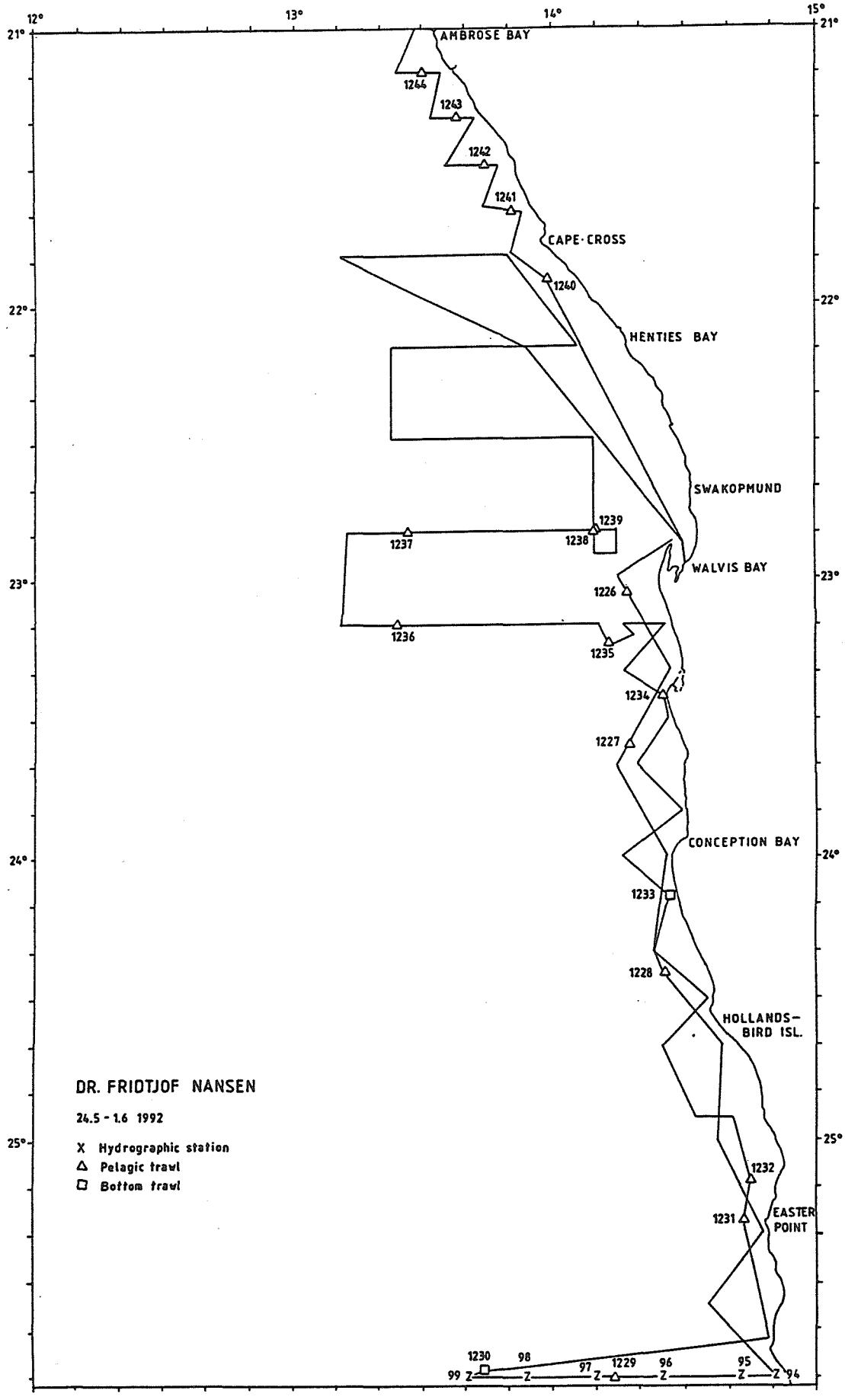


Figure 1a. Course track, hydrographical profile and fishing stations. Dolphin Head to Ambrose Bay.

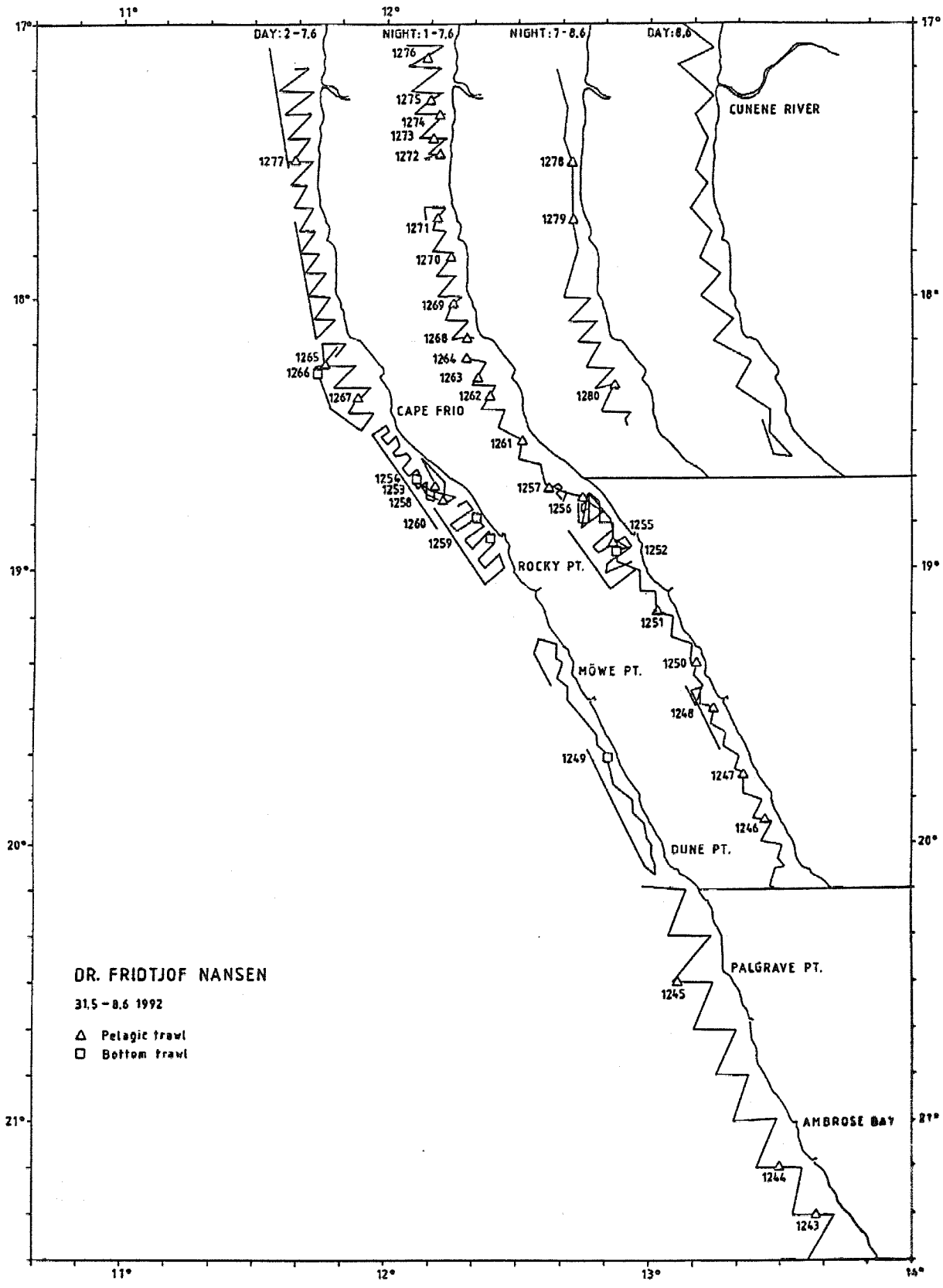


Figure 1b. Course track and fishing stations. Ambrose Bay to Cunene River.

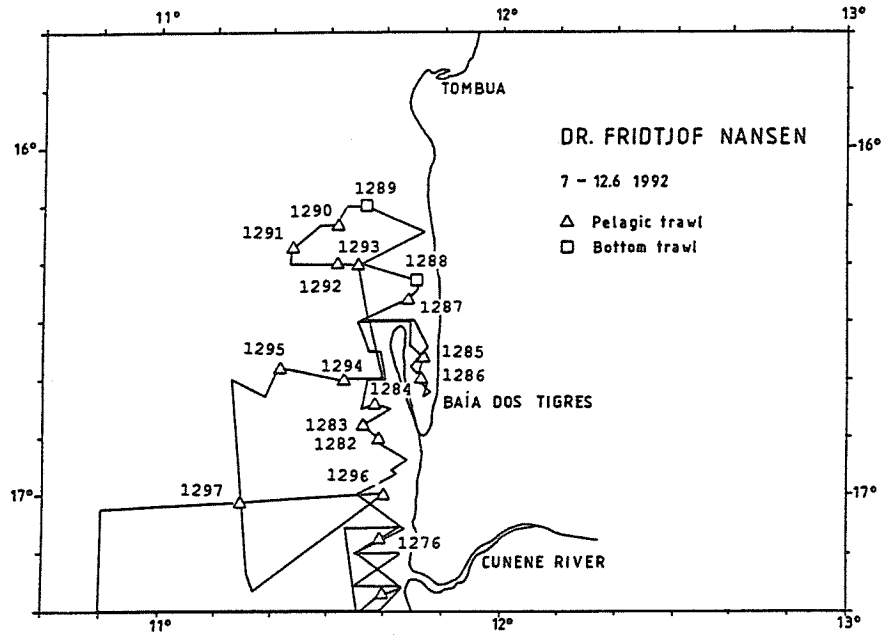


Figure 1c. Course track and fishing stations. Cunene River to Tombua

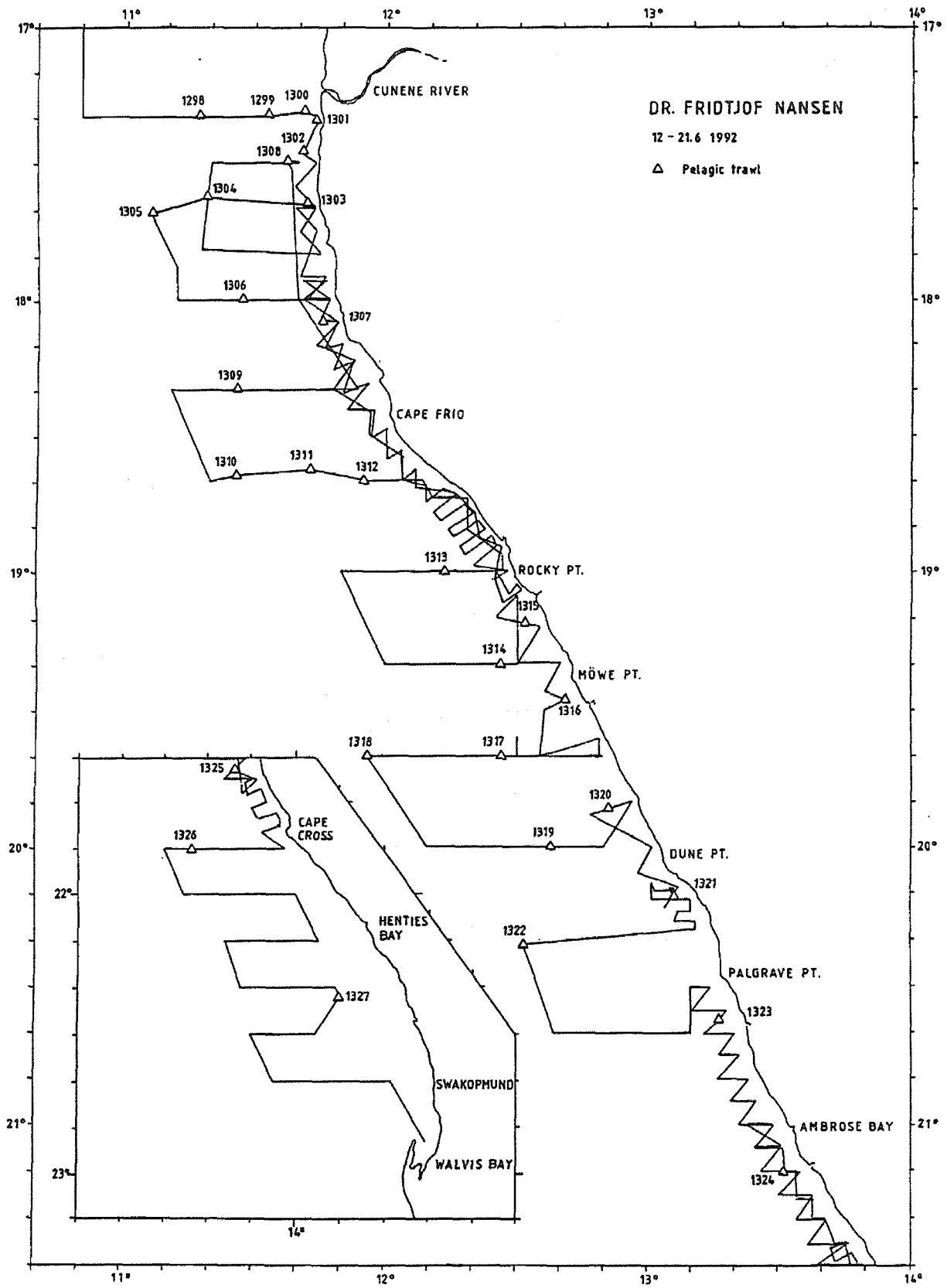


Figure 1d. Course track and fishing stations Rocky Point to Baia dos Tigres. Inshore survey of pelagic fish.

The weather was favourable for an acoustic survey during most of the cruise, except for the two days when the vessels operated in Angolan waters.

Figure 2 shows the hydrographic profile off Dolphin Head. Figures 3a-c show the sea surface temperatures in 4m depth.

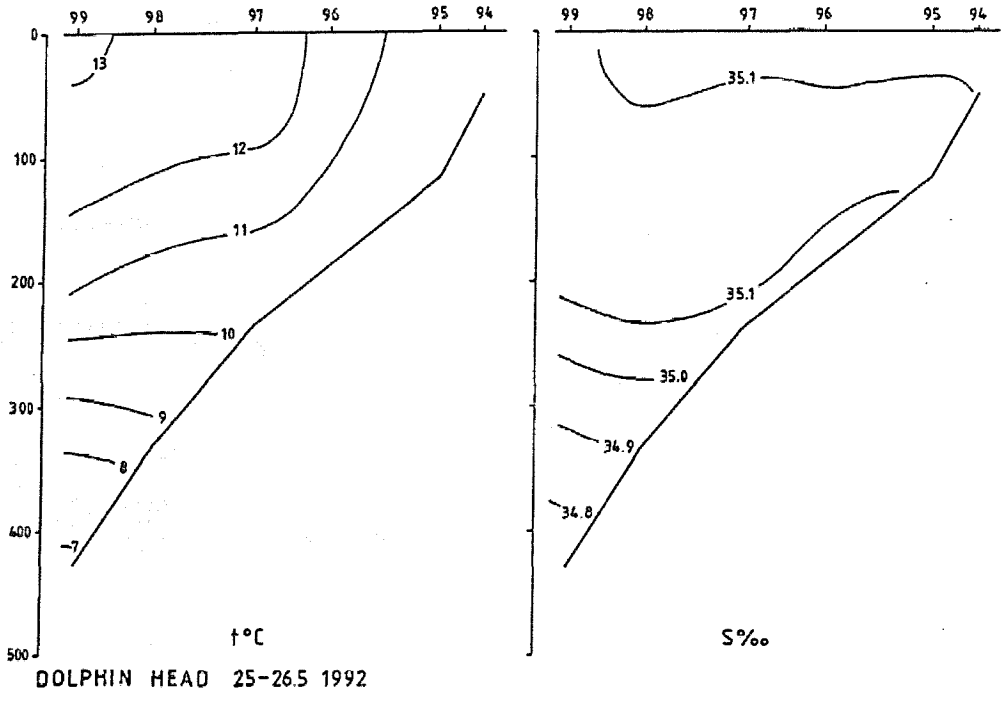


Figure 2. The hydrographic profile off Panther Head.

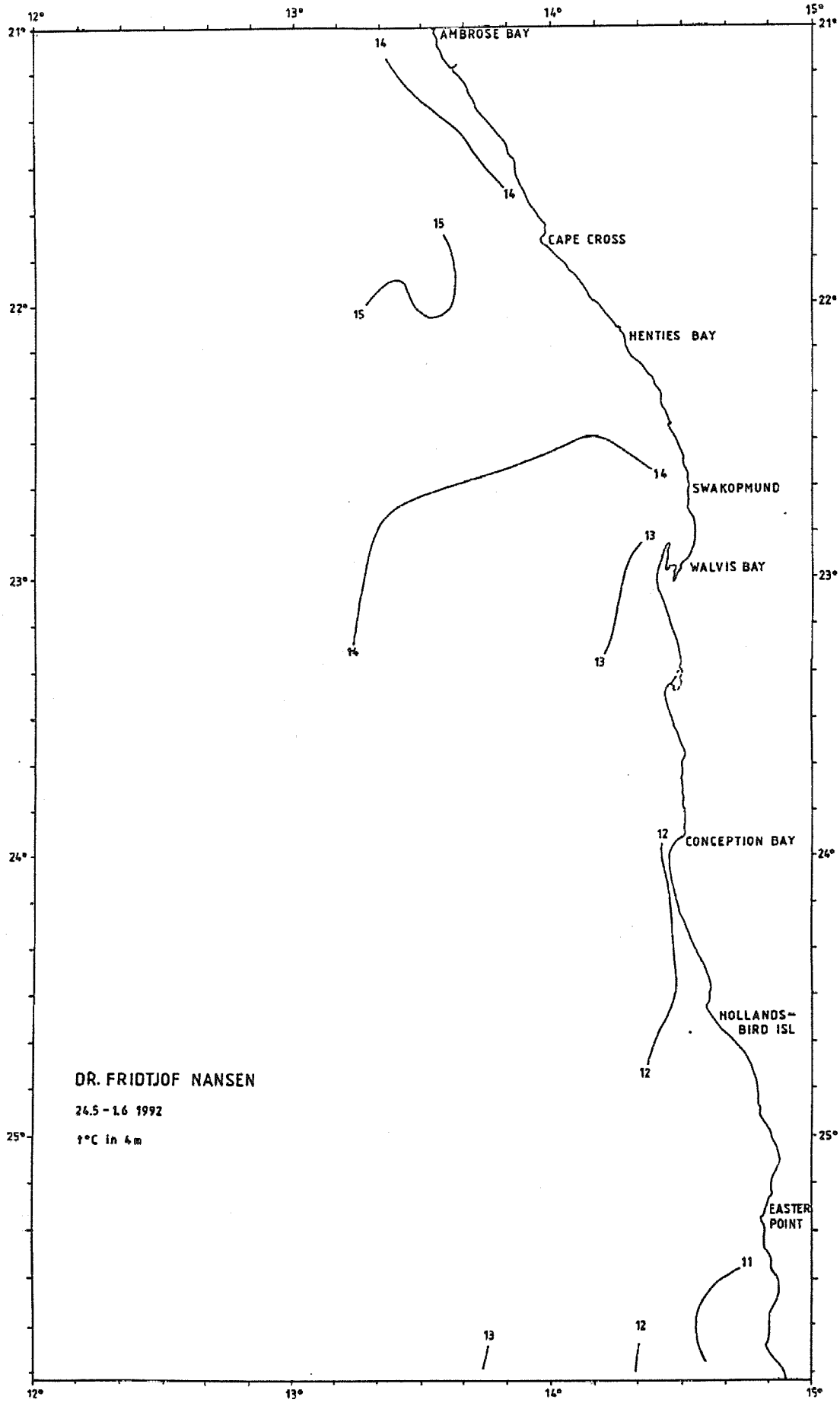


Figure 3a. Sea surface temperatures. Easter Point to Ambrose Bay.

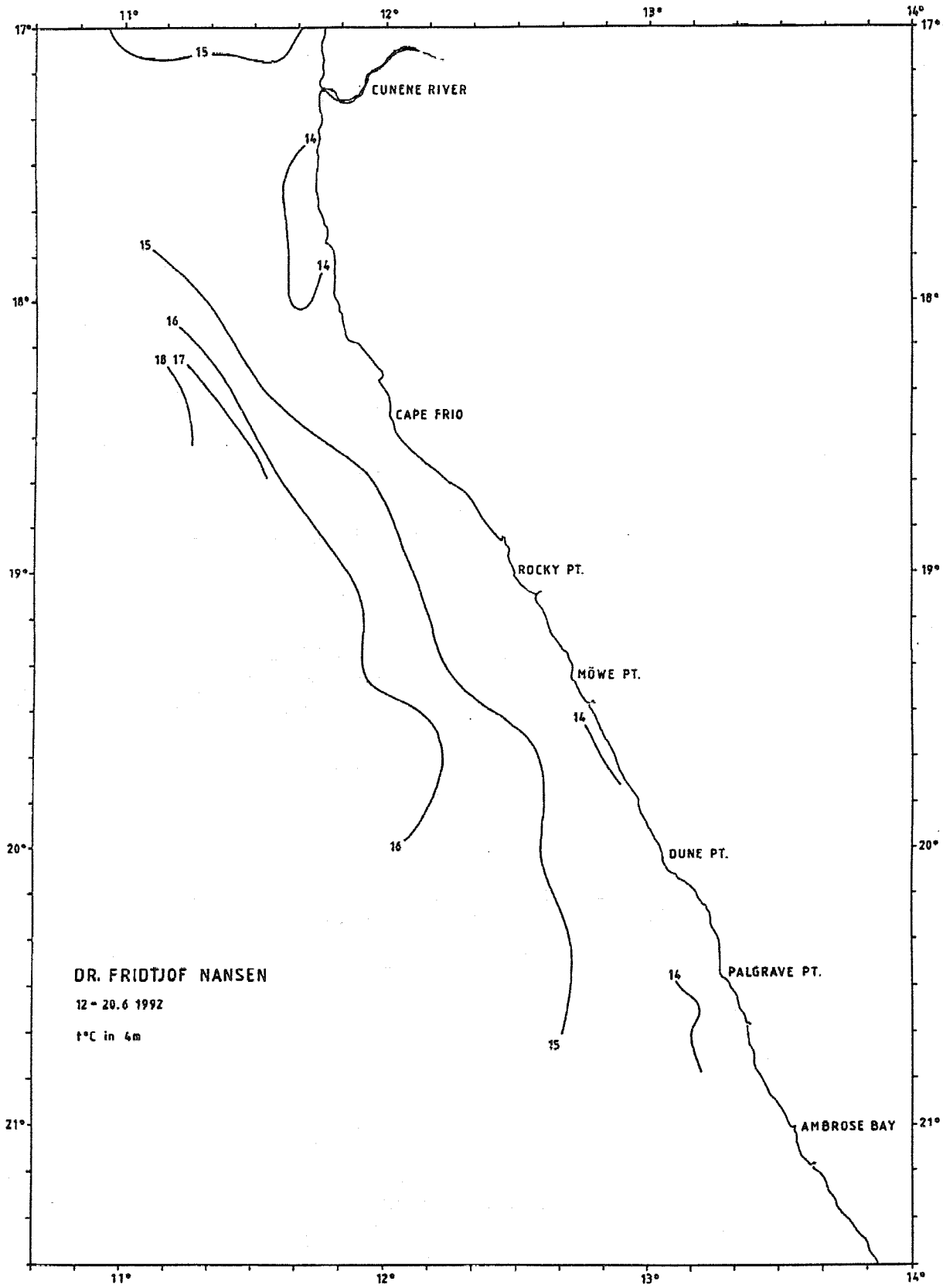


Figure 3b. Sea surface temperatures. Ambrose Bay to Cunene River.

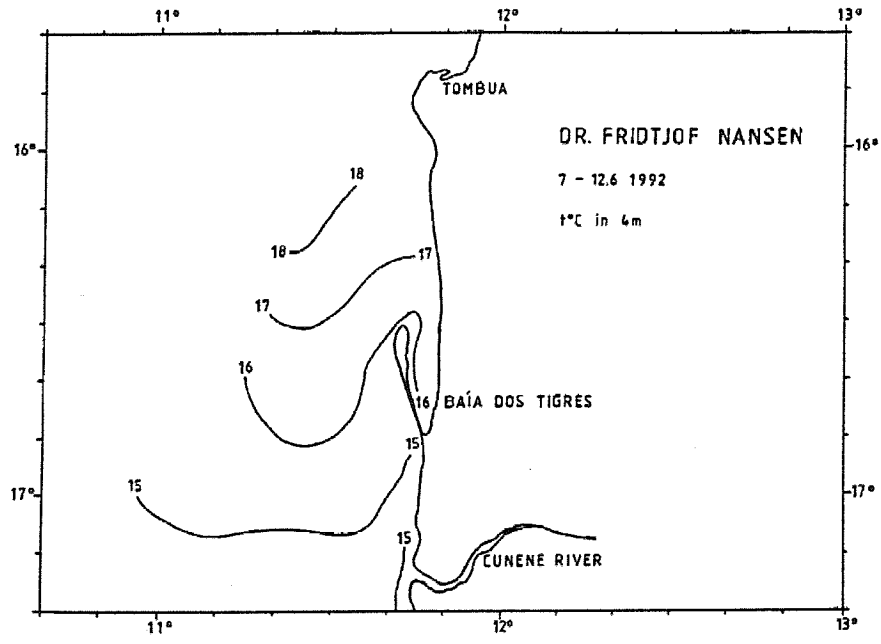


Figure 3c. Sea surface temperatures. Cunene River to Tombua.

3 DISTRIBUTION AND ABUNDANCE OF PELAGIC FISH

The acoustic integration system provided observations of fish densities averaged, usually, over 5 nm distances, but in areas of high fish concentrations over 1 nm. The unit of acoustic reflection used was 0.1 x m^2/nm^2 reflecting surface. The integrator values from fish targets were allocated to the following groups on the basis of trawl sampling and characteristic behaviour recognised from the echo recordings:

Pelagic fish type 1: Clupeidae (pilchard and round herring) and Engraulidae (anchovy).

Pelagic fish type 2: Carangidae (horse mackerel).

Non-commercial pelagic fish and plankton: myctophids, gobies and, primarily, jellyfish.

The allocation of type 1 fish to species were judge on the basis of the characteristics of the echo traces and on relevant trawl catches.

3.1 Distribution

In summary, some small areas of pelagic fish, mainly anchovy, were found south of Ambrose Bay (21°00'), while further north several regions with shoals of pilchard, in association with other pelagic species, were surveyed. Layers of plankton, consisting largely of jellyfish and small pelagic gobies and lantern fish were, as in previous surveys, found in offshore waters. In some inshore areas where dense shoals of horse mackerel did occur it was difficult to separate the type 1 species from the type 2 on the basis of the echo traces. In those cases the species composition of the trawl catches was used as identification. Sampling of fish was generally successful, except for some hauls which were disrupted by high concentrations of jellyfish, especially in the region south of Walvis Bay.

The distributions of clupeids and engraulids are shown in Figures 4a, 4b, 4c and 4d, and the distribution of carangids in Figure 5a and 5b. An arbitrary scale was used in the distribution charts to illustrate different levels of density.

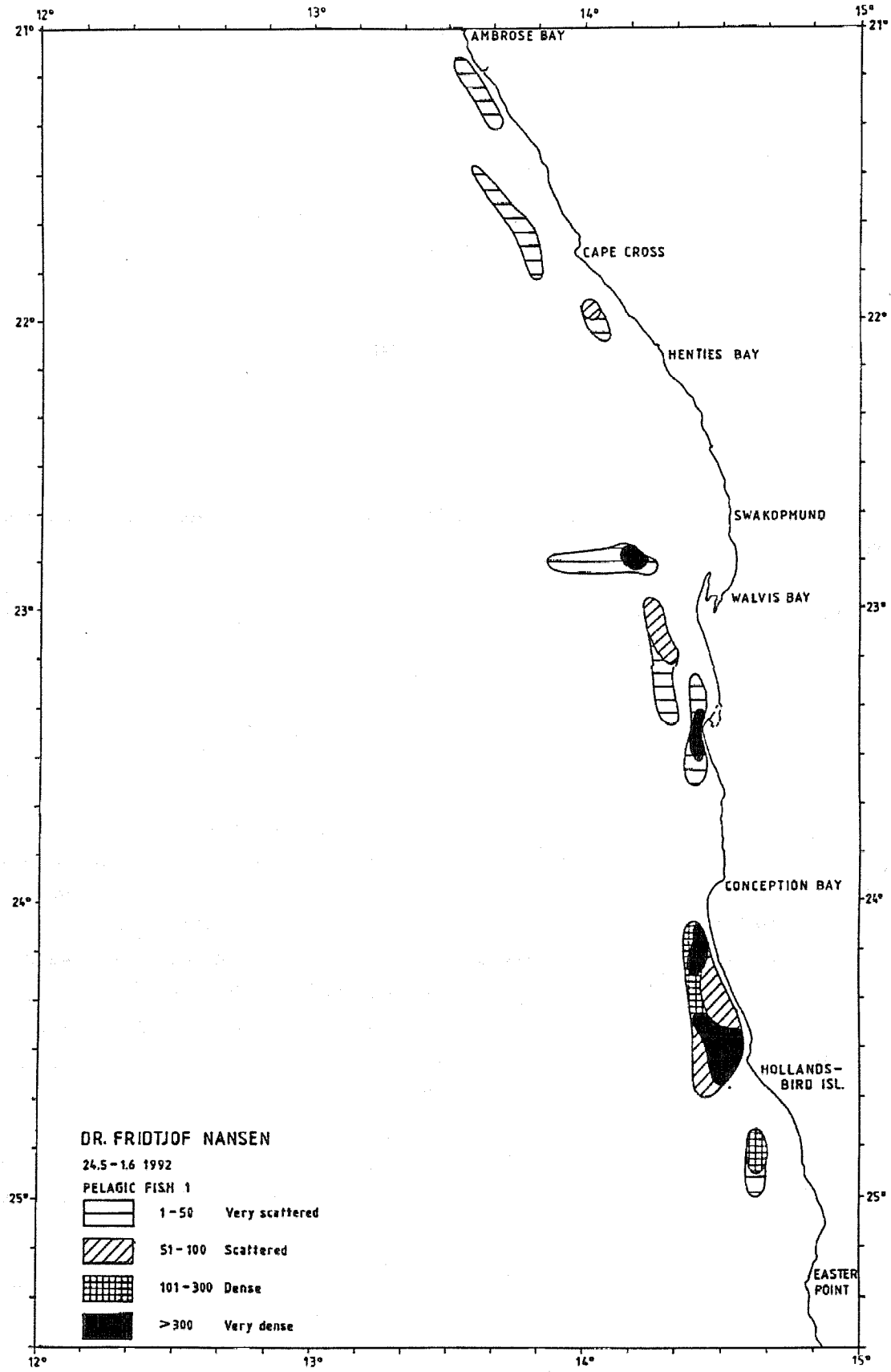


Figure 4a. Distribution of pelagic fish type 1, clupeids and anchovy. Easter Point to Ambrose Bay.

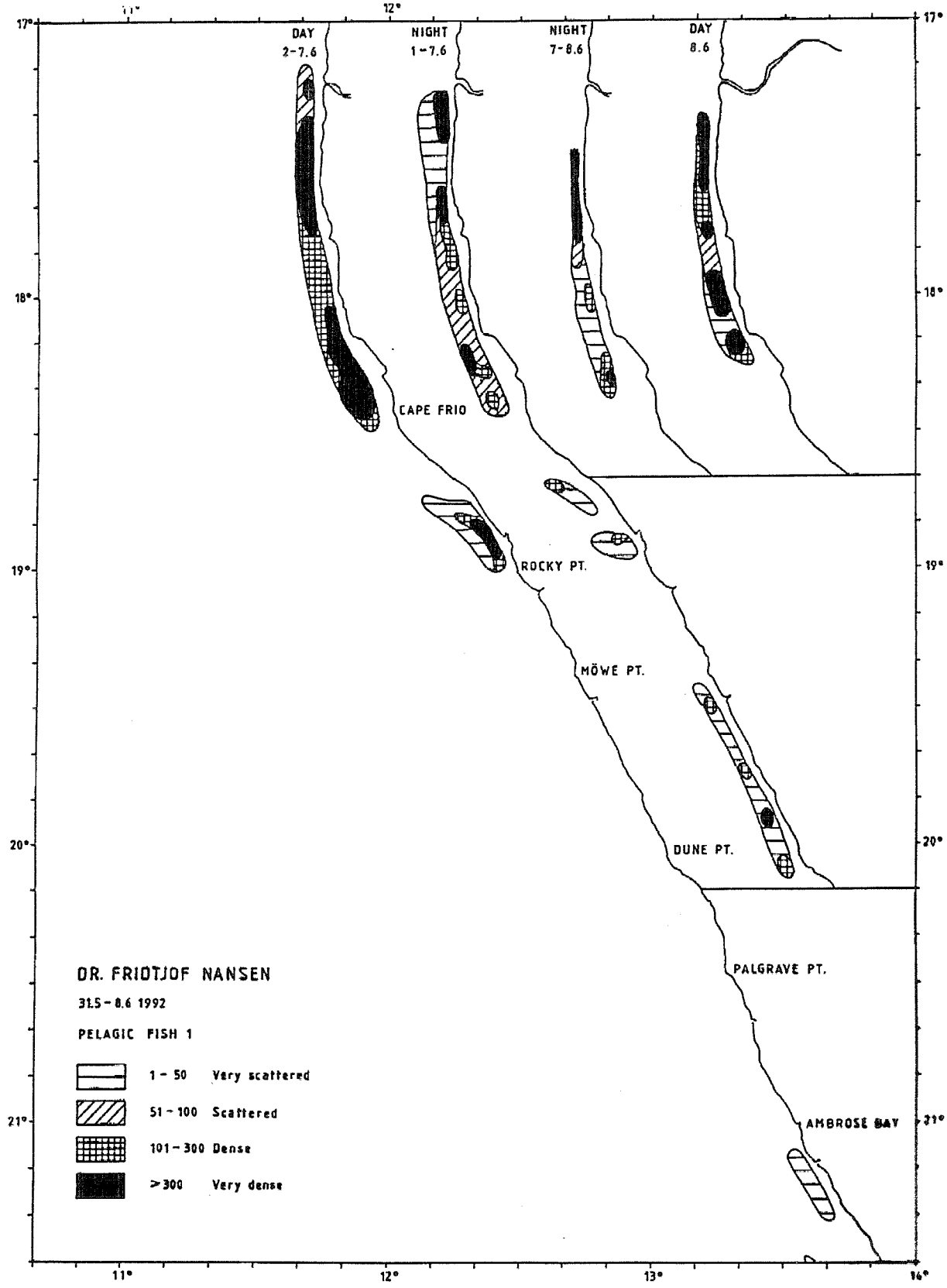


Figure 4b. Distribution of pelagic fish type 1, clupeids and anchovy. Ambrose Bay to Cunene River.

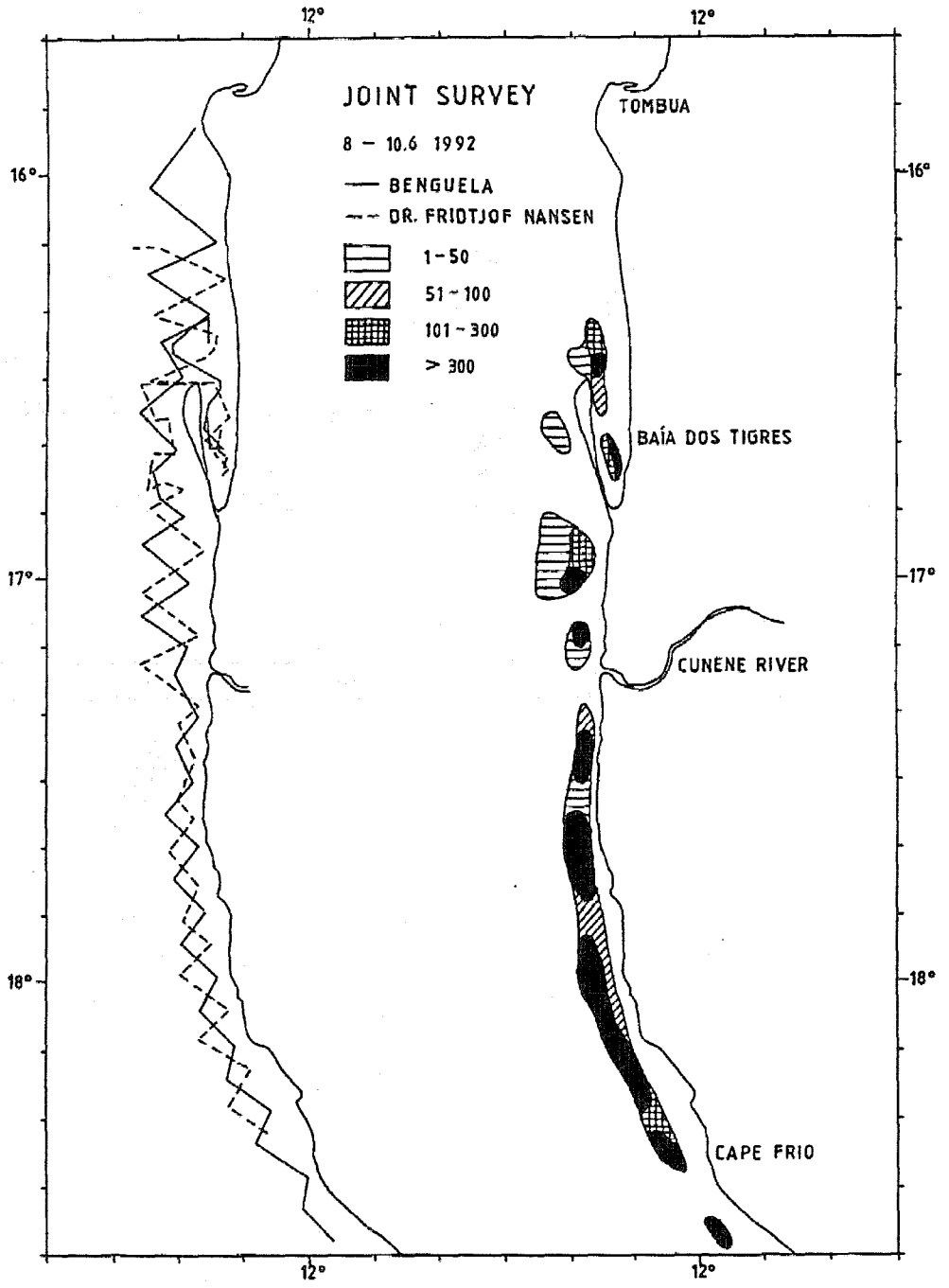


Figure 4c. Distribution of pelagic fish type 1, clupeids and anchovy, joint survey. Cape Frio to Tombua.

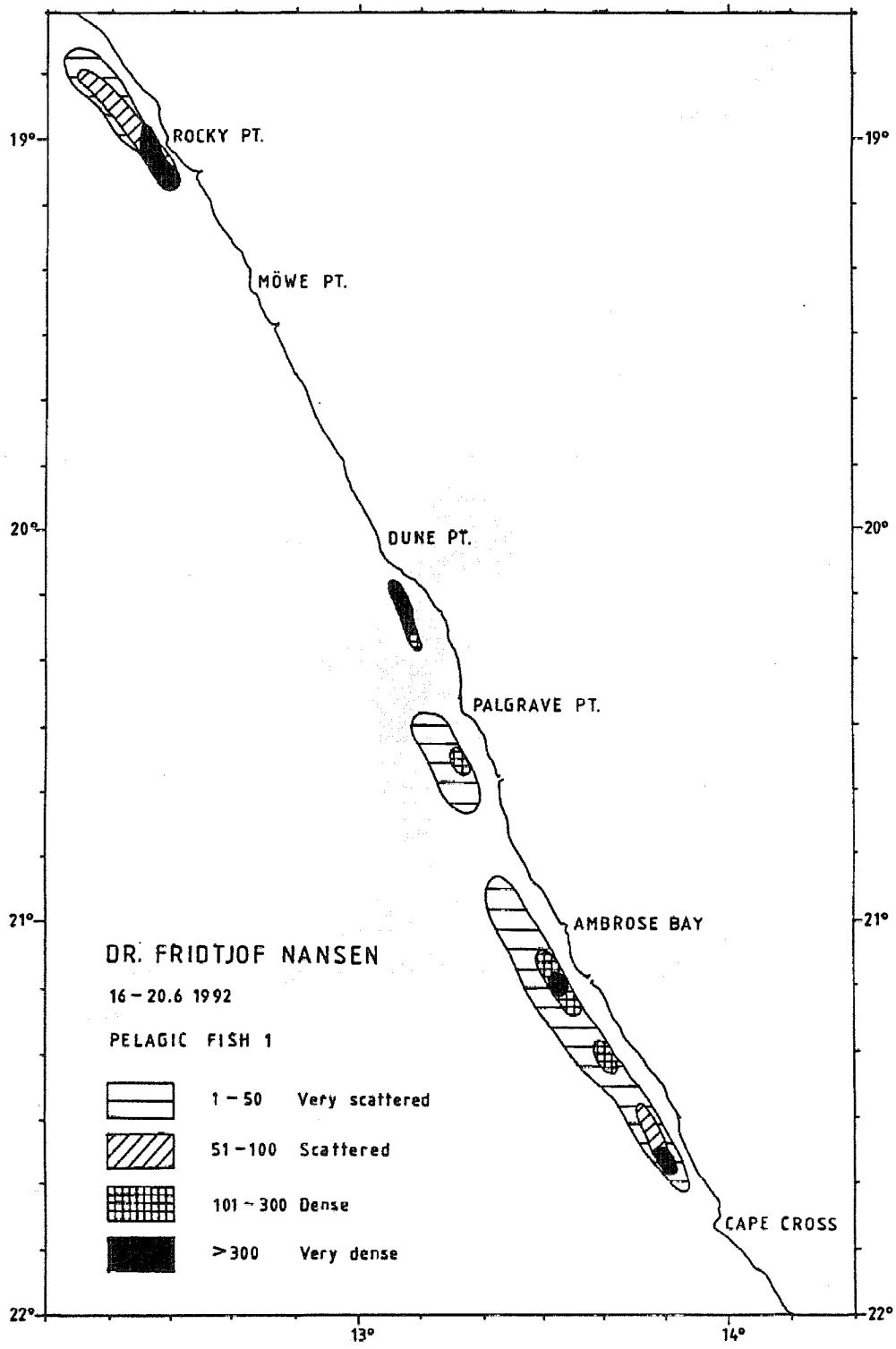


Figure 4d. Distribution of pelagic fish type 1, clupeids and anchovy. Cape Cross to Rocky Point.

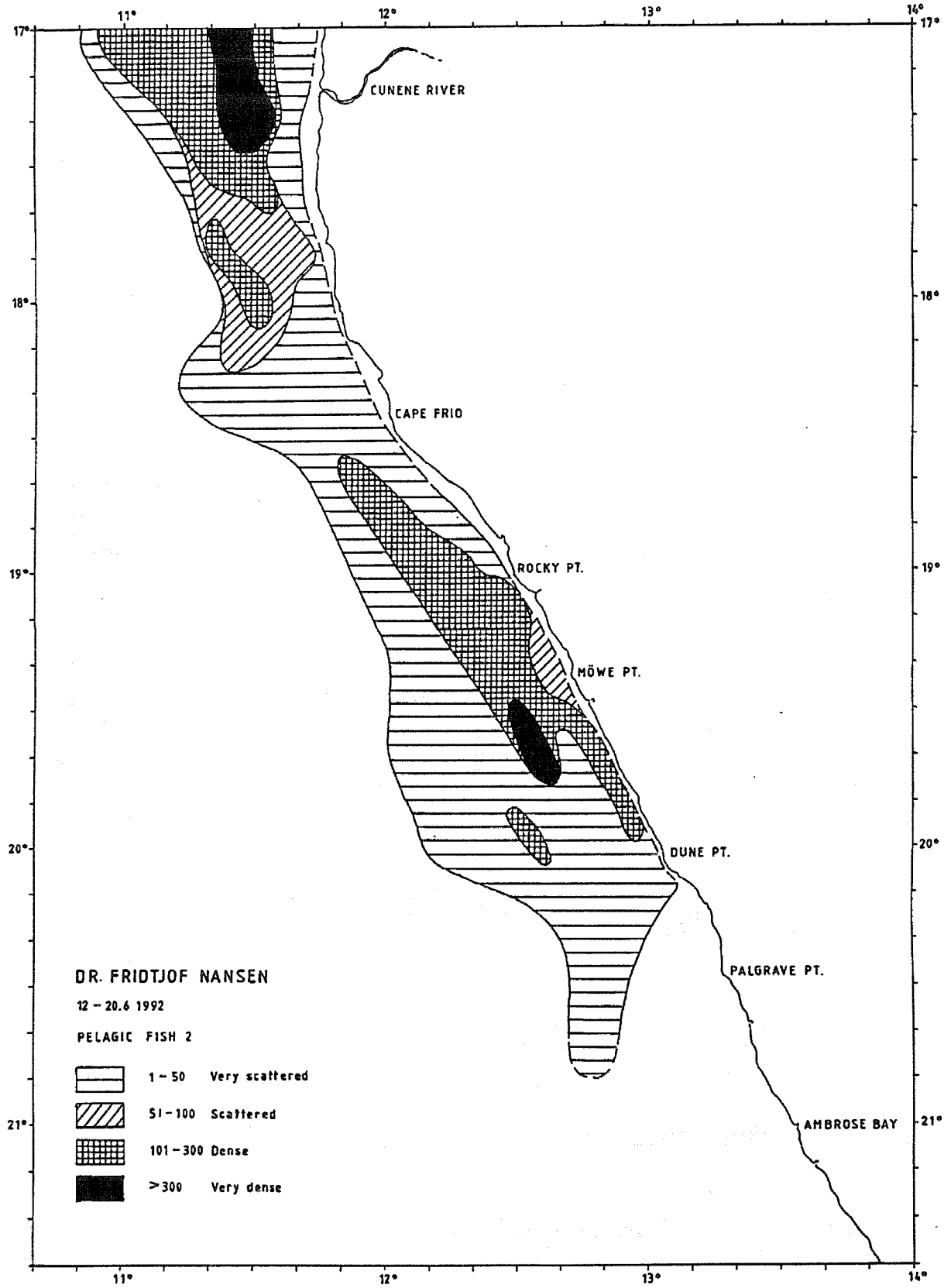


Figure 5a. Distribution of pelagic fish type 2, horse mackerel. Ambrose Bay to Cunene River.

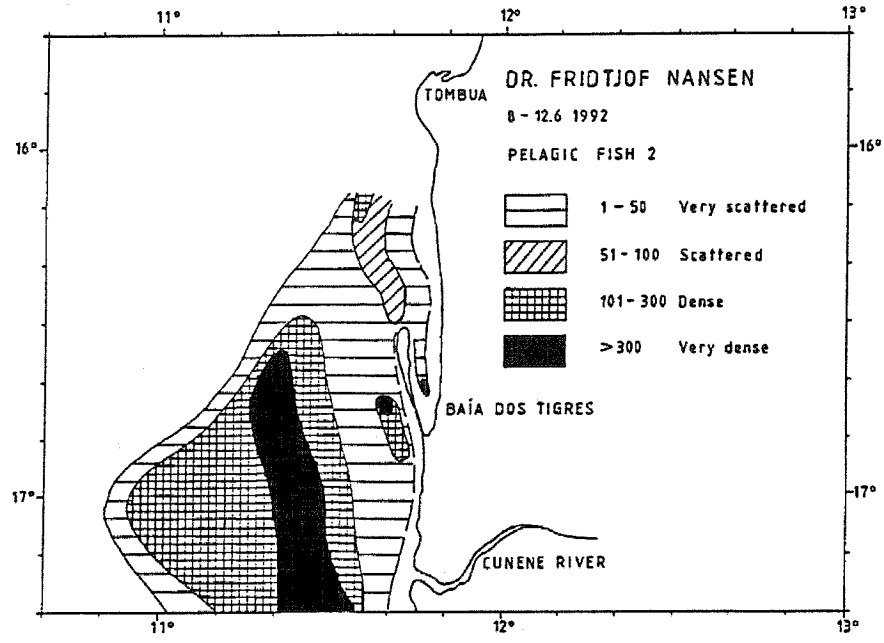


Figure 5b. Distribution of pelagic fish type 2, horse mackerel. Cunene River to Tombua.

3.1.1 Dolphin Head to Ambrose Bay

Dispersed shoals of anchovy were recorded off Cape Cross (21°10'-22°00'), in depths between 30m and 120m, off Walvis Bay (22°50'-23°40') and north of Hollands Bird Island (24°00'-24°40'). These shoals consisted of fish with modal length of 8cm to 10cm. Few other pelagic fish of commercial value were found in the area, except for large snoek *Thyrsites atun* which were caught in some of the trawls throughout this region. As in previous surveys of this region, most of the reflected echo intensity was allocated to layers of plankton, goby and lantern fish.

3.1.2 Ambrose Bay to Cunene River

Some few and widely dispersed shoals of pilchard between Möwe Point (19°30') and Rocky Point (19°00') were recorded on the way north and later re-surveyed by R/V "Benguela". One of the shoals was rather big, and had been fished on by purse seiners for several days. The fishermen reported that the shoal was moving in a southward direction. At the end of the survey, this fish was found distributed off Ambrose Bay (21°00). This fish was fairly large with a modal size of 23cm. A small area of scattered pilchard shoals was found in shallow water (20m-50m) north of Rocky Point (18°50') during the first coverage. These fish, which had a modal length of 20 cm seemed also to have moved south when the area was re-surveyed some days later. A large shoal of fish of similar size was found at the end of the survey between 20°10' and 20°15' and considered to be the same fish. Pelagic- 1 type shoals of variable size and density were recorded between Cape Frio (18°30') and the

Cunene River, along the coast in depths between 20m and 80m. Many of these shoals were found to be dense and large during the first northward coverage. When the area was re-surveyed in the subsequent days however, considerably less fish was found. No definite explanation of the disappearance of the fish can be given (Annex V). The shoals consisted of pilchard mainly with modal lengths of 11cm, 15cm and 20cm, but were mixed with round herring and anchovy. This fish distribution continued into Angolan waters.

Juvenile horse mackerel with a modal length of 9cm occurred along the coast from Dune Point (20°10') to the Cunene River. Transects of 10nm and 20nm between the course line determined the distribution of horse mackerel in offshore waters. Horse mackerel were found beyond the 100 m depth isoline mostly to the north of Palgrave Point. In this area, the distribution extended to some 40 nm from the coast. In the offshore area south of Rocky Point the horse mackerel often occurred in layers of plankton and other small fish, and could only be identified by trawling.

The size of offshore horse mackerel tended to be largest in the northern part of the distribution area. In Angolan waters the horse mackerel had a size distribution with modal peak at 24 cm, whereas samples collected in Namibian waters consisted of fish with a modal size of 16cm.

3.1.3 Cunene River to Tombua

The distribution of dispersed shoals of pilchard, anchovy and round herring found south of the Cunene River extended into Angolan waters, north to 16°40'. Another distribution area of pilchard was found north of Baia dos Tigres, in inshore waters between 16°20' and 16°30'. This fish was large with a modal length of 25cm.

The Cape horse mackerel (*Trachurus capensis*) was dominant in offshore waters north of the Cunene up to 16°30' whereas the Cunene horse mackerel (*Trachurus trecae*) dominated the catches further north.

3.2 ABUNDANCE OF PELAGIC FISH

The biomass estimates are based on the acoustic integration technique, similar to that used in previous assessments of the same stocks. The North Sea herring target strength was used for all type-1 pelagic fish:

$$TS = 20 \log L - 72$$

Using a condition factor of .78, normalised to a 17 cm fish, the biomass (in tonnes) was calculated by the formula:

$$\text{Biomass} = A * I * 0.167 * L/17$$

where A = Area (nm^2)
I = Integrator value
L = Length of fish

This is the same formula as used in the DR. "FRIDTJOF NANSEN" December 1991 survey, and reduces the biomass estimates by some 25% compared to the biomass estimates of type 1 fish given in previous reports.

The biomass estimates, which are supposed to be the most reliable assessment of the state of the stocks, are shown in Table 1.

Owing to the uncertainty of the most appropriate horse mackerel target strength to be used during acoustic biomass estimation, a biomass range is presented. The range corresponds to the values of target strength for the North Sea Herring (lower limit) and the TS proposed by Svellingen (upper limit) for horse mackerel (see "DR. FRIDTJOF NANSEN" Cruise Report No.1). A condition factor of 0.85 is used, which reduces the biomass estimate by 15% compared to those given in previous reports. Table 2 shows the estimates of the present survey.

3.2.1 Pilchard, anchovy and round herring

Several areas were surveyed more than once, both during night-time and during the day. At night the fish often ascended to surface layers and above the transducer range. These data could not be used for assessment purposes. The biomass estimates of the various coverages are listed and discussed in Annex V.

The estimates of 70 000 tonnes, mostly anchovy, of the area Easter Point- Walvis Bay was based on combined intergrater values during day-time from the southward and northward coverages of this area during the first week of the cruise. Another occurrence of anchovy was recorded north of Cape Cross and estimated at 5 000 tonnes.

On the northward coverage in the first week of June a shoal of large pilchard was recorded at Dune Point. Purse-seiners which were fishing in the area reported that the shoal was moving southward. The biomass was estimated as 23 000 tonnes, but was likely an underestimate as the fishing boat disrupted the survey. Dispersed shoals of large pilchard were recorded at Ambrose Bay on the southward coverage at the end of the cruise. This is assumed to be what was left of the same fish. The biomass estimate of 20 000 tonnes obtained in the Ambrose area is therefore used in the stock assessment.

A large shoal of medium size pilchard was recorded south of Dune Point on the southward coverage at the end of the cruise. The shoal was covered by a dense grid, and a biomass estimate of 110 000 tonnes was obtained and is included in the stock assessment. Pilchard of the same size was recorded north of Rocky Point some two weeks earlier. This fish, measured to 23 000 tonnes, was not found when passing the area on the last southward coverage and may be included in the biomass estimate off Dune Point. The fish recorded off Rocky Point is therefore excluded in the assessment.

Most of the type-1 pelagic fish was found north of Cape Frio, between 18°40' and the Cunene River. This area was therefore extensively covered. The first two coverages, one done during day-time and the other during night, yielded biomass estimates of 855 000 and 131 000 tonnes respectively. The low estimate obtained during night-time was obviously due to surface schooling of the fish. During day-time the fish occurred in dense shoals of very variable size, the two largest ones counting for some 1/3 of the total estimate. This suggests that the variance of the estimate is high. Two days later the area was re-surveyed using a combined survey grid by the two research vessels. This combined survey gave a biomass estimate of 500 000 tonnes. The latter estimate is regarded as the most accurate estimate and is used in the assessment (see Annex V).

Another 50 000 tonnes, mostly large pilchard were found in Angolan waters. The estimates allocated to species are shown in Table 1.

Table 1 Species composition and biomass estimates (in tonnes) of pelagic type-1 fish by area.

Area	Pilchard	Anchovy	Round herring	Total
Baia dos Tigres-Cunene River	45 000	5 000		50 000
Cunene River-Cape Frio	400 000	50 000	50 000	500 000
Dune Point	110 000			110 000
Ambrose Bay	20 000			
Cape Cross		5 000		5 000
Easter Point-Walvis Bay		70 000		70 000
Total	570 000	125 000	50 000	745 000
Total Namibia	530 000	125 000	50 000	705 000

3.2.2 Horse mackerel

Very little horse mackerel was found in the surveyed area south of Ambrose Bay, while northwards some 2.1 to 4.2 million tonnes were recorded. The horse mackerel in the inshore region constituted approximately 10% of the total, with some 0.2 to 0.4 million tonnes. The

estimate for the offshore stocks is probably underestimated due to bad weather in Angolan waters, surface schooling at night and "hiding" in the "dead zone" at the bottom at daytime.

Table 2 Biomass estimates of pelagic Cape horse mackerel. Reported in millions of tonnes.

Dolphin Head - Ambrose Bay	Ambrose Bay - Cunene River	Cunene River - Baia dos Tigres	Total
-	1.4 - 2.8	0.7 - 1.4	2.1 - 4.2

4 CONCLUDING REMARKS

The text table below summarize the biomass estimates of Namibian pilchard, anchovy, round herring and horse mackerel during the last two years.

Survey	Clupeiforms	Horse mackerel
June 1990	730 000	1 700 000
March 1991	811 000	1 300 000
November 1991	1 045 000	1 400 000
June 1992	755 000	2 100 000

Nb. A Clupeiform fish condition factor of 0.78 has been used during the last two surveys. The estimates reported in June 1990 and March 1991 have been reduced accordingly.

A horse mackerel condtion factor of 0.85 has been used for the June 1992 survey and the previous estimates have been reduced accordingly.

The total Clupeiform biomass estimate obtained during this cruise is lower than that obtained in November 1991, but similar to estimates made during previous surveys. These differences might be due to estimate variability rather than changes in the stock level. In previous years most of the Clupeiform fish have been distributed in the region south of Cape Frio, whereas at present there is a more northerly distribution. This might, however, change in the near future.

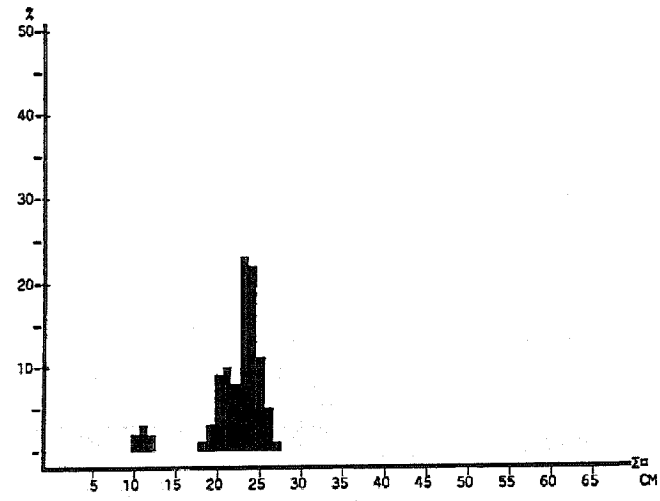
The proportion of juvenile horse mackerel in the total stock was much higher in 1991 than this year and accounted for 0.4 million tonnes compared to 0.2 million tonnes this year. This is consistent with the present increase in the adult stock compared to previous years.

Previously noted problems, such as the occurrence of widely dispersed shoals which require tightly spaced transects to ensure adequate coverage of such regions, were encountered north of Cape Frio, where the bulk of the stocks were distributed. These shoals consisted of adult pilchard and although the present coverage was reasonably spaced, the dispersed schooling in the upper 20m surface layer may have led to a substantial underestimate of the mature stock.

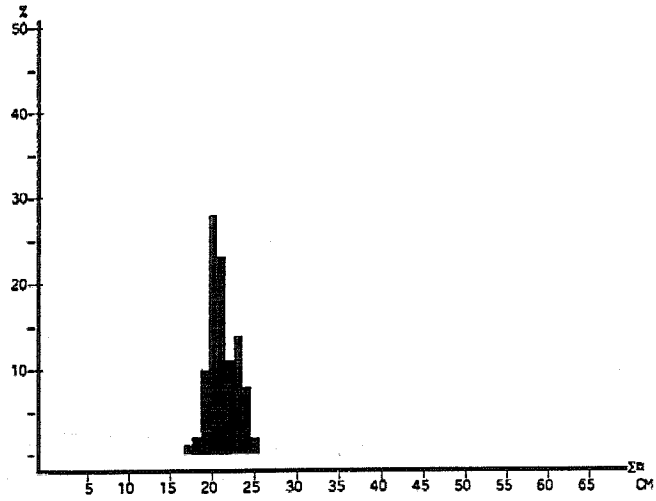
Determining species composition of pelagic type-1 fish is difficult solely from the echo recordings and is mostly based on trawl samples. This is a possible source of error, related to differences in the catchability of the species and to the frequency of trawling. It is, however, assumed that this source of error is of minor importance for the pilchard estimate because the large shoals of pilchard which count for the bulk of the pilchard estimate are easy to recognize and are normally unmixed.

Previous surveys have reported that fish migrated at night to surface waters above transducer level, and thus were not available to be surveyed. This behavioral trend was detected in all the target species during this survey and has probably caused an underestimation of the size of both the stocks of pilchard and the horse mackerel in offshore waters.

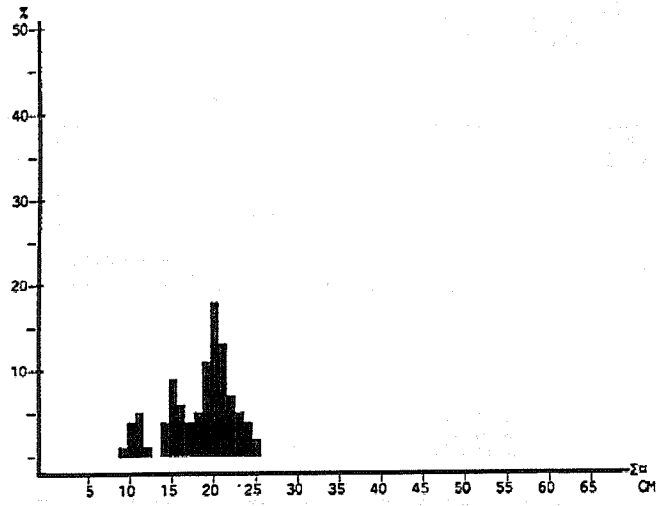
ANNEX I. DOLPHIN HEAD - TOMBUA. LENGTH DISTRIBUTIONS OF MAIN SPECIES.



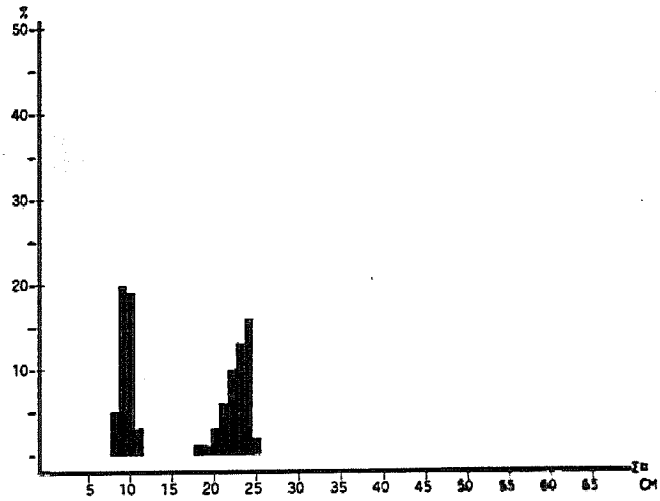
Sardinops ocellata
Cunene River - Tombua
Pooled sample (simple adding).
MEAN LENGTH = 22.04cm N= 298



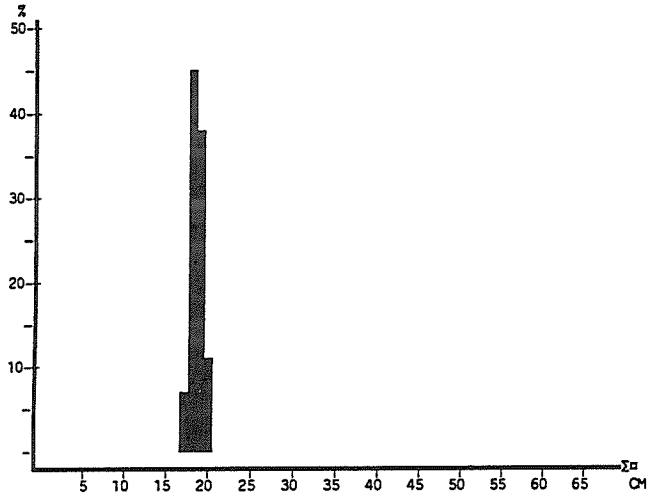
Sardinops ocellata
Ambrose Bay - Cape Frio
Pooled sample (simple adding).
MEAN LENGTH = 21.04cm N= 573



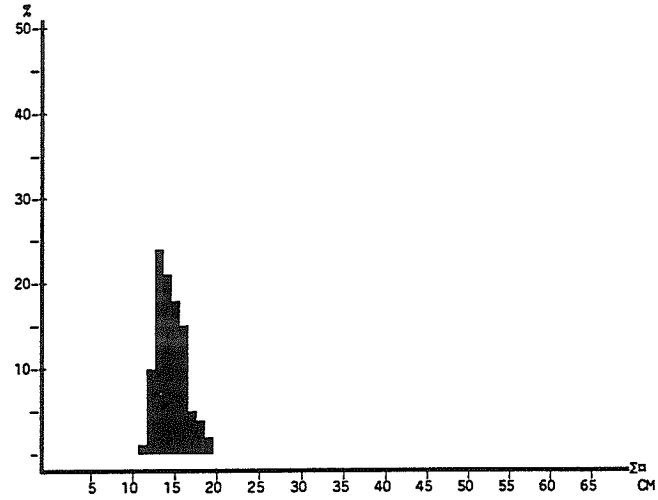
Sardinops ocellata
Cape Frio - Cunene River
Pooled sample (simple adding).
MEAN LENGTH = 18.30cm N= 1808



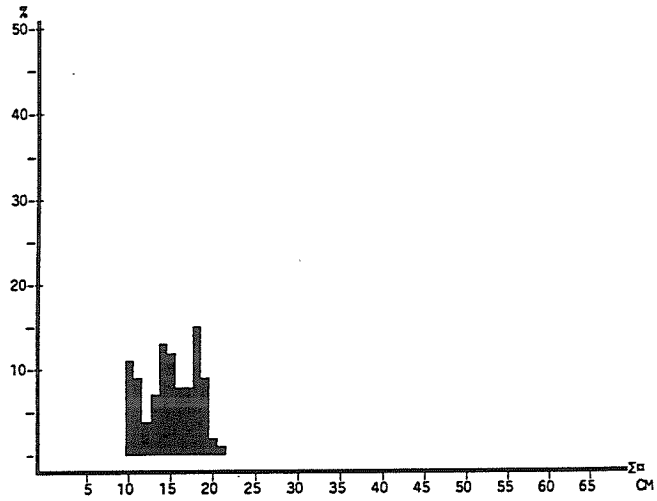
Sardinops ocellata
Easter Point - Ambrose Bay
Pooled sample (simple adding).
MEAN LENGTH = 16.19cm N= 283



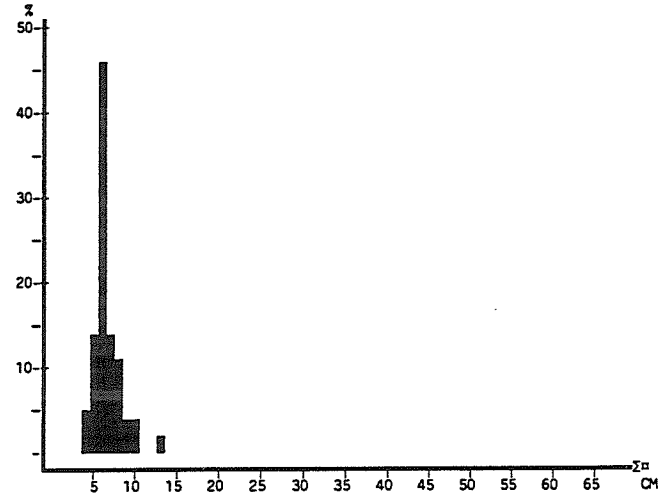
Etrumeus whiteheadi
Cunene River - Tombua
Pooled sample (simple adding).
MEAN LENGTH = 18.53cm N= 76



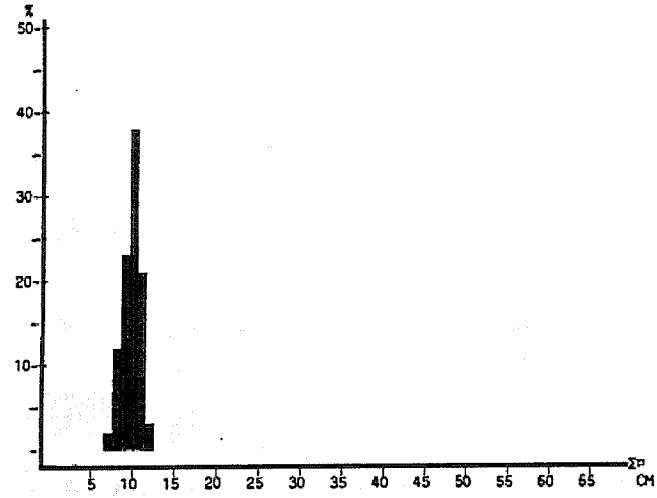
Etrumeus whiteheadi
Ambrose Bay - Cape Frio
Pooled sample (simple adding).
MEAN LENGTH = 14.48cm N= 469



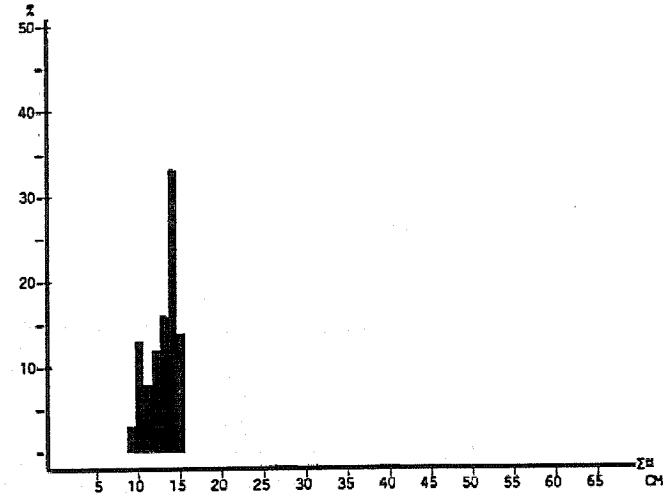
Etrumeus whiteheadi
Cape Frio - Cunene River
Pooled sample (simple adding).
MEAN LENGTH = 14.95cm N= 1009



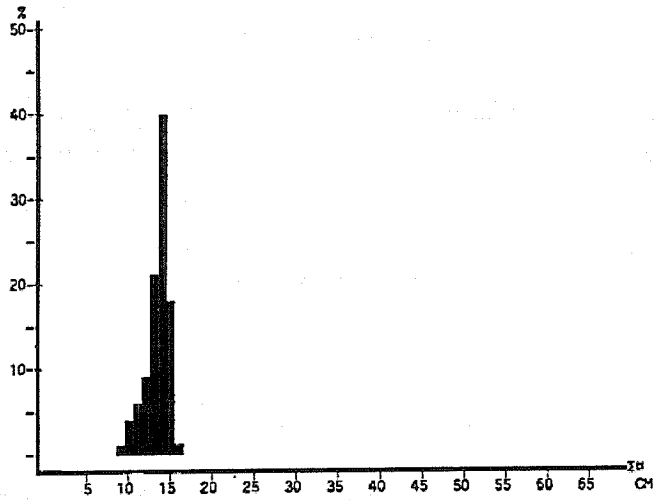
Etrumeus whiteheadi
Easter Point - Ambrose Bay
Pooled sample (simple adding).
MEAN LENGTH = 6.48cm N= 56



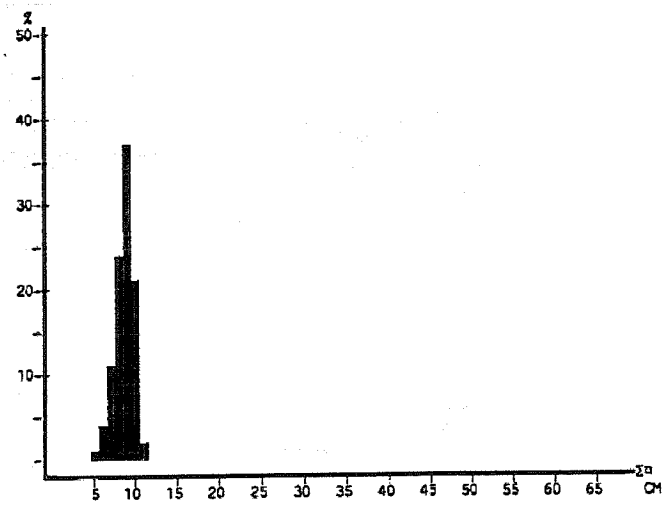
Engraulis capensis
Cunene River - Tombua
Pooled sample (simple adding).
MEAN LENGTH = 9.75cm N= 260



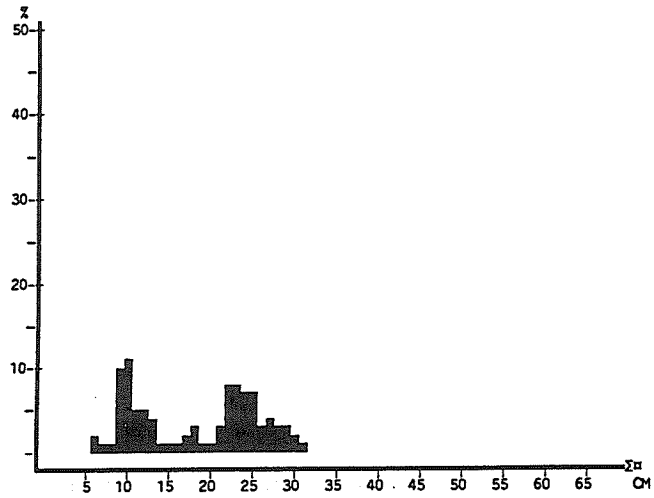
Engraulis capensis
Ambrose Bay - Cape Frio
Pooled sample (simple adding).
MEAN LENGTH = 12.82cm N= 792



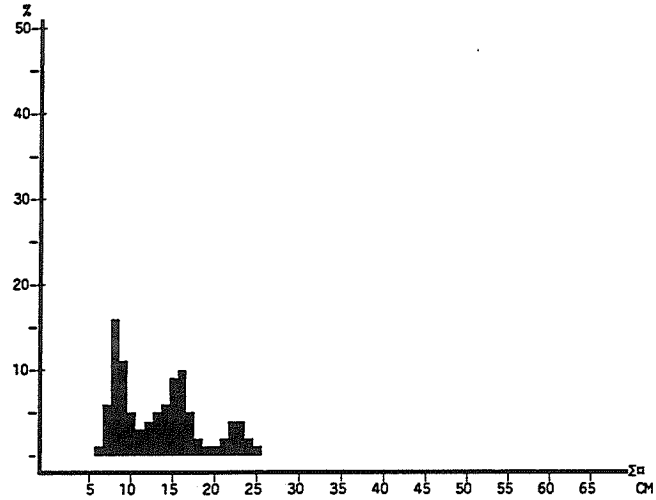
Engraulis capensis
Cape Frio - Cunene River
Pooled sample (simple adding).
MEAN LENGTH = 13.42cm N= 1663



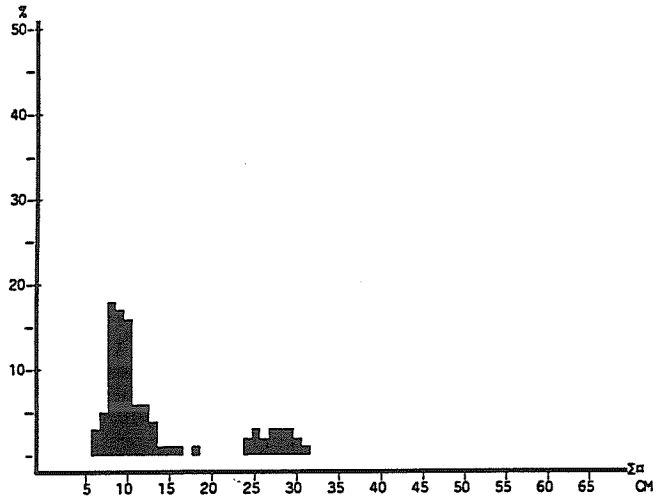
Engraulis capensis
Easter Point - Ambrose Bay
Pooled sample (simple adding).
MEAN LENGTH = 8.65cm N= 798



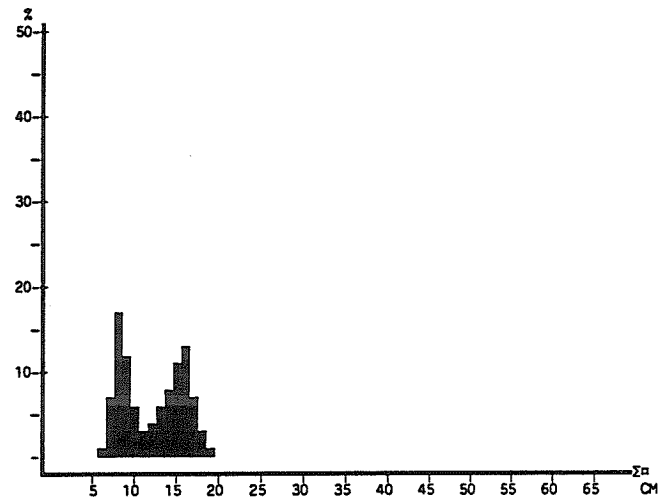
Trachurus capensis
Cunene River - Tombua, TOTAL
Pooled sample (simple adding).
MEAN LENGTH = 18.10cm N= 544



Trachurus capensis
Ambrose Bay- Cunene R. TOTAL
Pooled sample (simple adding).
MEAN LENGTH = 13.41cm N= 4476



Trachurus capensis
Cunene River - Tombua, 0-100m
Pooled sample (simple adding).
MEAN LENGTH = 13.29cm N= 545



Trachurus capensis
Ambrose Bay- Cunene R. 0-100m
Pooled sample (simple adding).
MEAN LENGTH = 12.18cm N= 3587

ANNEX II RECORDS OF FISHING STATIONS

PROJECT STATION:1226

DATE:24/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2304
start stop Long E 1418
TIME :20:41:00 20:51:00 dur. : 10min Purpose code: 1
LOG :6630.00 6630.60 dist.:0.60nm Area code : 2
FDEPTH: 10 10 GearCond.code:
BDEPTH: 78 82 Validity code:
Towing dir: 330 Wire out: 150 m Speed: 34 Kn*10

Sorted: Kg Total catch: 0.51 CATCH/HOUR: 3.06

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	2.40	768	78.43	482
Etrumeus whiteheadi	0.60	324	19.61	483
Sufflogobius bibarbatus	0.06	132	1.96	485
Sardinops ocellata	0.00	6		484
Total	3.06		100.00	

PROJECT STATION:1227

DATE:25/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2338
start stop Long E 1418
TIME :01:48:00 02:08:00 dur. : 20min Purpose code: 1
LOG :6673.30 6674.40 dist.:1.10nm Area code : 2
FDEPTH: 20 20 GearCond.code:
BDEPTH: 93 93 Validity code:
Towing dir: 15 Wire out: 75 m Speed: 35 kn*10

Sorted: 2 Kg Total catch: 2.40 CATCH/HOUR: 7.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	7.20	6192	100.00	
Total	7.20		100.00	

PROJECT STATION:1228

DATE:25/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2425
start stop Long E 1426
TIME :09:30:00 09:55:00 dur. : 25min Purpose code: 1
LOG :6735.40 6737.30 dist.:2.00nm Area code : 2
FDEPTH: 30 30 GearCond.code:
BDEPTH: 57 64 Validity code:
Towing dir: 330 Wire out: 150 m Speed: 43 kn*10

Sorted: Kg Total catch: 0.20 CATCH/HOUR: 0.48

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	0.48	53	100.00	487
Sufflogobius bibarbatus	0.00	2		490
Etrumeus whiteheadi	0.00	5		489
Engraulis capensis	0.00	29		488
Trachurus capensis	0.00	7		486
Total	0.48		100.00	

PROJECT STATION:1229

DATE:26/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2550
start stop Long E 1414
TIME :02:47:00 03:06:00 dur. : 19min Purpose code: 1
LOG :6874.20 6875.30 dist.:1.30nm Area code : 1
FDEPTH: 20 20 GearCond.code:
BDEPTH: 221 219 Validity code:
Towing dir: 360 Wire out: 75 m Speed: 39 kn*10

Sorted: 10 Kg Total catch: 4.80 CATCH/HOUR: 15.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
MYCTOPHIDAE	15.16	10383	100.00	
Total	15.16		100.00	

PROJECT STATION:1230

DATE:26/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2549
start stop Long E 1345
TIME :08:28:00 09:13:00 dur. : 45min Purpose code: 3
LOG :6911.90 6913.40 dist.:2.40nm Area code : 2
FDEPTH: 383 388 GearCond.code:
BDEPTH: 383 388 Validity code:
Towing dir: 337 Wire out:1150 m Speed: 31 kn*10

Sorted: 91 Kg Total catch: 1040.48 CATCH/HOUR: 1387.31

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius paradoxus, female	976.80	1980	70.41	453
Merluccius paradoxus, male	249.33	352	17.97	452
Merluccius capensis, female	68.93	29	4.97	451
Lophius upsicephalus	19.33	8	1.39	
Coelorinchus fasciatus	16.13	132	1.16	
Nezumia leonis	14.67	308	1.06	
Todarodes sagittatus	13.33	25	0.96	
Genypterus capensis	7.87	3	0.57	
Helicolenus dactylopterus	7.33	44	0.53	
Raja confundens	5.07	16	0.37	
Laemonema laureysi	4.40	147	0.32	
Galeus polli	2.93	15	0.21	
PORTUNIDAE	1.17	29	0.08	
Total	1387.29		100.00	

PROJECT STATION:1231

DATE:26/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2518
start stop Long E 1443
TIME :21:00:00 21:20:00 dur. : 20min Purpose code: 1
LOG :7006.00 7006.90 dist.:0.90nm Area code : 1
FDEPTH: 5 5 GearCond.code:
BDEPTH: 45 45 Validity code:
Towing dir: 360 Wire out: 150 m Speed: 29 kn*10

Sorted: Kg Total catch: 0.78 CATCH/HOUR: 2.34

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Chelidonichthys capensis	1.80	6	76.92	
Sufflogobius bibarbatus	0.30	45	12.82	
Etrumeus whiteheadi	0.24	3	10.26	
Merluccius paradoxus, juvenile	0.00	6		
Trachurus, Juveniles	0.00	6		
Total	2.34		100.00	

PROJECT STATION:1232

DATE:26/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2609
start stop Long E 1445
TIME :22:25:00 22:35:00 dur. : 10min Purpose code: 1
LOG :7014.20 7014.60 dist.:0.60nm Area code : 1
FDEPTH: 5 5 GearCond.code: 8
BDEPTH: 43 41 Validity code: 9
Towing dir: 14 Wire out: 150 m Speed: 32 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus, Juveniles	0.00	6		
Total				

PROJECT STATION:1233

DATE:27/ 5/92 GEAR TYPE: BT No:1 POSITION:Lat S 2409
start stop Long E 1427
TIME :11:35:00 11:45:00 dur. : 10min Purpose code: 1
LOG :7096.60 7096.90 dist.:0.40nm Area code : 2
FDEPTH: 20 19 GearCond.code:
BDEPTH: 20 19 Validity code:
Towing dir: 13 Wire out: 150 m Speed: 28 kn*10

Sorted: 11 Kg Total catch: 181.60 CATCH/HOUR: 1089.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	840.00	300720	77.09	
Engraulis capensis	150.00	25500	13.77	454
Callorhinchus capensis	31.80	18	2.92	
Trachurus capensis	30.00	3000	2.75	455
Chelidonichthys capensis	16.80	30	1.54	
Shrimps, small, non comm.	15.00	14700	1.38	
Sardinops ocellata	3.00	300	0.28	
Etrumeus whiteheadi	3.00	600	0.28	
Total	1089.60		100.01	

PROJECT STATION:1234

DATE:27/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2326
start stop Long E 1425
TIME :18:57:00 19:17:00 dur. : 20min Purpose code: 1
LOG :7161.30 7162.00 dist.:0.70nm Area code : 2
FDEPTH: 5 5 GearCond.code:
BDEPTH: 32 34 Validity code:
Towing dir: 10 Wire out: 100 m Speed: 30 kn*10

Sorted: Kg Total catch: 4.26 CATCH/HOUR: 12.78

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	12.60	5373	98.59	456
Etrumeus whiteheadi	0.18	135	1.41	
Sufflogobius bibarbatus	0.00	108		
Total	12.78		100.00	

PROJECT STATION:1235

DATE:27/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2313
start stop Long E 1412
TIME :23:59:00 00:16:00 dur. : 17min Purpose code: 1
LOG :7202.50 7203.80 dist.:1.21nm Area code : 2
FDEPTH: 20 20 GearCond.code:
BDEPTH: 111 105 Validity code:
Towing dir: 70 Wire out: 150 m Speed: 43 kn*10

Sorted: 1 Kg Total catch: 1.05 CATCH/HOUR: 3.71

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	3.53		95.15	
Engraulis capensis	0.18	35	4.85	
Total	3.71		100.00	

PROJECT STATION:1236

DATE:28/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2310
start stop Long E 1323
TIME :06:20:00 06:35:00 dur. : 15min Purpose code: 1
LOG :7259.00 7259.70 dist.:0.70nm Area code : 2
FDEPTH: 180 170 GearCond.code:
BDEPTH: 319 313 Validity code:
Towing dir: 90 Wire out: 400 m Speed: 32 kn*10

Sorted: Kg Total catch: 0.30 CATCH/HOUR: 1.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
MYCTOPHIDAE	1.20		100.00	
Total	1.20		100.00	

PROJECT STATION:1237

DATE:28/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2250
start stop Long E 1328
TIME :11:55:00 12:15:00 dur. : 20min Purpose code: 1
LOG :7310.10 7311.40 dist.:1.32nm Area code : 2
FDEPTH: 85 85 GearCond.code:
BDEPTH: 255 265 Validity code:
Towing dir: 270 Wire out: 250 m Speed: 38 kn*10

Sorted: 1 Kg Total catch: 1.00 CATCH/HOUR: 3.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Maurolicus muelleri	3.00		100.00	
Total	3.00		100.00	

PROJECT STATION:1238

DATE:28/ 5/92 GEAR TYPE: PT No:1 POSITION:Lat S 2249
start stop Long E 1410
TIME :17:12:00 17:32:00 dur. : 20min Purpose code: 1
LOG :7357.70 7359.20 dist.:1.50nm Area code : 2
FDEPTH: 20 20 GearCond.code:
BDEPTH: 105 110 Validity code:
Towing dir: 255 Wire out: 150 m Speed: 45 kn*10

Sorted: 488 Kg Total catch: 488.60 CATCH/HOUR: 1465.80

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Thyrsites atun	1464.30	396	99.90	457
Engraulis capensis	1.50		0.10	
Total	1465.80		100.00	

PROJECT STATION:1239

DATE:28/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2250
start stop Long E 1410
TIME :20:14:00 20:49:00 dur. : 35min Purpose code: 1
LOG :7382.10 7383.90 dist.:1.80nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 105 103 Validity code:
Towing dir: 360 Wire out: 150 m Speed: 30 kn*10

Sorted: 2 Kg Total catch: 19.20 CATCH/HOUR: 32.91

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	32.91	5784	100.00	458
Argonauta argo	0.00	10		
Sufflogobius bibarbatus	0.00	312		
Sufflogobius bibarbatus	0.00	312		
Total	32.91		100.00	

PROJECT STATION:1240

DATE:31/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2154
start stop Long E 1359
TIME :19:17:00 19:27:00 dur. : 10min Purpose code: 1
LOG :7757.40 7757.90 dist.:0.50nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 32 32 Validity code:
Towing dir: 328 Wire out: 150 m Speed: 30 kn*10

Sorted: Kg Total catch: 1.60 CATCH/HOUR: 9.60

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	9.00	1638	93.75	460
Sardinops ocellata	0.60	72	6.25	459
Argonauta argo	0.00	6		
Todaropsis eblanae	0.00	36		
Etrumeus whiteheadi	0.00	12		
Total	9.60		100.00	

PROJECT STATION:1241

DATE:31/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2140
start stop Long E 1352
TIME :21:33:00 21:53:00 dur. : 20min Purpose code: 1
LOG :7776.80 7777.60 dist.:0.80nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 25 33 Validity code:
Towing dir: 270 Wire out: 150 m Speed: 28 kn*10

Sorted: Kg Total catch: 0.30 CATCH/HOUR: 0.90

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Thyrsites atun	0.60	6	66.67	
Trachurus, Juveniles	0.30	15	33.33	
Todaropsis eblanae	0.00	24		
Total	0.90		100.00	

PROJECT STATION:1242

DATE:31/ 5/92 GEAR TYPE: PT No: POSITION:Lat S 2130
start stop Long E 1345
TIME :23:48:00 00:08:00 dur. : 20min Purpose code: 1
LOG :7795.40 7796.30 dist.:0.90nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 38 43 Validity code:
Towing dir: 270 Wire out: 150 m Speed: 27 kn*10

Sorted: Kg Total catch: 0.07 CATCH/HOUR: 0.21

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	0.09	15	42.86	461
Argonauta argo	0.06	3	28.57	
Todarodes sagittatus	0.03	6	14.29	
Sufflogobius bibarbatus	0.03	3	14.29	
Total	0.21		100.01	

PROJECT STATION:1243

DATE: 1/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 2120
start stop Long E 1338
TIME :02:34:00 02:54:00 dur. : 20min Purpose code: 1
LOG :7818.50 7819.40 dist.:1.18nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 41 52 Validity code:
Towing dir: 273 Wire out: 150 m Speed: 37 kn*10

Sorted: Kg Total catch: 0.10 CATCH/HOUR: 0.30

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	0.30	93	100.00	462
Trachurus capensis	0.00	6		
Sardinops ocellata	0.00	3		
Total	0.30		100.00	

PROJECT STATION:1244

DATE: 1/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 2109
start stop Long E 1331
TIME :05:12:00 05:32:00 dur. : 20min Purpose code: 1
LOG :7840.20 7841.20 dist.:1.20nm Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 44 58 Validity code:
Towing dir: 270 Wire out: 150 m Speed: 35 kn*10

Sorted: Kg Total catch: 0.14 CATCH/HOUR: 0.42

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	0.30	39	71.43	
Argonauta argo	0.06	3	14.29	
Etrumeus whiteheadi	0.03	3	7.14	
Trachurus capensis	0.03	12	7.14	463
Total	0.42		100.00	

PROJECT STATION:1245

DATE: 1/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 2031
start stop Long E 1307
TIME :13:56:00 14:12:00 dur. : 16min Purpose code: 1
LOG :7923.60 7924.60 dist.:1.00nm Area code : 2
FDEPTH: 10 10 GearCond.code:
BDEPTH: 92 91 Validity code:
Towing dir: 6 Wire out: 150 m Speed: 38 kn*10

Sorted: 2 Kg Total catch: 190.00 CATCH/HOUR: 712.50

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sufflogobius bibarbatus	675.00	427500	94.74	
Merluccius capensis, juveniles	37.50	21000	5.26	464
Total	712.50		100.00	

PROJECT STATION:1246

DATE: 1/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1954
start stop Long E 1256
TIME :21:53:00 22:13:00 dur. : 20min Purpose code: 1
LOG :8000.50 8001.20 dist.:0.70nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 34 40 Validity code:
Towing dir: 277 Wire out: 150 m Speed: 30 kn*10

Sorted: 5 Kg Total catch: 5.50 CATCH/HOUR: 16.50

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	12.60	165	76.36	465
Trachurus, Juveniles	2.10	54	12.73	466
Sufflogobius bibarbatus	1.20	1632	7.27	
Etrumeus whiteheadi	0.60	18	3.64	
Total	16.50		100.00	

PROJECT STATION:1247

DATE: 1/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1944
start stop Long E 1252
TIME :23:50:00 00:20:00 dur. : 30min Purpose code: 1
LOG :8015.20 8017.20 dist.:2.00nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 29 37 Validity code:
Towing dir: 330 Wire out: 100 m Speed: 40 kn*10

Sorted: 98 Kg Total catch: 883.60 CATCH/HOUR: 1767.20

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	1632.00	45696	92.35	467
Argyrosomus hololepidotus	81.00	20	4.58	
Sardinops ocellata	30.60	408	1.73	468
Pomatomus saltatrix	15.20	6	0.86	
Galeichthys feliceps	6.80	34	0.38	
Callorhinchus capensis	1.60	2	0.09	
Total	1767.20		99.99	

PROJECT STATION:1248

DATE: 2/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1929
start stop Long E 1243
TIME :03:10:00 03:40:00 dur. : 30min Purpose code: 1
LOG :8041.00 8043.00 dist.:1.70nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 41 34 Validity code:
Towing dir: 150 Wire out: 100 m Speed: 34 kn*10

Sorted: 18 Kg Total catch: 28.40 CATCH/HOUR: 56.80

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	18.40	260	32.39	469
Engraulis capensis	17.60	1006	30.99	470
Argyrosomus hololepidotus	14.00	4	24.65	
Etrumeus whiteheadi	4.80	224	8.45	471
Callorhinchus capensis	2.00	2	3.52	
Total	56.80		100.00	

PROJECT STATION:1249

DATE: 2/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1940
start stop Long E 1250
TIME :13:14:00 13:29:00 dur. : 15min Purpose code: 1
LOG :8137.40 8138.40 dist.:0.80nm Area code : 3
FDEPTH: 26 31 GearCond.code:
BDEPTH: 26 31 Validity code:
Towing dir: 178 Wire out: 100 m Speed: 31 kn*10

Sorted: 55 Kg Total catch: 960.75 CATCH/HOUR: 3843.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	3451.00	96264	89.80	472
Sardinops ocellata	378.00	5040	9.84	473
Etrumeus whiteheadi	14.00	352	0.36	474
Total	3843.00		100.00	

PROJECT STATION:1250

DATE: 2/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1921
start stop Long E 1241
TIME :20:45:00 21:05:00 dur. : 20min Purpose code: 1
LOG :8208.10 8209.40 dist.:1.30nm Area code : 3
FDEPTH: 15 20 GearCond.code:
BDEPTH: 23 36 Validity code:
Towing dir: 215 Wire out: 100 m Speed: 33 kn*10

Sorted: 5 Kg Total catch: 302.80 CATCH/HOUR: 908.40

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	900.00	25941	99.08	475
Callorhinchus capensis	8.40	3	0.92	
Sufflogobius bibarbatus	0.00	528		
Total	908.40		100.00	

PROJECT STATION:1251

DATE: 2/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1908
start stop Long E 1231
TIME :23:56:00 00:08:00 dur. : 12min Purpose code: 1
LOG :8235.30 8236.20 dist.:0.80nm Area code : 3
FDEPTH: 20 20 GearCond.code:
BDEPTH: 42 35 Validity code:
Towing dir: 88 Wire out: 100 m Speed: 38 kn*10

Sorted: 49 Kg Total catch: 584.40 CATCH/HOUR: 2922.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	2766.00	85225	94.66	476
Sardinops ocellata	126.00	1740	4.31	477
Engraulis capensis	24.00	1020	0.82	478
Merluccius capensis, juveniles	3.00	60	0.10	
Etrumeus whiteheadi	3.00	60	0.10	
Total	2922.00		99.99	

PROJECT STATION:1252

DATE: 3/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1856
start stop Long E 1223
TIME :03:00:00 03:15:00 dur. : 15min Purpose code: 1
LOG :8261.80 8262.40 dist.:0.90nm Area code : 3
FDEPTH: 54 54 GearCond.code:
BDEPTH: 54 54 Validity code:
Towing dir: 335 Wire out: 250 m Speed: 34 kn*10

Sorted: 10 Kg Total catch: 252.50 CATCH/HOUR: 1010.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	570.00	15392	56.44	479
Merluccius capensis	440.00	2300	43.56	480
Total	1010.00		100.00	

PROJECT STATION:1253

DATE: 3/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1842
start stop Long E 1211
TIME :09:22:00 09:39:00 dur. : 17min Purpose code: 1
LOG :8321.90 8322.80 dist.:0.90nm Area code : 3
FDEPTH: 23 20 GearCond.code:
BDEPTH: 30 28 Validity code:
Towing dir: 360 Wire out: 100 m Speed: 34 kn*10

Sorted: 22 Kg Total catch: 86.72 CATCH/HOUR: 306.07

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	296.47	13101	96.86	481
Etrumeus whiteheadi	8.47	494	2.77	482
Engraulis capensis	1.13	56	0.37	
Total	306.07		100.00	

PROJECT STATION:1254

DATE: 3/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1841
start stop Long E 1207
TIME :11:45:00 12:00:00 dur. : 15min Purpose code: 1
LOG :8341.20 8341.90 dist.:0.70nm Area code : 3
FDEPTH: 35 38 GearCond.code:
BDEPTH: 35 38 Validity code:
Towing dir: 311 Wire out: 150 m Speed: 32 kn*10

Sorted: 51 Kg Total catch: 1254.50 CATCH/HOUR: 5018.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	4931.60	150352	98.28	483
Chelidonichthys capensis	86.40	280	1.72	
Total	5018.00		100.00	

PROJECT STATION:1255

DATE: 3/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1854
start stop Long E 1222
TIME :23:59:00 00:19:00 dur. : 20min Purpose code: 1
LOG :8453.30 8454.60 dist.:1.30nm Area code : 3
FDEPTH: 5 5 GearCond.code:
BDEPTH: 52 65 Validity code:
Towing dir: 243 Wire out: 100 m Speed: 37 kn*10

Sorted: 27 Kg Total catch: 1100.00 CATCH/HOUR: 3300.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	1920.00	29562	58.18	484
Etrumeus whiteheadi	948.00	33798	28.73	485
Engraulis capensis	420.00	24120	12.73	486
Trachurus capensis	12.00	240	0.36	
Total	3300.00		100.00	

PROJECT STATION:1256

DATE: 4/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1844
start stop Long E 1214
TIME :04:28:00 04:48:00 dur. : 20min Purpose code: 1
LOG :8490.70 8492.10 dist.:1.50nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 31 33 Validity code:
Towing dir: 295 Wire out: 150 m Speed: 44 kn*10

Sorted: 28 Kg Total catch: 277.70 CATCH/HOUR: 833.10

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Chelidonichthys capensis	540.00	2529	64.82	
Trachurus capensis	147.00	8526	17.64	487
Engraulis capensis	114.00	12768	13.68	488
Thyrsites atun	30.00	120	3.60	
Etrumeus whiteheadi	1.50	120	0.18	
Sardinops ocellata	0.60	60	0.07	
Total	833.10		99.99	

PROJECT STATION:1257

DATE: 4/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1842
start stop Long E 1207
TIME :06:20:00 06:40:00 dur. : 20min Purpose code: 1
LOG :8502.60 8503.80 dist.:1.30nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 43 80 Validity code:
Towing dir: 225 Wire out: 150 m Speed: 34 kn*10

Sorted: 26 Kg Total catch: 106.00 CATCH/HOUR: 318.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Etrumeus whiteheadi	206.40	12384	64.91	491
Engraulis capensis	63.60	5808	20.00	489
Trachurus capensis	39.60	3756	12.45	490
Thyrsites atun	7.20	9	2.26	
Merluccius capensis, juveniles	1.20	24	0.38	
Sardinops ocellata	0.00	36		
Total	318.00		100.00	

PROJECT STATION:1258

DATE: 4/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1845
start stop Long E 1213
TIME :09:58:00 10:09:00 dur. : 11min Purpose code: 1
LOG :8530.80 8531.60 dist.:0.80nm Area code : 3
FDEPTH: 30 30 GearCond.code:
BDEPTH: 41 39 Validity code:
Towing dir: 302 Wire out: 150 m Speed: 41 kn*10

Sorted: 24 Kg Total catch: 96.80 CATCH/HOUR: 528.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	508.36	31287	96.28	492
Etrumeus whiteheadi	19.64	982	3.72	493
Engraulis capensis	0.00	22		
Total	528.00		100.00	

PROJECT STATION:1259

DATE: 4/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1853
start stop Long E 1224
TIME :15:09:00 15:21:00 dur. : 12min Purpose code: 1
LOG :8580.50 8581.30 dist.:0.75nm Area code : 3
FDEPTH: 18 17 GearCond.code:
BDEPTH: 18 17 Validity code:
Towing dir: 150 Wire out: 100 m Speed: 34 kn*10

Sorted: 73 Kg Total catch: 73.60 CATCH/HOUR: 368.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Argyrosomus hololepidotus	137.00	40	37.23	
Trachurus capensis	135.00	2140	36.68	494
Chelidonichthys capensis	55.00		14.95	
Galeichthys feliceps	15.00	125	4.08	
Callorhinchus capensis	13.00	5	3.53	
Shrimps, small, non comm.	7.50		2.04	
Squalus megalops	2.50	10	0.68	
Pomatomus saltatrix	1.50	10	0.41	
Engraulis capensis	0.75	70	0.20	
Loligo vulgaris	0.50	10	0.14	
Merluccius capensis, juveniles	0.25	15	0.07	
Total	368.00		100.01	

PROJECT STATION:1260

DATE: 4/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1850
start stop Long E 1221
TIME :17:39:00 17:46:00 dur. : 7min Purpose code: 1
LOG :8602.10 8602.60 dist.:0.50nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 27 24 Validity code:
Towing dir: 334 Wire out: 100 m Speed: 43 kn*10

Sorted: 13 Kg Total catch: 86.10 CATCH/HOUR: 738.00

SPECIES	CATCH/HOUR weight	CATCH/HOUR numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	555.43	7654	75.26	495
Argyrosomus hololepidotus	96.86	34	13.12	
Etrumeus whiteheadi	33.43	977	4.53	497
Trachurus capensis	33.43	1123	4.53	496
Diplodus sargus capensis	9.43	9	1.28	
Chelidonichthys capensis	7.71	17	1.04	
Galeichthys feliceps	1.71	9	0.23	
Engraulis capensis	0.00	94		
Total	738.00		99.99	

PROJECT STATION:1261

DATE: 4/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1832
start stop Long E 1201
TIME :22:40:00 23:00:00 dur. : 20min Purpose code: 1
LOG :8649.90 8650.80 dist.:0.90nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 37 32 Validity code:
Towing dir: 340 Wire out: 150 m Speed: 29 kn*10

Sorted: 14 Kg Total catch: 66.38 CATCH/HOUR: 199.14

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	189.06	5550	94.94	498
Galeichthys feliceps	5.40	12	2.71	
Sardinops ocellata	2.70	27	1.36	
Engraulis capensis	1.08	147	0.54	
Thyrsites atun	0.90	3	0.45	
Etrumeus whiteheadi	0.00	15		
Total	199.14		100.00	

PROJECT STATION:1262

DATE: 5/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1821
start stop Long E 1153
TIME :01:57:00 02:12:00 dur. : 15min Purpose code: 1
LOG :8675.00 8676.20 dist.:1.20nm Area code : 3
FDEPTH: 30 15 GearCond.code:
BDEPTH: 44 55 Validity code:
Towing dir: 205 Wire out: 150 m Speed: 40 kn*10

Sorted: 43 Kg Total catch: 364.00 CATCH/HOUR: 1456.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	672.00	77280	46.15	500
Sardinops ocellata	384.00	6288	26.37	499
Etrumeus whiteheadi	225.60	10108	15.49	502
Engraulis capensis	120.00	6816	8.24	501
Alopias vulpinus	52.00	4	3.57	
Galeichthys feliceps	2.40	4	0.16	
Total	1456.00		99.98	

PROJECT STATION:1263

DATE: 5/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1818
start stop Long E 1150
TIME :04:09:00 04:29:00 dur. : 20min Purpose code: 1
LOG :8690.00 8692.00 dist.:1.45nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 64 85 Validity code:
Towing dir: 205 Wire out: 150 m Speed: 40 kn*10

Sorted: 31 Kg Total catch: 4620.00 CATCH/HOUR: 13860.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	12600.00	160548	90.91	503
Trachurus capensis	900.00	54450	6.49	504
Etrumeus whiteheadi	270.00	4950	1.95	
Engraulis capensis	90.00	4050	0.65	
Total	13860.00		100.00	

PROJECT STATION:1264

DATE: 5/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1814
start stop Long E 1147
TIME :06:40:00 07:00:00 dur. : 20min Purpose code: 1
LOG :8707.50 8708.70 dist.:1.20nm Area code : 3
FDEPTH: 20 20 GearCond.code:
BDEPTH: 83 72 Validity code:
Towing dir: 40 Wire out: 150 m Speed: 41 kn*10

Sorted: 24 Kg Total catch: 1024.30 CATCH/HOUR: 3072.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Etrumeus whiteheadi	1952.10	70659	63.53	508
Engraulis capensis	554.10	32748	18.03	506
Sardinops ocellata	516.30	8691	16.80	505
Trachurus capensis	50.40	5415	1.64	507
Total	3072.90		100.00	

PROJECT STATION:1265

DATE: 5/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1815
start stop Long E 1146
TIME :09:10:00 09:21:00 dur. : 11min Purpose code: 1
LOG :8725.90 8726.40 dist.:0.50nm Area code : 3
FDEPTH: 60 50 GearCond.code:
BDEPTH: 100 101 Validity code:
Towing dir: 340 Wire out: 250 m Speed: 35 kn*10

Sorted: 28 Kg Total catch: 6028.00 CATCH/HOUR: 32880.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	25834.36	354633	78.57	509
Trachurus capensis	4814.73	794989	14.64	511
Engraulis capensis	1526.18	83373	4.64	510
Etrumeus whiteheadi	704.73	15267	2.14	
Total	32880.00		99.99	

PROJECT STATION:1266

DATE: 5/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1818
start stop Long E 1144
TIME :10:52:00 11:02:00 dur. : 10min Purpose code: 1
LOG :8735.60 8736.00 dist.:0.40nm Area code : 3
FDEPTH: 125 125 GearCond.code:
BDEPTH: 125 125 Validity code:
Towing dir: 333 Wire out: 500 m Speed: 26 kn*10

Sorted: 25 Kg Total catch: 1012.70 CATCH/HOUR: 6076.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	3247.20	36408	53.44	512
Merluccius capensis	1992.60	9594	32.79	513
Chelidonichthys capensis	369.00	492	6.07	
Dentex macrophthalmus	221.40	1722	3.64	
Pterothrissus belloci	221.40	2460	3.64	
Merluccius capensis, juveniles	24.60	738	0.40	514
Total	6076.20		99.98	

PROJECT STATION:1267

DATE: 5/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1822
start stop Long E 1153
TIME :15:06:00 15:13:00 dur. : 7min Purpose code: 1
LOG :8773.20 8773.60 dist.:0.40nm Area code : 3
FDEPTH: 30 30 GearCond.code:
BDEPTH: 45 45 Validity code: 3
Towing dir: 230 Wire out: 150 m Speed: 34 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
N O C A T C H	0.00			
Total				

PROJECT STATION:1268

DATE: 5/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1809
start stop Long E 1147
TIME :19:45:00 19:55:00 dur. : 10min Purpose code: 1
LOG :8816.70 8817.50 dist.:0.80nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 65 55 Validity code:
Towing dir: 89 Wire out: 100 m Speed: 48 kn*10

Sorted: 33 Kg Total catch: 10000.00 CATCH/HOUR: 60000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	46656.60	581412	77.76	516
Engraulis capensis	6998.40	394788	11.66	515
Etrumeus whiteheadi	2691.60	107670	4.49	518
Trachurus capensis	2153.40	270966	3.59	517
Thyrsites atun	1500.00	750	2.50	
Total	60000.00		100.00	

PROJECT STATION:1269

DATE: 5/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1801
start stop Long E 1145
TIME :22:55:00 23:15:00 dur. : 20min Purpose code: 1
LOG :8840.30 8841.30 dist.:1.00nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 64 50 Validity code:
Towing dir: 43 Wire out: 150 m Speed: 32 kn*10

Sorted: 35 Kg Total catch: 4498.00 CATCH/HOUR: 13494.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	5460.00	72042	40.46	519
Engraulis capensis	4875.00	258375	36.13	521
Etrumeus whiteheadi	2925.00	136890	21.68	520
Trachurus capensis	234.00	14430	1.73	522
Total	13494.00		100.00	

PROJECT STATION:1270

DATE: 6/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1752
start stop Long E 1144
TIME :02:24:00 02:44:00 dur. : 20min Purpose code: 1
LOG :8866.50 8867.90 dist.:1.30nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 67 47 Validity code:
Towing dir: 35 Wire out: 150 m Speed: 39 kn*10

Sorted: 24 Kg Total catch: 293.80 CATCH/HOUR: 881.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	522.00	8286	59.22	523
Etrumeus whiteheadi	298.80	8964	33.90	524
Engraulis capensis	46.80	2880	5.31	525
Trachurus capensis	7.20	1008	0.82	526
Pomatomus saltatrix	6.60	3	0.75	
Total	881.40		100.00	

PROJECT STATION:1271

DATE: 6/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1741
start stop Long E 1143
TIME :05:24:00 05:30:00 dur. : 6min Purpose code: 1
LOG :8889.40 8889.80 dist.:0.45nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 53 48 Validity code:
Towing dir: 27 Wire out: 150 m Speed: 42 kn*10

Sorted: 32 Kg Total catch: 12000.00 CATCH/HOUR: 120000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	62577.00	3857670	52.15	527
Sardinops ocellata	36810.00	767310	30.68	528
Trachurus capensis	16196.00	225640	13.50	529
Etrumeus whiteheadi	4417.00	139870	3.68	530
Total	120000.00		100.01	

PROJECT STATION:1272

DATE: 6/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1731
start stop Long E 1142
TIME :19:37:00 19:42:00 dur. : 5min Purpose code: 1
LOG :9032.30 9032.50 dist.:0.20nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 50 51 Validity code:
Towing dir: 360 Wire out: 150 m Speed: 38 kn*10

Sorted: 43 Kg Total catch: 4010.16 CATCH/HOUR: 48121.92

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	42040.80	1070340	87.36	531
Engraulis capensis	4303.20	244968	8.94	533
Etrumeus whiteheadi	993.12	47448	2.06	532
Trachurus capensis	662.40	47448	1.38	534
Pomatomus saltatrix	72.00	36	0.15	
Argyrosomus hololepidotus	48.00	12	0.10	
Diplodus sargus capensis	2.40	12		
Total	48121.92		99.99	

PROJECT STATION:1273

DATE: 6/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1725
start stop Long E 1140
TIME :21:32:00 21:42:00 dur. : 10min Purpose code: 1
LOG :9046.60 9047.30 dist.:0.70nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 78 85 Validity code:
Towing dir: 270 Wire out: 100 m Speed: 42 kn*10

Sorted: 9 Kg Total catch: 17.10 CATCH/HOUR: 102.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	27.00	1194	26.32	537
Etrumeus whiteheadi	26.40	486	25.73	538
Sardinops ocellata	24.00	276	23.39	535
Thyrsites atun	18.60	12	18.13	
Engraulis capensis	6.00	312	5.85	536
Todaropsis eblanae	0.60	18	0.58	
Total	102.60		100.00	

PROJECT STATION:1274

DATE: 6/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1720
start stop Long E 1142
TIME :23:15:00 23:35:00 dur. : 20min Purpose code: 1
LOG :9059.50 9060.80 dist.:1.30nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 44 65 Validity code:
Towing dir: 270 Wire out: 100 m Speed: 41 kn*10

Sorted: 24 Kg Total catch: 244.00 CATCH/HOUR: 732.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	363.00	25296	49.59	540
Sardinops ocellata	330.00	12498	45.08	539
Etrumeus whiteheadi	21.00	570	2.87	541
Trachurus capensis	15.00	870	2.05	542
Trichiurus lepturus	1.50	30	0.20	
Thyrsites atun	1.50	3	0.20	
Total	732.00		99.99	

PROJECT STATION:1275

DATE: 7/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1717
start stop Long E 1140
TIME :01:06:00 01:21:00 dur. : 15min Purpose code: 1
LOG :9069.70 9070.70 dist.:1.00nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 67 57 Validity code:
Towing dir: 50 Wire out: 150 m Speed: 39 kn*10

Sorted: 7 Kg Total catch: 46.20 CATCH/HOUR: 184.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Mola mola	104.00	4	56.28	
Engraulis capensis	32.80	2532	17.75	544
Etrumeus whiteheadi	28.00	808	15.15	543
Thyrsites atun	12.80	16	6.93	
Trachurus capensis	4.00	740	2.16	545
Argonauta argo	2.00	8	1.08	
Sardinops ocellata	0.80	48	0.43	546
Todaropsis eblanae	0.40	16	0.22	
Total	184.80		100.00	

PROJECT STATION:1276

DATE: 7/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1707
start stop Long E 1139
TIME :05:05:00 05:25:00 dur. : 20min Purpose code: 1
LOG :9104.90 9106.20 dist.:1.25nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 62 51 Validity code:
Towing dir: 65 Wire out: 150 m Speed: 38 kn*10

Sorted: 13 Kg Total catch: 40.30 CATCH/HOUR: 120.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Etrumeus whiteheadi	72.00	1710	59.55	547
Trachurus capensis	42.30	6309	34.99	548
Thyrsites atun	3.30	3	2.73	
Engraulis capensis	2.70	126	2.23	
Loligo vulgaris	0.60	33	0.50	
Total	120.90		100.00	

PROJECT STATION:1277

DATE: 7/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1731
start stop Long E 1139
TIME :09:49:00 10:07:00 dur. : 18min Purpose code: 1
LOG :9148.70 9149.80 dist.:0.90nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 97 103 Validity code:
Towing dir: 190 Wire out: 150 m Speed: 40 kn*10

Sorted: 11 Kg Total catch: 444.60 CATCH/HOUR: 1482.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	1400.00	161427	94.47	549
Alopias vulpinus	73.33	7	4.95	
Sarda sarda	8.67	10	0.59	
Total	1482.00		100.01	

PROJECT STATION:1278

DATE: 7/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1730
start stop Long E 1143
TIME :18:48:00 19:30:00 dur. : 42min Purpose code: 1
LOG :9236.50 9238.40 dist.:1.90nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 20 43 Validity code:
Towing dir: 180 Wire out: 100 m Speed: 29 kn*10

Sorted: 20 Kg Total catch: 156.80 CATCH/HOUR: 224.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	192.00	3303	85.71	550
Trachurus capensis	14.86	731	6.63	551
Etrumeus whiteheadi	10.29	1040	4.59	553
Engraulis capensis	5.71	457	2.55	552
Loligo vulgaris	1.14	57	0.51	
Total	224.00		99.99	

PROJECT STATION:1279

DATE: 7/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1743
start stop Long E 1143
TIME :21:15:00 21:20:00 dur. : 5min Purpose code: 1
LOG :9253.90 9254.10 dist.:0.20nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 50 52 Validity code:
Towing dir: 240 Wire out: 100 m Speed: 29 kn*10

Sorted: 7 Kg Total catch: 204.00 CATCH/HOUR: 2448.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	2160.00	43200	88.24	554
Engraulis capensis	180.00	9720	7.35	555
Trachurus capensis	72.00	4320	2.94	
Etrumeus whiteheadi	36.00	2160	1.47	
Total	2448.00		100.00	

PROJECT STATION:1280

DATE: 8/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1820
start stop Long E 1154
TIME :04:58:00 05:08:00 dur. : 10min Purpose code: 1
LOG :9332.30 9332.80 dist.:0.60nm Area code : 3
FDEPTH: 5 5 GearCond.code:
BDEPTH: 35 38 Validity code:
Towing dir: 268 Wire out: 100 m Speed: 37 kn*10

Sorted: 1 Kg Total catch: 58.00 CATCH/HOUR: 348.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	300.00	53400	86.21	556
Sardinops ocellata	30.00	1800	8.62	
Etrumeus whiteheadi	12.00	1200	3.45	
Engraulis capensis	6.00	600	1.72	
Total	348.00		100.00	

PROJECT STATION:1281

DATE: 8/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1834
start stop Long E 1158
TIME :07:30:00 07:31:00 dur. : 1min Purpose code: 1
LOG :9358.00 9358.00 dist.: nm Area code : 3
FDEPTH: 72 72 GearCond.code:
BDEPTH: 72 72 Validity code:
Towing dir: 90 Wire out: 350 m Speed: 30 kn*10

Sorted: 5 Kg Total catch: 5.60 CATCH/HOUR: 336.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	276.00	6600	82.14	557
Merluccius capensis	54.00	180	16.07	
Galeichthys feliceps	6.00	60	1.79	
Total	336.00		100.00	

PROJECT STATION:1282

DATE: 8/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1651
start stop Long E 1140
TIME :23:25:00 23:30:00 dur. : 5min Purpose code: 1
LOG :9526.60 9526.90 dist.:0.30nm Area code : 3
FDEPTH: 15 15 GearCond.code:
BDEPTH: 28 29 Validity code:
Towing dir: 120 Wire out: 100 m Speed: 32 kn*10

Sorted: 5 Kg Total catch: 9.60 CATCH/HOUR: 115.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	69.60	4608	60.42	560
Sardinops ocellata	26.40	768	22.92	559
Engraulis capensis	16.80	2880	14.58	558
Loligo vulgaris	1.20	72	1.04	
Etrumeus whiteheadi	1.20	144	1.04	
Total	115.20		100.00	

PROJECT STATION:1283

DATE: 9/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1649
start stop Long E 1136
TIME :00:39:00 00:54:00 dur. : 15min Purpose code: 1
LOG :9534.20 9535.40 dist.:1.20nm Area code : 3
FDEPTH: 20 20 GearCond.code:
BDEPTH: 81 69 Validity code:
Towing dir: 55 Wire out: 100 m Speed: 44 kn*10

Sorted: 4 Kg Total catch: 3.90 CATCH/HOUR: 15.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Engraulis capensis	8.00	1120	51.28	561
Sardinops ocellata	6.80	64	43.59	562
Etrumeus whiteheadi	0.40	8	2.56	
Trachurus capensis	0.20	56	1.28	564
Trachurus trecae	0.20	112	1.28	563
Total	15.60		99.99	

PROJECT STATION:1284

DATE: 9/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1644
start stop Long E 1138
TIME :02:19:00 02:25:00 dur. : 6min Purpose code: 1
LOG :9544.90 9545.40 dist.:0.50nm Area code : 3
FDEPTH: 16 16 GearCond.code:
BDEPTH: 63 55 Validity code:
Towing dir: 90 Wire out: 100 m Speed: 40 kn*10

Sorted: 1 Kg Total catch: 725.00 CATCH/HOUR: 7250.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	6000.00	975000	82.76	565
Trachurus capensis	1250.00	95000	17.24	566
Total	7250.00		100.00	

PROJECT STATION:1285

DATE:10/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1638
start stop Long E 1146
TIME :07:12:00 07:24:00 dur. : 12min Purpose code: 1
LOG :9588.50 9589.00 dist.:0.50nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 13 11 Validity code:
Towing dir: 122 Wire out: 100 m Speed: 27 kn*10

Sorted: 19 Kg Total catch: 76.00 CATCH/HOUR: 380.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	342.00	5820	90.00	567
Galeichthys feliceps	24.00	60	6.32	
MYLIOBATIDAE	9.00	10	2.37	
Pomatomus saltatrix	3.00	40	0.79	
Pomadasys incisus	2.00	40	0.53	
Total	380.00		100.01	

PROJECT STATION:1286

DATE:10/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1640
start stop Long E 1147
TIME :08:58:00 09:18:00 dur. : 20min Purpose code: 1
LOG :9602.80 9603.80 dist.:1.00nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 10 10 Validity code:
Towing dir: 155 Wire out: 100 m Speed: 30 kn*10

Sorted: 26 Kg Total catch: 341.95 CATCH/HOUR: 1025.85

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	297.00	4323	28.95	568
Sardinella aurita	264.00	2970	25.73	571
S H A R K S	129.00	6	12.57	
Sardinops ocellata	112.20	1023	10.94	570
Sardinella maderensis	99.00	2079	9.65	569
Pomatomus saltatrix	39.60	363	3.86	
Myliobatis aquila	23.40	36	2.28	
Pomadasys incisus	23.10	231	2.25	
Stromateus fiatola	11.70	36	1.14	
Lithognathus mormyrus	9.90	363	0.97	
Dentex macrophthalmus	6.60	165	0.64	
SPHYRNIDAE	4.50	3	0.44	
Trichiurus lepturus	3.30	99	0.32	
Umbrina canariensis	1.65	33	0.16	
Sphyraena guachancho	0.90	3	0.09	
Total	1025.85		99.99	

PROJECT STATION:1287

DATE:10/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1626
start stop Long E 1143
TIME :13:07:00 13:12:00 dur. : 5min Purpose code: 1
LOG :9639.50 9639.90 dist.:0.40nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 30 44 Validity code:
Towing dir: 250 Wire out: 100 m Speed: 50 kn*10

Sorted: 30 Kg Total catch: 8000.00 CATCH/HOUR: 96000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	96000.00	768000	100.00	572
Total	96000.00		100.00	

PROJECT STATION:1288

DATE:10/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1625
start stop Long E 1144
TIME :14:15:00 14:30:00 dur. : 15min Purpose code: 1
LOG :9646.20 9647.00 dist.:0.90nm Area code : 3
FDEPTH: 43 36 GearCond.code:
BDEPTH: 43 36 Validity code:
Towing dir: 165 Wire out: 200 m Speed: 35 kn*10

Sorted: 30 Kg Total catch: 1007.96 CATCH/HOUR: 4031.84

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	3192.00	50464	79.17	573
Merluccius capensis	258.40	1368	6.41	
Chelidonichthys capensis	152.00	304	3.77	
Loligo vulgaris	106.40	760	2.64	
Pagellus bellottii	91.20	456	2.26	
Lithognathus mormyrus	76.00	304	1.88	
Diplodus sargus capensis	76.00	304	1.88	
Atractoscion aequidens	60.80	152	1.51	
Mustelus mustelus	16.00	4	0.40	
Trachurus capensis	3.04	760	0.08	
Total	4031.84		100.00	

PROJECT STATION:1289

DATE:10/ 6/92 GEAR TYPE: BT No:1 POSITION:Lat S 1610
start stop Long E 1136
TIME :18:10:00 18:30:00 dur. : 20min Purpose code: 1
LOG :9683.70 9684.70 dist.:1.00nm Area code : 3
FDEPTH: 68 67 GearCond.code:
BDEPTH: 68 67 Validity code:
Towing dir: 50 Wire out: 300 m Speed: 31 kn*10

Sorted: 23 Kg Total catch: 121.10 CATCH/HOUR: 363.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	213.00	1065	58.63	574
Merluccius capensis	45.00	255	12.39	
Trachurus trecae	36.00	330	9.91	575
Loligo vulgaris	21.00	30	5.78	
Zeus faber	18.00	30	4.95	
Dentex macrophthalmus	16.50	105	4.54	
Sepia bertheloti	8.40	15	2.31	
Mustelus mustelus	4.80	6	1.32	
Galeichthys feliceps	0.60	3	0.17	
Trigla lyra	0.00	15		
Chelidonichthys capensis	0.00	15		
Total	363.30		100.00	

PROJECT STATION:1290

DATE:10/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1613
start stop Long E 1131
TIME :19:48:00 20:11:00 dur. : 23min Purpose code: 1
LOG :9692.70 9694.10 dist.:1.40nm Area code : 3
FDEPTH: 70 15 GearCond.code:
BDEPTH: 425 895 Validity code:
Towing dir: 270 Wire out: 200 m Speed: 36 kn*10

Sorted: 29 Kg Total catch: 117.30 CATCH/HOUR: 306.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	146.09	1221	47.74	577
Trachurus capensis	117.91	981	38.53	576
MYCTOPHIDAE	41.74	20452	13.64	
PARALEPIDIDAE	0.26	13	0.08	
Total	306.00		99.99	

PROJECT STATION:1291

DATE:10/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1618
start stop Long E 1124
TIME :21:28:00 21:43:00 dur. : 15min Purpose code: 1
LOG :9702.30 9703.00 dist.:0.70nm Area code : 3
FDEPTH: 23 23 GearCond.code:
BDEPTH: 1000 1000 Validity code:
Towing dir: 216 Wire out: 100 m Speed: 33 kn*10

Sorted: 4 Kg Total catch: 4.10 CATCH/HOUR: 16.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
MYCTOPHIDAE	16.00		97.56	
PARALEPIDIDAE	0.40	20	2.44	
Total	16.40		100.00	

PROJECT STATION:1292

DATE:10/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1620
start stop Long E 1132
TIME :23:03:00 23:30:00 dur. : 27min Purpose code: 1
LOG :9713.70 9715.30 dist.:1.60nm Area code : 3
FDEPTH: 5 5 GearCond.code:
BDEPTH: 80 80 Validity code:
Towing dir: 91 Wire out: 100 m Speed: 32 kn*10

Sorted: 1 Kg Total catch: 1.42 CATCH/HOUR: 3.16

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus trecae	2.67	29	84.49	
MYCTOPHIDAE	0.44	182	13.92	
Lolliguncula mercatoris	0.04	9	1.27	
Total	3.15		99.68	

PROJECT STATION:1293

DATE:11/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1620
start stop Long E 1135
TIME :00:25:00 00:41:00 dur. : 16min Purpose code: 1
LOG :9720.40 9721.30 dist.:1.00nm Area code : 3
FDEPTH: 30 60 GearCond.code:
BDEPTH: 78 76 Validity code:
Towing dir: 180 Wire out: 150 m Speed: 38 kn*10

Sorted: 28 Kg Total catch: 42.00 CATCH/HOUR: 157.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	149.63	1050	95.00	579
Trachurus trecae	7.50	86	4.76	578
Loligo vulgaris	0.38	4	0.24	
Total	157.51		100.00	

PROJECT STATION:1294

DATE:11/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1640
start stop Long E 1132
TIME :04:22:00 04:42:00 dur. : 20min Purpose code: 1
LOG :9751.30 9752.40 dist.:1.10nm Area code : 3
FDEPTH: 5 5 GearCond.code:
BDEPTH: 95 100 Validity code:
Towing dir: 268 Wire out: 100 m Speed: 33 kn*10

Sorted: Kg Total catch: 0.15 CATCH/HOUR: 0.45

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Loligo vulgaris	0.30	3	66.67	
Trachurus capensis	0.15	9	33.33	
Total	0.45		100.00	

PROJECT STATION:1295

DATE:11/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1639
start stop Long E 1121
TIME :06:37:00 06:45:00 dur. : 8min Purpose code: 1
LOG :9766.60 9767.10 dist.:0.50nm Area code : 3
FDEPTH: 30 25 GearCond.code:
BDEPTH: 132 133 Validity code:
Towing dir: 250 Wire out: 200 m Speed: 32 kn*10

Sorted: 29 Kg Total catch: 6000.00 CATCH/HOUR: 45000.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	45000.00	474548	100.00	580
Total	45000.00		100.00	

PROJECT STATION:1296

DATE:12/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1700
start stop Long E 1140
TIME :03:35:00 03:50:00 dur. : 15min Purpose code: 1
LOG :9850.50 9851.20 dist.:0.70nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 31 48 Validity code:
Towing dir: 90 Wire out: 100 m Speed: 40 kn*10

Sorted: 25 Kg Total catch: 1576.00 CATCH/HOUR: 6304.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	5952.00	83472	94.42	581
Thyrsites atun	280.00		4.44	
Trachurus trecae	24.00	240	0.38	
Galeorhinus galeus	24.00	4	0.38	
Trachurus capensis	12.00	2160	0.19	
Engraulis capensis	12.00	480	0.19	
Total	6304.00		100.00	

PROJECT STATION:1297

DATE:12/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1701
start stop Long E 1114
TIME :08:40:00 09:05:00 dur. : 25min Purpose code: 1
LOG :9885.60 9887.00 dist.:1.40nm Area code : 3
FDEPTH: 165 145 GearCond.code:
BDEPTH: 895 848 Validity code:
Towing dir: 160 Wire out: 550 m Speed: 39 kn*10

Sorted: 9 Kg Total catch: 8.90 CATCH/HOUR: 21.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	21.36	281	100.00	582
Total	21.36		100.00	

PROJECT STATION:1298

DATE:12/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1720
start stop Long E 1117
TIME :17:27:00 17:47:00 dur. : 20min Purpose code: 1
LOG :9955.70 9956.80 dist.:1.10nm Area code : 3
FDEPTH: 180 150 GearCond.code:
BDEPTH: 431 389 Validity code:
Towing dir: 100 Wire out: 600 m Speed: 34 kn*10

Sorted: 7 Kg Total catch: 17.30 CATCH/HOUR: 51.90

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	51.00	576	98.27	583
MYCTOPHIDAE	0.90	348	1.73	
Total	51.90		100.00	

PROJECT STATION:1299

DATE:12/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1720
start stop Long E 1133
TIME :20:10:00 20:18:00 dur. : 8min Purpose code: 1
LOG :9971.20 9971.70 dist.:0.50nm Area code : 3
FDEPTH: 115 115 GearCond.code:
BDEPTH: 128 123 Validity code:
Towing dir: 90 Wire out: 450 m Speed: 33 kn*10

Sorted: 20 Kg Total catch: 1204.40 CATCH/HOUR: 9033.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	8140.50	94073	90.12	584
Merluccius capensis	407.25	908	4.51	
Dentex macrophthalmus	316.50	2265	3.50	
Chelidonichthys capensis	90.75	450	1.00	
Pterothrissus belloci	45.00	450	0.50	
Pomatomus saltatrix	22.50	8	0.25	
Mustelus mustelus	10.50	8	0.12	
Total	9033.00		100.00	

PROJECT STATION:1300

DATE:12/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1719
start stop Long E 1142
TIME :21:44:00 21:54:00 dur. : 10min Purpose code: 1
LOG :9981.10 9981.50 dist.:0.40nm Area code : 3
FDEPTH: 20 45 GearCond.code:
BDEPTH: 56 58 Validity code:
Towing dir: 360 Wire out: 150 m Speed: 32 kn*10

Sorted: 11 Kg Total catch: 44.56 CATCH/HOUR: 267.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Pomatomus saltatrix	42.00	24	15.71	
Merluccius capensis	37.80	180	14.14	
Squalus megalops	36.00	108	13.46	
Galeichthys feliceps	23.40	72	8.75	
Mustelus palumbes	23.40	18	8.75	
Raja miraletus	21.60	72	8.08	
Trachurus capensis	21.60	216	8.08	
Chelidonichthys capensis	19.80	18	7.41	
Mustelus mustelus	16.20	18	6.06	
Engraulis capensis	16.20	954	6.06	585
Dicologoglossa cuneata	5.40	36	2.02	
Pomatomus saltatrix	3.60	54	1.35	
Etrumeus whiteheadi	0.36	18	0.13	
Total	267.36		100.00	

PROJECT STATION:1301

DATE:12/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1721
start stop Long E 1143
TIME :23:00:00 23:05:00 dur. : 5min Purpose code: 1
LOG :9988.60 9988.80 dist.:0.20nm Area code : 3
FDEPTH: 20 20 GearCond.code:
BDEPTH: 40 41 Validity code:
Towing dir: 337 Wire out: 100 m Speed: 30 kn*10

Sorted: 37 Kg Total catch: 516.60 CATCH/HOUR: 6199.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	5880.00	194376	94.85	586
Engraulis capensis	201.60	10584	3.25	588
Etrumeus whiteheadi	84.00	4116	1.36	587
Trachurus capensis	33.60	2184	0.54	
Total	6199.20		100.00	

PROJECT STATION:1302

DATE:13/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1728
start stop Long E 1141
TIME :00:50:00 00:55:00 dur. : 5min Purpose code: 1
LOG : 1.50 1.80 dist.:0.30nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 58 60 Validity code:
Towing dir: 325 Wire out: 100 m Speed: 36 kn*10

Sorted: 6 Kg Total catch: 5.85 CATCH/HOUR: 70.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Sardinops ocellata	28.80	1008	41.03	590
Engraulis capensis	13.20	780	18.80	592
Thyrsites atun	13.20	12	18.80	
Etrumeus whiteheadi	9.60	720	13.68	591
Loligo vulgaris	4.80	180	6.84	
Trachurus capensis	0.60	144	0.85	589
Total	70.20		100.00	

PROJECT STATION:1303

DATE:13/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1739
start stop Long E 1143
TIME :03:06:00 03:12:00 dur. : 6min Purpose code: 1
LOG : 21.30 21.60 dist.:0.30nm Area code : 3
FDEPTH: 10 10 GearCond.code: 3
BDEPTH: 35 43 Validity code: 4
Towing dir: 35 Wire out: 100 m Speed: 30 kn*10

Sorted: 3 Kg Total catch: 27.60 CATCH/HOUR: 276.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	190.00	21500	68.84	593
Engraulis capensis	70.00	3200	25.36	594
Thyrsites atun	11.00	10	3.99	
Loligo vulgaris	2.00	100	0.72	
Etrumeus whiteheadi	2.00	300	0.72	
Sardinops ocellata	1.00	100	0.36	
Total	276.00		99.99	

PROJECT STATION:1304

DATE:13/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1738
start stop Long E 1120
TIME :06:01:00 06:35:00 dur. : 34min Purpose code: 1
LOG : 45.80 47.90 dist.:2.10nm Area code : 3
FDEPTH: 150 220 GearCond.code:
BDEPTH: 544 614 Validity code:
Towing dir: 325 Wire out: 600 m Speed: 39 kn*10

Sorted: 7 Kg Total catch: 27.20 CATCH/HOUR: 48.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	34.94	399	72.79	595
Shrimps, small, non comm.	6.00		12.50	
Hoplostethus melanopus	2.47	1054	5.15	
Zenopsis conchifer	2.29	5	4.77	
MYCTOPHIDAE	2.29	706	4.77	
Total	47.99		99.98	

PROJECT STATION:1305

DATE:13/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1741
start stop Long E 1106
TIME :08:35:00 08:55:00 dur. : 20min Purpose code: 1
LOG : 62.30 63.40 dist.:1.10nm Area code : 3
FDEPTH: 250 300 GearCond.code:
BDEPTH: 1000 1000 Validity code:
Towing dir: 180 Wire out: 600 m Speed: 30 kn*10

Sorted: Kg Total catch: 9.50 CATCH/HOUR: 28.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachipterus trachypterus	16.50	6	57.89	
MYCTOPHIDAE	6.30	1539	22.11	
Shrimps, small, non comm.	5.10		17.89	
Beryx splendens	0.60	9	2.11	
Total	28.50		100.00	

PROJECT STATION:1306

DATE:13/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1800
start stop Long E 1127
TIME :13:06:00 13:26:00 dur. : 20min Purpose code: 1
LOG : 99.10 100.20 dist.:1.20nm Area code : 3
FDEPTH: 190 190 GearCond.code:
BDEPTH: 254 230 Validity code:
Towing dir: 90 Wire out: 600 m Speed: 36 kn*10

Sorted: 10 Kg Total catch: 10.10 CATCH/HOUR: 30.30

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	24.00	111	79.21	
Trachurus capensis	3.30	24	10.89	596
MYCTOPHIDAE	3.00		9.90	
Total	30.30		100.00	

PROJECT STATION:1307

DATE:14/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1806
start stop Long E 1145
TIME :21:06:00 21:16:00 dur. : 10min Purpose code: 1
LOG : 442.60 443.00 dist.:0.40nm Area code : 3
FDEPTH: 15 15 GearCond.code:
BDEPTH: 76 69 Validity code:
Towing dir: 78 Wire out: 150 m Speed: 36 kn*10

Sorted: 1 Kg Total catch: 11.50 CATCH/HOUR: 69.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	54.00	10380	78.26	597
Thyrsites atun	9.00	6	13.04	
Engraulis capensis	6.00	300	8.70	
Sardinops ocellata	0.00	60		
Etrumeus whiteheadi	0.00	60		
Total	69.00		100.00	

PROJECT STATION:1308

DATE:15/ 6/92 GEAR TYPE: PT No: POSITION:Lat S 1730
start stop Long E 1137
TIME :11:08:00 11:23:00 dur. : 15min Purpose code: 1
LOG : 573.30 573.90 dist.:0.60nm Area code : 3
FDEPTH: 95 90 GearCond.code:
BDEPTH: 105 111 Validity code:
Towing dir: 90 Wire out: 350 m Speed: 28 kn*10

Sorted: 39 Kg Total catch: 354.75 CATCH/HOUR: 1419.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	884.00	4216	62.30	598
Trachurus capensis	305.60	4940	21.54	599
Squalus megalops	93.60	260	6.60	
Pterothrissus belloci	78.00	780	5.50	
Myliobatis aquila	24.40	4	1.72	
Thyrsites atun	24.00	20	1.69	
Dentex macrophthalmus	5.20	52	0.37	
Synagrops microlepis	2.60	312	0.18	
Zeus faber	1.60	8	0.11	
Total	1419.00		100.01	

PROJECT STATION:1309

DATE:15/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1820
start stop Long E 1126
TIME :19:58:00 20:08:00 dur. : 10min Purpose code: 1
LOG : 651.20 651.60 dist.:0.40nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 437 496 Validity code:
Towing dir: 270 Wire out: 100 m Speed: 24 kn*10

Sorted: Kg Total catch: 2.83 CATCH/HOUR: 16.98

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Krill	12.00		70.67	
Trachurus capensis	3.60	84	21.20	
Todaropsis eblanae	0.90	12	5.30	
MYCTOPHIDAE	0.30	42	1.77	
Lestrolepis intermedia	0.18	6	1.06	
Total	16.98		100.00	

PROJECT STATION:1310

DATE:16/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1839
start stop Long E 1127
TIME :01:05:00 01:35:00 dur. : 30min Purpose code: 1
LOG : 696.60 698.80 dist.:2.10nm Area code : 3
FDEPTH: 100 100 GearCond.code:
BDEPTH: 291 385 Validity code:
Towing dir: 270 Wire out: 300 m Speed: 41 kn*10

Sorted: 9 Kg Total catch: 9.50 CATCH/HOUR: 19.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
MYCTOPHIDAE	10.00		52.63	
Brama brama	9.00	8	47.37	
Total	19.00		100.00	

PROJECT STATION:1311

DATE:16/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1839
start stop Long E 1145
TIME :04:19:00 04:37:00 dur. : 18min Purpose code: 1
LOG : 720.80 721.90 dist.:1.30nm Area code : 3
FDEPTH: 140 185 GearCond.code:
BDEPTH: 215 218 Validity code:
Towing dir: 270 Wire out: 450 m Speed: 32 kn*10

Sorted: 12 Kg Total catch: 12.40 CATCH/HOUR: 41.33

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Merluccius capensis	22.67	130	54.85	601
Dentex macrophthalmus	6.67	30	16.14	
Brama brama	6.00	7	14.52	
Trachurus capensis	6.00	30	14.52	600
Total	41.34		100.03	

PROJECT STATION:1312

DATE:16/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1840
start stop Long E 1155
TIME :06:48:00 07:04:00 dur. : 16min Purpose code: 1
LOG : 737.50 738.40 dist.:0.90nm Area code : 3
FDEPTH: 110 110 GearCond.code:
BDEPTH: 139 137 Validity code:
Towing dir: 270 Wire out: 250 m Speed: 36 kn*10

Sorted: 18 Kg Total catch: 37.20 CATCH/HOUR: 139.50

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	135.00	1369	96.77	602
Dentex macrophthalmus	1.88	11	1.35	
Merluccius capensis, juveniles	1.50	60	1.08	
Trigla lyra	1.13	4	0.81	
Total	139.51		100.01	

PROJECT STATION:1313

DATE:16/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 1859
start stop Long E 1213
TIME :13:30:00 14:03:00 dur. : 33min Purpose code: 1
LOG : 798.90 801.20 dist.:2.20nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 110 103 Validity code:
Towing dir: 90 Wire out: 100 m Speed: 40 kn*10

Sorted: 1 Kg Total catch: 180.00 CATCH/HOUR: 327.27

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	327.27	47220	100.00	603
Total	327.27		100.00	

PROJECT STATION:1314

DATE:16/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1920
start stop Long E 1226
TIME :21:20:00 21:30:00 dur. : 10min Purpose code: 1
LOG : 874.00 874.70 dist.:0.70nm Area code : 3
FDEPTH: 70 70 GearCond.code:
BDEPTH: 116 112 Validity code:
Towing dir: 90 Wire out: 350 m Speed: 49 kn*10

Sorted: 25 Kg Total catch: 276.10 CATCH/HOUR: 1656.60

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	1650.00	19602	99.60	604
Sufflogobius bibarbatus	6.60	2772	0.40	
Merluccius capensis, juveniles	0.00	150		
Total	1656.60		100.00	

PROJECT STATION:1315

DATE:16/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1911
start stop Long E 1232
TIME :23:50:00 23:57:00 dur. : 7min Purpose code: 1
LOG : 892.70 893.20 dist.:0.50nm Area code : 3
FDEPTH: 10 10 GearCond.code:
BDEPTH: 52 50 Validity code:
Towing dir: 102 Wire out: 100 m Speed: 43 kn*10

Sorted: 10 Kg Total catch: 1004.50 CATCH/HOUR: 8610.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	7560.00	259560	87.80	605
Engraulis capensis	924.00	47040	10.73	606
Sardinops ocellata	126.00	1680	1.46	
Total	8610.00		99.99	

PROJECT STATION:1316

DATE:17/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1929
start stop Long E 1242
TIME :05:50:00 06:03:00 dur. : 13min Purpose code: 1
LOG : 948.80 949.80 dist.:1.00nm Area code : 3
FDEPTH: 25 25 GearCond.code:
BDEPTH: 53 61 Validity code:
Towing dir: 290 Wire out: 150 m Speed: 41 kn*10

Sorted: 13 Kg Total catch: 25.87 CATCH/HOUR: 119.40

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
Trachurus capensis	110.77	3775	92.77	608
Engraulis capensis	8.31	471	6.96	607
Loligo vulgaris	0.28	9	0.23	
Sufflogobius bibarbatus	0.05	9	0.04	
Total	119.41		100.00	

PROJECT STATION:1317

DATE:17/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1940
start stop Long E 1227
TIME :12:44:00 13:04:00 dur. : 20min Purpose code: 1
LOG :1007.20 1008.60 dist.:1.30nm Area code : 3
FDEPTH: 75 75 GearCond.code:
BDEPTH: 131 133 Validity code:
Towing dir: 270 Wire out: 250 m Speed: 38 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
N O C A T C H	0.00			
Total				

PROJECT STATION:1318

DATE:17/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1940
start stop Long E 1156
TIME :16:41:00 16:56:00 dur. : 15min Purpose code: 1
LOG :1040.00 1041.10 dist.:1.00nm Area code : 3
FDEPTH: 220 220 GearCond.code:
BDEPTH: 324 320 Validity code:
Towing dir: 85 Wire out: 650 m Speed: 37 kn*10

Sorted: 17 Kg Total catch: 17.70 CATCH/HOUR: 70.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
MYCTOPHIDAE	60.00		84.75	
Merluccius capensis	5.60	8	7.91	
Brama brama	5.20	4	7.34	
Total	70.80		100.00	

PROJECT STATION:1319

DATE:17/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 2000
start stop Long E 1238
TIME :23:40:00 00:00:00 dur. : 20min Purpose code: 1
LOG :1105.90 1107.10 dist.:1.20nm Area code : 3
FDEPTH: 0 0 GearCond.code:
BDEPTH: 121 122 Validity code:
Towing dir: 90 Wire out: 100 m Speed: 38 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C	SAMP.NO.
N O C A T C H	0.00			
Total				

PROJECT STATION:1320

DATE:18/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 1952
start stop Long E 1252
TIME :03:06:00 03:36:00 dur. : 30min Purpose code: 1
LOG :1134.20 1136.00 dist.:1.80nm Area code : 3
FDEPTH: 35 35 GearCond.code:
BDEPTH: 64 61 Validity code:
Towing dir: 180 Wire out: 150 m Speed: 36 kn*10

Sorted: 27 Kg Total catch: 27.35 CATCH/HOUR: 54.70

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Trachurus capensis	33.20	1054	60.69	609
Callorhinchus capensis	9.80	6	17.92	
Argyrosomus hololepidotus	5.60	2	10.24	
Galeichthys feliceps	4.00	10	7.31	
Chelidonichthys capensis	1.60	4	2.93	
Engraulis capensis	0.30	20	0.55	
Etrumeus whiteheadi	0.20	8	0.37	
Total	54.70		100.01	

PROJECT STATION:1321

DATE:18/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2011
start stop Long E 1306
TIME :08:48:00 08:59:00 dur. : 11min Purpose code: 1
LOG :1184.80 1185.70 dist.:0.90nm Area code : 2
FDEPTH: 15 15 GearCond.code:
BDEPTH: 35 38 Validity code:
Towing dir: 180 Wire out: 150 m Speed: 46 kn*10

Sorted: 18 Kg Total catch: 5999.90 CATCH/HOUR: 32726.72

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Sardinops ocellata	32582.18	470635	99.56	610
Etrumeus whiteheadi	144.55	9049	0.44	
Total	32726.73		100.00	

PROJECT STATION:1322

DATE:18/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2021
start stop Long E 1232
TIME :17:14:00 17:34:00 dur. : 20min Purpose code: 1
LOG :1263.20 1264.30 dist.:1.20nm Area code : 2
FDEPTH: 170 170 GearCond.code:
BDEPTH: 248 253 Validity code:
Towing dir: 210 Wire out: 450 m Speed: 36 kn*10

Sorted: 40 Kg Total catch: 40.60 CATCH/HOUR: 121.80

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Thyrsites atun	57.00	27	46.80	
MYCTOPHIDAE	45.00	22050	36.95	
Brama brama	19.80	18	16.26	
Total	121.80		100.01	

PROJECT STATION:1323

DATE:19/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2037
start stop Long E 1316
TIME :02:06:00 02:20:00 dur. : 14min Purpose code: 1
LOG :1348.50 1349.70 dist.:1.00nm Area code : 2
FDEPTH: 10 10 GearCond.code:
BDEPTH: 56 44 Validity code:
Towing dir: 40 Wire out: 100 m Speed: 45 kn*10

Sorted: 32 Kg Total catch: 709.50 CATCH/HOUR: 3040.71

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Sardinops ocellata	2142.86	20979	70.47	611
Trachurus capensis	685.71	7179	22.55	612
Etrumeus whiteheadi	192.86	8143	6.34	613
Thyrsites atun	17.14	9	0.56	
Merluccius capensis, juveniles	2.14	107	0.07	
Total	3040.71		99.99	

PROJECT STATION:1324

DATE:19/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2110
start stop duration Long E 1331
TIME :18:55:00 19:05:00 10 (min) Purpose code: 1
LOG :1516.50 1517.20 0.70 Area code : 2
FDEPTH: 10 10 GearCond.code:
BDEPTH: 48 47 Validity code:
Towing dir: 330 Wire out: 100 m Speed: 48 kn*10

Sorted: 19 Kg Total catch: 38.06 CATCH/HOUR: 228.36

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Sardinops ocellata	216.00	2124	94.59	614
Etrumeus whiteheadi	9.60	288	4.20	
Chelidonichthys capensis	1.20	6	0.53	
Sufflogobius bibarbatus	0.96	144	0.42	
Trachurus capensis	0.60	30	0.26	
Total	228.36		100.00	

PROJECT STATION:1325

DATE:20/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2132
start stop duration Long E 1346
TIME :06:20:00 06:35:00 15 (min) Purpose code: 1
LOG :1632.30 1633.40 1.10 Area code : 2
FDEPTH: 10 10 GearCond.code:
BDEPTH: 26 26 Validity code:
Towing dir: 46 Wire out: 100 m Speed: 44 kn*10

Sorted: 15 Kg Total catch: 59.30 CATCH/HOUR: 237.20

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Engraulis capensis	160.00	15136	67.45	615
Sardinops ocellata	59.20	2000	24.96	616
Trachurus capensis	11.20	368	4.72	
Etrumeus whiteheadi	6.40	192	2.70	
Chelidonichthys capensis	0.40	4	0.17	
Total	237.20		100.00	

PROJECT STATION:1326

DATE:20/ 6/92 GEAR TYPE: PT No:1 POSITION:Lat S 2150
start stop duration Long E 1336
TIME :18:26:00 18:38:00 12 (min) Purpose code: 1
LOG :1752.00 1753.00 1.00 Area code : 2
FDEPTH: 50 70 GearCond.code:
BDEPTH: 110 113 Validity code:
Towing dir: 270 Wire out: 250 m Speed: 50 kn*10

Sorted: Kg Total catch: 30.00 CATCH/HOUR: 150.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Sufflogobius bibarbatus	150.00	55875	100.00	
Total	150.00		100.00	

PROJECT STATION:1327

DATE:21/ 6/92 GEAR TYPE: PT No:3 POSITION:Lat S 2222
start stop duration Long E 1410
TIME :04:54:00 05:18:00 24 (min) Purpose code: 1
LOG :1859.20 1860.90 1.70 Area code : 2
FDEPTH: 0 0 GearCond.code:
BDEPTH: 69 69 Validity code:
Towing dir: 335 Wire out: 100 m Speed: 42 kn*10

Sorted: 5 Kg Total catch: 67.60 CATCH/HOUR: 169.00

SPECIES	CATCH/HOUR weight	numbers	% OF TOT. C numbers	SAMP.NO.
Engraulis capensis	141.00	18073	83.43	617
Krill	25.00		14.79	
Trachurus capensis	1.50	330	0.89	619
Sardinops ocellata	1.50	300	0.89	618
Total	169.00		100.00	

ANNEX III INSTRUMENTS AND FISHING GEAR USED

ACOUSTIC INSTRUMENTS

A SIMRAD scientific echo sounder, EK 500/38kHz, was used during the survey for estimation of fish density.

Based on a calibration experiment using a standard copper sphere in Baia dos Tigres on 26th November 1991, the following settings were used:

Absorption Coeff.	10 dB/km
Pulse length	Medium
Bandwidth	Wide
Max. Power	2000 W
Angle sensitivity	21.9
2-way Beam Angle	-21.0 dB
Sv Transd. Gain	28.0 dB
Ts Transd. Gain	28.0 dB
3 dB Beamwidth	6.9°
Along-ship Offset	0°
Athwart-ship	0°

FISHING GEAR

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. This gear was also used for some of the mid-water trawls.

Pelagic trawl: Swedish type mid-water trawl with a vertical opening of 20-25m.

Cod ends of trawls with fine meshed inner lining.

ANNEX IV INTERCALIBRATION OF HYDROACOUSTIC INSTRUMENTS

In order to compare the hydroacoustic systems onboard R/V "BENGUELA" and R/V "DR. FRIDTJOF NANSEN", an intercalibration was carried out between the two vessels on the 15th June between 17 50'S and 18 10'S. The total sailed distance was 105 nautical miles, and the bottom depth varied from 50 metres down to approximately 1000 metres. Different courses were used. Weather conditions were good with calm seas and practically no wind. The two vessels sailed on a parallel course with "DR. FRIDTJOF NANSEN" 0.3 nautical miles to the side of and 0.3 nautical miles ahead of "BENGUELA".

The instrument settings were in accordance with the most recent calibration with standard copper sphere, and corresponded to those used during a normal survey. Tables 1 and 2 show instrument settings for the two vessels during the intercalibration.

The recordings consisted of layers of plankton, fish or a mixture of plankton and fish, and were grouped correspondingly.

These grouped data indicated that "DR. FRIDTJOF NANSEN" obtained higher S_A values than "BENGUELA" when the recordings were plankton or very small fish in deeper waters (mycto-phids), while there was good similarity between the vessels when commercial fish was recorded. This corresponds to the observations made during the intercalibration between the two vessels in November 1991, and is explained by the higher performance and lower threshold settings in the EK500 system.

The intercalibration also indicated that "BENGUELA's" bottom signal is frequently integrated and contributes to the SA value in the bottom channel. Experiments should be done to find a proper setting to minimize this bottom detection problem in the future.

It was also found that "BENGUELA" recorded noise at depths of approximately 400 metres and downwards, increasing with TVG. This interference is also integrated and will disturb data obtained from those depths. No certain explanation was found to this problem.

On the basis of these observations it was concluded that the SA-values obtained from fish in the pelagic zone by the two vessels were similar and could be used without correction.

R/V "Dr. Fridtjof Nansen 18.06.92

Terje Haugland

Table 1. Instrument settings onboard R/V "DR. FRIDTJOF NANSEN" during the inter-calibration.

Echo sounder:	EK500
Frequency:	38 kHz
Transducer:	ES38B (6.9° circular split beam)
Transmit power:	2000 Watts nom
Noise margin:	0 dB
Pulse length:	Medium
Bandwidth:	Wide
2-way beam angle:	-21.0 dB
SV transducer gain:	27.9 dB
TS transducer gain:	28.0 dB
SA threshold:	-80 dB

Table 2. Instrument settings onboard R/V "BENGUELA" during the intercalibration.

Echo sounder:	EK400
Frequency:	38 kHz
Transducer:	8°x8° split beam
Transmit power:	2500 Watts nom
Pulse length:	1.0 ms
Bandwidth:	3.3 kHz
Attenuator:	20 dB
Performance (SL+VR):	131.6 dB
Integrator:	QD
Integrator gain:	-40.2 dB
SA threshold:	10 mV

ANNEX V EVALUATION OF BIOMASS ESTIMATES OBTAINED BY *R.V. Dr. Fridtjof Nansen* and *R.V. Benguela* IN MAY-JUNE 1992

A number of sources of error are causing variability in the biomass estimates of Namibian pelagic fish. The main sources of error are:

1 Fish distribution is outside of the transducer range

   a Surface shoaling fish above transducer range
   b Fish on bottom in "dead zone"
   c Fish in waters shallower than 20 m

2 A highly clumped distribution when fish are in few scattered and very dense shoals

3 Migration during the survey period

During this survey several areas were covered more than once by either one or both vessels and the individual estimates of each area as assessed by the *R.V. Benguela* and *R.V. Dr. Fridtjof Nansen* are presented in Tables 1 and 2 respectively. An attempt is made below to present the best assessment of each area.

Cape Frio to Cunene River

As most of the pelagic type-1 fish occured between Cape Frio and Cunene River, this area was covered a number of times by both vessels. The estimates were extremely variable. The high value obtained by the *R.V. Dr. Fridtjof Nansen* of over 850 000 tonnes during 4th to 7th June rests on two extremely high S_A values. The *R.V. Benguela* obtained a similarly high estimate of 830 000 tonnes on 8th June, but this also comes largely from several dense shoals. These results must be considered unreliable because of the few data points contributing such a high part of the total biomass, although their similarity suggests some accuracy.

This variability is highlighted by the two simultaneous coverages on 8th June, when the *R.V. Benguela* obtained the very high estimate of 830 000 tonnes, while the *R.V. Dr. Fridtjof Nansen* recorded 260 000 tonnes.

This high variance should be reduced by increasing the transect density and therefore the combined results of the joint survey, estimated at 500 000 tonnes, are presented as the most reliable assessment of this region. This joint survey also gave a synoptic coverage of the area removing the error caused by fish migration during an extended survey period. Some of the integration values obtained by the *R.V. Benguela* were above of the range accepted by the

acoustic equipment and were lost. Minimum values have been inserted, which means that the 500 000 tonnes is a minimum estimate.

Pelagic fish are known to become unavailable to the research vessels at certain times when surface shoaling or migration into shallow waters occurs. The calm weather and full moon during the surveys conducted towards the end of the cruise are suspected to have resulted in the fish moving inshore during the day, and possibly night also, while surface shoaling was noted during both day and night times. It is assumed that the much smaller biomass estimates obtained in this region after the joint survey on the 8th June are due to the fish being distributed outside of the transducer range.

Cunene River to Tombua

Several estimates, ranging from 25 000 tonnes to 80 000 tonnes, were obtained for the fish in southern Angola. The sources of error reported for the fish to the south of the Cunene River are assumed to have also caused this variability. It is therefore likely that the joint survey has given the most accurate estimate. This gave a total of about 50 000 tonnes.

Ambrose to Rocky Point

The shoals briefly surveyed by both vessels on the first part of the survey at Dune Point and near Rocky Bay were reported to be moving southwards by the fishermen working in this region. The area of fish at Dune Point was poorly covered by both vessels due to the activities of these fishermen in the densest part of the shoal. The *R.V. Dr. Fridtjof Nansen* estimated the fish to be 23 000 tonnes, while the *R.V. Benguela* found only 8 000 tonnes.

The fish at Rocky Point was only found by the *R.V. Dr. Fridtjof Nansen* and was surveyed on 5th June with a widely spaced grid. The *R.V. Dr. Fridtjof Nansen* returned to this area on 10th and 15th June, but the fish could not be found. This further suggested that the fish was migrating southwards.

During the southward journey at the end of the cruise the *R.V.Dr Fridtjof Nansen* found fish at Dune Point with a similar length-frequency to the fish recorded earlier at Rocky Point. This was assumed to be the same fish which had moved some 60 nm southwards in the intervening 12 days. A dense survey grid gave an estimated biomass of 110 000 tonnes.

Pelagic fish were recorded around Ambrose Bay by the *R.V. Dr. Fridtjof Nansen* at the end of the cruise and the area was surveyed intensively. From the length-frequency characteristics, these fish are assumed to be the same as those recorded at Dune Point 14 days earlier, some 60 nm further north. The fishermen working in this area confirmed that they had been following this fish from Dune Point. The estimate for these fish was 20 000 tonnes.

The two values obtained during this southward part of the cruise are used as the most accurate assessment of these two areas of fish. The last estimate of the southern group of

shoals gave a lower estimate than that recorded 12 days earlier. This is assumed to be due to the effects of the fishing fleet.

Dolphin Head to Ambrose Bay

The only estimate of fish abundance for this area was made by the *R.V. Dr. Fridtjof Nansen* and gives about 70 000 tonnes of juvenile fish, mainly anchovy. Surface shoaling of these fish and dense layers of plankton may render this estimate unreliable and, if so, it is likely an underestimate.

The *R.V. Dr. Fridtjof Nansen* surveyed a small area of anchovy to the north of Cape Cross at the end of the cruise. The resulting estimate was 5 000 tonnes.

The species composition was determined from the trawl samples taken in each area and from the judged values of the echo traces (Table 3). On the basis of these proportions the fraction of each species occuring in each area has been calculated (Table 4) and these data are presented as the best estimates of abundance obtained during this cruise.

Table 1 Biomass estimates of Namibian pelagic fish of *R.V. Benguela*.

AREA	Day survey 4-7 June	Joint survey 8-10 June	North 13-14 June	South 13-14 June
Cunene-Baia dos Tigres		51 500	25 200	80 600
18°00' - Cunene		454 000	47 700	52 600
18°40' - 18°00'	239 300	375 200		
18°40' - Dune Pt.	17 500			

Table 2 Biomass estimates of Namibian pelagic fish of *R.V. Benguela*.

AREA	DAY 27-29/5	DAY 3/6	DAY 4/6	DAY 5-7/6	NIGHT 6-7/6	DAY 8/6	DAY+N 8-11/6	DAY 14-20/6
Cunene-B.d.Tigres						52 000		
18°20' - Cunene				855 000	131 000	262 000	71 000	
Rocky Point			23 000					
Dune Point		23 000						110 000
Ambrose Bay								20 000
Cape Cross								5 000
Easter Pt. Walvis Bay	72 000							