

**Preliminary Report Cruise No. II - Surveys of the Fish
Resources in the Shelf Region between Colombia and
Suriname - Part 3: Venezuela, North Coast from Bocas
del Dragon to Golfo de Venezuela, 30 May to 14 June
1988**

The research programme SURVEYS OF THE FISH RESOURCES IN THE SHELF REGION FROM COLOMBIA TO SURINAME 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 is being planned jointly by the participating countries, FAO's Department of Fisheries and the Institute of Marine Research, Norway. Its execution is the responsibility of the Institute of Marine Research in cooperation with FAO and national fisheries administrations.

The programme will comprise several coverages of the region. This cruise report describes the work and some of the findings of the first survey. Full reports will be issued after the completion of the programme.

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1. Introduction.

Survey objectives.

The general objectives of the programme as discussed and agreed at the planning meeting in Trinidad, 12-14 January are summarized in the Preliminary Report of Cruise No. I Part I. In the following the objectives for Survey II are clarified and amended on the basis of experience from previous surveys and from discussions with representatives from the participating countries.

Oriente. In principle the programme should be a repetition of that of Survey I. The main aim of the acoustic work is an estimate of the distribution, composition and biomass of the sardine stock with emphasis on problem of catchability of sardinella, even at night. The following amendments of the programme should be made:

- 1) The hydrographic profile off Pta Caribe should be moved to a position between Margarita Isl. and Los Testigos. The survey track off the easternmost coast can then be limited to an inshore coverage.
- 2) Work hydrographic profile off Cabo Codera or La Guaira.
- 3) Otherwise the coverage and the course tracks can be as in Survey I except that the inshore shelf inside the Cariaco Trench west of Puerto La Cruz can be skipped or given a low priority.
- 4) Intensified work on squid is of interest. Squids are at bottom during the day, at least in intermediate depths. Important areas are outside Margarita and perhaps also the edge off Los Testigos should be tried.
- 5) Fishing for Penaeid shrimp inshore at night should be tried in suitable locations to provide samples and by-catch data.
- 6) The small shelf around Blanquilla should be better covered.

Venezuela West coast and Gulf of Venezuela.

- 1) Add hydrographic profile off Golfo Triste.
- 2) Add night shrimping inshore where suitable
- 3) Follow programme Survey I, but with less coverage off La Guaira. Give emphasis to squid, positions where good catch rates during Survey I.

Participation.

The following scientific staff participated from Venezuela:

Port of Spain to La Guaira: Diana Zaera, Ayurami Alcala, Ramon Guzman, Walter Gonzalez, Bladimir Rodriguez and Wilmer Rojas.

La Guaira to Punto Fijo: Ayurami Alcala, Walter Gonzalez, Wilmer Rojas, Roberto Cipriani, Marco Tulio Badaracco and Diana Zaera.

From FAO:

Alvaro Abella.

The scientific staff from IMR was:

J. Hamre, H. Ullebust, M. Dahl and H. Vorren.

2. Narrative.

The vessels itinerary was as follows:

Departure Port of Spain: 30 May 00 hrs.

Call on La Guaira: 07 June

Arrival Pto. Fijo 14 June hrs.

Figures 1 and 2 show the course tracks and the fishing - and hydrographical stations worked. Little work was done in the eastern area over the shelf off the Paria Peninsula where the bottom conditions are difficult for demersal trawling. The survey effort was intensive from the Testigos Archipelago westwards past the Tortuga Island both along the inner and outer shelf parts. A hydrographical profile was worked northwards over the shelf off Pta. del Taquien between Margarita Isl. and Los Testigos. Another new hydrographical profile was worked northwards over the shelf off Cabo Codera and the suggested profile off Golfo Triste was positioned in the strait between Venezuela and Curacao. The sections off Puerto La Cruz and in the Gulf of Venezuela were repeated. The bottom trawl stations worked during daytime forms the basic data for swept area biomass estimation. Course tracks and section work were therefore adjusted so that most of the prepositioned trawling stations could be worked during daytime. It was however observed that schools of sardines occurred in surface layer during day hour but submerged to layer within the transducers range at night. Additional course tracks for acoustic biomass estimation were therefore run at night in areas of high sardin abundance. A dense net of prelocated trawl stations were positioned over the shelf off Margarita Island and in the Gulf of Venezuela during daytime to cover different areas and depth ranges. The shelf around Blanquilla was surveyed for trawlable bottom and two trawl stations made. The acoustic system was calibrated on 3 June in the Gulf of Cariaco using the coppersphere procedure. 113 trawl stations were worked and 2700 nm. were steamed.

3. Hydrography.

Figure 3 shows the distribution of temperature, salinity and oxygen in the profiles off Pta Taquien and Cabo Codera. Off Pta Taquien the surface temperatures on the inner-most station are 3° C lower than those off the shelf and seen together with the isolines for salinity and oxygen the profile gives a picture of clear upwelling of intermediate water being lifted over the shelf and transported to the surface inshore. Off Cabo Cadera there is an increase in temperature shorewards and the isolines for salinity and oxygen indicate no upwelling of intermediate water masses. In the Cariaco Trench profile (Figure 4) there is neither any lift in the isolines shorewards, but the section off Pta Sabana and that nonwestward from Cabo San Roman indicate slight upwelling in the upper 50 m. The section in the Gulf of Venezuela shows no sign of vertical movement in the water masses.

4. Fish distribution.

Figure 5 illustrates the distribution of all fish as observed with the acoustic integration system. This will mainly show the pelagic species, but some demersal fish which lifts off the bottom, especially at night will also be included. The units of acoustic reflection is $0.1 \times m^2/nm^2$ reflecting surface. This unit is not directly proportional to fish density since small sized fish gives a higher acoustic reflection per unit weight than bigger fish, but in gross terms Figure 5 gives a fair picture of the main distributional features of the pelagic fish in the area. An arbitrary scale has been used to illustrate different levels of concentration. The acoustic data will later be used for biomass estimates.

The Oriente.

High densities of pelagic fish were observed at night along the coast southeast of Isla Margarita, and on the shelf outside the Margarita Island. The main contributors to these recordings were adult *Sardinella aurita* and *Etrumeus teres* inside and outside the Island respectively. Schools were seen at surface in day hour and dense schools were recorded on the echo sounder at night. Two large samples were obtained with pelagic trawl, one from inside (St. No. 465) and one from outside (St. No. 475) the Margarita Island. It is assumed that these catches represent the schools of sardines which were observed in surface layer during day. In the same areas juvenile sardines were caught together with carangids and scombrids in day hauls at bottom. The catches in these areas also included other pelagic fishes as barracudas, scombrids and carangids in addition to demersal fish. It is noted that the highest fish density is located in the cool upwelled water masses southeast of Isla Margarita, as can be seen by comparison with the temperature profile in Figure 3. Schools of anchovies were recorded inside and at the entrance of the Cariaco gulf. The present results thus confirm the findings during the previous coverage as reported in Preliminary Cruise Report I, Part 3.

Over most of the deeper parts of the shelf only scattered recordings were made indicating a general low level of fish density in mid water. The recordings usually consisted of traces of small schools or single fish not far off the bottom. Identification with bottom trawl showed that in addition to sardines they should be attributed to carangids, scombrids, barracudas and demersal fish lifting off the bottom.

Western part, from Cabo Codera to Peninsula de Guajira.

In the western part the registration of pelagic fish was more scattered than farther to the east with two small areas of concentration of schooling fish in the central part of the Gulf of Venezuela (Figure 6). On the basis of the bottom trawl samples these schools were identified as anchovies and sardines mainly. Sardines were also caught at bottom in the inner and western part of the gulf but not recorded in any significant abundance on the echo sounder. This may however be due to blanking by a very dense scattering layer of planktonic organism which occurred in that part of the gulf.

5. Results of fishing experiments.

The bottom trawl survey forms part of a programme for "swept area" biomass estimation, and for this purpose the trawl stations are positioned in advance more or less randomly and with no intention of obtaining high catch rates. The catch rates thus do not simulate those of a commercial fishery and they are presented here merely to give a rough impression of the general occurrence, composition and abundance of fish on the shelf. The data from the prepositioned trawl hauls will later be used for estimates of biomass of demersal species.

The bottom trawl used is a shrimp-cum-fish trawl (see Annex 1) and it may not be as efficient for shrimp as specially designed shrimp-trawls.

Oriente.

The fish on the shelf between Bocas de Dragon and Cabo Codera is grouped as in the previous cruise report: an assemblage of the inner pan of the shelf, inside the Testigos Archipelago and the Margarita Island and on the coastal side of the Cariaco Trench in which catfish and croakers are the most common groups of the demersals; and one assemblage found over the outer parts of the shelf outside the Testigos and Margarita Island and westwards past the Tortuga Island where the demersal fish is dominated by snappers. This grouping is used in the following description of the composition and catch rates of the fishing experiments. The complete record of all hauls made are shown in Annex II. Stations 455 to 508 and the position of the stations can be seen in Figure 1.

Table 1 shows an analysis of catch rates (standardized to kg per hours towing) for all successfull bottom trawl hauls by broad groups of fish and for the inner and outer shelf separately. "Pelagic" comprises Clupeidae(sardines), Engraulidae(anchovies), Carangidae, Scombridae, Sphyraenidae(barracuda) and Trichiuridae(hairtails). "Demersal" includes the families Sciaenidae(croakers), Lutjanidae(snappers), Pomadasidae(grunts), Serranidae(groupers), Ariidae(catfish) and Priacanthidae(glasseyes). Catch rates of demersal fish are high, averaging 361 kg/hour on the inner shelf and 180 kg/hour on the outer shelf, compared to the respective 200 kg/hour and 110 kg/hour obtained in the previous bottom trawl survey of these areas in February-March. Squids are present in nearly all catches at about the same rates as in the previous survey and shrimps are scarce. Table 2 shows the catch rates by families for the demersal fish by inner and outer shelf parts. As in previous survey catfish and croakers dominate the inner part and snappers the outer part of the shelf.

Table 1. ORIENTE. Catch rates for main groups in bottom trawl stations standardized to kg/hour.

INNER

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
455	61	105.90	4.80	15.60	14.10		106.20
456	65	2.40	284.80		8.00		129.60
462	33	18.30	12.30		17.00		1.60
463	37	5.43	37.29		31.43		11.28
464	35	252.10	19.00		40.00	3.00	65.50
466	43	107.40	213.00	16.00	40.00	4.00	169.60
467	33	8.00	107.60	10.00	84.00	6.20	114.00
484	65	171.60	511.00	80.60		5.60	171.60
485	20	858.00	2220.00				1059.60
486	71	368.00	911.20	36.80	12.00	3.30	252.30
488	49	11.88	398.16		10.80	1.08	12.72
490	149	108.80	456.00		65.60	49.60	179.20
491	111	144.40	800.90	5.00	60.80	1.80	87.70
492	81	22.34	87.90	40.00	13.50		60.78
493	41	5126.07	16.80				
494	43	25.94	28.34		9.60	1.20	21.00
495	78	17.70	39.00	11.40	12.00		83.22
MEAN		432.60	361.65	12.67	24.64	4.46	148.58

OUTER

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
458	71	201.60	115.40		24.60		42.20
460	61	15.00	157.00	7.40	11.00	1.00	139.00
461	35	82.00	19.60	22.00	27.20	0.20	43.00
468	44	35.80	28.00	0.70	12.50	0.30	32.30
469	65	1417.30	374.50	0.80	62.10		8.10
470	44	1501.70	3.10		28.60		17.10
471	73	717.50	832.40		17.20		85.90
472	28	15.90	2.70		15.30		20.70
473	49	315.00	171.00		61.80	1.20	74.00
474	26	67.20	56.40		81.60		69.60
477	148	6.00	44.40				50.16
478	59		46.92		1.20		145.92
479	77	140.80	351.50		9.90		235.40
480	69	371.40	421.40		98.00		134.40
481	50	175.20	221.80		157.20	1.60	182.40
482	91	10.50	372.15	42.00	10.50		225.75
483	96	105.60	317.60		2.40		43.40
496	81	80.00	166.50			0.40	54.50
499	97	193.90	188.20		11.20		42.50
500	99		74.28		3.36		13.20
501	128	274.80	100.98		0.90		21.00
502	78	99.25	14.66		6.68		31.88
503	92	0.60	1.50		7.80		13.00
504	33	0.80	457.90	12.40			351.90
505	71	102.40	344.40		2.40		15.40
506	75		1.00		0.80		7.36
507	77		136.61		2.31		3.46
508	72		25.00		2.80		10.20
MEAN		211.79	180.25	3.05	23.55	0.17	75.49

Table 3 shows the catch rates for the different types of pelagic fish. Catch rates of pelagic fish in bottom hauls are not very meaningful and as the Table shows the rates and composition of species vary considerably by stations. One large catch of anchovies was taken on the inner coast of the Cariaco trench (Annex II, St. No. 493) and one good sardine catch was obtained north of the Margarita Island (St. No. 470). Most of the pelagic catches were dominated by carangids with some good catches of hairtails, scombrids and barracudas. Present catch rates are higher but species composition of pelagic fish are mostly the same as observed in February-March.

Table 2. ORIENTE. Catch rates by families for demersal fish, kg/hour.

INNER

ST. NO.	DEP.	Croakers	Catfish	Grunts	Groupers	Glassesye s	Other
455	61	4.80					241.80
456	65			6.40	1.60	1.60	415.20
462	33			1.40	0.50		47.30
463	37			0.29	3.57	5.71	75.86
464	35	13.00	2.00	2.50	1.00	0.50	360.60
466	43	110.60	35.20	6.40	26.40	24.00	347.40
467	33	3.60		52.00	18.00	4.00	252.20
484	65	340.60		117.00	19.60		463.20
485	20	100.80	1690.00	191.80	159.40	78.00	1917.60
486	71	883.20		16.00	7.20	1.60	675.60
488	49	347.40	40.68	6.84	3.24		36.48
490	149	412.80					446.40

491	111	729.90			5.70	52.00	313.00
492	81			2.10		37.80	184.62
493	41	8.23	4.46			4.11	5126.07
494	43				1.04	2.10	82.94
495	78					9.00	154.32
MEAN		173.82	104.26	23.69	14.54	12.97	655.33

OUTER

ST. NO.	DEP.	Croakers	Snappers	Grunts	Groupers	Glasseyes	Other
458	71		101.60	3.60		10.20	268.40
460	61		139.00		1.50	16.50	173.40
461	35		19.60				174.40
468	44		26.20		1.80		81.60
469	65		165.00		34.00	175.50	1488.30
470	44				2.00	1.10	1547.40
471	73		724.40	25.80	56.40	25.80	820.60
472	28				2.70		51.90
473	49		136.80		30.60	3.60	452.00
474	26		2.40	17.20	32.40	4.40	218.40
477	148		3.36		41.04		56.16
478	59		1.92	10.80	0.60	33.60	147.12
479	77		185.40	99.40	66.70		386.10
480	69		403.20			18.20	603.80
481	50		178.00		40.80	3.00	516.40
482	91		342.30		29.85		288.75
483	96	19.20	265.60	25.60		7.20	151.40
496	81		131.00		0.50	35.00	134.90
499	97		145.20	4.20	36.40	2.40	247.60
500	99		9.36	52.44	12.48		16.56
501	128		97.50		0.48	3.00	296.70
502	78		11.57			3.09	137.81
503	92		0.50		1.00		21.40
504	33		373.90	4.40	5.00	74.60	365.10
505	71		149.20	195.20			120.20
506	75				1.00		8.16
507	77			135.23	1.38		5.77
508	72		21.20	3.80			13.00
MEAN		0.69	129.79	20.63	14.24	14.90	314.05

Western part, from Cabo Codera to Peninsula de Guajira.

Results of the bottom hauls between Cabo Codera and Cabo San Roman are summarized in Table 4. Mean catch rate of demersal is 90 kg/hour or about half the rate obtained on the outer Oriente coast. This catch rate is however more than twice that of the demersal fish catch obtained in the bottom trawl survey of the area in February-March. The record catch of 546 kg/hour (St. No. 517) was obtained at night on the small bank north of La Guaira, consisting of good sized snappers mainly. The poorest catches were encountered on the Cabo Codera coast (St. Nos. 513-515). 4 hauls were made on the slope from 200-300 m. to test the availability of deep sea shrimps, and the rates obtained are around 6 kg/hour. The pelagic species are also less abundant in the trawl catches than further to the east, and confirms the results of the acoustic stock measurements. The family composition of the pelagic and demersal species is shown in Tables 5 and 6 respectively. The latter is dominated by snappers whereas the pelagics consist of carangids, hairtails and sardines mainly.

Table 3. ORIENTE. Catch rates by families of pelagic fish in bottom trawl hauls, kg/hour.

INNER

ST. NO.	DEP.	Sardines	Hairtails	Carangids	Scombrids	Barracuda	Other
455	61	0.90	0.60	90.00	1.50	12.90	140.70
456	65			2.40			422.40
462	33	1.70		1.20		15.40	30.90
463	37			0.43	0.14	4.86	80.00
464	35	154.50		27.50	28.60	41.50	127.50
466	43	23.20	40.00	44.20			442.60
467	33	8.00					321.80
484	65	13.00	15.60	143.00			768.80
485	20			185.20	308.80	364.00	3279.60
486	71	5.60	260.80	54.40		47.20	1215.60
488	49	1.44	2.52	7.92			422.76
490	149		80.00	28.80			750.40
491	111		95.00	49.40			956.20
492	81		9.60	5.24		7.50	202.18
493	41		6.86	27.78		9.60	5098.63
494	43	7.80		1.64			76.64
495	78			13.50		4.20	145.62
MEAN		12.71	30.06	40.15	19.94	29.83	851.90

OUTER

ST. NO.	DEP.	Sardines	Hairtails	Carangids	Scombrids	Barracuda	Other
458	71	3.60		198.00			182.20
460	61			15.00			315.40
461	35	32.40		32.20	8.20	9.20	112.00
468	44			0.80	25.60	9.40	73.80
469	65	251.10		845.20	321.00		445.50
470	44	1471.80		29.90			48.80
471	73			717.50			935.50
472	28	3.90		4.50	7.50		38.70
473	49	291.60		9.00		14.40	308.00
474	26	29.60		23.20	8.00	6.40	207.60
477	148			6.00			94.56
478	59						194.04
479	77			140.80			596.80
480	69	4.20		347.20	20.00		653.80
481	50	7.20		129.60	38.40		563.00
482	91			8.40	2.10		650.40
483	96			104.00	1.60		363.40
496	81			35.00		45.00	221.40
499	97		8.40	185.50			241.90
500	99						90.84
501	128			274.80			122.88
502	78	0.51		83.31	15.43		53.22
503	92			0.60			22.30
504	33	0.10		0.70			822.20
505	71			102.40			362.20
506	75						9.16
507	77						142.38
508	72						38.00
MEAN		74.86	0.30	117.63	15.99	3.01	282.50

Table 4. VENEZUELA, WESTERN PART. Catch rates for main groups in bottom trawl stations standardized to kg/hour.

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
509	63		110.30	14.80	5.00		18.60
510	183	10.00	138.00		2.00		39.60
511	153	427.20	121.20	8.00	2.40		52.60
512	66	6.25	144.63		3.75		13.13
513	65	27.60	14.50		1.80		8.20
514	93	36.20	4.60		4.40		22.60
515	67	0.84	12.96		2.40		38.04
516	215	16.80	61.40		3.60	6.60	57.00
517	101	81.60	546.00				270.80
518	77	8.30	37.60		7.00		55.70
519	73	6.40	55.40	7.00	5.00		57.40
520	45	60.60	133.60				3.60
521	66	109.20	72.60		6.00		17.20
522	60	36.48	65.04		1.68		17.28
523	106	72.43	156.63		7.71		195.00
524	252	0.60			8.70	5.85	75.10
525	233		11.05		5.21	4.89	68.07
526	264	0.15			8.85	5.55	26.69
527	59	289.60	106.60		4.80		25.60
528	79	49.60	22.80		1.50		19.10
529	60	8.40	97.00		4.20		13.80
530	69	55.60	43.10		18.00		6.60
531	22	20.00	50.40		3.20		55.80
532	49	3.20	89.40		3.40		6.20
533	37	43.00	161.60		2.20		6.80
MEAN		54.80	90.26	1.19	4.51	0.92	46.82

Table 5. VENEZUELA, WESTERN PART. Catch rates by families for pelagic fish in bottom trawl hauls, kg/hour.

ST. NO.	DEP.	Sardines	Hairtails	Carangids	Scombrids	Barracudab	Other
509	63						148.70
510	183			10.00			179.60
511	153		426.00	1.20			184.20
512	66			6.25			161.51
513	65	1.00		26.60			24.50
514	93			35.80	0.40		31.60
515	67			0.84			53.40
516	215			16.80			128.60
517	101			81.60			816.80
518	77			8.30			100.30
519	73			6.40			124.80
520	45			6.60	9.00	45.00	137.20
521	66	65.60		43.60			95.80
522	60	3.12		32.64			84.72
523	106			60.86	11.57		359.34
524	252		0.60				89.65
525	233						89.22
526	264		0.15				41.09
527	59	157.20	3.20	72.40	55.60	1.20	137.00
528	79		2.60	32.10	14.90		43.40
529	60			7.40		1.00	115.00
530	69			55.40	0.20		67.70
531	22			17.60	2.40		109.40
532	49	0.80		1.00	0.40	1.00	99.00
533	37			32.60	10.40		170.60
MEAN		9.11	17.30	22.24	4.19	1.93	143.73

Table 6. VENEZUELA, WESTERN PART. Catch rates by families for demersal fish, kg./hour.

ST. NO.	DEP.	Croakers	Snappers	Grunts	Groupers	Glassesyes	Other
509	63		102.70				46.00
510	183		138.00				51.60
511	153		87.60		33.60		490.20
512	66		137.25			7.38	23.13
513	65		6.10			8.40	37.60
514	93		4.40			0.20	63.20
515	67		4.08			6.48	43.68
516	215	1.80	59.40		0.20		84.00
517	101		459.00		59.00	28.00	352.40
518	77	1.80	25.80			1.00	80.00
519	73		29.60			8.00	93.60
520	45		104.60			5.00	88.20
521	66		70.60			2.00	132.40
522	60		63.12		0.24		57.12
523	106		156.63				275.14
524	252						90.25
525	233		11.05				78.17
526	264						41.24
527	59		100.20			6.40	320.00
528	79		22.00			0.80	70.20
529	60		94.80				28.60
530	69		40.70			0.20	82.40
531	22		29.20			5.60	94.60
532	49		70.80	0.40		2.20	28.80
533	37		135.20			1.00	77.40
MEAN		0.14	78.11	0.02	3.72	3.31	113.20

In the Gulf of Venezuela the catch data have been grouped in an inner and outer part as in the previous survey in February-March, with a north/south dividing line from Punto Fijo and westward. The catch rate by broad groups are shown in Table 7. The average catch of demersals in the inner pan is 52 kg/hour compared to 61 kg/hour obtained in the previous coverage. For the outer part of the gulf, the respective catch figures are 54 kg/hour and 24 kg/hour. The best catches of squids and shrimps were obtained in the innerpart of the gulf, on the eastern and western side respectively. The record catch of squids is 54 kg/hour, and for shrimps the record is 57 kg/hour. Catch rate by family groups are shown in Tables 8 and 9 for pelagics and demersals respectively. The pelagics are dominated by carangids, the demersals by snappers(outer-) and croakers (inner part).

Pooled samples of the length compositions of the most common species are shown in Annex III.

Table 7. GULF OF VENEZUELA. Catch rates for main groups in bottom trawlstations standardized to kg/hour.

INNER PART

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
538	19	264.20	76.80		15.60	1.60	40.80
539	15	36.10	30.20	0.40	1.00	8.60	7.80
540	23	518.00	85.20	3.60		2.80	28.00
541	20	597.62	50.47	9.18		0.71	41.29
542	21	372.00	13.80		4.80		10.80
543	15	216.00	81.60	21.00	6.00	57.00	31.40
544	13	96.80	78.60	8.80		11.20	25.80
545	15	152.60	111.30		1.00	29.00	7.60
546	14	156.00	64.20		6.00	6.00	55.80
547	24	120.69	74.07			1.03	28.81
548	32	45.20	83.60		13.60	3.40	76.00

549	28	233.20	20.50		54.00		16.50
550	40	298.20	2.50		6.00		1.50
551	40	283.90	2.20		22.40		79.10
552	36	406.00	4.60		24.00		28.80
MEAN		253.10	51.98	2.87	10.29	8.09	32.00

OUTER PART

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squids	Shrimp	Other
534	29		10.60			0.30	1.20
535	74	25.90	1.60		3.10		6.70
536	69	25.94	62:00		2.70		27:14
537	70	26.54	29.60		5.40		32.84
553	49	1163.70	4.50		23.60	0.20	237.40
554	50	699.40	100.40		11.70	0.30	39.40
555	43	400.40	9.60		42.00		12.60
656	45	26.72	2.73		10.36	0.09	11.19
557	56	96.60	81.20		2.40	0.60	57.40
558	17	15.60	27.40		3.60	13.60	68.40
559	12	62.90	23.00		1.00	4.80	19.60
560	54	49.30	2.10	3.80	4.60		3.50
561	59	77.70	2.40		3.80	0.60	11.30
562	60	174.00	95.00		4.00		63.70
563	61	28.24	44.40		5.00		79.00
564	52	472.64	235.09		4.36		89.45
565	29	2.80	38.00	2.00			91.40
566	15	58.00	75.80	2.00	1.00	4.80	108.80
567	70	19.50	180.30		4.00	3.00	44.00
MEAN		180.31	53.99	0.41	6.98	1.49	52.90

Table 8. GULF OF VENEZUELA. Catch rates by families for pelagic fish in bottom trawl hauls, kg/hour.

INNER PART

ST. NO.	DEP.	Sardines	Anchovies	Carangids	Hairtails	Barracudas	Other
538	19	212.40		35.00	16.80		134.80
539	15	10.50	5.90	0.50	19.20		48.00
540	23	121.80		95.20	301.00		119.60
541	20	158.29		352.15	87.18		101.65
542	21	31.20	1.20	295.20		21.60	52.20
543	15	52.00	68.00	20.00	62.00		211.00
544	13	37.20	15.60	16.00	28.00		124.40
545	15	41.60	17.00	5.00	89.00		148.90
546	14	108.60		36.60	3.60		139.20
547	24	50.06	28.80	28.11	6.86	6.86	103.91
548	32	32.40		11.20			178.20
549	28	27.00	24.00	164.70		17.00	91.50
550	40	133.00		154.00			21.20
551	40			225.00	6.40	51.80	104.40
552	36			399.20		1.80	62.40
MEAN		67.74	10.70	122.52	41.34	6.60	109.42

OUTER PART

ST. NO.	DEP.	Sardines	Scombrids	Carangids	Barracuda	Hairtails	Other
534	29						11.80
535	74	0.50		1.20	23.80	0.40	11.70
536	69	2.10	0.74	6.30	16.80		91.84
537	70	0.44	9.90	7.80	8.40		67.84
553	49	25.00	0.20	127.50	23.60	987.40	265.70
554	50	176.80	23.40	148.20	286.00	65.00	151.80
555	43	128.80	42.00	201.60	26.60		65.60
556	45	0.27	0.91	2.18	2.73		45.00
557	56		4.20	13.20	78.80	0.40	141.60
558	17	8.40	1.20	2.40			116.60
559	12	29.60	6.60	3.10		19.60	52.40
560	54	1.20	36.00	1.40	0.80	6.80	17.10
561	59	0.40	1.80	40.50	3.00	32.00	18.10
562	60	1.00	1.00	102.00	70.00		162.70
563	61	1.74	1.00	21.50	3.50		128.90
564	52	34.91	10.09	384.00	43.64		328.90
565	29	0.40		1.60	0.80		131.40
566	15	9.00	4.60	17.40	2.00	25.00	192.40
567	70	1.50	1.00	17.00			231.30
MEAN		22.21	7.61	57.84	31.08	59.82	117.51

Table 9. GULF OF VENEZUELA. Catch rates by families for demersal fish, kg./hour.

INNER PART

ST. NO.	DEP.	Croakers	Snappers	Grunts	Groupers	Perilus	Other
538	19	72.40	4.40			2.80	319.40
539	15	30.20				3.00	50.90
540	23	71.60	13.60			18.20	534.20
541	20	50.47				34.41	614.39
542	21		13.80			10.80	376.80
543	15	81.60				9.00	322.40
544	13	78.60					142.60
545	15	109.70	1.60			3.00	187.20
546	14	64.20					223.80
547	24	46.29	3.43	24.35			150.53
548	32	4.80		58.40	14.00		144.60
549	28	15.00		3.00	2.50		303.70
550	40						308.20
551	40	2.20				77.00	308.40
552	36		3.60			28.80	431.00
MEAN		41.80	2.70	5.72	1.10	12.47	294.54

OUTER PART

ST. NO.	DEP.	Croakers	Snappers	Grunts	Groupers	Glasseyes	Other
534	29						11.80
535	74		1.40		0.20	5.80	30.20
536	69		26.60	0.90	29.40	21.00	39.88
537	70		24.00	1.20	0.30	24.00	44.88
553	49		4.50			5.00	1419.90
554	50		90.00	10.40			750.80
555	43	6.00		2.20	1.40	5.60	449.40
556	45			2.73		1.82	46.54
557	56		58.40	17.80	1.40	44.00	116.60

558	17	25.00	2.40				101.20
559	12	22.80		0.20			88.30
560	54	1.80		0.30		0.30	60.90
561	59	1.90	0.50			0.50	92.90
562	60		60.80	7.00	16.20	25.00	227.70
563	61		41.40			65.00	50.24
564	52		213.27	10.91	2.18	32.73	542.45
565	29		28.80	3.60		13.60	83.20
566	15	4.60	31.60	37.60		2.60	174.00
567	70	1.00	160.80	5.00	10.50	2.00	71.50
MEAN		3.32	39.18	5.25	3.24	13.10	231.97

Figure 1. Course tracks, fishing stations and hydrographic profiles. Oriente coast.

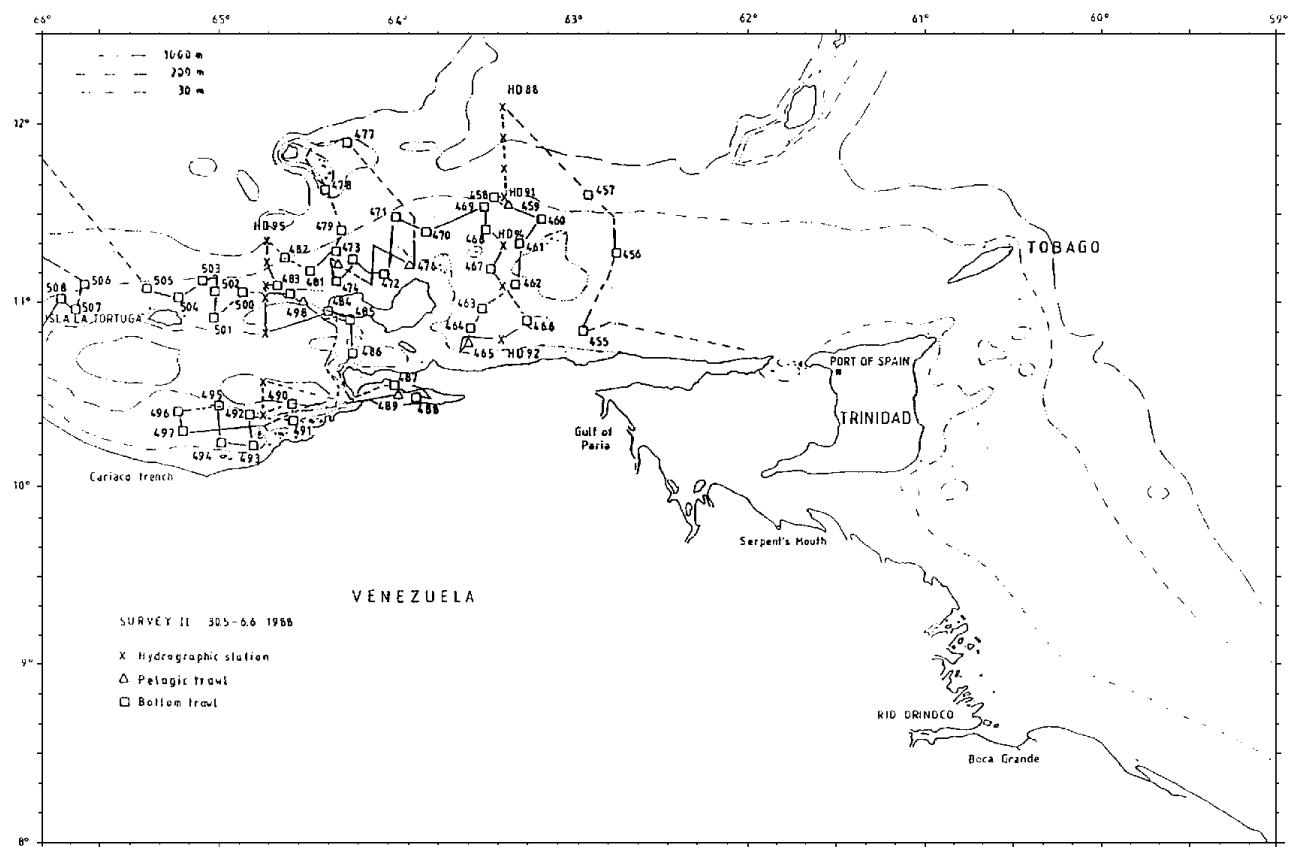


Figure 2. Course tracks, fishing stations and hydrographic profiles. Western coasts.

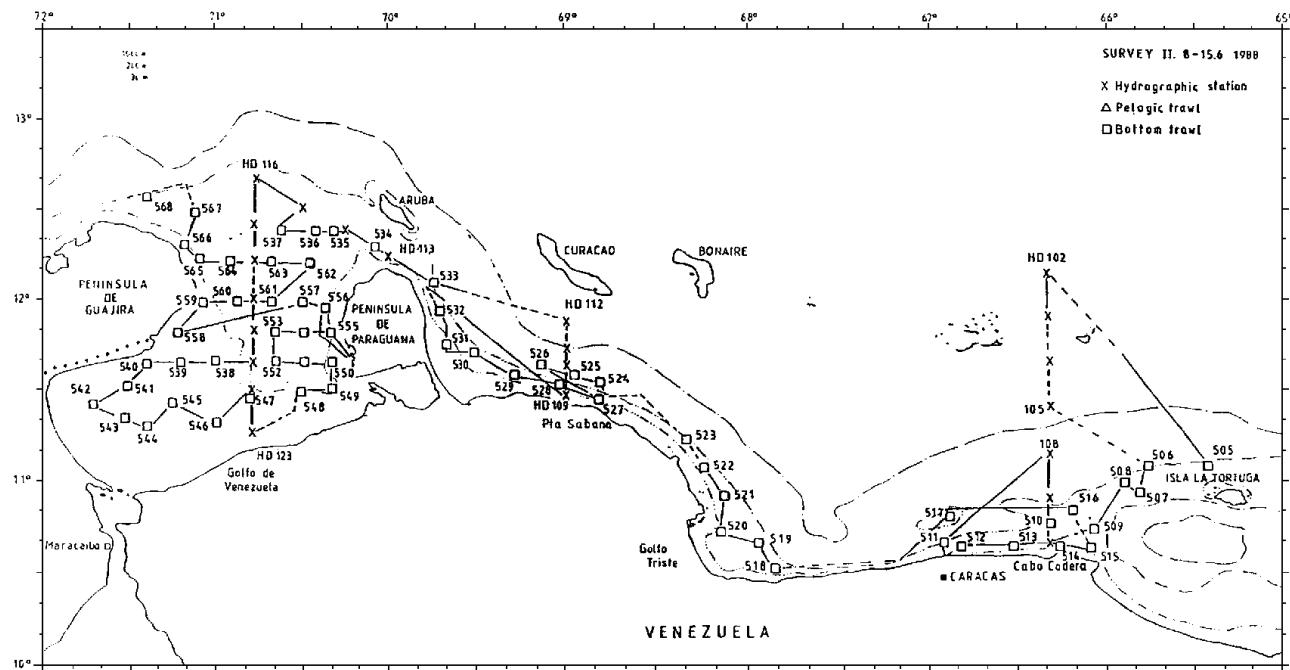


Figure 3. Hydrographic profiles. Oriente coast. - PTA DEL TAQUIEN 31.5-1.6 1988

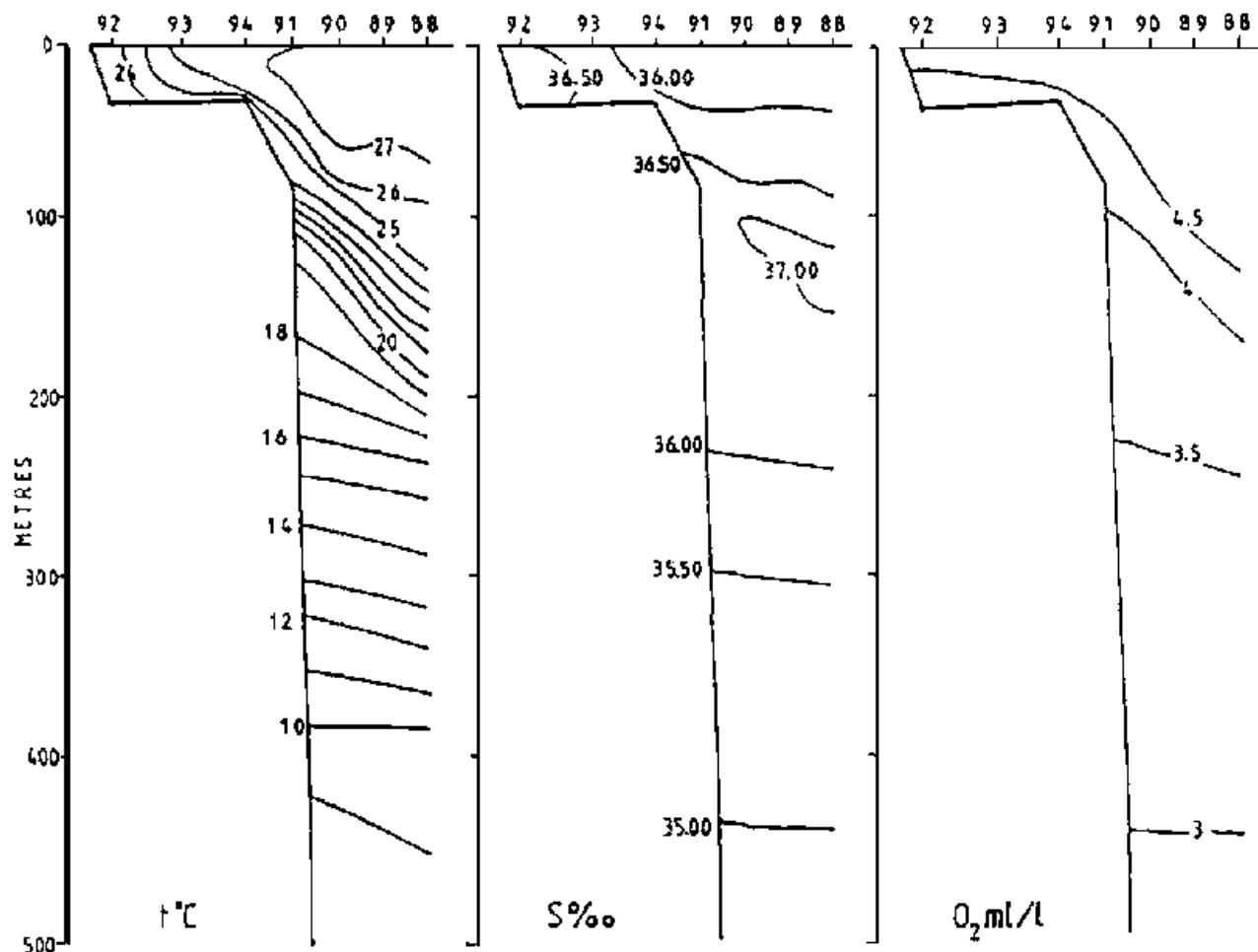


Figure 3. Hydrographic profiles. Oriente coast. - PUERTO LA CRUZ 3-4.6 1988

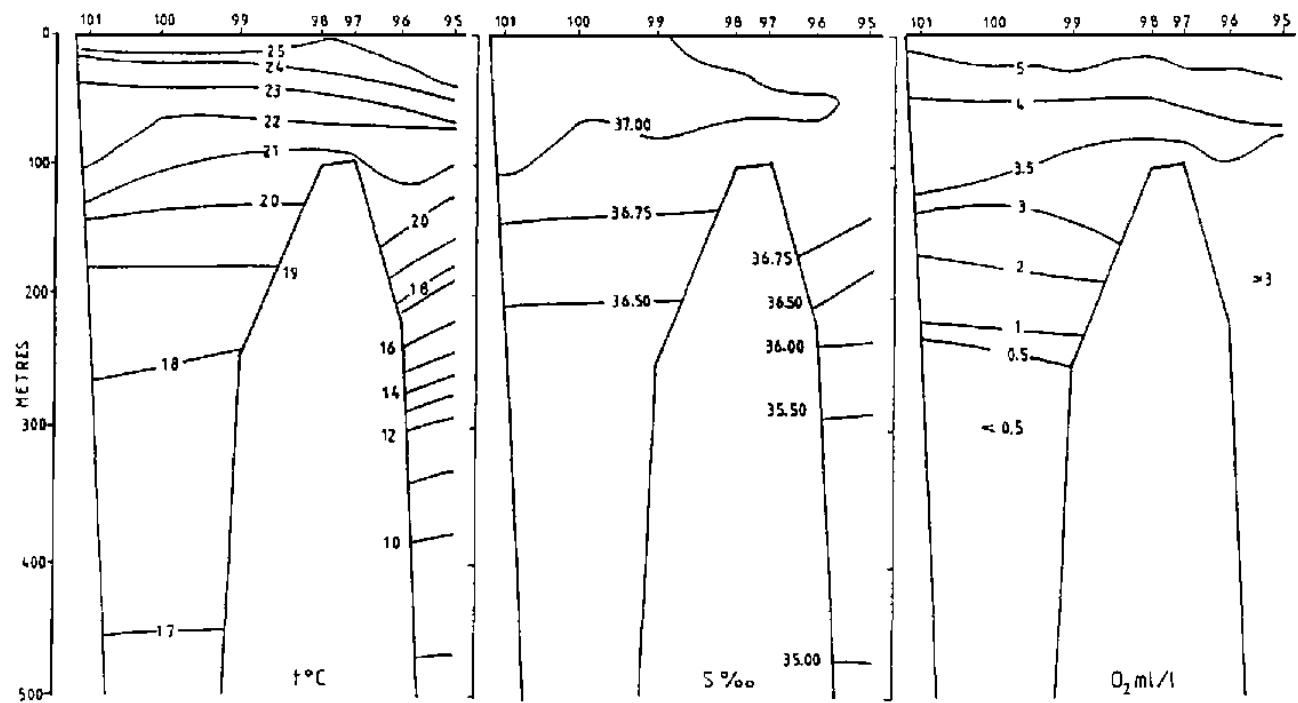


Figure 4a. Hydrographic profiles. Western coasts. - CABO CODERA 6-7.6 1988

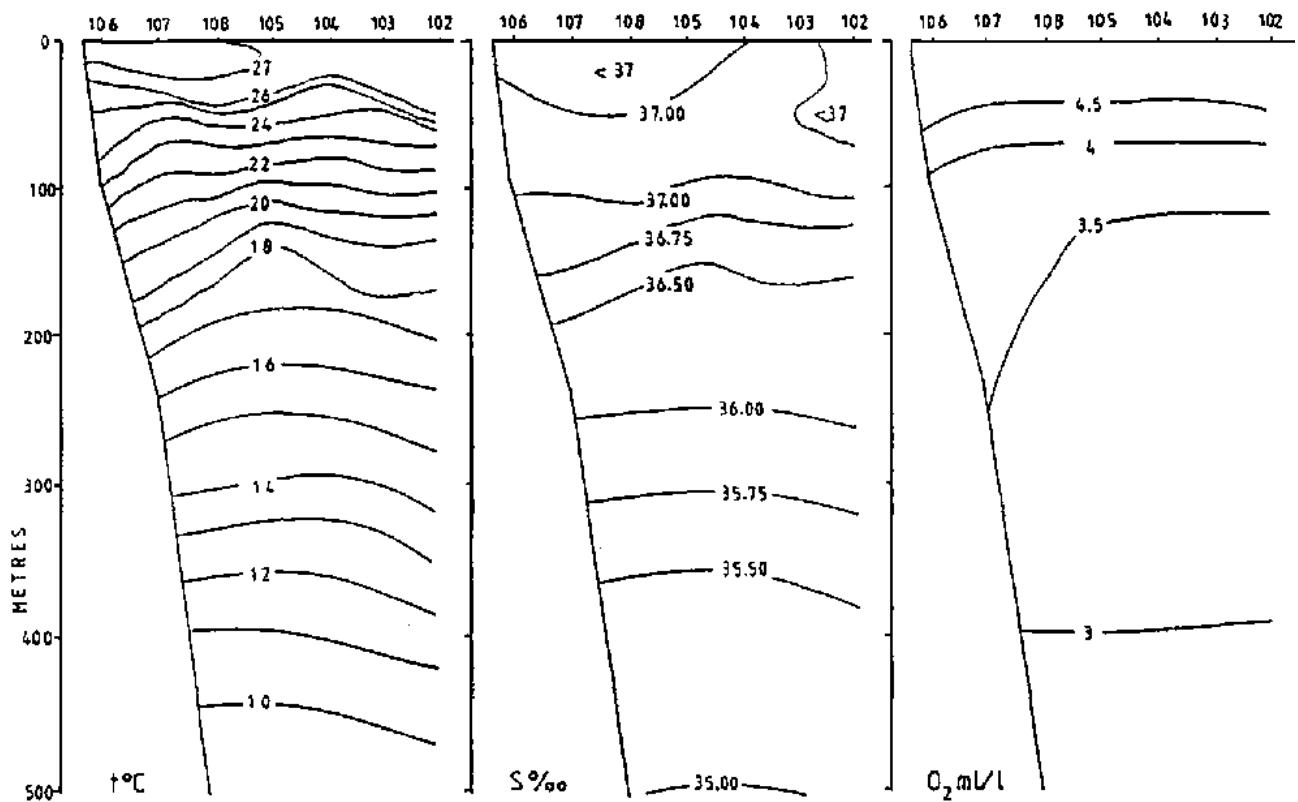


Figure 4a. Hydrographic profiles. Western coasts. - PTA SABANA 11.6 1988

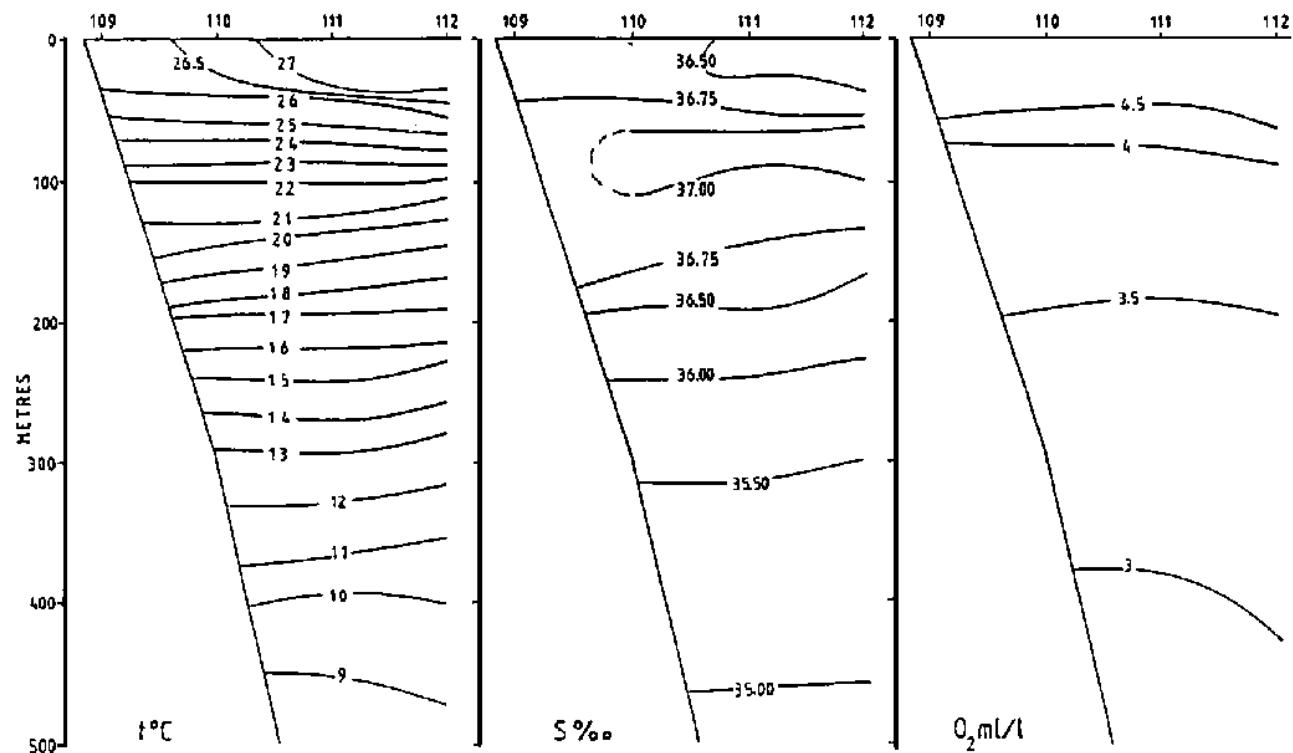


Figure 4b. Hydrographic profiles. Western coasts. - CABO SAN ROMAN 11.6 1988

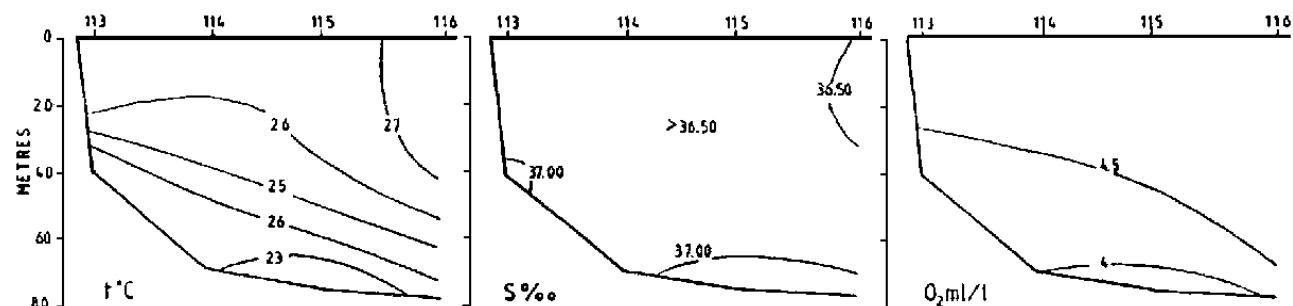


Figure 4c. Hydrographic profiles. Western coasts. - GULF OF VENEZUELA 11-13.6 1988

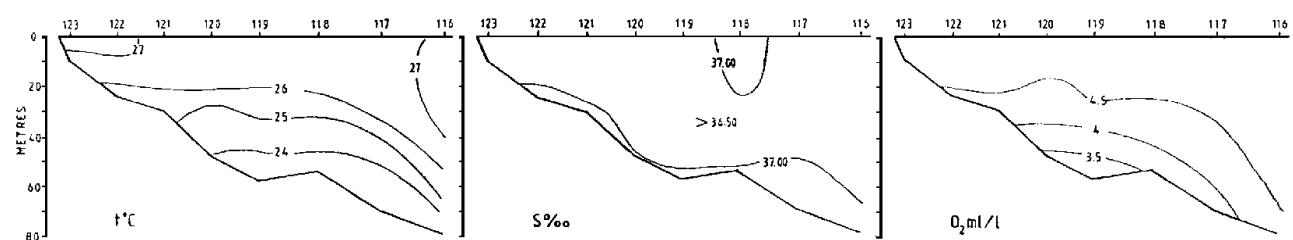


Figure 5. Distribution of pelagic fish from acoustic system. Oriente coast.

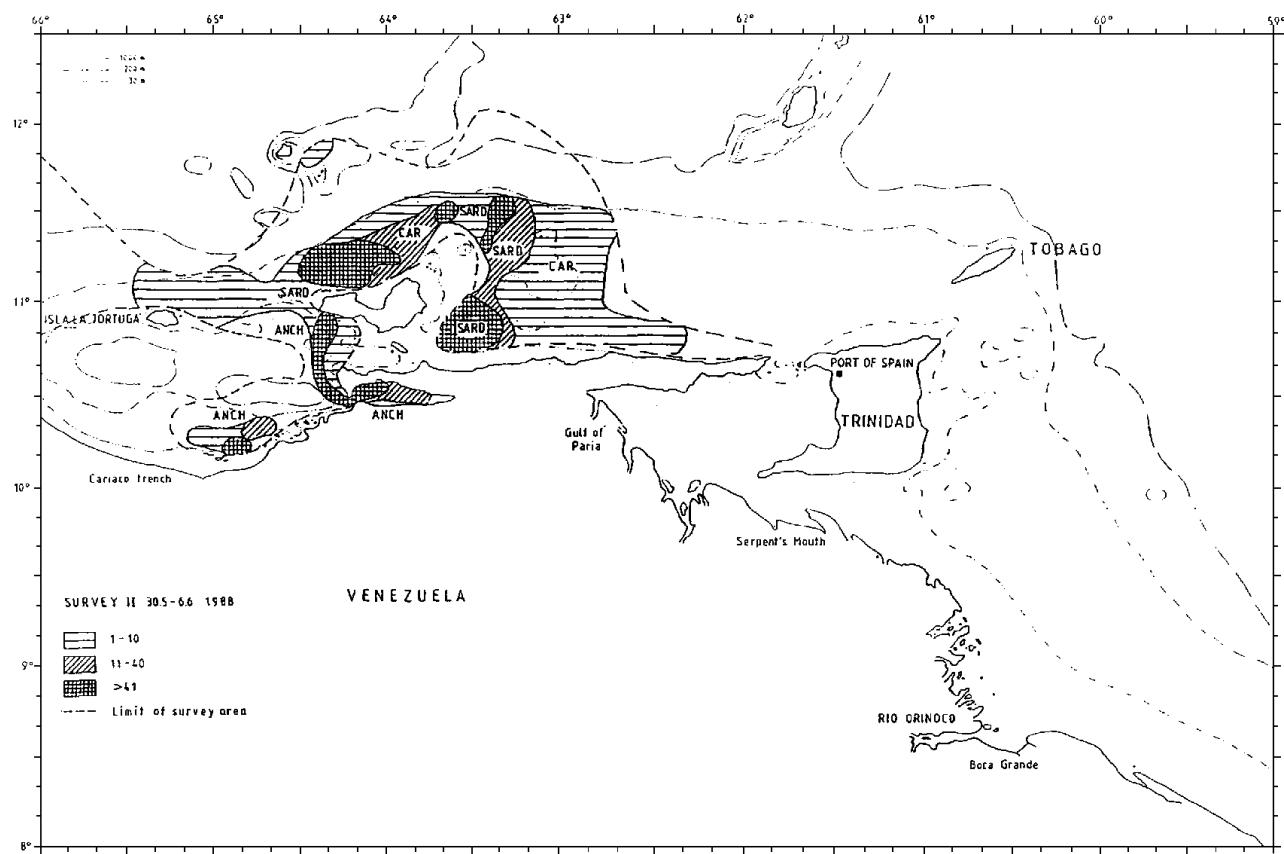
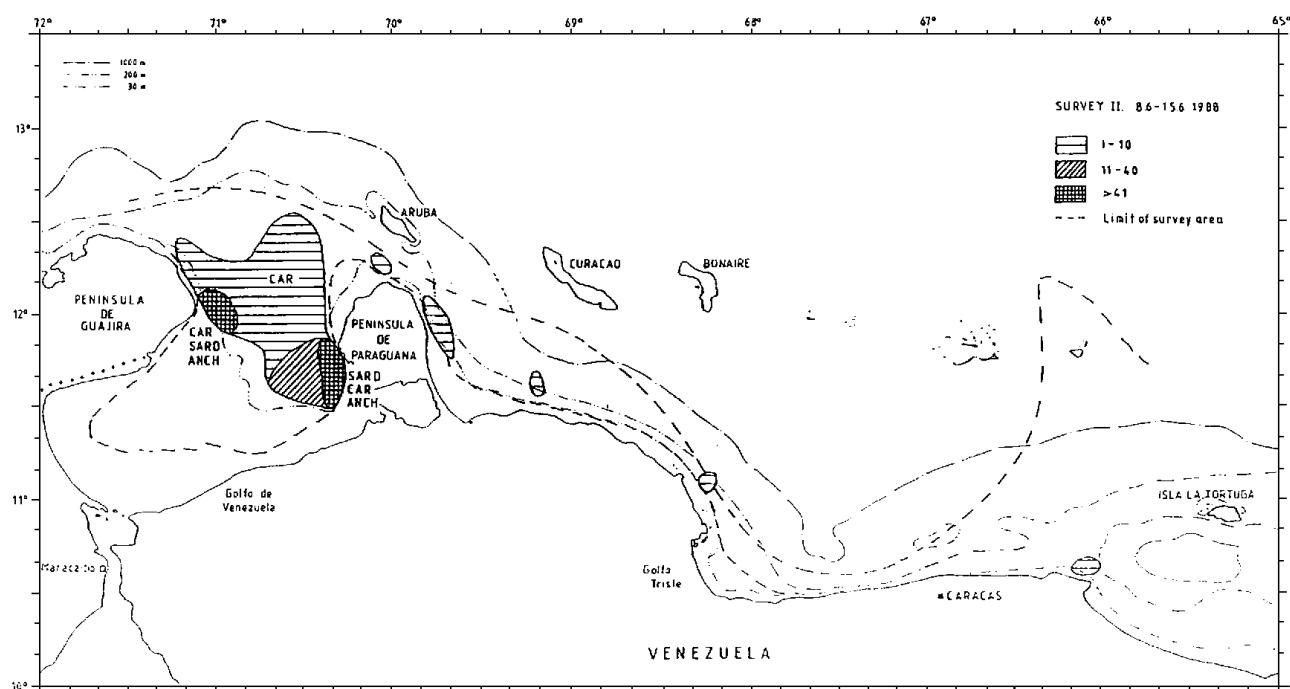


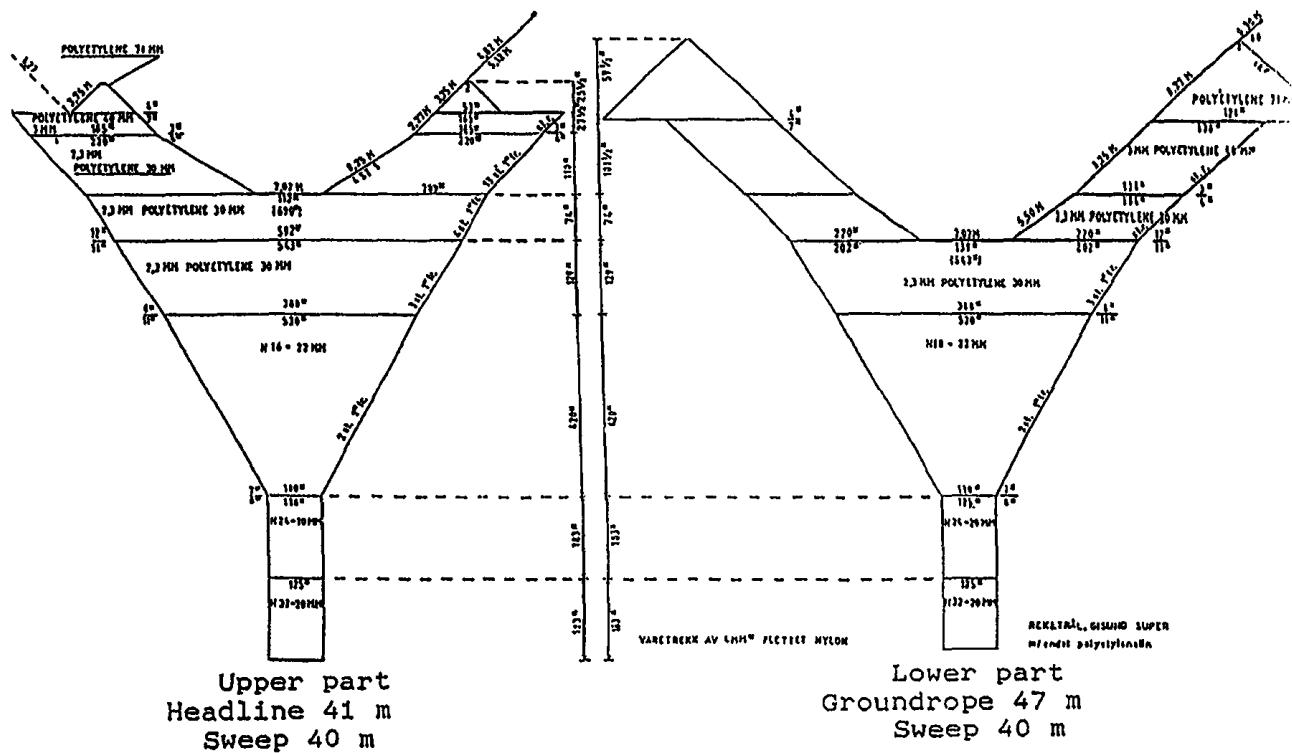
Figure 6. Distribution of pelagic fish from acoustic system. Western coasts.



ANNEX 1. DESCRIPTION OF TRAWL - APENDICE 1.

DESCRIPCION DE RED DE ARRASTRE

Figure



ANNEX 2. RECORDS OF FISHING STATIONS

PROJECT STATION: 455

DATE: 30/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1052
 start stop duration Long W 6255
 TIME :12:15:00 12:45:00 30 (min) Purpose code: 3
 LOG :1738.00 1738.00 Area code : 3
 FDEPTH: 60 62 GearCond.code:
 BDEPTH: 60 62 Validity code:
 Towing dir: 270° Wire out: 250 m Speed: kn*10

Sorted: 82 Kg Total catch: 123.30 CATCH/HOUR: 246.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Peprius paru</i>	105.60	216	42.92	319
<i>Selene spixii</i>	90.00	92	36.50	320
<i>Rhizoprionodon porosus</i>	15.60	16	6.33	
<i>Loligo sp</i>	12.00	3756	4.87	
<i>Sphyraena picudilla</i>	8.70	34	3.53	
<i>Micropogonias furnieri</i>	4.80	4	1.95	
<i>Sphyraena guachancho</i>	4.20	5	1.70	
<i>Scomberosomus cavalla</i>	1.50	6	0.61	
<i>Loligo pacieci</i>	1.20	18	0.49	
<i>Loligo plei</i>	0.90	10	0.36	
<i>Trichiurus lepturus</i>	0.60	10	0.24	
<i>Upeneus parvus</i>	0.60	4	0.24	
<i>Etrumeus teres</i>	0.60	28	0.24	
<i>Chirocentrodon bleekeriatus</i>	0.30	34	0.12	
<i>Sardinella aurita</i>	0.00	4		
Total	246.60		100.00	

PROJECT STATION: 456

DATE: 30/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1018
 start stop duration Long W 6245
 TIME :16:30:00 17:00:00 30 (min) Purpose code: 3
 LOG :1773.50 1773.50 Area code : 3
 FDEPTH: 66 66 GearCond.code:
 BDEPTH: 66 66 Validity code:
 Towing dir: 275° Wire out: 300 m Speed: kn*10

Sorted: 27 Kg Total catch: 212.40 CATCH/HOUR: 424.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Pristipomoides macropnthalus</i>	259.20	7182	61.02	
<i>Upeneus parvus</i>	88.00	2298	20.72	
<i>Rhomboplites aurorubens</i>	16.00	224	3.77	
<i>Pagrus pagrus</i>	14.40	16	3.39	
<i>Loligo plei</i>	8.00	96	1.88	
<i>Balistes vetula</i>	8.00	16	1.88	
<i>Fistularia petimba</i>	4.80	32	1.13	
<i>Acanthostracion quadricornis</i>	4.80	16	1.13	
<i>Synodus poeyi</i>	4.80	48	1.13	
<i>Haemulon aurolineatum</i>	4.00	32	0.94	
<i>Decapterus macarellus</i>	2.40	48	0.56	
<i>Haemulon steindachneri</i>	2.40	32	0.56	
<i>Ariommha bondi</i>	1.60	32	0.38	
<i>Serranus dawingeri</i>	1.60	16	0.38	
<i>Lagocephalus laevigatus</i>	1.60	32	0.38	
<i>Synodus sp</i>	1.60	16	0.38	
<i>Priacanthus arenatus</i>	1.60	48	0.38	
Total	424.80		100.01	

PROJECT STATION: 457

DATE: 30/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 start stop duration Long W 6253
 TIME :19:50:00 20:20:00 30 (min) Purpose code: 3
 LOG :1799.40 1799.40 Area code : 3
 FDEPTH: 520 540 GearCond. code:
 BDEPTH: 520 540 Validity code:
 Towing dir: 275° Wire out: 1500 m Speed: kn*10

Sorted: 4 Kg Total catch: 3.90 CATCH/HOUR: 7.80

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Chauliodus sloani</i>	3.00 84	25.64		
<i>Bathynoetus giganteus</i>	0.60 4	7.69		
<i>Epigonus acropis</i>	0.60 6	7.69		
<i>Hydrologus alberti</i>	0.60 2	7.69		
<i>Gonostoma elongatum</i>	0.50 24	6.41		
<i>Glyphecrangon</i> sp	0.40 58	5.13		
<i>Synagrops bellus</i>	0.40 2	5.13		
PARALEPIDIDAE	0.40 2	5.13		
<i>Ornithoteutis antillarum</i>	0.40 6	5.13		
<i>Benthodesmus tenuiss</i>	0.40 8	5.13		
Shrimps, small, non comm.	0.30 316	3.85		
<i>Nezumia cyano</i>	0.30 0	3.85		
<i>Phycisulus</i> sp.	0.30 2	3.85		
<i>Aristeus viridens</i>	0.20 6	2.56		
<i>Acanthephyra</i> sp.	0.20 4	2.56		
<i>Raja</i> sp	0.20 2	2.56		
TRACHICHTHYIDAE	0.00 8			
<i>Melacosteum niger</i>	0.00 2			
<i>Argyropelecus aculeatus</i>	0.00 8			
<i>Melanostomias</i> sp.	0.00 2			
Total	7.80	100.00		

PROJECT STATION: 458

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1134
 start stop duration Long W 6325
 TIME :06:55:00 07:25:00 30 (min) Purpose code: 3
 LOG :1879.80 1879.90 0.10 Area code : 3
 FDEPTH: 70 71 GearCond. code:
 BDEPTH: 70 71 Validity code:
 Towing dir: 270° Wire out: 400 m Speed: kn*10

Sorted: 31 Kg Total catch: 191.90 CATCH/HOUR: 383.80

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Trachurus lethami</i>	196.80 6064	51.28	321	
<i>Pristipomoides macrophthalmus</i>	92.40 2952	24.08	322	
<i>Upeneus parvus</i>	29.40 1416	7.66	323	
<i>Loligo palearis</i>	16.20 268	4.22		
<i>Priacanthus arenatus</i>	10.20 36	2.66		
<i>Rhomboplites aurorubens</i>	9.20 42	2.40		
<i>Loligo plei</i>	8.40 84	2.19		
<i>Caulolatilus intermedius</i>	5.40 12	1.41		
<i>Fistularia petimba</i>	4.80 36	1.25		
<i>Sardinella aurita</i>	3.60 108	0.94		
<i>Haemulon boschmei</i>	2.40 132	0.63		
<i>Synodus poeyi</i>	1.20 24	0.31		
<i>Haemulon aurolineatum</i>	1.20 12	0.31		
<i>Decapterus tabi</i>	1.20 24	0.31		
<i>Prionotus carolinus</i>	0.60 12	0.16		
<i>Ancyloplites quadrociliata</i>	0.60 2	0.16		
<i>Syacium</i> sp.	0.20 2	0.05		
<i>Ariommam regulus</i>	0.00 12			
POLYCHMADIDAE	0.00 36			
Total	383.80	100.02		

PROJECT STATION: 459

DATE: 31/ 5/88 GEAR TYPE: PT No:4 POSITION: Lat N 1132
 start stop duration Long W 6322
 TIME : 08:25:00 08:55:00 30 (min) Purpose code: 1
 LOG : 1885.70 1887.20 1.50 Area code : 3
 FDEPTH: 0 0 GearCond.code:
 BDEPTH: 69 66 Validity code:
 Towing dir: 108° Wire out: 50 m Speed: 30 kn*10

Sorted: kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight	numbers	
NO CATCH	0.00		
Total	-----	-----	

PROJECT STATION: 460

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1128
 start stop duration Long W 6311
 TIME : 10:25:00 10:55:00 30 (min) Purpose code: 3
 LOG : 1898.40 1898.50 0.10 Area code : 3
 FDEPTH: 61 61 GearCond.code:
 BDEPTH: 61 61 Validity code:
 Towing dir: 213° Wire out: 350 m Speed: kn*10

Sorted: 32 Kg Total catch: 165.20 CATCH/HOUR: 330.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight	numbers	
<i>Upeneus parvus</i>	125.00	9038	37.83 326
<i>Pristipomoides macrophthalmus</i>	124.00	6200	37.53 327
<i>Priacanthus arenatus</i>	16.50	480	4.99
<i>Rhomboplites aurorubens</i>	15.00	660	4.54 325
<i>Trachurus lathami</i>	15.00	550	4.54 324
<i>Loligo plei</i>	9.00	220	2.72
<i>Mustelus canis</i>	7.40	2	2.24
<i>Synodus poeyi</i>	7.00	250	2.12
<i>Ariommha bondi</i>	5.00	210	1.51
<i>Loligo paiei</i>	2.00	40	0.61
<i>Diplometrum bivittatum</i>	1.50	40	0.45
<i>Eucinostomus argenteus</i>	1.00	10	0.30
<i>Penaeus brasiliensis</i>	1.00	10	0.30
<i>Ariommha regulus</i>	1.00	10	0.30
<i>Haemulon brasiliense</i>	0.00	10	
Total	-----	330.40	----- 99.98

PROJECT STATION: 461

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION:Lat N 1119
 start stop duration Long W 6318
 TIME :12:20:00 12:50:00 30 (min) Purpose code: 3
 LOG :1910.00 1911.30 1.30 Area code: 3
 FDEPTH: 36 33 GearCond.code:
 SDEPTH: 36 33 Validity code:
 Towing dir: 172° Wire out: 150 m Speed: 25 kn*10

Sorted: 10 Kg Total catch: 97.00 CATCH/HOUR: 194.00

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Loligo pealei</i>	27.20 2414	14.02		
<i>Strumeus teres</i>	26.40 10032	13.61		
<i>Rhizoprionodon porosus</i>	19.00 16	9.79		
<i>Synodus poeyi</i>	16.60 1114	9.59		
<i>Caranx hippos</i>	15.00 2	8.25		
<i>Pristipomoides macrourthalicus</i>	13.60 2618	7.01		
<i>Caranx crytos</i>	12.40 6	6.39		
<i>Prionotus punctatus</i>	8.40 18	4.33		
<i>Scomberesox cavalla</i>	8.20 6	4.23		
<i>Ophichthodes oglinum</i>	6.00 312	3.09		
<i>Lutjanus purpureus</i>	6.00 2	3.09		
<i>Sphyraena picudilla</i>	6.00 22	3.09		
<i>Aluterus monoceros</i>	3.60 8	1.86		
<i>Upeneus parvus</i>	3.20 426	1.65		
<i>Eucinostomus guiles</i>	3.20 4	1.65		
<i>Sphyraena guachancho</i>	3.20 2	1.65		
<i>Muraenesox bigmani</i>	3.00 2	1.55		
<i>Selene vomer</i>	3.00 2	1.55		
<i>Porichthys sp</i>	1.60 6	1.82		
<i>Eucinostomus argenteus</i>	1.60 2	1.82		
<i>Acanthostracion quadricornis</i>	1.40 6	3.72		
<i>Dactylopterus volitans</i>	1.40 2	3.72		
<i>Trachurus lathami</i>	0.80 2	1.41		
<i>Penaeus brasiliensis</i>	0.20 2	0.10		
Total	97.00	99.99		

PROJECT STATION: 462

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION:Lat N 1105
 start stop duration Long W 6319
 TIME :14:40:00 15:10:00 30 (min) Purpose code: 3
 LOG :1923.30 1923.30 Area code: 3
 FDEPTH: 32 34 GearCond.code:
 SDEPTH: 32 34 Validity code:
 Towing dir: 207° Wire out: 150 m Speed: kn*10

Sorted: 24 Kg Total catch: 24.60 CATCH/HOUR: 49.20

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Loligo pierii</i>	17.00 1216	34.55		328
<i>Sphyraena guachancho</i>	13.40 62	27.24		
<i>Lutjanus purpureus</i>	6.60 2	13.41		
<i>Lutjanus analis</i>	3.00 90	6.10		
<i>Sphyraena picudilla</i>	2.00 2	4.07		
<i>Strumeus teres</i>	1.40 44	2.85		
<i>Orthopristis ruber</i>	1.40 4	2.85		
<i>Trachurus lathami</i>	1.20 36	2.44		
<i>Dactylopterus volitans</i>	0.60 2	1.22		
<i>Acanthostracion quadricornis</i>	0.50 2	1.02		
<i>Eucinostomus argenteus</i>	0.40 8	0.81		
<i>Lutjanus synagris</i>	0.40 4	0.81		
<i>Rhomboplites aurorubens</i>	0.40 20	0.81		
<i>Diplodus bivittatum</i>	0.30 8	0.61		
<i>Sardinella aurita</i>	0.30 6	0.61		
<i>Diplodus formosus</i>	0.20 2	0.41		
<i>Synodus poeyi</i>	0.10 6	0.20		
Total	24.60	100.01		

PROJECT STATION: 463

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1057
 start stop duration Long W 6331
 TIME : 16:35:00 16:56:00 21 (min) Purpose code: 3
 LOO : 1935.60 1935.80 0.20 Area code : 3
 FDEPTH: 34 40 GearCond.code: 5
 BDEPTH: 34 40 Validity code: 1
 Towing dir: 240° Wire out: 150 m Speed: 10 kn*10

Sorted: 30 Kg Total catch: 29.90 CATCH/HOUR: 85.43

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Loligo plei</i>	28.57	877	33.44	
<i>Rhomboplites aurorubens</i>	26.29	594	30.77	
<i>Priacanthus arenatus</i>	5.71	294	6.69	
<i>Sphyraena guachancho</i>	4.86	29	5.69	
<i>Aluterus monoceros</i>	3.71	3	4.34	
OCTOPODIDAE	2.86	9	3.35	
<i>Balistes vetula</i>	2.86	6	3.35	
<i>Synodus poeyi</i>	2.14	40	2.50	
<i>Dactylopterus volitans</i>	2.00	23	2.34	
<i>Diplectrus formosum</i>	2.00	17	2.34	
<i>Lutjanus purpureus</i>	1.43	20	1.67	
<i>Diplectrum bivittatum</i>	1.14	9	1.33	
<i>Trachurus lathami</i>	0.43	17	0.50	
<i>Serranus dawingeri</i>	0.43	3	0.50	
<i>Fistularia petiota</i>	0.43	11	0.50	
<i>Haemulon aurolineatum</i>	0.29	3	0.34	
<i>Scomber japonicus</i>	0.14	3	0.16	
<i>Upeneus parvus</i>	0.14	11	0.16	
<i>Lagoccephalus laevigatus</i>	0.00	3		
Total	-----	85.43	-----	99.96

PROJECT STATION: 464

DATE: 31/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1051
 start stop duration Long W 6337
 TIME : 18:15:00 18:45:00 30 (min) Purpose code: 3
 LOG : 1946.80 1947.50 0.70 Area code : 3
 FDEPTH: 35 35 GearCond.code:
 BDEPTH: 35 35 Validity code:
 Towing dir: 270° Wire out: 200 m Speed: 15 kn*10

Sorted: 34 Kg Total catch: 189.00 CATCH/HOUR: 379.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Sardinella aurita	120.00	4000	31.61	329
Harengula clupeola	34.50	550	9.09	330
Sphyraena picudilla	32.00	140	8.43	
Archosargus rhomboidalis	29.50	80	7.77	
Scomberomorus cavalla	28.60	6	7.53	
Trachurus lathami	26.00		6.85	
Peprilus paru	23.50	40	6.19	
Loligo plei	16.50	560	4.35	
Loligo sp	14.00		3.69	
Loligo palearis	9.50	440	2.50	
Sphyraena guachancho	9.50	10	2.50	
Paralichthys tropicus	6.00	12	1.58	
Bairdiella sanctaeluciae	5.00	20	1.32	
Cynoscion jamaicensis	5.00	40	1.32	
Synodus foetens	4.50	10	1.19	
Penaeus notialis	3.00	80	0.79	
Larimus breviceps	3.00	10	0.79	
Orthopristis ruber	2.50	10	0.66	
Arius spixii	2.00	10	0.53	
Trachinotus carolinus	1.50	2	0.40	
Eucinostomus argenteus	1.00	20	0.26	
Synodus intermedius	1.00	40	0.26	
Diplectrum bivittatum	1.00	10	0.26	
Priacanthus arenatus	0.50	20	0.13	
Penaeus brasiliensis	0.00	10		
Sphaeroicedes testudineus	0.00	10		
Total	379.60		100.00	

PROJECT STATION: 465

DATE: 31/ 5/88 GEAR TYPE: PT No:4 POSITION: Lat N 1047
 start stop duration Long W 6335
 TIME : 20:05:00 20:20:00 15 (min) Purpose code: 1
 LOG : 1957.70 1958.10 0.40 Area code : 3
 FDEPTH: 3 0 GearCond.code:
 BDEPTH: 32 32 Validity code:
 Towing dir: 270° Wire out: 75 m Speed: 20 kn*10

Sorted: 22 Kg Total catch: 2000.00 CATCH/HOUR: 8000.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Sardinella aurita	8000.00	85556	100.00	331
Total	8000.00		100.00	

PROJECT STATION: 466

DATE: 1/ 6/88 GEAR TYPE: BT No.1 POSITION: Lat N 1053
 start stop duration Long W 6316
 TIME :00:35:00 01:05:00 30 (min) Purpose code: 3
 LOG :1995.90 1995.90 Area code : 3
 FDEPTH: 46 40 GearCond.code:
 BDEPTH: 46 40 Validity code:
 Towing dir: 323° Wire out: 200 m Speed: Kn*10

Sorted: 31 Kg Total catch: 275.00 CATCH/HOUR: 550.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMPLE NO.
	weight	numbers		
<i>Synodus poeyi</i>	120.00	7500	21.82	
<i>Ctenosciena gracilicirrhus</i>	64.00	1216	11.64	
<i>Trichiurus lepturus</i>	40.00	464	7.27	
<i>Caranx hippos</i>	36.20	6	6.58	
<i>Arius sp</i>	35.20	384	6.40	
<i>Cynoscion jamaicensis</i>	33.60	298	6.11	
<i>Loligo plei</i>	32.00	432	5.82	
<i>Priacanthus arenatus</i>	24.00	432	4.36	
<i>Mustelus bigmani</i>	16.00	32	2.91	
<i>Porichthys sp</i>	16.00	560	2.91	
<i>Micropogonias furnieri</i>	13.00	12	2.36	
<i>Serranus phoebe</i>	12.80	734	2.33	
<i>Prionotus punctatus</i>	12.80	160	2.33	
<i>Chirocentrodon bleekeriensis</i>	12.80	912	2.33	
<i>Lepophidium sp</i>	11.20	640	2.04	
<i>Diplectrum formosum</i>	9.60	14	1.75	
<i>Loligo pacifici</i>	8.00	400	1.45	
<i>Pristipomoides macrourus</i>	8.00	308	1.45	
<i>Trachurus iathami</i>	8.00	128	1.45	
<i>Sardinella aurita</i>	6.40	48	1.16	
<i>Eucinostomus argenteus</i>	6.40	32	1.16	
<i>Haemulon steindachneri</i>	4.80	32	0.87	
<i>Diplectrum bivittatum</i>	4.00	112	0.73	
<i>Pellona harroweri</i>	4.00	32	0.73	
<i>Penesus brasiliensis</i>	4.00	48	0.73	332
<i>Dactylopterus volitans</i>	3.20	32	0.58	
<i>Lutjanus synagris</i>	2.40	16	0.44	
<i>Haemulon boschmei</i>	1.60	32	0.29	
<i>Syacium micrurum</i>	0.00	16		
<i>Lagocephalus laevigatus</i>	0.00	16		
Total	-----	550.00	-----	100.00

PROJECT STATION: 467

DATE: 1 / 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1111
 start stop duration Long W 6328
 TIME :03:15:00 03:45:00 -30 (min) Purpose code: 3
 LOG :2011.80 2011.80 Area code : 3
 FDEPTH: 32 34 GearCond.code:
 BDEPTH: 32 34 Validity code:
 Towing dir: 30° Wire out: 150 m Speed: kn*10

Sorted: 17 Kg Total catch: 164.90 CATCH/HOUR: 329.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Loligo plei</i>	64.00	1940	19.41	333
<i>Synodus poeyi</i>	56.00	4340	16.98	
<i>Upeneus parvus</i>	40.00	2800	12.13	
<i>Haemulon steindachneri</i>	30.00	400	9.10	
<i>Rhomboplites aurorubens</i>	28.00	300	8.49	
<i>Haemulon boschmei</i>	22.00	1200	6.67	
OCTOPODIDAE	20.00	20	6.06	
<i>Lepophidium</i> sp	10.00	180	3.03	
<i>Diplectrum formosum</i>	10.00	220	3.03	
<i>Rhizoprionodon porosus</i>	10.00	20	3.03	
<i>Serranus phoebe</i>	8.00	220	2.43	
<i>Sardinella aurita</i>	8.00	160	2.43	
<i>Penaeum brasiliensis</i>	6.20	102	1.88	334
<i>Priacanthus arenatus</i>	4.00	300	1.21	
<i>Pecten</i> sp	4.00	120	1.21	
<i>Micropogonias furnieri</i>	3.60	18	1.08	
<i>Ancylospetta</i> sp.	2.00	60	0.61	
<i>Porichthys</i> sp	2.00	20	0.61	
<i>Pristipomoides macrophthalmus</i>	2.00	100	0.61	
<i>Bothus</i> sp	0.00	40		
<i>Prionotus punctatus</i>	0.00	60		
<i>Parexocoetus brachypterus</i>	0.00	20		
Total	-----	329.80	-----	100.01

PROJECT STATION: 468

DATE: 1/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1123
 start stop duration Long W 6329
 TIME : 06:10:00 06:40:00 30 (min) Purpose code: 3
 LOG : 2027.60 2027.60 Area code : 3
 FDEPTH: 43 44 GearCond.code:
 BDEPTH: 43 44 Validity code:
 Towing dir: 310° Wire out: 250 m Speed: kn*10

Sorted: 55 Kg Total catch: 54.80 CATCH/HOUR: 109.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Pristipomoides macrophthalmus</i>	26.20	1738	23.91	335
<i>Scomberomorus cavalla</i>	25.60	12	23.36	
<i>Upeneus parvus</i>	19.40	1008	17.70	336
<i>Loligo plei</i>	12.50	576	11.41	337
<i>Sphyraena picudilla</i>	8.00	42	7.30	
<i>Synodus poeyi</i>	4.80	328	4.38	
<i>Synodus foetens</i>	4.50	16	4.11	
<i>Diplectrum bivittatum</i>	1.80	78	1.64	
<i>Sphyraena guachancho</i>	1.40	2	1.28	
<i>Ancylorhynchus quadrocellata</i>	1.00	-	0.91	
<i>Gymnothorax ocellatus</i>	0.80	6	0.73	
<i>Balistes vetula</i>	0.80	2	0.73	
PORTUNIDAE	0.80	6	0.73	
<i>Rhizoprionodon porosus</i>	0.70	2	0.64	
<i>Chloroscombrus chrysurus</i>	0.50	2	0.46	
<i>Selene spixii</i>	0.30	4	0.27	
<i>Panaeus brasiliensis</i>	0.30	5	0.27	
<i>Syacium</i> sp.	0.20	-	0.18	
<i>Trachurus lathami</i>	0.00	2		
<i>Etrumeus teres</i>	0.00	2		
<i>Octopus vulgaris</i>	0.00	-		
<i>Diplectrum formosum</i>	0.00	8		
Total	-----	109.60	-----	100.01

PROJECT STATION: 469

DATE: 17 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1133
 start stop duration Purpose code: 3 Long W 6330
 TIME :08:15:00 08:45:00 30 (min) Area code : 3
 LOG :2041.60 2041.80 0.20 GearCond.code:
 FDEPTH: 62 67 Validity code:
 SDEPTH: 62 67
 Towing dir: 260° Wire out: 350 m Speed: 4 kn*10
 Sorted: 67 Kg Total catch: 931.60 CATCH/HOUR: 1862.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trachurus lathami</i>	756.00	41744	40.58	338
<i>Scomber japonicus</i>	318.60	5778	17.10	339
<i>Sardinella aurita</i>	226.80	10544	12.18	340
<i>Priacanthus arenatus</i>	175.50	514	9.42	
<i>Pristipomoides macrophthalmus</i>	81.00	4914	4.35	
<i>Selar crumenophthalmus</i>	75.60	1168	4.06	
<i>Rhomboplites aurorubens</i>	43.20	1674	2.32	
<i>Loligo paellei</i>	37.80	572	2.03	
<i>Myctoperca cidi</i>	34.00	2	1.83	
<i>Butijanus purpureus</i>	26.80	18	1.44	
<i>Strumeus teres</i>	24.30	1080	1.30	
<i>Loligo plei</i>	24.30	432	1.30	
<i>Butijanus synurus</i>	14.00	18	0.75	
<i>Dicapterus macarellus</i>	10.80	18	0.58	
<i>Openeus parvus</i>	8.10	432	0.43	
<i>Uraspis secunda</i>	2.80	2	0.15	
<i>Scomberomorus cavalla</i>	2.40	2	0.13	
<i>Muraenesox canis</i>	0.80	4	0.04	
<i>Synodus foetens</i>	2.00	34		
<i>Ariommabondi</i>	0.00	18		
<i>Caulolatilus intermedius</i>	0.00	34		
<i>Serranus atrobranchus</i>	0.00	34		
Total	-----	1862.80	-----	99.99

PROJECT STATION: 470

DATE: 17 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1124
 start stop duration Purpose code: 3 Long W 6350
 TIME :10:20:00 10:50:00 30 (min) Area code : 3
 LOG :2054.90 2055.00 0.10 GearCond.code:
 FDEPTH: -1 -5 Validity code:
 SDEPTH: 62 45
 Towing dir: 270° Wire out: 250 m Speed: kn*10

Sorted: 59 Kg Total catch: 775.30 CATCH/HOUR: 1550.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Strumeus teres</i>	1467.40	104184	94.63	341
<i>Selene apixii</i>	26.60	24	1.72	342
<i>Loligo plei</i>	22.00	594	1.42	
<i>Cactylopterus volitans</i>	5.60	12	0.43	
<i>Ogcocelphalus nasutus</i>	6.60	44	0.43	
<i>Loligo paellei</i>	6.60	186	0.43	
<i>Sardinella aurita</i>	4.40	44	0.28	
<i>Uraspis secunda</i>	3.30	2	0.21	
<i>Ogcocelphalus flavolimatus</i>	1.20	2	0.08	
<i>Synodus foetens</i>	1.20	2	0.08	
<i>Priacanthus arenatus</i>	1.10	2	0.07	
<i>Prionotus punctatus</i>	1.00	2	0.06	
<i>Caulolatilus intermedius</i>	0.90	2	0.06	
<i>Ancylopsetta quadrocellata</i>	0.80	2	0.05	
<i>Diplectrum bivittatum</i>	0.80	2	0.05	
<i>Forichthys pauciradiatus</i>	0.00	22		
<i>Serranus atrobranchus</i>	0.00	22		
Total	-----	1550.60	-----	100.00

PROJECT STATION: 471

DATE: 17/6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1129
 start stop duration Long W 6401
 TIME :12:00:00 12:30:00 30 (min) Purpose code: 3
 LOG :2064.10 2064.10 Area code : 3
 FDEPTH: 70 76 GearCond.code:
 BDEPTH: 70 76 Validity code:
 Towing dir: 270° Wire out: 400 m Speed: kn*10

Sorted: 35 Kg Total catch: 826.50 CATCH/HOUR: 1653.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Trachurus lathami</i>	709.50	26690	42.92	343
<i>Fristipomoides macrophthalmus</i>	421.40	7416	25.49	344
<i>Rhomboplites aurorubens</i>	215.00	2796	13.01	
<i>Cutjanus analis</i>	88.00	16	5.32	
<i>Mycteroperca cici</i>	53.00	2	3.21	
<i>Synodus poeyi</i>	25.80	86	1.56	
<i>Priacanthus arenatus</i>	25.80	44	1.56	
<i>Haemulon steindachneri</i>	25.80	86	1.56	
<i>Upeneus parvus</i>	21.50	66	1.30	
<i>Scorpaena istmensis</i>	12.90	130	0.78	
<i>Lagocephalus leavigatus</i>	12.90	172	0.78	
<i>Loligo plei</i>	8.60	86	0.52	
<i>Loligo paellei</i>	8.60	130	0.52	
<i>Serracina agassizii</i>	8.00	46	0.52	
<i>Seriola zonata</i>	8.00	2	0.48	
<i>Fistularia petimba</i>	4.20	2	0.25	
<i>Serranus flaviventris</i>	2.00	1	0.12	
<i>Epinephelus niveatus</i>	1.60	2	0.08	
Total	-----	1653.00	-----	99.98

PROJECT STATION: 472

DATE: 17/6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1111
 start stop duration Long W 6403
 TIME :14:33:00 15:03:00 30 (min) Purpose code: 3
 LOG :2082.40 2083.30 0.90 Area code : 3
 FDEPTH: 26 29 GearCond code:
 BDEPTH: 19 29 Validity code:
 Towing dir: 162° Wire out: 150 m Speed: 20 kn*10

Sorted: 17 Kg Total catch: 57.30 CATCH/HOUR: 54.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Upeneus parvus</i>	11.70	442	21.43	
<i>Loligo plei</i>	9.30	120	17.03	
<i>Scomber jaconicus</i>	7.50	196	13.74	245
<i>Synodus poeyi</i>	6.00	390	10.99	
<i>Trachurus lathami</i>	4.50	168	8.24	
<i>Sardinella aurita</i>	3.90	52	7.14	
<i>Loligo paellei</i>	3.60	72	6.59	
JCTOPODIDAE	2.40	2	4.40	
<i>Diplodectrum formosum</i>	2.40	16	4.40	
<i>Paralichtys alboguttata</i>	2.40	4	4.40	
<i>Prionotus sp</i>	0.60	4	1.10	
<i>Serranus phoebe</i>	0.30	6	0.55	
<i>Acantho meleagrinum</i>	0.00	5		
<i>Decapterus punctatus</i>	0.00	4		
<i>Priacanthus arenatus</i>	0.00	4		
Total	-----	54.60	-----	100.01

PROJECT STATION: 473

DATE: 1/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1114
 start stop duration Long W 6414
 TIME :16:13:00 16:43:00 30 (min) Purpose code: 3
 LOG :2092.50 2092.50 Area code : 3
 FDEPTH: 54 44 GearCond.code:
 BDEPTH: 54 44 Validity code:
 Towing dir: 269° Wire out: 250 m Speed: kn*10

Sorted: 34 Kg Total catch: \$11.50 CATCH/HOUR: 623.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP. NO.
	Weight	numbers		
<i>Etrumeus teres</i>	191.60	16638	46.81	346
<i>Pristipomoides macrourus</i>	135.00	5534	21.67	
<i>Loligo plei</i>	55.80	810	8.96	347
<i>Upeneus parvus</i>	43.20	2106	6.93	
<i>Serranus flaviventris</i>	30.60	35	4.91	
<i>Sphyraena picudilla</i>	14.40	126	2.31	
<i>Synodus poeyi</i>	10.80	204	1.73	
<i>Scorpaena brasiliensis</i>	9.00	36	1.44	
<i>Trachurus lathami</i>	9.00	234	1.44	
OCTOPODIDAE	6.00	6	0.96	
<i>Dactylopterus volitans</i>	5.40	18	0.87	
<i>Priacanthus arenatus</i>	3.60	144	0.58	
<i>Eucinostomus argenteus</i>	2.70	54	0.43	
<i>Rhomboplites aurorubens</i>	1.80	72	0.29	
<i>Scorpaena istmennis</i>	1.80	13	0.29	
<i>Penaeus brasiliensis</i>	1.20	22	0.19	348
<i>Rhinobatos percellens</i>	0.60	2	0.10	
<i>Phrynelox scaber</i>	0.40	2	0.06	
<i>Paralichthys alboguttata</i>	0.10	3	0.02	
Total	-----		-----	99.99

PROJECT STATION: 474

DATE: 1/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1107
 start stop duration Long W 6426
 TIME :17:43:00 18:13:00 30 (min) Purpose code: 3
 LOG :2100.50 2101.10 0.60 Area code : 3
 FDEPTH: 26 26 GearCond.code:
 BDEPTH: 26 26 Validity code:
 Towing dir: 255° Wire out: 150 m Speed: 20 kn*10

Sorted: 34 Kg Total catch: 137.40 CATCH/HOUR: 274.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Loligo plei	77.60	1032	28.24	349
Upeneus porvus	40.00	1856	14.56	350
Sardinella aurita	29.60	376	10.77	351
Diplectrum bivittatum	20.80	184	7.57	
Haemulon steindachneri	16.00	69	5.02	
Trachurus lathami	13.20	776	4.80	352
Synodus poeyi	12.00	704	4.37	
Diplectrum formosum	9.20	120	3.35	
Sphyraena picudilla	6.40	72	2.33	
Sarda sarda	5.60	24	2.04	
Synodus foetens	5.60	40	2.04	
Scorpaena brasiliensis	4.80	10	1.75	
Decapterus macarellus	4.40	144	1.60	
Priacanthus arenatus	4.40	96	1.60	
OCTOPODIDAE	4.00	8	1.46	
Chloroscombrus chrysurus	4.00	16	1.46	
Dactylopterus volitans	4.00	8	1.46	
Lutjanus analis	2.40	24	0.87	
Epinephelus flavolimbatus	2.40	8	0.87	
Euthynnus alletteratus	2.40	8	0.87	
LABRIDAE	1.60	8	0.58	
Bothus lunatus	1.60	24	0.58	
Alectis ciliaris	1.60	16	0.58	
Haemulon aurolineatum	1.20	8	0.44	
Pristipomoides macrophthalmus	0.00	8		
Total	-----	274.80	-----	100.01

PROJECT STATION: 475

DATE: 1/ 6/88 GEAR TYPE: PT No:2 POSITION:Lat N 1113
 start stop duration Long W 6420
 TIME :20:00:00 20:23:00 23 (min) Purpose code: 1
 LOG :2115.50 2116.70 1.20 Area code : 3
 FDEPTH: 15 15 GearCond.code:
 BDEPTH: 45 47 Validity code:
 Towing dir: 300° Wire out: 150 m Speed: 35 kn*10

Sorted: 36 Kg Total catch: 397.70 CATCH/HOUR: 1037.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Sardinella aurita	889.57	18566	85.74	353
Etrumeus teres	60.26	3300	5.81	354
Scomber japonicus	57.39	545	5.53	355
Euthynnus alletteratus	18.65	58	1.80	
Selar crumenophthalmus	7.17	29	0.69	
Decapterus macarellus	4.30	115	0.41	
Total	-----	1037.34	-----	99.98

PROJECT STATION: 476

DATE: 2/ 6/88 GEAR TYPE: PT No:2 POSITION:Lat N 1113
 start stop duration Long W 6455
 TIME :00:35:00 01:05:00 30 (min) Purpose code: 1
 LOG :2163.50 2164.20 0.70 Area code: 3
 FDEPTH: 5 8 GearCond.code:
 BDEPTH: 22 27 Validity code:
 Towing dir: 15° Wire out: 50 m Speed: 15 kn*10

Sorted: 10 Kg Total catch: 10.45 CATCH/HOUR: 20.90

SPECIES		CATCH/HOUR.	% OF TOT. C	SAMP.NO.
	weight	numbers		
Anchoviella lepidostole	11.00	1146	52.63	386
Loligo plei	3.00	760	14.05	
Synodus poeyi	2.00	234	9.57	
Etrumeus teres	1.00	142	4.78	
Sphyraena picudilla	0.80	2	3.83	
Sardinella aurita	0.80	40	3.83	
Trichiurus lepturus	0.60	2	2.67	
Engraulis eurystole	0.60	44	2.87	
Chirocentrodon bleekeriensis	0.60	74	2.87	
Remora sp.	0.20	4	0.96	
Anchos lyolepis	0.20	20	0.96	
Selar crumenophthalmus	0.10	2	0.48	
Selene sp	0.00	4		
Decapterus macarellus	0.00	2		
Trachurus lathami	0.00	4		
Haemulon boschae	0.00	6		
Total	-----	20.90	-----	100.00

PROJECT STATION: 477

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1154
 start stop duration Long W 6417
 TIME :07:00:00 07:25:00 25 (min) Purpose code: 3
 LOG :2213.00 2213.10 0.10 Area code: 3
 FDEPTH: 135 160 GearCond.code:
 BDEPTH: 135 160 Validity code:
 Towing dir: 235° Wire out: 700 m Speed: kn*10

Sorted: 42 Kg Total catch: 41.90 CATCH/HOUR: 100.56

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight	numbers		
Antigonia capros	30.72	221	30.55	
Epinephelus niveatus	30.24	5	30.07	
Serranus phoebe	10.80	166	10.74	357
Caulolatilus cyanops	9.60	14	9.55	
Seriola rivolana	6.00	5	5.97	
Rhomboplites aurorubens	3.36	5	3.34	
Fistularia petimba	2.40	7	2.39	
Chaetodon guyanensis	1.68	38	1.67	
Lagocephalus laevigatus	1.32	2	1.31	
Synodus intermedius	1.32	22	1.31	
Ostichthys trachypoma	1.20	5	1.19	
Synodus poeyi	1.20	58	1.19	
Scorpaena plumieri	0.48	2	0.48	
Fistularia tabacaria	0.24	10	0.24	
Paranthias furcifer	0.00	5		
Total	-----	100.56	-----	100.00

PROJECT STATION: 478

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1140
 start stop duration Long W 6424
 TIME : 10:55:00 11:20:00 25 (min) Purpose code: 3
 LOG : 2245.00 2245.00 Area code : 3
 FDEPTH: 58 60 GearCond.code:
 BDEPTH: 58 60 Validity code:
 Towing dir: 270° Wire out: 350 m Speed: kn*10

Sorted: 81 Kg Total catch: 80.85 CATCH/HOUR: 194.04

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO
	WEIGHT	NUMBERS		
Dactylopterus volitans	85.20	130	43.91	
Priacanthus arenatus	33.60	3936	17.32	
Acanthostracion quadricornis	31.20	103	16.08	
Balistes vetula	12.00	5	6.18	
Haemulon boschme	5.00	1752	3.09	
Diodon sp.	5.04	14	2.60	
Haemulon aurolineatum	4.80	264	2.47	
Caulolatilus chrysops	2.64	2	1.36	
Fistularia tabacaria	2.64	2	1.36	
Fistularia petimba	2.40	7	1.24	
Malacanthus plumieri	1.92	5	0.99	
Loligo paelei	1.20	24	0.62	
Lutjanus synagris	1.20	19	0.62	
Holacanthus ciliaris	0.96	2	0.49	
Lutjanus buccanella	0.72	26	0.37	
Paranthias sp.	0.60	41	0.31	
Chaetodon sedentarius	0.48	17	0.25	
Upeneus parvus	0.36	17	0.19	
Ogcocephalus vespertilio	0.36	2	0.19	
Pomacanthus sp.	0.24	2	0.12	
Holocentrus sp.	0.24	2	0.12	
Hemiptenorotus novacula	0.12	2	0.06	
Nicholimina usta	0.12	7	0.06	
Total	-----	194.04	-----	100.00

PROJECT STATION: 479

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1124
 start stop duration Long W 6418
 TIME :13:34:00 14:04:00 30 (min) Purpose code: 3
 LOG :2266.40 2266.40 Area code : 3
 FDEPTH: 78 76 GearCond.code:
 BDEPTH: 78 76 Validity code:
 Towing dir: 200° Wire out: 350 m Speed: kn*10
 Sorted: 28 Kg Total catch: 368.80 CATCH/HOUR: 737.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO
	weight	numbers		
<i>Upeneus parvus</i>	182.60	8108	24.76	
<i>Trachurus lathami</i>	138.60	5106	18.79	
<i>Pristipomoides macrourhalmus</i>	88.00	1650	11.93	
<i>Rhomboplites aurorubens</i>	77.00	72	10.44	
<i>Haemulon boschme</i>	70.40	2398	9.54	
<i>Epinephelus niveatus</i>	47.80	2	6.48	
<i>Haemulon melanurum</i>	29.00	210	3.93	
<i>Lutjanus analis</i>	20.40	2	2.77	
<i>Epinephelus flavolimbatus</i>	18.90	4	2.56	
<i>Ariommia bondi</i>	15.40	616	2.09	
<i>Synodus poeyi</i>	11.00	88	1.49	
<i>Lagocephalus laevigatus</i>	11.00	44	1.49	
<i>Loligo paelei</i>	9.90	132	1.34	
<i>Caulolatilus cyanops</i>	7.00	18	0.95	
<i>Caulolatilus intermedius</i>	4.40	4	0.60	
<i>Aluterus monoceros</i>	3.00	1	0.41	
<i>Decapterus tabl</i>	2.20	22	0.30	
<i>Paralichthys tropicus</i>	1.00	2	0.14	
Total	-----	737.60	-----	100.01

PROJECT STATION: 480

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1117
 start stop duration Long W 6421
 TIME :14:54:00 15:24:00 30 (min) Purpose code: 3
 LOG :2272.00 2272.80 0.80 Area code : 3
 FDEPTH: 70 68 GearCond.code:
 BDEPTH: 70 68 Validity code:
 Towing dir: 225° Wire out: 300 m Speed: 15 kn*10

Sorted: 36 Kg Total catch: 512.60 CATCH/HOUR: 1025.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO
	weight	numbers		
<i>Pristipomoides macrourhalmus</i>	403.20	8824	39.33	359
<i>Trachurus lathami</i>	347.20	1932	33.87	360
<i>Loligo plei</i>	98.00	812	9.56	361
<i>Synodus poeyi</i>	28.00	172	2.73	
<i>Caulolatilus chrysops</i>	22.40	112	2.18	
<i>Scomber japonicus</i>	20.00	120	1.95	358
<i>Aluterus monoceros</i>	19.60	28	1.91	
<i>Upeneus parvus</i>	19.60	700	1.91	
<i>Priacanthus arenatus</i>	18.20	420	1.78	
<i>Prionotus punctatus</i>	14.00	280	1.37	
<i>Scorpaena agassizi</i>	14.00	28	1.37	
<i>Dactylopterus volitans</i>	14.00	28	1.37	
<i>Sardinella aurita</i>	4.20	140	0.41	
<i>Scorpaena istmensis</i>	2.80	28	0.27	
<i>Selar crumenopthalmus</i>	0.00	28		
Total	-----	1025.20	-----	100.01

PROJECT STATION: 481

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1110
 start stop duration Long W 6430
 TIME :16:26:00 16:56:00 30 (min) Purpose code: 3
 LOG :2281.30 2282.60 1.30 Area code : 3
 FDEPTH: 48 52 GearCond.code:
 BDEPTH: 48 52 Validity code:
 Towing dir: 270° Wire out: 200 m Speed: 26 kn*10

Sorted: 20 Kg Total catch: 369.10 CATCH/HOUR: 738.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Upeneus parvus</i>	144.00	7630	19.51	
<i>Pristipomoides macrourus</i>	129.60	7100	17.56	
<i>Loligo plei</i>	102.00	1632	13.82	
<i>Selar crumenophthalmus</i>	76.80	2112	10.40	
<i>Loligo pacieci</i>	55.20	960	7.48	
<i>Trachurus lathami</i>	52.80	3024	7.15	
<i>Scomber japonicus</i>	38.40	720	5.20	
<i>Rhomboplites aurorubens</i>	38.40	2184	5.20	
<i>Epinephelus flavolimbatus</i>	31.20	24	4.23	
<i>Caulolatilus cyanops</i>	14.40	24	1.95	
<i>Scorpaena agassizii</i>	12.00	24	1.63	
<i>Synodus poeyi</i>	9.60	288	1.30	
<i>Lutjanus purpureus</i>	9.00	4	1.22	
<i>Sardinella aurita</i>	7.20	144	0.98	
<i>Diplectrum radiale</i>	4.80	96	0.65	
<i>Serranus phoebe</i>	4.80	96	0.65	
<i>Priacanthus arenatus</i>	3.00	5	0.41	
<i>Lagocephalus laevigatus</i>	2.40	24	0.33	
<i>Penaeus brasiliensis</i>	1.60	24	0.22	
<i>Lutjanus synagris</i>	1.00	2	0.14	
<i>Eucinostomus argenteus</i>	0.00	48		
<i>Priacanthus arenatus</i>	0.00	144		
Total	-----	738.20	-----	100.03

PROJECT STATION: 482

DATE: 2/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1114
 start stop duration Long W 6438
 TIME :17:50:00 18:10:00 20 (min) Purpose code: 3
 LOG :2289.00 2289.60 0.60 Area code: 3
 FDEPTH: 95 86 GearCond. code:
 DEPTH: 95 86 Validity code:
 Towing dir: 240° Wire out: 450 m Speed: 20 kn*10

Sorted: 31 Kg Total catch: 220.30 CATCH/HOUR: 660.90

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT.	C	SAMP.NO.
	NUMBERS				
Pristipomoides macrophthalmus	342.30	3612	51.79	362	
Upeneus parvus	81.90	457	12.39	363	
Mustelus canis	42.00	21	6.35		
Caulolatilus cyanops	36.75	105	5.56		
Fistularia petimba	28.35	42	4.29		
Dactylopterus volitans	21.00	63	3.18		
Ariommam bondi	18.90	924	2.86		
Synodus poeyi	13.65	42	2.07		
Epinephelus flavolimbatus	13.20	3	2.00		
Loligo plei	10.50	273	1.59		
Trachinocephalus myops	9.45	21	1.43		
Trachurus lathami	8.40	42	1.27		
Serranus phoebe	7.35	42	1.11		
Narcine brasiliensis	6.30	21	0.95		
Serranus dawingeri	6.30	42	0.95		
Syacium gunteri	4.20	42	0.64		
Scorpaena plumieri	4.20	63	0.64		
Mycteropterus interstitialis	3.00	3	0.45		
Scomber japonicus	2.10	42	0.32		
Prionotus punctatus	1.05	21	0.16		
Sardinella aurita	0.00	21			
Etrumeus teres	0.00	21			
Chaetodon guyanensis	0.00	21			
Total	-----	660.90	-----	100.00	

PROJECT STATION: 483

DATE: 2/ 6/88 GEAR TYPE: BT No.:1 POSITION:Lat N 1106
 start stop duration Long W 6442
 TIME :22:08:00 22:35:00 30 (min) Purpose code: 3
 LOG :2316.30 2317.40 1.10 Area code : 3
 FDEPTH: 96 95 GearCond.code:
 BDEPTH: 96 95 Validity code:
 Towing dir: 270° Wire out: 500 m Speed: 20 kn*10

Sorted: 29 Kg Total catch: 234.50 CATCH/HOUR: 469.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Fristipomoides macrophthalmus</i>	209.60	4492	44.69	
<i>Trachurus lathami</i>	104.00	800	22.17	364
<i>Rhomboplites aurorubens</i>	56.00	448	11.94	365
<i>Haemulon flavolineatum</i>	24.00	48	5.13	
<i>Upeneus parvus</i>	20.80	384	4.43	
<i>Pareques sp</i>	19.20	80	4.09	
<i>Priacanthus arenatus</i>	7.20	32	1.54	
<i>Piectularia petimba</i>	6.40	32	1.36	
<i>Ophidion holbrookii</i>	4.80	192	1.02	
<i>Scorpaena plumieri</i>	4.80	96	1.02	
<i>Synodus poeyi</i>	3.20	16	0.68	
<i>Loligo plei</i>	2.40	32	0.51	
<i>Scomber japonicus</i>	1.60	16	0.34	
<i>Lagocephalus laevigatus</i>	1.60	16	0.34	
<i>Haemulon striatum</i>	1.60	48	0.34	
<i>Conger triporiceps</i>	1.00	2	0.21	
APOGONIDAE	0.80	64	0.17	
<i>Lepophidium sp</i>	0.00	16		
<i>Serranus phoebe</i>	0.00	16		
<i>Ariommata bondi</i>	0.00	32		
Total	-----	469.00	-----	99.97

PROJECT STATION: 484

DATE: 3/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 10°56'
 TIME : 04:15:00 04:45:00 30 (min) Duration Long W 64°22'
 LCG : 2361.00 2362.00 1.00 Purpose code: 3
 FDEPTH: 74 56 Area code: 3
 BDEPTH: 74 56 GearCond.code:
 Towing dir: 90° Wire out: 350 m Speed: 25 kn'10
 Sorted: 32 Kg Total catch: 670.20 CATCH/HOUR: 940.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Trachurus lathami</i>	143.00	1690	15.21	
<i>Micropogonias furnieri</i>	93.60	106	9.95	
<i>Ctenosciana gracilicirrhua</i>	83.20	78	8.85	
<i>Mustelus canis</i>	80.60	156	8.57	
<i>Micropogonias furnieri</i>	80.60	906	8.57	
<i>Haemulon steindachneri</i>	75.40	754	8.02	
<i>Prionotus punctatus</i>	70.20	338	7.46	
<i>Macrodon sp.</i>	52.00	52	5.93	
<i>Synodus poeyi</i>	44.20	2100	4.70	
<i>Orthopristis ruber</i>	33.80	130	3.59	
<i>Pristipomoides macropnthalma</i>	33.80	1768	3.59	
<i>Stellifer sp</i>	31.20	858	3.32	
<i>Upeneus parvus</i>	20.80	910	2.21	
<i>Upeneus parvus</i>	18.20	52	1.94	
<i>Trichiurus lepturus</i>	15.60	182	1.86	
<i>Serranus phoebe</i>	13.00	130	1.38	
<i>Harengula sp</i>	13.00	858	1.38	
<i>Haemulon aurolineatum</i>	7.80	16	0.83	
<i>Penaeus notialis</i>	5.40	102	0.57	366
<i>Diplectrum radiale</i>	5.20	130	0.55	
<i>Eucinostomus argenteus</i>	5.20	156	0.55	
<i>Dactylopterus volitans</i>	5.20	26	0.55	
<i>Lepophidium sp</i>	2.60	26	0.28	
<i>Scorpaena agassizii</i>	2.60	26	0.28	
<i>Porichthys sp</i>	2.60	78	0.28	
<i>Serranus dewingeri</i>	1.40	4	0.15	
<i>Penaeus brasiliensis</i>	0.20	26	0.02	367
<i>Sardinella aurita</i>	0.00	26		
Total	-----	940.40	-----	99.99

PROJECT STATION: 485

DATE: 3/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1055
 start stop duration Long W 6416
 TIME : 05:30:00 06:00:00 30 (min) Purpose code: 3
 LOG : 2366.30 2367.60 1.30 Area code: 3
 ZDEPTH: 16 24 GearCond. code:
 SDEPTH: 16 24 Validity code:
 Towing dir: 100° Wire out: 100 m Speed: 30 Km*10

Sorted: 64 Kg Total catch: 2068.80 CATCH/HOUR: -137.60

SPECIES	CATCH/HOUR		% OF TOT.	C	SAMP. NO.
	weight	numbers			
<i>Arius spixii</i>	1690.00	8320	40.84	368	
<i>Diapterus rhombus</i>	461.60	3446	11.16	369	
<i>Sphyraena picudilla</i>	315.20	3510	7.62	371	
<i>Scomberomorus cavalla</i>	308.80	910	7.46	370	
Miscellaneous fish	295.80		7.15		
<i>Synodus foetens</i>	159.20	976	3.85		
<i>Selene spixii</i>	104.00	650	2.51		
<i>Trachurus lathami</i>	81.20	260	1.96		
<i>Bairdiella sanctaeluciae</i>	81.20	520	1.96		
<i>Haemulon steindachneri</i>	78.00	1040	1.89		
<i>Priacanthus arenatus</i>	78.00	1040	1.89		
<i>Lagocephalus laevigatus</i>	78.00	326	1.89		
<i>Diplectrum formosum</i>	71.60	326	1.73		
<i>Diplectrum bivittatum</i>	65.00	1236	1.57		
<i>Orthopristis ruber</i>	55.20	520	1.33		
<i>Sphyraena guachancho</i>	48.80	66	1.18		
<i>Haemulon bonariensis</i>	39.00	66	0.94		
<i>Scorpaena brasiliensis</i>	39.00	196	0.94		
<i>Serranus</i> sp	22.80	130	0.55		
<i>Hemitirrhulus littoralis</i>	19.60	66	0.47		
<i>Haemulon boehlkei</i>	19.60	910	0.47		
<i>Eucinostomus guila</i>	13.00	326	0.31		
<i>Eucinostomus argenteus</i>	13.00	780	0.31		
<i>Prionotus punctatus</i>	0.00	66			
<i>Bothus ocellatus</i>	0.00	66			
<i>Syacium gunteri</i>	0.00	260			
Total	4137.60		99.98		

PROJECT STATION: 486

DATE: 3/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1043
 start stop duration Long W 6415
 TIME :07:50:00 08:20:00 30 (min) Purpose code: 3
 LOG :2383.50 2383.50 Area code : 3
 FDEPTH: 71 71 GearCond.code:
 BDEPTH: 71 71 Validity code:
 Towing dir: 290° Wire out: 350 m Speed: kn*10

Sorted: 98 Kg Total catch: 791.80 CATCH/HOUR: 1583.60

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Ctenosciena gracilicirrhus</i>	683.20 7408	43.14		372
<i>Trichiurus lepturus</i>	260.80 2712	16.47		
<i>Micropogonias furnieri</i>	200.00 112	12.63		
<i>Peprius paru</i>	192.00 288	12.12		
<i>Trachurus lethami</i>	54.40 256	3.44		
<i>Mustelus canis</i>	36.80 32	2.32		
<i>Sphyraena guachancho</i>	33.60 32	2.12		
<i>Aluterus monoceros</i>	16.00 16	1.01		
<i>Orthopristis ruber</i>	16.00 48	1.01		
<i>Sphyraena picudilla</i>	13.60 48	0.96		
<i>Loligo sp</i>	12.00	0.76		
<i>Mylobatis freminvillei</i>	7.60 4	0.48		
<i>Upeneus parvus</i>	6.40 64	0.40		
<i>Chirocentrodon bleekerianus</i>	5.60 364	0.35		
<i>Prionotus punctatus</i>	5.60 32	0.35		
<i>Paralichthys tropicus</i>	5.50 4	0.35		
<i>Fistularia setimba</i>	4.80 16	0.30		
<i>Synodus poeyi</i>	4.80 112	0.30		
<i>Scorpaena brasiliensis</i>	4.80 16	0.30		
<i>Ciplectrum bivittatum</i>	4.00 64	0.25		
<i>Pristipomoides macropnthalmaus</i>	3.20 60	0.20		
<i>Synodus intermedius</i>	3.20 256	0.20		
<i>Epinephelus niveatus</i>	3.20 16	0.20		
<i>Penaeus brasiliensis</i>	2.80 90	0.16	373	
<i>Porichthys pauciradiatus</i>	1.60 32	0.10		
<i>Frigacanthus arenatus</i>	1.60 16	0.10		
<i>Penaeus notialis</i>	0.80 16	0.05		
<i>Sardinella aurita</i>	0.00 16			
<i>Ancyloplitta quadrociliata</i>	0.00 16			
Total	791.80	59.97		

PROJECT STATION: 487

DATE: 3/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1033
 start stop duration Long W 6401
 TIME :16:25:40 17:05:00 29 (min) Purpose code: 3
 LOG :2417.50 2418.60 1.10 Area code : 3
 FDEPTH: 61 66 GearCond.code:
 BDEPTH: 61 66 Validity code: 9
 Towing dir: 114° Wire out: 200 m Speed: 20 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
NO	CATCH	weight numbers		
Total		-----	-----	

PROJECT STATION: 488

DATE: 3/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1030
 start stop duration Long W 6353
 TIME :18:00:00 18:25:00 25 (min) Purpose code: 3
 LOG :2424.90 2425.70 0.80 Area code : 3
 FDEPTH: -9 48 GearCond.code:
 BDEPTH: -9 48 Validity code:
 Towing dir: 106° Wire out: 200 m Speed: 20 kn*10

Sorted: 60 Kg Total catch: 181.10 CATCH/HOUR: 434.64

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Ctenosciena gracilicirrhos	198.00	4867	45.55	374
Micropogonias furnieri	149.40	298	34.37	375
Arius spixii	40.68	346	9.36	376
Eucinostomus argenteus	7.92	202	1.82	
Trachurus lathami	7.92	576	1.82	
Orthopristis ruber	6.84	79	1.57	
Loligo palearis	6.48	468	1.49	
Loligo plei	4.32	94	0.99	
Parelichthys tropicus	2.64	2	0.61	
Trichiurus lepturus	2.52	101	0.58	
Fistularia petimba	2.16	7	0.50	
Serranus dawingeri	2.16	14	0.50	
Penaeus notialis	1.08	26	0.25	
Diplocrerum bivittatum	1.08	7	0.25	
Etrumeus teres	0.72	120	0.17	
Chirocentrodon bleekerianus	0.72	158	0.17	
Penaeus brasiliensis	0.00	2		
Total	-----	434.64	-----	100.00

PROJECT STATION: 489

DATE: 3/ 6/88 GEAR TYPE: PT No:4 POSITION:Lat N 1031
 start stop duration Long W 6400
 TIME :21:00:00 21:30:00 30 (min) Purpose code: 1
 LOG :2448.30 2449.80 1.50 Area code : 3
 FDEPTH: 0 0 GearCond.code:
 BDEPTH: 63 55 Validity code:
 Towing dir: 240° Wire out: 50 m Speed: 30 kn*10

Sorted: 8 Kg Total catch: 52.20 CATCH/HOUR: 104.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Engraulis eurystole	70.20	3172	67.24	377
Etrumeus teres	29.80	2268	28.54	378
Trichiurus lepturus	4.40	2	4.21	
Total	-----	104.40	-----	99.99

PROJECT STATION: 490

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1025
 Start stop duration Long W 6435
 TIME :04:24:00 04:54:00 30 (min) Purpose code: 3
 LOG :2511.30 2512.00 0.70 Area code : 3
 FDEPTH: 154 143 GearCond.code:
 SDEPTH: 154 143 Validity code:
 Towing dir: 76° Wire out: 650 m Speed: 15 kn*10

Sorted: 27 Kg Total catch: 429.60 CATCH/HOUR: 859.20

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers		
<i>Sciaena bathytatus</i>	400.00 1600	46.55	
<i>PERCICHTHYDAE</i>	96.00 1152	11.17	
<i>Trichiurus lepturus</i>	80.00 768	9.31	
<i>Steindachnerina argentea</i>	48.00 3040	5.59	
<i>S H R I M P S</i>	48.00	5.59	
<i>Pristipomoides macropnthalmus</i>	43.20 416	5.03	
<i>Loligo plei</i>	41.60 832	4.84	
<i>Trachurus lethami</i>	28.80 128	3.35	
<i>Loligo pacaei</i>	24.00 768	2.79	
<i>Stellifer castorifer</i>	12.80 160	1.49	
<i>Synodus poeyi</i>	12.80 928	1.49	
<i>Ancylosetta dilecta</i>	9.60 32	1.12	
<i>Fistularia setacea</i>	4.80 32	0.56	
<i>Hoplunnis diomedianus</i>	3.20 192	0.37	
<i>Lepophidium sp</i>	3.20 64	0.37	
<i>Penaeus notialis</i>	1.60 64	0.19	
<i>Porichthys sp</i>	1.60 64	0.19	
<i>Trichopsetta ventralis</i>	0.00 64		
<i>Penaeus brasiliensis</i>	0.00 32		
<i>Prionotus stearnsi</i>	0.00 64		
<i>ANTENNARIDAE</i>	0.00 32		
Total	----- 859.20	----- 100.00	

PROJECT STATION: 491

DATE: 4/ 6/68 GEAR TYPE: BT- No:1 POSITION: Lat N 1021
 start stop duration Long W 6436
 TIME :05:46:00 06:16:00 30 (min) Purpose code: 3
 LOG :2516.80 2517.80 1.00 Area code : 3
 DEPTH: 118 96 GearCond.code:
 SDEPTH: 118 96 Validity code:
 Towing dir: 233° Wire out: 550 m Speed: 25 kn'10

Sorted: 29 Kg Total catch: 550.50 CATCH/HOUR: 1101.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Bairdiella crvsurus	562.40	3572	51.08	379
Ctenosciena gracilicirrhus	119.70	1216	10.87	
Trichiurus lepturus	95.00	418	8.63	
Loligo paelei	60.80	5472	5.52	
Synodus poeyi	53.20	11278	4.83	
Priacanthus arenatus	52.00	1330	4.72	
SCIÆNIDÆ	41.80		3.80	
Trachurus lathami	38.00	1064	3.45	
Scorpaena brasiliensis	20.90	28	1.90	
Pristipomoides macrophtalmus	13.30	304	1.21	
Selar crumenonothalmus	11.40	152	1.04	
Upeneus parvus	7.60	304	0.69	
Micropogonias furnieri	6.00	12	0.54	
Serranus atrobranchus	5.70	190	0.52	
Squatina dumeril	5.00	2	0.45	
Prionotus stearnsi	3.80	190	0.35	
Paralichthys tropicus	2.20	4	0.20	
Penaeus subtilis	1.80	40	0.16	380
Penaeus brasiliensis	0.00	2		
Porichthys sp	0.00	228		
Total	-----	1100.60	-----	99.96

PROJECT STATION: 492

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1023
 start stop duration Long W 6450
 TIME :08:00:00 08:30:00 30 (min) Purpose code: 3
 LOG :2531.60 2533.30 1.70 Area code : 3
 FDEPTH: 51 30 GearCond.code:
 DDEPTH: 51 30 Validity code:
 Towing dir: 270° Wire out: 450 m Speed: 30'kn*10

Sorted: 60 kg Total catch: 112.26 CATCH/HOUR: 224.52

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Pristipomoides macrophthalmus</i>	48.00	2236	21.38	382
<i>Priacanthus arenatus</i>	37.80	210	16.84	381
<i>Mustelus canis</i>	26.60	28	11.85	
<i>Loligo pacieei</i>	13.50	580	0.01	383
<i>Rhizoprionodon porosus</i>	13.40	2	5.97	
<i>Ariommha bondi</i>	12.30	300	5.48	
<i>Upeneus parvus</i>	11.84	374	5.27	384
<i>Aluterus monoceros</i>	10.50	12	4.68	
<i>Trichiurus lepturus</i>	9.60	10	4.28	
<i>Sphyraena guachancho</i>	7.50		3.34	
<i>Eucinostomus argenteus</i>	6.90	132	3.07	
<i>Mylobatis freminvillei</i>	5.00	2	2.23	
<i>Trachurus lathami</i>	3.00	42	1.34	
<i>Balistes vetula</i>	2.70	4	1.20	
<i>Selene spixii</i>	2.24	6	1.00	
<i>Fistularia petimba</i>	2.10	19	0.94	
<i>Haemulon steindachneri</i>	2.10	18	0.94	
<i>Caulolatilus intermedius</i>	1.80	6	0.80	
<i>Acanthostracion quadricornis</i>	1.50	4	0.67	
<i>Saurida brasiliensis</i>	1.50	268	0.67	
<i>Fistularia tabacaria</i>	1.34	30	0.60	
<i>Saurida normani</i>	1.20	10	0.53	
<i>Synodus poeyi</i>	0.90	6	0.40	
<i>Prionotus carolinus</i>	0.60	12	0.27	
<i>Lagocephalus laevigatus</i>	0.30	6	0.13	
<i>Ancylospetta dilecta</i>	0.30	4	0.13	
<i>Sardinella aurita</i>	0.00	4		
Total	-----		224.52	-----
				100.02

PROJECT STATION: 493

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1012
 start stop duration Long W 6449
 TIME :09:55:00 10:30:00 35 (min) Purpose code: 3
 LOG :2545.60 2547.00 1.40 Area code : 3
 FDEPTH: 40 41 GearCond.code:
 BDEPTH: 40 41 Validity code:
 Towing dir: 283° Wire out: 200 m Speed: 20 kn*10

Sorted: 78 Kg Total catch: 3000.00 CATCH/HOUR: 5142.86

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Engraulis eurystole</i>	4532.40 570943	88.13	385	
<i>Anchoviella lepidostole</i>	549.43 127215	10.68	386	
<i>Selene vomer</i>	10.29 10	0.20		
<i>Oligoplites saimens</i>	9.26 7	0.18		
<i>Micropogonias furnieri</i>	8.23 7	0.16		
<i>Sphyraena guachancho</i>	7.20 14	0.14		
<i>Trichiurus lepturus</i>	6.86 14	0.13		
<i>Chloroscombrus chrysurus</i>	4.80 34	0.09		
<i>Bagre marinus</i>	4.46 3	0.09		
<i>Priacanthus arenatus</i>	4.11 7	0.08		
<i>Hemicaranx amblyrhynchus</i>	3.43 14	0.07		
<i>Sphyraena picudilla</i>	2.40 10	0.05		
Total	-----5142.87	-----100.00		

PROJECT STATION: 494

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1015
 start stop duration Long W 6500
 TIME :11:35:00 12:05:00 30 (min) Purpose code: 3
 LOG :2555.00 2556.30 1.30 Area code : 3
 FDEPTH: 43 43 GearCond.code:
 BDEPTH: 43 43 Validity code:
 Towing dir: 280° Wire out: 250 m Speed: 25 kn*10

Sorted: 25 Kg Total catch: 43.04 CATCH/HOUR: 86.08

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Pristipomoides macrophthalmus</i>	25.20 1898	29.28		
<i>Anchoa lycodes</i>	16.50 1014	19.17	387	
<i>Synodus poeyi</i>	9.60 442	11.15		
<i>Pecten sp</i>	8.70 986	10.11		
<i>Sardinella aurita</i>	7.80 120	9.06	388	
<i>Loligo piei</i>	6.90 100	8.02		
<i>Loligo paelei</i>	2.70 64	3.14		
<i>Upeneus parvus</i>	2.40 108	2.79		
<i>Priacanthus arenatus</i>	2.10 166	2.44		
<i>Penaeus notialis</i>	1.20 6	1.39		
<i>Selar crumenopthalmus</i>	0.90 4	1.05		
<i>Trachurus lathami</i>	0.74 18	0.86		
<i>Diplectrum bivittatum</i>	0.60 6	0.70		
<i>Fistularia setacea</i>	0.30 18	0.35		
<i>Diplectrum radiale</i>	0.30 24	0.35		
<i>Serranus phoebe</i>	0.14 12	0.16		
Total	-----86.08	-----100.02		

PROJECT STATION: 495

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1025
 start stop duration Long W 6501
 TIME :13:20:00 13:50:00 30 (min) Purpose code: 3
 LOG :2566.40 2567.40 1.00 Area code: 3
 FDEPTH: ^ 78 78 GearCond.code:
 BDEPTH: . 78 78 Validity code:
 Towing dir: 272° Wire out: 350 m Speed: 20 kn*10

Sorted: 27 Kg Total catch: 81.66 CATCH/HOUR: 163.32

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Pristipomoides macrophthalmus	30.00	1360	38.37	
Upeneus parvus	29.70	1404	38.19	
Eucinostomus argenteus	14.40	258	3.92	
Trachurus iathami	12.00	435	7.38	389
Mustelus canis	11.40	15	6.98	
Aluterus monoceros	10.32	6	6.32	
Ariommabondi	9.60	232	5.68	390
Priacanthus arenatus	9.00	300	5.51	
Loligo plei	7.20	312	4.41	
Fistularia petimba	7.20	90	4.41	
Balistes capriscus	6.60	6	4.04	
Loligo pacieci	4.80	192	2.94	
Sphyraena picudilla	4.20	6	2.57	
Synodus poeyi	4.20	24	2.57	
Selar crumenophthalmus	1.50	5	0.92	
Dactylopterus volitans	1.20	12	0.73	
Prionotus stearnsi	0.00	12		
Total	163.32		100.01	

PROJECT STATION: 496

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1025
 start stop duration Long W 6513
 TIME :15:10:00 15:40:00 30 (min) Purpose code: 3
 LOG :2577.80 2579.00 1.20 Area code: 3
 FDEPTH: 82 79 GearCond.code:
 BDEPTH: 82 79 Validity code:
 Towing dir: 183° Wire out: 400 m Speed: 20 kn*10

Sorted: 30 Kg Total catch: 150.70 CATCH/HOUR: 301.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Pristipomoides macrophthalmus	131.00	1358	43.46	391
Sphyraena guachancho	45.00	50	14.93	
Priacanthus arenatus	35.00	300	11.61	
Trachurus iathami	30.00	390	9.95	392
Upeneus parvus	25.00	570	8.29	
Synodus poeyi	10.00	40	3.32	
Eucinostomus argenteus	10.00	140	3.32	
Calamus nodosus	6.00	10	1.99	
Selar crumenophthalmus	5.00	50	1.66	
Fistularia petimba	3.00	50	1.00	
Diplodus bivittatum	0.50	50	0.17	
Prionotus carolinus	0.50	10	0.17	
Penaeus brasiliensis	0.40	4	0.13	
Prionotus stearnsi	0.00	20		
Total	301.40		100.00	

PROJECT STATION: 497

DATE: 4/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1017
 start stop duration Long W 6512
 TIME : 16:32:00 17:02:00 30 (min) Purpose code: 5
 LOG : 2585.00 2585.90 0.90 Area code : 3
 FDEPTH: 47 48 GearCond.code: 6
 BDEPTH: 47 48 Validity code: 9
 Towing dir: 270° Wire out: 200 m Speed: 20 kn*10

Sorted: Kg Total catch: CATCH/HOUR:

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
NO CATCH	weight numbers		
	0.00		
Total	-----	-----	

PROJECT STATION: 498

DATE: 5/ 6/88 GEAR TYPE: PT No:2 POSITION:Lat N 1100
 start stop duration Long W 6431
 TIME : 04:55:00 05:17:00 22 (min) Purpose code: 1
 LOG : 2691.50 2692.50 1.00 Area code : 3
 FDEPTH: 60 70 GearCond.code: 3
 BDEPTH: 315 325 Validity code: 4
 Towing dir: 119° Wire out: 225 m Speed: 30 kn*10

Sorted: 1 Kg Total catch: 1.45 CATCH/HOUR: 3.95

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
<i>Engraulis eurystole</i>	3.55	89.87	393
<i>Trachurus lathami</i>	0.41	10.38	
Total	----- 3.96 -----	----- 100.25 -----	

PROJECT STATION: 499

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1103
 Start stop duration Long W 6434
 TIME :06:15:00 06:45:00 30 (min) Purpose code: 3
 LOG :2699.30 2699.00 0.70 Area code : 3
 FDEPTH: 99 95 GearCond.code:
 HDEPTH: 99 95 Validity code:
 Towing dir: 270° Wire out: 550 m Speed: 15 kn*10

Sorted: 53 Kg Total catch: 217.90 CATCH/HOUR: 435.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trechurus lathami</i>	184.80	1016	42.40	394
<i>Pristipomoides macrophthalmus</i>	121.80	1036	27.95	395
<i>Mycteroperca cidi</i>	36.40	2	8.35	
<i>Rhomboplites aurorubens</i>	23.40	70	5.37	
<i>Calamus bajonado</i>	21.00	-	4.82	
<i>Loligo plei</i>	9.40	792	2.16	
<i>Trichiurus lepturus</i>	8.40	5	1.93	
<i>Aluterus monoceros</i>	6.60	5	1.51	
<i>Caulolatilus chrysops</i>	5.20	5	1.19	
<i>Haemulon flavolineatum</i>	4.20	5	0.96	
<i>Upeneus parvus</i>	3.20	56	0.73	
<i>Paralichthys tropicus</i>	3.00	-	0.69	
<i>Priacanthus arenatus</i>	2.40	6	0.55	
<i>Loligo paelei</i>	1.80	12	0.41	
<i>Fistularia petimba</i>	1.80	14	0.41	
<i>Pagrus pagrus</i>	1.70	1	0.39	
<i>Selar crumenophthalmus</i>	0.70	5	0.16	
<i>Etrumeus teres</i>	0.00	5		
Total	-----	435.80	-----	99.98

PROJECT STATION: 500

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1102
 start stop duration Long W 6451
 TIME :06:20:00 06:45:00 25 (min) Purpose code: 3
 LOG :2711.80 2712.30 0.50 Area code : 3
 FDEPTH: 94 104 GearCond.code:
 BDEPTH: 94 104 Validity code:
 Towing dir: 270° Wire out: 550 m Speed: 2 kn*10

Sorted: 38 Kg Total catch: 37.85 CATCH/HOUR: 90.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Haemulon striatum</i>	48.60	509	53.50	396
<i>Mycteroperca cidi</i>	12.48	2	13.74	
<i>Rhomboplites aurorubens</i>	5.04	17	5.55	
<i>Caulolatilus chrysops</i>	3.96	2	4.36	
<i>Haemulon flavolineatum</i>	3.84	12	4.23	
<i>Aluterus monoceros</i>	3.48	2	3.83	
<i>Lutjanus buccanella</i>	3.36	5	3.70	
<i>Calamus bajonado</i>	3.24	2	3.57	
<i>Loligo paelei</i>	1.92		2.11	
<i>Loligo plei</i>	1.44	50	1.59	
<i>Pristipomoides macropthalmus</i>	0.96	12	1.06	
<i>Caulolatilus cyanops</i>	0.60	2	0.66	
<i>Chromis sp.</i>	0.48	10	0.53	
<i>Synodus poeyi</i>	0.48	2	0.53	
<i>Scorpaena plumieri</i>	0.36	2	0.40	
<i>Upeneus parvus</i>	0.36	31	0.40	
<i>Ariommabondi</i>	0.24	14	0.26	
<i>Canthigaster rostrata</i>	0.00	2		
<i>Apogon pseudosacculatus</i>	0.00	2		
Total	-----	90.84	-----	100.02

PROJECT STATION: 501

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1054
 start stop duration Long W 6501
 TIME :11:00:00 11:30:00 30 (min) Purpose code: 3
 LOG :2733.20 2734.20 1.00 Area code : 3
 FDEPTH: 130 125 GearCond.code:
 BDEPTH: 130 125 Validity code:
 Towing dir: 260° Wire out: 650 m Speed: 25 kn*10

Sorted: 66 Kg Total catch: 199.84 CATCH/HOUR: 397.68

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trachurus lathami</i>	274.80	2574	69.10	396
<i>Pristipomoides macropthalmus</i>	96.00	904	24.14	397
<i>Pagrus pagrus</i>	17.40	30	4.38	
<i>Caulolatilus cyanops</i>	3.60	6	0.91	
<i>Priacanthus arenatus</i>	3.00	30	0.75	
<i>Rhomboplites aurorubens</i>	1.50	6	0.30	
<i>Loligo paelei</i>	0.90	36	0.23	
<i>Serranus dewinteri</i>	0.48	6	0.12	
Total	-----	397.68	-----	100.01

PROJECT STATION: 502

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1002
 start stop duration Long W 6500
 TIME :12:34:00 13:09:00 35 (min) Purpose code: 3
 LOG :2741.70 2742.10 0.40 Area code : 3
 FDEPTH: 80 75 GearCond.code:
 BDEPTH: 30 75 Validity code:
 Towing dir: 316° Wire out: 400 m Speed: 8 kn*10

Sorted: 59 Kg Total catch: 68.95 CATCH/HOUR: 152.49

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Trachurus lathami</i>	83.31	482	54.63	398
<i>Upeneus parvus</i>	27.51	722	18.04	399
<i>Scomber japonicus</i>	15.43	183	10.12	400
<i>Rhomboplites aurorubens</i>	9.00	75	5.90	401
<i>Aluterus monoceros</i>	4.37	3	2.87	
<i>Loligo plei</i>	4.37	98	2.87	
<i>Priacanthus arenatus</i>	3.09	19	2.03	
<i>Pristipomoides macrophthalmus</i>	2.57	29	1.69	
<i>Loligo pacieci</i>	2.31	29	1.51	
<i>Sardinella aurita</i>	0.51	9	0.33	
Total	-----	152.47	-----	99.99

PROJECT STATION: 503

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1107
 start stop duration Long W 6505
 TIME :14:35:00 15:05:00 30 (min) Purpose code: 3
 LOG :2753.00 2754.00 1.00 Area code : 3
 FDEPTH: 94 90 GearCond.code:
 BDEPTH: 94 90 Validity code:
 Towing dir: 238° Wire out: 450 m Speed: 20 kn*10

Sorted: 11 Kg Total catch: 11.45 CATCH/HOUR: 22.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Aluterus monoceros</i>	9.00	4	39.30	
<i>Loligo plei</i>	7.00	172	30.57	402
<i>Ariommia bondi</i>	2.00	70	8.73	
<i>Upeneus parvus</i>	1.40	58	6.11	
<i>Serranus flaviventris</i>	1.00	6	4.37	
<i>Loligo pacieci</i>	0.80	14	3.49	
<i>Fistularia petiota</i>	0.60	2	2.62	
<i>Decapterus tabl</i>	0.60	4	2.62	
<i>Pristipomoides macrophthalmus</i>	0.50	2	2.18	
Total	-----	22.90	-----	99.99

PROJECT STATION: 504

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1101
 start stop duration Long W 6514
 TIME :16:20:00 16:50:00 30 (min) Purpose code: 3
 LOG :2764.50 2766.00 1.50 Area code : 3
 FDEPTH: 30 35 GearCond.code:
 BDEPTH: 30 35 Validity code:
 Towing dir: 290° Wire out: 150 m Speed: 30 kn*10

Sorted: 411 Kg Total catch: 411.33 CATCH/HOUR: 822.66

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Ocyurus chrysurus	355.20	390	43.18	403
Calamus pennatus	141.00	290	17.14	404
Priacanthus arenatus	74.60	118	9.07	405
Balistes vetula	68.00	40	8.27	
Lachnolaimus maximus	54.60	36	6.64	
Pomacanthus paru	21.30	12	2.59	
ACANTHURIDAE	19.30	32	2.35	
Lutjanus griseus	18.70	6	2.27	
Acanthostracion quadricornis	17.50	16	2.13	
Rhizoprionodon porosus	12.40	2	1.51	
Aluterus scriptus	6.80	2	0.83	
Haemulon plumieri	4.40	8	0.53	
Fistularia tabacaria	4.00	4	0.49	
Acanthurus chirurgus	3.60	5	0.44	
Aluterus monoceros	3.40	2	0.41	
Epinephelus guttatus	3.00	4	0.36	
Sparisoma sp.	3.00	6	0.36	
Pomacanthus arcuatus	3.00	2	0.36	
Pseudupeneus maculatus	2.80	38	0.34	
Fistularia petimbe	2.60	8	0.32	
Mycteroperca cidi	2.00	2	0.24	
Aulostomus maculatus	1.00	10	0.12	
Decapterus punctatus	0.40	5	0.05	
Decapterus tabl	0.30	4	0.04	
Sardinella aurita	0.10	2	0.01	
Total	-----	823.00	-----	100.05

PROJECT STATION: 505

DATE: 5/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1105
 start stop duration Long W 6525
 TIME : 10:00:00 18:30:00 30 (min) Purpose code: 3
 LOG : 2774.60 2775.90 1.30 Area code : 3
 FDEPTH: 70 72 GearCond.code:
 BDEPTH: 70 72 Validity code:
 Towing dir: 270° Wire out: 350 m Speed: 20 kn*10

Sorted: 26 Kg Total catch: 232.30 CATCH/HOUR: 464.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Haemulon bonaparte</i>	155.20	7824	33.41	
<i>Rhomboplites aurorubens</i>	123.20	3984	26.52	406
<i>Trachurus lathami</i>	80.00	0000	17.22	407
<i>Haemulon flavolineatum</i>	40.00	928	8.61	
<i>Decapterus macarellus</i>	20.00	354	4.30	
<i>Lutjanus griseus</i>	19.20	2	4.13	
<i>Stenotomus chrysops</i>	13.60	2	2.93	
<i>Lutjanus purpureus</i>	6.80	2	1.46	
<i>Loligo plei</i>	2.40	32	0.52	
<i>Decapterus tabl</i>	2.40	32	0.52	
<i>Fistularia petimba</i>	1.80	4	0.39	
Total	-----	464.60	-----	100.01

PROJECT STATION: 506

DATE: 6/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1105
 start stop duration Long W 6545
 TIME : 12:22:00 12:52:00 30 (min) Purpose code: 3
 LOG : 2948.30 2949.80 1.50 Area code : 3
 FDEPTH: 62 67 GearCond.code:
 BDEPTH: 62 67 Validity code: 1
 Towing dir: 205° Wire out: 400 m Speed: 30 kn*10

Sorted: 4 Kg Total catch: 4.58 CATCH/HOUR: 9.16

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Calamus pennatus</i>	2.46	6	26.06	
<i>Caulolatilus intermediate</i>	1.40	2	15.28	
<i>Fistularia tabacaria</i>	1.40	2	15.28	
<i>Synodus sp</i>	1.00	16	10.92	
<i>Serranus phoebe</i>	1.00	18	10.92	
<i>Loligo plei</i>	0.80	14	8.73	
<i>Fistularia petimba</i>	0.60	6	6.55	
<i>Acanthostreacion quadricornis</i>	0.30	2	3.28	
<i>Trachinocephalus evops</i>	0.20	2	2.18	
Total	-----	9.16	-----	100.00

PROJECT STATION: 507

DATE: 6/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1056
 start stop duration Long W 6549
 TIME :14:15:00 14:28:00 13 (min) Purpose code: 3
 LOG :2959.70 2960.30 0.60 Area code : 3
 FDEPTH: 72 e2 GearCond.code: 5
 SDEPTH: 72 82 Validity code: 1
 Towing dir: 320° Wire out: 350 m Speed: 27 kn*10

Sorted: 31 Kg Total catch: 30.85 CATCH/HOUR: 142.38

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Haemulon chryargyreum	135.23	2137	94.98	409
Loligo plei	2.31	18	1.62	
Chromis sp.	2.08	32	1.46	
Fistularia petimba	1.38	5	0.97	
Serranus phoebe	1.38	18	0.97	
Synodus poeyi	0.00	5		
Prionotus sp	0.00	5		
Total	-----	142.38	-----	100.00

PROJECT STATION: 508

DATE: 6/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1056
 start stop duration Long W 6553
 TIME :15:07:00 15:37:00 30 (min) Purpose code: 3
 LOG :2964.70 2966.00 1.30 Area code : 3
 FDEPTH: 72 72 GearCond.code:
 SDEPTH: 72 72 Validity code: 1
 Towing dir: 300° Wire out: 350 m Speed: 25 kn*10

Sorted: 19 Kg Total catch: 19.00 CATCH/HOUR: 15.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Lutjanus analis	15.60	2	41.05	
Balistes vetula	5.60	2	14.74	
Rhomboplites aurorubens	5.60	124	14.74	410
Haemulon chryargyreum	3.40	54	8.95	
Loligo plei	2.00	40	5.26	
Pagrus pagrus	1.80	2	4.74	
Synodus poeyi	1.20	22	3.16	
Loligo pacieei	0.80	10	2.11	
Fistularia petimba	0.60	2	1.58	
Chromis sp.	0.60	10	1.58	
Dactylopterus volitans	0.40	2	1.05	
Haemulon boschme	0.40	10	1.05	
Total	-----	39.00	-----	100.01

PROJECT STATION: 509

DATE: 6/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1044
 start stop duration Long W 6604
 TIME :17:53:00 18:23:00 30 (min). Purpose code: 3
 LOG :2987.20 2988.00 0.80 Area code : 3
 FDEPTH: 63 63 GearCond.code:
 BDEPTH: 63 63 Validity code:
 Towing dir: 42° Wire out: 300 m Speed: 15 kn*10

Sorted: 74 Kg Total catch: 74.35 CATCH/HOUR: 148.70

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Lutjanus apodus</i>	102.40 30	68.66	411	
<i>Mustelus</i> sp	14.80 6	9.95		
<i>Pagrus pagrus</i>	7.60 10	5.11		
<i>Aluterus monoceros</i>	6.80 4	4.57		
<i>Balistes vetula</i>	5.40 2	3.63		
<i>Loligo plei</i>	5.00 38	3.36	412	
<i>Acanthostracion quadricornis</i>	4.80 4	3.23		
<i>Fistularia petimba</i>	1.00 4	0.67		
<i>Chilomycterus antillarum</i>	0.60 2	0.40		
<i>Lutjanus synagris</i>	0.30 2	0.20		
Total	----- 148.70	----- 99.98		

PROJECT STATION: 510

DATE: 6/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1045
 start stop duration Long W 6619
 TIME :21:57:00 22:27:00 30 (min). Purpose code: 3
 LOG :3017.70 3019.20 1.50 Area code : 3
 FDEPTH: 182 184 GearCond.code:
 BDEPTH: 182 184 Validity code:
 Towing dir: 260° Wire out: 700 m Speed: 30 kn*10

Sorted: 47 Kg Total catch: 94.80 CATCH/HOUR: 189.60

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Pristipomoides macrourus</i>	138.00 1624	72.72		
<i>Prionotus beanii</i>	13.60 196	7.17		
<i>Trachurus lathami</i>	10.00 40	5.27		
<i>Aluterus monoceros</i>	6.40 4	3.38		
<i>Upeneus parvus</i>	3.60 80	1.90		
<i>Peristedion</i> sp	3.60 120	1.90		
<i>Lepophidium profundorum</i>	2.80 60	1.46		
<i>Saurida caribbeus</i>	2.40 16	1.27		
<i>Loligo plei</i>	2.00 28	1.05		
<i>Grotula barbata</i>	2.00 4	1.05		
<i>Antennarius radiosus</i>	1.20 4	0.63		
<i>Pontinus longispinnis</i>	0.80 20	0.42		
<i>Trichopsetta ventralis</i>	0.80 20	0.42		
<i>Decodon puellaris</i>	0.60 4	0.32		
<i>Scorpaena agassizii</i>	0.40 20	0.21		
<i>Pseudupeneus maculatus</i>	0.40 4	0.21		
<i>Spherooides pachygaster</i>	0.40 3	0.21		
<i>Porichthys bathoiketes</i>	0.40 8	0.21		
<i>Synchiropus agassizii</i>	0.20 4	0.11		
MORIDAE	0.00 20			
<i>Hildebrandia</i> sp.	0.00 4			
<i>Hoplunnis</i> sp	0.00 16			
<i>Serranus atrobranchus</i>	0.00 4			
Total	----- 189.60	----- 99.99		

PROJECT STATION: 511

DATE: 7/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1039
 start stop duration Long W 6657
 TIME :06:30:00 07:00:00 30 (min) Purpose code: 3
 LOG :3096.50 3097.80 1.30 Area code : 3
 FDEPTH: 154 151 GearCond.code:
 BDEPTH: 154 151 Validity code:
 Towing dir: 260° Wire out: 650 m Speed: 25 kn*10

Sorted: 67 Kg Total catch: 305.70 CATCH/HOUR: 611.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
Trichiurus lepturus	426.00	468	69.68	
Rhomboplites aurorubens	58.80	420	9.62	413
Myliobatis frenata	40.00	10	6.54	
Hemanthias leptus	33.60	72	5.50	
Pristipomoides macrourus	28.80	204	4.71	
Hexanchus griseus	8.00	2	1.31	
Fistularia petimba	4.80	24	0.79	
Upeneus parvus	4.80	72	0.79	
Paralichthys tropicus	3.00	2	0.49	
Loligo pacielei	2.40	72	0.39	
Trachurus lathami	1.20	12	0.20	
Penaeus brasiliensis	0.00	12		
Total	-----	611.40	-----	100.02

PROJECT STATION: 512

DATE: 8/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1038
 start stop duration Long W 6648
 TIME :08:53:00 09:17:00 24 (min) Purpose code: 3
 LOG :3114.20 3115.30 1.10 Area code : 3
 FDEPTH: 69 63 GearCond.code:
 BDEPTH: 69 63 Validity code:
 Towing dir: 95° Wire out: 350 m Speed: 20 kn*10

Sorted: 67 Kg Total catch: 67.10 CATCH/HOUR: 167.75

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
Lutjanus purpureus	127.00	375	75.71	414
Myliobatis frenata	7.50	8	4.47	
Priacanthus arenatus	7.38	15	4.40	
Lutjanus synagris	6.25	5	3.73	
Seriola rivoliana	6.25	3	3.73	
Loligo plei	3.75	210	2.24	
Pristipomoides macrourus	2.50	20	1.49	
Albula nemoptera	1.63	3	0.97	
Rhomboplites aurorubens	1.50	23	0.89	
Fistularia petimba	1.50	3	0.89	
Eucinostomus argenteus	1.25	30	0.75	
Prionotus punctatus	0.75	3	0.45	
Upeneus parvus	0.50	23	0.30	
Synodus poeyi	0.00	5		
Total	-----	167.76	-----	100.02

PROJECT STATION: 513

DATE: 8/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1039
 Start stop duration Long W 6632
 TIME : 12:05:00 12:35:00 30 (min) Purpose code: 3
 LOG : 3130.90 3132.40 1.50 Area code : 3
 FDEPTH: 67 63 GearCond.code:
 BDEPTH: 67 63 Validity code:
 Towing dir: 275° Wire out: 350 m Speed: 30 kn*10

Sorted: 26 Kg	Total catch:	26.05	CATCH/HOUR:	52.10
 SPECIES				
	weight	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	numbers			
<i>Trachurus lathami</i>	21.00	1996	40.31	415
<i>Priacanthus arenatus</i>	8.40	24	16.12	
<i>Upeneus parvus</i>	3.40	520	6.53	
<i>Rhomboplites aurorubens</i>	2.80	62	5.37	416
<i>Lagocephalus laevigatus</i>	2.00	4	3.84	
<i>Decapterus macarellus</i>	2.00	64	3.84	
<i>Lutjanus purpureus</i>	1.90	6	3.65	
<i>Loligo plei</i>	1.80	50	3.45	
<i>Seriola rivolana</i>	1.60	2	3.07	
<i>Prionotus punctatus</i>	1.60	2	3.07	
<i>Pristipomoides macrourhalmus</i>	1.40	12	2.69	
<i>Fistularia petimba</i>	1.20	6	2.30	
<i>Alectis ciliaris</i>	1.00	2	1.92	
<i>Decapterus punctatus</i>	1.00	22	1.92	
<i>Sardinella aurita</i>	1.00	28	1.92	
<i>Diplodus bivittatum</i>	0.00	4		
<i>Synodus poeyi</i>	0.00	6		
 ----- Total 52.10 ----- 100.00				

PROJECT STATION: 514

DATE: 8/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1039
 start stop duration Long W 6617
 TIME : 14:49:00 15:19:00 30 (min) Purpose code: 3
 LOG : 3152.50 3153.90 1.40 Area code : 3
 FDEPTH: 91 95 GearCond.code:
 BDEPTH: 91 95 Validity code:
 Towing dir: 270° Wire out: 400 m Speed: 28 kn*10

Sorted: 34 Kg	Total catch:	33.90	CATCH/HOUR:	67.80
 SPECIES				
	weight	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	numbers			
<i>Selar crumenophthalmus</i>	35.00	426	51.62	417
<i>Upeneus parvus</i>	8.60	956	12.68	
<i>Eucinostomus argenteus</i>	8.00	176	11.80	
<i>Loligo paelei</i>	4.40	80	6.49	418
<i>Pristipomoides macrourhalmus</i>	4.00	44	5.90	
<i>Aluterus monoceros</i>	2.60	3	3.83	
<i>Ariommabondi</i>	1.80	40	2.65	
<i>Cyclopsetta chittendeni</i>	1.60	2	2.36	
<i>Trachurus lathami</i>	0.80	2	1.18	
<i>Rhomboplites aurorubens</i>	0.40	4	0.55	
<i>Scomber japonicus</i>	0.40	2	0.59	
<i>Priacanthus arenatus</i>	0.20	4	0.29	
 ----- Total 67.80 ----- 99.98				

PROJECT STATION: 515

DATE: 8/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1039
 Start stop duration Long W 6604
 TIME :17:20:00 17:45:00 25 (min) Purpose code: 3
 LOG :3169.90 3171.70 1.80 Area code : 3
 FDEPTH: 70 64 GearCond.code:
 BDEPTH: 70 64 Validity code:
 Towing dir: 278° Wire out: 350 m Speed: 36 kn*10

Sorted: 22 Kg Total catch: 22.60 CATCH/HOUR: 54.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Eucinostomus argenteus</i>	16.80	343	30.97	419
<i>Upeneus parvus</i>	7.68	216	14.16	420
<i>Priacanthus arenatus</i>	6.48	17	11.95	
<i>Dactylopterus volitans</i>	6.00	12	11.06	
<i>Fistularia petiota</i>	3.84	24	7.08	
<i>Pristipomoides macrourus</i>	3.60	36	6.64	
<i>Acanthostracion quadricornis</i>	2.64	5	4.87	
<i>Calamus penna</i>	2.40	2	4.42	
<i>Loligo plei</i>	1.20	46	2.21	
<i>Loligo paelei</i>	1.20	29	2.21	
<i>Acanthostracion polionotus</i>	0.96	2	1.77	
<i>Selar crumenophthalmus</i>	0.60	7	1.11	
<i>Rhomboplites aurorubens</i>	0.48	10	0.88	
<i>Trachurus lathami</i>	0.24	10	0.44	
<i>Ariommus bondi</i>	0.12	12	0.22	
<i>Synodus poeyi</i>	0.00	2		
Total	-----	54.24	-----	99.99

PROJECT STATION: 516

DATE: 8/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1050
 start stop duration Long W 6612
 TIME : 19:30:00 20:00:00 30 (min) Purpose code: 3
 LOG : 3187.70 3189.20 1.50 Area code : 3
 FDEPTH: 214 215 GearCond.code:
 BDEPTH: 214 215 Validity code:
 Towing dir: 270° Wire out: 900 m Speed: 30 kn*10

Sorted: 23 Kg Total catch: 72.70 CATCH/HOUR: 145.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
<i>Pristipomoides macrophthalmus</i>	59.40	468	40.85	422
<i>Pontinus longispinnis</i>	30.00	600	20.63	
<i>Trachurus lathami</i>	16.80	60	11.55	
<i>Prionotus keeni</i>	13.80	204	9.49	
<i>Solenocera</i> sp	5.60	366	3.85	421
<i>Saurida normani</i>	4.20	24	2.89	
<i>Loligo pacifisi</i>	3.60	30	2.48	
<i>Brotula barbata</i>	2.40	6	1.65	
<i>Lepophidium profundorum</i>	2.10	24	1.44	
<i>Sciaena bathytatus</i>	1.80	6	1.24	
<i>Hoplunnis</i> sp	1.80	168	1.24	
<i>Trichopsetta ventralis</i>	1.20	18	0.83	
Shrimps, small, non comm.	1.00		0.69	
<i>Bembrops</i> sp	0.60	0	0.41	
<i>Neopepinnula americana</i>	0.60	12	0.41	
<i>Peristedion miniatum</i>	0.30	0	0.21	
<i>Pikea mexicana</i>	0.20	10	0.14	
<i>Prionotus stearnsii</i>	0.00	0		
MORIDAE	0.00	148		
<i>Peristedion</i> sp	0.00	18		
<i>Upeneus parvus</i>	0.00	0		
<i>Merluccius albidus</i>	0.00	18		
<i>Hemanthias leptus</i>	0.00	0		
<i>Ogcocephalus radiatus</i>	0.00	14		
<i>Zeniopsis ocellata</i>	0.00	4		
Total.	-----	145.40	-----	100.00

PROJECT STATION: 517

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1050
 start stop duration Long W 6654
 TIME :00:32:00 01:02:00 30 (min) Purpose code: 3
 LOG :3235.10 3237.20 2.10 Area code : 3
 FDEPTH: 100 98 GearCond.code:
 CDEPTH: 103 98 Validity code:
 Towing dir: 243° Wire out: 500 m Speed: 35 kn*10

Sorted: 28 Kg Total catch: 449.20 CATCH/HOUR: 898.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Rhomboplites aurorubens	400.00	736	44.52	423
Dasyatis sp	240.00	2	26.71	
Lutjanus vivanus	59.00	9	6.57	
Mycteroperca cili	57.00	2	6.34	
Decapterus tabl	49.60	396	5.52	
Seriola rivolana	32.00	4	3.56	
Priacanthus arenatus	22.00	20	2.45	
Ariomma bondi	15.20	272	1.69	
Myripristis jacobus	8.00	4	0.89	
Pristigenys etias	6.00	12	0.67	
Dactylopterus volitans	2.80	4	0.31	
Serranus phoebe	1.60	24	0.18	
Fistularia petimba	1.20	4	0.13	
Scorpaena agassizi	1.20	12	0.13	
Prionotus stearnsi	0.80	4	0.09	
Pontinus longispinnis	0.80	4	0.09	
Hoplunnis sp	0.60	3	0.07	
Pronotogrammus eos	0.40	16	0.04	
Apogon pseudomaculatus	0.20	4	0.02	
Xenolepidichthys daigleishi	0.00	4		
Lepophidium profundorum	0.00	4		
Chaetodon guyanensis	0.00	3		
Total	----- 898.40		----- 99.98	

PROJECT STATION: 518

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1033
 start stop duration Long W 6750
 TIME :08:15:00 08:45:00 30 (min) Purpose code: 3
 LOC :3303.30 3304.80 1.50 Area code : 3
 FDEPTH: 30 74 GearCond.code:
 BDEPTH: 30 74 Validity code:
 Towing dir: 310° Wire out: 400 m Speed: 30 kn*10

Sorted: 54 Kg Total catch: 54.30 CATCH/HOUR: 108.60

SPECIES	CATCH/HOUR		% OF TOT.	C	SAMP.NO.
	WEIGHT	NUMBERS			
<i>Lachnolaimus maximus</i>	17.10	4	15.75		
<i>Ajuterus sonoceros</i>	15.80	16	15.47		
<i>Rhomboplites aurorubens</i>	13.20	260	12.71	424	
<i>Eucinostomus argenteus</i>	11.40	370	11.42	425	
<i>Calamus pennatus</i>	9.00	18	8.29		
<i>Seriola rivolana</i>	7.60	8	7.00		
<i>Urolophus plei</i>	7.00	508	6.45	426	
<i>Pristipomoides macrophthalmus</i>	5.20	78	5.71		
<i>Paralichthys tropicus</i>	4.00	2	3.68		
<i>Upeneus parvus</i>	4.00	140	3.68	427	
<i>Lutjanus purpureus</i>	3.80	20	3.50		
<i>Lutjanus synagris</i>	2.00	2	1.84		
<i>Pareques sp</i>	1.80	16	1.66		
<i>Fistularia petiota</i>	1.20	8	1.10		
<i>Priacanthus arenatus</i>	1.00	2	0.92		
<i>Trachurus iathami</i>	0.70	48	0.64		
<i>Saurida normani</i>	0.20	5	0.18		
<i>Syacium sp.</i>	0.00	4			
<i>Bothus ocellatus</i>	0.00	2			
<i>Haemulon aurolineatum</i>	0.00	2			
<i>Diplectrum bivittatum</i>	0.00	4			
Total	-----		108.60	-----	
				100.00	

PROJECT STATION: 519

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1040
 start stop duration Long W 6756
 TIME :09:40:00 10:10:00 30 (min) Purpose code: 3
 LOG :3311.10 3312.30 1.20 Area code: 3
 FDEPTH: 73 73 GearCond.code:
 SDEPTH: 73 73 Validity code:
 Towing dir: 322° Wire out: 400 m Speed: 25 kn*10

Sorted: 65 Kg Total catch: 65.60 CATCH/HOUR: 131.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Sucinostomus argenteus</i>	41.00	1066	31.25	428
<i>Calamus pennatula</i>	17.80	34	13.57	430
<i>Lutjanus analis</i>	12.40	4	9.45	
<i>Rhomboplites aurorubens</i>	10.00	128	7.62	431
<i>Priacanthus arenatus</i>	8.00	72	6.10	429
<i>Saurida normani</i>	7.00	96	5.34	
<i>Mustelus canis</i>	7.00	4	5.34	
<i>Upeneus parvus</i>	5.40	140	4.12	
<i>Loligo plei</i>	5.00	346	3.81	
<i>Priatipomoides macrophthalmus</i>	5.00	74	3.81	
<i>Seriola rivoliana</i>	3.60	4	2.74	
<i>Aluterus monoceros</i>	3.20	6	2.44	
<i>Trachurus lathami</i>	2.80	238	2.13	
<i>Lutjanus purpureus</i>	2.20	6	1.68	
<i>Fistularia petimba</i>	0.60	2	0.46	
<i>Fistularia tabacaria</i>	0.20	6	0.15	
<i>Decapterus macarellus</i>	0.00	4		
<i>Ariommia bondi</i>	0.00	10		
<i>Diplectrum bivittatum</i>	0.00	4		
Total	-----		131.20	100.01

PROJECT STATION: 520

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1043
 start stop duration Long W 6805
 TIME :11:42:00 12:12:00 30 (min) Purpose code: 3
 LOG :3324.70 3325.90 1.20 Area code: 3
 FDEPTH: -2 47 GearCond.code:
 SDEPTH: -2 47 Validity code:
 Towing dir: 10° Wire out: 250 m Speed: 25 kn*10

Sorted: 99 Kg Total catch: 98.90 CATCH/HOUR: 197.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Lutjanus analis</i>	64.00	10	32.36	432
<i>Sphyraena guachancho</i>	45.00	76	22.75	433
<i>Calamus pennatula</i>	24.00	34	12.13	
<i>Lutjanus purpureus</i>	21.60	2	10.92	
<i>Lutjanus synagris</i>	17.00	26	8.59	434
<i>Scomberomorus cavalla</i>	3.00	2	4.55	
<i>Priacanthus arenatus</i>	5.00	3	2.53	
<i>Selene spixii</i>	4.40	3	2.22	
<i>Aluterus monoceros</i>	3.00	2	1.52	
<i>Chloroscombrus chrysurus</i>	1.20	10	1.11	
<i>Rhomboplites aurorubens</i>	2.00	6	1.01	
<i>Remora sp.</i>	0.40	2	0.20	
<i>Fistularia petimba</i>	0.20	2	0.10	
Total	-----		197.80	99.99

PROJECT STATION: 521

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1056
 Start stop duration Long W 6808
 TIME :13:30:00 14:00:00 30 (min) Purpose code: 3
 LOG :3336.90 3337.80 0.90 Area code: 3
 FDEPTH: 67 65 GearCond.code:
 BDEPTH: 67 65 Validity code:
 Towing dir: 325° Wire out: 300 m Speed: 22 kn*10
 Sorted: 33 Kg Total catch: 102.50 CATCH/HOUR: 205.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
Sardinella aurita	65.60	1180	32.00	436
Lutjanus synagris	44.80	74	21.85	435
Lutjanus griseus	12.60	-	11.02	
Chloroscombrus chrysurus	14.80	308	7.22	
Eucinostomus argenteus	12.40	248	6.05	
Seriola rivoliana	6.80	-	4.29	
Decapterus punctatus	8.00	209	3.90	
Loligo plei	6.00	152	2.93	
Caranx latus	4.00	-	1.95	
Selene spixii	4.00	-	1.95	
Decapterus macarellus	3.60	72	1.76	
Lutjanus analis	2.80	-	1.37	
Aluterus monoceros	2.40	-	1.17	
Priacanthus arenatus	2.00	-	0.98	
Upeneus parvus	1.20	32	0.59	
Caulolatilus guppyi	0.80	-	0.38	
Pristipomoides macrophthalmus	0.40	-	0.20	
Trachurus lathami	0.40	12	0.20	
Ariommabondi	0.40	12	0.20	
Etrumeus teres	0.00	-		
Total	-----	102.50	-----	100.02

PROJECT STATION: 522

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1105
 start stop duration Long W 6814
 TIME :15:02:00 15:32:00 30 (min) Purpose code: 3
 LOG :3346.30 3346.50 0.20 Area code : 3
 FDEPTH: 55 55 GearCond. code:
 BDEPTH: 65 55 Validity code:
 Towing dir: 312° Wire out: 300 m Speed: 1 kn*10

Sorted: 28 Kg Total catch: 60.24 CATCH/HOUR: 120.48

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Lutjanus analis</i>	49.00	10	~0.67	
<i>Peprius peru</i>	12.72	72	10.56	
<i>Selene spixii</i>	10.08	20	6.37	
<i>Lutjanus purpureus</i>	7.20	43	5.98	
<i>Trachurus lethami</i>	7.20	332	5.98	
<i>Chloroscombrus chrysurus</i>	7.20	74	5.98	
<i>Lutjanus synagris</i>	5.00	3	4.15	
<i>Selar crumenophthalmus</i>	4.08	78	3.39	
<i>Sardinella aurita</i>	3.12	200	2.59	
<i>Decapterus macarellus</i>	3.12	106	2.59	437
<i>Albula vulpes</i>	2.68	0	2.39	
<i>Calamus pennae</i>	1.68	4	1.39	
<i>Loligo plei</i>	1.68	122	1.39	438
<i>Albula nemoptera</i>	1.68	0	1.39	
<i>Pristipomoides macrophthalmus</i>	1.44	10	1.20	
<i>Anchoa</i> sp	0.72	135	0.60	
<i>Decapterus punctatus</i>	0.72	12	0.60	
<i>Rhomboplites aurorubens</i>	0.48	4	0.40	
<i>Decapterus tabl</i>	0.24	4	0.20	
<i>Diplectrum bivittatum</i>	0.24	4	0.20	
Total	-----	120.48	-----	100.02

PROJECT STATION: 523

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1114
 start stop duration Long W 6820
 TIME :16:40:00 17:08:00 28 (min) Purpose code: 3
 LOG :3355.90 3356.30 0.40 Area code : 3
 FDEPTH: 88 123 GearCond. code:
 BDEPTH: 88 123 Validity code:
 Towing dir: 300° Wire out: 450 m Speed: 8 kn*10

Sorted: 32 Kg Total catch: 201.50 CATCH/HOUR: 431.79

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Aluterus monoceros</i>	195.00	118	45.16	
<i>Lutjanus analis</i>	75.64	24	17.52	439
<i>Seriola rivolana</i>	60.86	41	14.09	
<i>Rhomboplites aurorubens</i>	42.86	596	9.93	
<i>Rhomboplites aurorubens</i>	18.64	19	4.32	
<i>Scomberomorus cavalla</i>	11.57	2	2.68	
<i>Lutjanus vivanus</i>	8.14	3	1.89	
<i>Loligo plei</i>	7.71	471	1.79	
<i>Lutjanus vivanus</i>	7.71	21	1.79	
<i>Lutjanus purpureus</i>	2.14	2	0.50	
<i>Lutjanus buccanella</i>	1.50	2	0.35	
Total	-----	201.50	-----	100.02

PROJECT STATION: 524

DATE: 9/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1132
 start stop duration Long W 6847
 TIME : 21:10:00 22:10:00 60 (min) Purpose code: 3
 LOG : 3396.10 3397.90 1.80 Area code: - 0
 FDEPTH: 248 156 GearCond.code:
 BDEPTH: 248 156 Validity code:
 Towing dir: 290° Wire out: 1050 m Speed: 20 kn*10

Sorted: 30 Kg Total catch: 90.25 CATCH/HOUR: 90.25

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Synagrops bellus</i>	46.50 147		51.52	
<i>Steindachneria argentea</i>	10.50 352		11.63	
<i>Coelorhynchus caribbeaus</i>	7.50 210		8.31	
<i>Illex coindetti</i>	3.60 15		3.99	
<i>Solenocera</i> sp	3.60 160		3.99	440
<i>Pontinus longispinnis</i>	3.00 14		3.33	
LEPIDOTEUTHIDAE	2.70 120		2.99	
LOLIGINIDAE	2.40 16		2.66	
PENAEIDAE	2.10 356		2.33	
<i>Lepophidium profundorum</i>	1.90 21		2.11	
<i>Synrops</i> sp	1.50 21		1.66	
<i>Brotula barbata</i>	1.20 3		1.33	
<i>Peristedion</i> sp	1.20 11		1.33	
<i>Hoplunnis</i> sp	0.90 75		1.00	
<i>Lepidopus caudatus</i>	0.60 6		0.66	
<i>Argentina</i> sp.	0.50 43		0.56	
<i>Neopinnula americana</i>	0.30 4		0.33	
<i>Plesionika edwardsii</i>	0.15 39		0.17	
<i>Poecilopsetta albomarginata</i>	0.00 6			
<i>Monolene</i> sp	0.00 3			
<i>Ialiteutes mcgintyi</i>	0.00 18			
MORIDAE	0.00 15			
Total	----- 90.25	----- 90.25		

PROJECT STATION: 525

DATE: 9/ 6/98 GEAR TYPE: BT No:1 POSITION:Lat N 1135
 start stop duration Long W 6857
 TIME :23:15:00 23:53:00 38 (min) Purpose code: 3
 LOG :3404.60 3405.90 1.30 Area code : 3
 FDEPTH: 232 233 GearCond.code:
 BDEPTH: 232 233 Validity code:
 Towing dir: 290° Wire out:1000 m Speed: 20 kn*10

Sorted: 28 Kg Total catch: 56.50 CATCH/HOUR: 89.21

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Synagrops bellus	27.79	249	31.15	
Pristipomoides macrophthalmus	11.05	76	12.39	
Lepophidium profundorum	7.89	66	8.84	
Steindachneria argentea	7.89	196	8.84	
Pontinus longimpinnis	5.37	95	6.02	
Neopinnula americana	4.11	28	4.61	
Illex coindetti	3.16	19	3.54	
Hoplunnis sp	3.16	278	3.54	
Argentina sp.	2.53	107	2.84	
Coelorhynchus caribbeaus	2.21	47	2.48	
Gephyroberyx darwini	2.21	3	2.48	
LEPIDOTEUTHIDAE	2.05	98	2.30	
Solenocera sp	1.89	120	2.12	441
Plesionika edwardsii	1.58	123	1.77	
Peristedion sp	1.58	25	1.77	
PENAEIDAE	1.42	101	1.59	
Synodus poeyi	1.26	19	1.41	
Antigonia capros	0.95	6	1.06	
Brotula barbata	0.32	51	0.36	
Monolene sp	0.32	25	0.36	
Ariomma bondi	0.32	3	0.36	
Sembrops sp	0.16	5	0.18	
Bromisculus imberbis	0.00	3		
Synagrops sp.	0.00	25		
Polymixia lowei	0.00	9		
APOOONIDAE	0.00	19		
Zaliosutes mcgintvi	0.00	3		
HYCTOPHIDAE	0.00	19		
Prionotus stearnsi	0.00	3		
Total	-----	89.22	-----	100.01

PROJECT STATION: 526

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1130
 Start stop duration Long W 6809
 TIME : 01:07:00 02:07:00 60 (min) Purpose code: 3
 LOG : 3414.90 3416.80 1.90 Area code : 3
 FDEPTH: 264 264 GearCond. code:
 BDEPTH: 264 264 Validity code:
 Towing dir: 270° Wire out: 1000 m Speed: 20 kn*10

Sorted: 23 Kg Total catch: 41.24 CATCH/HOUR: 41.24

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP. NO.
	Weight	numbers		
<i>Ilex coindetti</i>	3.85	74	21.46	
<i>Belorhynchus caribbeaus</i>	4.95	159	12.00	
<i>Fontinus longispinnis</i>	3.75	50	9.09	
<i>Argentina</i> sp.	2.25	108	5.46	
<i>Synodus poeyi</i>	2.25	5	5.46	
<i>PENAEIDAE</i>	2.25	620	5.46	
<i>Synagrops</i> sp.	2.25	180	5.46	
<i>Brotula barbata</i>	2.10	44	5.09	
<i>Hoplunnis</i> sp	1.80	86	4.36	
<i>Synagrops bellus</i>	1.50	23	3.64	
<i>MERLUCCIIDAE</i>	1.50	3	3.64	
<i>Metanephrops binghami</i>	1.50	35	3.64	
<i>Solenocera</i> sp	1.05	47	2.55	
<i>Peristedion</i> sp	1.05	20	2.55	
<i>Plesionika edwardsii</i>	0.75	50	1.82	
<i>Steindachneria argenta</i>	0.75	9	1.82	
<i>Neoepinnula americana</i>	0.75	8	1.82	
<i>Prionotus roseus</i>	0.45	8	1.09	
<i>Polytmixia lowei</i>	0.45	21	1.09	
<i>Ancylopsetta dilecta</i>	0.30	2	0.73	
<i>Antigonia capros</i>	0.30	5	0.73	
<i>Lepophidium profundorum</i>	0.22	6	0.53	
<i>Lepidopus caudatus</i>	0.15	2	0.36	
<i>Monolene</i> sp	0.07	9	0.17	
<i>Cytopsis roseus</i>	0.00	2		
<i>Epigonus</i> sp	0.00	2		
<i>HYCTOPHIDAE</i>	0.00	30		
<i>Zalieutes mcgintyi</i>	0.00	5		
Total	41.24		100.02	

PROJECT STATION: 527

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1128
 start stop duration Long W 6948
 TIME : 06:00:00 06:30:00 30 (min) Purpose code: 3
 LOG : 3446.30 3446.50 0.20 Area code : 3
 FOEPTH: 57 60 GearCond.code:
 BDEPTH: 57 60 Validity code:
 Towing dir: 273° Wire out: 250 m Speed: 4 kn*10

Sorted: 33 Kg Total catch: 213.30 CATCH/HOUR: 426.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chirocentrodon bleekeriatus</i>	153.60	50944	35.01	
<i>Selene spixii</i>	64.00	224	15.00	442
<i>Scomberomorus brasiliensis</i>	55.60	48	13.03	444
<i>Lutjanus griseus</i>	49.00	6	11.49	443
<i>Lutjanus analis</i>	38.80	12	9.10	445
<i>Peprilus paru</i>	11.20	24	2.63	
<i>Chaetodipterus faber</i>	9.20	4	2.16	
<i>Lutjanus synagris</i>	7.60	10	1.78	
<i>Priacanthus arenatus</i>	6.40	16	1.50	
<i>Selene vomer</i>	5.60	8	1.31	
<i>Loligo plei</i>	3.20	120	0.75	
<i>Trichiurus lepturus</i>	3.20	8	0.75	
<i>Eucinostomus argenteus</i>	3.20	96	0.75	
<i>Seara crumenophthalmus</i>	2.80	16	0.66	
<i>Lutjanus purpureus</i>	2.40	8	0.56	
<i>Rhomboplites aurorubens</i>	2.40	24	0.56	
<i>Upeneus parvus</i>	2.00	184	0.47	
<i>Sardinella aurita</i>	2.00	56	0.47	
<i>Loligo paelei</i>	1.60	96	0.38	
<i>Opisthonema oglinum</i>	1.60	8	0.38	
<i>Sphyraena picudilla</i>	1.20	8	0.28	
<i>Ocapterus punctatus</i>	0.00	8		
<i>Etrumeus teres</i>	0.00	8		
Total	-----	426.60	-----	100.02

PROJECT STATION: 528

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1133
 Start stop duration Long W 6903
 TIME : 08:37:00 09:07:00 30 (min) Purpose code: 3
 LOG : 3465.60 3466.70 1.10 Area code : 3
 FDEPTH: 81 77 GearCond. code:
 BDEPTH: 81 77 Validity code:
 Towing dir: 281° Wire out: 400 m Speed: 25 kn*10

Sorted: 46 Kg Total catch: 46.50 CATCH/HOUR: 93.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Chloroscombrus chrysurus</i>	13.00	158	13.98	446
<i>Lutjanus analis</i>	9.80	4	10.54	
<i>Lutjanus synagris</i>	9.60	20	10.32	
<i>Scomberoscorus brasiliensis</i>	8.40	9	9.03	
<i>Dasyatis sp</i>	7.00	2	7.53	
<i>Scomberoscorus cavalla</i>	6.50	2	6.99	
<i>Selene spixii</i>	6.00	28	6.45	447
<i>Seriola rivolana</i>	5.20	0	5.59	
<i>Alectis ciliaris</i>	4.60	2	4.95	
<i>Lagocephalus leavigatus</i>	3.60	4	3.87	
<i>Mylobatis freminvillei</i>	3.00	1	3.23	
<i>Trichiurus lepturus</i>	2.60	4	2.80	
<i>Eucinostomus argenteus</i>	2.00	34	2.15	
<i>Upeneus parvus</i>	1.60	18	1.72	
<i>Trachurus lathami</i>	1.60	0	1.72	
<i>Albula nemoptera</i>	1.60	2	1.72	
<i>Selar crumenophthalmus</i>	1.60	8	1.72	
<i>Rhomboplites aurorubens</i>	1.30	14	1.40	
<i>Loligo plei</i>	1.20	92	1.29	
<i>Pristipomoides macrophthalmus</i>	1.00	20	1.08	
<i>Priacanthus arenatus</i>	0.80	2	0.86	
<i>Prionotus beanii</i>	0.30	2	0.32	
<i>Loligo paelei</i>	0.30	12	0.32	
<i>Lutjanus purpureus</i>	0.30	2	0.32	
<i>Decapterus macarellus</i>	0.10	4	0.11	
Total	-----	93.00	-----	100.01

PROJECT STATION: 529

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1136
 start stop duration Long W 6917
 TIME : 10:35:00 11:05:00 30 (min) Purpose code: 3
 LOI : 3479.50 3480.60 1.10 Area code : 3
 FDEPTH: 62 58 GearCond. code:
 BDEPTH: 62 58 Validity code:
 Towing dir: 290° Wire out: 300 m Speed: 20 kn*10

Sorted: 62 Kg Total catch: 61.70 CATCH/HOUR: 123.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP. NO.
	Weight numbers		
<i>Lutjanus synagris</i>	44.80 76	36.14	448
<i>Lutjanus purpureus</i>	25.40 140	20.58	449
<i>Lutjanus analis</i>	21.40 6	17.34	
<i>Eucinostomus argenteus</i>	12.60 222	10.21	450
<i>Loligo plei</i>	3.60 244	2.92	451
<i>Selene vomer</i>	3.60 5	2.92	
<i>Rhomboplites aurorubens</i>	3.00 16	2.43	
<i>Selene spixii</i>	2.60 3	2.11	
<i>Chloroscombrus chrysurus</i>	1.20 3	0.97	
<i>Calamus pennatula</i>	1.20 2	0.97	
<i>Calamus penna</i>	1.00 2	0.81	
<i>Sphyraena picudilla</i>	1.00 4	0.81	
<i>Cyclopetetta chittendeni</i>	0.80 2	0.65	
<i>Loligo pacaei</i>	0.60 50	0.49	
<i>Caulolatilus intermedius</i>	0.40 2	0.32	
<i>Pristipomoides macrophthalmus</i>	0.40 4	0.32	
<i>Upeneus parvus</i>	0.00 2		
<i>Diplectrum bivittatum</i>	0.00 2		
Total	-----123.40	-----99.99	

PROJECT STATION: 530

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1143
 start stop duration Long W 6931
 TIME : 12:34:00 13:04:00 30 (min) Purpose code: 3
 LOI : 3493.70 3494.50 0.80 Area code : 3
 FDEPTH: 70 68 GearCond. code:
 BDEPTH: 70 68 Validity code:
 Towing dir: 316° Wire out: 350 m Speed: 20 kn*10

Sorted: 62 Kg Total catch: 61.65 CATCH/HOUR: 123.30

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP. NO.
	Weight numbers		
<i>Seriola rivolana</i>	36.00 20	29.20	
<i>Lutjanus analis</i>	27.00 8	21.90	
<i>Loligo plei</i>	18.00 1800	14.60	
<i>Trachurus iathami</i>	17.00 1060	13.79	452
<i>Lutjanus synagris</i>	11.40 18	9.25	
<i>Eucinostomus argenteus</i>	3.80 76	3.08	
<i>Fistularia petimba</i>	2.60 5	2.11	
<i>Calamus pennatula</i>	2.20 4	1.78	
<i>Salar crumenophthalmus</i>	2.20 76	1.78	
<i>Rhomboplites aurorubens</i>	1.80 30	1.46	
<i>Pristipomoides macrophthalmus</i>	0.50 14	0.41	
<i>Upeneus parvus</i>	0.20 16	0.16	
<i>Decapterus macarellus</i>	0.20 6	0.16	
<i>Scober japonicus</i>	0.20 3	0.16	
<i>Priacanthus arenatus</i>	0.20 4	0.16	
<i>Diplectrum bivittatum</i>	0.00 2		
<i>Synodus posyi</i>	0.00 2		
Total	-----123.30	-----100.00	

PROJECT STATION: 531

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1146
 TIME : 14:20:00 14:50:00 30 (min) Duration Purpose code: 3 Long W 6939
 LOG : 3504.40 3505.10 0.70 Area code : 3
 FDEPTH: 23 20 GearCond. code:
 BDEPTH: 23 20 Validity code:
 Towing dir: 325° Wire out: 100 m Speed: 15 kn*10

Sorted: 17 Kg Total catch: 64.70 CATCH/HOUR: 129.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Eucinostomus argenteus</i>	37.60	972	29.06	
<i>Lutjanus analis</i>	22.40	28	17.31	
<i>Calamus pennatus</i>	10.80	24	8.35	
<i>Selar crumenophthalmus</i>	6.80	184	5.26	453
<i>Lutjanus synagris</i>	6.80	38	5.26	
<i>Trachinotus falcatus</i>	6.00	2	4.64	
<i>Priacanthus arenatus</i>	5.60	12	4.33	
<i>Upeneus parvus</i>	5.20	260	4.02	
<i>Calamus penna</i>	4.80	10	3.71	
<i>Aluterus monoceros</i>	4.80	6	3.71	
<i>Lactophrys trigonus</i>	4.60	2	3.55	
<i>Selene vomer</i>	3.20	4	2.47	
<i>Loligo plai</i>	3.20	260	2.47	
<i>Scomberomorus cavalla</i>	2.40	4	1.85	
<i>Balistes capriuscus</i>	2.00	4	1.55	
<i>Lagocephalus laevigatus</i>	1.60	4	1.24	
<i>Caranx cryos</i>	0.80	12	0.62	
<i>Decapterus macarellus</i>	0.60	148	0.46	
<i>Decapterus punctatus</i>	0.20	4	0.15	
Total	-----	129.40	-----	100.01

PROJECT STATION: 532

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1157
 start stop duration Long W 6943
 TIME : 16:31:00 17:01:00 30 (min) Purpose code: 3
 LOG : 3516.50 3517.50 1.00 Area code : 3
 FDEPTH: 33 45 GearCond.code: 0
 SDEPTH: 33 45 Validity code:
 Towing dir: 323° Wire out: 250 m Speed: 20 kn*10

Sorted: 31 kg Total catch: \$1.10 CATCH/HOUR: 102.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO
	Weight	numbers		
<i>Lutjanus analis</i>	36.00	34	35.23	
<i>Lutjanus synagris</i>	24.00	32	23.48	
<i>Calamus penna</i>	14.40	30	14.09	
<i>Lutjanus purpureus</i>	5.40	36	5.28	
<i>Eucinostomus argenteus</i>	5.20	30	5.09	
<i>Rhomboplites aurorubens</i>	4.40	326	4.31	
<i>Loligo plei</i>	3.40	356	3.33	
<i>Priacanthus arenatus</i>	2.20	4	2.15	
<i>Calamus pennatus</i>	2.00	2	1.96	
<i>Sphyraena picudilla</i>	1.00	4	0.98	
<i>Lutjanus vivanus</i>	1.00	2	0.98	
<i>Sardinella aurita</i>	0.80	30	0.78	
<i>Upeneus parvus</i>	0.60	16	0.59	
<i>Chloroscombrus chrysurus</i>	0.50	4	0.49	
<i>Trachurus lathami</i>	0.50	62	0.49	
<i>Haemulon boschmei</i>	0.40	32	0.39	
<i>Scomber japonicus</i>	0.40	4	0.39	
<i>Decapterus macarellus</i>	0.00	6		
<i>Selar crumenophthalmus</i>	0.00	6		
Total	-----	102.20	-----	100.01

PROJECT STATION: 533

DATE: 11/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1206
 start stop duration Long W 6945
 TIME : 10:50:00 11:20:00 30 (min) Purpose code: 3
 LOG : 3667.30 3667.30 Area code : 3
 FDEPTH: -6 29 GearCond.code:
 BDEPTH: -6 29 Validity code:
 Towing dir: 330° Wire out: 250 m Speed: kn*10

Sorted: 107 kg Total catch: 106.80 CATCH/HOUR: 1:3.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
<i>Lutjanus analis</i>	104.00	96	48.69	454
<i>Calamus penna</i>	23.40	50	10.96	455
<i>Selar crumenopnthalinus</i>	19.80	82	9.18	457
<i>Lutjanus vivanus</i>	12.60	166	5.90	456
<i>Seriola rivolana</i>	12.40	12	5.61	
<i>Scomberomorus cavalla</i>	10.40	8	4.87	
<i>Lutjanus purpureus</i>	9.60	42	4.49	458
<i>Rhomboplites aurorubens</i>	5.40	50	2.53	459
<i>Lutjanus synagris</i>	3.60	6	1.69	
<i>Upeneus parvus</i>	2.40	268	1.12	
<i>Loligo plei</i>	2.20	210	1.03	460
<i>Calamus pennatula</i>	2.00	2	0.94	
<i>Lactophrys trigonus</i>	2.00	6	0.94	
<i>Acanthostracion quadricornis</i>	1.40	4	0.66	
<i>Eucinostomus argenteus</i>	1.00	10	0.47	
<i>Priacanthus arenatus</i>	1.00	2	0.47	
<i>Decapterus macarellus</i>	0.40	44	0.19	
<i>Selar crumenopnthalinus</i>	0.20	20	0.09	
<i>Decapterus punctatus</i>	0.00	2		
Total	-----	213.60	-----	100.03

PROJECT STATION: 534

DATE: 11/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1218
 start stop duration Long W 7005
 TIME : 13:25:00 13:55:00 30 (min) Purpose code: 3
 LOG : 3684.50 3684.60 0.10 Area code : 3
 FDEPTH: 31 27 GearCond.code:
 BDEPTH: 31 27 Validity code:
 Towing dir: 291° Wire out: 150 m Speed: 2 kn*10

Sorted: 6 Kg Total catch: 5.90 CATCH/HOUR: 11.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
<i>Calamus penna</i>	8.60	44	72.88	
<i>Calamus pennatula</i>	2.00	14	16.95	
<i>Diodon sp.</i>	0.90	2	6.78	
<i>Pseudupeneus maculatus</i>	0.40	2	3.39	
Total	-----	11.80	-----	100.00

PROJECT STATION: 535

DATE: 11/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1223
 start stop duration Long W 7019
 TIME : 15:28:00 15:58:00 30 (min) Purpose code: 3
 LOG : 3695.60 3695.90 0.30 Area code : 3
 FDEPTH: 75 75 GearCond.code:
 BDEPTH: 75 75 Validity code:
 Towing dir: 270° Wire out: 300 m Speed: 6 kn*10

Sorted: 19 Kg Total catch: 18.80 CATCH/HOUR: 17.60

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Sphyraena picudilla</i>	19.20 100	51.06	461	
<i>Priacanthus arenatus</i>	5.80 100	15.43	462	
<i>Sphyraena guachancho</i>	4.60 6	12.23		
<i>Loligo paellei</i>	2.80 156	7.45	463	
<i>Pristipomoides macrophthalmus</i>	1.40 13	3.72		
<i>Salar crumenophthalmus</i>	1.00 4	2.66		
<i>Strumeus teres</i>	0.50 14	1.33		
<i>Prionotus stearnsi</i>	0.40 12	1.06		
<i>Trichiurus lepturus</i>	0.40 13	1.06		
<i>Loligo plei</i>	0.30 4	0.80		
<i>Penaeus notialis</i>	0.30 2	0.80		
<i>Upeneus parvus</i>	0.30 6	0.80		
<i>Serranus phoebe</i>	0.20 6	0.53		
<i>Synodus foeyi</i>	0.20 14	0.53		
<i>Trachurus lathami</i>	0.20 4	0.53		
Total	-----	-----	99.99	

PROJECT STATION: 536

DATE: 11/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1223
 start stop duration Long W 7027
 TIME : 16:46:00 17:16:00 30 (min) Purpose code: 3
 LOG : 3701.50 3702.20 0.70 Area code : 3
 FDEPTH: 69 69 GearCond.code:
 BDEPTH: 69 69 Validity code:
 Towing dir: 265° Wire out: 350 m Speed: 15 kn*10

Sorted: 26 Kg Total catch: 58.89 CATCH/HOUR: 117.78

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Mycteroperca interstitialis</i>	29.40 3	24.96		
<i>Priacanthus arenatus</i>	21.00 318	17.83	464	
<i>Sphyraena picudilla</i>	16.80 75	14.26	465	
<i>Pristipomoides macrophthalmus</i>	9.00 132	7.64	466	
<i>Rhomboplites aurorubens</i>	7.20 56	5.11	467	
<i>Trachurus lathami</i>	5.70 198	4.84	468	
<i>Lutjanus analis</i>	5.40 2	4.58		
<i>Pagrus pagrus</i>	4.20 10	3.57		
<i>Lutjanus purpureus</i>	3.60 -	3.08		
<i>Synodus foeyi</i>	2.70 12	2.29		
<i>Loligo plei</i>	2.70 15	2.29		
<i>Etrumeus teres</i>	2.10 75	1.78		
<i>Eucinostomus argenteus</i>	1.80 24	1.53		
<i>Lutjanus evnagris</i>	1.40 2	1.19		
<i>Upeneus parvus</i>	1.04 34	0.88		
<i>Haemulon steindachneri</i>	0.90 4	0.76		
<i>Calamus penne</i>	0.90 3	0.76		
<i>Scomber japonicus</i>	0.74 12	0.63		
<i>Ancylospetta quadrociliata</i>	0.60 4	0.51		
<i>Salar crumenophthalmus</i>	0.60 4	0.51		
Total	-----	117.78	99.98	

PROJECT STATION: 537

DATE: 11/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1223
 start stop duration Long W 7038
 TIME : 18:30:00 18:50:00 30 (min) Purpose code: 3
 LOG : 3710.00 3711.30 1.30 Area code : 3
 FDEPTH: 63 71 GearCond.code:
 BDEPTH: 59 71 Validity code:
 Towing dir: 270° Wire out: 350 m Speed: 25 kn*10

Sorted: 16 kg Total catch: 47.19 CATCH/HOUR: 94.38

SPECIES	CATCH/HOUR		% OF TOT.	C	SAMP.NO.
	Weight	numbers			
Priacanthus arenatus	24.00	352	51.43	471	
Lutjanus synagris	9.90	14	10.49		
Pristipomoides macropnthalmaus	9.90	214	10.49	470	
Scomber japonicus	9.90	382	10.49	469	
Trachurus lathami	6.90	516	7.31	472	
Sphyraena picudilla	6.00	18	6.36		
Loligo plei	5.40	94	5.72		
Synodus foetens	3.90	18	4.13		
Pagrus pagrus	3.20	6	3.39		
Lutjanus analis	2.70	2	2.86		
Eucinostomus argenteus	2.70	66	2.86		
Sphyraena guachancho	2.40	4	2.54		
Rhomboplites aurorubens	1.50	16	1.59		
Haemulon steindachneri	1.20	12	1.27		
Selar crumenophthalmus	0.90	12	0.95		
Upeneus parvus	0.90	36	0.95		
Calamus pennatula	0.60	4	0.64		
Caulolatilus intermedius	0.60	4	0.64		
Etrumeus teres	0.44	14	0.47		
Fistularia tabacaria	0.44	6	0.47		
Calamus cervigoni	0.30	4	0.32		
Diplectrum bivittatum	0.30	3	0.32		
Dactylopterus volitans	0.30	4	0.32		
Sardinella aurita	0.00	4			
Sphoeroides dorsalis	0.00	-			
Total	-----		94.38	-----	
				100.01	

PROJECT STATION: 538

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 start stop duration Long W 7058
 TIME :06:27:00 06:57:00 30 (min) Purpose code: 3
 LOG :3815.30 3816.80 1.50 Area code : 3
 FDEPTH: 21 17 GearCond.code:
 BDEPTH: 21 17 Validity code:
 Towing dir: 270° Wire out: 150 m Speed: 30 kn'10

Sorted: 29 Kg Total catch: 199.50 CATCH/HOUR: 399.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	NUMBERS		
<i>Chirocentrodon bleekeriensis</i>	181.20	41676	~5.41	
<i>Ctenosciena gracilicirrhus</i>	38.40	5112	9.62	
<i>Dipterus rhombus</i>	19.20	192	4.81	
<i>Chloroscombrus chrysurus</i>	19.20	5628	4.81	
<i>Pellona harroweri</i>	19.20	1944	4.81	
<i>Micropogonias furnieri</i>	17.60	26	4.41	474
<i>Trichiurus lepturus</i>	16.80	228	4.21	
<i>Loligo palearis</i>	15.60		3.91	
<i>Chloroscombrus chrysurus</i>	13.20	132	3.31	
<i>Harengula clupeola</i>	9.60	780	2.41	
<i>Elops saurus</i>	8.80	12	2.21	
<i>Cynoscion microlepidotus</i>	7.80	192	1.95	
<i>Cynoscion virescens</i>	6.80	6	1.70	
<i>Lutjanus synagris</i>	4.40	4	1.10	
<i>Lepophidium profundorum</i>	3.60	72	0.90	
<i>Eucinostomus argenteus</i>	3.20	132	0.80	
<i>Prionotus punctatus</i>	3.20	254	0.80	
<i>Pepilius paru</i>	2.80	5	0.70	
<i>Opisthonema oglinum</i>	2.40	12	0.60	
<i>Cynoscion leiaarchus</i>	1.80	72	0.45	
<i>Penaeus notialis</i>	1.20	68	0.30	473
<i>Selene spixii</i>	1.20	12	0.30	
<i>Trachinotus cavennensis</i>	1.00	12	0.25	
<i>Caranx hippos</i>	0.40	6	0.10	
<i>Penaeus schmitti</i>	0.40	6	0.10	
<i>Larimus breviceps</i>	0.00	12		
<i>Porichthys pauciradiatus</i>	0.00	12		
Total	-----		-----	-----
	399.00		399.00	

PROJECT STATION: 539

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 start stop duration Long W 7111
 TIME : 08:08:00 08:38:00 30 (min) Purpose code: 3
 LOG : 3827.70 3829.20 1.50 Area code : 3
 FDEPTH: 14 15 GearCond.code:
 SDEPTH: 14 15 Validity code:
 Towing dir: 270° Wire out: 100 m Speed: 30 kn*10

Sorted: 42 Kg Total catch: 42.05 CATCH/HOUR: 84.10

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trichiurus lepturus</i>	19.20	154	22.83	
<i>Micropogonias furnieri</i>	9.60	62	11.41	475
<i>Chirocentrodon bleekerianus</i>	7.80	1608	9.27	
<i>Cynoscion sp</i>	6.90	868	8.20	
<i>Bairdiella sp</i>	6.90	1646	8.20	
<i>Anchoa spinifer</i>	5.90	572	7.02	
<i>Xiphopenaeus kroyeri</i>	5.40	1162	6.42	
<i>Nebris microps</i>	3.00	10	3.57	
<i>Nematopalaemon schmitti</i>	3.00		3.57	
<i>Peprius paru</i>	3.00	50	3.57	
<i>Chaetodipterus faber</i>	2.80	4	3.33	
<i>Macrodon ancylodon</i>	2.00	12	2.38	
<i>Larimus brevicauda</i>	1.40	2	1.66	
<i>Porichthys pauciradiatus</i>	1.00	30	1.19	
<i>Diapterus rhombus</i>	1.00	30	1.19	
<i>Harengula clupeola</i>	1.00	30	1.19	
<i>Loligo paelei</i>	1.00	286	1.19	
<i>Pellona harroweri</i>	1.00	100	1.19	
<i>Opisthonema oglinum</i>	0.70	2	0.83	
<i>Chloroscombrus chrysurus</i>	0.50	70	0.59	
<i>Cynoscion microlepidotus</i>	0.40	2	0.48	
<i>Rhizoprionodon lalandei</i>	0.40	2	0.48	
<i>Penaeus notialis</i>	0.20	4	0.24	
<i>Sympodus plagiussa</i>	0.00	10		
<i>Penaeus schmitti</i>	0.00	6		
Total	-----	84.10	-----	100.00

PROJECT STATION: 540

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 start stop duration Long W 7124
 TIME : 10:00:00 10:30:00 30 (min) Purpose code: 3
 LOG : 3842.00 3844.30 1.50 Area code : 3
 FDEPTH: 23 22 GearCond.code:
 SDEPTH: 23 22 Validity code:
 Towing dir: 216° Wire out: 150 m Speed: 30 kn*10

Sorted: ~1 Kg Total catch: 318.80 CATCH/HOUR: 637.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trichiurus lepturus</i>	301.00	6230	7.21	
<i>Chloerescomorus chrysurus</i>	91.00	1806	14.27	476
<i>Pellona harroveri</i>	81.20	8218	12.74	
<i>Micropogonias furnieri</i>	32.00	56	5.02	479
<i>Chirotcentrodon bleekeriianum</i>	23.80	4452	3.73	
<i>Peprilus paru</i>	18.20	238	2.85	
<i>Micropogonias turnieri</i>	16.80	182	2.63	477
<i>Lutjanus synagris</i>	13.60	16	1.13	
<i>Cynoscion leiarchus</i>	13.00	24	2.04	478
<i>Opisthonema oglinum</i>	11.20	84	1.76	
<i>Cynoscion microlepidotus</i>	9.80	266	1.54	
<i>Diapterus rhombus</i>	5.60	210	0.88	
<i>Harengula clupeoia</i>	5.60	182	0.60	
<i>Selene spixii</i>	4.20	56	0.66	
<i>Rhizoprionodon lalandei</i>	3.60	6	0.56	
<i>Penaeus schmitti</i>	2.80	56	0.44	
<i>Elops saurus</i>	1.80	2	0.28	
<i>Chaetodipterus fader</i>	1.60	2	0.25	
<i>Dasyatis guttata</i>	0.80	2	0.13	
<i>Anchoa spinifer</i>	0.00	28		
<i>Loligo paelei</i>	0.00	140		
<i>Ctenosciena gracilicirrhus</i>	0.00	56		
Total	-----	637.60	-----	100.00

PROJECT STATION: 541

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1130
 start stop duration Long W 7130
 TIME : 11:36:00 12:10:00 34 (min) Purpose code: 3
 LOG : 3853.80 3855.50 1.70 Area code : 3
 FDEPTH: 19 20 GearCond.code:
 SDEPTH: 19 20 Validity code:
 Towing dir: 250° Wire out: 100 m Speed: 30 kn*10

Sorted:	30 Kg	Total catch:	396.25	CATCH/HOUR:	699.26
SPECIES				CATCH/HOUR	% OF TOT. C SAMPL.NO.
				weight numbers	
Chloroscombrus chrysurus				344.12 3233	49.21 480
Trichiurus lepturus				87.18 2156	12.47 481
Peliona harroweri				80.29 6371	11.48 482
Opisthonema oglinum				68.82 528	9.84 483
Micropogonias furnieri				39.00 459	5.58
Peprilus paru				34.41 321	4.92
Cynoscion microlepidotus				11.47 275	1.64
Harengula jaguana				9.18 229	1.31
Rhizoprionodon lalandei				9.18 46	1.31
Selene spixii				9.03 138	1.15
Eucinostomus gula				4.59 69	0.66
Synodus poeyi				2.29 23	0.03
Penaeus schmitti				0.53 9	0.08
Penaeus notialis				0.18 2	0.03
Total			699.27		100.01

PROJECT STATION: 542

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1126
 start stop duration Long W 7142
 TIME : 13:25:00 13:55:00 30 (min) Purpose code: 3
 LOG : 3867.30 3868.70 1.40 Area code : 3
 FDEPTH: 21 21 GearCond.code:
 SDEPTH: 21 21 Validity code:
 Towing dir: 252° Wire out: 100 m Speed: 30 kn*10

Sorted:	30 Kg	Total catch:	200.70	CATCH/HOUR:	401.40
SPECIES				CATCH/HOUR	% OF TOT. C SAMPL.NO.
				weight numbers	
Chloroscombrus chrysurus				249.60 1546	62.18 484
Chloroscombrus chrysurus				34.80 4036	8.67 485
Opisthonema oglinum				30.00 300	7.47 486
Scomberomorus regalis				22.80 36	5.68
Sphyraena guachancho				21.60 132	5.38
Lutjanus synagris				13.80 14	3.44
Peprilus paru				10.80 36	2.69
Caranx hippos				6.00 2	1.49
Selene vomer				4.80 12	1.20
Loligoconula brevis				4.80 564	1.20
Anchoa lvoolepis				1.20 408	0.30
Opisthonema oglinum				1.20 168	0.30
Total			401.40		100.00

PROJECT STATION: 543

DATE: 12/ 6/86 GEAR TYPE: BT No:1 POSITION: Lat N 1120
 start stop duration Long W 7132
 TIME : 15:40:00 16:10:00 30 (min) Purpose code: 3
 LOG : 3885.00 3887.50 1.70 Area code : 3
 FDEPTH: 15 15 GearCond. code:
 BDEPTH: 15 15 Validity code:
 Towing dir: 108° Wire out: 100 m Speed: 35 kn*10

Sorted: 23 Kg Total catch: 206.50 CATCH/HOUR: 413.00

SPECIES	CATCH/HOUR		% OF TOT.	C	SAMP.NO.
	weight	numbers			
Anchoa spinifer	64.00	9360	15.50	490	
Xiphopenaeus kroyeri	56.00	10640	13.56	488	
Trichiurus lepturus	54.00	648	13.08	489	
Ctenosciaena gracilicirrhus	40.00	1680	9.69		
Pellona harroweri	28.00	1040	6.78		
Micropogonias furnieri	25.60	60	6.20	487	
Pomacanthus arcuatus	18.40	12	4.46		
Cynoscion microlepidotus	16.00	160	3.87		
Chloerescombrus chrysurus	14.00	90	3.39		
Scomberomorus regalis	14.00	10	3.39		
Sphyraea tudes	13.00	40	3.15		
Opisthonema oglinum	12.00	70	2.91		
Peprilus peruvius	9.00	60	2.18		
Harengula jaguana	8.00	240	1.94		
Trichiurus lepturus	8.00	380	1.94		
Rhizoprionodon lalandei	8.00	40	1.94		
Loligoenula brevis	6.00	1160	1.45		
Hemicaranx ambyrhynchus	6.00	10	1.45		
Lycengraulis grossidens	4.00	120	0.97		
Chirocentrodon bleekeriensis	4.00	560	0.97		
Eucinostomus guia	4.00	120	0.97		
Penaeus schmitti	1.00	18	0.24		
Total	413.00		100.03		

PROJECT STATION: 544

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 3117
 Start stop duration Long W 7124
 TIME : 16:55:00 17:25:00 30 (min) Purpose code: 3
 LOG : 3892.70 3894.30 1.60 Area code : 3
 FDEPTH: 13 13 GearCond.code:
 SDEPTH: 13 13 Validity code:
 Towing dir: 100° Wire out: 100 m Speed: 32 kn*10

Sorted: 21 Kg Total catch: 110.60 CATCH/HOUR: 221.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trichiurus lepturus</i>	28.00	376	12.66	
<i>Micropogonias furnieri</i>	27.40	52	12.39	491
<i>Macrodon ancylodon</i>	22.40	304	10.13	492
<i>Pellona harroveri</i>	19.60	1176	5.86	
<i>Anchoa spinifer</i>	15.60	936	7.05	
<i>Chaetodipterus faber</i>	12.80	8	5.79	
<i>Sciaenidae Juveniles</i>	12.40	630	5.61	
<i>Micropogonias furnieri</i>	12.00	176	5.42	493
<i>Rhinoptera bonasus</i>	11.00	2	4.97	
<i>Xiphopenaeus kroyeri</i>	10.80	2288	4.88	
<i>Chirocentrodon bleekeriatus</i>	10.80	1952	4.88	
<i>Chloroscombrus chrysurus</i>	9.20	64	4.16	
<i>Sphyraena tudes</i>	8.00	4	3.62	
<i>Chloroscombrus chrysurus</i>	6.80	160	3.07	
<i>Opiathonema oglinum</i>	4.80	32	2.17	
<i>Harengula clupeola</i>	2.00	90	0.90	
<i>Cynoscion sp</i>	2.00	64	0.90	
<i>Dasyatis guttata</i>	2.00	2	0.90	
<i>Iopisthus parvipinnis</i>	1.20	24	0.54	
<i>Larimus breviceps</i>	1.20	88	0.54	
<i>Rhizoprionodon lalandei</i>	0.80	2	0.36	
<i>Penaeus schmitti</i>	0.40	10	0.18	
<i>Peprilus peru</i>	0.00	8		
<i>Selene spixii</i>	0.00	8		
<i>Loligo paelei</i>	0.00	60		
Total	-----		221.20	-----
				99.98

PROJECT STATION: 545

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1128
 Start stop duration Long W 7113
 TIME : 18:45:00 19:15:00 30 (min) Purpose code: 3
 LOG : 3907.90 3909.60 1.70 Area code : 3
 FDRPTH: 15 15 GearCond.code:
 BDPTH: 15 15 Validity code:
 Towing dir: 32° Wire out: 100 m Speed: 32 kn*10

Sorted: 28 Kg Total catch: 150.75 CATCH/HOUR: 301.50

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Trichiurus lepturus</i>	89.00	770	29.52	
<i>Sciaenidae juveniles</i>	43.00		14.26	
<i>Macrodon ancylodon</i>	28.00	260	9.29	
<i>Chirocentrodon bleekeriatus</i>	26.60	3680	8.82	
<i>Micropogonias furnieri</i>	23.20	46	7.69	494
<i>Xiphopenaeus kroyeri</i>	20.00	3720	6.63	
<i>Anchoa spinifer</i>	17.00	1490	5.64	
<i>Pellona harroweri</i>	13.00	730	4.31	
<i>Nematopalemon schmitti</i>	8.00	5010	2.65	
<i>Micropogonias furnieri</i>	8.00	170	2.65	495
<i>Cynoscion sp</i>	5.00	300	1.66	
<i>Pepriium paru</i>	3.00	30	1.00	
<i>Selene spixii</i>	3.00	70	1.00	
<i>Prionotus punctatus</i>	3.00	30	1.00	
<i>Larimus breviceps</i>	2.50	20	0.83	
<i>Opisthonema oglinum</i>	2.00	30	0.66	
<i>Chloroscombrus chrysurus</i>	2.00	130	0.66	
<i>Synodus foetens</i>	1.60	10	0.53	
<i>Lutjanus synagris</i>	1.60	2	0.53	
<i>Loligo paellei</i>	1.00	170	0.33	
<i>Penaeus schmitti</i>	0.60	16	0.20	
<i>Penaeus notialis</i>	0.40	4	0.13	
<i>Syphurus sp</i>	0.00	60		
Total	-----	301.50	-----	99.99

PROJECT STATION: 546

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1120
 start stop duration Long W 7100
 TIME : 21:08:00 21:38:00 30 (min) Purpose code: 3
 LOG : 3926.40 3927.80 1.40 Area code : 3
 FDEPTH: 13 14 GearCond.code:
 BDEPTH: 13 14 Validity code:
 Towing dir: S4° Wire out: 100 m Speed: 30 kn*10

Sorted: 24 Kg Total catch: 144.00 CATCH/HOUR: 288.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NC
	WEIGHT	NUMBERS		
<i>Opisthonema oglinum</i>	60.00	360	21.04	497
<i>Micropogonias furnieri</i>	51.60	350	17.92	496
<i>Chirocentrodon bleekeriatus</i>	48.00	9220	16.67	
<i>Chloroscombrus chrysourus</i>	21.60	36	7.50	
<i>Lophidium profundorum</i>	21.00	620	7.29	
<i>Elops saurus</i>	14.40	12	5.00	
<i>Cynoscion leiaarchus</i>	9.60	12	3.33	
<i>Oligoplites saurus</i>	9.40	12	2.92	
<i>Synodus foetens</i>	7.20	12	2.50	
<i>Scomberomorus cavalla</i>	7.20	12	2.50	
<i>Dipterus rhombus</i>	7.20	155	2.50	
<i>Chloroscombrus chrysourus</i>	6.00	720	2.08	
<i>Porichthys pauciradiatus</i>	6.00	540	2.08	
<i>Loligo paelaei</i>	6.00	360	2.08	
<i>Trichiurus lepturus</i>	3.60	92	1.25	
<i>Kishinouyeus kroyeri</i>	3.60	600	1.25	
<i>Sairdiella sp</i>	3.00	360	1.04	
<i>Penaeus schmitti</i>	2.40	60	0.83	
<i>Selene spixii</i>	0.60	12	0.21	
<i>Diplectrum bivittatum</i>	0.00	50		
<i>Prionotus punctatus</i>	0.00	180		
Total	-----	288.00	-----	99.99

PROJECT STATION: 547

DATE: 12/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1128
 start stop duration Long W 7047
 TIME : 23:30:00 24:05:00 35 (min) Purpose code: 3
 LOG : 3942.30 3943.60 1.30 Area code : 3
 SODEPTH: 24 23 GearCond.code:
 SODEPTH: 24 23 Validity code:
 Towing dir: 180° Wire out: 100 m Speed: 18 kn*10

Sorted: 26 Kg Total catch: 131.00 CATCH/HOUR: 224.57

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Synicentrus bleekeriensis</i>	50.06	27813	22.29	
<i>Cynoscion similis</i>	34.80	24	15.50	498
<i>Anchoa lytlepis</i>	28.80	14469	12.82	
<i>Chloroscombrus chrysurus</i>	14.40	1872	6.41	
<i>Synodus poeyi</i>	13.03	117	5.80	
<i>Hemulon aurolineatum</i>	10.29	1577	4.58	
<i>Prionotus punctatus</i>	10.29	27	4.58	
<i>Chloroscombrus chrysurus</i>	9.60	41	4.27	
<i>Orthopristis ruber</i>	9.60	41	4.27	
<i>Trichiurus lepturus</i>	6.86	21	3.05	
<i>Sphyraena guachancho</i>	6.86	7	3.05	
<i>Lepophidium profundorum</i>	5.49	343	2.44	
<i>Codon don nobilis</i>	4.46	5	1.99	
<i>Micropogonias furnieri</i>	4.29	5	1.91	
<i>Hemicarangus molvyrhynchus</i>	4.11	7	1.83	
<i>Menticirrhus americanus</i>	3.77	7	1.68	
<i>Micropogonias furnieri</i>	3.43	21	1.53	
<i>Lutjanus synagris</i>	3.43	7	1.53	
<i>Penaeus notialis</i>	1.03	26	0.46	
<i>Eucinostomus gula</i>	0.00	7		
<i>Opisthonema oglinum</i>	0.00	21		
<i>Sardinella aurita</i>	0.00	7		
<i>Loligo nucula brevis</i>	0.00	48		
<i>Porichthys sp</i>	0.00	14		
Total	----- 224.60		----- 99.99	

PROJECT STATION: 548

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1130
 start stop duration Long W 7032
 TIME : 03:28:00 03:58:00 30 (min) Purpose code: 3
 LOG : 3976.50 3978.20 1.70 Area code: 3
 FDEPTH: 33 31 GearCond.code:
 BDEPTH: 23 31 Validity code:
 Towing dir: 86° Wire out: 150 m Speed: 35 kn*10

Sorted: 27 Kg Total catch: 110.90 CATCH/HOUR: 221.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	WEIGHT	NUMBERS		
<i>Haemulon aurolineatum</i>	50.40	6408	22.72	
<i>Eucinostomus argenteus</i>	38.40	1240	17.31	
<i>Opisthonema oglinum</i>	18.40	118	8.30	501
<i>Sardinella aurita</i>	14.00	408	6.31	500
<i>Loligo plei</i>	10.40	160	4.69	
<i>Diplectrum radiale</i>	9.60	384	4.33	
<i>Chloroscombrus chrysurus</i>	9.60	248	4.33	
<i>Lagocephalus laevigatus</i>	8.00	24	3.61	
<i>Orthopristis ruber</i>	9.00	24	3.61	
<i>Synodus poeyi</i>	5.40	448	2.89	
<i>Priacanthus arenatus</i>	6.40	16	2.89	
<i>Lepophidium sp</i>	4.80	96	2.16	
<i>Upeneus parvus</i>	4.80	208	2.16	
<i>Prionotus punctatus</i>	4.80	104	2.16	
<i>Menticirrhus americanus</i>	4.80	15	2.16	
<i>Parichthys sp</i>	3.20	32	1.44	
<i>Lolligancula sp</i>	3.20	224	1.44	
<i>Penaeus brasiliensis</i>	3.20	196	1.44	499
<i>Diplectrum formosum</i>	2.80	40	1.26	
<i>Pomatomus saltatrix</i>	2.40	3	1.08	
<i>Selene spixii</i>	1.60	3	0.72	
<i>Diplectrum bivittatum</i>	1.60	13	0.72	
<i>Dactylopterus volitans</i>	1.60	80	0.72	
<i>Scober japonicus</i>	1.60	3	0.72	
<i>Trichopsetta ventralis</i>	0.80	3	0.36	
<i>Diplobatis guamachensis</i>	0.80	15	0.36	
<i>Penaeus notialis</i>	0.20	2	0.09	
<i>Prionotus carolinus</i>	0.00	32		
Total	-----	221.80	-----	99.98

PROJECT STATION: 549

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1131
 start stop duration Long W 7020
 TIME : 06:37:00 07:07:00 30 (min) Purpose code: 3
 LOG : 3991.80 3993.50 1.70 Area code : 3
 FDEPTH: 28 28 GearCond.code:
 BDEPTH: 28 28 Validity code:
 Towing dir: 360° Wire out: 150 m Speed: 32 kn'10

Sorted: 30 Kg Total catch: 162.10 CATCH/HOUR: 324.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chloroscombrus chrysurus</i>	162.00	1160	49.97	502
<i>Loligo plei</i>	54.00	2250	10.66	503
<i>Opisthonema oglinum</i>	18.00	430	5.55	
<i>Cynoscion leiacanthus</i>	15.00	16	1.63	
<i>Engraulis eurystole</i>	13.00	2280	4.01	504
<i>Anchoa lycolepis</i>	11.00	1410	3.39	505
<i>Sardinella aurita</i>	9.00	370	2.78	
<i>Sphyraena guachancho</i>	9.00	16	1.78	
<i>Eucinostomus argenteus</i>	8.00	230	2.47	
<i>Sphyraena picudilla</i>	8.00	100	2.47	
<i>Orthopristis ruber</i>	3.00	10	0.93	
<i>Paralichthys tropicus</i>	3.00	10	0.93	
<i>Diplectrum bivittatum</i>	2.50	50	0.77	
<i>Dactylopterus volitans</i>	2.00	50	0.62	
<i>Upeneus parvus</i>	1.50	60	1.46	
<i>Prionotus punctatus</i>	1.50	60	1.46	
<i>Trachinotus carolinus</i>	1.20	2	0.37	
<i>Selene spixii</i>	1.00	10	0.31	
<i>Saurida normani</i>	0.50	30	0.15	
<i>Decapterus macarellus</i>	0.50	10	0.15	
<i>Scomber japonicus</i>	0.50	10	0.15	
Total	-----	324.20	-----	100.01

PROJECT STATION: 550

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 start stop duration Long W 7021
 TIME : 08:10:00 08:40:00 30 (min) Purpose code: 3
 LOG : 4002.30 4003.70 1.40 Area code : 3
 FDEPTH: 39 -1 GearCond.code:
 BDEPTH: 39 -1 Validity code:
 Towing dir: 270° Wire out: 200 m Speed: 30 kn'10

Sorted: 30 Kg Total catch: 154.10 CATCH/HOUR: 308.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chloroscombrus chrysourus</i>	150.00	3140	48.67	506
<i>Opisthonema oglinum</i>	80.00	1020	25.96	507
<i>Sardinella aurita</i>	53.00	890	17.20	508
<i>Scomberosomus cavalla</i>	9.00	2	2.92	
<i>Loligo plei</i>	6.00	180	1.95	
<i>Selene spixii</i>	3.00	130	0.97	
<i>Priacanthus arenatus</i>	2.50	70	0.81	
<i>Pomatomus saltatrix</i>	1.50	10	0.49	
<i>Sarda sarda</i>	1.20	2	0.39	
<i>Scomber japonicus</i>	1.00	10	0.32	
<i>Selar crumenophthalmus</i>	1.00	10	0.32	
Total	-----	308.20	-----	100.00

PROJECT STATION: 551

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1139
 Start stop duration Long W 7030
 TIME : 09:30:00 10:00:00 30 (min) Purpose code: 3
 LOG : 4010.40 4011.90 1.50 Area code : 3
 FDEPTH: 40 40 GearCond.code:
 BDEPTH: 40 40 Validity code:
 Towing dir: 270° Wire out: 200 m Speed: 30 kn*10

Sorted: 55 Kg Total catch: 193.80 CATCH/HOUR: 387.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chloroscombrus chrysurus</i>	223.60	3360	57.69	509
<i>Pepnillus paru</i>	77.00	232	19.87	510
<i>Sphyraena guachancho</i>	46.20	78	11.92	
<i>Loligo plei</i>	19.60	1002	5.06	511
<i>Trichiurus lepturus</i>	6.40	8	1.65	
<i>Sphyraena picudilla</i>	5.60	56	1.44	
<i>Loligo paellei</i>	2.80	162	0.72	
<i>Micropogonias furnieri</i>	2.20	2	0.57	
<i>Synodus foetens</i>	2.10	3	0.54	
<i>Trachurus latheus</i>	1.00	42	0.26	
<i>Scomber japonicus</i>	0.70	14	0.18	
<i>Selene spixii</i>	0.40	3	0.10	
Total	----387.60		----100.00	

PROJECT STATION: 552

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1141
 Start stop duration Long W 7041
 TIME : 11:10:00 11:40:00 30 (min) Purpose code: 3
 LOG : 4021.80 4023.20 1.40 Area code : 3
 FDEPTH: 34 37 GearCond.code:
 BDEPTH: 34 37 Validity code:
 Towing dir: 360° Wire out: 200 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 231.70 CATCH/HOUR: 463.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chloroscombrus chrysurus</i>	399.20	3616	56.15	512
<i>Pepnillus paru</i>	28.80	50	5.21	
<i>Loligo paellei</i>	24.00	1656	5.18	513
<i>Scomberomorus cavalla</i>	5.00	5	1.08	
<i>Lutjanus synagris</i>	3.60	4	0.78	
<i>Sphyraena guachancho</i>	1.80	2	0.39	
<i>Priacanthus arenatus</i>	1.00	4	0.22	
Total	----463.40		----100.01	

PROJECT STATION: 553

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1149
 . start stop duration Long W 7040
 TIME : 12:32:00 13:02:00 30 (min) Purpose code: 3
 LOG : 4030.30 4031.70 1.40 Area code : 3
 FDEPTH: 48 49 GearCond.code:
 BDEPTH: 48 49 Validity code:
 Towing dir: 87° Wire out: 250 m Speed: 30 kn*10

Sorted: 57 Kg Total catch: 714.70 CATCH/HOUR: 1429.40

SPECIES

	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
Trichiurus lepturus	987.40 11670	69.08	S14
Peprilus paru	215.00 1826	15.04	S15
Chloroscombrus chrysurus	92.50 1450	6.47	S16
Selene spixii	35.00 1050	2.45	S17
Sardinella aurita	25.00 350	1.75	
Sphyraena picudilla	23.60 230	1.65	
Synodus poeyi	17.40 100	1.22	
Loligo plei	13.60 476	0.95	
Loligo paieei	10.00 326	0.70	
Priacanthus arenatus	5.00 26	0.35	
Lutjanus synagris	4.00 14	0.28	
Lutjanus purpureus	0.50 2	0.03	
Sarda sarda	0.20 2	0.01	
Penaeus brasiliensis	0.20 2	0.01	
Penaeus notialis	0.00 2		
Trachurus lathami	0.00 26		
Total	1429.40	99.99	

PROJECT STATION: 554

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1149
 . start stop duration Long W 7030
 TIME : 13:57:00 14:27:00 30 (min) Purpose code: 3
 LOG : 4039.00 4040.70 1.70 Area code : 3
 FDEPTH: 50 50 GearCond.code:
 BDEPTH: 50 50 Validity code:
 Towing dir: 90° Wire out: 250 m Speed: 34 kn*10

Sorted: 30 Kg Total catch: 425.60 CATCH/HOUR: 851.20

SPECIES

	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
Sphyraena picudilla	286.00 2710	33.60	S19
Sardinella aurita	156.00 2686	18.33	S20
Trachurus lathami	122.20 5576	14.36	S21
Trichiurus lepturus	65.00 494	7.64	
Lutjanus evnagris	50.00 126	5.87	S18
Pomatomus saltatrix	39.00 234	4.58	
Chloroscombrus chrysurus	26.00 312	3.05	
Scomber japonicus	23.40 494	2.75	
Opisthonema oglinum	20.80 78	2.44	
Lutjanus purpureus	13.20 2	1.55	
Loligo paieei	10.40 104	1.22	
Haemulon steindachneri	10.40 156	1.22	
Rhomboplites aurorubens	10.40 52	1.22	
Lutjanus analis	10.40 70	1.22	
Loligo plei	6.00 2	0.70	
Trichopsetta ventralis	1.30 156	0.15	
Penaeus brasiliensis	0.40 2	0.05	
Penaeus notialis	0.20 4	0.02	
Total	851.20	99.98	

PROJECT STATION: 555

DATE: 13/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1148
 Start stop duration Long W 7023
 TIME : 15:30:00 16:00:00 30 (min) Purpose code: 3
 LOG : 4047.40 4049.00 1.60 Area code : 3
 FDEPTH: 44 41 GearCond.code:
 BDEPTH: 44 41 Validity code:
 Towing dir: 94° Wire out: 250 m Speed: 32 kn*10

Sorted: 33 Kg Total catch: 232.30 CATCH/HOUR: 464.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Trachurus lathami</i>	182.00	6238	39.17	
<i>Sardinella aurita</i>	119.00	2066	25.61	
<i>Scomber japonicus</i>	42.00	756	9.04	
<i>Sphyraena picudilla</i>	26.60	210	5.73	
<i>Loligo plei</i>	25.20	252	5.42	
<i>Loligo paellei</i>	16.80	196	3.62	
<i>Chloroscombrus chrysurus</i>	14.00	56	3.01	
<i>Opiasthonema oglinum</i>	9.80	56	2.11	
<i>Micropogonias furnieri</i>	6.00	4	1.29	
<i>Priacanthus arenatus</i>	5.60	42	1.21	
<i>Selene spixii</i>	5.60	70	1.21	
<i>Synodus poeyi</i>	5.60	28	1.21	
<i>Fistularia petimba</i>	1.40	14	0.30	
<i>Anchoa lyolepis</i>	1.40	56	0.30	
<i>Diplectrum bivittatum</i>	1.40	14	0.30	
<i>Haemulon aurolineatum</i>	1.40	14	0.30	
<i>Orthopristis ruber</i>	0.80	2	0.17	
Total	-----	464.60	-----	100.00

PROJECT STATION: 556

DATE: 14/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1156
 start stop duration Long W 7023
 TIME : 17:20:00 17:53:00 33 (min) Purpose code: 3
 LOG : 4080.20 4081.80 1.60 Area code : 3
 FDEPTH: 41 49 GearCond.code:
 BDEPTH: 41 49 Validity code:
 Towing dir: 293° Wire out: 200 m Speed: 32 kn*10

Sorted: 28 Kg Total catch: 28.10 CATCH/HOUR: 51.09

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Anchoa lyolepis</i>	20.18	1816	39.50	522
<i>Loligo plei</i>	9.09	196	17.79	523
<i>Synodus foetens</i>	4.00	22	7.83	
<i>Peprilus paru</i>	3.64	7	7.12	
<i>Orthopristis ruber</i>	2.73	11	5.34	
<i>Sphyraena picudilla</i>	2.73	24	5.34	
<i>Priacanthus arenatus</i>	1.82	15	3.56	
<i>Selar crumenophthalmus</i>	1.82	15	3.56	
<i>Loligo paellei</i>	1.27	11	2.49	
<i>Scomber japonicus</i>	0.91	16	1.78	
<i>Lagocephalus laevigatus</i>	0.73	4	1.43	
<i>Paralichthys tropicus</i>	0.73	2	1.43	
<i>Engraulis eurystole</i>	0.45	42	0.88	
<i>Chloroscombrus chrysurus</i>	0.36	2	0.70	
<i>Strumeus teres</i>	0.27	16	0.53	
<i>Eucinostomus argenteus</i>	0.18	11	0.35	
<i>Penaeus brasiliensis</i>	0.09	4	0.18	
<i>Openeus parvus</i>	0.09	4	0.18	
Total	-----	51.09	-----	99.99

PROJECT STATION: 557

DATE: 14/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1200
 start stop duration Long W 7031
 TIME : 18:50:00 19:20:00 30 (min) Purpose code: 3
 LOG : 4088.90 4090.50 1.60 Area code: 3
 FDEPTH: 56 56 GearCond.code:
 BDEPTH: 56 56 Validity code:
 Towing dir: 270° Wire out: 300 m Speed: 30 kn*10

Sorted: 46 Kg Total catch: 119.10 CATCH/HOUR: 238.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Sphyraena picudilla</i>	72.80	560	30.56	524
<i>Priacanthus arenatus</i>	44.00	168	18.47	525
<i>Lutjanus analis</i>	29.60	6	12.43	
<i>Haemulon steindachneri</i>	17.60	112	7.39	526
<i>Trachurus lathami</i>	11.60	560	4.87	
<i>Lutjanus synagris</i>	10.60	18	4.45	
<i>Lutjanus purpureus</i>	8.80	2	3.69	
<i>Rhomboptites aurorubens</i>	7.60	136	3.19	
<i>Sphyraena guachancho</i>	6.00	8	2.52	
<i>Synodus foetens</i>	5.60	40	2.35	
<i>Pagrus pagrus</i>	3.60	8	1.51	
<i>Scomberomorus cavalla</i>	3.60	9	1.51	
<i>Peprius paru</i>	3.60	8	1.51	
<i>Chaetodipterus faber</i>	2.80	2	1.18	
<i>Loligo plei</i>	2.40	16	1.01	
<i>Ocyurus chrysurus</i>	1.80	2	0.76	
<i>Selar crumenophthalmus</i>	1.60	20	0.67	
<i>Serranus dewinteri</i>	1.40	4	0.59	
<i>Pomatomus saltatrix</i>	1.00	4	0.42	
<i>Scomber japonicus</i>	0.60	20	0.25	
<i>Penaeus brasiliensis</i>	0.40	4	0.17	
<i>Upeneus parvus</i>	0.40	36	0.17	
<i>Trichiurus lepturus</i>	0.40	12	0.17	
<i>Penaeus notialis</i>	0.20	4	0.08	
<i>Haemulon boschme</i>	0.20	8	0.08	
BOTHIDAE	0.00	4		
<i>Sphoeroides sp</i>	0.00	8		
<i>Prionotus stearnsi</i>	0.00	4		
Total	<hr/> 238.20		<hr/> 100.00	

PROJECT STATION: 558

DATE: 15/ 6/88 GEAR TYPE: BT No: 1 POSITION: Lat N 1150
start stop duration Long W 7114
TIME : 01:20:00 01:50:00 30 (min) Purpose code: 3
LOG : 4133.10 4134.40 1.30 Area code : 3
FDEPTH: 17 16 GearCond. code:
BDEPTH: 17 16 Validity code:
Towing dir: 38° Wire out: 100 m Speed: 25 kn*10

Sorted: 64 Kg Total catch: 64.30 CATCH/HOUR: 128.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Dasyatis guttata</i>	56.00	14	43.55	
<i>Micropogonias furnieri</i>	20.60	76	16.02	527
Shrimps, small, non comm.	7.20	2456	5.60	
<i>Xiphopenaeus kroyeri</i>	6.00	40	4.67	
<i>Opisthonema oglinum</i>	4.80	666	3.73	
<i>Lolligancula</i> sp	3.60	378	2.80	
<i>Anchoa</i> sp	3.60	2362	2.80	
<i>Chirocentrodon bleekerianus</i>	3.60	614	2.80	
<i>Lepophidium profundorum</i>	2.40	14	1.87	
<i>Synodus poeyi</i>	2.40	28	1.87	
<i>Cynoscion</i> sp	2.40	212	1.87	
<i>Chloroscombrus chrysurus</i>	2.40	240	1.87	
<i>Eucinostomus argenteus</i>	2.40	86	1.87	
<i>Lutjanus synagris</i>	2.40	6	1.87	
<i>Prionotus punctatus</i>	1.20	56	0.93	
<i>Parichthys</i> sp	1.20	226	0.93	
<i>Ctenosciena gracilicirrhus</i>	1.20	312	0.93	
<i>Scomberosomus regalis</i>	1.20	2	0.93	
<i>Centropomus undecimalis</i>	0.80	2	0.62	
<i>Cynoscion jamaicensis</i>	0.80	2	0.62	
RHINOBATHIDAE	0.80	2	0.62	
<i>Eucinostomus gula</i>	0.60	56	0.47	
<i>Sphaeroides testudineus</i>	0.60	56	0.47	
<i>Penaeus notialis</i>	0.20	8	0.16	
<i>Penaeus schmitti</i>	0.20	4	0.16	
<i>Haemulon</i> sp	0.00	2		
Total	-----	128.60	-----	100.03

PROJECT STATION: 559

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1150
 start stop duration Long W 7113
 TIME : 03:18:00 03:48:00 30 (min) Purpose code: 3
 LOG : 4147.20 4148.50 1.30 Area code : 3
 FDEPTH: 11 12 GearCond.code:
 BDEPTH: 11 12 Validity code:
 Towing dir: 90° Wire out: 75 m Speed: 30 kn*10

Sorted: 56 Kg Total catch: 55.65 CATCH/HOUR: 111.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Chirocentrodon bleekerianus</i>	23.20 3712	20.84		
<i>Trichiurus lepturus</i>	19.60 96	17.61	528	
<i>Cynoscion virescens</i>	7.40 22	6.65		
<i>Micropogonias furnieri</i>	7.20 44	6.47		
<i>Scomberomorus regalis</i>	6.60 8	5.93		
<i>Dasyatis guttata</i>	6.00 2	5.39		
<i>Pellona harroweri</i>	5.80 1276	5.21		
<i>Bagre marinus</i>	5.80 10	5.21		
<i>Ctenosciena gracilicirrhos</i>	3.40 680	3.05		
S H R I M P S	3.40	3.05		
<i>Anchoa spinifer</i>	2.80 112	2.52		
<i>Pomacanthus arcuatus</i>	2.60 2	2.34		
<i>Eucinostomus guila</i>	2.20 22	1.98		
<i>Cynoscion jamaicensis</i>	2.20 14	1.98		
<i>Selene spixii</i>	2.20 34	1.98		
<i>Porichthys sp</i>	1.80 96	1.62		
<i>Larimus breviceps</i>	1.60 6	1.44		
<i>Lycengraulis grossidens</i>	1.20 24	1.08		
SCIARENIDAE	1.00 20	0.90		
<i>Loligoancula sp</i>	1.00 280	0.90		
<i>Penaeus schmitti</i>	1.00 18	0.90		
<i>Bagre bagre</i>	0.60 12	0.54		
<i>Selene setapinnis</i>	0.60 132	0.54		
<i>Opisthonema oglinum</i>	0.60 2	0.54		
<i>Pepilus paru</i>	0.60 4	0.54		
<i>Penaeus notialis</i>	0.40 28	0.36		
<i>Chloroscombrus chrysurus</i>	0.30 2	0.27		
<i>Haemulon steindachneri</i>	0.20 4	0.18		
Total	----- 111.30	-----	100.02	

PROJECT STATION: 560

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1200
 start stop duration Long W 7053
 TIME : 06:07:00 06:37:00 30 (min) Purpose code: 3
 LOG : 4159.00 4160.50 1.50 Area code : 3
 FDEPTH: 52 35 GearCond.code:
 BDEPTH: 50 35 Validity code:
 Towing dir: 70° Wire out: 250 m Speed: 30 kn*10

Sorted: 02 Kg Total catch: 31.65 CATCH/HOUR: \$3.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Scomberomorus cavalla</i>	36.00	78	56.87	529
<i>Trichiurus lepturus</i>	6.80	174	10.74	
<i>Rhizoprionodon longicauda</i>	3.00	2	0.00	
<i>Loligo plei</i>	3.80	352	6.00	530
<i>Cynoscion leiarchus</i>	1.30	2	0.04	
<i>Engraulis eurystole</i>	1.60	244	2.53	
<i>Anchoa sp</i>	1.40	264	2.21	
<i>Synodus poeyi</i>	1.20	98	1.90	
<i>Opisthonema oglinum</i>	1.20	40	1.90	
<i>Lolliguncula brevis</i>	0.80	66	1.26	
<i>Sphyraena picudilla</i>	0.80	12	1.26	
<i>Chloroscombrus chrysurus</i>	0.80	5	1.26	
<i>Lagocephalus leavigatus</i>	0.70	1	1.11	
<i>Synodus foetens</i>	0.60	6	0.95	
<i>Trachurus lathami</i>	0.40	18	0.63	
<i>Pomadasys corvinus</i>	0.30	4	0.47	
<i>Diapterus rhombus</i>	0.30	2	0.47	
<i>Priacanthus arenatus</i>	0.30	4	0.47	
<i>Eucinostomus argenteus</i>	0.20	2	0.32	
<i>Selene spixii</i>	0.20	6	0.32	
<i>Upeneus parvus</i>	0.20	6	0.32	
<i>Lycengraulis grossidens</i>	0.10	2	0.16	
<i>Penaeus notialis</i>	0.00	2		
<i>Scomber japonicus</i>	0.00	2		
<i>Seler crumenophthalmus</i>	0.00	2		
Total	-----		\$3.30	-----
				99.99

PROJECT STATION: 561

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1200
 start stop duration Long W 7041
 TIME : 07:52:00 08:22:00 30 (min) Purpose code: 3
 LOG : 4171.60 4173.00 1.60 Area code: 1 2
 FDEPTH: 100 30 GearCond.code:
 SDEPTH: 100 30 Validity code:
 Towing dir: 115° Wire out: 300 m Speed: 30 KN/10

Sorted: 46 kg Total catch: 47.90 CATCH/HOUR: 95.80

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT. C	SAMP. NO.
				numbers
<i>Selar crumenophthalmus</i>	38.60	3.96	80.29	531
<i>Trichiurus lepturus</i>	32.00	3.00	33.40	
<i>Synodus foetens</i>	5.20	0.52	5.43	
<i>Synodus oxyrinchus</i>	3.20	0.32	3.34	
<i>Aplocreanus micropodus</i>	3.00	0.29	3.13	
<i>Loligo vulgaris</i>	2.40	0.20	2.51	
<i>Scomber japonicus</i>	1.80	0.18	1.88	
<i>Bairdiella sp</i>	1.60	0.16	1.67	
<i>Loligo plei</i>	1.40	0.14	1.46	
<i>Trachurus lathami</i>	1.40	0.14	1.46	
<i>Lagocephalus laevigatus</i>	0.80	0.08	0.84	
<i>Upeneus parvus</i>	0.80	0.08	0.84	
<i>Peprilus paru</i>	0.80	0.08	0.84	
<i>Penaeus notialis</i>	0.60	0.06	0.63	
<i>Lutjanus purpureus</i>	0.50	0.05	0.52	
<i>Priacanthus arenatus</i>	0.50	0.05	0.52	
<i>Chloroscombrus chrysourus</i>	0.40	0.04	0.42	
<i>Ctenosciena gracilicirrhus</i>	0.30	0.03	0.31	
<i>Etrumeus teres</i>	0.20	0.02	0.21	
<i>Oplistognathus oglinus</i>	0.20	0.02	0.21	
<i>Selene spixii</i>	0.10	0.01	0.10	
<i>Pristipomoides macropnthalmaus</i>	0.00	0.00		
<i>Diplectrus bivittatum</i>	0.00	0.00		
Total	-----	47.90	-----	100.01

PROJECT STATION: 562

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1213
 start stop duration Purpose code: 3 Long W 7027
 TIME : 11:10:00 11:40:00 30 (min) Area code : 3
 LOG : -200.60 -202.60 1.50 GearCond.code:
 FDEPTH: 60 59 Validity code:
 BDEPTH: 60 59
 Towing dir: 180° Wire out: 300 m Speed: 30 kn*10

Sorted: 25 kg Total catch: 168.35 CATCH/HOUR: 336.70

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Trachurus lathami</i>	100.00	5000	29.70	534
<i>Sphyraena picudilla</i>	70.00	600	39.79	533
<i>Priacanthus arenatus</i>	25.00	110	7.43	
<i>Lutjanus analis</i>	24.40	4	7.25	
<i>Rhomboplites aurorutans</i>	22.00	160	6.53	532
<i>Eucinostomus argenteum</i>	19.00	320	5.64	
<i>Myctoperca bonaci</i>	16.20	4	4.81	
<i>Pagrus pagrus</i>	11.00	24	3.27	
<i>Cynodus poeyi</i>	10.00	50	1.97	
<i>Lutjanus synagris</i>	9.40	10	2.79	
<i>Haemulon steindachneri</i>	5.00	40	1.49	
<i>Pristipomoides macrophthalmus</i>	5.00	10	1.49	
<i>Loligo paelei</i>	4.00	50	1.19	
<i>Upeneus parvus</i>	3.00	140	0.89	
<i>Lagocephalus lativestus</i>	2.50	10	0.74	
<i>Iachnolaimus maximus</i>	2.40	2	0.71	
<i>Haemulon boschme</i>	2.00	60	0.59	
<i>Salar crumenophthalmus</i>	2.00	10	0.59	
<i>Paralichthys lethostigma</i>	1.60	2	0.53	
<i>Etrumeus teres</i>	1.00	20	0.30	
<i>Scomber japonicus</i>	1.00	10	0.30	
<i>Lolligancula sp</i>	0.00	20		
LABRIDAE	2.00	10		
Total	-----		336.70	-----
				100.00

PROJECT STATION: 563

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1212
 start stop duration Long W 7041
 TIME : 13:15:00 13:45:00 30 (min) Purpose code: 3
 LOG : 4216.40 4218.00 1.60 Area code : 3
 FDEPTH: 65 57 GearCond.code:
 BDEPTH: 65 57 Validity code:
 Towing dir: 273° Wire out: 300 m Speed: 35 kn*10

Sorted: 24 Kg Total catch: 19.32 CATCH/HOUR: 156.64

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Priacanthus arenatus</i>	65.00	1156	41.50	536
<i>Cutjanus analis</i>	18.00	4	11.49	
<i>Chloroscombrus chrysurus</i>	10.00	70	6.38	537
<i>Pristipomoides macrophthalmus</i>	10.00	146	5.38	
<i>Trachurus lathami</i>	7.50	430	4.79	
<i>Rhomboplites aurorubens</i>	6.80	54	4.34	535
<i>Lutjanus synagris</i>	6.60	14	4.21	
<i>Synodus poeyi</i>	5.00	46	3.63	
<i>Loligo pacielei</i>	5.00	46	3.19	
<i>Eucinostomus argenteus</i>	4.00	106	3.55	
<i>Sphyraena picudilla</i>	3.50	26	2.23	
<i>Lagocephalus laevigatus</i>	3.00	10	1.92	
<i>Pagrus pagrus</i>	3.00	8	1.92	
<i>Etrumeus teres</i>	1.74	156	1.11	
<i>Decapterus macarellus</i>	1.50	170	0.96	538
<i>Selar crumenophthalmus</i>	1.50	22	0.96	
<i>Decapterus punctatus</i>	1.00	90	0.64	
<i>Fistularia petimba</i>	1.00	80	0.64	
<i>Scomber japonicus</i>	1.00	20	0.64	
<i>Anchoa lyolepis</i>	0.50	26	0.32	
<i>Upeneus parvus</i>	0.00	10		
Total	-----		156.64	-----
				100.00

PROJECT STATION: 564

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1213
 start stop duration Long W 7054
 TIME : 15:03:00 15:25:00 22 (min) Purpose code: 3
 LOC : 4228.60 4229.70 1.10 Area code : 3
 FDEPTH: 53 51 GearCond.code:
 SDEPTH: 53 51 Validity code:
 Towing dir: 273° Wire out: 250 m Speed: 30 kn'10

Sorted: 27 Kg Total catch: 293.90 CATCH/HOUR: 801.55

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP. NO.
	Weight	numbers		
<i>Chloroscombrus chrysurus</i>	349.09	7619	43.55	541
<i>Lutjanus analis</i>	70.91	19	3.85	
<i>Rhomboplites aurorubens</i>	65.45	181	3.17	540
<i>Lutjanus synagris</i>	60.00	112	7.49	539
<i>Sphyraena picudilla</i>	43.64	109	5.44	
<i>Priacanthus arenatus</i>	32.73	175	4.08	
<i>Sardinella aurita</i>	26.18	1942	3.27	542
<i>Synodus pceyi</i>	26.18	262	3.27	
<i>Lutjanus purpureus</i>	13.64	55	1.70	
<i>Eucinostomus argenteus</i>	10.91	327	1.36	
<i>Haemulon steindachneri</i>	10.91	98	1.36	
<i>Upeneus parvus</i>	10.91	1353	1.36	
<i>Decapterus punctatus</i>	10.91	720	1.36	
<i>Decapterus macarellus</i>	10.91	545	1.36	
<i>Trachurus lathami</i>	10.91	633	1.36	
<i>Pagrus pagrus</i>	8.73	22	1.09	
<i>Opiathoneus oglinum</i>	8.73	65	1.09	
<i>Scomberosomus cavalle</i>	6.82	14	0.85	
<i>Acanthostracion quadricornis</i>	4.36	22	0.54	
<i>Pistularia petimba</i>	4.36	65	0.54	
<i>Loligo paciei</i>	4.36	371	0.54	
<i>Pristipomoides macrophthalmus</i>	3.27	349	0.41	
<i>Scomber japonicus</i>	3.27	54	0.41	
<i>Diplectrum bivittatum</i>	2.18	22	0.27	
<i>Seler crumenophthalmus</i>	2.18	65	0.27	
Total	-----	801.54	-----	99.99

PROJECT STATION: 565

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1214
 start stop duration Long W 7104
 TIME : 16:36:00 17:06:00 30 (min) Purpose code: 3
 LOG -238.70 4240.10 1.40 Area code : 3
 FDEPTH: 30 18 GearCond.code:
 BDEPTH: 30 29 Validity code:
 Towing dir: 360° Wire out: 150 m Speed: 25 kn*10

Sorted: 26 Kg Total catch: 67.10 CATCH/HOUR: 134.20

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Upeneus parvus</i>	29.20	602	41.76	544
<i>Lutjanus synagris</i>	28.80	60	21.46	543
<i>Eucinostomus argenteus</i>	28.00	426	20.86	545
<i>Priscanthus arenatus</i>	13.60	60	10.13	
<i>Balistes capriscus</i>	13.60	28	10.13	
<i>Calamus pennae</i>	5.60	20	4.17	
<i>Balistes vetula</i>	3.20	4	2.38	
<i>Anisotremus virginicus</i>	2.00	4	1.49	
<i>Mustelus canis</i>	2.00	2	1.49	
<i>Orthopristis ruber</i>	1.60	4	1.19	
<i>Fistularia tabacaria</i>	1.60	16	1.19	
<i>Sphyraena picudilla</i>	0.80	4	0.60	
<i>Synodus poeyi</i>	0.80	4	0.60	
<i>Chloroscombrus chrysurus</i>	0.80	16	0.60	
<i>Selar crumenophthalmus</i>	0.80	16	0.60	
<i>Prionotus punctatus</i>	0.60	4	0.45	
<i>Pomacanthus arcuatus</i>	0.40	4	0.30	
<i>Cymothorax ocellatus</i>	0.40	4	0.30	
<i>Sardinella aurita</i>	0.40	16	0.30	
Total	134.20		100.00	

PROJECT STATION: 566

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1217
 start stop duration Long W 7110
 TIME : 17:46:00 18:16:00 30 (min) Purpose code: 3
 LOG : 4245.60 4246.90 1.30 Area code : 3
 FDEPTH: 14 15 GearCond. code:
 BDEPTH: 14 15 Validity code:
 Towing dir: 298° Wire out: 100 m Speed: 30 kn*10

Sorted: 49 Fg Total catch: 125.20 CATCH/HOUR: 250.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP. NO.
	weight	numbers		
Polydactylus oligodon	30.00	176	11.98	
Lutjanus analis	29.60	36	11.82	546
Trichiurus lepturus	25.00	116	9.98	
Diapterus rhombus	19.60	70	7.83	
Albula vulpes	19.60	70	7.83	
Anisotremus virginicus	15.00	36	5.99	
Selene spixii	14.60	250	5.83	
Conodon nobilis	12.00	36	4.79	
Haemulon plumieri	9.60	20	3.83	
Centropomus undecimalis	9.60	8	3.83	
Balistes vetula	9.60	10	3.83	
Elops saurus	9.60	16	3.83	
Harengula clupeola	5.00	520	2.00	
Panulirus argus	4.80	4	1.92	
Scomberomorus brasiliensis	4.60	16	1.84	
Peprilus paru	4.60	36	1.84	
Micropogonias furnieri	3.00	36	1.20	
Eucinostomus argenteus	2.60	16	1.04	
Priacanthus arenatus	2.60	8	1.04	
Chirocentrodon bleekeriensis	2.00	360	0.80	
Rhizoprionodon lajardaei	2.00	10	0.80	
Gymnurra chrysourus	2.00	8	0.80	
Opisthonema oglinum	2.00	20	0.90	
Selene vomer	2.00	2	0.90	
Sphyraena guachancho	2.00	6	0.80	
Calamus penna	2.00	10	0.80	
Loligo plei	1.00	40	0.40	
Ctenosciena gracilicirrhua	1.00	96	0.40	
Pomadasys corvinaeformis	1.00	10	0.40	
Upeneus parvus	1.00	16	0.40	
Chloroscombrus chrysurus	0.80	6	0.32	
Cynoscion microlepidotus	0.60	6	0.24	
Lolligancula sp	0.00	10		
Lycengraulis grossidens	0.00	6		
Pellona harroweri	0.00	16		
Total	-----	250.40	-----	100.01

PROJECT STATION: 567

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1231
 start stop duration Long W 7106
 TIME : 19:55:00 20:25:00 30 (min) Purpose code: 3
 LOG : 4261.70 4262.20 0.50 Area code : 3
 FDEPTH: 70 69 GearCond.code:
 BDEPTH: 70 69 Validity code:
 Towing dir: 360° Wire out: 350 m Speed: 20 kn*10

Sorted: 13 Kg Total catch: 129.40 CATCH/HOUR: 250.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Pristipomoides macrophthalmus	74.00	5120	29.51	547
Rhomboplites aurorubens	67.00	270	26.71	548
Trachurus lathami	15.00	1210	5.98	
Lutjanus analis	12.00	2	4.78	
Serranus phoebe	10.00	810	3.99	
Sucinostomus argenteus	9.00	340	3.59	
Lutjanus synagris	7.80	14	2.11	
Synodus poeyi	6.00	550	2.39	
Loligo plei	4.00	30	1.59	
Upeneus parvus	4.00	150	1.59	
Lepophidium profundorum	4.00	1050	1.59	
Calamus pinnatula	3.00	10	1.20	
Hoplunnis sp	3.00	110	1.20	
Haemulon steindachneri	3.00	20	1.20	
Prionotus punctatus	3.00	10	1.20	
Porichthys pauciradiatus	3.00	390	1.20	
Prionotus beanii	2.50	80	1.00	
Penaeus notialis	2.00	130	0.80	549
Pseudupeneus maculatus	2.00	10	0.80	
Priacanthus arenatus	2.00	60	0.80	
Uraspis secunda	2.00	2	0.80	
Hammulon aurolineatum	1.50	10	0.60	
Cyclopsetta chittendeni	1.50	10	0.60	
Apogon sp	1.50	380	0.60	
Etrumeus teres	1.50	60	0.60	
Sphoeroides sp	1.50	50	0.60	
Penaeus brasiliensis	1.00	90	0.40	550
Dactylopterus volitans	1.00	10	0.40	
Scomber japonicus	1.00	30	0.40	
Equetus lanceolatus	1.00	10	0.40	
Haemulon boschmei	0.50	20	0.20	
Diplectrum bivittatum	0.50	20	0.20	
Sardinella aurita	0.00	10		
Aluterus monoceros	0.00	10		
Total	-----		-----	100.00

PROJECT STATION: 568

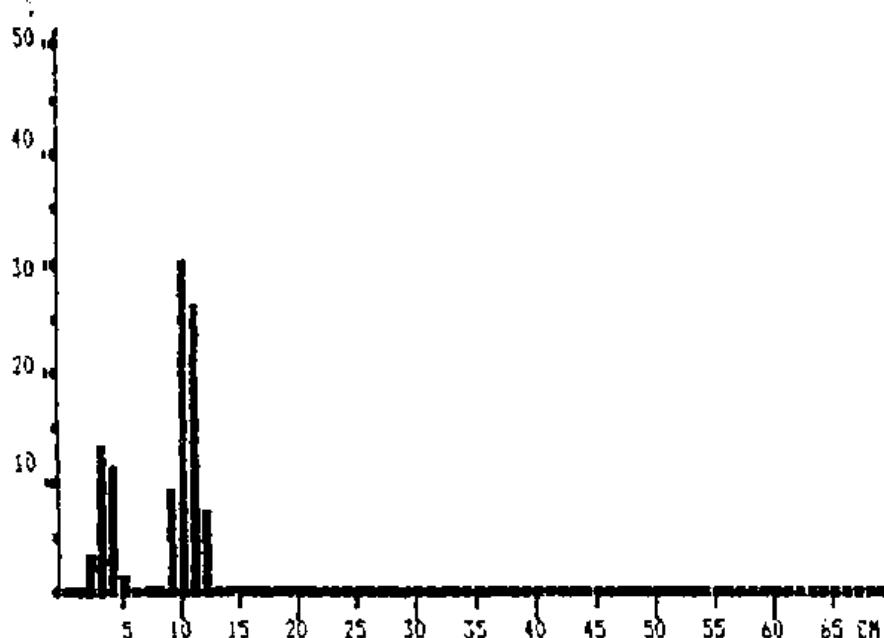
DATE: 16/ 5/88 GEAR TYPE: BT No:1 POSITION: Lat N 1234
 start stop duration Long W 7127
 TIME :00:23:00 01:23:00 60 (min) Purpose code: 3
 LOG :4302.90 4303.50 0.60 Area code : 5
 FDEPTH: 455 451 GearCond.code:
 BDEPTH: 455 451 Validity code:
 Towing dir: 258° Wire out:1400 m Speed: 6 kn*10

Sorted: 22 Kg Total catch: 100.30 CATCH/HOUR: 100.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Synagrops bellus</i>	30.80	502	30.71	
<i>Nezumia cyrano</i>	24.00	749	23.93	
CRANGONIDAE	12.80	3602	12.76	
<i>Pleurobranchus edwardsianus</i>	7.00	273	6.98	552
<i>Solenocera</i> sp	6.70	179	6.68	551
<i>Benthodesmus tenuis</i>	6.00	152	5.98	
<i>Coelorhynchus caribbeus</i>	2.80	80	2.79	
Miscellaneous fish	2.00		1.99	
GEMPYLIDAE	2.00	4	1.99	
ISOPODS	1.20	4	1.20	
<i>Peristedion</i> sp	1.20	20	1.20	
<i>Cytopsia roseus</i>	1.20	12	1.20	
<i>Rossia</i> sp	0.80	6	0.80	
MYCTOPHIDAE	0.60	32	0.60	
SEPIOLIDAE	0.40	4	0.40	
<i>Hoplunnis diomedianus</i>	0.40	20	0.40	
<i>Sternopyx pseudobacura</i>	0.40	24	0.40	
Total	-----	100.30	-----	100.01

ANNEX 3. POOLED LENGTH DISTRIBUTIONS OF MAIN SPECIES CAUGHT. Venezuela

Engraulis eurystole - East of Cabo Cadera



Pooled sample (simple adding)

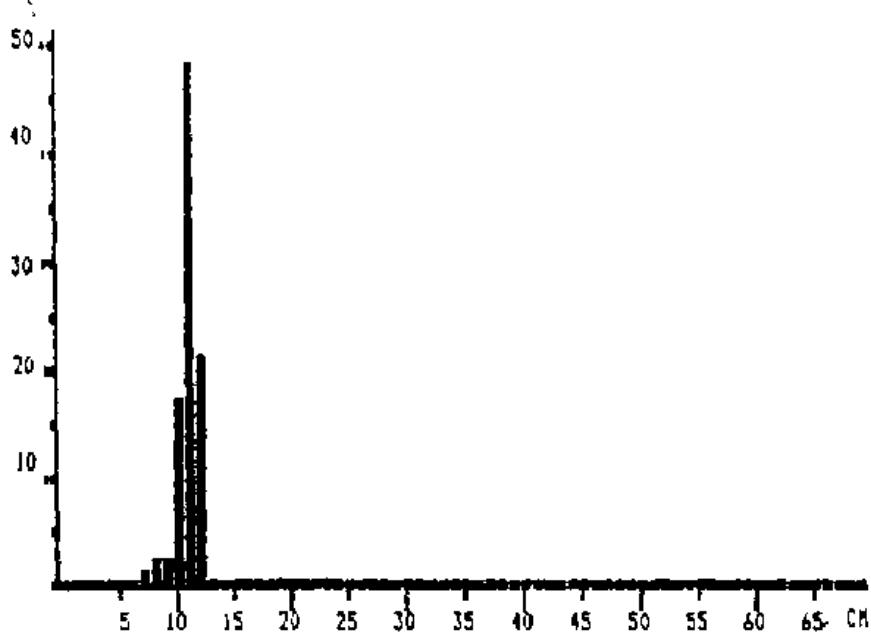
MEAN LENGTH = 8.50cm N= 404

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 489 AND 498.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Anchoa lyolepis - East of Cabo Cadera



Pooled sample (simple adding)

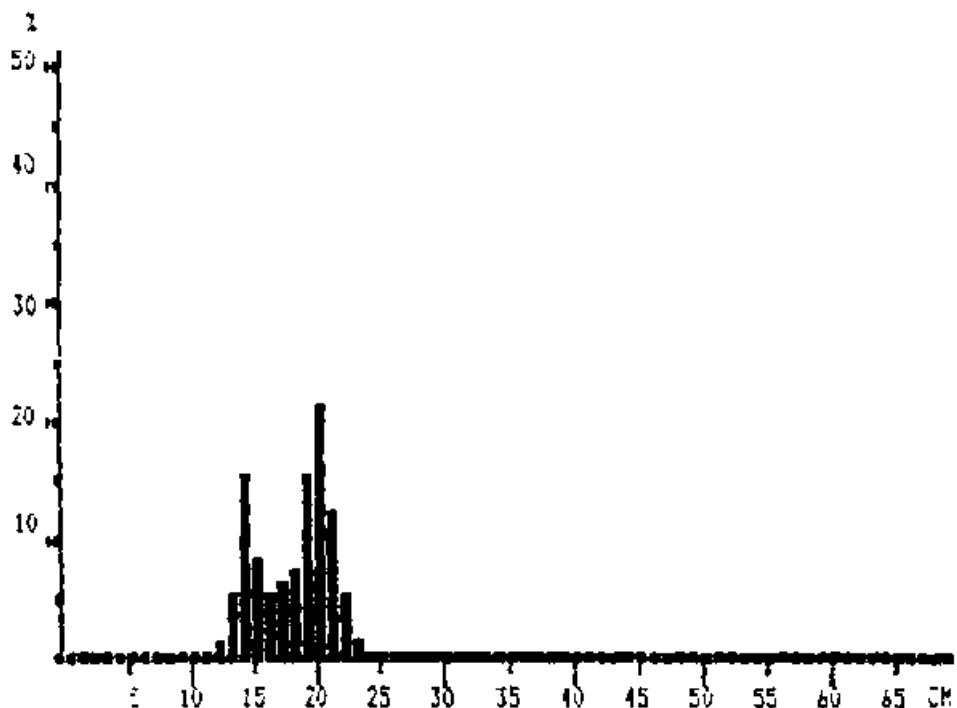
MEAN LENGTH = 10.87cm N= 86

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 494 AND 494.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Sardinella aurita - East of Cabo Cadera



Pooled sample (simple adding)

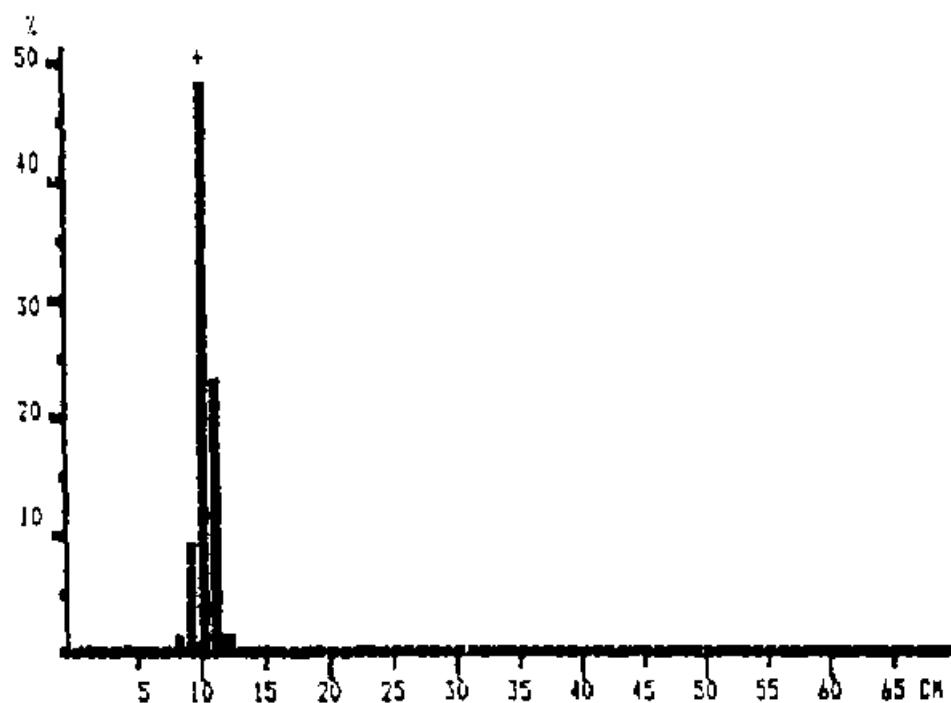
MEAN LENGTH = 17.89cm N= 823

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 464 AND 494.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Engraulis eurystole - West of Cabo Cadera



Pooled sample (simple adding)

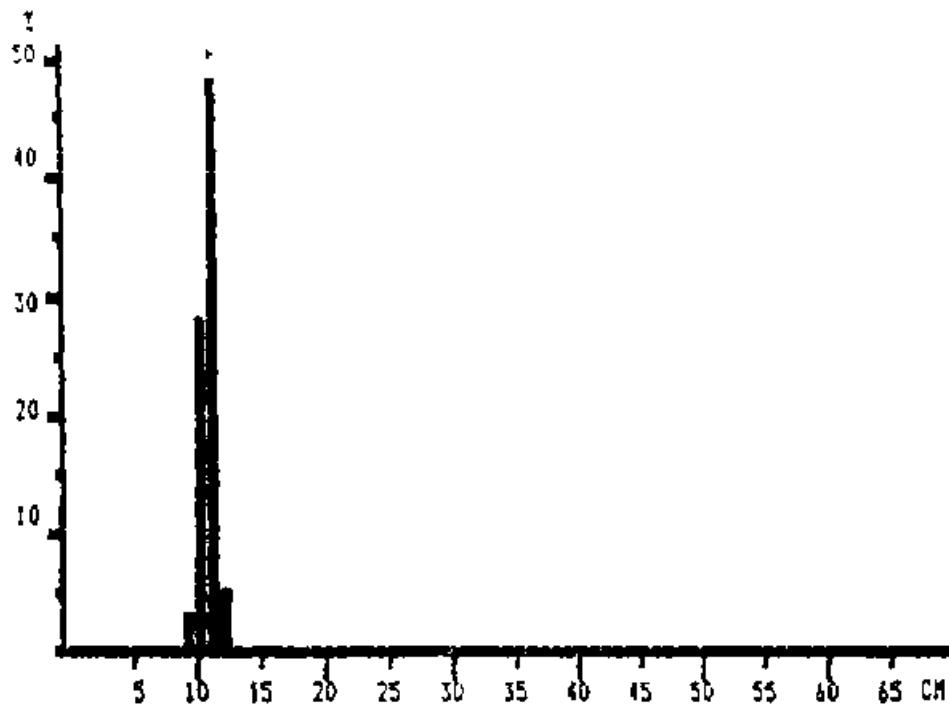
MEAN LENGTH = 10.14cm N= 105

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 549 AND 549.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Anchoa lyolepis - West of Cabo Cadera



Pooled sample (simple adding)

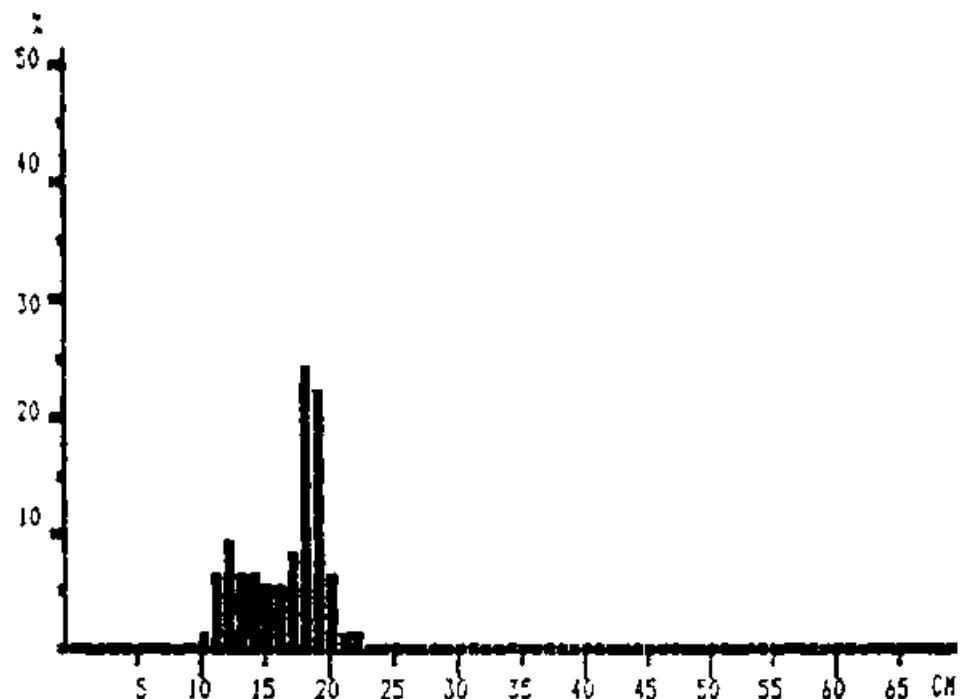
MEAN LENGTH = 10.72cm N= 158

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 549 AND 556.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Sardinella aurita - West of Cabo Cadera



Pooled sample (simple adding)

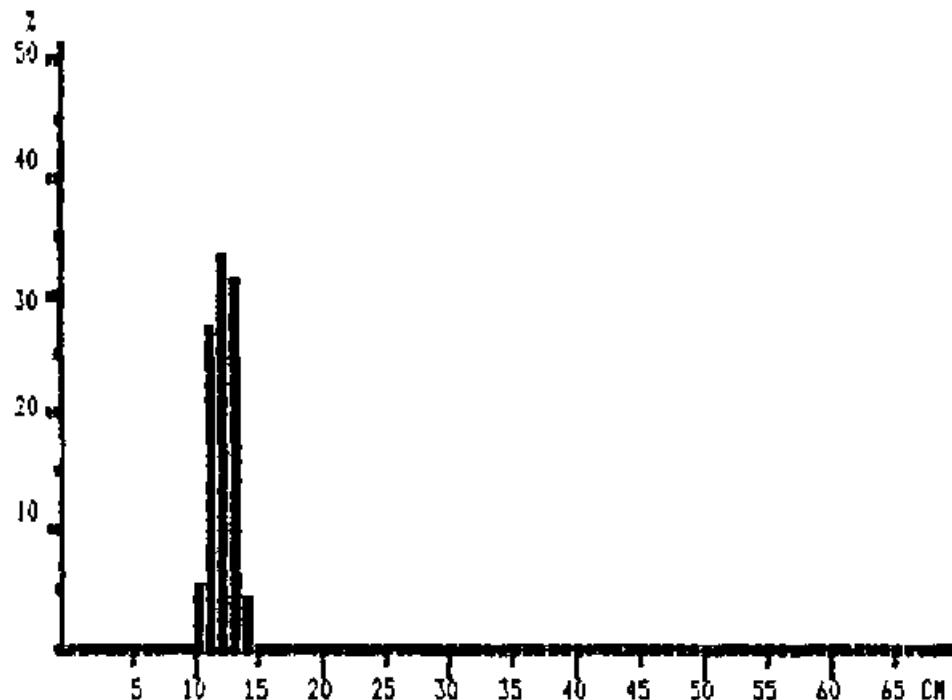
MEAN LENGTH = 16.47cm N= 394

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 521 AND 564.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Etrumeus teres - East of Cabo Cadera



Pooled sample (simple adding)

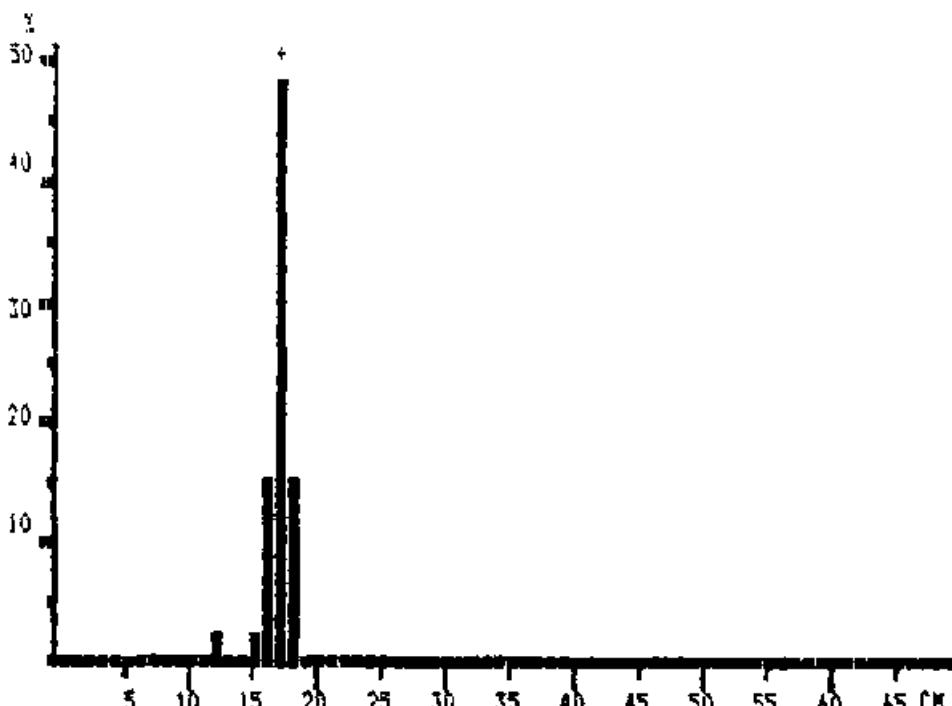
MEAN LENGTH = 12.04cm N= 529

NUMBERS OF SUBSAMPLES: 4

SAMPLES FOUND BETWEEN ST. NO. 470 AND 489.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Harengula clupeola - East of Cabo Cadera



Pooled sample (simple adding)

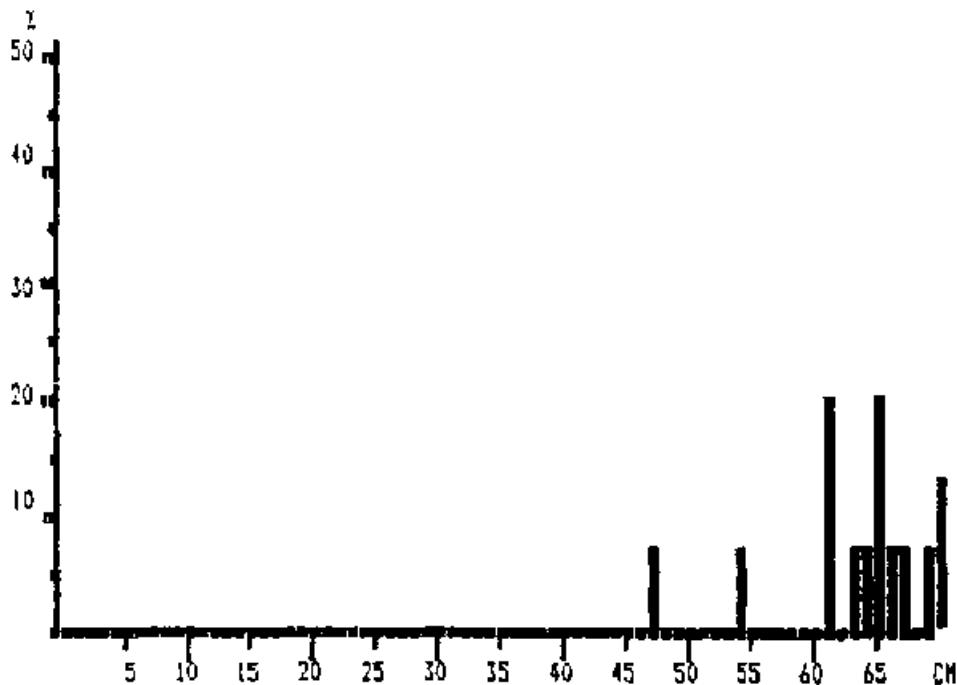
MEAN LENGTH = 16.87cm N= 55

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 464 AND 464.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Lutjanus apodus - East of Cabo Cadera



Pooled sample (simple adding)

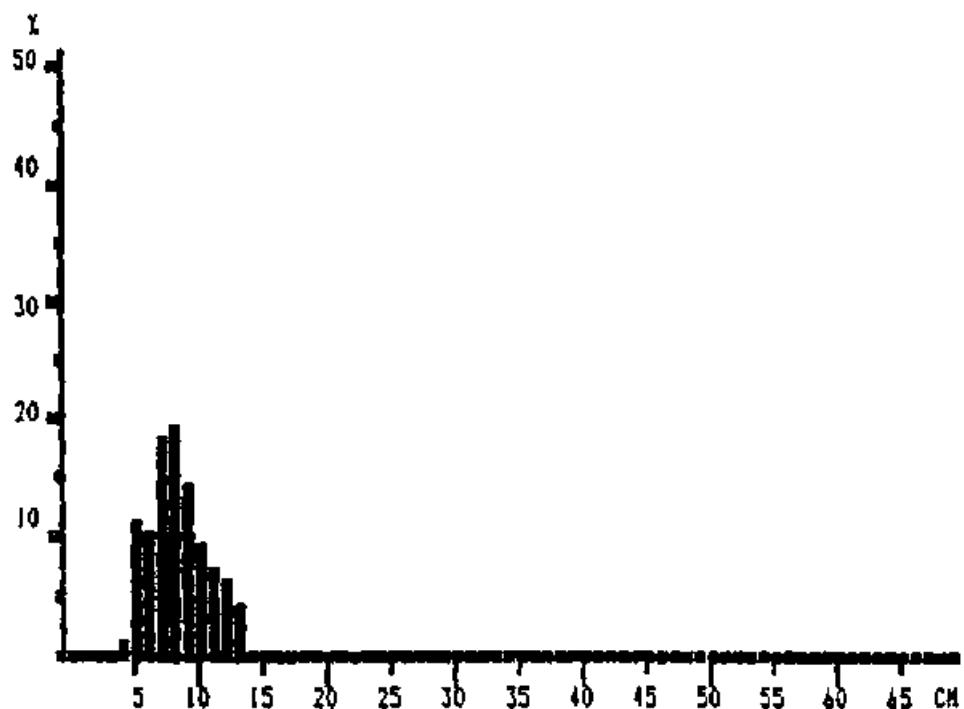
MEAN LENGTH = 63.20cm N= 15

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 509 AND 509.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Anchoa spinifer - West of Cabo Cadera



Pooled sample (simple adding)

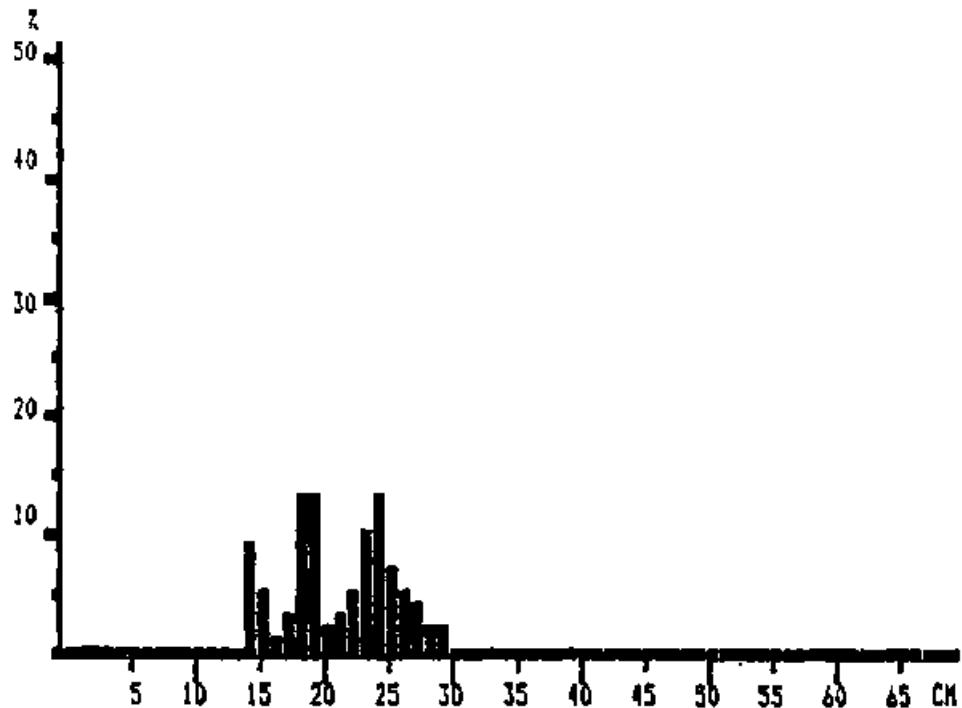
MEAN LENGTH = 8.26cm N= 234

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 543 AND 543.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Opisthonema oglinum - West of Cabo Cadera



Pooled sample (simple adding)

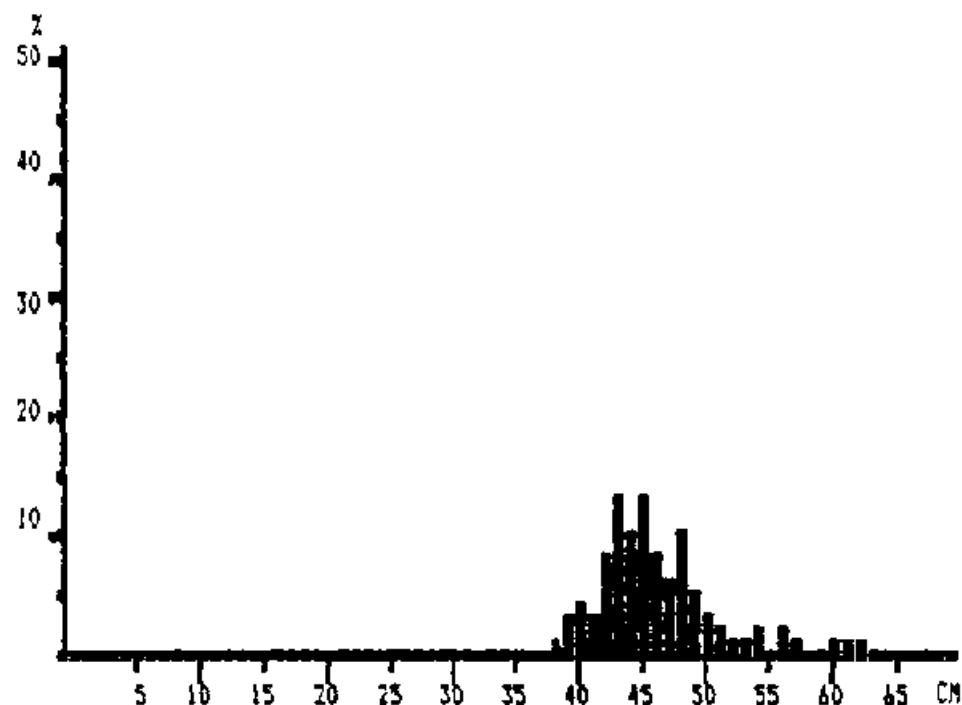
MEAN LENGTH = 20.85cm N= 239

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 541 AND 550.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Lutjanus purpureus - West of Cabo Cadera



Pooled sample (simple adding)

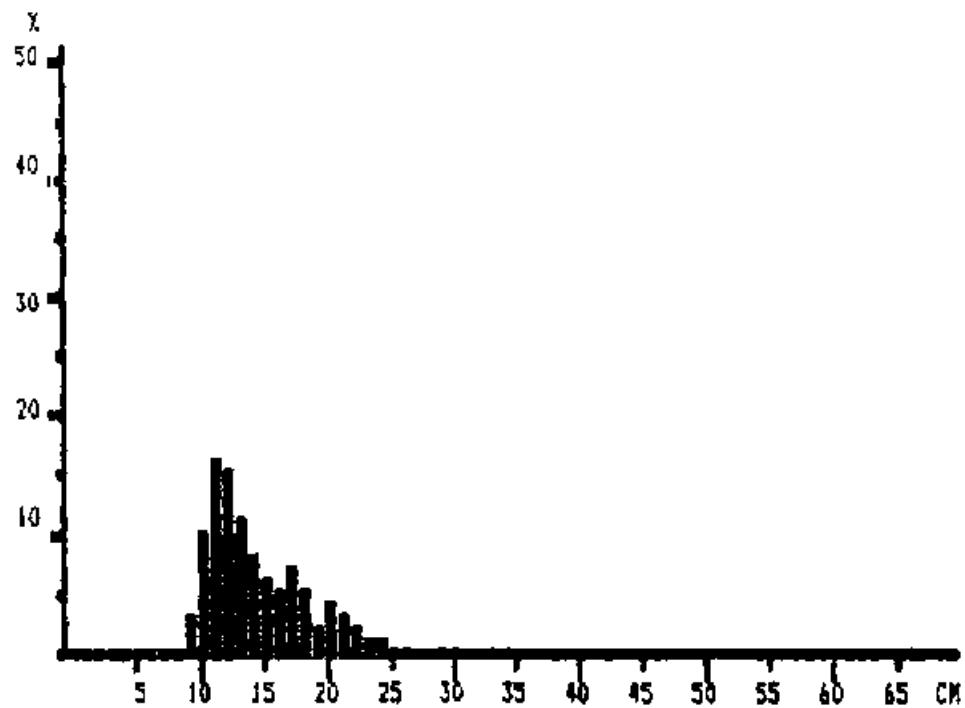
MEAN LENGTH = 26.55cm N= 241

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 512 AND 533.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Ocyurus chrysurus - East of Cabo Cadera



Pooled sample (simple adding)

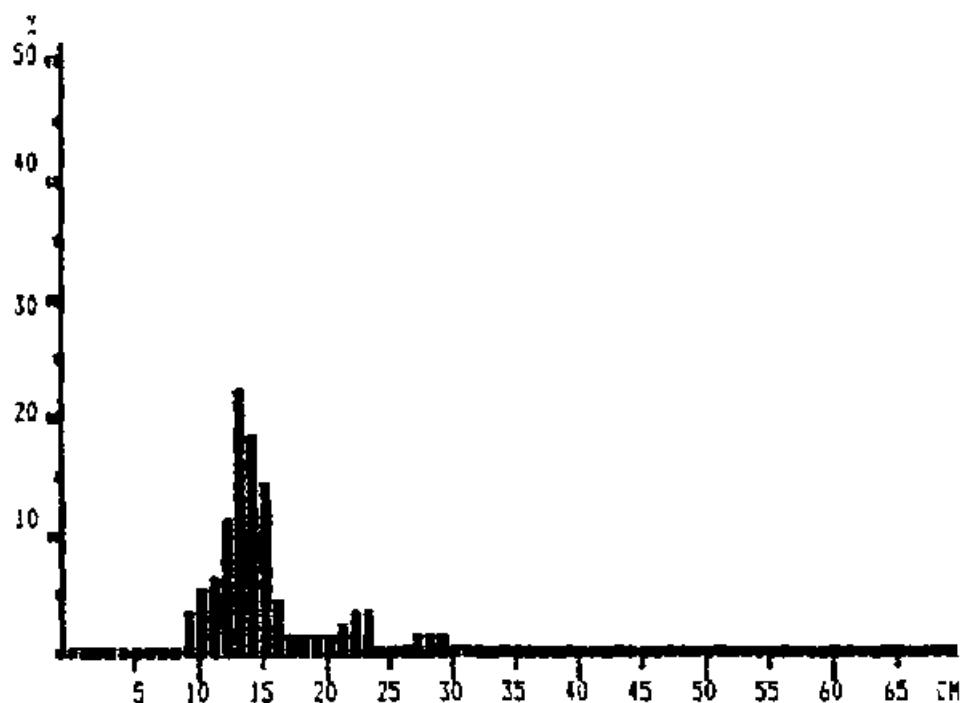
MEAN LENGTH = 46.04cm N= 93

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 504 AND 504.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Pristipomoides macrourus - East of Cabo Cadera



Pooled sample (simple adding)

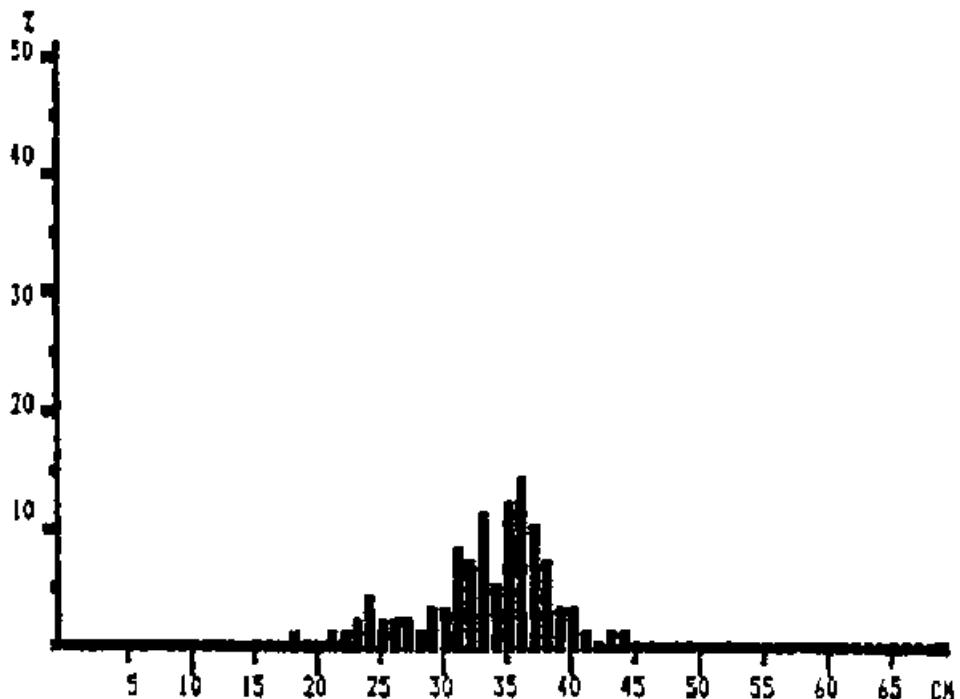
MEAN LENGTH = 14.23cm N= 810

NUMBERS OF SUBSAMPLES: 11

SAMPLES FOUND BETWEEN ST. NO. 458 AND 501.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Rhomboplites aurorubens - East of Cabo Cadera



Pooled sample (simple adding)

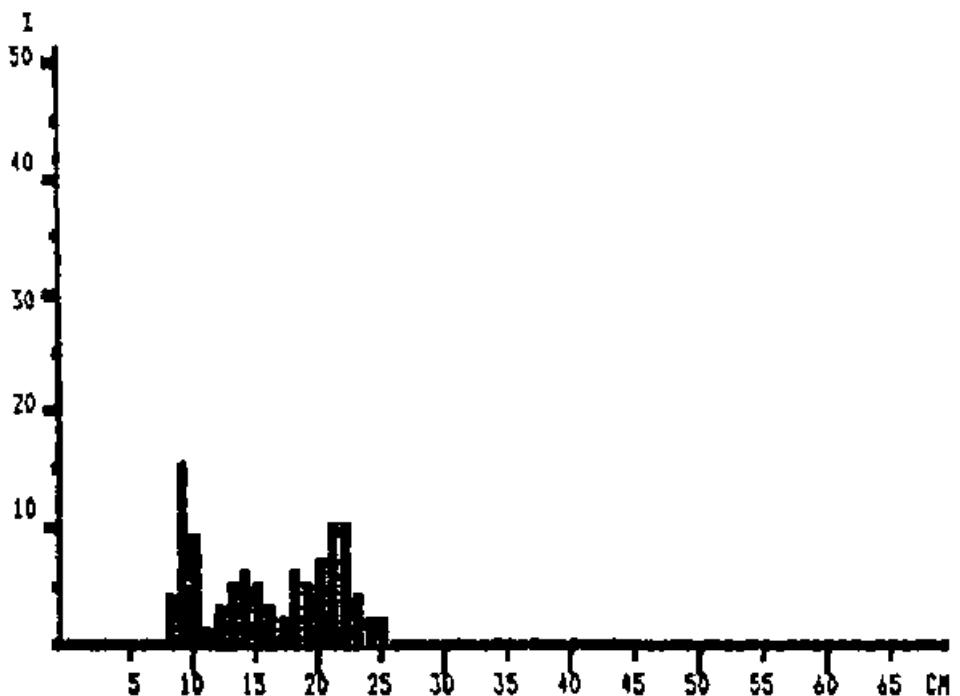
MEAN LENGTH = 14.56cm N= 284

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 460 AND 508.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Lutjanus synagris - West of Cabo Cadera



Pooled sample (simple adding)

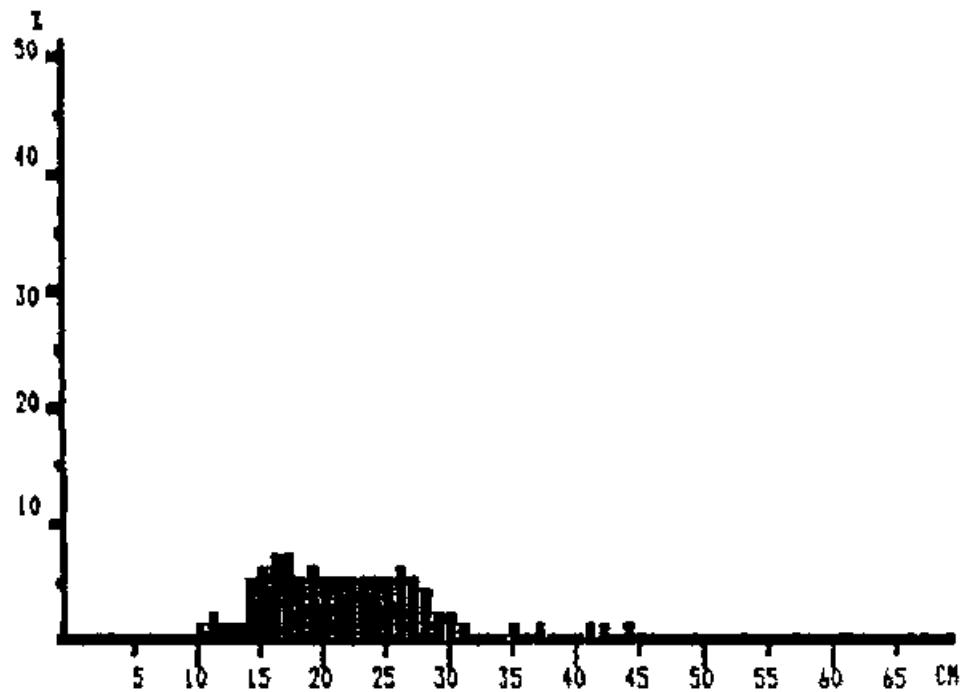
MEAN LENGTH = 33.42cm N= 190

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 520 AND 565.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Pristipomoides macrophthalmus - West of Cabo Cadera



Pooled sample (simple adding)

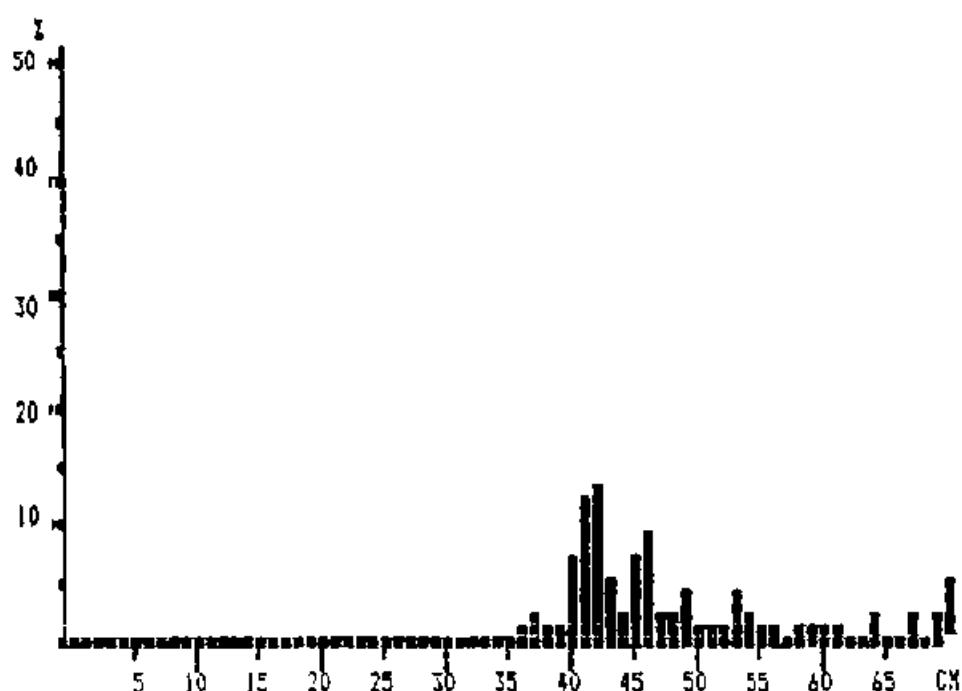
MEAN LENGTH = 16.00cm N= 206

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 516 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Rhomboplites aurorubens - West of Cabo Cadera



Pooled sample (simple adding)

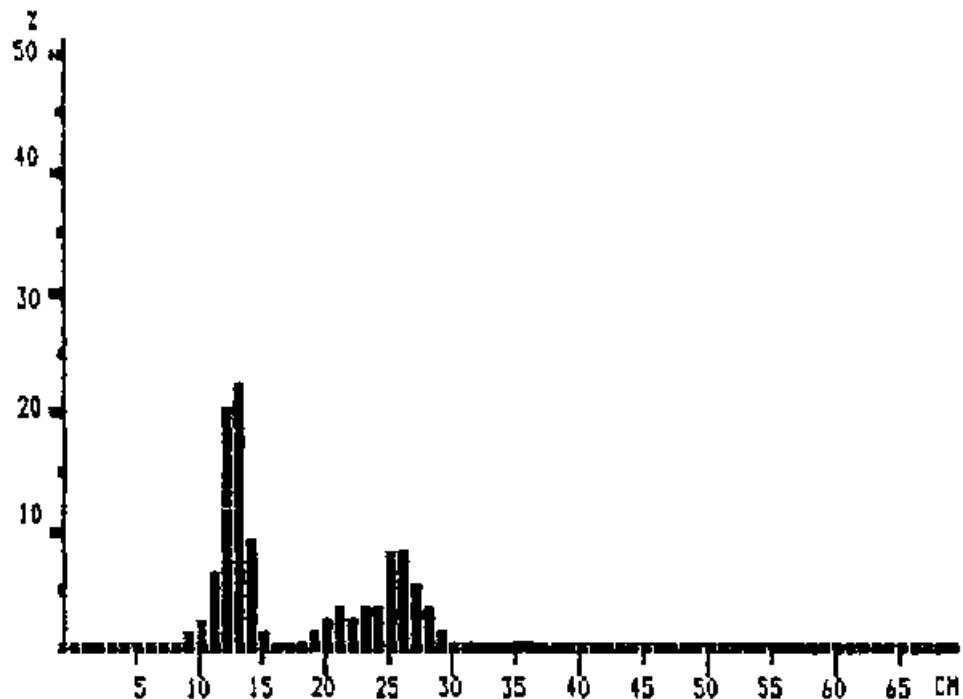
MEAN LENGTH = 22.07cm N= 647

NUMBERS OF SUBSAMPLES: 11

SAMPLES FOUND BETWEEN ST. NO. 511 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Lutjanus analis - West of Cabo Cadera



Pooled sample (simple adding)

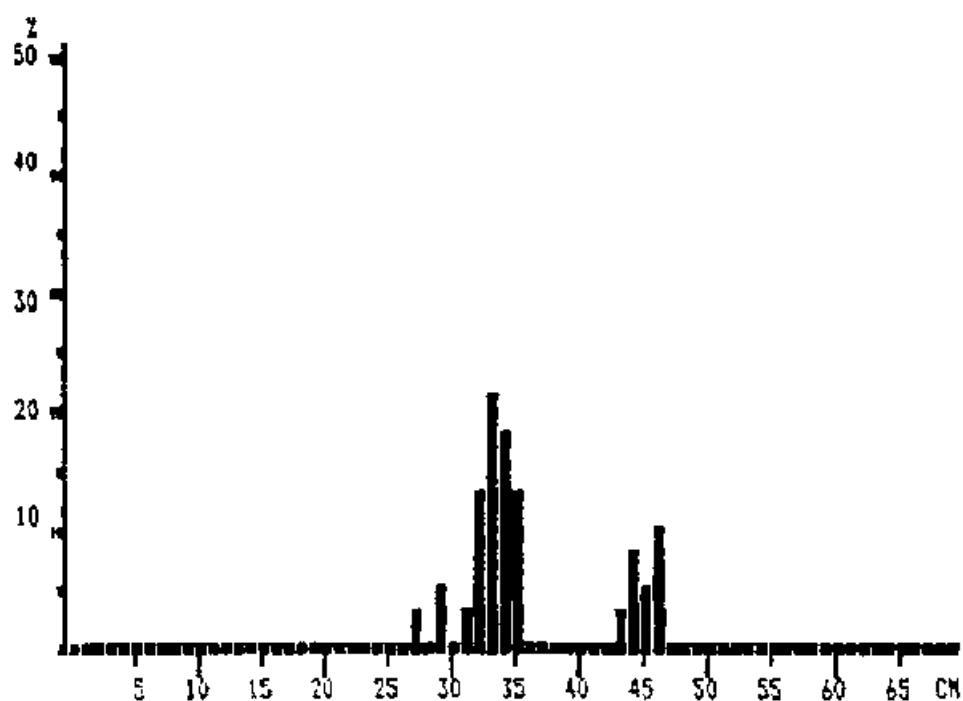
MEAN LENGTH = 48.01cm N= 82

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 520 AND 566.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Trachurus lathami - East of Cabo Cadera



Pooled sample (simple adding)

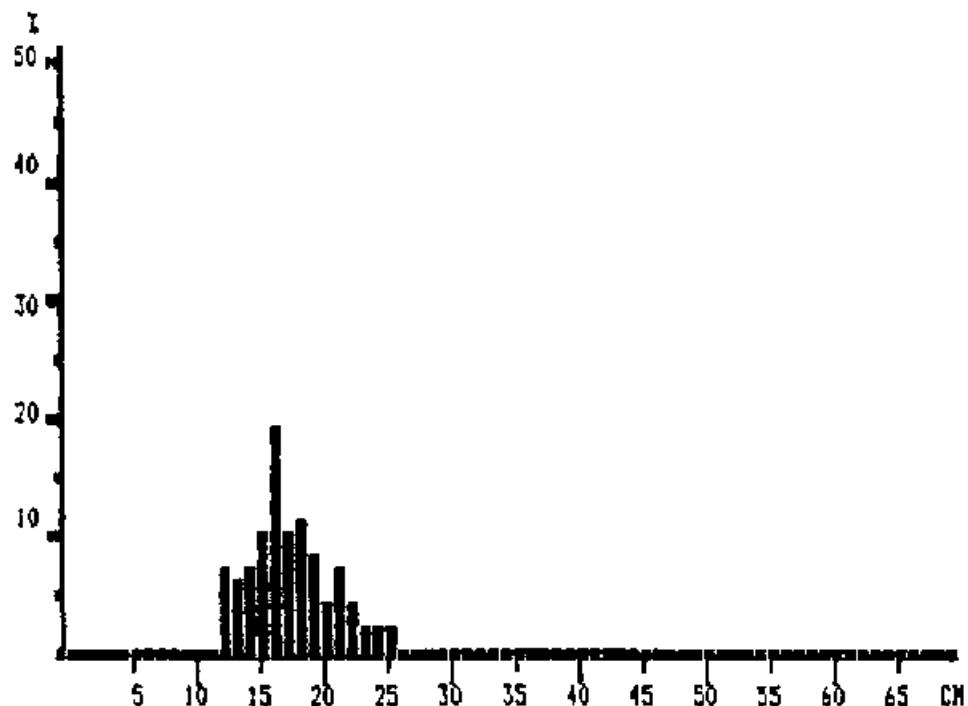
MEAN LENGTH = 17.30cm N= 994

NUMBERS OF SUBSAMPLES: 13

SAMPLES FOUND BETWEEN ST. NO. 458 AND 505.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Selene spixii - East of Cabo Cadera



Pooled sample (simple adding)

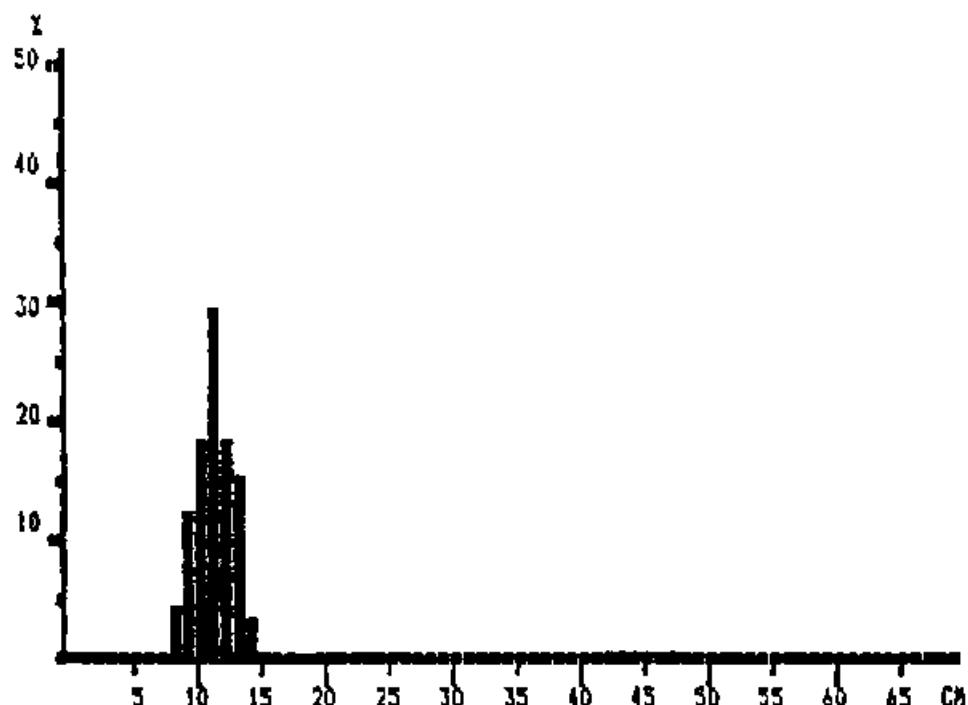
MEAN LENGTH = 35.95cm N= 39

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 455 AND 470.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Lutjanus vivanus - West of Cabo Cadera



Pooled sample (simple adding)

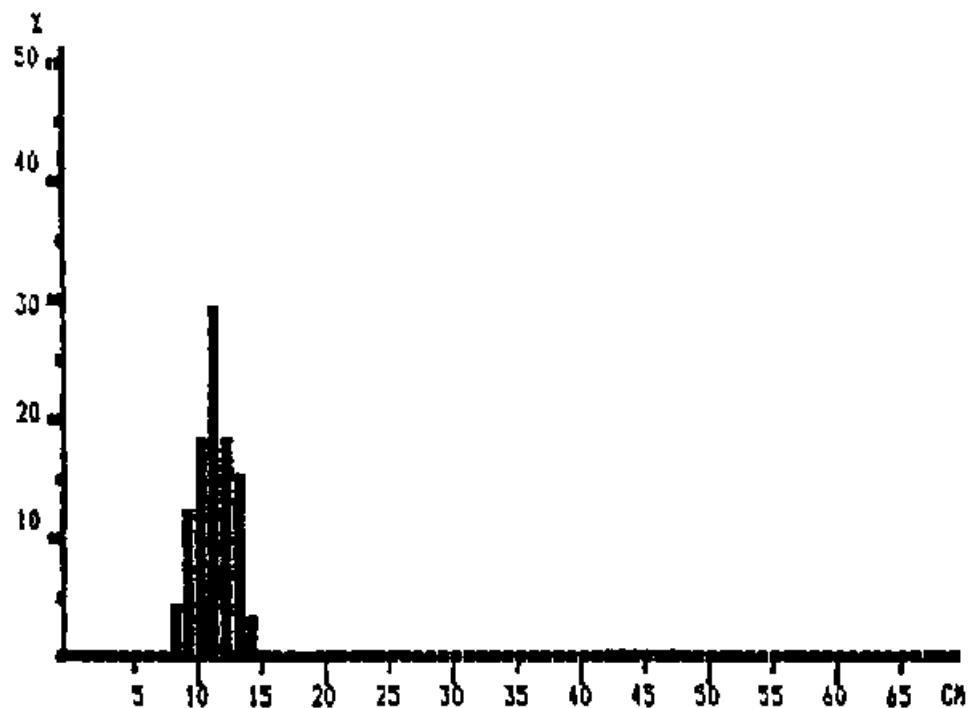
MEAN LENGTH = 17.16cm N= 83

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 533 AND 533.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Trachurus lathami - West of Cabo Cadera



Pooled sample (simple adding)

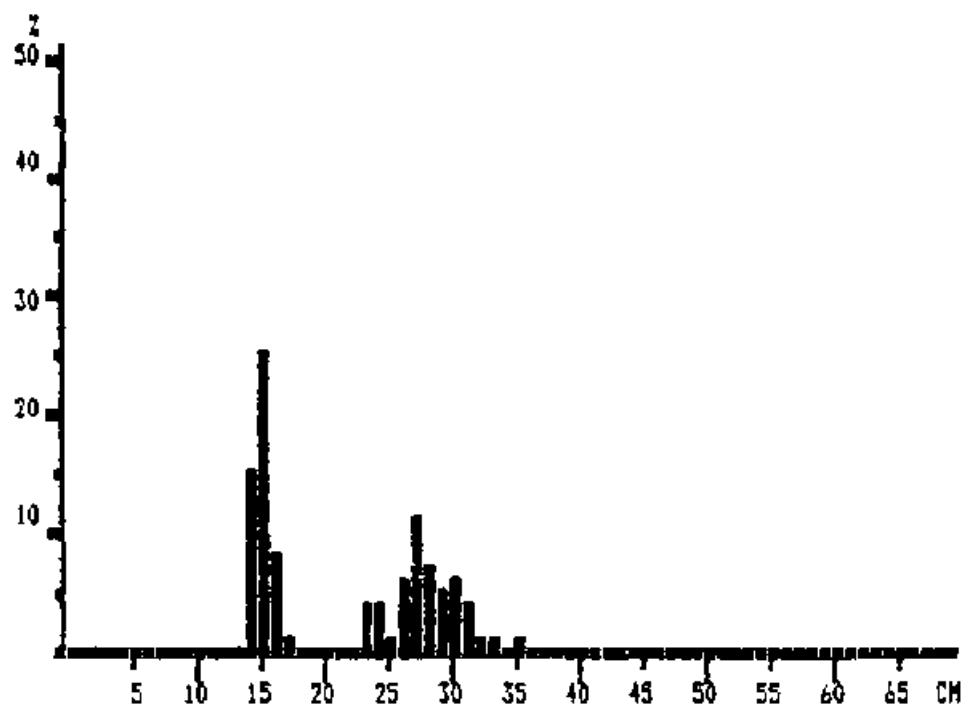
MEAN LENGTH = 11.10cm N= 617

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 513 AND 562.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Selene spixii - West of Cabo Cadera



Pooled sample (simple adding)

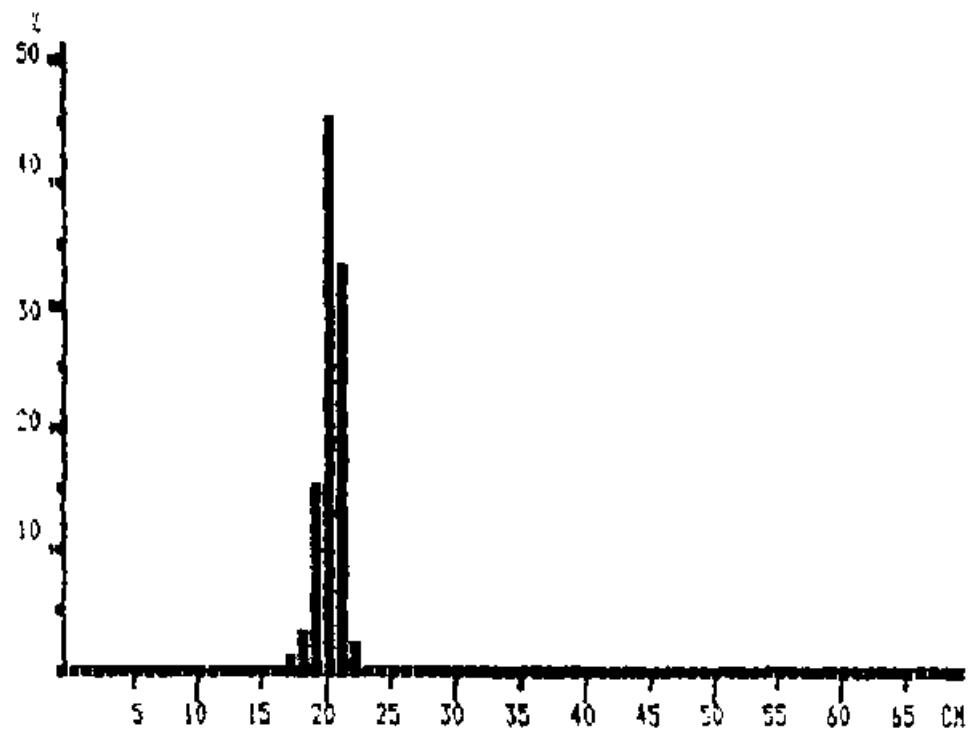
MEAN LENGTH = 21.33cm N= 84

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 527 AND 553.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Haemulon striatum - East of Cabo Cadera



Pooled sample (simple adding)

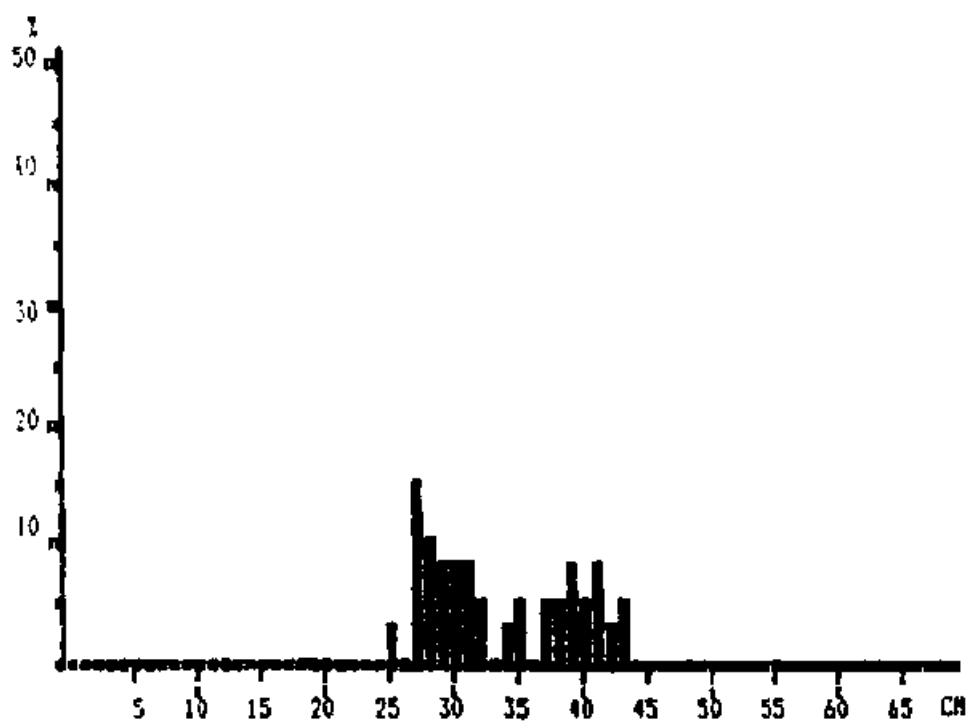
MEAN LENGTH = 20.12cm N= 91

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 500 AND 500.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Micropogonias furnieri - East of Cabo Cadera



Pooled sample (simple adding)

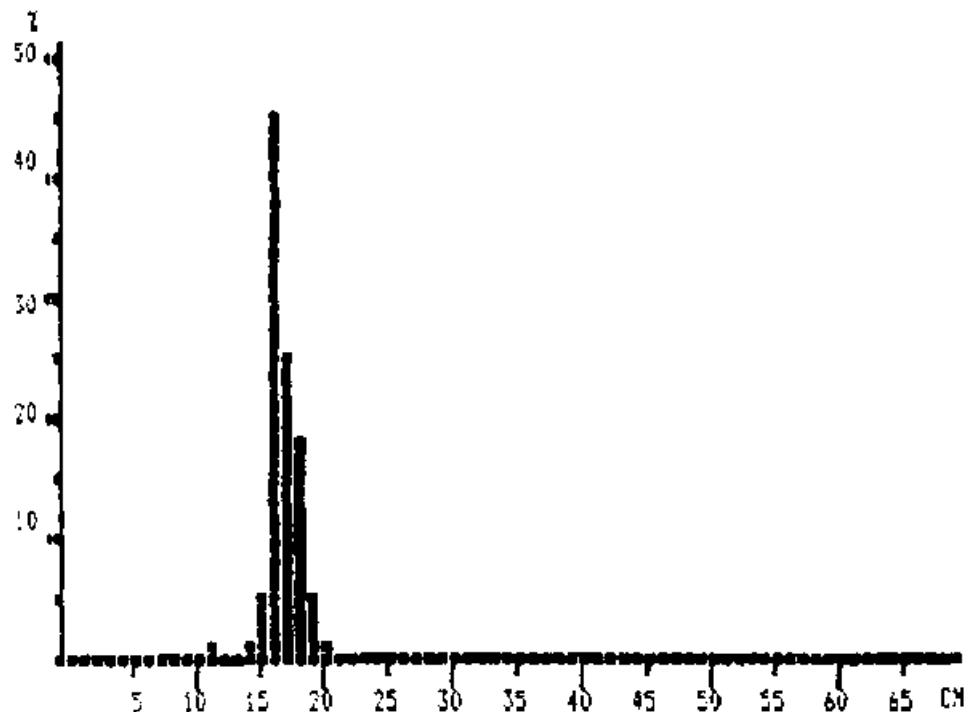
MEAN LENGTH = 33.38cm N= 40

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 488 AND 488.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Ctenosciena gracilicirrhus



Pooled sample (simple adding)

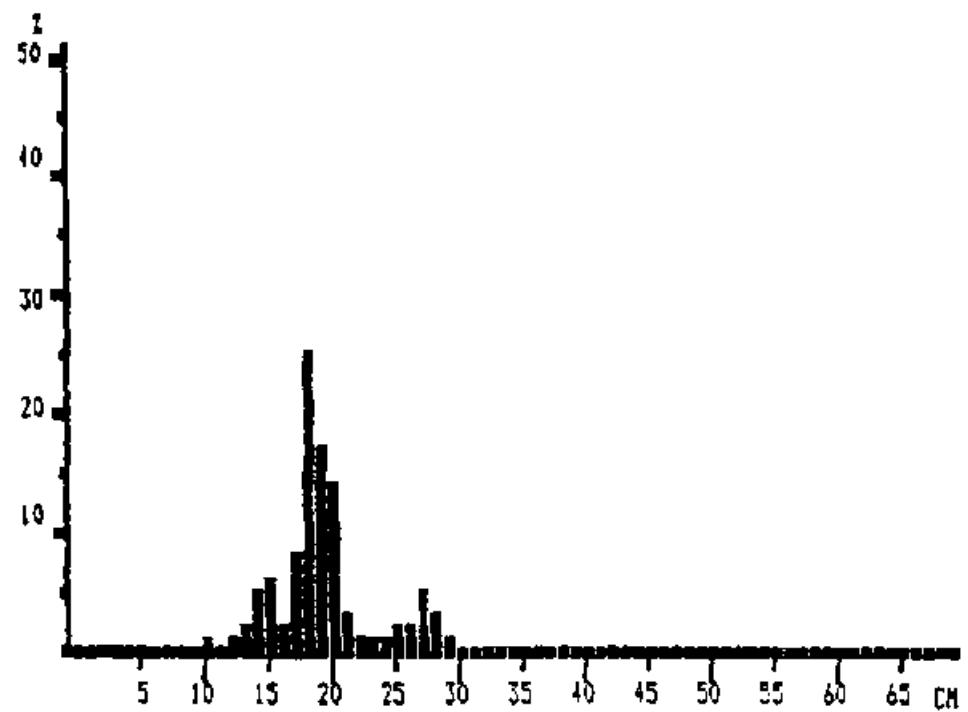
MEAN LENGTH = 16.66cm N= 154

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 486 AND 486.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Selar crumenophthalmus - West of Cabo Cadera



Pooled sample (simple adding)

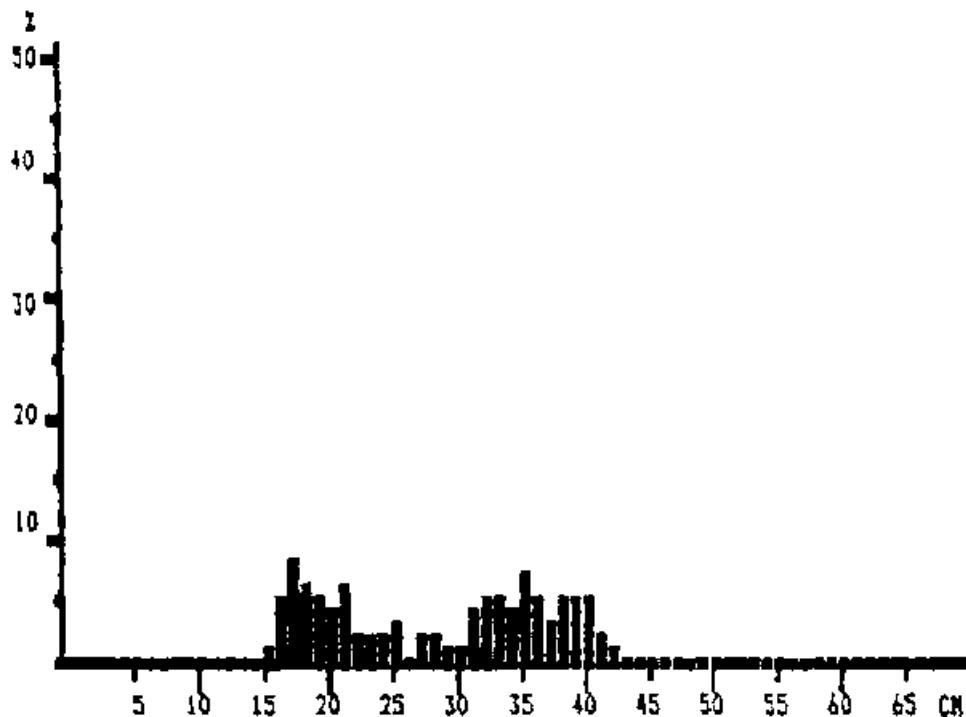
MEAN LENGTH = 19.14cm N= 283

NUMBERS OF SUBSAMPLES: 4

SAMPLES FOUND BETWEEN ST. NO. 514 AND 561.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Micropogonias furnieri - West of Cabo Cadera



Pooled sample (simple adding)

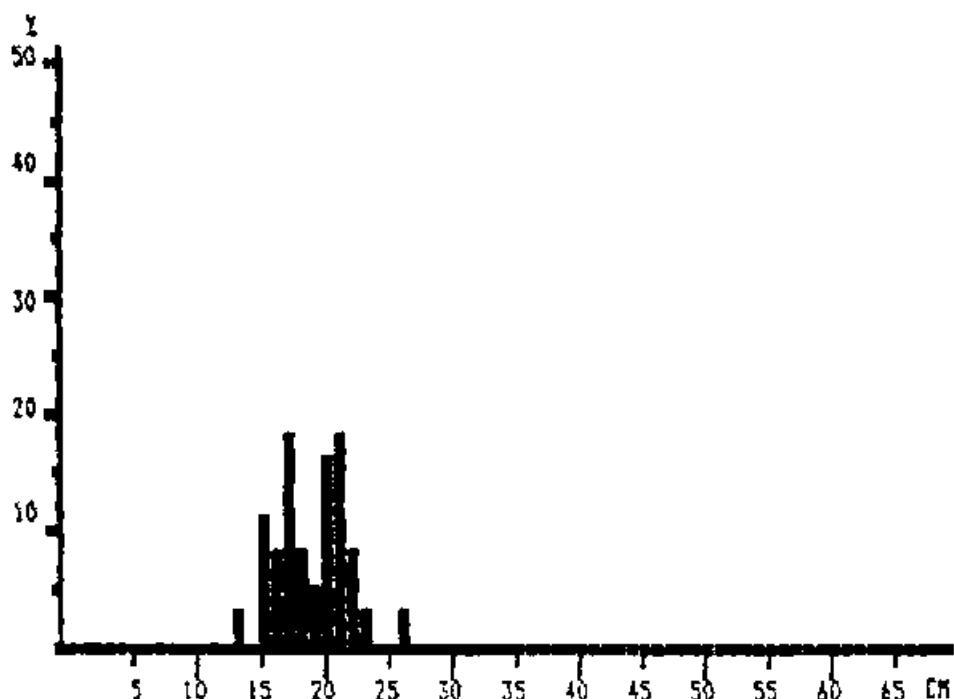
MEAN LENGTH = 28.31cm N= 266

NUMBERS OF SUBSAMPLES: 11

SAMPLES FOUND BETWEEN ST. NO. 538 AND 558.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Macrodon ancylodon - West of Cabo Cadera



Pooled sample (simple adding)

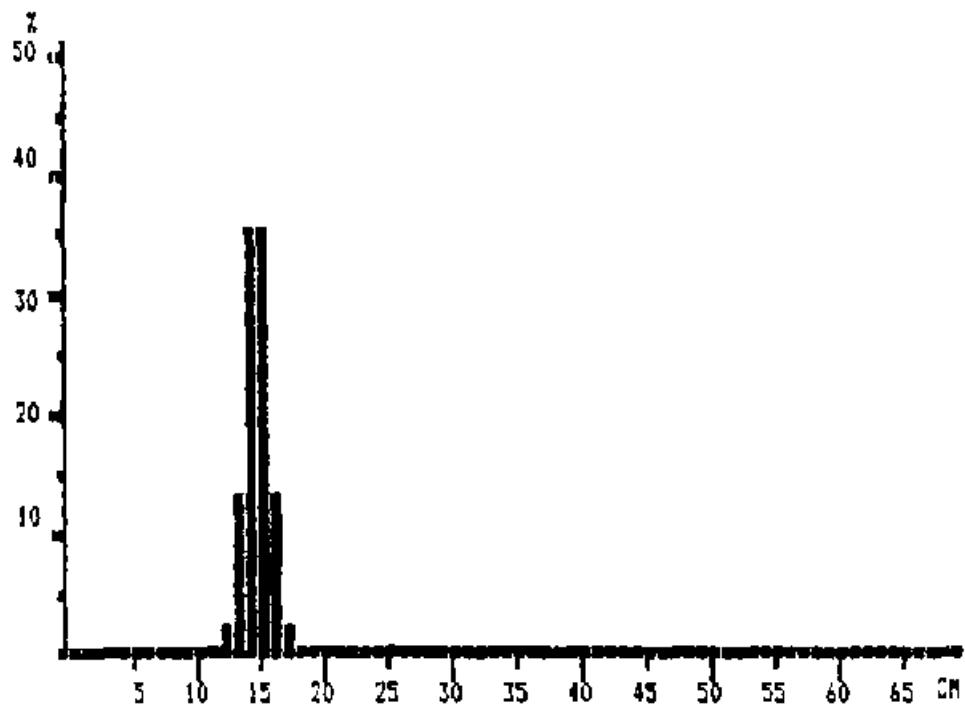
MEAN LENGTH = 18.79cm N= 38

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 544 AND 544.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Scomber japonicus - West of Cabo Cadera



Pooled sample (simple adding)

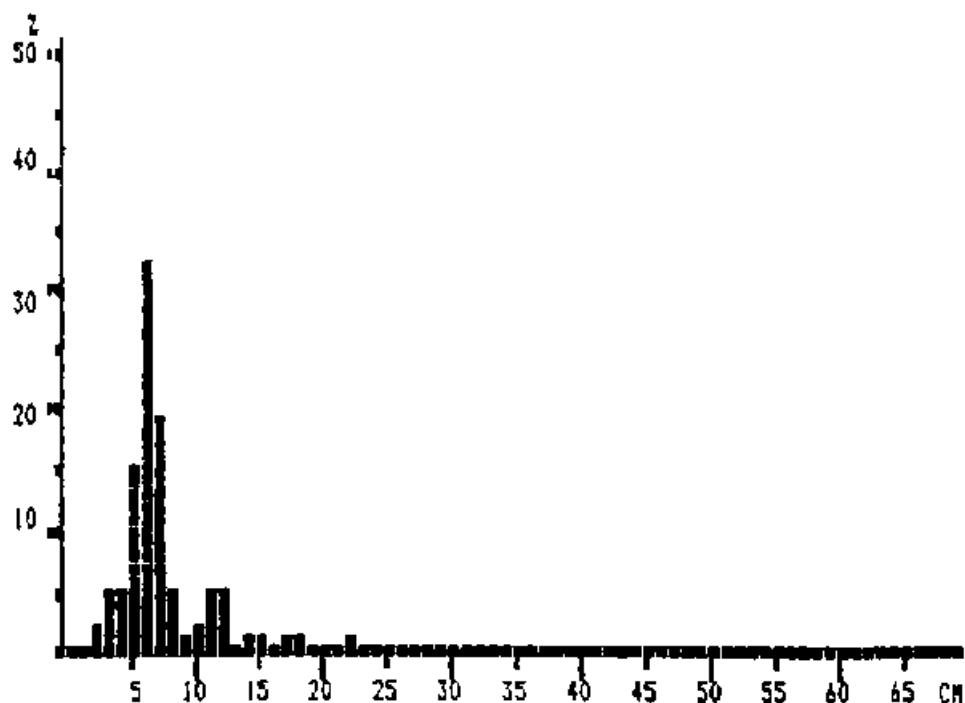
MEAN LENGTH = 14.50cm N= 127

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 537 AND 537.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Loligo paelei - East of Cabo Cadera



Pooled sample (simple adding)

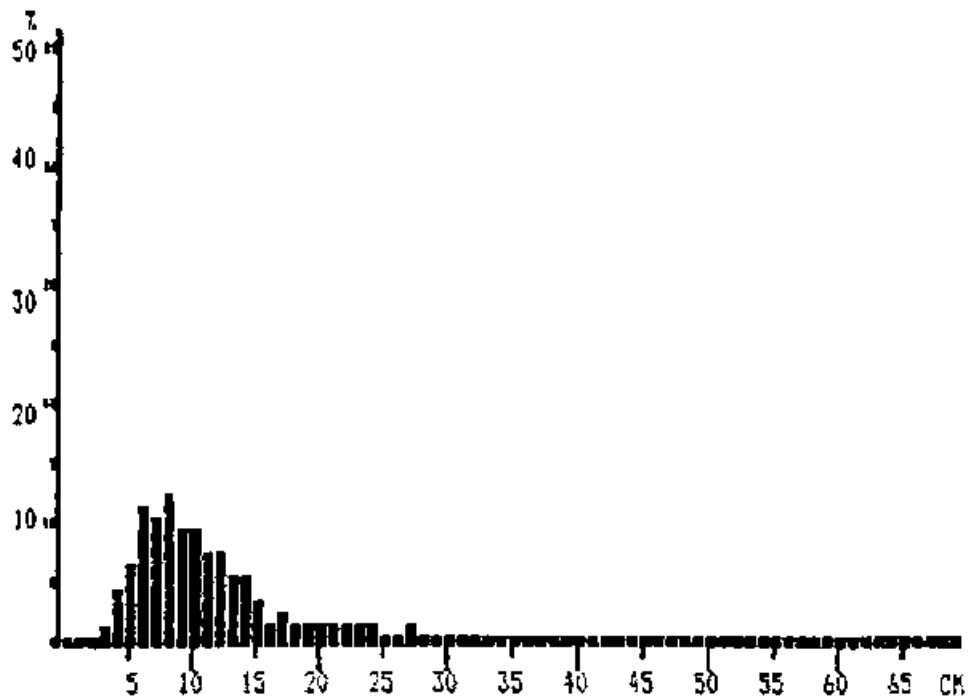
MEAN LENGTH = 7.08cm N= 88

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 492 AND 492.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Loligo plei - East of Cabo Cadera



Pooled sample (simple adding)

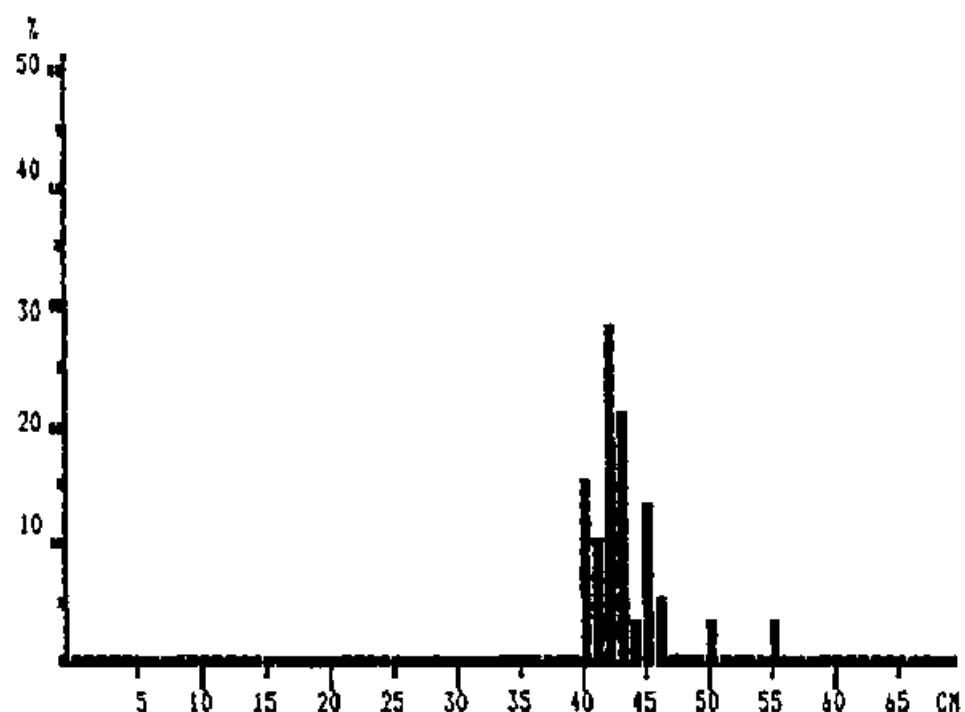
MEAN LENGTH = 10.26cm N= 689

NUMBERS OF SUBSAMPLES: 8

SAMPLES FOUND BETWEEN ST. NO. 462 AND 509.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Scomberomorus cavalla - West of Cabo Cadera



Pooled sample (simple adding)

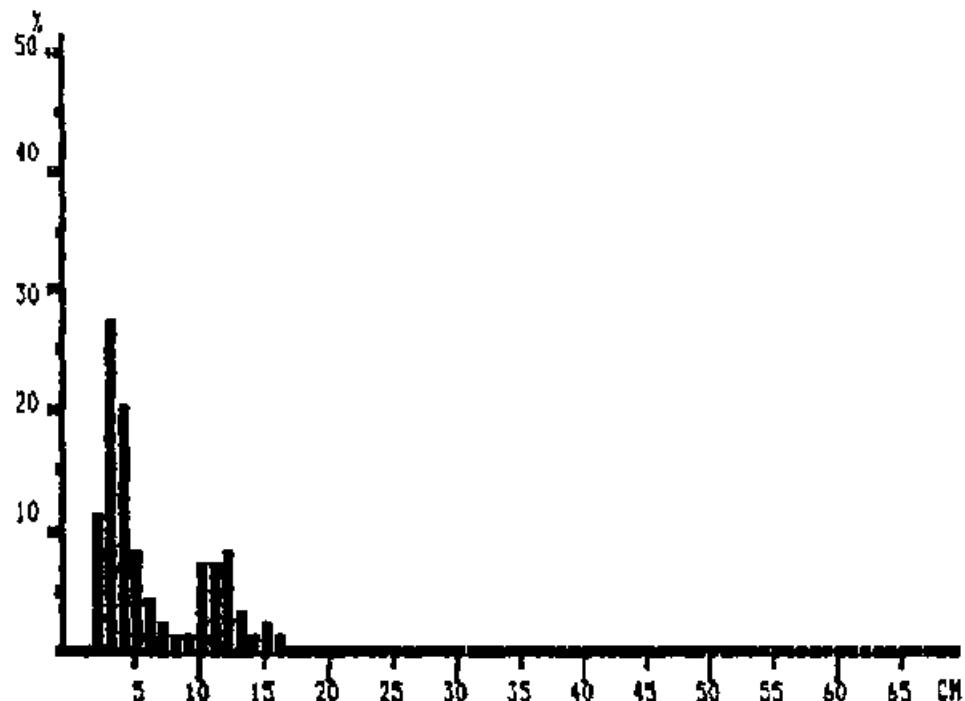
MEAN LENGTH = 42.97cm N= 39

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 560 AND 560.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Loligo paelei - West of Cabo Cadera



Pooled sample (simple adding)

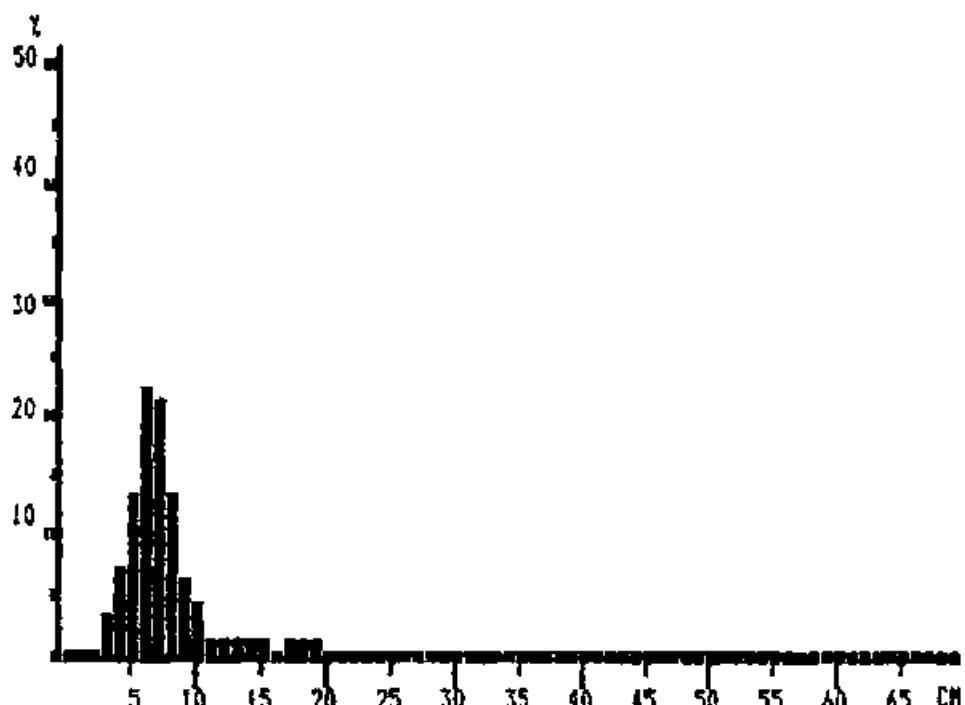
MEAN LENGTH = 6.00cm N= 168

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 514 AND 535.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Loligo plei - West of Cabo Cadera



Pooled sample (simple adding)

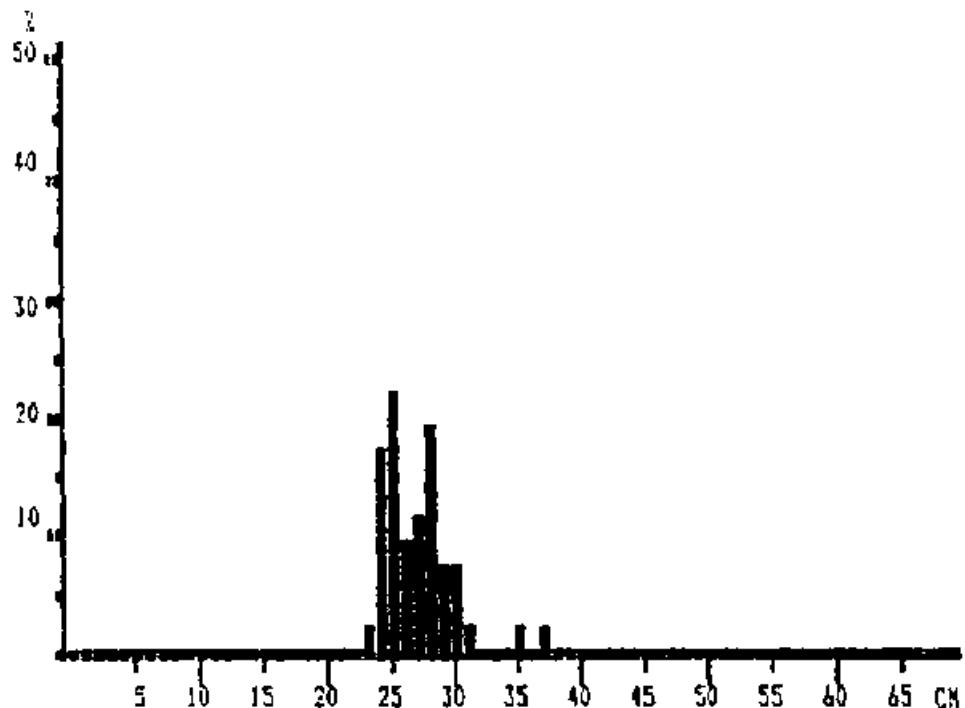
MEAN LENGTH = 7.37cm N= 883

NUMBERS OF SUBSAMPLES: 9

SAMPLES FOUND BETWEEN ST. NO. 518 AND 560.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Sphyraena picudilla - East of Cabo Cadera



Pooled sample (simple adding)

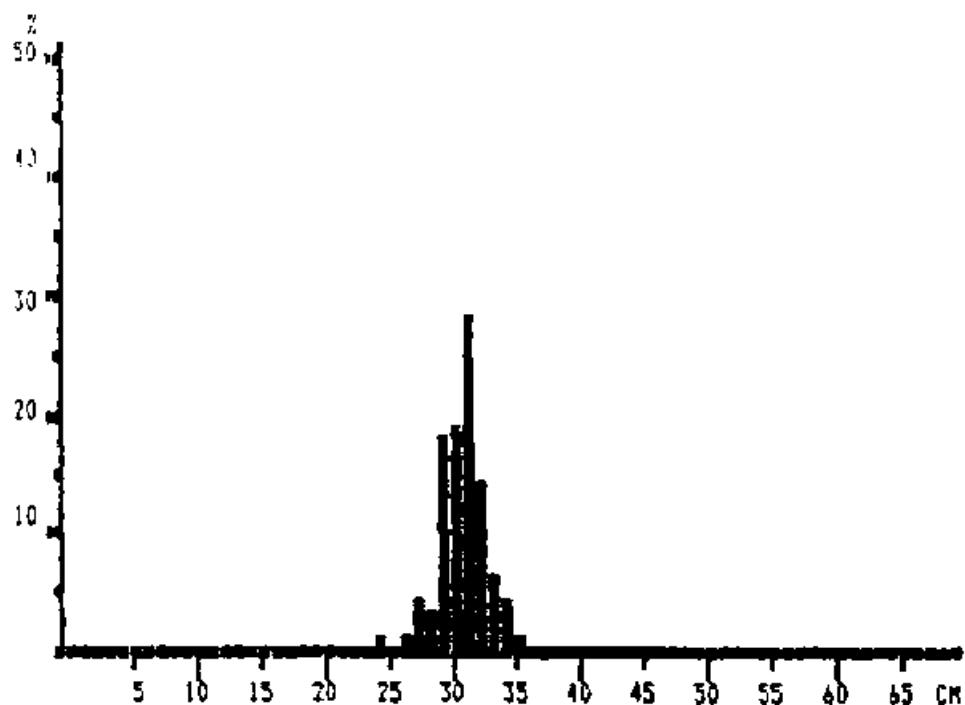
MEAN LENGTH = 26.85cm N= 54

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 485 AND 485.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Peprilus paru East of Cabo Cadera



Pooled sample (simple adding)

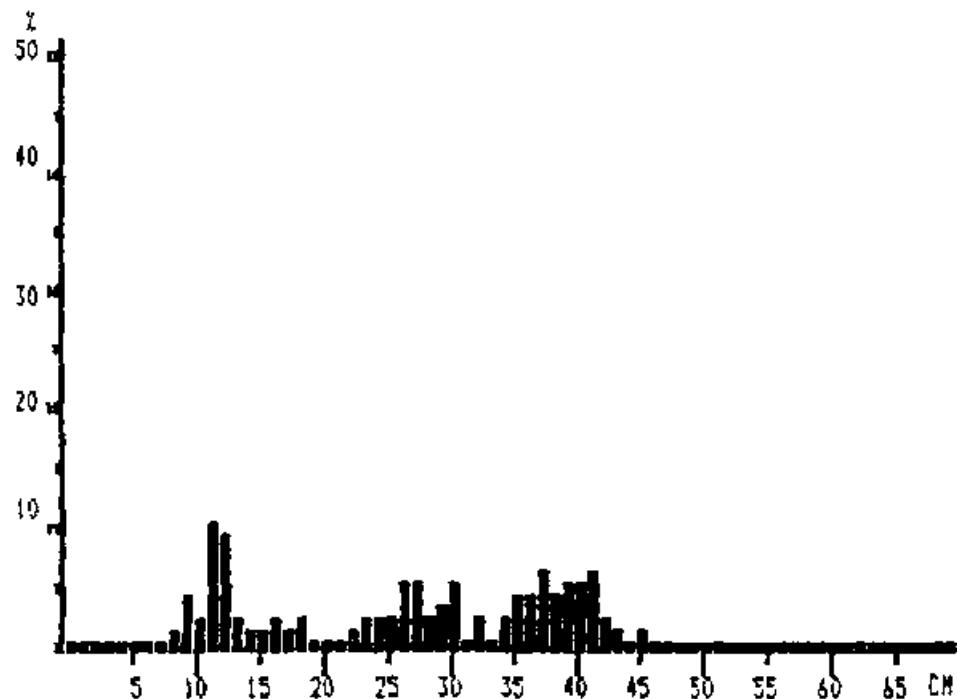
MEAN LENGTH = 30.46cm N= 72

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 455 AND 455.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Priacanthus arenatus - East of Cabo Cadera



Pooled sample (simple adding)

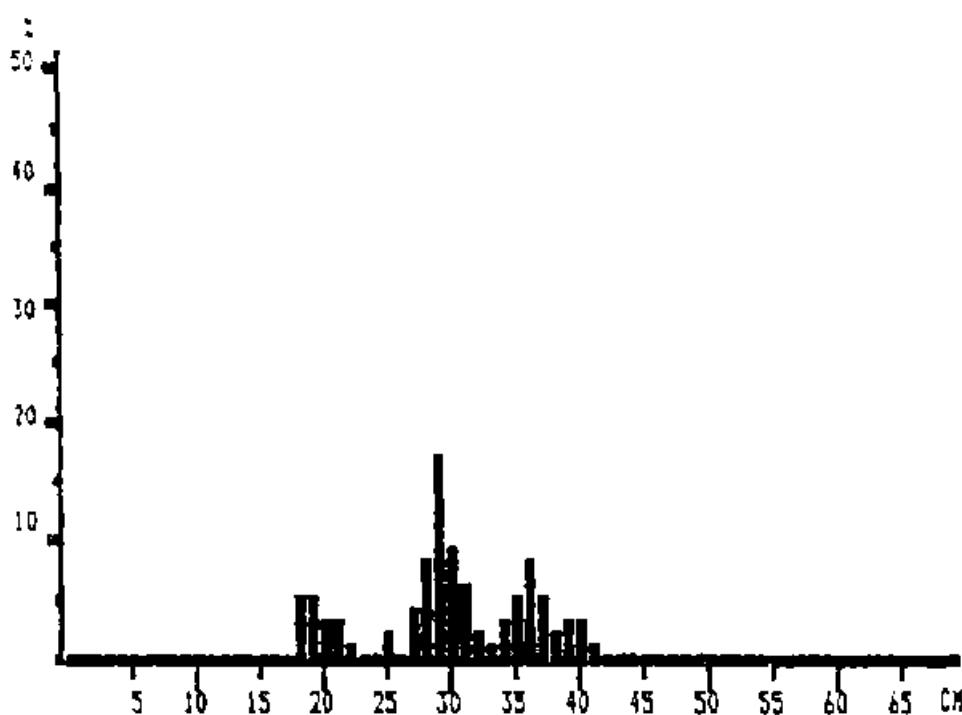
MEAN LENGTH = 26.58cm N= 129

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 492 AND 504.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Sphyraena picudilla - West of Cabo Cadera



Pooled sample (simple adding)

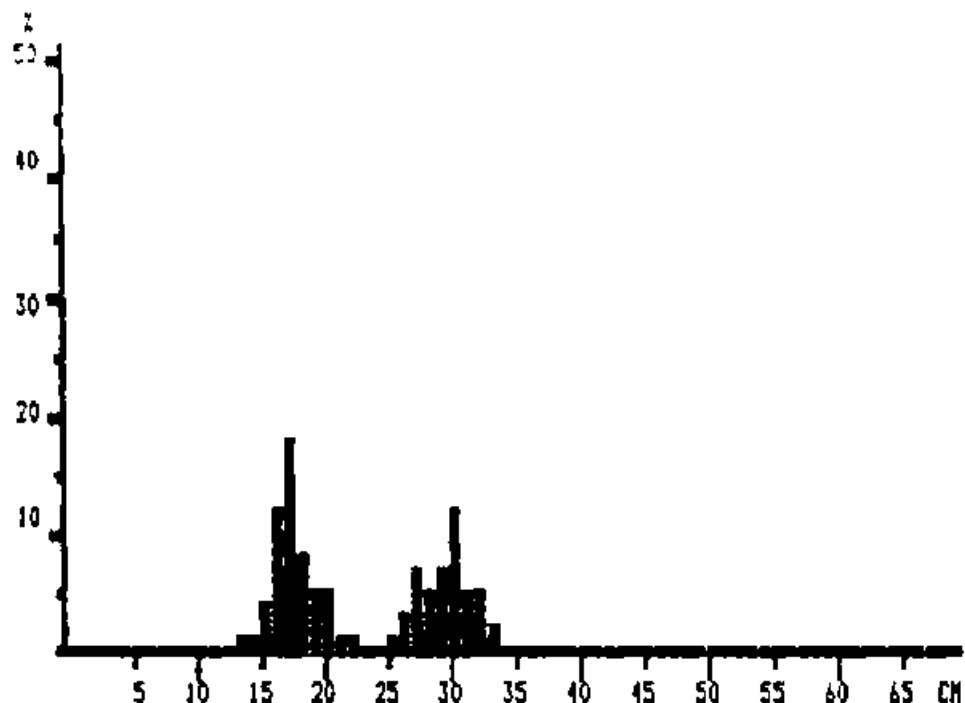
MEAN LENGTH = 29.94cm N= 259

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 535 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Peprilus paru - West of Cabo Cadera



Pooled sample (simple adding)

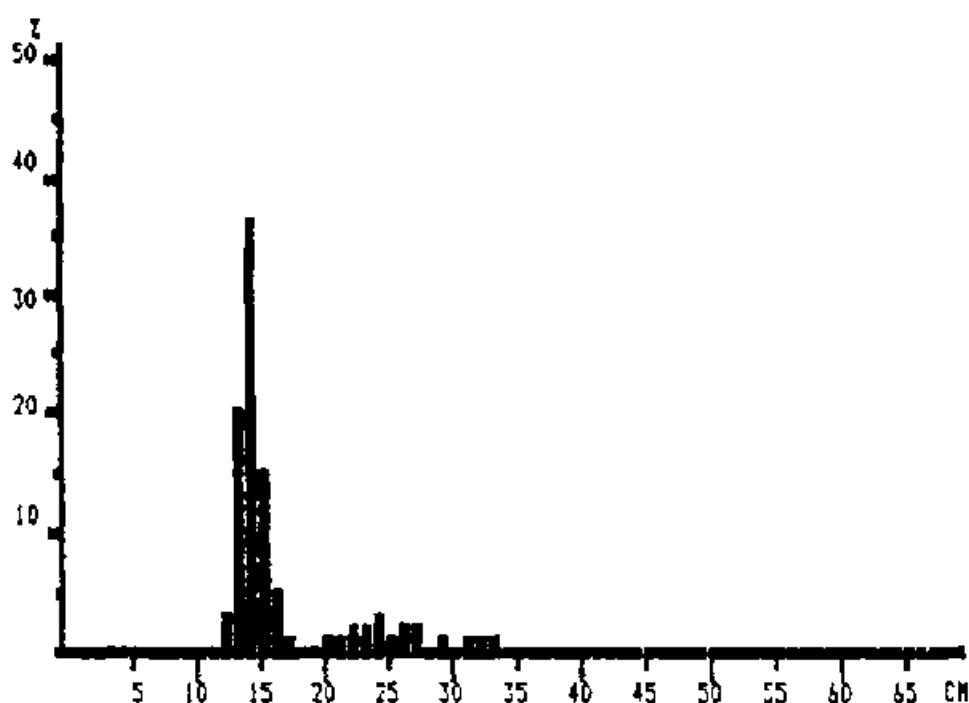
MEAN LENGTH = 22.70cm N= 106

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 551 AND 553.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Priacanthus arenatus - East of Cabo Cadera



Pooled sample (simple adding)

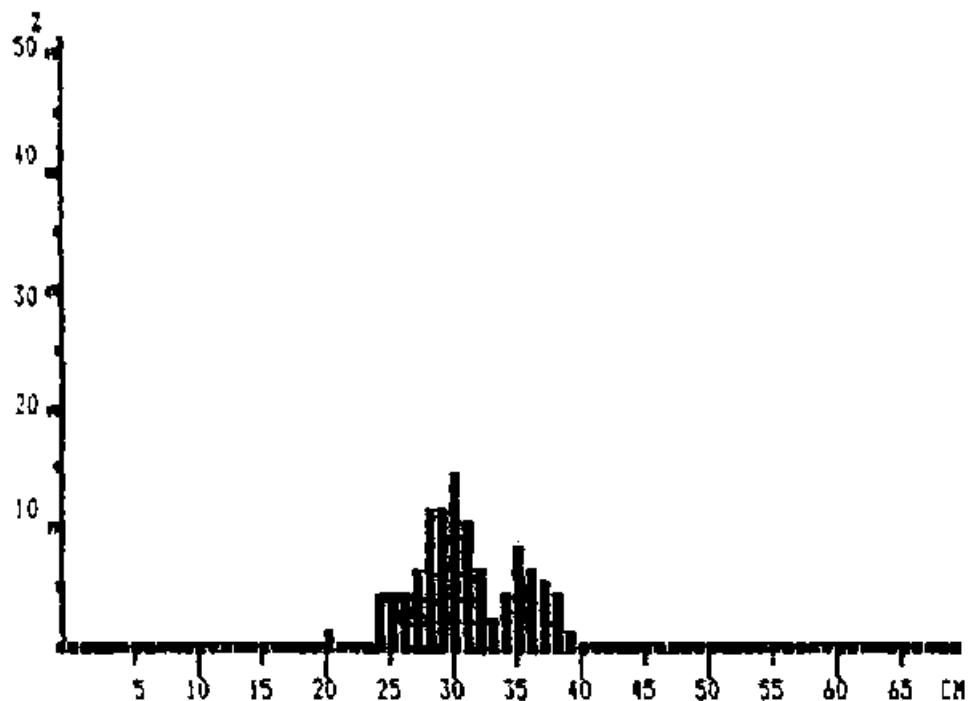
MEAN LENGTH = 16.42cm N= 409

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 519 AND 519.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Calamus pennatula - East of Cabo Cadera



Pooled sample (simple adding)

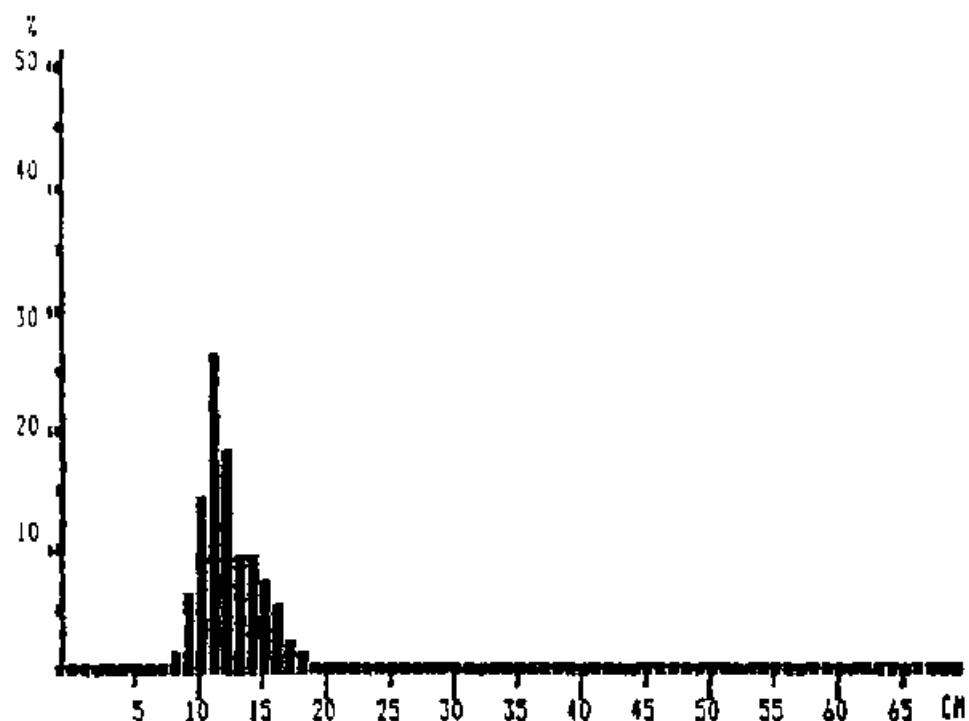
MEAN LENGTH = 30.74cm N= 106

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 504 AND 504.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Upeneus parvus - East of Cabo Cadera



Pooled sample (simple adding)

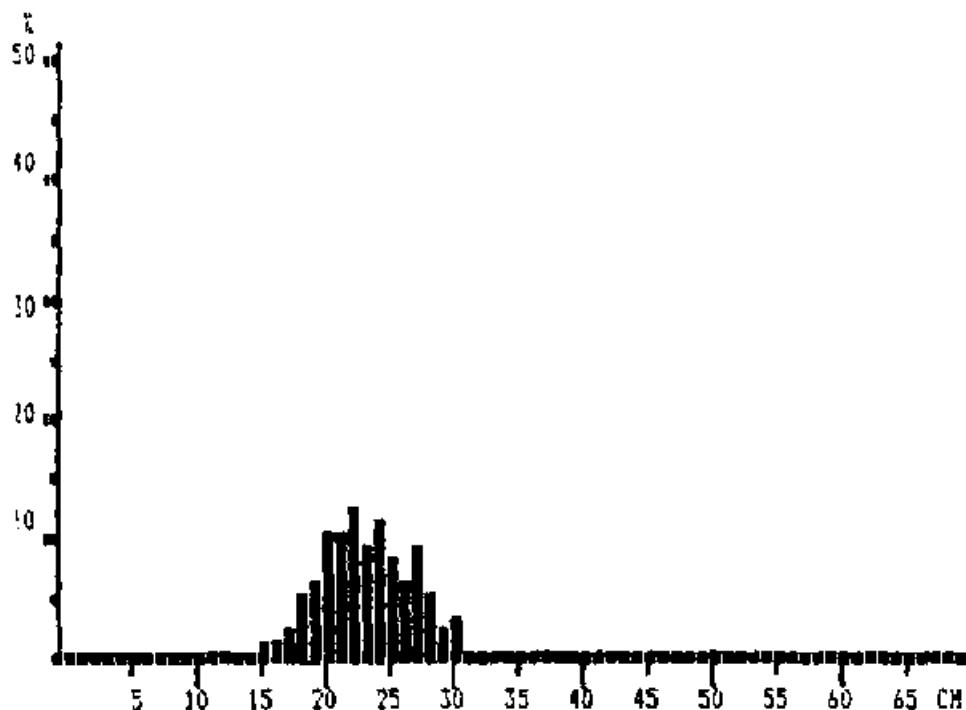
MEAN LENGTH = 12.17cm N= 676

NUMBERS OF SUBSAMPLES: 7

SAMPLES FOUND BETWEEN ST. NO. 458 AND 502.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Arius spixii - East of Cabo Cadera



Pooled sample (simple adding)

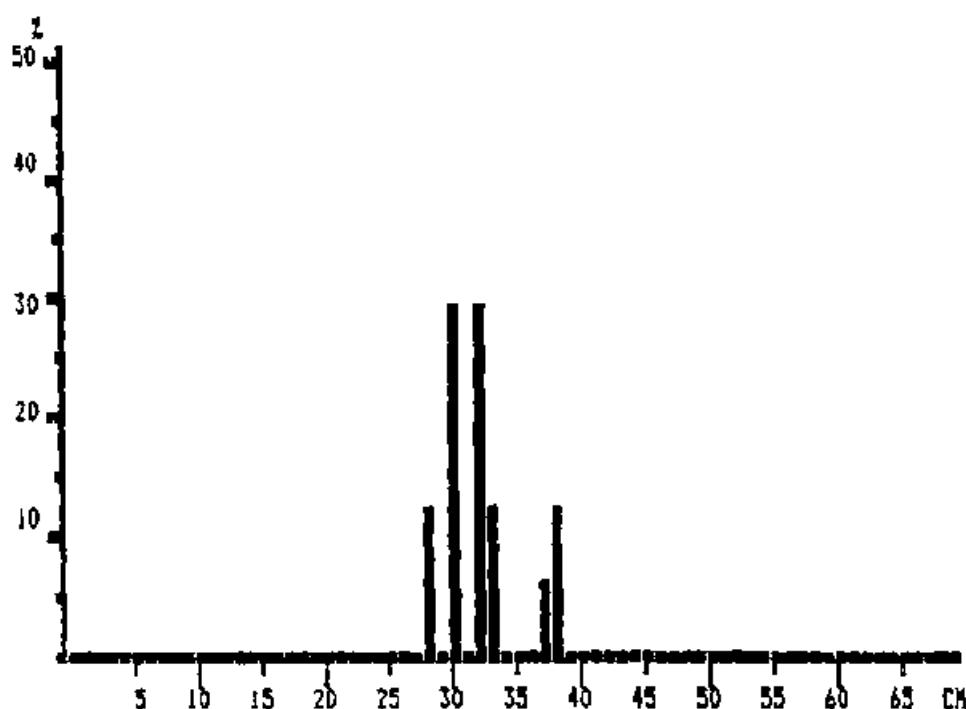
MEAN LENGTH = 22.99cm N= 176

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 485 AND 488.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Calamus pennatula - West of Cabo Cadera



Pooled sample (simple adding)

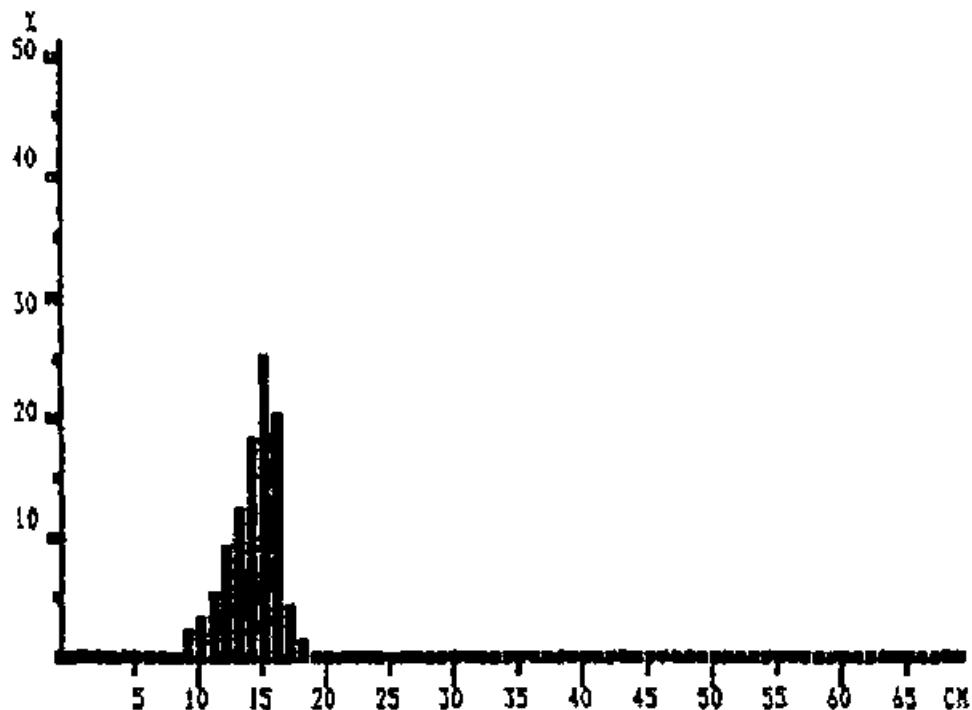
MEAN LENGTH = 32.06cm N= 17

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 519 AND 519.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Upeneus parvus - West of Cabo Cadera



Pooled sample (simple adding)

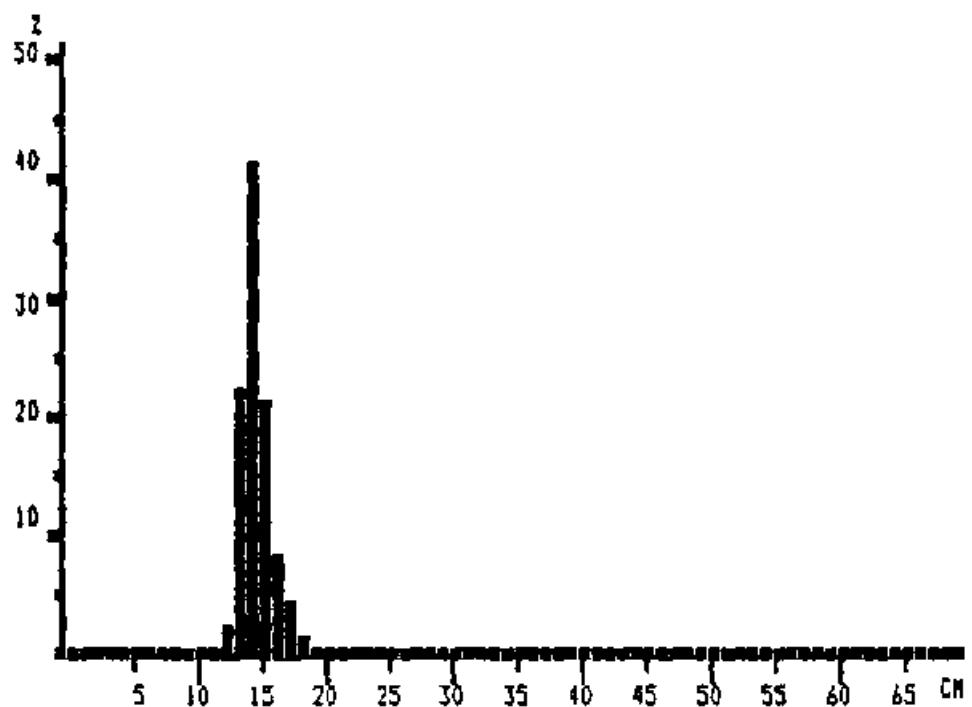
MEAN LENGTH = 14.27cm N= 228

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 515 AND 565.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Eucinostomus argenteus - West of Cabo Cadera



Pooled sample (simple adding)

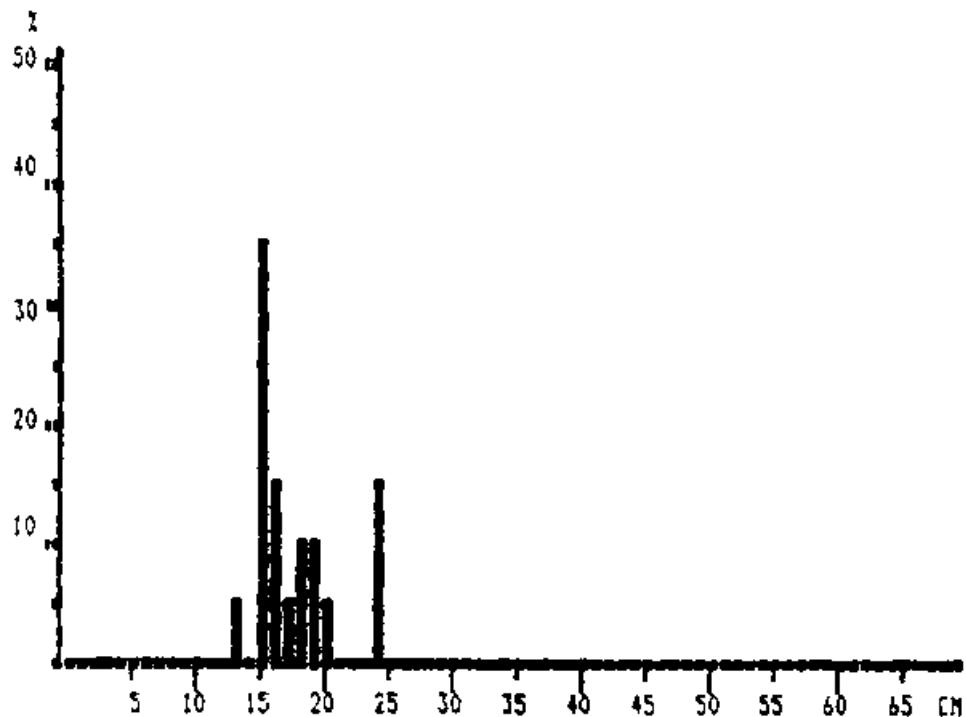
MEAN LENGTH = 14.33cm N= 497

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 515 AND 565.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Penaeus subtilis - East of Cabo Cadera



Pooled sample (simple adding)

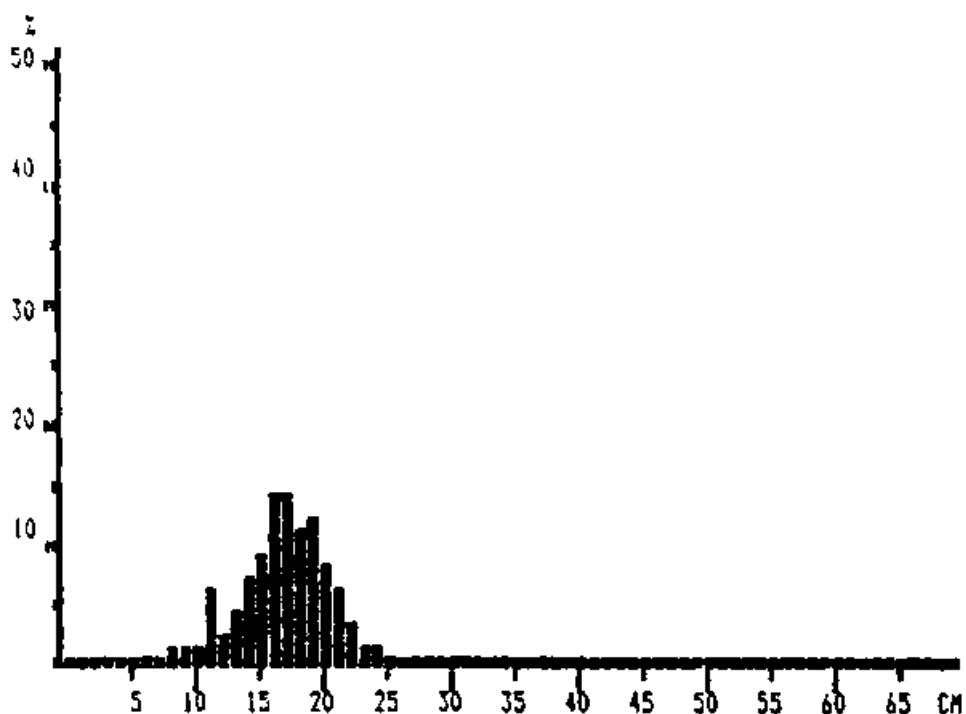
MEAN LENGTH = 17.45cm N= 20

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 491 AND 491.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Penaeus brasiliensis - East of Cabo Cadera



Pooled sample (simple adding)

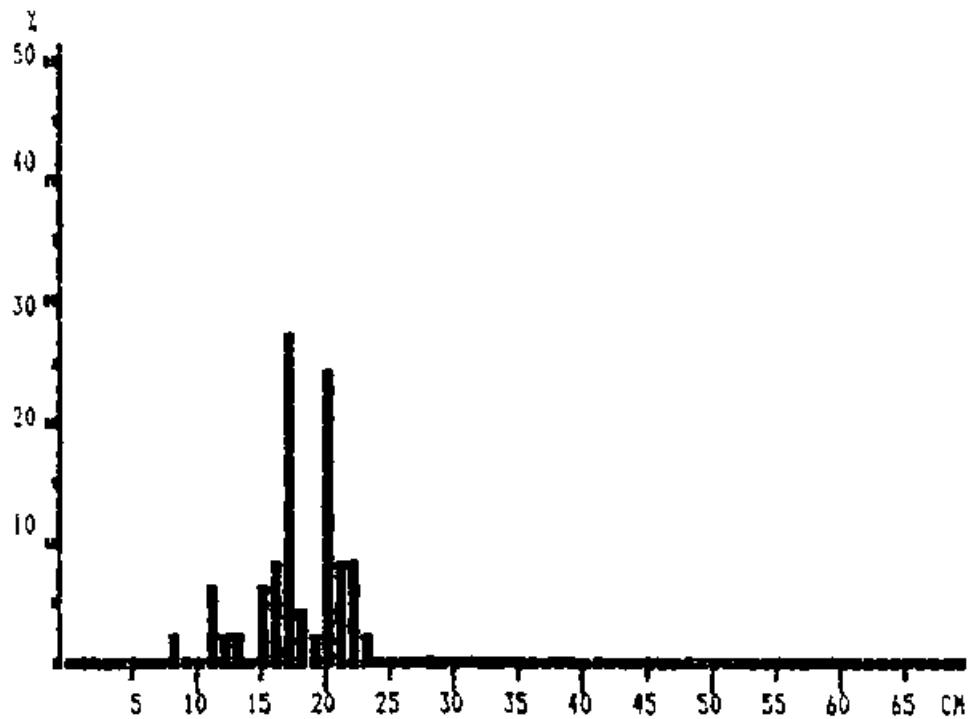
MEAN LENGTH = 16.77cm N= 154

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 466 AND 486.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Penaeus notialis - East of Cabo Cadera



Pooled sample (simple adding)

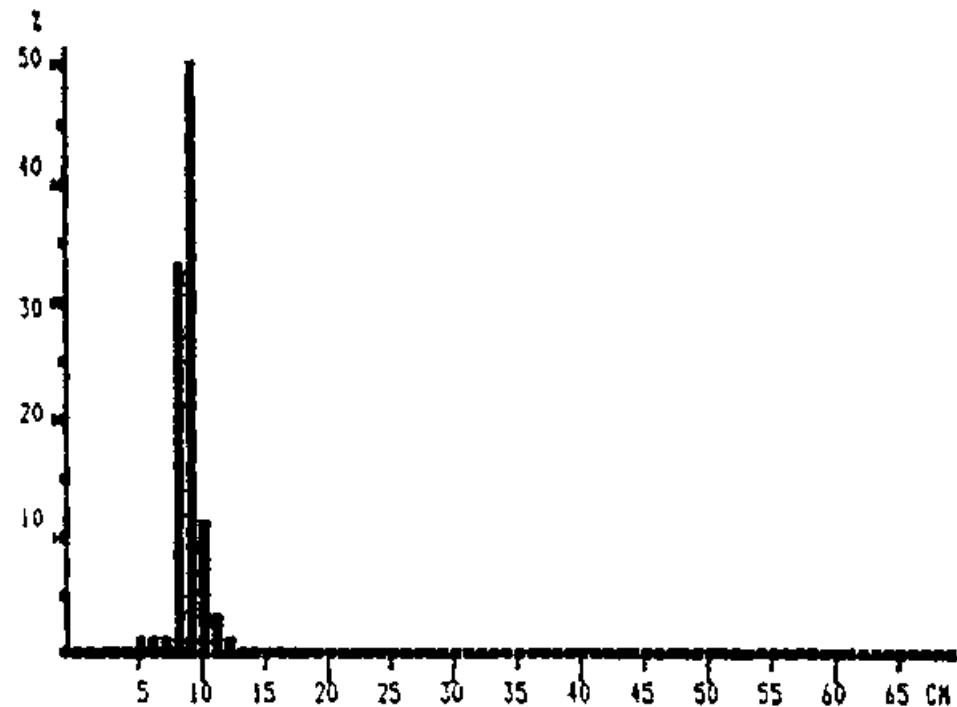
MEAN LENGTH = 17.71cm N= 51

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 484 AND 484.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Xiphopenaeus kroyeri - West of Cabo Cadera



Pooled sample (simple adding)

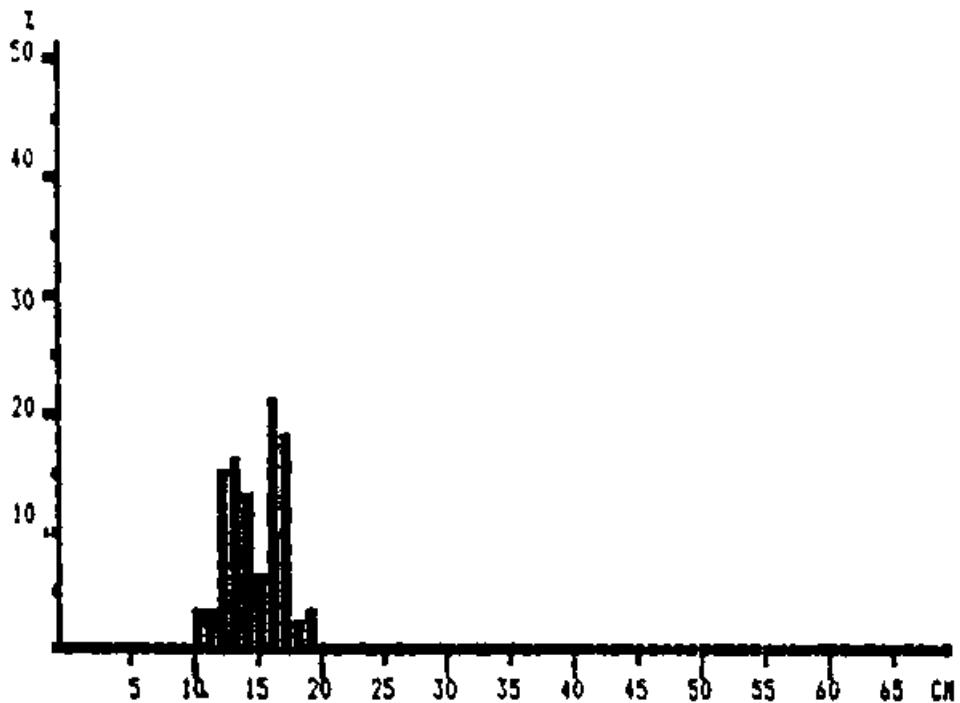
MEAN LENGTH = 8.77cm N= 228

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 543 AND 543.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Penaeus brasiliensis - West of Cabo Cadera



Pooled sample (simple adding)

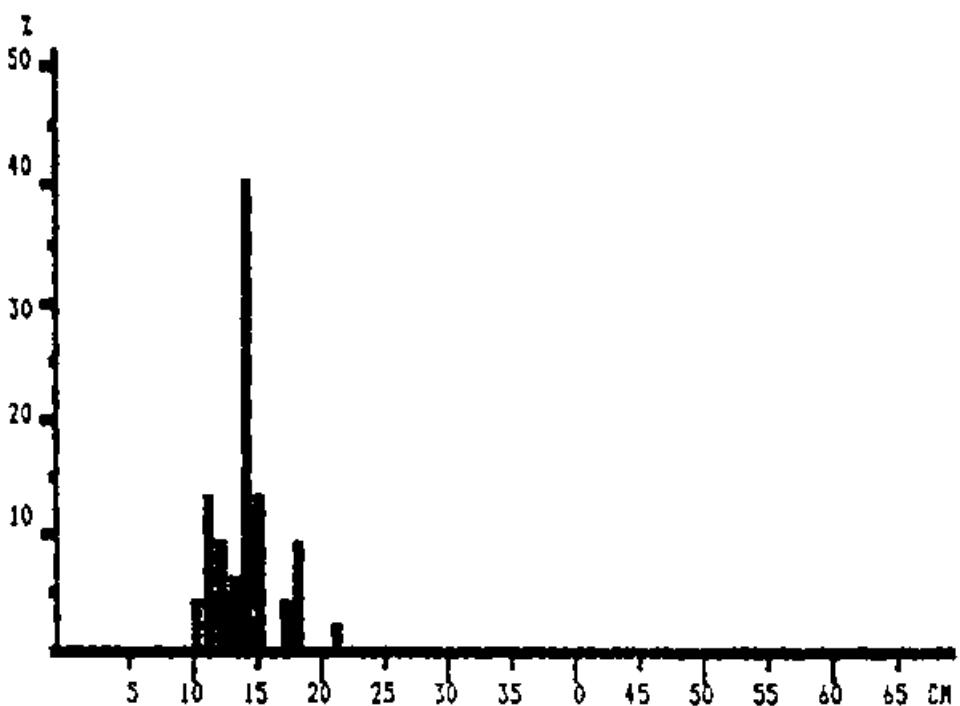
MEAN LENGTH = 14.56cm N= 62

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 548 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Penaeus notialis - West of Cabo Cadera



Pooled sample (simple adding)

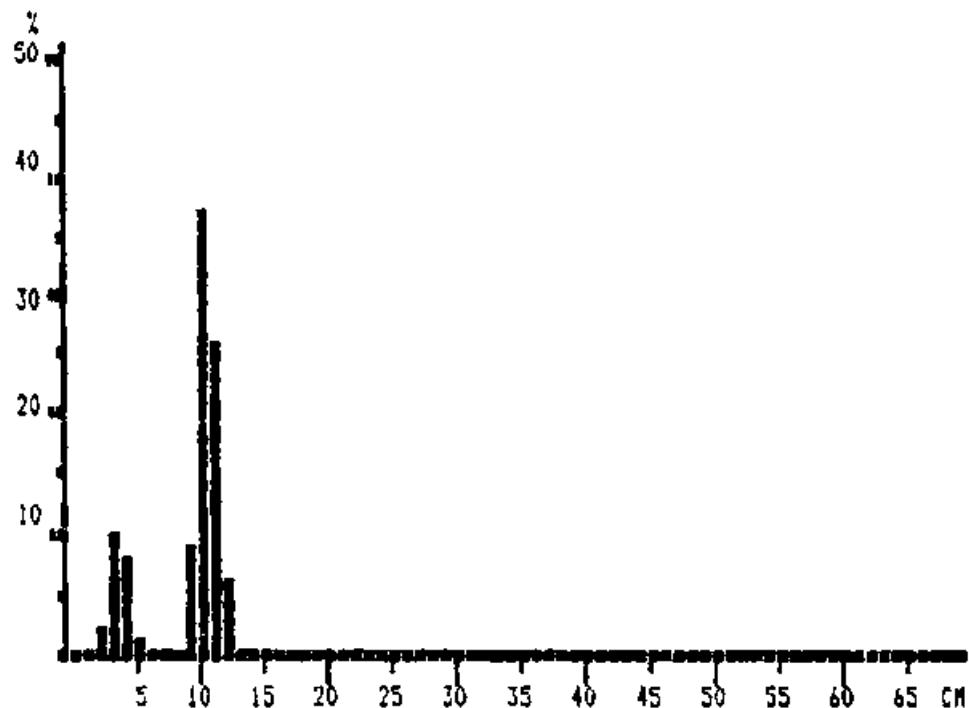
MEAN LENGTH = 13.96cm N= 47

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 538 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 510 AND 567.

Engraulis eurystole - TOTAL



Pooled sample (simple adding)

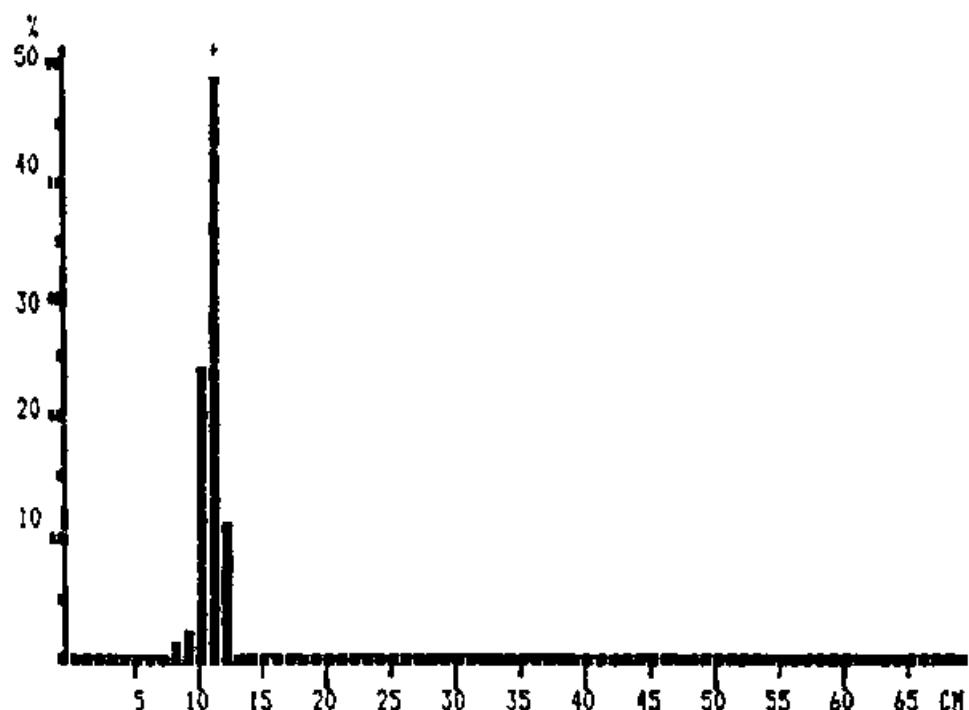
MEAN LENGTH = 8.83cm N= 509

NUMBERS OF SUBSAMPLES: 4

SAMPLES FOUND BETWEEN ST. NO. 489 AND 549.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Anchoa lyolepis - TOTAL



Pooled sample (simple adding)

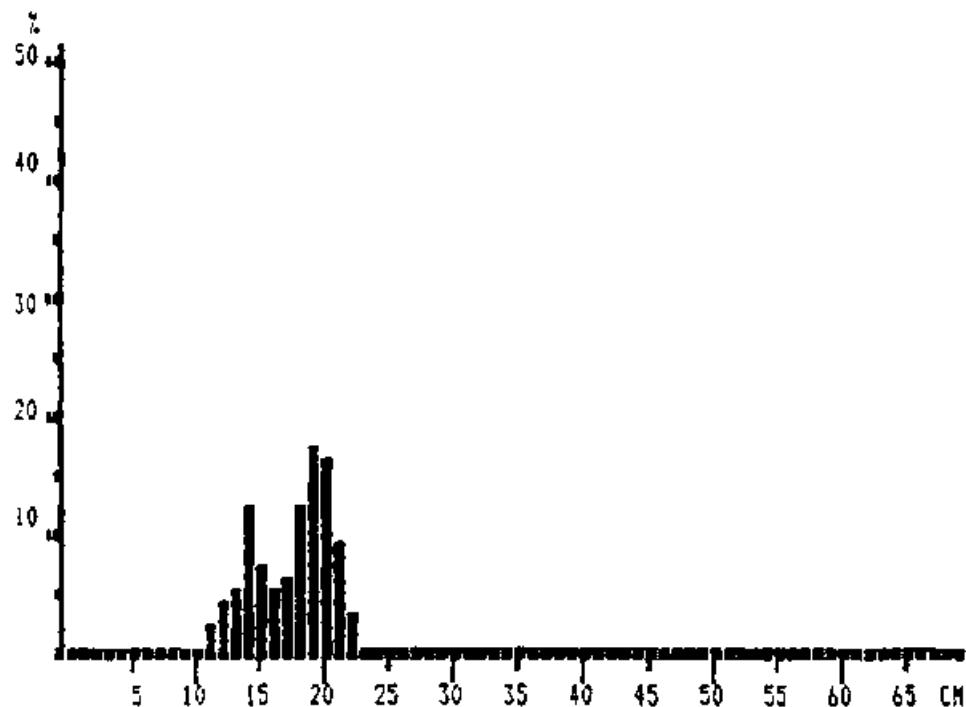
MEAN LENGTH = 10.77cm N= 244

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 494 AND 556.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Sardinella aurita - TOTAL



Pooled sample (simple adding)

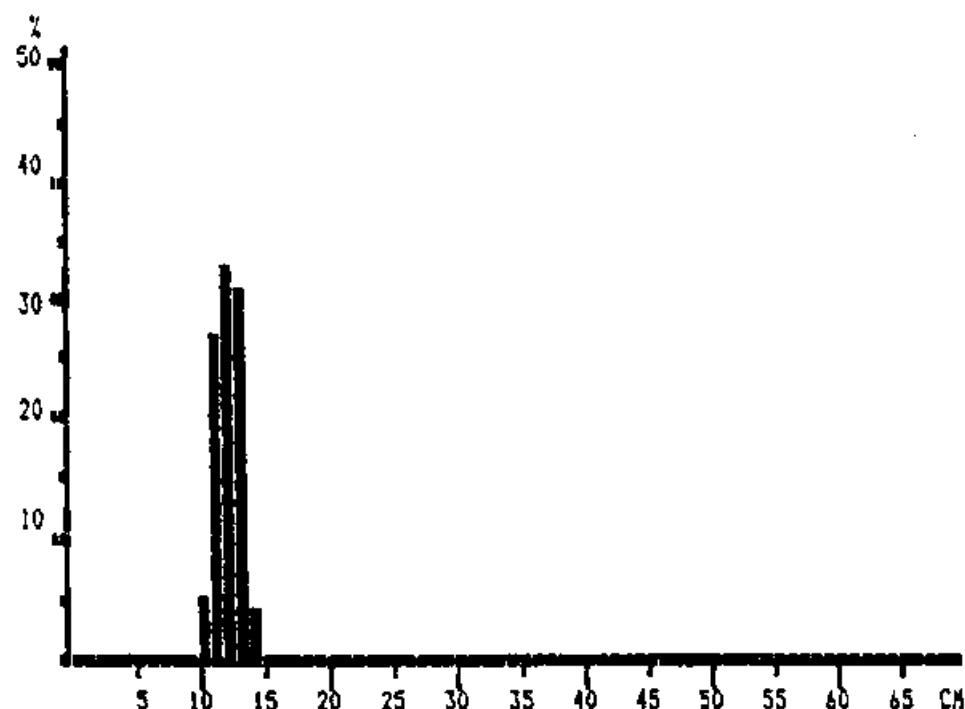
MEAN LENGTH = 17.43cm N= 1217

NUMBERS OF SUBSAMPLES: 11

SAMPLES FOUND BETWEEN ST. NO. 464 AND 564.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Etrumeus teres - TOTAL



Pooled sample (simple adding)

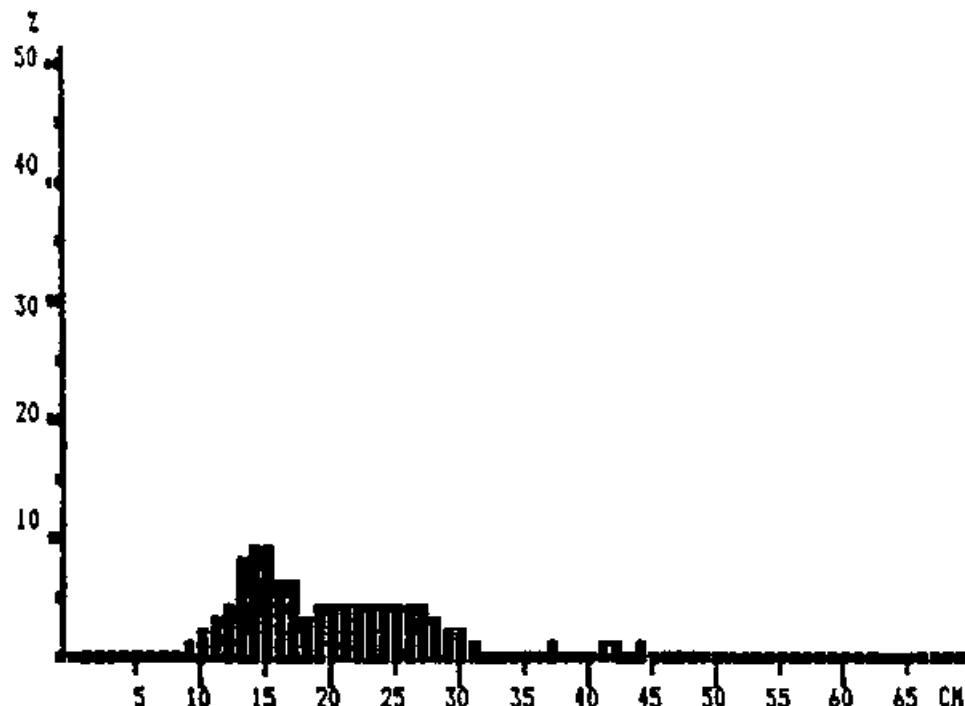
MEAN LENGTH = 12.04cm N= 529

NUMBERS OF SUBSAMPLES: 4

SAMPLES FOUND BETWEEN ST. NO. 470 AND 489.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Rhomboplites aurorubens - TOTAL



Pooled sample (simple adding)

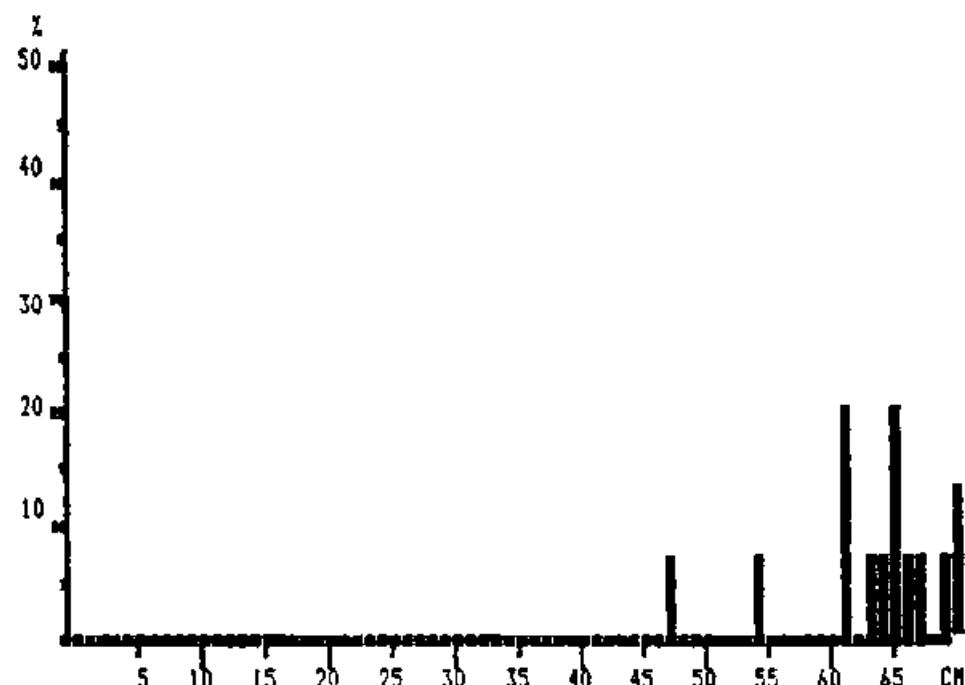
MEAN LENGTH = 19.78cm N= 931

NUMBERS OF SUBSAMPLES: 16

SAMPLES FOUND BETWEEN ST. NO. 460 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Lutjanus apodus - TOTAL



Pooled sample (simple adding)

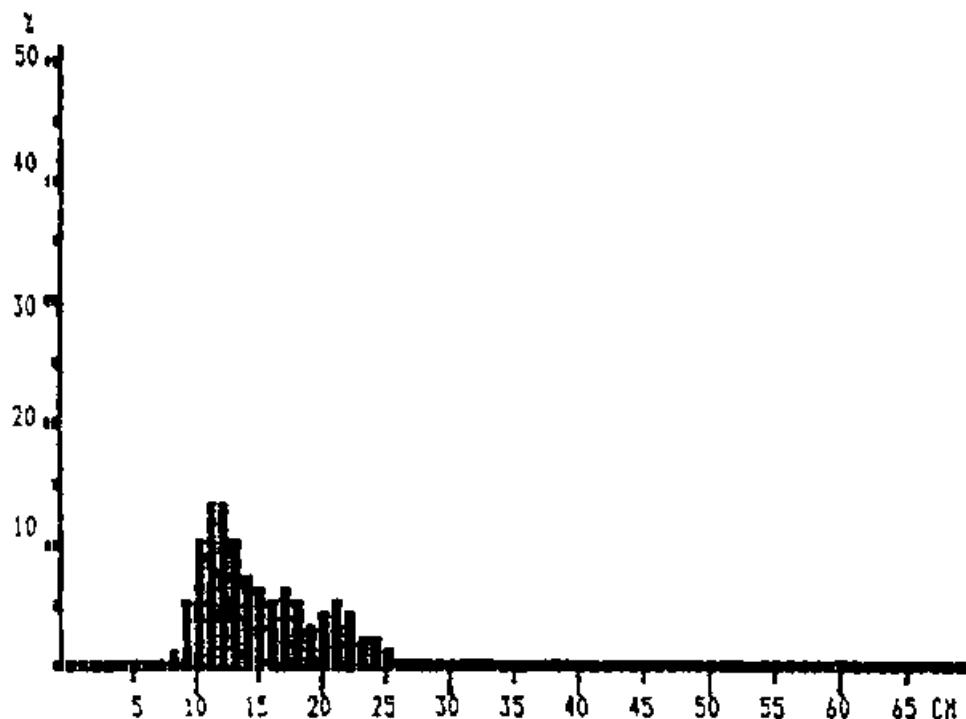
MEAN LENGTH = 63.20cm N= 15

NUMBERS OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 509 AND 509.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 509.

Pristipomoides macrophthalmus - TOTAL



Pooled sample (simple adding)

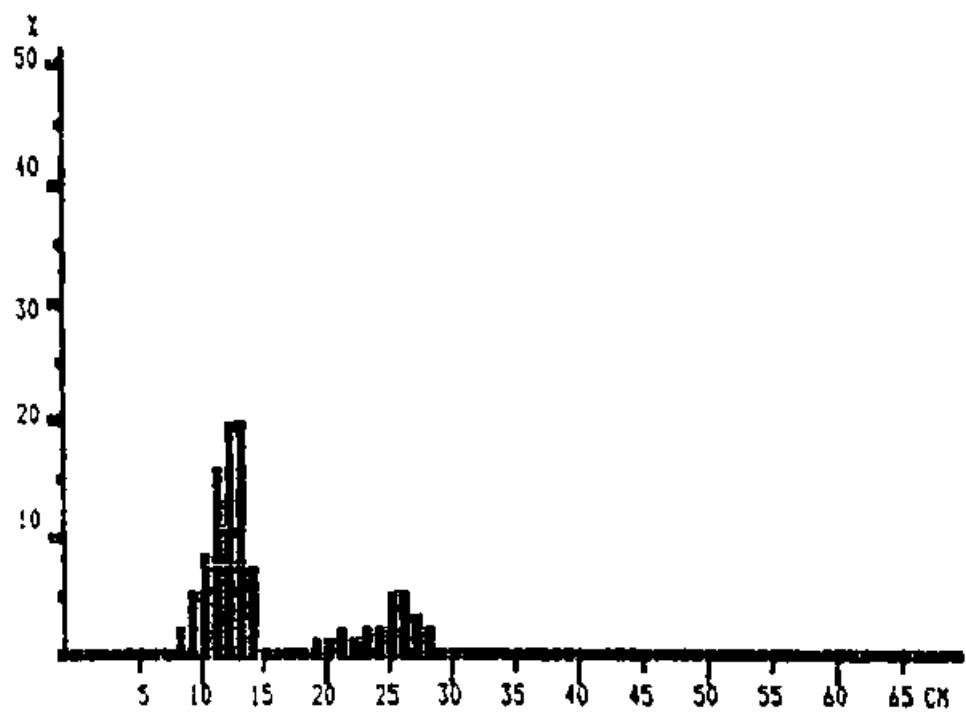
MEAN LENGTH = 14.59cm N= 1016

NUMBERS OF SUBSAMPLES: 14

SAMPLES FOUND BETWEEN ST. NO. 458 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Trachurus lathami - TOTAL



Pooled sample (simple adding)

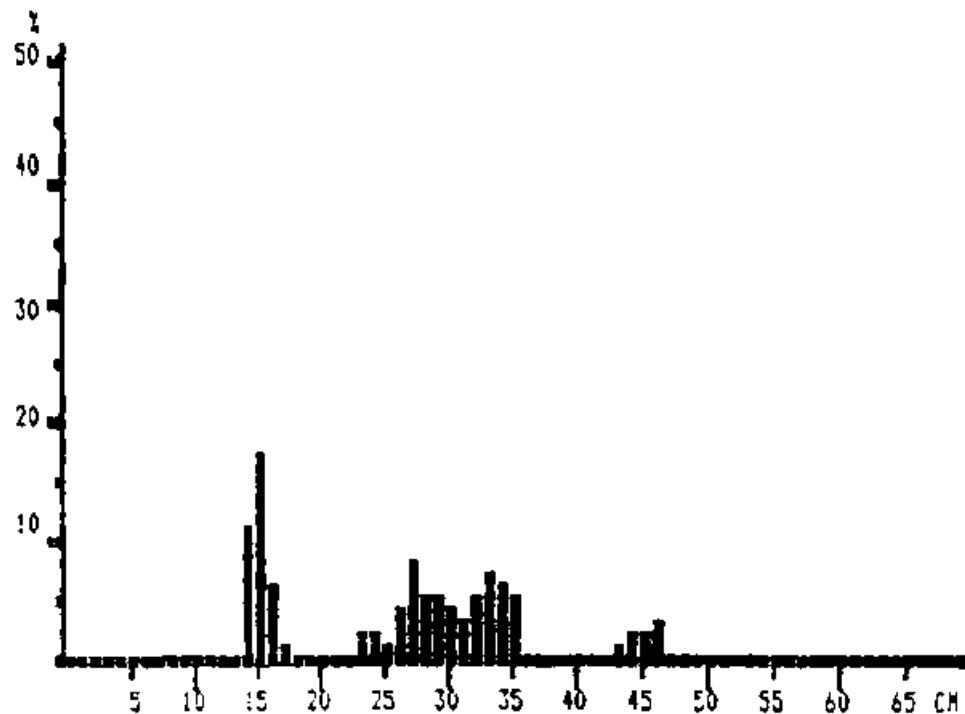
MEAN LENGTH = 14.93cm N= 1611

NUMBERS OF SUBSAMPLES: 19

SAMPLES FOUND BETWEEN ST. NO. 458 AND 562.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Selene spixii - TOTAL



Pooled sample (simple adding)

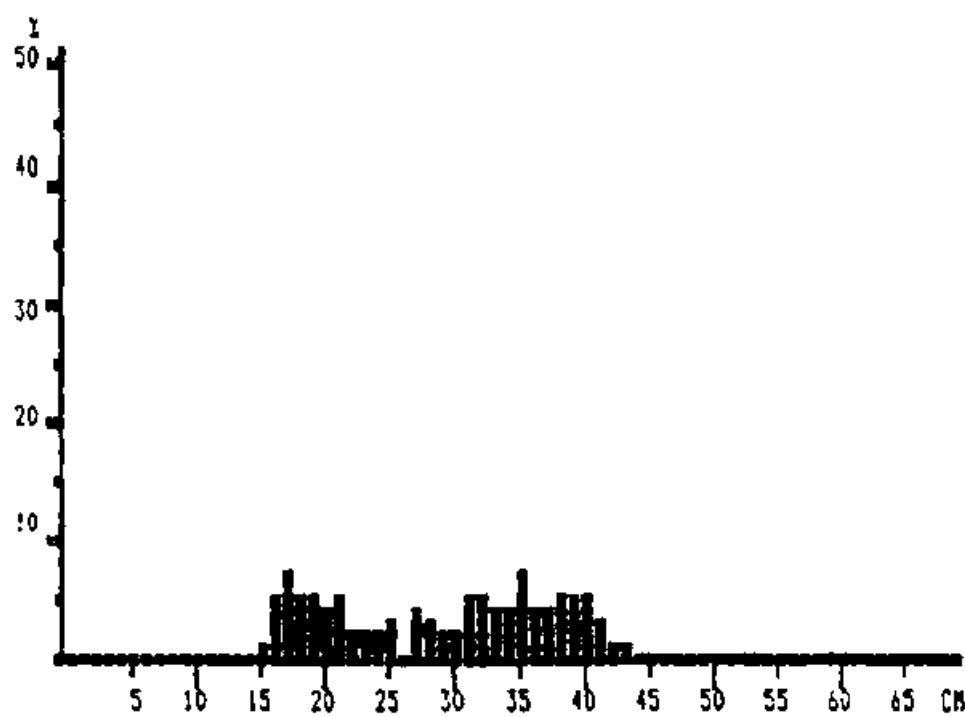
MEAN LENGTH = 25.97cm N= 123

NUMBERS OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 455 AND 553.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Micropogonias furnieri - TOTAL



Pooled sample (simple adding)

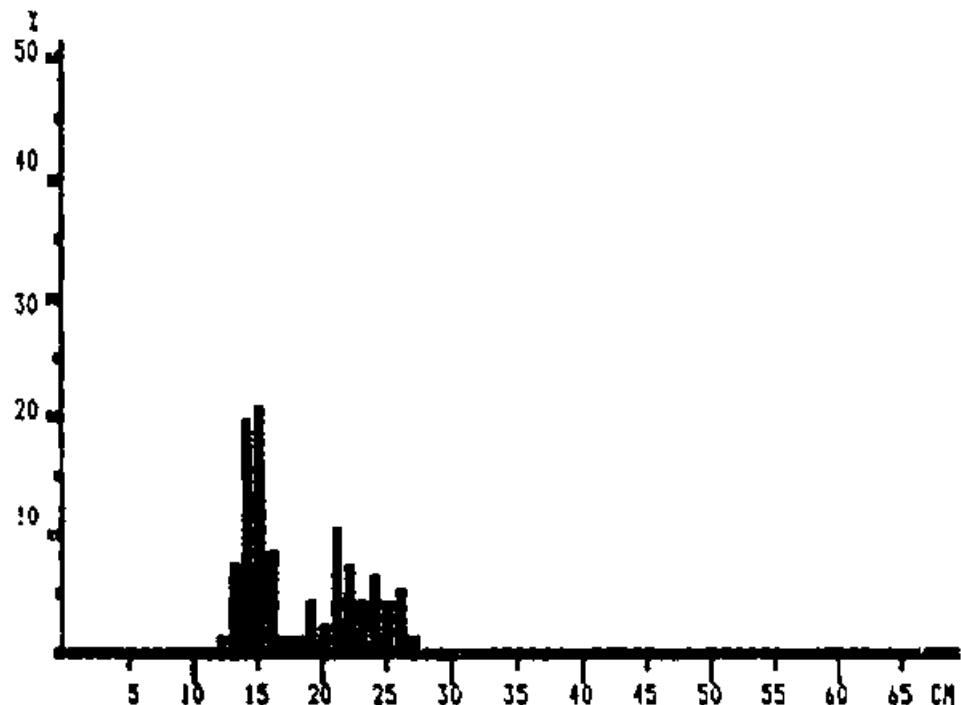
MEAN LENGTH = 28.97cm N= 306

NUMBERS OF SUBSAMPLES: 12

SAMPLES FOUND BETWEEN ST. NO. 488 AND 558.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Scomber japonicus - TOTAL



Pooled sample (simple adding)

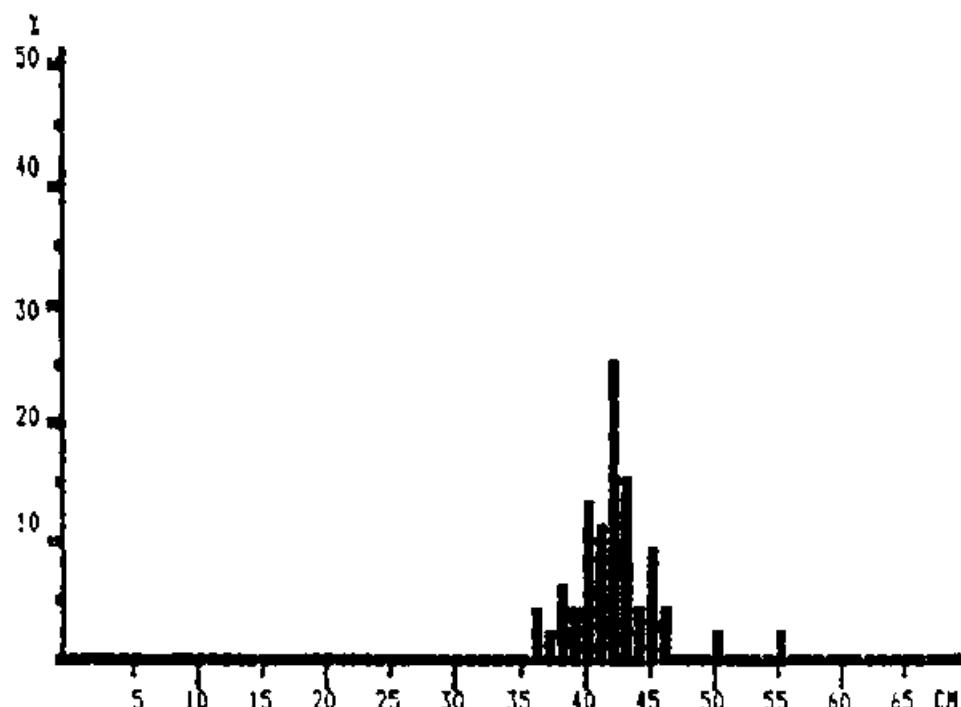
MEAN LENGTH = 18.03cm N= 374

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 469 AND 537.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Scomberomorus cavalla - TOTAL



Pooled sample (simple adding)

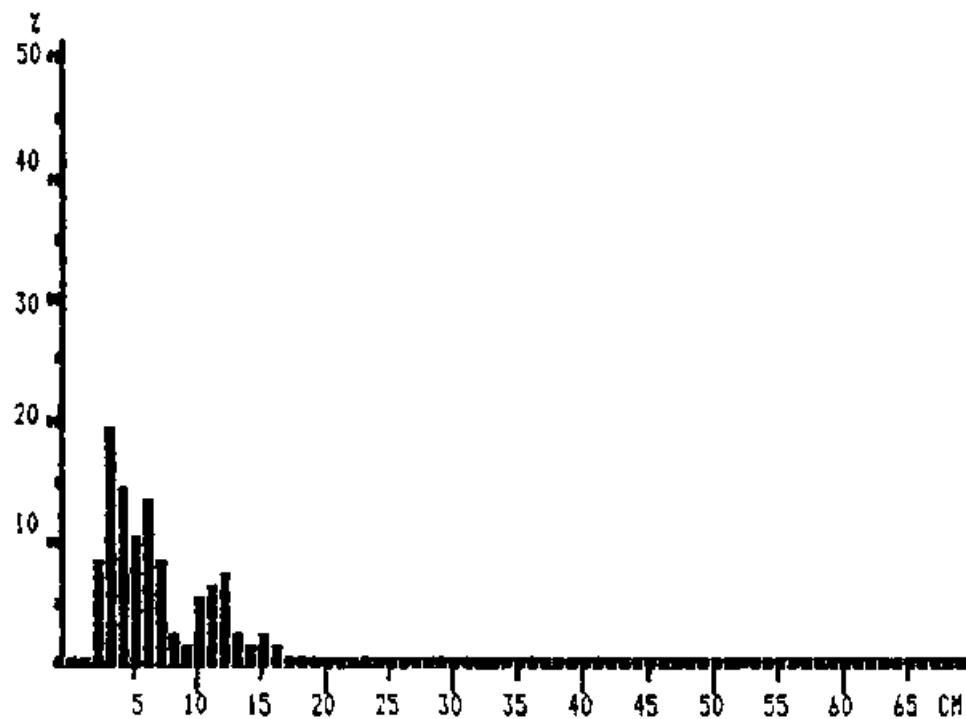
MEAN LENGTH = 42.02cm N= 53

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 485 AND 560.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Loligo paelei - TOTAL



Pooled sample (simple adding)

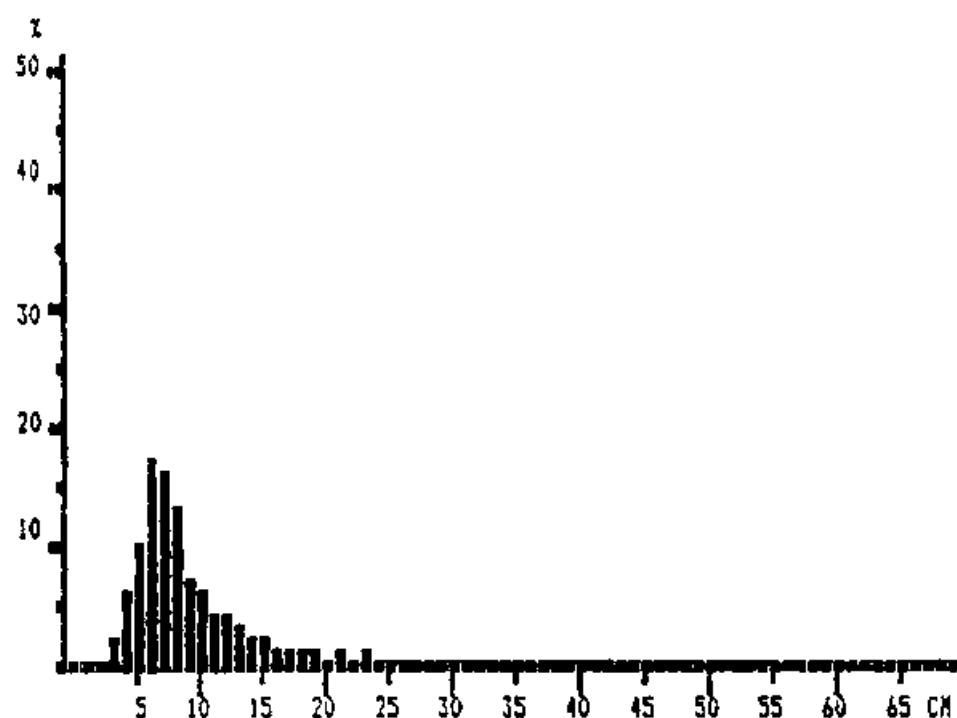
MEAN LENGTH = 6.37cm N= 256

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 492 AND 535.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Loligo plei - TOTAL



Pooled sample (simple adding)

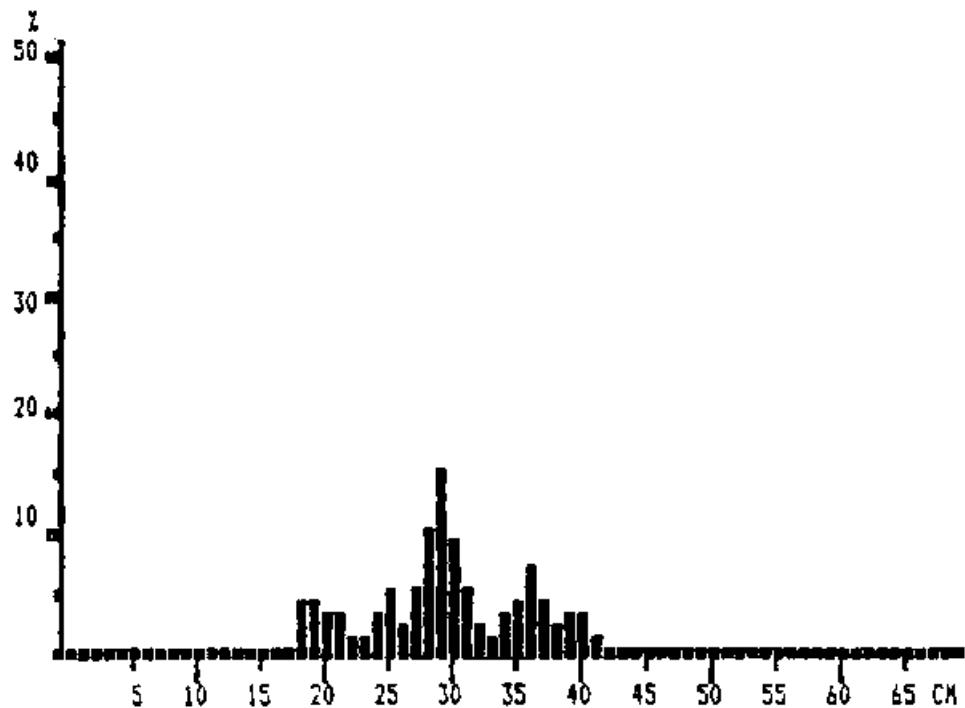
MEAN LENGTH = 8.64cm N= 1572

NUMBERS OF SUBSAMPLES: 17

SAMPLES FOUND BETWEEN ST. NO. 462 AND 560.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Sphyraena picudilla - TOTAL



Pooled sample (simple adding)

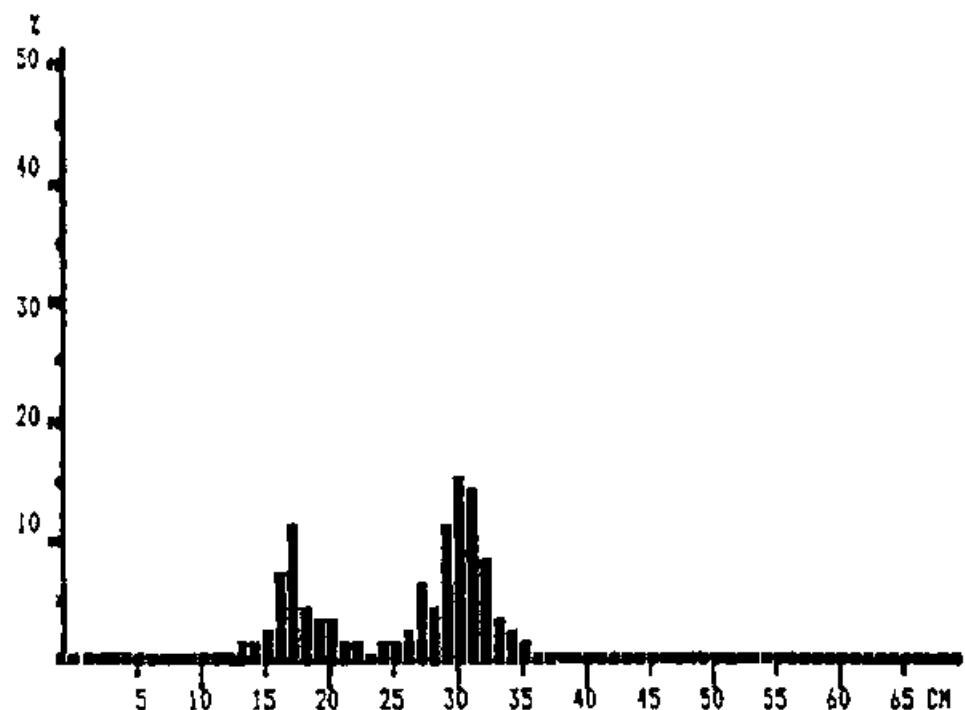
MEAN LENGTH = 29.41cm N= 313

NUMBERS OF SUBSAMPLES: 6

SAMPLES FOUND BETWEEN ST. NO. 485 AND 562.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Peprilus paru - TOTAL



Pooled sample (simple adding)

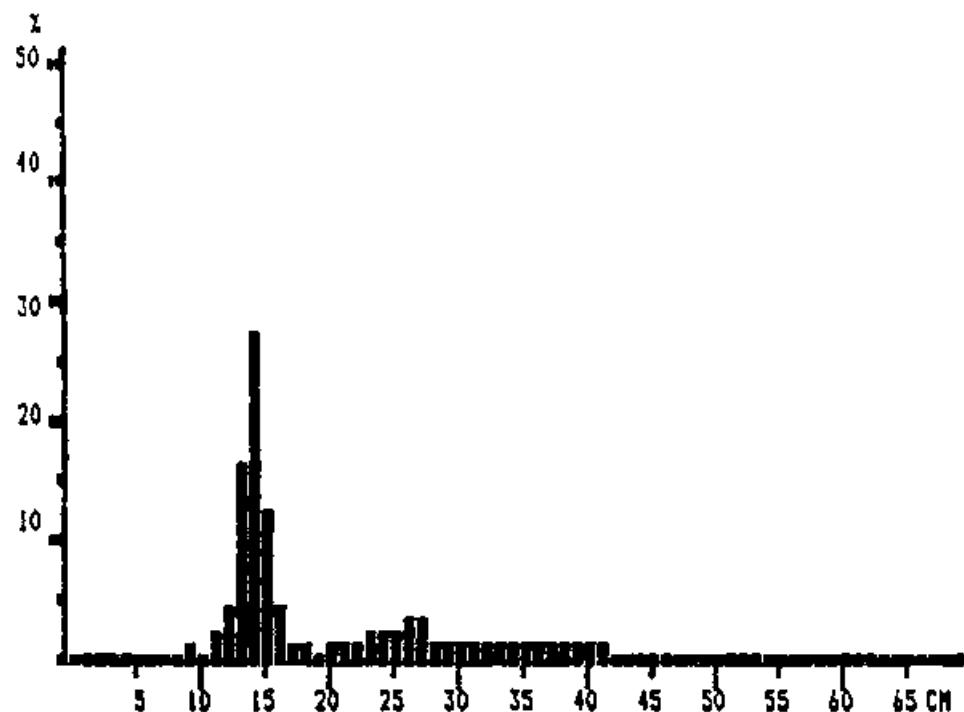
MEAN LENGTH = 25.84cm N= 178

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 455 AND 553.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Priacanthus arenatus - TOTAL



Pooled sample (simple adding)

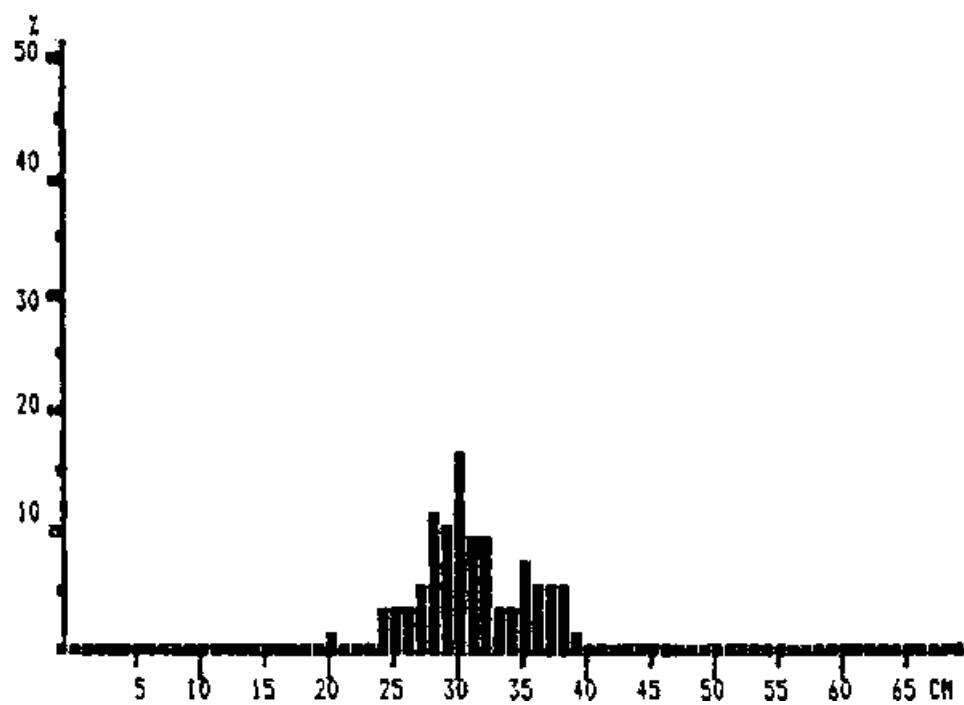
MEAN LENGTH = 18.85cm N= 538

NUMBERS OF SUBSAMPLES: 8

SAMPLES FOUND BETWEEN ST. NO. 492 AND 463.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Calamus pennatula - TOTAL



Pooled sample (simple adding)

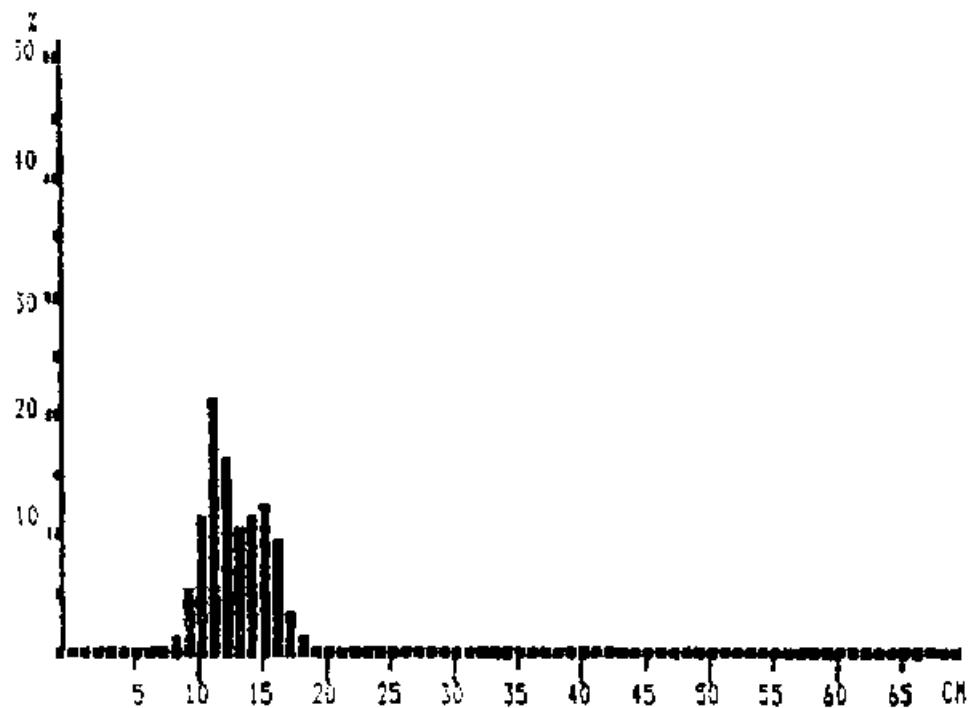
MEAN LENGTH = 30.92cm N= 123

NUMBERS OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 504 AND 519.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Upeneus parvus - TOTAL



Pooled sample (simple adding)

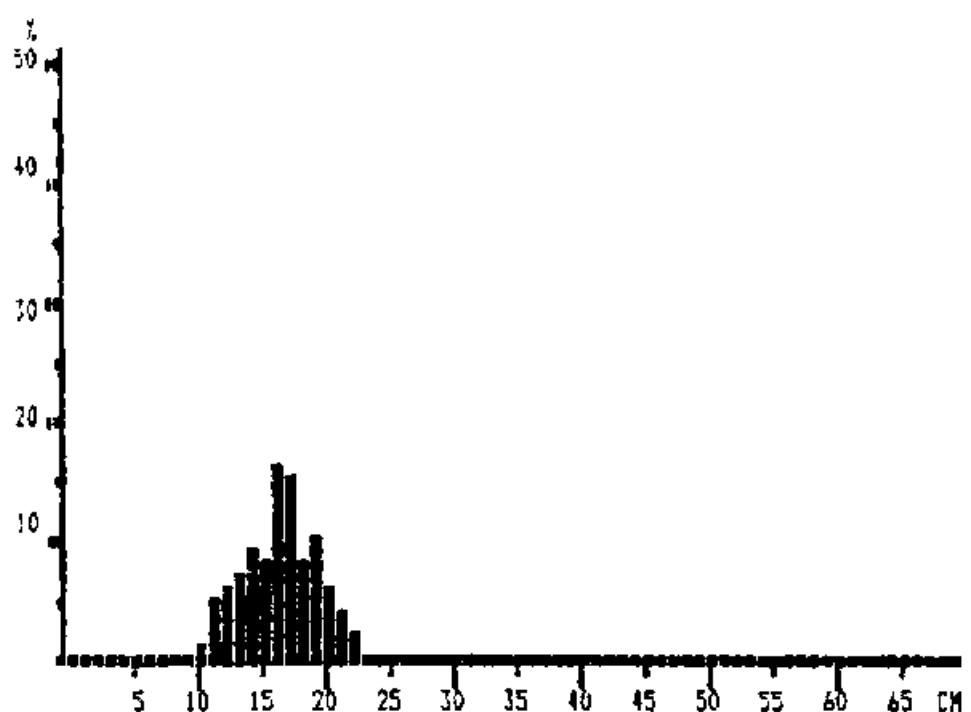
MEAN LENGTH = 12.70cm N= 904

NUMBERS OF SUBSAMPLES: 10

SAMPLES FOUND BETWEEN ST. NO. 458 AND 565.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Penaeus brasiliensis - TOTAL



Pooled sample (simple adding)

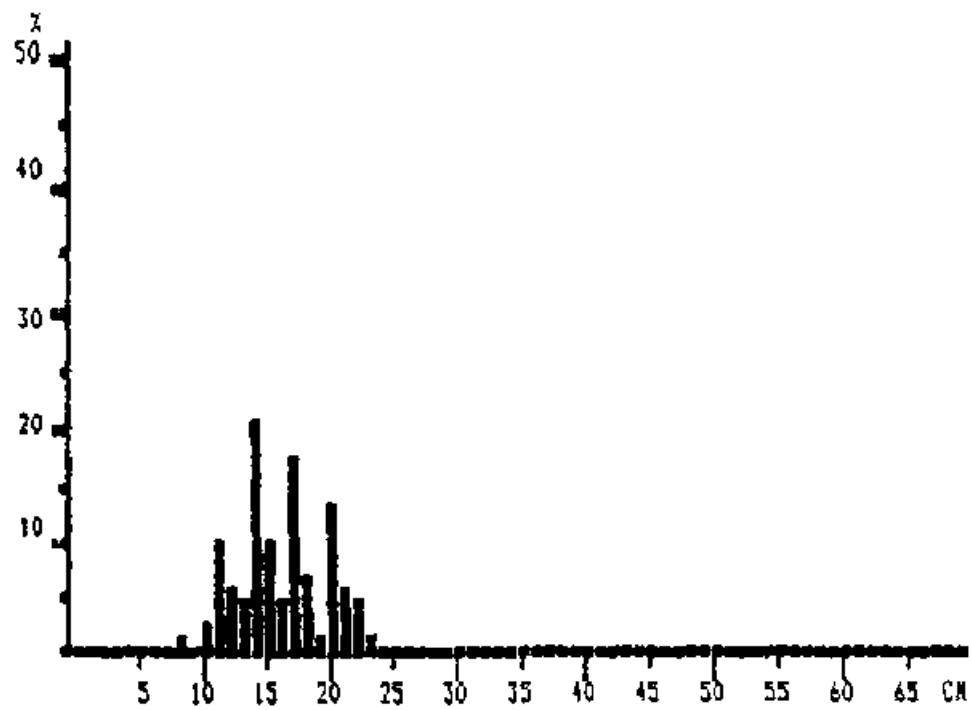
MEAN LENGTH = 16.14cm N= 216

NUMBERS OF SUBSAMPLES: 7

SAMPLES FOUND BETWEEN ST. NO. 466 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Penaeus notialis - TOTAL



Pooled sample (simple adding)

MEAN LENGTH = 15.91cm N= 98

NUMBERS OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 484 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 455 AND 567.

Preliminary Report Cruise No II. - Surveys of the Fish Resources in the Shelf Region between Colombia and Suriname - Part 4: Colombia from the Guajira Peninsula to The Coast off Cartagena. 14 - 21 June 1988.

CRUISE REPORTS "DR FRIDTJOF NANSEN"

NORAD - FAO/UNDP GLO 82/001

IMR, Bergen

The research programme SURVEYS OF THE FISH RESOURCES IN THE SHELF REGION FROM COLOMBIA TO SURINAME 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 is being planned jointly by the participating countries, FAO's Department of Fisheries and the Institute of Marine Research, Norway. Its execution is the responsibility of the Institute of Marine Research in cooperation with FAO and national fisheries administrations.

The programme will comprise several coverages of the region. This cruise report describes the work and some of the findings of the first survey. Full reports will be issued after the completion of the programme.

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1. Introduction

Survey objectives.

The general objectives of the programme as discussed and agreed at the planning meeting in Trinidad, 12-14 January are summarized in the Preliminary Report of Cruise No. I, Part I. In the following the objectives for Survey II are further clarified and amended on the basis of experience from Survey I and from discussions with representatives from the participating countries. Due to unforeseen problems with the vessels maintenance in the repair yard in Curacao the start of Survey II had to be postponed and although the cruise was prolonged, the cruise time had to be cut by 5 days compared with the original plan. During Survey I a fault in the hydraulic system resulted in that no trawling were carried out after passing the Peninsula of Guajira until Santa Marta. It was therefore agreed that the fishing should be intensified in the second coverage of this area. Under these circumstances it was realized that the coverage of the Colombian shelf could not be complete. It was agreed that priority should be given to the investigation of the shelf area east of Santa Marta, and that the programme should be extended westward so far as time permitted. The Colombian participants should however be consulted about details of the programme.

Participation.

The following scientific staff participated from Colombia:

- From Punto Fijo to Santa Marta: Jorge Mercado, Jorge Infante, Carlos Guerrero.

From Venezuela the following participated from Punto Fijo to Santa Marta:

- Diana Zaera, Luisa Franco, Wilmer Rojas

From FAO:

- Alvaro Abella.

From IMR the staff was:

- J. Hamre, H. Ullebust, M. Dahl, and H. Vorren.

2. Narrative

The vessels itinerary was as follows:

- Departure Punto Fijo: 14 June
- Arrival Santa Marta: 21 June

Figure 1 shows the course tracks and the fishing - and hydrographical stations worked. From departure Punto Fijo the work started with a coverage of the mouth of the Gulf of Venezuela, both the Venezuelan and Colombian side. This part of the activities are reported in Cruise Report II, Part 3. The hydrographical profile off the Peninsula Guajira northwards was repeated and two new sections were worked, one off Riohacha and another off the Rosario Island. The cruise ended in the shelf area of Golfo de Morrosquillo. The bottom trawl stations worked during daytime form the basic data for swept area biomass estimation. Course tracks and section work were therefore adjusted so that most of the prepositioned trawl stations could be worked in day hours. Trawling fore deep sea shrimps at depth from 200m downwards was planed in various areas and 6 hauls were made. Several hours of searching for acceptable bottom conditions was spent on the slope without successful result, specially between Santa Marta and Cartagena. In the shelf area beyond Cartagena muddy and coraline bottom did hamper the station work considerably. 40 trawl stations were worked and 900 nm steamed.

3. Hydrography

Figure 2 shows the hydrographical sections off the Peninsula of Guajira, off Riohacha and off the Rosario Island. The profile off Guajira shows evidence of a light upwelling, whereas the isolines of the Riohacha section show no sign of vertical movementes of the water masses. In the Rosario section the hydrographical situation is characterized by an upper layer of light water inshore with low salinity and high temperature, probably effected by the discharge from the Magdalena river.

4. Fish distribution

Figure 3 illustrates the distribution of all fish as observed with the acoustic integration system. This will mainly show the pelagic species, but some demersal fish which lifts off the bottom, especially at night, will also be included. The units of acoustic reflection is $0.1 \times m^2/nm^2$ reflecting surface. This unit is not directly proportional to fish density, since small sized fish gives a higher acoustic reflection per unit weight than bigger fish, but in gross terms the figures give a fair picture of the main distributional features of the pelagic fish in the area. An arbitrary scale has been used to illustrate different levels of concentration. The acoustic data will later be used for biomass estimates.

On the basis of the bottom trawl samples, the acoustic registrations around the Guajira Peninsula were identified as sardines, various species of carangids and mackerels. The resources were not substantial, and formed more occasional patches than uniform aggregations of greater extent. Further west the acoustic registrations were scarce, with no patches exceeding a very scattered general picture.

5. Results of fishing experiments

Most of the fishing forms part of a programme for "swept area" biomass estimation, and for this purpose the trawl stations are positioned in advance more or less randomly and with no intention of obtaining high catches. The catch rates thus do not simulate those of a commercial fishery, and they are presented here merely to give a rough impression of the general occurrence, composition and abundance of fish on the shelf. The results may thus not be comparable to catch rates from previous fishing surveys. The data from the prepositioned trawl hauls will later be used for estimates of biomass of groups of demersal species.

The bottom trawl used is a shrimp-cum-fish trawl (see Annex 1) and it may not be as efficient for shrimp as specially designed shrimp-trawls.

Table 1 shows all hauls carried out on the shelf from the Guajira Peninsula to Santa Marta, and grouped according to main categories. The demersal group comprises the families Lutjanidae (snappers), Serranidae (groupers), Sciaenidae (croakers), Priacanthidae (glasseyes) and Pomadasidae (grunts). Pelagic group includes Clupeidae (sardines), Carangidae, Scombridae, Sphyraenidae (barracuda) and Trichiuridae (hairtails). The average catch of demersals is abt. 76 kg/hour, while pelagic fish is 174 kg/hour. Squids and shrimps are scarce in shallow waters, but in the hauls below 200m depth the catch rates of shrimps range from 6 kg/hour to 26 kg/hour. Other fish, generally with a low market value, is at average caught at 72 kg/hour. The total mean catch rate was abt. 335 kg/hour, which is some 50% above the catch rate obtained on the western part of the Venezuela coast. The catch composition by family groups is shown in Table 2 and 3 for demersal and pelagic fish respectively. Demersals are dominated by snappers, the pelagic by sardines and carangids. Anchovies are absent. This family composition is mostly the same as that found in the catches off the Venezuela west coast.

Table 1. COLOMBIA, EASTERN PART. Catch rates for main groups in bottom trawl stations standardized to kg/hour.

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
568	453	6.00			1.20	26.50	66.60
569	67	32.20	134.60		0.60		25.40
570	24	86.30	2.00				1.80
571	70	77.00	91.00		2.60		18.00
572	66	188.10	270.90	28.00	14.40		9.90
573	164	5.20	20.40	26.00	7.60		44.40
574	44	24.90	114.08	3.00	9.00	0.14	17.62
575	59	235.90	146.50		1.40		65.80
576	255	3.90	1.80	1.20	0.60	25.20	101.40
577	252	5.60	18.60	4.40	6.00	12.60	79.00
578	309	16.40		58.80	3.20	6.10	60.40
579	404	21.82				15.71	238.34
580	70	80.74	140.74	2.40			83.31
581	45	1510.20	47.60				51.20
582	67	172.00	285.40			5.00	27.00
583	36	232.50	25.20		10.00		54.70
584	71	286.40	110.44				154.00
585	33	1.00	15.00				86.30
586	62	423.40	113.80				32.60
587	23	32.80	6.40				152.20
588	22	722.80	79.60	6.40			156.20
589	69	8.80	168.40		1.80		222.40
590	61	185.00	31.00				36.00
591	110	2.61	51.92				16.30
592	100	0.20	33.40		2.40		22.50
MEAN		174.47	76.35	5.21	2.43	3.65	72.93

Table 2. COLOMBIA, EASTERN PART. Catch rates by families for demersal fish, kg/hour.

ST. NO.	DEP.	Croakers	Snappers	Grunts	Groupers	Glasseyes	Other
569	67		84.60		44.00	18.00	46.20
570	24		2.00				88.10
571	70		87.80			4.80	96.00
572	66	270.00	0.90				240.40
573	164	0.80	18.80		0.80		83.20
574	44		105.94	3.90	0.14	0.44	58.32
575	59		94.90	32.20	18.00	12.60	291.90
580	70		81.08	58.63	56.57		110.91
581	45		47.60			10.00	1551.40
582	67		214.00	10.00	43.40		222.00
583	36		20.70		1.00	2.00	298.70
584	71		64.64	94.40	18.60		373.20
585	33		2.00			4.20	96.10
586	62		94.60				475.20
587	23		0.40		0.40	1.20	189.40
588	22		70.00				895.00
589	69		157.20	180.00			64.20
590	61		31.00			15.00	206.00
591	110		48.01				22.82
592	100		33.40	0.10		2.30	22.70
MEAN		13.54	62.98	18.96	9.15	3.53	271.59

Table 3. COLOMBIA, EASTERN PART. Catch rates by families of pelagic fish in bottom trawl hauls, kg/hour.

ST. NO.	DEP.	Sardines	Hairtails	Carangids	Scombrids	Barracuda	Other
569	67	4.40	1.80	16.40	14.00		160.60
570	24			80.60	1.30		3.80
571	70	1.40	6.00	53.60	15.20	0.80	111.60
572	66		16.20	171.00		0.90	323.20
573	164		5.20				98.40
574	44	4.20		13.20	6.60	0.90	143.84
575	59	112.00		60.20	0.70	63.00	213.70
580	70	19.54		57.09	4.11		226.45
581	45	1282.60		227.60			98.80
582	67	66.00		102.00	4.00		317.40
583	36	156.00		70.50	6.00		89.90
584	71	88.00		198.40			264.44
585	33					1.00	101.30
586	62	244.80		178.60			146.40
587	23	11.60		5.20	16.00		158.60
588	22	720.00			2.80		242.20
589	69			8.80			392.60
590	61	21.00		148.50	6.50	9.00	67.00
591	110		2.61				68.22
592	100			0.20			58.30
MEAN		136.58	1.59	69.59	3.86	3.78	164.34

Table 4 summarizes the catch rates by broad groups for the shelf area between Santa Marta and Golfo de Morrosquillo. The total mean catch rate is 75 kg/hour only, and seen in light of the general hydrographical condition of the area (Fig. 2c) the result of the fishing experiments confirms that this is a region of very low production.

The complete record of all hauls made are shown in Annex II, and pooled length samples of the most common species caught are shown in Annex III.

Table 4. COLOMBIA, WESTERN PART. Catch rates for main groups in bottom trawl stations standardized to kg/hour.

ST. NO.	DEP.	Pelagic	Demersal	Shark	Squid	Shrimp	Other
593	97	4.20	57.80		1.80	9.60	25.90
594	240	0.39	46.96	1.95		1.30	15.25
595	44	6.70	6.60			1.20	24.00
596	101	2.20	24.40		1.20	1.40	8.40
597	30		0.30		0.20		5.30
598	46	12.00	42.90	3.00			15.40
599	35	1.00	65.70		0.20		21.60
600	51	136.84	45.00		2.10	0.48	51.10
601	170	3.18	31.41	2.47	6.00	0.35	12.54
602	64	10.50	24.10	6.80	12.40		20.10
603	39	3.00	0.60		1.20	2.40	7.20
604	71	8.40	4.70	15.20	4.40	0.10	12.30
605	58	6.00	24.00		6.00		28.00
606	80	3.50	15.50	1.40	5.60	0.80	11.20
607	28	10.60	7.20				26.00
608	22	0.23	29.53				29.08
MEAN		13.05	26.67	1.93	2.57	1.10	19.59

Done in Santa Marta
21 June 1988

Figure 1. Course tracks, fishing stations and hydrographic profiles.

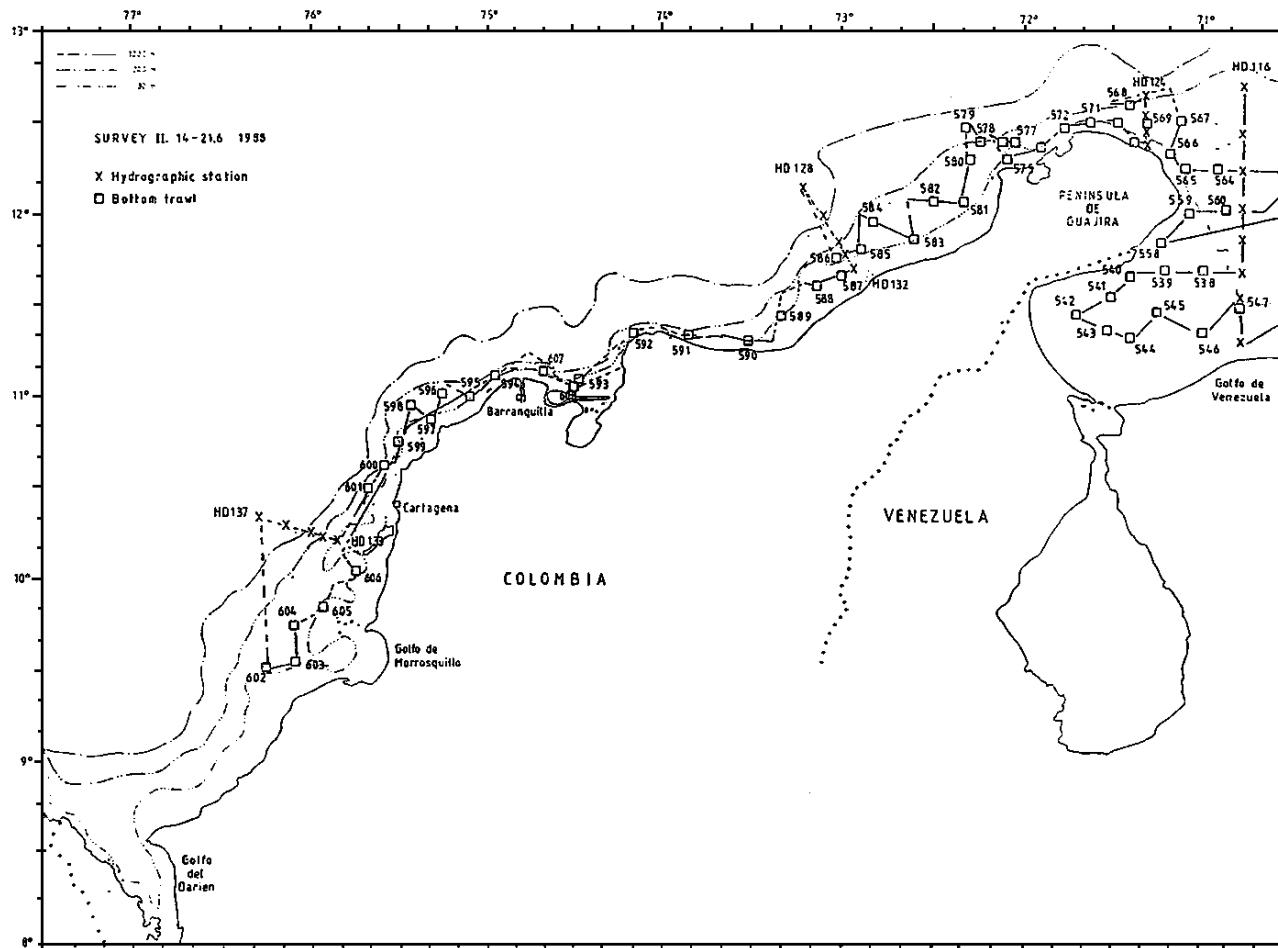
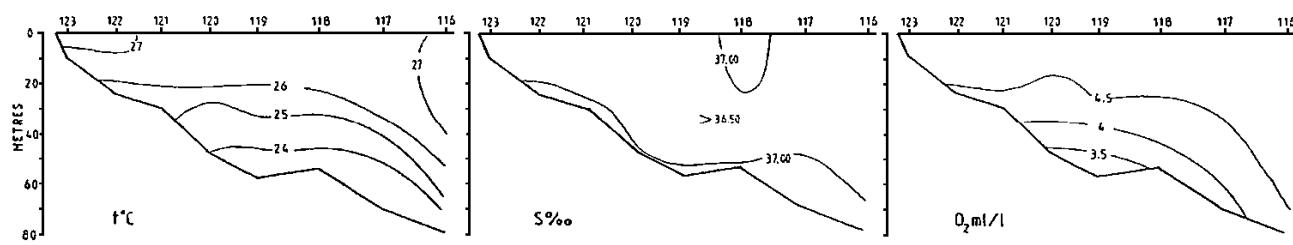


Figure 2a. Hydrographic profiles.

GULF OF VENEZUELA 11 - 13.6 1988



PENINSULA DE LA GUAJIRA 16.6 1988

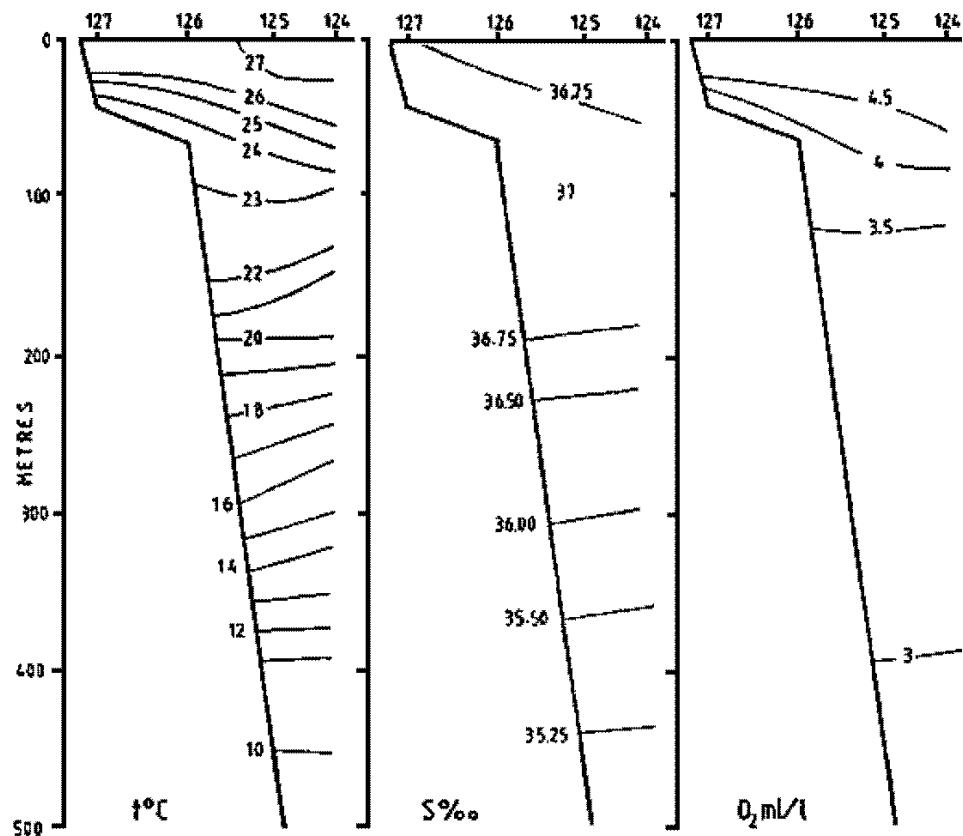
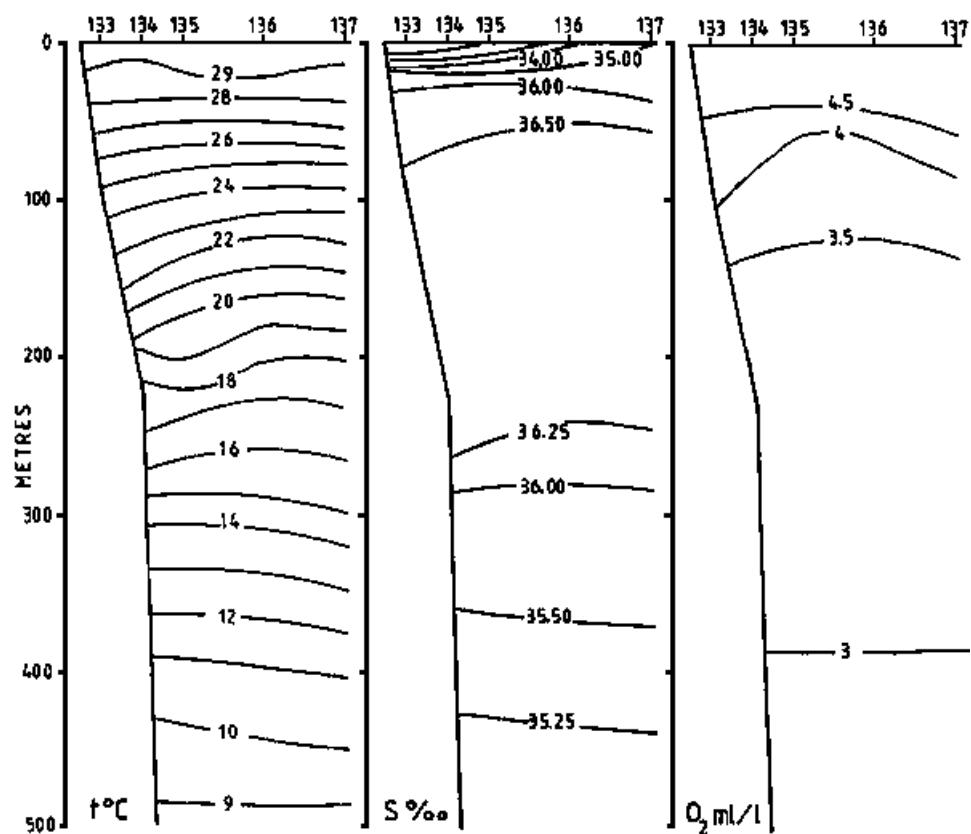


Figure 2b. Hydrographic profiles.

ISLAS DEL ROSARIO 19 - 20.6 1988



RIOHACHA 17 - 18.6 1988

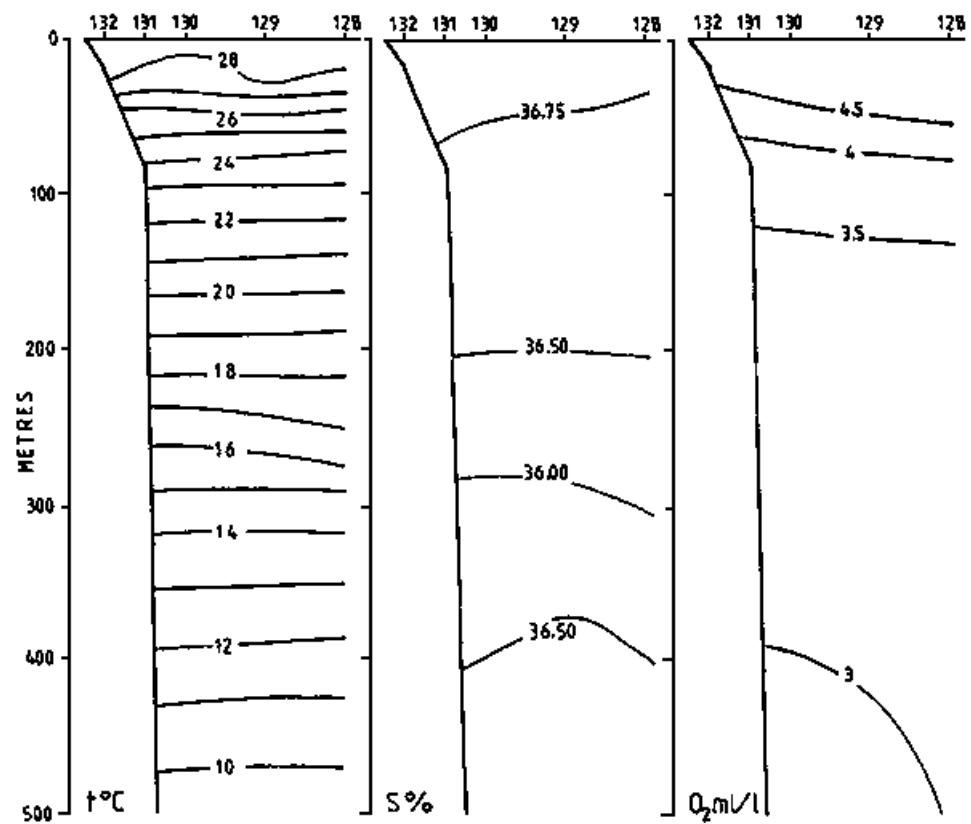
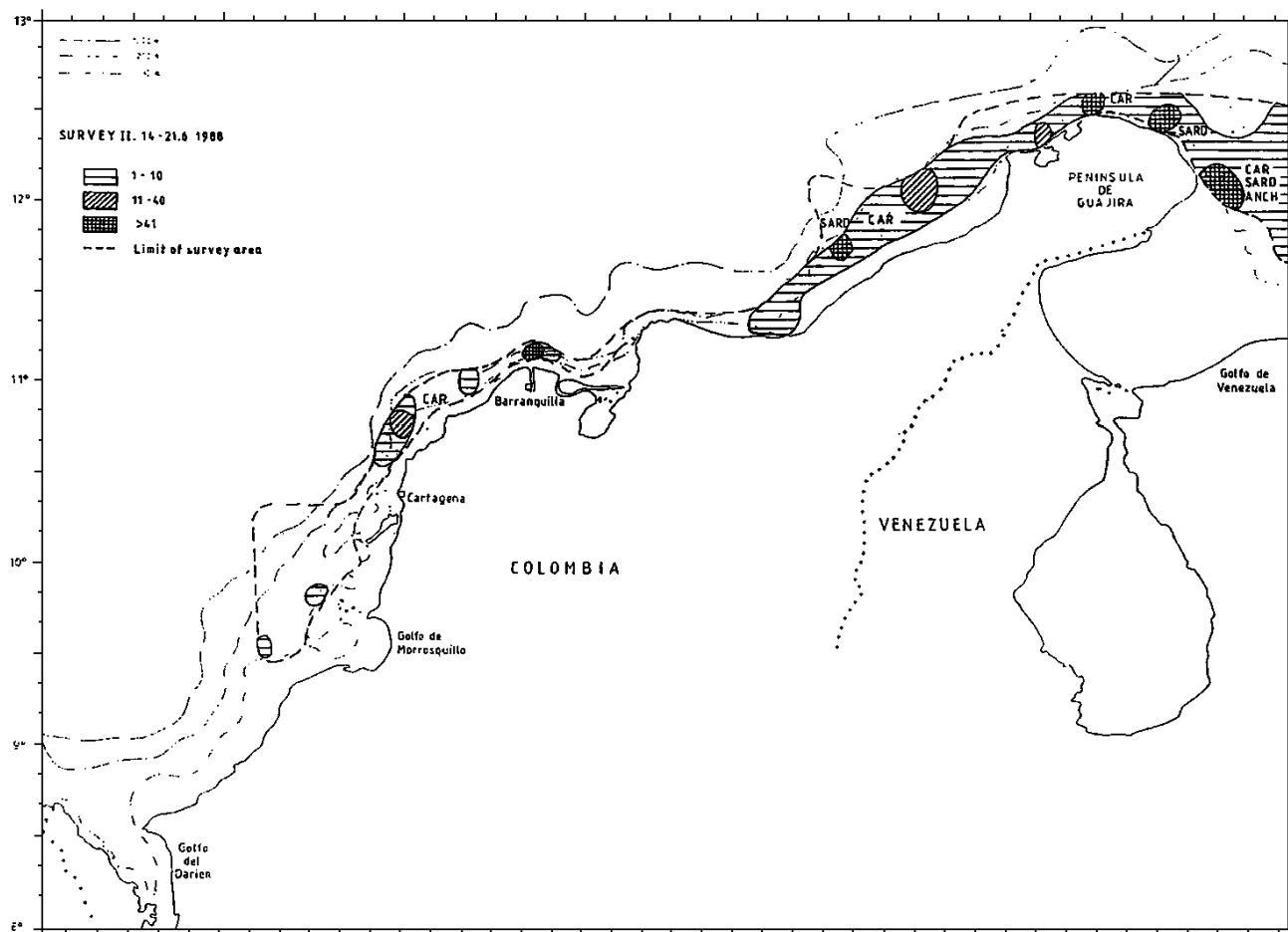


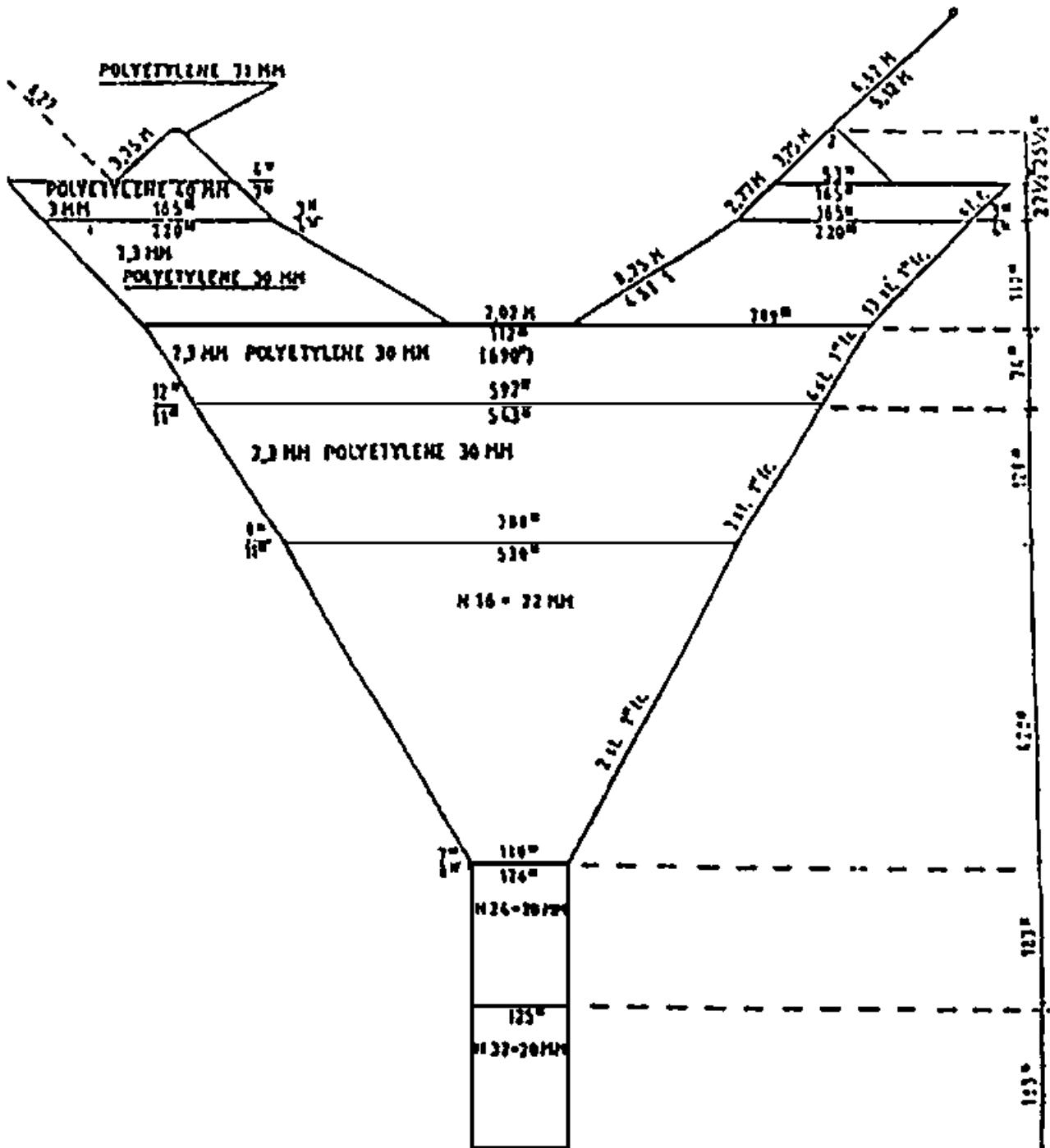
Figure 3. Distribution of pelagic fish from acoustic system.



ANNEX 1. DESCRIPTION OF TRAWL - APENDICE 1.

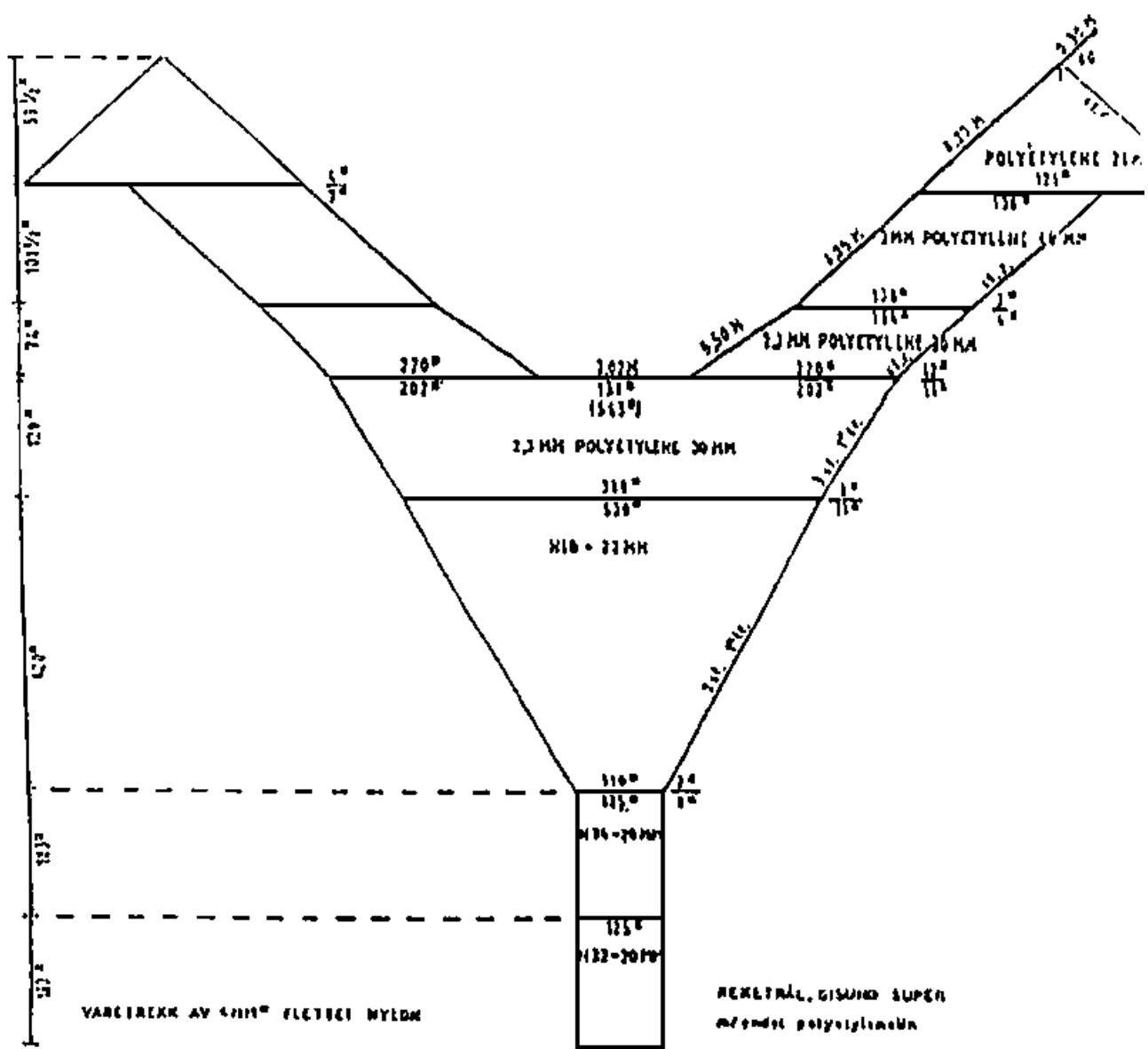
DESCRIPCION DE RED DE ARRASTRE

Upper part



Headline 41 m
Sweep 40 m

Lower part



Groundrope 47 m
Sweep 40 m

ANNEX 2. RECORDS OF FISHING STATIONS

PROJECT STATION: 558

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1150
 start stop duration Long W 7114
 TIME : 01:20:00 01:50:00 30 (min) Purpose code: 3
 LOG : 4133.10 4134.40 1.30 Area code : 3
 FDEPTH: 17 16 GearCond. code:
 BDEPTH: 17 16 Validity code:
 Towing dir: 38° Wire out: 100 m Speed: 25 kn*10

Sorted: 64 Kg Total catch: 64.30 CATCH/HOUR: 128.60

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
Dasyatis guttata	56.00 14		43.55	
Micropogonias furnieri	20.60 76		16.02	527
Shrimps, small, non comm.	7.20 2456		5.60	
Xiphopenaeus kroyeri	6.00 40		4.67	
Opisthonema oglinum	4.80 666		3.73	
Lolligancula sp	3.60 378		2.80	
Anchoa sp	3.60 2362		2.80	
Chirocentrodon bleekeriianus	3.60 614		2.80	
Lepophidium profundorum	2.40 14		1.87	
Gynodus poeyi	2.40 28		1.87	
Cynoscion sp	2.40 212		1.87	
Chloroscombrus chrysurus	2.40 240		1.87	
Eucinostomus argenteus	2.40 66		1.87	
Lutjanus synagris	2.40 6		1.87	
Prionotus punctatus	1.20 56		0.93	
Parichthys sp	1.20 226		0.93	
Ctenosciaena gracilicirrhus	1.20 312		0.93	
Scomberomorus regalis	1.20 2		0.93	
Centropomus undecimalis	0.80 2		0.62	
Cynoscion jamaicensis	0.80 2		0.62	
RHINOBATHIDAE	0.80 2		0.62	
Eucinostomus guia	0.60 56		0.47	
Sphoeroides testudineus	0.60 56		0.47	
Penaeus notialis	0.20 0		0.16	
Penaeus schmitti	0.20 4		0.16	
Haemulon sp	0.00 2			
Total	-----	128.60	-----	100.03

PROJECT STATION: 559

DATE: 15/ 6/08 GEAR TYPE: BT No:1 POSITION: Lat N 1150
 start stop duration Long W 7113
 TIME : 03:18:00 03:48:00 30 (min) Purpose code: 3
 LOG : 4147.20 4148.50 .1.30 Area code : 3
 FDEPTH: 11 12 GearCond.code:
 BDEPTH: 11 12 Validity code:
 Towing dir: 90° Wire out: 75 m Speed: 30 kn*10

Sorted: 56 Kg Total catch: 55.65 CATCH/HOUR: 111.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Chiurocentrodon blockeri</i> anum	23.20 3712	20.84		
<i>Trichiurus lepturus</i>	19.60 96	17.61	528	
<i>Cynoscion virescens</i>	7.40 22	6.65		
<i>Micropogonias furnieri</i>	7.20 44	6.47		
<i>Scomberomorus regalis</i>	6.60 8	5.93		
<i>Dasyatis guttata</i>	6.00 2	5.39		
<i>Pellona harroweri</i>	5.80 1276	5.21		
<i>Dagre marinus</i>	5.80 10	5.21		
<i>Ctenomys gracilicirrhus</i>	3.40 680	3.05		
S H R I M P S	3.40	3.05		
<i>Anchoa spinifer</i>	2.80 112	2.52		
<i>Pomacanthus arcuatus</i>	2.60 2	2.34		
<i>Eucinostomus gula</i>	2.20 22	1.98		
<i>Cynoscion jamaicensis</i>	2.20 14	1.98		
<i>Selene spixii</i>	2.20 34	1.98		
<i>Porichthys sp</i>	1.80 96	1.62		
<i>Larimus breviceps</i>	1.60 6	1.44		
<i>Lycengraulis grossidens</i>	1.20 24	1.08		
SCIAENIDAE	1.00 20	0.90		
<i>Lolligancula sp</i>	1.00 280	0.90		
<i>Penaeus schmitti</i>	1.00 18	0.90		
<i>Bagre bagre</i>	0.60 12	0.54		
<i>Selene setapinnis</i>	0.60 132	0.54		
<i>Opisthonema oglinum</i>	0.60 2	0.54		
<i>Peprius paru</i>	0.60 4	0.54		
<i>Penaeus notialis</i>	0.40 28	0.36		
<i>Chloroscombrus chrysourus</i>	0.30 2	0.27		
<i>Haemulon steindachneri</i>	0.20 4	0.18		
Total	----- 111.30	-----	100.02	

PROJECT STATION: 560

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1200
 start stop duration Long W 7053
 TIME : 06:07:00 06:37:00 30 (min) Purpose code: 3
 LOG : 4159.00 4160.50 1.50 Area code: 3
 FDEPTH: 53 55 GearCond.code:
 BDEPTH: 53 55 Validity code:
 Towing dir: 70° Wire out: 250 m Speed: 30 kn*10

Sorted: 32 Kg Total catch: 31.65 CATCH/HOUR: 63.30

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	numbers			
<i>Scomberomorus cavalla</i>	36.00	78	56.87	529
<i>Trichiurus lepturus</i>	6.80	174	10.74	
<i>Rhizoprionodon lalandei</i>	3.00	2	6.00	
<i>Loligo plei</i>	3.80	252	6.00	530
<i>Cynoscion leiarchus</i>	1.80	2	2.84	
<i>Engraulis eurystole</i>	1.60	244	2.53	
<i>Anchoa</i> sp	1.40	264	2.21	
<i>Synodus poeyi</i>	1.20	98	1.90	
<i>Opisthonema oglinum</i>	1.20	40	1.90	
<i>Lolliguncula brevis</i>	0.80	66	1.26	
<i>Sphyraena picudilla</i>	0.80	12	1.26	
<i>Chloroscombrus chrysurus</i>	0.80	6	1.26	
<i>Lagocephalus leavigatus</i>	0.70	2	1.11	
<i>Synodus foetens</i>	0.60	6	0.95	
<i>Trechurus lathami</i>	0.40	18	0.63	
<i>Pomadasys corvinusformis</i>	0.30	4	0.47	
<i>Dipterus reticulatus</i>	0.30	2	0.47	
<i>Priacanthus arenatus</i>	0.30	4	0.47	
<i>Eucinostomus argenteus</i>	0.20	2	0.32	
<i>Selene spixii</i>	0.20	6	0.32	
<i>Upeneus parvus</i>	0.20	6	0.32	
<i>Lycengraulis grossidens</i>	0.10	2	0.16	
<i>Penaeus notialis</i>	0.00	2		
<i>Scomber japonicus</i>	0.00	2		
<i>Salar crumenophthalmus</i>	0.00	2		
Total	-----	63.30	-----	99.99

PROJECT STATION: 564

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1313
 start stop duration Long W 7054
 TIME : 15:03:00 15:25:00 22 (min) Purpose code: 3
 LOG : 4228.60 4229.70 1.10 Area code: 3
 FDEPTH: 53 51 GearCond.code:
 BDEPTH: 53 51 Validity code:
 Towing dir: 273° Wire out: 250 m Speed: 30 kn*10

Sorted: 27 Kg Total catch: 293.90 CATCH/HOUR: 801.55

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Chloroscombrus chrysurus</i>	349.09	7819	43.58	541
<i>Lutjanus analis</i>	70.91	19	8.85	
<i>Rhomboplites aurorubens</i>	65.65	281	8.17	540
<i>Lutjanus synagris</i>	60.00	112	7.49	529
<i>Sphyraena picudilla</i>	43.64	109	5.44	
<i>Priacanthus arenatus</i>	32.73	175	4.08	
<i>Sardinella aurita</i>	26.18	1942	3.27	542
<i>Synodus poeyi</i>	26.18	262	3.27	
<i>Lutjanus purpureus</i>	13.64	55	1.70	
<i>Eucinostomus argenteus</i>	10.91	327	1.36	
<i>Haemulon steindachneri</i>	10.91	98	1.36	
<i>Upeneus parvus</i>	10.91	1050	1.36	
<i>Decapterus punctatus</i>	10.91	720	1.36	
<i>Decapterus macarellus</i>	10.91	545	1.36	
<i>Trachurus lathami</i>	10.91	633	1.36	
<i>Pagrus pagrus</i>	8.73	22	1.09	
<i>Opiathonessa oglinum</i>	8.73	65	1.09	
<i>Scomberomorus cavalla</i>	6.82	14	0.98	
<i>Acanthostracion quadricornis</i>	4.36	22	0.54	
<i>Fistularia petimba</i>	4.36	65	0.54	
<i>Oligo macleei</i>	4.36	371	0.54	
<i>Pristipomoides macrophthalmus</i>	3.27	349	0.41	
<i>Scomber japonicus</i>	3.27	44	0.41	
<i>Diplectrum bivittatum</i>	2.18	22	0.27	
<i>Seler crumenophthalmus</i>	2.18	65	0.27	
Total	-----	801.54	-----	99.99

PROJECT STATION: 565

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1214
 Start stop duration Long W 7104
 TIME : 16:06:00 17:06:00 30 (min) Purpose code: 3
 LCO : 4238.70 4240.10 1.40 Area code: 1 3
 FDEPTH: 30 28 GearCond.code:
 BDEPTH: 30 28 Validity code:
 Towing dir: 360° Wire out: 150 m Speed: 25 kn'10

Sorted: 26 Kg Total catch: 67.10 CATCH/HOUR: 134.20

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight number			
<i>Upeneus parvus</i>	29.20 502	21.76	544	
<i>Lutjanus synagris</i>	28.80 60	21.46	543	
<i>Eucinostomus argenteus</i>	28.00 426	20.86	545	
<i>Priacanthus arenatus</i>	13.60 60	10.13		
<i>Ballistes caprius</i>	13.60 28	10.13		
<i>Calamus penne</i>	5.60 20	4.17		
<i>Ballistes vetula</i>	3.20 4	2.38		
<i>Anisotremus virginicus</i>	2.00 4	1.49		
<i>Mustelus canis</i>	2.00 2	1.49		
<i>Orthopristis ruber</i>	1.60 4	1.19		
<i>Fistularia tabacaria</i>	1.60 16	1.19		
<i>Sphyraena picudilla</i>	0.80 4	0.60		
<i>Synodus poeyi</i>	0.80 4	0.60		
<i>Chloromacbrus chrysourus</i>	0.80 16	0.60		
<i>Selar crumenophthalmus</i>	0.80 16	0.60		
<i>Prionotus punctatus</i>	0.60 4	0.46		
<i>Pomacentrus arcuatus</i>	0.40 4	0.30		
<i>Gymnothorax ocellatus</i>	0.40 4	0.30		
<i>Sardinella aurita</i>	0.40 16	0.30		
Total	----- 134.20	----- 100.00		

PROJECT STATION: 566

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1217
 start stop duration Long W 7110
 TIME : 17:46:00 18:16:00 30 (min) Purpose code: 3
 LOG : 4245.60 4246.90 1.30 Area code : 3
 FDEPTH: 14 15 GearCond.code:
 BDPTH: 14 15 Validity code:
 Towing dir: 298° Wire out: 100 m Speed: 30 kn*10

Sorted: 49 Kg Total catch: 125.20 CATCH/HOUR: 250.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Polydactylus oligodon	30.00	176	11.98	
Lutjanus analis	29.60	36	11.82	546
Trichiurus lepturus	25.00	116	9.98	
Diapterus rhombus	19.60	70	7.83	
Albula vulpes	19.60	70	7.83	
Anisotremus virginicus	15.00	36	5.99	
Selene spixii	14.60	250	5.83	
Conodon nobilis	12.00	36	4.79	
Haemulon plumieri	9.60	20	3.83	
Centropomus undecimalis	9.60	6	3.83	
Ballistes vetula	9.60	10	3.83	
Elops saurus	9.60	16	3.83	
Harengula clupeola	5.00	520	2.00	
Panulirus argus	4.80	4	1.92	
Scomberomorus brasiliensis	4.60	16	1.84	
Peprius paru	4.60	36	1.84	
Micropogonias furnieri	3.00	36	1.20	
Eucinostomus argenteus	2.60	16	1.04	
Priacanthus arenatus	2.60	6	1.04	
Chiurocentrodon bleekeriensis	2.00	860	0.80	
Rhizoprionodon lalandei	2.00	10	0.80	
Ocyurus chrysurus	2.00	6	0.80	
Opisthonema oglinum	2.00	20	0.80	
Selene vomer	2.00	6	0.80	
Sphyraena guachancho	2.00	6	0.80	
Calamus penna	2.00	10	0.80	
Loligo plei	1.00	40	0.40	
Ctenosciana gracilicirrhus	1.00	96	0.40	
Pomadasys corvineiformis	1.00	10	0.40	
Upeneus parvus	1.00	16	0.40	
Chloroscombrus chrysurus	0.80	6	0.32	
Cynoscion microlepidotus	0.60	6	0.24	
Colligancula sp	0.00	10		
Lycengraulis grossidens	0.00	6		
Pellona harroweri	0.00	16		
Total	-----	250.40	-----	100.01

PROJECT STATION: 567

DATE: 15/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1231
 start stop duration Long W 7106
 TIME : 19:55:00 20:25:00 30 (min) Purpose code: 3
 LOC : 4261.70 4262.20 0.50 Area code : 3
 FDEPTH: 70 69 GearCond.code:
 BDEPTH: 70 69 Validity code:
 Towing dir: 360° Wire out: 350 m Speed: 20 kn*10

Sorted: 23 Kg Total catch: 125.40 CATCH/HOUR: 250.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Pristipomoides macrophthalmus	74.00	5120	29.51	547
Rhomboplites aurorubens	67.00	270	26.71	548
Trachurus lathami	15.00	1210	5.98	
Lutjanus analis	12.00	2	4.78	
Serranus phoebe	10.00	810	3.99	
Eucinostomus argenteus	9.00	240	3.59	
Lutjanus synagris	7.80	14	3.11	
Synodus poeyi	6.00	550	2.39	
Loligo plei	4.00	30	1.59	
Upeneus parvus	4.00	150	1.59	
Lepophidium profundorum	4.00	1050	1.59	
Calamus pennatula	3.00	10	1.20	
Hoplunnis sp	3.00	110	1.20	
Haemulon steindachneri	3.00	20	1.20	
Prionotus punctatus	3.00	10	1.20	
Porichthys pauciradiatus	3.00	390	1.20	
Prionotus beanii	2.50	80	1.00	
Penaeus notialis	2.00	130	0.80	549
Pseudupeneus maculatus	2.00	10	0.80	
Priacanthus arenatus	2.00	60	0.80	
Urampsis secunda	2.00	2	0.80	
Haemulon aurolineatum	1.50	10	0.60	
Cyclopetta chittendeni	1.50	10	0.60	
Apogon sp	1.50	280	0.60	
Etrumeus teres	1.50	60	0.60	
Sphoeroides sp	1.50	50	0.60	
Penaeus brasiliensis	1.00	90	0.40	550
Dactylopterus volitans	1.00	10	0.40	
Scomber japonicus	1.00	30	0.40	
Equetus lanceolatus	1.00	10	0.40	
Haemulon boschmei	0.50	20	0.20	
Diplectrum bivittatum	0.50	20	0.20	
Sardinella aurita	0.00	10		
Aluterus monoceros	0.00	10		
Total	-----	250.80	-----	100.03

PROJECT STATION: 568

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1234
 Start stop duration Long W 7127
 TIME : 00:23:00 01:23:00 60 (min) Purpose code: 3
 LOG : 4302.90 4303.50 0.60 Area code : 5
 FDEPTH: 455 451 GearCond.code:
 BDEPTH: 455 451 Validity code:
 Towing dir: 258° Wire out: 1400 m Speed: 6 kn*10

Sorted: 22 Kg Total catch: 100.30 CATCH/HOUR: 100.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Synagrops bellus</i>	30.80 502	30.71		
<i>Nezumia cyrano</i>	24.00 749	23.93		
CRANGONIDAE	12.80 3602	12.76		
<i>Plesiopenaeus edwardsianus</i>	7.00 273	6.98	552	
<i>Solenocera</i> sp	6.70 179	6.68	551	
<i>Benthodesmus tenuis</i>	6.00 152	5.98		
<i>Coelorhynchus caribbeaus</i>	2.80 80	2.79		
Miscellaneous fish	2.00	1.99		
GEMPYLIDAE	2.00 4	1.99		
ISOPODS	1.20 4	1.20		
<i>Peristedion</i> sp	1.20 20	1.20		
<i>Cytopsis roseus</i>	1.20 12	1.20		
<i>Rossia</i> sp	0.80 4	0.80		
MYCTOPHIDAE	0.60 32	0.60		
SEPIOLIDAE	0.40 4	0.40		
<i>Hoplunnis diomedianus</i>	0.40 20	0.40		
<i>Sternopyx pseudoscura</i>	0.40 24	0.40		
Total	100.30	100.01		

PROJECT STATION: 569

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1233
 Start stop duration Long W 7118
 TIME : 05:55:00 06:25:00 30 (min) Purpose code: 3
 LOG : 4331.40 4332.60 1.20 Area code : 5
 FDEPTH: 67 66 GearCond.code:
 BDEPTH: 67 66 Validity code:
 Towing dir: 169° Wire out: 350 m Speed: 30 kn*10

Sorted: 96 Kg Total catch: 96.40 CATCH/HOUR: 192.80

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Mycteroperca bonaci</i>	44.00 2	22.82		
<i>Lutjanus analis</i>	26.00 6	13.49		
<i>Lutjanus purpureus</i>	22.00 12	11.41		
<i>Lutjanus synagris</i>	19.00 28	9.85	553	
<i>Priacanthus arenatus</i>	18.00 68	9.34	554	
<i>Trachurus lathami</i>	16.00 1040	8.30		
<i>Scomberomorus cavalla</i>	13.80 2	7.16		
<i>Rhomboplites aurorubens</i>	9.80 76	5.08		
<i>Pristipomoides macrophthalmus</i>	7.80 188	4.05		
<i>Calamus penna</i>	6.00 24	3.11		
<i>Eucinostomus argenteus</i>	4.00 86	2.07		
<i>Lachnolaimus maximus</i>	2.00 2	1.04		
<i>Trichiurus lepturus</i>	1.80 2	0.93		
<i>Loligo plei</i>	0.60 14	0.31		
<i>Fistularia tabacaria</i>	0.60 4	0.31		
<i>Decapterus punctatus</i>	0.40 34	0.21		
<i>Upeneus parvus</i>	0.40 34	0.21		
<i>Exocoetus volitans</i>	0.30 2	0.16		
<i>Scomber japonicus</i>	0.20 10	0.10		
<i>Synodus foetens</i>	0.10 2	0.05		
Total	92.80	100.00		

PROJECT STATION: 570

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1225
 start stop duration Purpose code: 3 Long W 7123
 TIME : 08:30:00 09:00:00 30 (min) Area code : 5
 LOG : 4346.90 4347.90 1.00 GearCond.code:
 FDEPTH: 23 24 Validity code:
 BDEPTH: 23 24
 Towing dir: 290° Wire out: 100 m Speed: 20 kn*10

Sorted: 45 Kg Total catch: 45.05 CATCH/HOUR: 90.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
<i>Chloroscombrus chrysurus</i>	54.00 524	59.93	555
<i>Selene spixii</i>	20.00 60	22.20	556
<i>Alectis ciliaris</i>	6.60 6	7.33	
<i>Opisthonema oglinum</i>	4.40 26	4.88	557
<i>Lutjanus synagris</i>	2.00 2	2.22	
<i>Chaetodipterus faber</i>	1.80 2	2.00	
<i>Scomberomorus cavalla</i>	1.30 4	1.44	
Total	----- 90.10	----- 100.00	

PROJECT STATION: 571

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1222
 start stop duration Purpose code: 3 Long W 7130
 TIME : 10:00:00 10:39:00 30 (min) Area code : 5
 LOG : 4355.80 4356.90 1.10 GearCond.code:
 FDEPTH: 68 71 Validity code:
 BDEPTH: 68 71
 Towing dir: 270° Wire out: 350 m Speed: 20 kn*10

Sorted: 25 Kg Total catch: 94.30 CATCH/HOUR: 188.60

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
<i>Lutjanus analis</i>	50.20 14	26.62	558
<i>Trachurus lathami</i>	48.00 3616	25.45	559
<i>Lutjanus synagris</i>	16.00 22	8.48	560
<i>Rhomboplites aurorubens</i>	12.00 44	6.36	561
<i>Scomberomorus cavalla</i>	9.60 16	5.09	
<i>Lutjanus purpureus</i>	8.00 2	4.24	
<i>Trichiurus lepturus</i>	6.00 52	3.18	
<i>Scomber japonicus</i>	5.60 204	2.97	
<i>Peprius paru</i>	5.60 12	2.97	
<i>Priacanthus arenatus</i>	4.80 12	2.55	
<i>Chaetodipterus faber</i>	4.00 4	2.12	
<i>Chloroscombrus chrysurus</i>	3.60 16	1.91	
<i>Calamus pennatula</i>	3.20 8	1.70	
<i>Loligo plei</i>	2.00 52	1.06	
<i>Selene spixii</i>	2.00 8	1.06	
<i>Upeneus parvus</i>	1.60 24	0.85	
<i>Pristipomoides macrourhalus</i>	1.60 28	0.85	
<i>Etrumeus teres</i>	0.80 88	0.42	
<i>Fiatularia petimba</i>	0.80 4	0.42	
<i>Sphyraena picudilla</i>	0.80 4	0.42	
<i>Eucinostomus argenteus</i>	0.80 16	0.42	
<i>Loligo pealei</i>	0.60 16	0.32	
<i>Sardinella aurita</i>	0.40 8	0.21	
<i>Syacium micrurum</i>	0.40 4	0.21	
<i>Opisthonema oglinum</i>	0.20 4	0.11	
Total	----- 188.60	----- 99.99	

PROJECT STATION: 572

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1232
 start stop duration Long W 7138
 TIME : 11:30:00 12:00:00 30 (min) Purpose code: 3
 LOG : 4364.70 4366.10 1.40 Area code : 5
 FDEPTH: 65 67 GearCond.code:
 BDEPTH: 65 67 Validity code:
 Towing dir: 260° Wire out: 350 m Speed: 28 kn*10

Sorted: 30 Kg Total catch: 255.65 CATCH/HOUR: 511.30

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Sciaenidae juveniles	270.00	21060	52.81	563
Selene spixii	135.00	4764	26.40	562
Trachurus lathami	36.00	2304	7.04	264
Rhizoprionodon porosus	28.00	20	5.48	
Trichiurus lepturus	16.20	522	3.17	
Loligo paelei	14.40	414	2.82	
Lagocephalus laevigatus	5.40	18	1.06	
Peprius paru	3.60	18	0.70	
Sphyraena picudilla	0.90	18	0.18	
Upeneus parvus	0.90	54	0.18	
Pristipomoides macrophthalmus	0.90	36	0.18	
Total	-----	511.30	-----	100.02

PROJECT STATION: 573

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1230
 start stop duration Long W 7146
 TIME : 12:55:00 13:25:00 30 (min) Purpose code: 3
 LOG : 4372.90 4374.50 1.60 Area code : 5
 FDEPTH: 167 160 GearCond.code: 8
 BDEPTH: 167 160 Validity code: 1
 Towing dir: 241° Wire out: 650 m Speed: 32 kn*10

Sorted: 26 Kg Total catch: 51.80 CATCH/HOUR: 103.60

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Synodus poeyi	21.20	240	20.46	566
Pristipomoides macrophthalmus	18.80	168	18.15	565
Mustelus canis	10.00	52	17.37	
Peristedion sp	9.20	512	8.88	
Upeneus parvus	8.40	156	8.11	567
Squatina sp	8.00	4	7.72	
Loligo paelei	7.60	572	7.34	
Trichiurus lepturus	5.20	32	5.02	
Coelorhynchus caribbeaus	4.80	1776	4.63	
Serranus phoebe	0.80	20	0.77	
Prionotus roseus	0.80	8	0.77	
Stellifer sp	0.40	4	0.39	
Ctenosciena gracilicirrhos	0.40	8	0.39	
Prionotus stearnsi	0.00	8		
Porichthys sp	0.00	4		
Total	-----	103.60	-----	100.00

PROJECT STATION: 574

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1223
 start stop duration Long W 7155
 TIME : 16:00:00 16:30:00 30 (min) Purpose code: 3
 LOG : 4385.90 4387.60 1.70 Area code : 5
 FDEPTH: 43 45 GearCond.code:
 BDEPTH: 43 45 Validity code:
 Towing dir: 251° Wire out: 200 m Speed: 35 kn*10

Sorted: 15 Kg Total catch: 84.37 CATCH/HOUR: 168.74

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Lutjanus synagris</i>	64.00	78	37.93	568
<i>Lutjanus analis</i>	16.00	6	9.48	
<i>Rhomboplites aurorubens</i>	14.00	148	8.30	569
<i>Decapterus punctatus</i>	9.00	762	5.33	
<i>Coligo paelei</i>	9.00	262	5.33	
<i>Lutjanus griseus</i>	6.20	4	3.67	
<i>Calamus pennatula</i>	5.00	14	2.96	
<i>Lutjanus purpureus</i>	5.00	4	2.96	
<i>Eucinostomus argenteus</i>	4.50	102	2.67	
<i>Scomber japonicus</i>	4.50	238	2.67	
<i>Decapterus macarellus</i>	4.20	438	2.49	
<i>Sardinella aurita</i>	4.20	330	2.49	
<i>Aluterus monoceros</i>	4.00	4	2.37	
<i>Rhizoprionodon lalandei</i>	3.00	2	1.78	
<i>Haemulon boschmai</i>	3.00	274	1.78	
<i>Calamus penne</i>	3.00	8	1.78	
<i>Balistes capriscus</i>	3.00	2	1.78	
<i>Scomberomorus cavalla</i>	2.10	4	1.24	
<i>Sphyraena picudilla</i>	0.90	4	0.53	
<i>Haemulon aurolineatum</i>	0.90	12	0.53	
<i>Pristipomoides macrophthalmus</i>	0.74	6	0.44	
<i>Peristedion sp</i>	0.60	48	0.36	
<i>Synodus foetens</i>	0.44	4	0.26	
<i>Fistularia petimba</i>	0.44	4	0.26	
<i>Priacanthus arenatus</i>	0.44	6	0.26	
<i>Upeneus parvus</i>	0.30	18	0.18	
<i>Diplectrum bivittatum</i>	0.14	4	0.08	
<i>Penaeus brasiliensis</i>	0.14	4	0.08	
<i>Synodus poeyi</i>	0.00	4		
<i>Chromis sp.</i>	0.00	4		
Total	-----	168.74	-----	99.99

PROJECT STATION: 575

DATE: 16/ 6/88 GEAR TYPE: BT No.: 1 POSITION: Lat N 1220
 start stop duration Long W 7204
 TIME : 17:28:00 17:58:00 30 (min) Purpose code: 3
 LOG : 4395.70 4397.30 1.60 Area code : 5
 FDEPTH: 58 60 GearCond.code:
 BDEPTH: 58 60 Validity code:
 Towing dir: 250° Wire out: 300 m Speed: 30 kn*10

Sorted: 25 Kg Total catch: 224.80 CATCH/HOUR: 449.60

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT.	C	SAMP.NO.
	numbers				
<i>Sardinella aurita</i>	112.00	6944	24.91		
<i>Sphyraena picudilla</i>	63.00	392	14.01		
<i>Decapterus macarellus</i>	46.20	4858	10.28		
<i>Lutjanus synagris</i>	44.00	78	9.79	570	
<i>Calamus pennatula</i>	33.60	140	7.47		
<i>Haemulon aurolineatum</i>	23.80	532	5.29		
<i>Lutjanus purpureus</i>	20.00	6	4.45	571	
<i>Epinephelus niveatus</i>	18.00	2	4.00		
<i>Eucinostomus argenteus</i>	15.40	322	3.43		
<i>Trachurus lathami</i>	14.00	1008	3.11		
<i>Lutjanus analis</i>	14.00	2	3.11		
<i>Priacanthus arenatus</i>	12.60	28	2.80		
<i>Haemulon boscme</i>	8.40	924	1.87		
<i>Rhomboplites aurorubens</i>	7.00	126	1.56		
<i>Rhomboplites aurorubens</i>	6.40	24	1.42		
<i>Pristipomoides macrophthalmus</i>	3.50	42	0.78		
<i>Fistularia petimba</i>	2.80	56	0.62		
<i>Upeneus parvus</i>	2.80	126	0.62		
<i>Loligo plei</i>	1.40	14	0.31		
<i>Scomber japonicus</i>	0.70	28	0.16		
<i>Synodus foetens</i>	0.00	42			
<i>Diplectrum bivittatum</i>	0.00	14			
<i>Selar crumenophthalmus</i>	0.00	14			
Total	-----	449.60	-----	99.99	

PROJECT STATION: 576

DATE: 16/ 6/88 WEAR TYPE: BT No:1 POSITION: Lat N 1224
 start stop duration Long W 7207
 TIME : 21:15:00 21:25:00 10 (min) Purpose code: 3
 LOG : 4423.30 4424.00 0.70 Area code : 5
 FDEPTH: 250 260 GearCond.code:
 BDEPTH: 250 260 Validity code:
 Towing dir: 240° Wire out:1000 m Speed: 35 kn*10

Sorted: 22 Kg Total catch: 22.35 CATCH/HOUR: 134.10

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Steindachneria argentea</i>	53.40 2082	39.82		
<i>Antigonias capros</i>	17.40 132	12.98		
<i>Solenocera</i> sp	17.40 1080	12.98	572	
<i>Synagrops</i> sp.	7.20 600	5.37		
Miscellaneous fish	5.40	4.03		
<i>Pontinus longispinnis</i>	4.20 78	3.13		
BOTHIDAE	3.60 450	2.68		
CALATHEIDAE	3.00 240	2.24		
PEMNAZIDAE	2.40 606	1.79		
<i>Pseudupeneus maculatus</i>	2.40 12	1.79		
<i>Polymixia lowei</i>	2.40 180	1.79		
<i>Plesiostikta</i> sp	2.40 696	1.79		
<i>Scomber japonicus</i>	2.10 36	1.57		
<i>Peristedion miniatum</i>	2.10 42	1.57		
<i>Lepidopodus caudatus</i>	1.80 24	1.34		
<i>Hoplunnis</i> sp	1.80 60	1.34		
<i>Pristipomoides macrophthalmus</i>	1.80 12	1.34		
<i>Etmopterus</i> sp	1.20 30	0.89		
<i>Argentinas</i> sp.	0.90 6	0.67		
<i>Loligo pacifaei</i>	0.60 6	0.45		
<i>Bembrops anatirostris</i>	0.60 6	0.45		
<i>Hildebrandia</i> sp.	0.00 6			
<i>Neopinnula americana</i>	0.00 12			
CYNOGLOSSIDAE	0.00 12			
<i>Coelorinchus</i> sp	0.00 12			
Total	----- 134.10	-----	100.01	

PROJECT STATION: 577

DATE: 16/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1225
 start stop duration Long W 7204
 TIME : 22:28:00 23:28:00 60 (min) Purpose code: 3
 LOC : -4428.80 4432.20 3.40 Area code : 5
 FDEPTH: 235 268 GearCond. code:
 BDEPTH: 235 268 Validity code:
 Towing dir: 260° Wire out: 1000 m Speed: 30 kn'10

Sorted: 27 Kg Total catch: 126.20 CATCH/HOUR: 126.20

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP. NO.
	Weight numbers		
<i>Steindachneria argentea</i>	26.80 1513	21.24	
<i>Epinemphelus</i> sp	18.60 2	14.74	
<i>Synagrops bellus</i>	14.00 1015	11.09	
<i>Solenocara</i> sp	9.60 768	7.61	
<i>Saurida normani</i>	7.20 12	5.71	
<i>Pontinus longispinnis</i>	6.40 76	5.07	
Miscellaneous fish	6.00	4.75	
<i>Lepidopus caudatus</i>	5.60 94	4.44	
<i>Illex coindetti</i>	4.00 64	3.17	
<i>Squalus</i> sp	3.20 4	2.54	
<i>Lepophidium profundorum</i>	2.60 88	2.06	
BOTHIDAE	2.40 368	1.90	
<i>Loligo paelei</i>	2.00 24	1.58	
<i>Argentina</i> sp.	2.00 124	1.58	
MORIDAE	2.00 300	1.58	
<i>Neopinnulis americana</i>	2.00 32	1.58	
<i>Polymixia lowei</i>	2.00 136	1.58	
PEMAREIDAE	2.00 304	1.58	
<i>Hoplunnis</i> sp	1.20 64	0.95	
<i>Trichopsetta ventralis</i>	1.20 4	0.95	
<i>Etmopterus</i> sp	1.20 24	0.95	
<i>Plesiostoma edwardsoni</i>	1.00 140	0.79	
<i>Prionotus stearnsi</i>	0.80 36	0.63	
<i>Peristedion miniatum</i>	0.80 16	0.63	
<i>Dibranchus atlanticus</i>	0.60 90	0.48	
<i>Bembrops</i> sp	0.40 4	0.32	
<i>Coelorhynchus caribbeaus</i>	0.40 44	0.32	
<i>Halieutichthys aculeatus</i>	0.20 20	0.16	
<i>Porichthys</i> sp	0.00 8		
<i>Antigonias capros</i>	0.00 8		
Total	----- 126.20	-----	99.98

PROJECT STATION: 578

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1225
 Start stop duration Long W 7215
 TIME :00:40:00 01:10:00 30 (min) Purpose code: 3
 LOG :4441.10 4442.60 1.50 Area code : 5
 FDEPTH: 311 306 GearCond.code:
 BDEPTH: 311 306 Validity code:
 Towing dir: 243° Wire out:1200 Speed: 30 kn*10

Sorted: 21 Kg Total catch: 72.45 CATCH/HOUR: 144.90

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Squalus</i> sp	54.00 18		37.27	
<i>Steindachneria argentea</i>	36.00 1260		24.84	
<i>Lepidopus caudatus</i>	16.40 288		11.32	
<i>Coelorhynchus caribbeaus</i>	4.80 230		3.31	
<i>Pontinus longispinnis</i>	4.00 24		2.76	
<i>Ilix coindetti</i>	3.20 40		2.21	
<i>Polymixia lowei</i>	3.20 64		2.21	
<i>Scyliorhinus</i> sp.	2.80 4		1.93	
<i>Lepophidium profundorum</i>	2.40 92		1.66	
PENAEIDAE	2.20 294		1.52	
<i>Etmopterus</i> sp	2.00 60		1.38	
<i>Argentina</i> sp.	2.00 116		1.38	
<i>Solenocara</i> sp	1.80 88		1.24	
<i>Raja teevani</i>	1.60 4		1.10	
Miscellaneous fish	1.60		1.10	
<i>Metanephrops binghami</i>	1.50 34		1.04	
<i>Xenolepidichthys dalgleishi</i>	1.20 36		0.83	
BOTHIDAE	1.00 24		0.69	
MORIDAE	0.80 36		0.55	
<i>Cytopsis roseus</i>	0.80 20		0.55	
<i>Plemonika edwardsii</i>	0.60 72		0.41	
OPHIDIDAE	0.40 12		0.28	
<i>Bembrops</i> sp	0.40 40		0.28	
<i>Peristedion miniatum</i>	0.20 8		0.14	
<i>Synagrops bellus</i>	0.00 8			
Total	----- 144.90		----- 100.00	

PROJECT STATION: 579

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1228
 start stop duration Long W 7217
 TIME :02:25:00 03:20:00 55 (min) Purpose code: 3
 LOG :4449.50 4452.30 2.80 Area code : 5
 FDEPTH: 400 408 GearCond.code:
 BDEPTH: 400 408 Validity code:
 Towing dir: 243° Wire out: 1350 m Speed: 30 kn*10

Sorted: 24 Kg Total catch: 252.90 CATCH/HOUR: 275.69

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
Steindachneria argentea	130.91 1777	47.45		
Polymixia lowei	52.36 491	18.98		
Coclerhynchus caribbeaus	24.00 698	8.70		
Lepidopus caudatus	21.82 480	7.91		
Solenocara sp	12.00 332	4.35	573	
Bembrops sp	8.18 153	2.96		
Synagrops bellus	5.45 327	1.98		
Argentina sp.	5.45 196	1.98		
Peristedion miniatum	4.36 87	1.58		
Plesionichthys edwardsianus	3.71 122	1.34	574	
URANOSCOPIIDAE	3.27 11	1.19		
Cyttopsis roseus	2.18 22	0.79		
Lepophidium profundorum	1.09 22	0.40		
Xenolepidichthys daigleishi	1.09 33	0.40		
Etmopterus sp	0.00 22			
Melanostomias macrophothus	0.00 11			
Total	275.87	100.01		

PROJECT STATION: 580

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1219
 start stop duration Long W 7218
 TIME :05:35:00 06:10:00 35 (min) Purpose code: 3
 LOG :4463.00 4464.70 1.70 Area code : 5
 FDEPTH: 70 69 GearCond.code:
 BDEPTH: 70 69 Validity code:
 Towing dir: 200° Wire out: 350 m Speed: 35 kn*10

Sorted: 21 Kg Total catch: 179.20 CATCH/HOUR: 307.20

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
Rhomboplites aurorubens	61.71 782	20.09	575	
Mycteroperca bonaci	56.57 3	18.41		
Haemulon aurolineatum	55.54 1152	18.08		
Salar crumenophthalmus	46.29 473	15.07	576	
Sardinella aurita	19.54 617	6.36		
Lutjanus analis	13.71 5	4.46		
Decapterus macarellus	10.29 998	3.35		
Lachnolaimus maximus	7.20 5	2.34		
Lutjanus purpureus	5.66 2	1.84		
Pomacanthus paru	5.14 3	1.67		
Scomber japonicus	4.11 144	1.34		
Mulloidichthys martinicus	4.11 93	1.34		
Haemulon boschme	3.09 226	1.01		
Calamus pennatula	3.09 31	1.01		
Upeneus parvus	3.09 103	1.01		
Balistes vetula	2.57 2	0.84		
Mustelus canis	2.40 2	0.78		
Eucinostomus argenteus	2.06 62	0.67		
Trachurus lathami	0.51 51	0.17		
Pseudupeneus maculatus	0.51 10	0.17		
Total	307.19	100.01		

PROJECT STATION: 581

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1206
 start stop duration Long W 7219
 TIME : 07:40:00 08:10:00 30 (min) Purpose code: 3
 LOG : 4478.80 4480.40 1.60 Area code : 5
 FDEPTH: 41 48 GearCond.code:
 BDEPTH: 41 48 Validity code:
 Towing dir: 276° Wire out: 200 m Speed: 30 kn*10

Sorted: 62 Kg Total catch: 804.50 CATCH/HOUR: 1609.00

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
Sardinella aurita	1282.60 95826	79.71	577	
Decapterus macarellus	227.60 24700	14.15	578	
Lutjanus analis	33.60 6	2.09		
Upeneus parvus	25.00 2600	1.55		
Eucinostomus argenteus	16.20 800	1.01		
Lutjanus synagris	14.00 30	0.87	579	
Priacanthus arenatus	10.00 76	0.62		
Total	----- 1609.00	----- 100.00		

PROJECT STATION: 582

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1207
 start stop duration Long W 7231
 TIME : 09:30:00 10:00:00 30 (min) Purpose code: 3
 LOG : 4492.00 4493.80 1.80 Area code : 5
 FDEPTH: 65 68 GearCond.code:
 BDEPTH: 65 68 Validity code:
 Towing dir: 276° Wire out: 350 m Speed: 35 kn*10

Sorted: 24 Kg Total catch: 244.70 CATCH/HOUR: 489.40

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
Rhomboplites aurorubens	88.00 1820	17.98	580	
Decapterus macarellus	88.00 11520	17.98		
Lutjanus synagris	78.00 160	15.94	581	
Sardinella aurita	66.00 2480	13.49		
Lutjanus analis	48.00 10	9.81		
Calamus pennatula	28.00 200	5.72		
Mycteroperca cidi	24.20 4	4.94		
Epinephelus niveatus	19.20 2	3.92		
Decapterus punctatus	14.00 280	2.86		
Upeneus parvus	10.00 1160	2.04		
Haemulon aurolineatum	5.80 1400	1.19		
Panulirus argus	5.00 2	1.02		
Haemulon boschme	4.20 5480	0.86		
Scomber japonicus	4.00 40	0.82		
Pomacanthus paru	3.00 2	0.61		
Mulloidichthys martinicus	2.00 100	0.41		
Pseudupeneus maculatus	2.00 40	0.41		
Eucinostomus argenteus	0.00 40			
Total	----- 489.40	----- 100.00		

PROJECT STATION: 583

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1153
 Start stop duration Long W 7237
 TIME : 12:16:00 12:46:00 30 (min) Purpose code: 3
 LOG : 4516.70 4518.00 1.30 Area code : 5
 FDEPTH: 27 45 GearCond.code:
 BDEPTH: 27 45 Validity code:
 Towing dir: 295° Wire out: 150' m Speed: 30 kn*10

Sorted: 29 Kg Total catch: 161.20 CATCH/HOUR: 322.40

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Sardinella aurita	156.00	7664	48.39	588
Decapterus punctatus	56.00	4696	17.37	582
Upeneus parvus	16.50	1280	5.12	583
Lutjanus griseus	13.00	2	4.03	
Loligo plei	10.00	90	3.10	
Pomacanthus paru	9.80	4	3.04	
Decapterus macarellus	9.00	1000	2.79	584
Eucinostomus argenteus	7.00	440	2.17	585
Lectophrys trigonus	6.00	10	1.86	
Scomber japonicus	6.00	170	1.86	
Salar crumenophthalmus	5.50	480	1.71	586
Balistes capriscus	5.00	10	1.55	
Rhomboplites aurorubens	4.50	420	1.40	587
Balistes vetula	4.40	2	1.36	
MONACANTHIDAE	4.00	10	1.24	
Calamus pennatula	3.50	30	1.09	
Ocyurus chrysurus	3.20	2	0.99	
Priacanthus arenatus	2.00	30	0.62	
Diplectrum bivittatum	1.00	10	0.31	
Total	322.40		100.00	

PROJECT STATION: 584

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1159
 Start stop duration Long W 7249
 TIME : 14:06:00 14:36:00 30 (min) Purpose code: 3
 LOG : 4529.80 4530.90 1.10 Area code : 5
 FDEPTH: 69 73 GearCond.code:
 BDEPTH: 69 73 Validity code:
 Towing dir: 295° Wire out: 350 m Speed: 15 kn*10

Sorted: 30 Kg Total catch: 275.42 CATCH/HOUR: 550.84

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Decapterus tabl	164.80	816	29.92	589
Sardinella aurita	88.00	5590	15.98	
Haemulon boschme	88.00	6160	15.98	
Rhomboplites aurorubens	40.64	1952	7.38	590
Decapterus macarellus	33.60	1886	6.10	
Calamus pennatula	27.20	96	4.94	
Lutjanus analis	24.00	6	4.36	
Lachnolaimus maximus	17.00	8	3.09	
Upeneus parvus	16.00	768	2.90	
Epinephelus sp	13.80	2	2.51	
Pomacanthus paru	9.00	4	1.63	
Haemulon aurolineatum	6.40	112	1.16	
Acanthostracion quadricornis	6.40	16	1.16	
Balistes vetula	6.40	2	1.16	
Eucinostomus argenteus	3.20	32	0.58	
Diplectrum bivittatum	2.40	48	0.44	
Serranus phoebe	2.40	48	0.44	
Fistularia petimba	1.60	16	0.29	
Total	550.84		100.02	

PROJECT STATION: 585

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1150
 start stop duration Long W 7253
 TIME : 16:20:00 16:50:00 30 (min) Purpose code: 3
 LOG : 4547.80 4549.40 1.60 Area code : 5
 FDEPTH: 33 33 GearCond.code:
 BDEPTH: 33 33 Validity code:
 Towing dir: 250° Wire out: 150 m Speed: 32 kn*10

Sorted: 51' Kg Total catch: 51.15 CATCH/HOUR: 102.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Balistes capriscus</i>	65.00 90		63.54	
<i>Calemus pennatula</i>	13.00 132		12.71	
OSTRACIIDAE	7.20 14		7.04	
<i>Acanthostracion quadricornis</i>	4.60 20		4.50	
<i>Priacanthus arenatus</i>	4.20 34		4.11	
<i>Fistularia tabacaria</i>	2.20 8		2.15	
<i>Rhomboplites aurorubens</i>	2.00 20		1.96	
<i>Pseudupeneus maculatus</i>	1.00 12		0.98	
<i>Holocentrus ascensionis</i>	1.00 8		0.98	
<i>Sphyraena picudilla</i>	1.00 4		0.98	
Diodon sp.	0.80 4		0.78	
<i>Fistularia petimba</i>	0.30 2		0.29	
Total	----- 102.30		----- 100.02	

PROJECT STATION: 586

DATE: 17/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1148
 start stop duration Long W 7302
 TIME : 17:45:00 18:15:00 30 (min) Purpose code: 3
 LOG : 4556.80 4558.50 1.70 Area code : 5
 FDEPTH: 60 64 GearCond.code:
 BDEPTH: 60 64 Validity code:
 Towing dir: 255° Wire out: 300 m Speed: 32 kn*10

Sorted: 28 Kg Total catch: 284.90 CATCH/HOUR: 569.80

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Sardinella aurita</i>	244.80 10512		42.96	591
<i>Decapterus macarellus</i>	176.00 16800		30.89	592
<i>Lutjanus purpureus</i>	45.00 10		7.90	593
<i>Lutjanus analis</i>	40.00 12		7.02	
<i>Calamus pennatula</i>	19.20 48		3.37	
<i>Lachnolaimus maximus</i>	12.80 4		2.25	
<i>Rhomboplites aurorubens</i>	9.60 1072		1.68	
<i>Pomacanthus arcuatus</i>	9.40 6		1.65	
<i>Pomacanthus paru</i>	7.20 4		1.26	
<i>Fistularia petimba</i>	3.20 16		0.56	
<i>Seriola rivoliana</i>	2.60 4		0.46	
Total	----- 569.80		----- 100.00	

PROJECT STATION: 587

DATE: 18/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1142
 start stop duration Long W 7301
 TIME : 05:32:00 06:02:00 30 (min) Purpose code: 3
 LOG : 4626.30 4627.60 1.30 Area code : 5
 FDEPTH: 23 22 GearCond.code:
 BDEPTH: 23 22 Validity code:
 Towing dir: 248° Wire out: 100 m Speed: 30 kn*10

Sorted: 42 Kg Total catch: 95.70 CATCH/HOUR: 191.40

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Balistes capriscus</i>	97.60 276	50.99	594	
<i>Aluterus monoceros</i>	23.60 24	12.33		
<i>Scomberomorus cavalla</i>	16.00 8	8.36		
<i>Lactophrys trigonus</i>	11.60 20	6.06		
<i>Sardinella aurita</i>	11.60 176	6.06	595	
<i>Eucinostomus argenteus</i>	9.60 84	5.02		
<i>Calamus pennatus</i>	5.60 84	2.93		
<i>Caranx cryos</i>	4.80 4	2.51		
<i>OSTRACIIDAE</i>	2.80 4	1.46		
<i>Rachycentron canadus</i>	2.80 2	1.46		
<i>Acanthostracion quadricornis</i>	1.60 2	0.84		
<i>Echeneis naucrates</i>	1.20 8	0.63		
<i>Priacanthus arenatus</i>	1.20 20	0.63		
<i>Rhomboplites aurorubens</i>	0.40 4	0.21		
<i>Selar crumenophthalmus</i>	0.40 4	0.21		
<i>Diplectrum bivittatum</i>	0.40 4	0.21		
<i>Synodus foetens</i>	0.20 4	0.10		
Total	----- 191.40	----- 100.01		

PROJECT STATION: 588

DATE: 18/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1138
 start stop duration Long W 7308
 TIME : 07:04:00 07:34:00 30 (min) Purpose code: 3
 LOG : 4635.90 4637.60 1.70 Area code : 5
 FDEPTH: 14 30 GearCond.code:
 BDEPTH: 14 30 Validity code:
 Towing dir: 257° Wire out: 125 m Speed: 32 kn*10

Sorted: 31 Kg Total catch: 482.50 CATCH/HOUR: 965.00

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Sardinella aurita</i>	720.00 36768	74.61	596	
<i>Lutjanus analis</i>	70.00 23	7.25	597	
<i>Lachnolaimus maximus</i>	56.00 36	5.80		
<i>Balistes capriscus</i>	41.40 60	4.29		
<i>Pomacanthus arcuatus</i>	26.00 16	2.69		
<i>Balistes vetula</i>	15.60 8	1.62		
<i>Calamus penna</i>	9.60 144	0.99		
<i>Lactophrys trigonus</i>	7.20 24	0.75		
<i>Aluterus monoceros</i>	7.20 24	0.75		
<i>Rhizoprionodon lalandei</i>	6.40 2	0.66		
<i>Scomberomorus cavalla</i>	2.80 2	0.29		
<i>Pomacanthus paru</i>	2.80 2	0.29		
Total	----- 965.00	----- 99.99		

PROJECT STATION: 589

DATE: 18/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1128
 start stop duration Long W 7321
 TIME : 09:45:00 10:15:00 30 (min) Purpose code: 3
 LOG : 4659.30 4660.90 1.60 Area code : 5
 FDEPTH: 67 70 GearCond.code:
 BDEPTH: 67 70 Validity code:
 Towing dir: 230° Wire out: 350 m Speed: 30 kn*10

Sorted: 23 Kg Total catch: 200.70 CATCH/HOUR: 401.40

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
Haemulon aurolineatum	171.20 3824	42.65	598	
Rhomboplites aurorubens	128.00 2272	31.89	599	
Balistes capriscus	22.40 32	5.58		
Eucinostomus argenteus	14.40 304	3.59		
Lutjanus analis	13.60 8	3.39	600	
Lutjanus purpureus	12.20 10	3.04	601	
Calamus pennatula	11.20 80	2.79		
Seriola rivoliana	8.80 4	2.19		
Haemulon striatum	5.60 112	1.40		
Synodus foetens	4.80 32	1.20		
Haemulon boscme	3.20 208	0.80		
Pristipomoides macrourhalicus	2.40 16	0.60		
Loligo pacifici	1.80 18	0.45		
Lutjanus synagris	1.00 2	0.25		
Upeneus parvus	0.80 16	0.20		
Total	----- 401.40	----- 100.02		

PROJECT STATION: 590

DATE: 18/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1120
 start stop duration Long W 7331
 TIME : 12:00:00 12:30:00 30 (min) Purpose code: 3
 LOG : 4676.70 4678.00 1.30 Area code : 5
 FDEPTH: 61 61 GearCond.code:
 BDEPTH: 61 61 Validity code:
 Towing dir: 250° Wire out: 300 m Speed: 28 kn*10

Sorted: 25 Kg Total catch: 126.00 CATCH/HOUR: 252.00

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
Chloroscombrus chrysurus	110.00 3300	43.65	602	
Selene spixii	23.00 988	9.13	603	
Opisthonema oglinum	21.00 260	8.33	604	
Eucinostomus argenteus	21.00 520	8.33		
Priacanthus arenatus	15.00 50	5.95		
Rhomboplites aurorubens	12.00 130	4.76		
Seriola crumenophthalma	10.00 60	3.97		
Lutjanus purpureus	10.00 30	3.97		
Lutjanus synagris	7.00 40	2.78		
Scorpaenichthys cavalla	6.50 30	2.56		
Caranx hippos	5.50 10	2.18		
Sphyraena guachancho	5.00 40	1.98		
Sphyraena picudilla	4.00 30	1.59		
Pristipomoides macrourhalicus	2.00 20	0.79		
Total	----- 252.00	----- 99.99		

PROJECT STATION: 591

DATE: 18/ 6/68 GEAR TYPE: BT No:1 POSITION:Lat N 1120
 start stop duration .Purpose code: 3
 TIME : 14:47:00 15:10:00 23 (min) Area code : 5
 LOG : 4696.80 4697.80 1.00 GearCond.code:
 FDEPTH: 87 132 Validity code:
 BDEPTH: 87 132
 Towing dir: 258° Wire out: 400 m Speed: 25 kn*10

Sorted: 27 Kg Total catch: 27.15 CATCH/HOUR: 70.83

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	numbers			
Rhomboplites aurorubens	17.22	73	24.31	605
Lutjanus analis	11.48	10	16.21	
Lutjanus synagris	11.48	29	16.21	606
Eucinostomus argenteus	10.96	222	15.47	607
Pristipomoides macrourus	5.22	55	7.37	608
Calamus pennatus	3.91	16	5.52	
Trichiurus lepturus	2.61	10	3.68	
Lutjanus purpureus	2.61	5	3.68	
Balistes capriscus	1.83	3	2.58	
Synodus poeyi	1.30	26	1.84	
Holocentrus ascensionis	0.91	3	1.28	
Fistularia petimba	0.65	8	0.92	
Upeneus parvus	0.65	10	0.92	
Total	70.83	99.99		

PROJECT STATION: 592

DATE: 18/ 6/68 GEAR TYPE: BT No:1 POSITION:Lat N 1122
 start stop duration .Purpose code: 3
 TIME : 17:10:00 17:40:00 30 (min) Area code : 5
 LOG : 4716.90 4718.60 1.70 GearCond.code:
 FDEPTH: 112 87 Validity code:
 BDEPTH: 112 87
 Towing dir: 250° Wire out: 550 m Speed: 35 kn*10

Sorted: 29 Kg Total catch: 29.25 CATCH/HOUR: 58.50

SPECIES	WEIGHT	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	numbers			
Upeneus parvus	14.80	288	25.30	609
Lutjanus vivanus	13.00	88	22.22	610
Pristipomoides macrourus	9.80	94	16.75	611
Rhomboplites aurorubens	5.80	88	9.91	
Lutjanus analis	4.80	2	8.21	
Fistularia petimba	4.00	20	6.84	
Loligo plei	2.40	900	4.10	
Priacanthus arenatus	1.80	24	3.08	
Synodus foetens	0.60	6	1.03	
Pristigenys atlas	0.50	2	0.85	
Holocentrus ascensionis	0.40	4	0.68	
Balistes vetula	0.30	2	0.51	
Trachurus lathami	0.20	2	0.34	
Haemulon surolineatum	0.10	2	0.17	
Serranus phoebe	0.00	2		
Synodus poeyi	0.00	2		
Penaeus notialis	0.00	2		
Luligo scabia	0.00	2		
Total	58.50	99.99		

PROJECT STATION: 593

DATE: 10/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1107
 start stop duration Position code: 3
 TIME : 21:10:00 21:40:00 30 (min) Purpose code: 3
 LOG : 4753.80 4755.40 1.60 Area code : 5
 FDEPTH: 88 105 GearCond.code:
 BDEPTH: 88 105 Validity code:
 Towing dir: 260° Wire out: 400 m Speed: 30 kn*10

Sorted: 50 Kg Total catch: 49.65 CATCH/HOUR: 99.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Lutjanus synagris</i>	28.00	68	28.20	612
<i>Sciaena</i> sp	10.60	104	10.67	
<i>Pristipomoides macrophthalmus</i>	7.40	1300	7.45	
<i>Neopinnula americana</i>	6.40	94	6.45	
<i>Penaeus notialis</i>	6.00	218	6.04	613
<i>Serranus</i> sp	4.80	978	4.83	
Shrimps, small, non comm.	3.60		3.63	
<i>Trichiurus lepturus</i>	2.80	20	2.82	
<i>Lepophidium profundorum</i>	2.60	132	2.62	
<i>Pristipomoides macrophthalmus</i>	2.60	30	2.62	
<i>Saurida normani</i>	2.60	8	2.62	
<i>Eucinostomus argenteus</i>	2.60	38	2.62	
<i>Hoplunnis</i> sp	2.10	116	2.11	
<i>Steindachneria argenta</i>	2.10	158	2.11	
<i>Porichthys</i> sp	2.10	106	2.11	
MYCTOPHIDAE	2.10		2.11	
<i>Loilgo paelei</i>	1.80	22	1.81	
<i>Umbrina</i> sp	1.80	4	1.81	
<i>Lutjanus vivanus</i>	1.80	8	1.81	
<i>Prionotus punctatus</i>	1.00	4	1.01	
<i>Lepophidium profundorum</i>	0.80	8	0.81	
<i>Selar crumenophthalmus</i>	0.80	4	0.81	
<i>Lutjanus purpureus</i>	0.80	2	0.81	
<i>Promethichthys prometheus</i>	0.80	6	0.81	
<i>Seriola rivoliana</i>	0.60	2	0.60	
<i>Holocentrus ascensionis</i>	0.30	2	0.30	
<i>Hildebrandia</i> sp.	0.20	2	0.20	
<i>Synodus foetens</i>	0.20	52	0.20	
<i>Solenocera</i> sp	0.00	4		
<i>Syacium micrurum</i>	0.00	4		
<i>Rhomboplites aurorubens</i>	0.00	20		
<i>Synagrops bellus</i>	0.00	22		
Total	-----	99.30	-----	99.99

PROJECT STATION: 594

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1107
 start stop duration Long W 7458
 TIME : 02:50:00 03:13:00 , 23 (min) Purpose code: 3
 LOG : 4805.00 4806.10 1.10 Area code : 5
 FDEPTH: 244 235 GearCond.code: 5
 BDEPTH: 244 235 Validity code: 1
 Towing dir: 235° Wire out: 950 m Speed: 30 kn*10

Sorted: 25 Kg Total catch: 25.25 CATCH/HOUR: 65.87

SPECIES	CATCH/HOUR	% OF TOT.	C	SAMP. NO.
	weight	numbers		
Sciaena bathytatos	46.96	436	71.29	
Neoepinnula americana	2.61	5	3.96	
Argentina sp.	2.61	154	3.96	
CYNOGLOSSIDAE	1.96	172	2.98	
MORIDAE	1.83	120	2.78	
Polymixia lowei	1.30	94	1.97	
GEMPYLIDAE	1.04	5	1.58	
Squalus sp	1.04	3	1.58	
Etmopterus sp	0.91	21	1.38	
Solenocera sp	0.78	42	1.18	
Raja teevani	0.78	3	1.18	
Lepophidium profundorum	0.78	10	1.18	
Pontinus longispinnis	0.65	3	0.99	
Coelorhynchus caribbeaus	0.52	10	0.79	
Synagrops bellus	0.52	18	0.79	
Bembrops sp	0.52	10	0.79	
Lepidotopus caudatus	0.39	3	0.59	
Xiphopenaeus kroyeri	0.26	76	0.39	
BOTHIDAE	0.13	3	0.20	
Metanephrops binghami	0.13	10	0.20	
Penaeus subtilis	0.13	3	0.20	
MYCTOPHIDAE	0.00	5		
Total	65.85	99.96		

PROJECT STATION: 595

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1059
 start stop duration Long W 7506
 TIME : 06:10:00 06:40:00 30 (min) Purpose code: 3
 LOG : 4819.30 4821.00 1.70 Area code : 5
 FDEPTH: 43 45 GearCond.code:
 BDEPTH: 43 45 Validity code:
 Towing dir: 260° Wire out: 250 m Speed: 32 kn*10

Sorted: 19 Kg Total catch: 19.25 CATCH/HOUR: 38.50

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Eucinostomus argenteus</i>	11.80 292	30.65	614	
<i>Priacanthus arenatus</i>	4.80 10	12.47		
<i>Upeneus parvus</i>	3.80 90	9.87		
<i>Salar crumenophthalmus</i>	3.60 24	9.35		
<i>Rhomboplites aurorubens</i>	3.40 36	8.83		
<i>Sardinella aurita</i>	3.00 24	7.79		
<i>Balistes capricornis</i>	1.80 8	4.68		
<i>Lutjanus synagris</i>	1.80 4	4.68		
<i>Penaeus notialis</i>	1.20 34	3.12	615	
<i>Lutjanus purpureus</i>	1.20 12	3.12		
<i>Synodus foetens</i>	0.80 6	2.08		
<i>Porichthys sp</i>	0.40 16	1.04		
<i>Ogcocephalus sp</i>	0.30 2	0.78		
<i>Prionotus punctatus</i>	0.30 6	0.78		
<i>Diplectrum bivittatum</i>	0.20 12	0.52		
<i>Chloroscombrus chrysurus</i>	0.10 2	0.26		
<i>Diapterus rhombus</i>	0.00 2			
Total	----- 38.50	----- 100.02		

PROJECT STATION: 596

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1101
 start stop duration Long W 7515
 TIME : 08:08:00 08:38:00 30 (min) Purpose code: 3
 LOG : 4833.70 4835.50 1.80 Area code : 5
 FDEPTH: 101 101 GearCond.code:
 BDEPTH: 101 101 Validity code:
 Towing dir: 260° Wire out: 550 m Speed: 32 kn*10

Sorted: 19 Kg Total catch: 18.80 CATCH/HOUR: 37.60

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers			
<i>Lutjanus purpureus</i>	17.00 8	45.21	616	
<i>Lutjanus vivanus</i>	4.60 16	12.23		
<i>Pristipomoides macrophthalmus</i>	2.40 88	6.38		
<i>Seriola rivoliana</i>	2.20 2	5.85		
<i>Synodus foetens</i>	2.00 16	5.32		
<i>Priacanthus arenatus</i>	1.60 4	4.26		
<i>Aluterus monoceros</i>	1.60 2	4.26		
<i>Penaeus notialis</i>	1.40 44	3.72		
<i>Loligo palearis</i>	1.20 32	3.19		
<i>Porichthys sp</i>	1.20 76	3.19		
<i>Upeneus parvus</i>	1.00 26	2.66		
<i>Calappa sp</i>	0.60 4	1.60		
<i>Epinephelus niveatus</i>	0.40 6	1.06		
<i>Prionotus punctatus</i>	0.20 2	0.53		
<i>Prionotus stearnsi</i>	0.20 24	0.53		
<i>Trichopsetta ventralis</i>	0.00 12			
<i>Narcine brasiliensis</i>	0.00 4			
<i>Solenocera sp</i>	0.00 10			
<i>Serranus sp</i>	0.00 6			
Total	----- 37.60	----- 99.99		

PROJECT STATION: 597

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1053
 start stop duration Long W 7518
 TIME : 10:25:00 10:55:00 30 (min) Purpose code: 3
 LOG : 4848.90 4850.40 1.50 Area code : 5
 FDEPTH: 29 31 GearCond.code:
 BDEPTH: 29 31 Validity code:
 Towing dir: 240° Wire out: 100 m Speed: 30 kn*10

Sorted: 3 Kg Total catch: 2.90 CATCH/HOUR: 5.80

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Narcine brasiliensis</i>	3.00 2		51.72	
<i>Eucinostomus argenteus</i>	1.60 36		27.59	
<i>Synodus foetens</i>	0.30 6		5.17	
<i>Syacium micrurum</i>	0.20 2		3.45	
<i>Loligo plei</i>	0.20 20		3.45	
<i>Rhomboplites aurorubens</i>	0.20 2		3.45	
<i>Upeneus parvus</i>	0.20 4		3.45	
<i>Lutjanus purpureus</i>	0.10 2		1.72	
<i>Halieutichthys aculeatus</i>	0.00 6			
<i>Prionotus punctatus</i>	0.00 2			
<i>Trichopsetta ventralis</i>	0.00 6			
<i>Lutjanus synagris</i>	0.00 4			
Total	----- 5.80	-----	100.00	

PROJECT STATION: 598

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1057
 start stop duration Long W 7526
 TIME : 12:00:00 12:30:00 30 (min) Purpose code: 3
 LOG : 4860.00 4861.70 1.70 Area code : 5
 FDEPTH: 47 45 GearCond.code:
 BDEPTH: 47 45 Validity code:
 Towing dir: 217° Wire out: 250 m Speed: 35 kn*10

Sorted: 37 Kg Total catch: 36.65 CATCH/HOUR: 73.30

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers			
<i>Lutjanus analis</i>	15.60 8		21.28	
<i>Seriola rivoliana</i>	12.00 6		16.37	
<i>Haemulon eurolineatum</i>	12.00 356		16.37	
<i>Lutjanus purpureus</i>	11.00 6		15.01	
<i>Lutjanus griseus</i>	9.00 2		12.28	
<i>Rhomboplites aurorubens</i>	5.30 84		7.23	
<i>Rhizoprionodon porosus</i>	3.00 2		4.09	
<i>Mullus surattus</i>	2.20 36		3.00	
<i>Lutjanus buccanella</i>	1.20 14		1.64	
<i>Eucinostomus argenteus</i>	1.00 6		1.36	
<i>Lutjanus vivanus</i>	0.80 6		1.09	
<i>Upeneus parvus</i>	0.20 4		0.27	
Total	----- 36.65	-----	99.99	

PROJECT STATION: 599

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1046
 start stop duration Long W 7529
 TIME : 14:12:00 14:42:00 30 (min) Purpose code: 3
 LOG : 4875.00 4876.80 1.80 Area code : 5
 FDEPTH: 36 34 GearCond.code:
 SDEPTH: 36 34 Validity code:
 Towing dir: 205° Wire out: 200 m Speed: 35 kn*10

Sorted: 44 Kg Total catch: 44.25 CATCH/HOUR: 88.50

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers		
<i>Lutjanus analis</i>	30.60 22	34.58	617
<i>Lutjanus synagris</i>	17.00 60	19.21	618
<i>Epinephelus morio</i>	13.00 2	14.69	
<i>Priacanthus arenatus</i>	10.00 32	11.30	
<i>Hemmulon aurolineatum</i>	6.00 118	6.78	
<i>Rhomboplites aurorubens</i>	5.00 60	5.65	619
<i>Eucinostomus argenteus</i>	2.60 60	2.94	
<i>Acanthostracion sp</i>	1.00 2	1.13	
<i>Ballistes capriscus</i>	1.00 2	1.13	
<i>Synodus poeyi</i>	1.00 4	1.13	
<i>Seriola rivoliana</i>	1.00 8	1.13	
<i>Loligo plei</i>	0.20 70	0.23	
<i>Diplectrum bivittatum</i>	0.10 4	0.11	
<i>Peneus notialis</i>	0.00 2		
Total	----- 88.50	----- 100.01	

PROJECT STATION: 600

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1037
 start stop duration Long W 7534
 TIME : 15:55:00 16:25:00 30 (min) Purpose code: 3
 LOG : 4887.30 4888.90 1.60 Area code : 5
 FDEPTH: 53 49 GearCond.code:
 SDEPTH: 53 49 Validity code:
 Towing dir: 210° Wire out: 250 m Speed: 32 kn*10

Sorted: 32 Kg Total catch: 117.76 CATCH/HOUR: 235.52

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	Weight numbers		
<i>Selar crumenophthalmus</i>	135.10 942	97.36	622
<i>Eucinostomus argenteus</i>	21.00 490	0.92	620
<i>Rhomboplites aurorubens</i>	17.50 260	7.43	621
<i>Lutjanus synagris</i>	14.00 70	5.94	
<i>Upeneus parvus</i>	12.60 224	5.35	623
<i>Lutjanus analis</i>	10.00 2	4.29	
<i>Synodus poeyi</i>	7.00 84	2.97	
<i>Synodus foetens</i>	5.60 56	2.38	
<i>Pristipomoides macrophthalmus</i>	3.50 8	1.49	
<i>Acanthostracion quadricornis</i>	2.80 8	1.19	
<i>Loligo plei</i>	2.10 372	0.89	
<i>Seriola rivoliana</i>	1.74 14	0.74	
<i>Prionotus punctatus</i>	1.40 14	0.59	
<i>Lactophrys trigonus</i>	0.70 8	0.30	
<i>Peneus notialis</i>	0.48 14	0.20	
<i>Syacium sp.</i>	0.00 8		
<i>Lutjanus vivanus</i>	0.00 8		
Total	----- 235.52	----- 100.00	

PROJECT STATION: 601

DATE: 19/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 1029
 start stop duration Long W 7539
 TIME : 18:10:00 18:27:00 17 (min) Purpose code: 3
 LOG : 4903.50 4904.30 0.80 Area code : 5
 FDEPTH: 166 174 GearCond.code:
 BDEPTH: 166 174 Validity code:
 Towing dir: 20° Wire out: 750 m Speed: 25 kn*10

Sorted: 16 Kg Total catch: 15.85 CATCH/HOUR: 55.94

SPECIES		CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight	numbers		
Pristipomoides macrophthalmus	21.18	258	37.86	624
Loligo paelei	6.00	1782	10.73	
Saurida normani	6.00	28	10.73	
Raja cyclophora	4.59	4	8.21	
Hemanthias leptus	3.53	4	6.31	
Lepidopus caudatus	2.47	28	4.42	
Muraenesox canis	2.47	4	4.42	
Lutjanus synagris	2.47	4	4.42	
Rhomboplites aurorubens	2.47	21	4.42	
Umbrina sp	1.76	14	3.15	
HOLOCENTRIDAE	1.06	11	1.89	
Ancylopsetta sp.	0.71	11	1.27	
Selar crumenophthalmus	0.71	7	1.27	
Plemonika sp	0.35	25	0.63	
Synagrops bellus	0.18	25	0.32	
PENAEIDAE	0.00	14		
MYCTOPHIDAE	0.00	815		
Benthrops sp	0.00	7		
Sphoeroides sp	0.00	4		
PARALEPIDIDAE	0.00	7		
Argentina sp.	0.00	14		
Synodus foetens	0.00	25		
Paralichthys sp	0.00	11		
Haemulon striatum	0.00	4		
Etrumeus teres	0.00	4		
Total	-----	55.95	-----	100.05

PROJECT STATION: 602

DATE: 20/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 932
 start stop duration Long W 7616
 TIME : 08:52:00 09:22:00 30 (min) Purpose code: 3
 LOG : 5018.90 5020.20 1.30 Area code : 5
 FDEPTH: 66 61 GearCond.code:
 SDEPTH: 66 61 Validity code:
 Towing dir: 90° Wire out: 350 m Speed: 26 kn*10

Sorted: 37 Kg Total catch: 36.95 CATCH/HOUR: 73.90

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP. NO.
	weight	numbers		
<i>Lutjanus synagris</i>	14.80	68	20.03	625
<i>Loligo plei</i>	12.40	3294	16.78	
<i>Scomberomorus cavalla</i>	9.00	2	12.18	
<i>Eucinostomus argenteus</i>	9.00	244	12.18	
<i>Lutjanus analis</i>	5.60	4	7.58	
<i>Rhizoprionodon lalandei</i>	4.40	2	5.95	
<i>Balistes capriscus</i>	4.40	14	5.95	
<i>Acanthostracion quadricornis</i>	3.20	28	4.33	
<i>Carcharhinus limbatus</i>	2.40	2	3.25	
<i>Rhomboplites aurorubens</i>	2.20	48	2.98	
<i>Upeneus parvus</i>	2.00	84	2.71	
<i>Siganus crumenophthalmus</i>	1.40	16	1.89	
<i>Lutjanus vivanus</i>	0.80	22	1.08	
<i>Diplectrum bivittatum</i>	0.60	14	0.81	
<i>Priacanthus arenatus</i>	0.60	8	0.81	
<i>Fistularia petimba</i>	0.50	8	0.68	
<i>Balistes vetula</i>	0.40	2	0.54	
<i>Selene spixii</i>	0.10	2	0.14	
<i>Pristipomoides macrophthalmus</i>	0.10	8	0.14	
<i>Antigonia capros</i>	0.00	2		
<i>Synodus poeyi</i>	0.00	2		
<i>Synodus foetens</i>	0.00	2		
Total	-----	73.90	-----	100.01

PROJECT STATION: 603

DATE: 20/ 6/98 GEAR TYPE: BT No:1 POSITION: Lat N 932
 start stop duration Long W 7605
 TIME : 09:35:00 09:40:00 5 (min) Purpose code: 3
 LOG : 5029.70 5029.90 0.20 Area code : 5
 FDEPTH: 38 39 GearCond.code: 9
 BDEPTH: 38 39 Validity code:
 Towing dir: 350° Wire out: 200 m Speed: 24 kn*10

Sorted: 1 Kg Total catch: 1.20 CATCH/HOUR: 14.40

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
Upeneus parvus	3.00 156	20.83	
Chloroscombrus chrysurus	3.00 84	20.83	
Penaeus notialis	2.40 132	16.67	
Loligo paelei	1.20 60	8.33	
Acanthostracion quadricornis	1.20 12	8.33	
Synodus foetens	1.20 12	8.33	
Lepophidium profundorum	0.60 12	4.17	
Porichthys pauciradiatus	0.60 156	4.17	
Priacanthus arenatus	0.60 12	4.17	
Rhomboplites aurorubens	0.60 12	4.17	
Loligo plei	0.00 12		
Squilla sp	0.00 12		
Selar crumenophthalmus	0.00 12		
Syphurus sp	0.00 36		
Diplectrum bivittatum	0.00 48		
Synodus poeyi	0.00 48		
Selene spixii	0.00 12		
Total	----- 14.40	----- 100.00	

PROJECT STATION: 604

DATE: 20/ 6/98 GEAR TYPE: BT No:1 POSITION: Lat N 943
 start stop duration Long W 7606
 TIME : 11:05:00 11:35:00 30 (min) Purpose code: 3
 LOG : 5042.10 5043.10 1.00 Area code : 5
 FDEPTH: 71 71 GearCond.code:
 BDEPTH: 71 71 Validity code:
 Towing dir: 53° Wire out: 350 m Speed: 20 kn*10

Sorted: 23 Kg Total catch: 22.35 CATCH/HOUR: 45.10

SPECIES	CATCH/HOUR	% OF TOT. C	SAMP.NO.
	weight numbers		
Rhizoprionodon lalandei	15.20 16	33.70	
Eucinostomus argenteus	11.40 368	25.38	626
Loligo plei	4.40 420	9.76	
Rhomboplites aurorubens	3.40 62	7.54	
Trichiurus lepturus	3.40 38	7.54	
Chloroscombrus chrysurus	2.40 48	5.32	
Opiathonema oglinum	1.40 22	3.10	
Lutjanus synagris	0.80 4	1.77	
Scomberomorus brasiliensis	0.60 2	1.33	
Sphyraena guachancho	0.50 2	1.11	
Diplectrum radiale	0.40 20	0.89	
Balistes capriscus	0.40 4	0.89	
Upeneus parvus	0.40 24	0.89	
Pristipomoides macrophthalmus	0.10 10	0.22	
Synodus poeyi	0.10 2	0.22	
Penaeus notialis	0.10 6	0.22	
Selene spixii	0.10 2	0.22	
Anchoa lyolepis	0.00 2		
Total	----- 45.10	----- 100.00	

PROJECT STATION: 605

DATE: 20/ 6/88 GEAR TYPE: BT No:1 POSITION: Lat N 951
 start stop duration Long W 7557
 TIME : 12:54:00 13:00:00 6 (min) Purpose code: 3
 LOG : 5055.50 5055.80 0.30 Area code : 5
 FDEPTH: 58 58 GearCond.code: 8
 BDEPTH: 58 58 Validity code: 1
 Towing dir: 230° Wire out: 250 m Speed: 30 kn*10

Sorted: 6 Kg Total catch: 6.40 CATCH/HOUR: 64.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	Weight	numbers		
<i>Eucinostomus argenteus</i>	17.00	620	26.56	
<i>Lutjanus synagris</i>	11.00	20	17.19	
<i>Upeneus parvus</i>	9.00	820	14.06	
<i>Loligo plei</i>	6.00	900	9.38	
<i>Rhomboplites aurorubens</i>	4.00	40	6.25	
<i>Chloroscombrus chrysurus</i>	4.00	40	6.25	
<i>Lutjanus analis</i>	4.00	10	6.25	
<i>Diplectrum radiale</i>	2.00	90	3.13	
<i>Sphyraena guachancho</i>	2.00	10	3.13	
<i>Calamus pennatus</i>	2.00	10	3.13	
<i>Synodus poeyi</i>	1.00	10	1.56	
<i>Pristipomoides macrourus</i>	1.00	70	1.56	
<i>Fistularia petimba</i>	1.00	10	1.56	
BOTHIDAE	0.00	30		
LABRIDAE	0.00	10		
SERRANIDAE	0.00	50		
<i>Selar crumenophthalmus</i>	0.00	10		
<i>Lutjanus purpureus</i>	0.00	10		
Total	-----	64.00	-----	100.01

PROJECT STATION: 606

DATE: 20/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1003
 start stop duration Long W 7846
 TIME :17:28:00 17:58:00 30 (min) Purpose code: 3
 LOG :5074.30 5076.10 1.80 Area code : 5
 FDEPTH: 78 81 GearCond.code:
 BDEPTH: 78 81 Validity code:
 Towing dir: 255° Wire out: 400 m Speed: 32 kn*10

Sorted: 19 Kg Total catch: 19.00 CATCH/HOUR: 38.00

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Rhomboplites aurorubens	13.40	376	35.26	627
Eucinostomus argenteus	9.40	304	24.74	628
Loligo plei	3.20	260	8.42	
Loligo pacaei	2.40	322	6.32	
Trichiurus lepturus	2.40	8	6.32	
Rhizoprionodon islandei	1.40	2	3.68	
Lutjanus synagris	1.40	6	3.68	
Balistes capriscus	0.80	4	2.11	
Peneus notialis	0.80	32	2.11	
Diplectrum bivittatum	0.60	28	1.58	
Priacanthus arenatus	0.60	6	1.58	
Sphyraena guachancho	0.40	2	1.05	
Decapterus punctatus	0.40	24	1.05	
Chloroscombrus chrysurus	0.30	4	0.79	
Upeneus parvus	0.20	8	0.53	
Fistularia petimba	0.20	2	0.53	
Pristipomoides macrourus	0.10	8	0.26	
Haemulon striatum	0.00	2		
Selar crumenophthalmus	0.00	2		
<hr/>				
Total	38.00		100.01	

PROJECT STATION: 607

DATE: 21/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1107
 start stop duration Long W 7441
 TIME :06:04:00 06:34:00 30 (min) Purpose code: 3
 LOG :5180.40 5181.80 1.40 Area code : 5
 FDEPTH: 22 34 GearCond.code:
 BDEPTH: 22 34 Validity code:
 Towing dir: 104° Wire out: 100 m Speed: 30 kn*10

Sorted: 22 Kg Total catch: 21.90 CATCH/HOUR: 43.80

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
Balistes capriscus	17.40	62	39.73	
Lutjanus synagris	4.40	20	10.05	629
Elops saurus	4.20	6	9.59	
Scomberomorus brasiliensis	3.00	6	6.85	
Alectis ciliaris	2.40	4	5.48	
Selene spixii	2.40	14	5.48	
Chaetodipterus faber	2.00	4	4.57	
Lutjanus purpureus	1.40	2	3.20	
Rhomboplites aurorubens	1.40	6	3.20	
Eucinostomus argenteus	1.40	32	3.20	
Sphyraena guachancho	1.40	4	3.20	
Diapterus rhombus	1.00	2	2.28	
Caranx cryos	1.00	2	2.28	
Chloroscombrus chrysurus	0.40	4	0.91	
<hr/>				
Total	43.80		100.02	

PROJECT STATION: 608

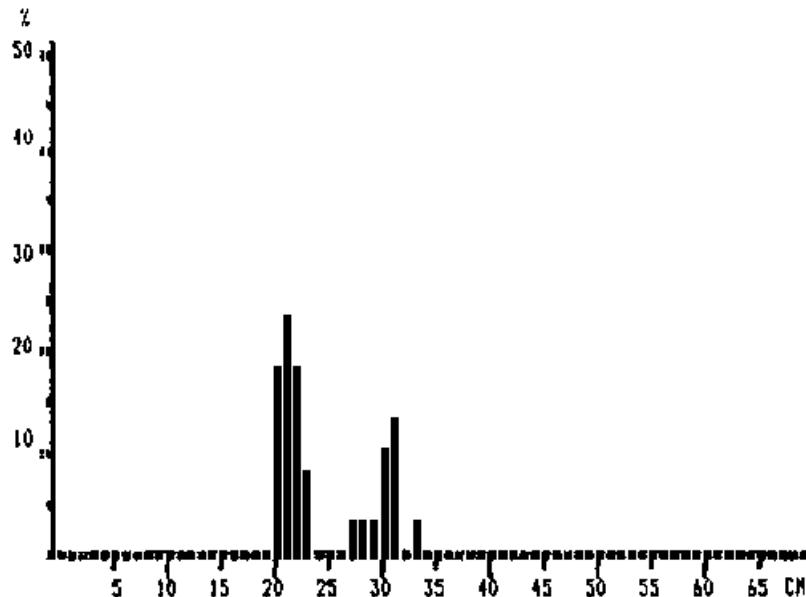
DATE: 21/ 6/88 GEAR TYPE: BT No:1 POSITION:Lat N 1104
 start stop duration Long W 7429
 TIME :07:42:00 07:55:00 13 (min) Purpose code: 3
 LOG :5191.70 5192.40 0.70 Area code : 5
 FDEPTH: 21 22 GearCond.code: 5
 BDEPTH: 21 22 Validity code: 1
 Towing dir: S3° Wire out: 100 m Speed: 30 kn*10

Sorted: 13 Kg Total catch: 12.75 CATCH/HOUR: 58.85

SPECIES	CATCH/HOUR		% OF TOT. C	SAMP.NO.
	weight	numbers		
<i>Lutjanus analis</i>	19.38	14	32.93	
<i>Balistes capriscus</i>	14.77	51	25.10	
<i>Lutjanus synagris</i>	10.15	9	17.25	
<i>Acanthostracion quadricornis</i>	7.85	14	13.34	
<i>Kiops saurus</i>	3.23	5	5.49	
<i>Balistes vetula</i>	3.23	9	5.49	
<i>Salene spixii</i>	0.23	5	0.39	
<i>Haemulon boschme</i>	0.00	18		
<i>Holocentrus ascensionis</i>	0.00	5		
Total	-----	58.84	-----	99.99

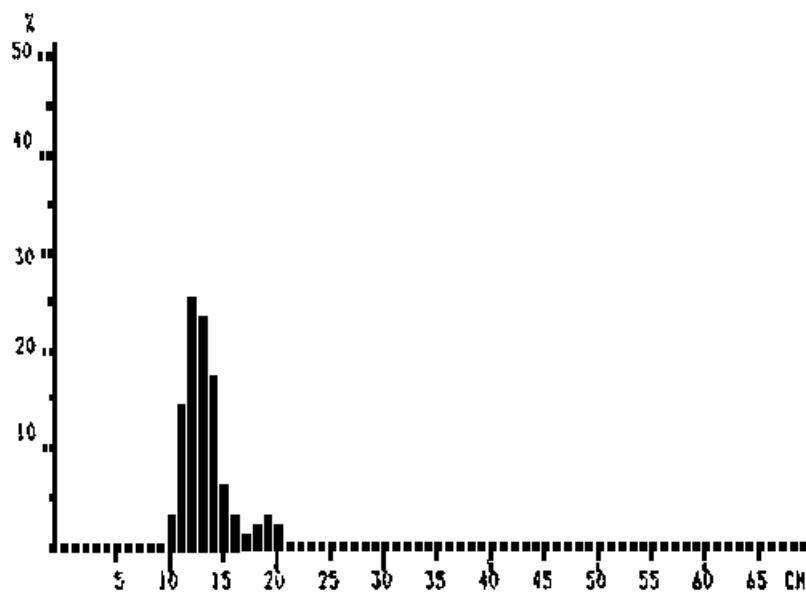
ANNEX 3. POOLED LENGTH DISTRIBUTIONS OF MAIN SPECIES CAUGHT, COLOMBIA

Opisthonema oglinum - Colombia



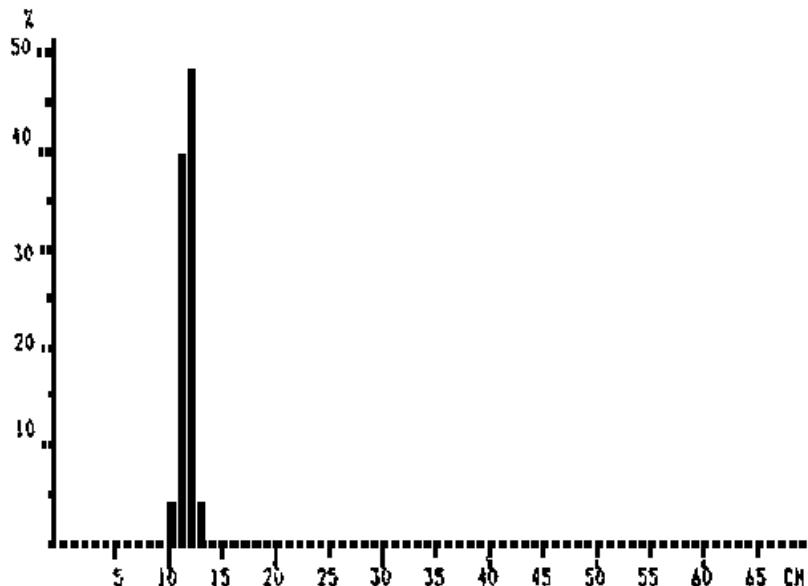
Pooled sample (simple adding)
MEAN LENGTH = 24.21cm N= 39
NUMBER OF SUBSAMPLES: 2
SAMPLES FOUND BETWEEN ST. NO. 570 AND 590.
SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Sardinella aurita - Colombia



Pooled sample (simple adding)
MEAN LENGTH = 13.25cm N= 588
NUMBER OF SUBSAMPLES: 6
SAMPLES FOUND BETWEEN ST. NO. 564 AND 588.
SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Trachurus lathami - Colombia



Pooled sample (simple adding)

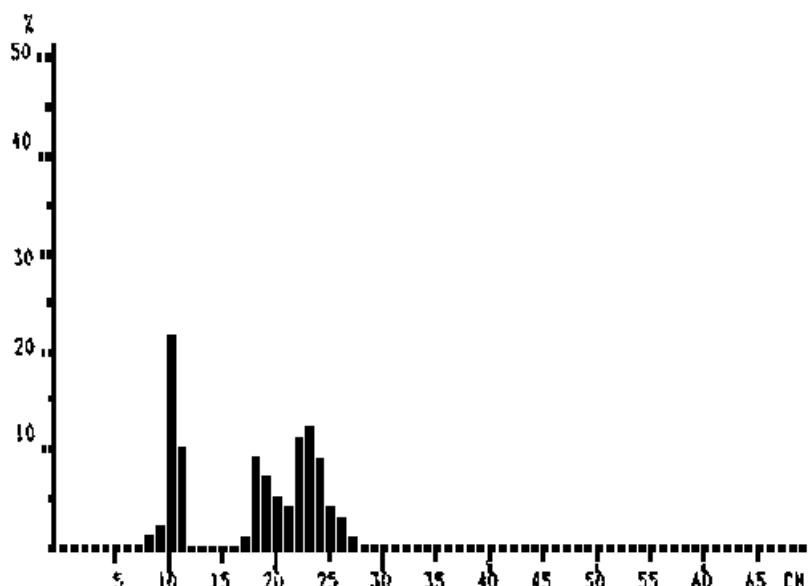
MEAN LENGTH = 11.53cm N= 241

NUMBER OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 571 AND 572.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Selar crumenophthalmus - Colombia



Pooled sample (simple adding)

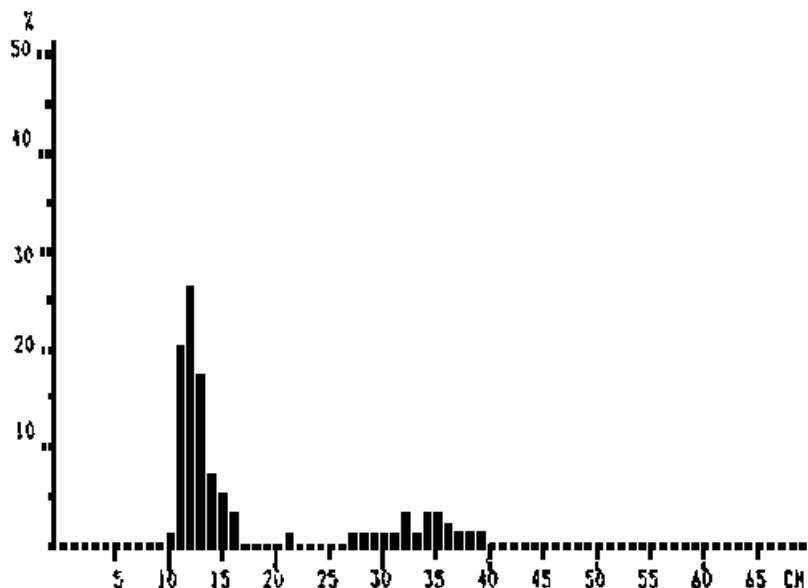
MEAN LENGTH = 17.78cm N = 140

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 580 AND 600.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

***Selene spixii* - Colombia**



Pooled sample (simple adding)

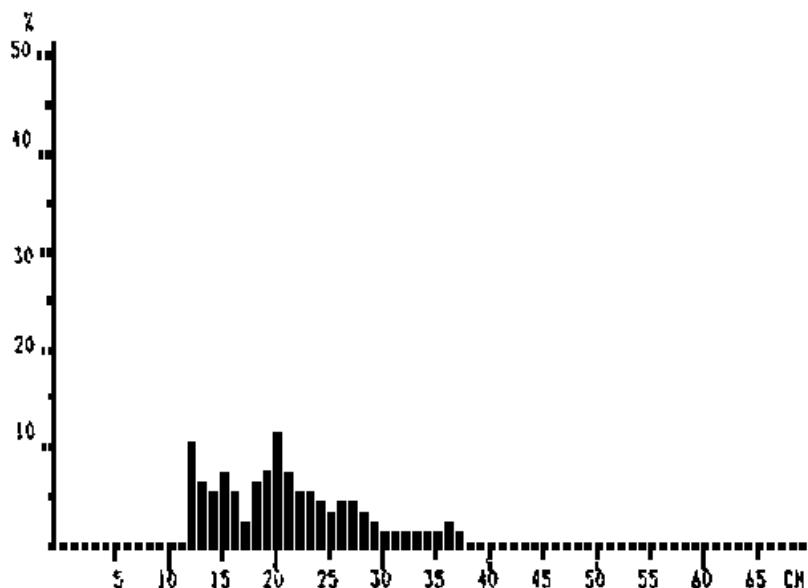
MEAN LENGTH = 16.76cm N= 149

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 570 AND 590.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

***Chloroscombrus chrysurus* - Colombia**



Pooled sample (simple adding)

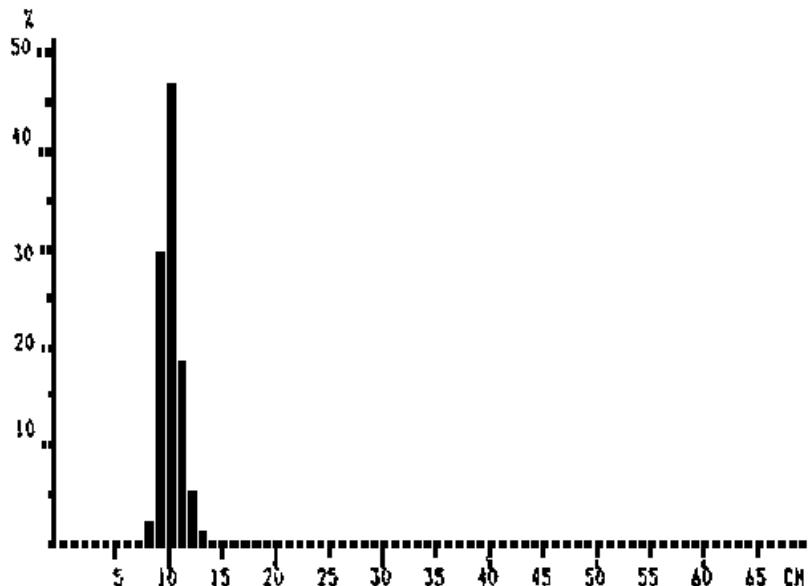
MEAN LENGTH = 19.88cm N= 189

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 564 AND 590.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Decapterus macarellus - Colombia



Pooled sample (simple adding)

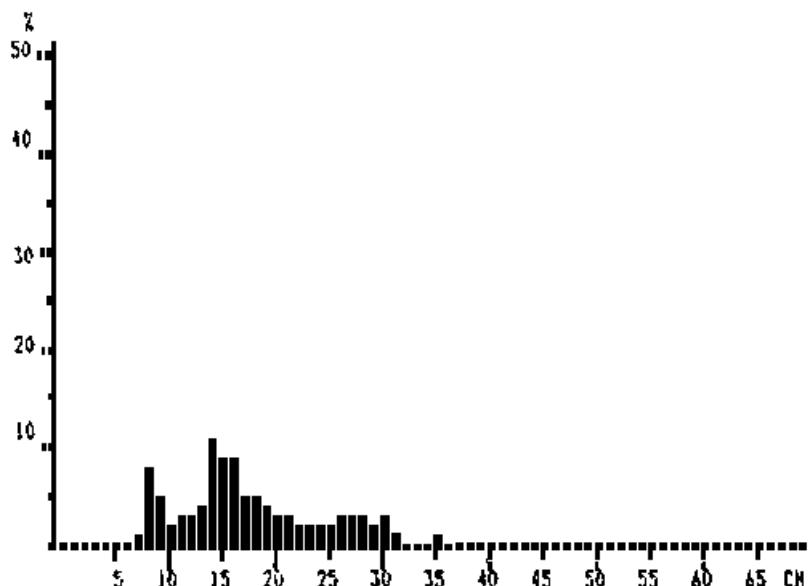
MEAN LENGTH = 9.98cm N= 357

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 581 AND 586.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Rhomboptilus aurorubens - Colombia



Pooled sample (simple adding)

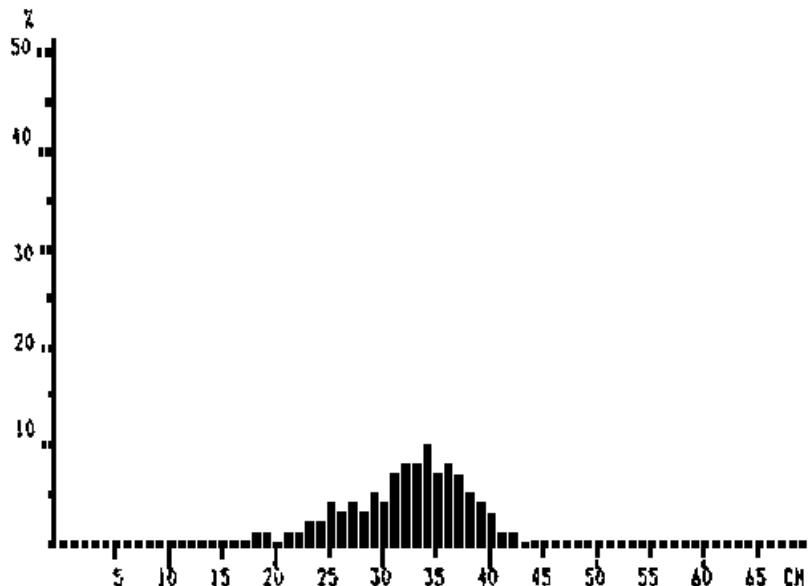
MEAN LENGTH = 17.01cm N= 918

NUMBER OF SUBSAMPLES: 13

SAMPLES FOUND BETWEEN ST. NO. 564 AND 606.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Lutjanus synagris - Colombia



Pooled sample (simple adding)

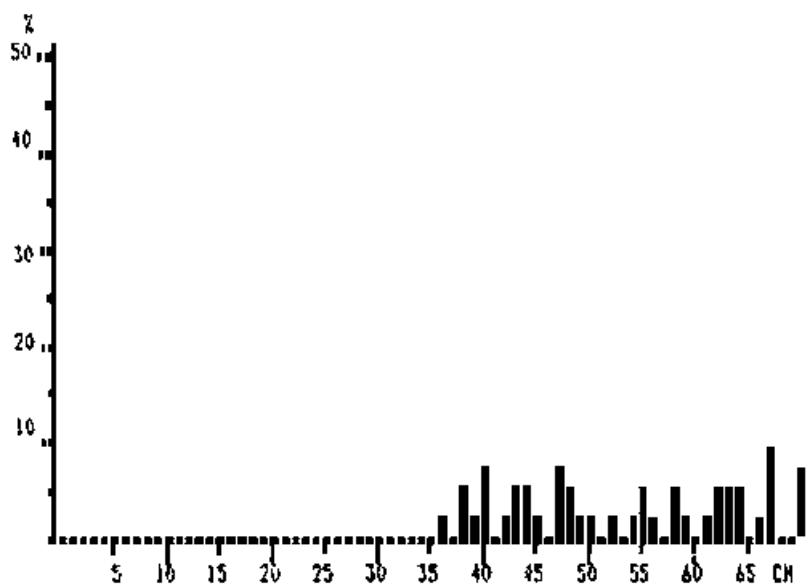
MEAN LENGTH = 32.30cm N= 353

NUMBER OF SUBSAMPLES: 12

SAMPLES FOUND BETWEEN ST. NO. 564 AND 602.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Lutjanus analis - Colombia



Pooled sample (simple adding)

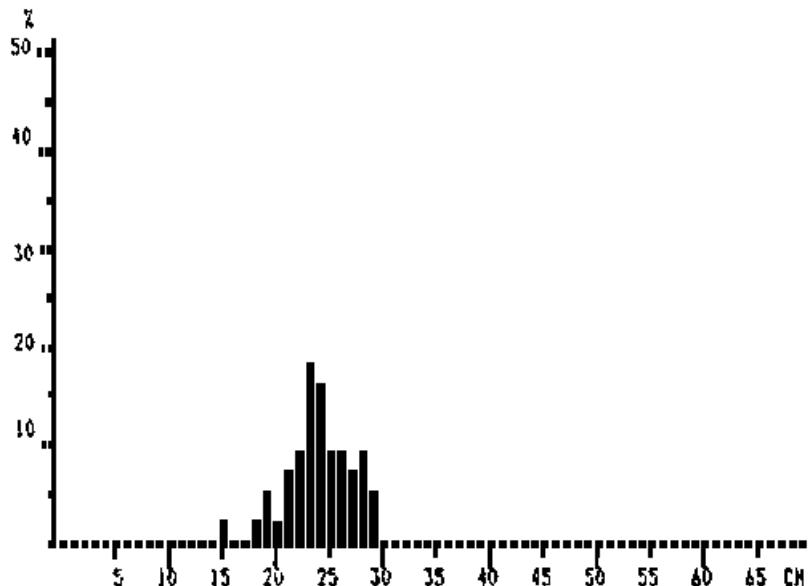
MEAN LENGTH = 53.44cm N= 43

NUMBER OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 566 AND 599.

SAMPLES SEARCH BETWEEN ST. NO. 564 AND 606.

Lutjanus vivanus - Colombia



Pooled sample (simple adding)

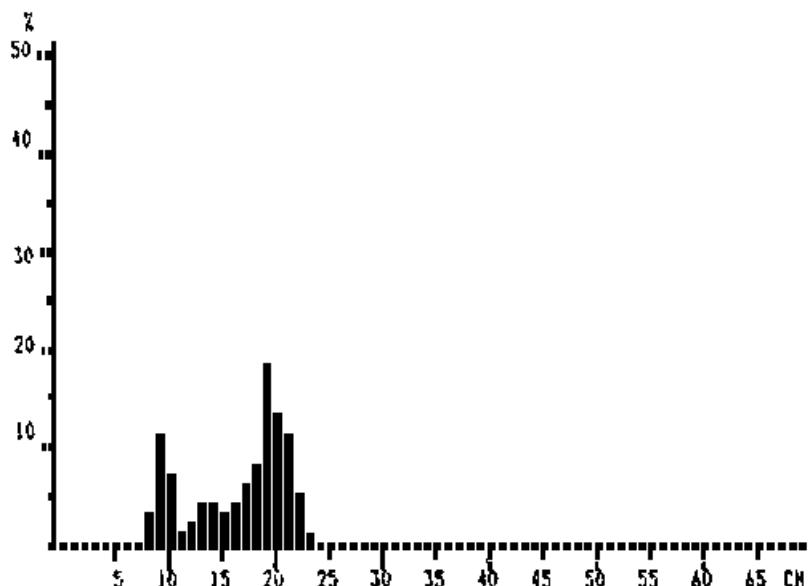
MEAN LENGTH = 23.84cm N= 44

NUMBER OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 592 AND 592.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Pristipomoides macrourus - Colombia



Pooled sample (simple adding)

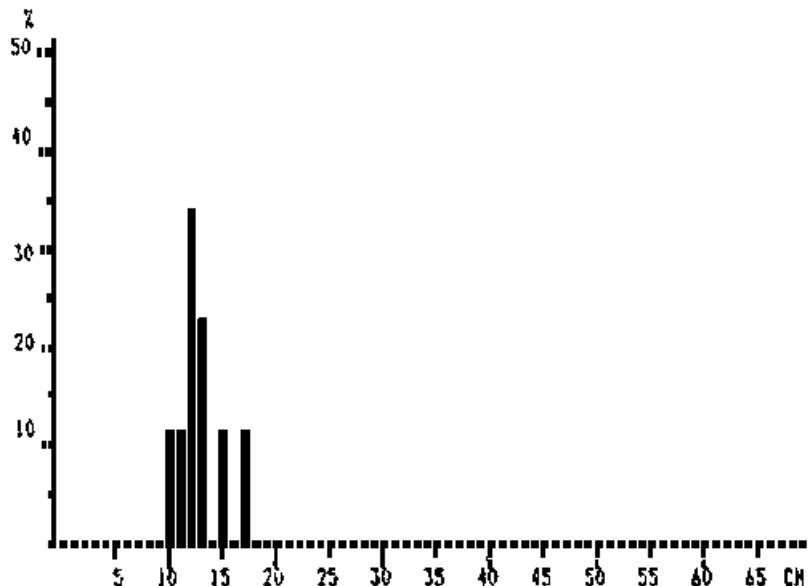
MEAN LENGTH = 16.54cm N= 275

NUMBER OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 567 AND 601.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Penaeus brasiliensis - Colombia



Pooled sample (simple adding)

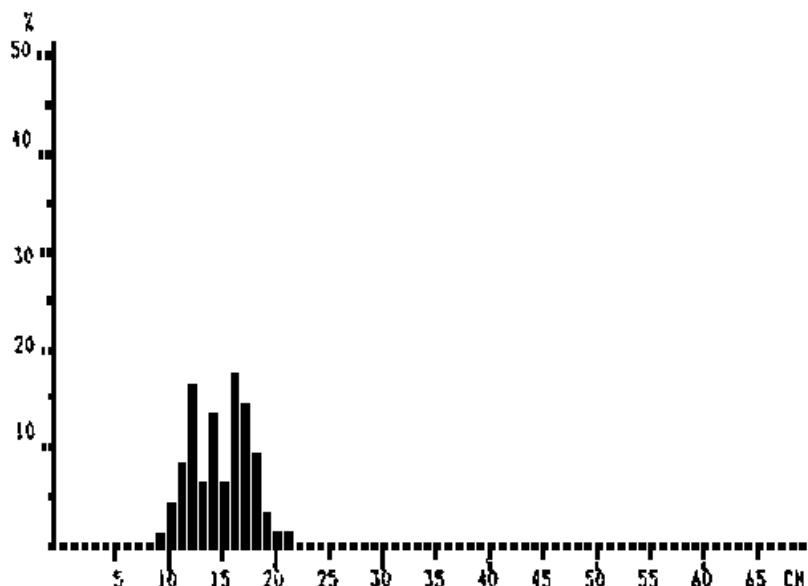
MEAN LENGTH = 12.78cm N= 9

NUMBER OF SUBSAMPLES: 1

SAMPLES FOUND BETWEEN ST. NO. 567 AND 567.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Penaeus notialis - Colombia



Pooled sample (simple adding)

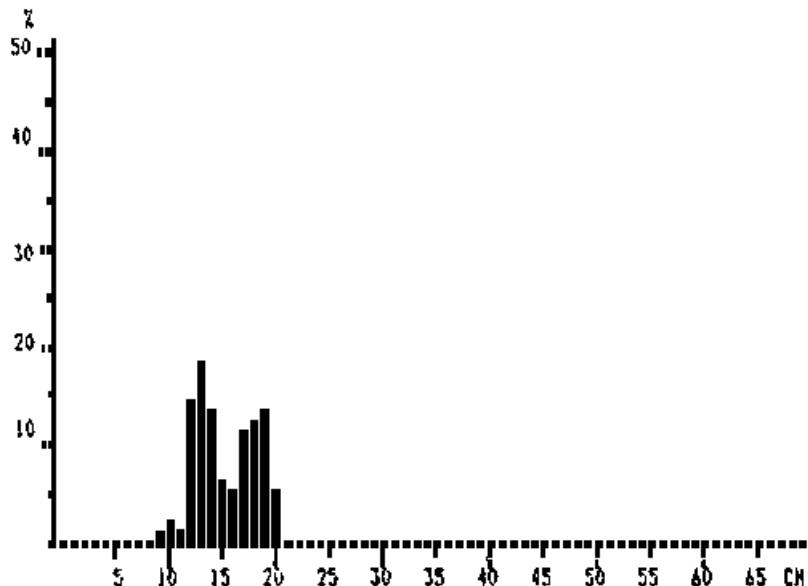
MEAN LENGTH = 14.67cm N= 139

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 567 AND 595.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Plesiopenaeus edwardsianus - Colombia



Pooled sample (simple adding)

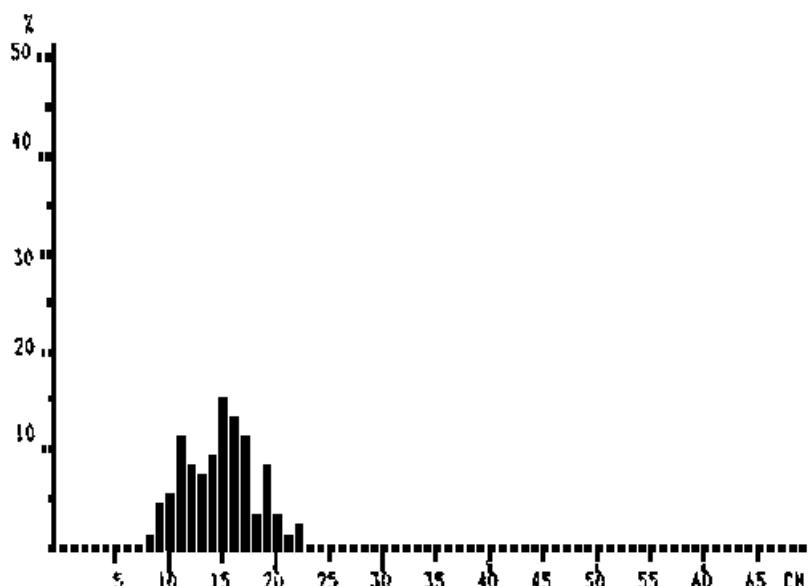
MEAN LENGTH = 15.22cm N= 85

NUMBER OF SUBSAMPLES: 2

SAMPLES FOUND BETWEEN ST. NO. 568 AND 579.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Solenocera sp - Colombia



Pooled sample (simple adding)

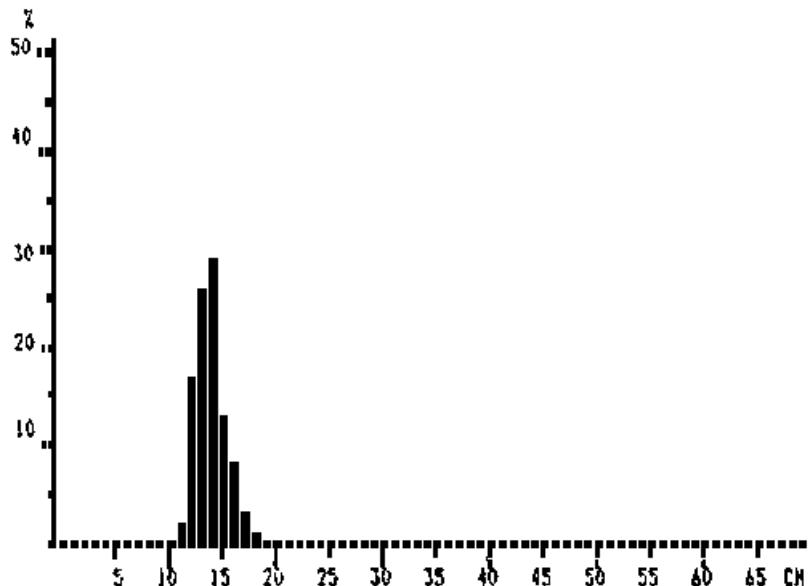
MEAN LENGTH = 14.58cm N= 151

NUMBER OF SUBSAMPLES: 3

SAMPLES FOUND BETWEEN ST. NO. 568 AND 579.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Eucinostomus argenteus - Colombia



Pooled sample (simple adding)

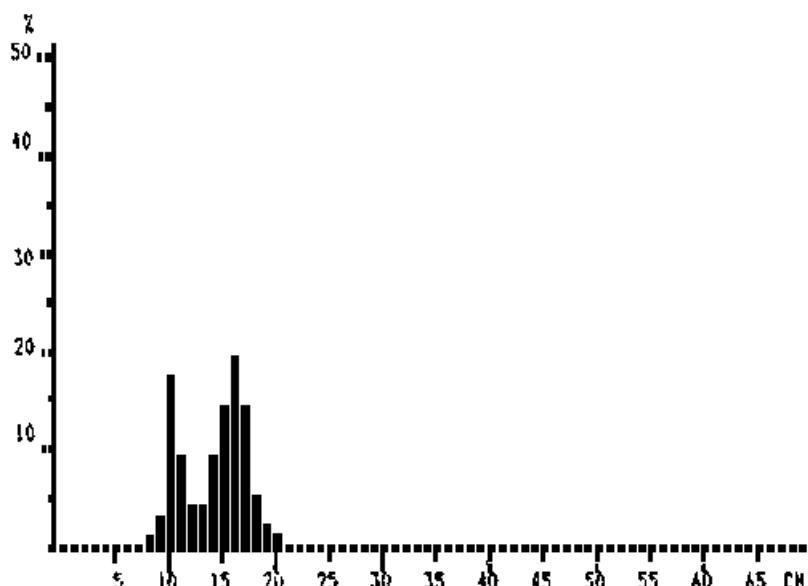
MEAN LENGTH = 13.78cm N= 549

NUMBER OF SUBSAMPLES: 7

SAMPLES FOUND BETWEEN ST. NO. 565 AND 606.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.

Upeneus parvus - Colombia



Pooled sample (simple adding)

MEAN LENGTH = 14.11cm N= 411

NUMBER OF SUBSAMPLES: 5

SAMPLES FOUND BETWEEN ST. NO. 565 AND 600.

SAMPLES SEARCHED BETWEEN ST. NO. 564 AND 606.