NORTH CAROLINA/NATIONAL MARINE FISHERIES SERVICE REGIONAL COOPERATIVE STATISTICAL PROGRAM

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by

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STUDY I

North Carolina Commercial Fisheries Harvest and Production

by

Katy H. West

Study Objective: To collect, process and disseminate commercial fishery harvest and production statistics for North Carolina for use in state and federal fishery management programs

ABSTRACT

Commercial fishery statistics in coastal North Carolina were collected from June 1983 through March 1986 from 278 - 335 seafood dealers, on a voluntary basis, by five state port agents and two federal port agents. Data were collected for the following surveys: North Carolina Landings Bulletin (monthly), South Atlantic Regional Shrimp Survey (weekly), General Canvas of the Fisheries (annual), Market News Reports (weekly), and Trip Estimates for the Long Haul and Winter Trawl Fisheries (seasonal). The North Carolina Marine Fisheries Vessel License file was used to collect statistical data on the fishing fleet. The landings data were compiled and published each month in the Division's "North Carolina Monthly Landings Bulletin" which was sent to over 160 users. Over 450 requests for fishery statistics from various users (Regional Fishery Management Councils, State management agencies, news media, researchers, etc.) were answered during this project.

INTRODUCTION

Background

Fishery statistics are important components in the development of fishery management strategies. Recognizing the importance of accurate and timely fishery statistics, the fishery management agencies of the South Atlantic states (North Carolina, South Carolina, Georgia, Florida) and the National Marine Fisheries Service (NMFS) joined together in 1977 to collect fishery statistics for the region. Initial impetus and funding for the regional program came from the Atlantic States Marine Fisheries Commission's (ASMFC) State/Federal Fisheries Management program. The NMFS Southeast Regional Office provided funding to continue the program and implemented Cooperative Agreements with each state. The first cooperative agreements were signed in October 1980. The South Atlantic State/Federal Statistical Committee serves as the coordinating group for the regional activities. For example, the members of the Committee determine the data sets to be collected, the periodicity of data collection, computer codes, and input and output formats.

A Cooperative Agreement between North Carolina Division of Marine Fisheries (DMF) and NMFS (Project SF-20) was signed in 1983 to continue this program. This report covers the entire period of the Agreement, conducted during 1 June 1983 through 31 March 1986.

Objectives

During this period the following objectives were met under the program:

1. To obtain monthly reports on the commercial landings by

   species (pounds and value) of fish and shellfish for the North Carolina Landings Bulletin.

2. To obtain monthly reports on the type of gear used, the water body of capture, distance from shore and the exvessel value of the catch.

3. To obtain weekly detailed information on the pounds and value by shrimp species, by count size, by water body of capture, by gear, by grading type, by trips, by calendar day fished, and by hours fished for the South Atlantic Regional Shrimp program.

4. To obtain the annual reports (Processed Products and Wholesale Dealer Survey, Shellfish Conversions, and Operating Units Data-Boat and Shore Survey and Vessel Survey) for the General Canvas of the Fisheries.

5. To obtain weekly estimates of commercial landings for the major species by region, for the Market News Program.

6. To obtain monthly estimates of the number of trips for major North Carolina fisheries.

7. To design and implement a data entry, data analysis and data management Automated Data Processing (ADP) system for the commercial fishing harvest and production statistics.

8. To computerize all information contained on the North Carolina marine fisheries vessel license file.

9. To provide summaries of the information stored on the vessel license file.

10. To publish a monthly summary of commercial landings by species, by pounds and dollars, and comparing year-to-date totals to the same period in the previous year.

11. To respond in a timely manner to data requests for statistics collected and processed by the project.

12. To provide the weekly Market News Report for North Carolina to the NMFS New Orleans Market News offices, for inclusion in their Friday Market News publication.

13. Coordinate the activities of the state and federal participants in the study in order to increase the effectiveness of the program.

METHODS

Data Collection

The basic procedures followed in this segment for collecting commercial fishery statistics have been described in several reports (Theiling 1981; West 1980, 1981, 1982, 1983, 1984, 1985). Additional data collection procedures are also described in the NMFS publication "Manual for Conducting Statistical Surveys of the Fisheries of the United States" (U.S. Dep. Interior, Bur. Com. Fish. 1964) and the Statistical Committee's manual "South Atlantic Regional Shrimp Trip Interview Form Instructions" (1980).

Commercial landings and processing data were collected under North Carolina's legal authority (General Statute 113-163) on a voluntary basis from the seafood dealers located in the coastal counties (Figure 1). Five state port agents and two federal port agents collected data during this project. The counties covered by each port agent position and the number of seafood dealers contacted are shown in Table 1. From these seafood dealers, the port agents collected data for the following surveys:

North Carolina Landings Bulletin (monthly)
South Atlantic Regional Shrimp Survey (weekly)
General Canvas of the Fisheries (annual)
Market News Report (weekly)

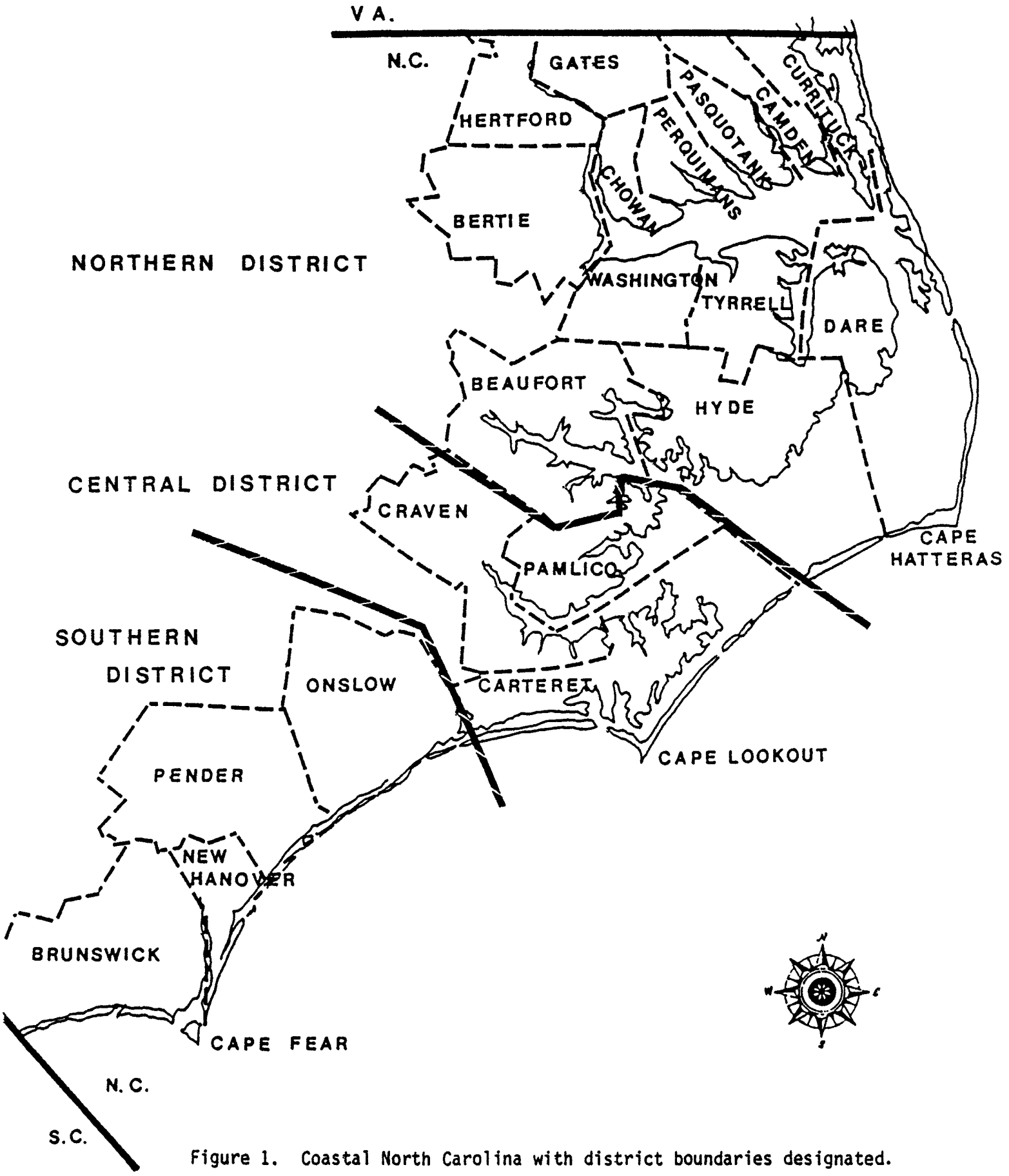

Figure 1. Coastal North Carolina with district boundaries designated.

Table 1. Port agents office location, geographic area of coverage and number of seafood dealers contacted, 1983 - 1985.

Port agent office location	Agency	Counties covered	Number of seafood dealers contacted 1983	1984	1985
Manteo, NC	DMF	Camden, Chowan, Currituck, Dare (portion), Hertford Pasquotank, Perquimans, Tyrrell	63	61	46
Washington, NC	DMF	Beaufort, Bertie, Hyde (portion), Halifax, Martin, Pamlico (portion), Washington	58	60	52
Sea Level, NC	DMF	Carteret (portion), Craven, Pamlico (portion)	34	30	30
Beaufort, NC	DMF	Carteret (portion) New Hanover (portion), Onslow, Pender	83	83	73
Wilmington, NC	DMF	Bladen, Brunswick, Columbus, New Hanover (portion)	67	67	67
Beaufort, NC	NMFS	Carteret (portion), Dare (portion)	25	25	21
Manteo, NC	NMFS	Dare (portion), Hyde (portion)	9	9	24

For the North Carolina Landings Bulletin, pounds and value by species, water caught, county landed, gear, and distance from shore were collected on a monthly basis. For the South Atlantic Regional Shrimp Survey, pounds and value by shrimp species, count size, water caught, gear, grading type, and vessel size category were collected. Also, the number of hours fished, days out of port and number of trips were recorded. Recording of a vessel identification number was optional. For the General Canvas of the Fisheries, data were collected on the number and types of fishermen and fishing craft, and the types and quantity of gear employed. Also, data on the number of processors, employment in the industry, and the disposition of the catch were collected. For the Market News Reports, weekly estimates of the pounds landed and the average price paid for the major species were collected by district (Northern, Central, Southern - Figure 1).

During the project, several special surveys were undertaken by the port agents. One survey obtained an estimate of long haul seine fishing effort. For each month, the port agents recorded the number of seafood dealers handling long haul crews and the total number of crews which worked. Whenever possible, the port agents also recorded the number of landings made by a single crew or a combination of crews. A simple ratio was used to expand the trip number subsample to an estimate of total trips for the total number of crews working.

A second survey obtained an estimate of winter trawl fishing effort. The methodology used was identical to the long haul effort survey.

A third survey collected weekly landings of river herring (*Alosa pseudoharengus* and *Alosa aestivalis*) by gear and water of capture for the 1983-1986 seasons in the Northern District. The North Carolina Marine Fisheries Vessel License (Figure 2) was used to collect statistical information on the fishing fleet. These annual licenses were issued to the public mainly through local businesses which were paid a commission by the Division to act as "license agents." There was at least one license agent in each coastal county.

Data Processing

The data collected were coded by the state and federal port agents on standardized data forms provided by NMFS. The completed forms were mailed to DMF according to the following time schedules:

a) North Carolina Landings Bulletin data by the 15th of the following month.
b) South Atlantic Regional Shrimp Survey on the Friday of each week. All schedules for a month by the 10th of the following month.
c) General Canvas and Special Survey information on the specified due date.

Data were reviewed by the state for errors and this review consisted of the following:

AGENCY COPY NO. 1 PRINT ONLY ONE CHARACTER PER SPACE PROVIDED
LICENSE FEE SCHEDULE ON BACK OF WHITE COPY.

NORTH CAROLINA MARINE FISHERIES VESSEL LICENSE
P.O. BOX 769, MOREHEAD CITY, N.C. 28557

LICENSE TRANSACTION: [ ] (1) New/Renewal [ ] (3) Duplicate [ ] (4) Change
[ ] (2) Transfer [ ] (5) Delete

Year | Gross Tons | Vessel Length Ft. | License Fee | Lic. Decal No

Company Name (only if registered by company name)

Owner's Name (First) (I) (Last)

Street/Route/Box (Address of Legal Residency Only)

City | State

Zip Code | County

Owner's D.O.B. Mo. Day Yr. | Telephone Number A/C Prefix Number

Vessel Name (Not Manufacturer)

Port of Landing (Nearest town) | State Registration Number

No. In Crew | Horsepower Rating | Year Built | U.S. Customs Number

Hull Material [ ] (W) Wood [ ] (F) Fiberglass [ ] (O) _____
[ ] (S) Steel [ ] (A) Aluminum

Fuel [ ] (G) Gasoline [ ] (D) Diesel [ ] (O) _____

Propulsion [ ] (O) Outboard [ ] (C) Inboard/Outdrive
[ ] (I) Inboard [ ] (N) _____

Ves./Owner Income [ ] (1) Commercial F/T (over 50% Income) [ ] (4) Charter
[ ] (2) Commercial P/T (under 50% Income) [ ] (5) Headboat
[ ] (3) Pleasure (No Fishing Income)

STATISTICAL INFORMATION CENTER
(List only the commercial fishing equipment used with this vessel)

NETS/SEINES		YDS.
Purse Seine	(1)	_____
Common Seine	(2)	_____
Hand Seine	(3)	_____
Long Haul Net	(4)	_____
Channel Net	(5)	_____
Stake Gill Net	(6)	_____
Anchor Gill Net	(7)	_____
Drift Gill Net	(8)	_____
Pound Net (No. of)	(9)	_____

TRAWL RIG		
[ ] (S) Single		
[ ] (D) Double		
[ ] (T) Twin Trawl		
TRAWLS		**FT. EA.**
Crab	(1)	_____
Fish	(2)	_____
Scallop	(3)	_____
Shrimp	(4)	_____
Clam	(5)	_____

DREDGES		NUMBER
Hydraulic Clam	(1)	_____
Oyster	(2)	_____
Bay Scallop	(3)	_____
Sea Scallop	(4)	_____
POTS		**NUMBER**
Crab	(1)	_____
Eel	(2)	_____
Fish	(3)	_____
Lobster	(4)	_____

LINES		NUMBER
Crab Trotline	(1)	_____
Fish Trotline	(2)	_____
Handline	(3)	_____
Longline	(4)	_____
HAND GEAR		
[ ] (R) Rakes		
[ ] (T) Tongs		
[ ] (G) Gigs		
[ ] (H) Hand Only		

I declare under penalties of law that the information given above is true and correct to the best of my knowledge.

Signature: _____

Date Issued: _____ Time _____ AM PM
Agent No.: _____
Agent Name: _____

LICENSE EXPIRES DEC. 31

Figure 2. The North Carolina Marine Fisheries Vessel License application.

a) Visually reviewing forms to insure the coverage dates were correct and all data fields were completed.
b) A landings summary compiled by the port agents was checked against a summary compiled by the data clerk (Bulletin only). Once these two summaries matched, they were used as a check to locate key entry errors in the records stored on the regional and North Carolina data files.
c) For the Bulletin data, the number of records that should be keyed was counted and used as a check in the file update process.

From June 1983 until January 1986 the reviewed data forms were sent to NMFS personnel in Beaufort, NC for key entry into the Southeast Fisheries Center Information Network (SEFIN) through the use of NMFS Data 100 CRT terminals. Their key entry program checked for errors in certain fields. During the update process of taking the records from disk and storing them on the master files, an edit program checked for additional errors. Rejected forms were returned to the Federal port agent who contacted the state statistics coordinator for corrections. NMFS made subsequent corrections to the master files which were located on the NMFS Burrough 7800 computer in Seattle, Washington.

In October 1984 DMF used a NMFS developed data entry program for the APPLE microcomputer to key enter the monthly Bulletin data. This dual data entry by NMFS and DMF continued until January 1986 when DMF became solely responsible for the Regional Shrimp (North Carolina portion) and Bulletin data entry. Also at this time, DMF became responsible for all the steps in the update process (uploading the data, correction files, checking audit reports, etc.).

The annual General Canvas forms were sent to NMFS where they were processed by the NMFS Central Office, Resource Statistics Division in Washington, D.C. The data from the Special Surveys were not computerized. Data forms were stored by the state for future reference.

All of the data included on the North Carolina Marine Fisheries Vessel Licenses in 1983, 1984, and 1985 were computerized. Licenses issued by the license agents were sent to the Division where they were visually checked for completeness. Licenses were then submitted to the North Carolina State Computer Center (SCC) for key entry and updating to the master file. A set of edit criteria was used to catch errors during the update process. The update report listed all errors and included a summary of the number of errors for each license agent. Based on the error report, license agents were notified of data fields with which they had problems and were asked to pay special attention to these fields. Subsequent corrections were made to the master file which was stored on the SCC's IBM 3090 computer.

Data Reports

The programs for Shrimp and Bulletin report generation were developed by NMFS. Their Economics and Statistics Office (ESO) maintained interactive report generation programs and NMFS Beaufort Laboratory ADP personnel provided programs for batch processing. The reports from these programs were used to answer data requests and compile the North Carolina Monthly Bulletins for publication. NMFS also provided the batch Bulletin runs 1 - 8 described in previous reports (West 1983).

Several new programs and/or files were developed during the project that provided for the first time the DMF with access to its own North Carolina detailed records and summary reports which flagged data that came from less than three sources. These two developments provided the flexibility in summary reports that DMF had needed for several years. Access to detailed North Carolina records was supplied by (1) the creation of individual state data files of Bulletin and Shrimp data for North Carolina and (2) an option in the interactive ESO programs to create a file of the records selected. With access to its own detailed records DMF could then use other methods (SPSS canned programs, sort programs developed by NMFS Beaufort ADP or DMF) to generate summaries that were not available under the interactive ESO developed programs. The interactive programs were upgraded during the project by (1) modifying the output format, per the South Atlantic Statistics Committee request, (2) allowing greater flexibility in sort fields, (3) flagging data from less than three sources, and (4) only allowing the state that collected the data to view flagged data.

When reviewing these reports from or are sorting the data in the North Carolina Bulletin file the user should always keep the following points in mind:

1. Data for menhaden (non-bait) and thread herring are not included on the computer file.

2. A dealer code of 666 is assigned to all shrimp data which causes all shrimp data to be flagged. Shrimp data by species is not available until July 1983.

3. Individual species codes for porgies and scups were assigned in June 1985. At that time the code 3295 was used for porgies, unclassified and the code 3298 was used for scups, unclassified.

4. Individual species codes for tilefish were assigned in June 1985. At that time the code for tilefish, unclassified changed from 4470 to 4480.

The data clerk compiled the agents' Market News data into a weekly Market News Report for North Carolina. This report was telephoned to the NMFS, New Orleans on Friday mornings.

At the end of each license year (December 1983, 1984, and 1985) several annual computer reports from the Division's Vessel License files were generated. They included listings of the license holders sequenced by one of

the following: license number, name, county of residence or craft length. A state summary and county summaries of the gear information and vessel use categories (full-time, part-time, pleasure, charter boats, head boat) were also generated. The EASYTRIEVE programs to generate these reports were developed by DMF.

Any reports which contained information identifiable at the dealer level were considered confidential. The Division Confidentiality Policy (NC Dept. Nat. Res. and Community Develop. 1980) was followed to insure uniformity between NMFS and the Division on how these data were used and released to the public. This policy ensures that an information source will not be hurt by providing information to the statistics program. NMFS and North Carolina have reviewed each other's data collection authority and confidentiality statutes and found them to be generally equivalent.

RESULTS AND DISCUSSION

The Bulletin data collected during this project were compiled and published by month in the Division's "North Carolina Landings Bulletin." The format for this publication follows that used by NMFS in previous years (pre 1979) when they published the bulletin data. The Bulletin is composed of the following three tables:

Landings by species, by district for the month.

Landings by species for the month (current year and previous year).

Landings by species, cumulative for the year (current year and previous year).

The Bulletin was published for each month from June 1983 through March 1986 and was sent to over 160 users (libraries, researchers, and state and federal management agencies). Appendix A contains the monthly North Carolina Bulletins for December 1983, December 1984, December 1985, and March 1986.

The dockside volume (million pounds) and value (million dollars) of North Carolina's commercial fisheries in 1983, 1984, and 1985 were 287/$57.4, 277/$57.3, and 215/$64.6, respectively. A core group of nine species or species groups (croaker, flounder, menhaden, grey trout, snapper/grouper, blue crabs, shrimp, oysters, and hard clams) were valued each year at over $1,000,000. This same group also accounted for over 90% of the total pounds landed. In 1985 sea bass and bay scallops were also valued at over $1,000,000. The 1985 value is the second highest on record ($68.8 million record in 1980).

During this project, DMF had delays in data collection and NMFS experienced a number of data management problems. Both problems caused a delay in the availability of corrected monthly data. Due to these problems, Bulletin publication was often several months later than the month of reporting. However, by the end of the project, processing was back on schedule and the Bulletin was available within 1.5 months from the submittal date.

Bulletin data were also summarized by various collection parameters (month, gear, water, etc.) in response to management questions and data requests. Either the ESO interactive programs or batch programs (e.g. SPSS) were used to generate summaries. Figures 3 and 4, respectively, are examples of ESO interactive and SPSS programs which selected croaker landings for each month in 1985.

In Figure 3 data from fewer than three dealers are denoted by an asterisk. In these examples the author has determined that the release of these data in this report follows the guidelines of the DMF confidentiality policy because the data are not traceable to the data source(s).

Processed fishery products in 1983, 1984, and 1985 were valued at $63.4 million, $65.8 million, and $69.43 million, respectively. The major products included fish meal, oil and solubles, shucked scallops, shucked oysters, crabmeat, headed shrimp, and edible finfish products. Table 2, gives the value and percentage contributed by each of these categories to the total state processed product value in 1983, 1984, and 1985. Table 3 gives the number of wholesale dealers operating in the coastal counties and the number of these dealers that produced processed fishery products, 1983-1985.

Table 4 gives the shellfish conversion factors for North Carolina by year, 1983-1985. These annual conversion factors are used to convert the national standard whole round meat weights into bushels which are more meaningful to the local fishermen.

The General Canvas Operating Units Survey data have not been fully processed by NMFS, and therefore summaries are not included in this report.

North Carolina Regional Shrimp Survey data are summarized by month and by species in Tables 5, 6, and 7 for 1983, 1984, and 1985, respectively. The 1985 shrimp poundage was the second highest on record (record 9.1 million pounds in 1953).

The Market News Reports for North Carolina were published on Fridays in the NMFS New Orleans "Fishery Market News Report" Publication. Figure 5 is an example of the June 27 - July 2 1986 North Carolina report which was published in the NMFS New Orleans Fishery Market News Report.

River herring landings by week for the Northern District of the state by season for 1984, 1985, and 1986 are shown in Table 8. Catch and effort data by week for the seasonal Chowan River pound net fishery are shown in Table 9 for 1984-1986. These data were used by the Division's anadromous fish program as an indication of the trend in river herring stock abundance.

Monthly estimates of long haul seine effort (trips) and winter trawl fishery effort (trips) and the commercial landings for these fisheries for the time period April 1983 through March 1986 are shown in Tables 10 and 11, respectively. These trip estimates only provide a rough estimate of nominal effort because of the expansion process described in the methods section of this report. Estimates of effective effort would be much more difficult to obtain. However, by relating the trips to the commercial catch over a long

REPORT: LDG345LB

NATIONAL MARINE FISHERIES SERVICE
LANDINGS DATA (BY REQUEST) SEQUENCED AS FOLLOWS:
(MONTH, SPECIES)
PERIOD SELECTED: JAN 1985 THRU DEC 1985

DATE PREPARED: 07/17/86
PAGE: 1

* NEXT TO POUNDS - DENOTES CONFIDENTAL DATA AT LOWEST SUMMARY LEVEL

MONTH	SPECIES		POUNDS	VALUE
1	925 CROAKER,ATLANTIC,UNC		1,245,783	$386,919.00
		MONTH TOTAL:	1,245,783	$386,919.00
2	925 CROAKER,ATLANTIC,UNC		769,978	$258,094.00
		MONTH TOTAL:	769,978	$258,094.00
3	925 CROAKER,ATLANTIC,UNC		416,966	$143,999.00
		MONTH TOTAL:	416,966	$143,999.00
4	925 CROAKER,ATLANTIC,UNC		605,239	$158,584.00
		MONTH TOTAL:	605,239	$158,584.00
5	925 CROAKER,ATLANTIC,UNC		1,065,966	$307,882.00
		MONTH TOTAL:	1,065,966	$307,882.00
6	925 CROAKER,ATLANTIC,UNC		549,827	$158,875.00
		MONTH TOTAL:	549,827	$158,875.00
7	925 CROAKER,ATLANTIC,UNC		764,327	$247,658.00
		MONTH TOTAL:	764,327	$247,658.00
8	925 CROAKER,ATLANTIC,UNC		868,462	$282,633.00
		MONTH TOTAL:	868,462	$282,633.00
9	915 CROAKER,ATLANTIC,MD	*	10,033	$7,525.00
9	920 CROAKER,ATLANTIC,SM	*	8,855	$2,657.00
9	925 CROAKER,ATLANTIC,UNC		589,927	$237,087.00
		MONTH TOTAL:	608,815	$247,269.00
10	925 CROAKER,ATLANTIC,UNC		314,692	$102,810.00
		MONTH TOTAL:	314,692	$102,810.00
11	925 CROAKER,ATLANTIC,UNC		408,224	$156,028.00
		MONTH TOTAL:	408,224	$156,028.00
12	925 CROAKER,ATLANTIC,UNC		1,096,153	$496,163.00
		MONTH TOTAL:	1,096,153	$496,163.00
		GRND TOTAL:	8,714,432	$2,946,914.00

Figure 3. Example of the output from the ESO interactive computer program which selected 1985 croaker (*Micropogonias undulatus*) landings by month from the regional bulletin file.

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------------------- D E S C R I P T I O N   O F   S U B P O P U L A T I O N S -----------------
CRITERION VARIABLE   WEIGHT
   BROKEN DOWN BY    MONTH
              BY     SPECIES
-----------------------------------------------------------------------------------------------
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VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE	N
FOR ENTIRE POPULATION			8714432.0000	4844.0422	15646.6341	244817159.3613	(1799)
MONTH	1.		1245783.0000	11325.3000	18602.4770	346052150.7070	(110)
SPECIES	925.	CROAKER, UNCLASSIFIE	1245783.0000	11325.3000	18602.4770	346052150.7070	(110)
MONTH	2.		769978.0000	8020.6042	16839.0548	283553767.8418	(96)
SPECIES	925.	CROAKER, UNCLASSIFIE	769978.0000	8020.6042	16839.0548	283553767.8418	(96)
MONTH	3.		416966.0000	3657.5965	8274.2964	68463980.3667	(114)
SPECIES	925.	CROAKER, UNCLASSIFIE	416966.0000	3657.5965	8274.2964	68463980.3667	(114)
MONTH	4.		605239.0000	4655.6846	15001.4126	225042381.3652	(130)
SPECIES	925.	CROAKER, UNCLASSIFIE	605239.0000	4655.6846	15001.4126	225042381.3652	(130)
MONTH	5.		1065966.0000	8263.3023	28136.0572	791637712.1953	(129)
SPECIES	925.	CROAKER, UNCLASSIFIE	1065966.0000	8263.3023	28136.0572	791637712.1953	(129)
MONTH	6.		549827.0000	4013.3358	13167.5082	173383272.6816	(137)
SPECIES	925.	CROAKER, UNCLASSIFIE	549827.0000	4013.3358	13167.5082	173383272.6816	(137)
MONTH	7.		764327.0000	3980.8698	15007.0610	225211880.8047	(192)
SPECIES	925.	CROAKER, UNCLASSIFIE	764327.0000	3980.8698	15007.0610	225211880.8047	(192)
MONTH	8.		868462.0000	4595.0370	18948.2169	359034924.0039	(189)
SPECIES	925.	CROAKER, UNCLASSIFIE	868462.0000	4595.0370	18948.2169	359034924.0039	(189)
MONTH	9.		608815.0000	2969.8293	11465.3747	131454817.7598	(205)
SPECIES	915.	CROAKER, MEDIUM	10033.0000	10033.0000	0.0000	0.0000	(1)
SPECIES	920.	CROAKER, SMALL	8855.0000	8855.0000	0.0000	0.0000	(1)
SPECIES	925.	CROAKER, UNCLASSIFIE	589927.0000	2906.0443	11503.6441	132333828.2109	(203)
MONTH	10.		314692.0000	1729.0769	8748.2895	76532570.0269	(182)
SPECIES	925.	CROAKER, UNCLASSIFIE	314692.0000	1729.0769	8748.2895	76532570.0269	(182)
MONTH	11.		408224.0000	2504.4417	9925.0752	98507118.0261	(163)
SPECIES	925.	CROAKER, UNCLASSIFIE	408224.0000	2504.4417	9925.0752	98507118.0261	(163)
MONTH	12.		1096153.0000	7211.5329	15216.6932	231547751.3633	(152)
SPECIES	925.	CROAKER, UNCLASSIFIE	1096153.0000	7211.5329	15216.6932	231547751.3633	(152)

TOTAL CASES = 1799

Figure 4. Example of the output from the SPSS computer program which selected 1985 croaker (Micropogonias undulatus) landings by month from the North Carolina bulletin file.

DESCRIPTION OF SUBPOPULATIONS

CRITERION VARIABLE VALUE
BROKEN DOWN BY MONTH
BY SPECIES

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	VARIANCE	N
FOR ENTIRE POPULATION			2946751.8200	1637.9943	5148.0143	26502051.5679	(1799)
MONTH	1.		386909.4600	3517.3587	5329.7731	28406481.1558	(110)
SPECIES	925.	CROAKER, UNCLASSIFIE	386909.4600	3517.3587	5329.7731	28406481.1558	(110)
MONTH	2.		258084.3600	2688.3787	5047.9033	25481328.1440	(96)
SPECIES	925.	CROAKER, UNCLASSIFIE	258084.3600	2688.3787	5047.9033	25481328.1440	(96)
MONTH	3.		143990.7900	1263.0771	2775.6846	7704425.2069	(114)
SPECIES	925.	CROAKER, UNCLASSIFIE	143990.7900	1263.0771	2775.6846	7704425.2069	(114)
MONTH	4.		158571.0400	1219.7772	3221.6714	10379166.6785	(130)
SPECIES	925.	CROAKER, UNCLASSIFIE	158571.0400	1219.7772	3221.6714	10379166.6785	(130)
MONTH	5.		307859.5900	2386.5084	7708.2868	59417684.7466	(129)
SPECIES	925.	CROAKER, UNCLASSIFIE	307859.5900	2386.5084	7708.2868	59417684.7466	(129)
MONTH	6.		158871.1400	1159.6434	3656.6060	13370767.6749	(137)
SPECIES	925.	CROAKER, UNCLASSIFIE	158871.1400	1159.6434	3656.6060	13370767.6749	(137)
MONTH	7.		247648.8800	1289.8379	4855.9128	23579889.3193	(192)
SPECIES	925.	CROAKER, UNCLASSIFIE	247648.8800	1289.8379	4855.9128	23579889.3193	(192)
MONTH	8.		282620.7400	1495.3478	6180.0880	38193487.2390	(189)
SPECIES	925.	CROAKER, UNCLASSIFIE	282620.7400	1495.3478	6180.0880	38193487.2390	(189)
MONTH	9.		247252.8100	1206.1113	5288.4728	27967944.8784	(205)
SPECIES	915.	CROAKER, MEDIUM	7524.7500	7524.7500	0.0000	0.0000	(1)
SPECIES	920.	CROAKER, SMALL	2656.5000	2656.5000	0.0000	0.0000	(1)
SPECIES	925.	CROAKER, UNCLASSIFIE	237071.5600	1167.8402	5294.8390	28035319.8184	(203)
MONTH	10.		102801.1200	564.8413	2663.6434	7094996.1167	(182)
SPECIES	925.	CROAKER, UNCLASSIFIE	102801.1200	564.8413	2663.6434	7094996.1167	(182)
MONTH	11.		156000.0600	957.0556	3523.6218	12415910.4992	(163)
SPECIES	925.	CROAKER, UNCLASSIFIE	156000.0600	957.0556	3523.6218	12415910.4992	(163)
MONTH	12.		496141.8300	3264.0910	7469.9444	55800069.3765	(152)
SPECIES	925.	CROAKER, UNCLASSIFIE	496141.8300	3264.0910	7469.9444	55800069.3765	(152)

TOTAL CASES = 1799

Figure 4. Continued

Table 2. Value of and percent contribution to North Carolina processed products for major product categories, 1983 - 1985.

	Value ($ millions)					
Major Product	1983	%	1984	%	1985	%
Crabmeat	$30.04	47	$32.70	49.7	$39.89	57.45
Fishmeal, oil, and solubles	10.55	17	8.15	12.4	4.31	6.21
Shucked Scallops	3.31	5	4.37	6.6	3.29	4.74
Shucked Oysters	6.77	11	7.18	10.9	5.65	8.14
Headed Shrimp	2.48	4	1.12	1.7	2.92	4.20
Edible Finfish Products	9.40	15	11.09	16.9	11.65	16.78
Miscellaneous	.88	1	.20	.4	.15	.22

Table 3. Number of North Carolina wholesale dealers and processors of seafood by year, 1983 - 1985.

Year	Wholesale Dealers	Seafood Processors	Total (exclusive of duplication)
1983	330	113	330
1984	335	120	335
1985	278	101	313

Table 4. North Carolina Shellfish Conversion Factors 1983-1985.

	1983			1984			1985		
Species	Pounds	Bushels	Conv.	Pounds	Bushels	Conv.	Pounds	Bushels	Conv.
Oysters, Public Spring	255,329	42,273	6.04	272,992	41,023	6.65	265,146	44,057	6.02
Oysters, Public Fall	446,387	70,631	6.32	411,329	66,342	6.20	267,904	47,826	5.60
Oysters, Private Spring	4,998	626	7.99	38,674	7,064	5,47	9,850	1,555	6.33
Oysters, Private Fall	17,795	3,247	5.48	1,562	222	7.04	2,539	440	5.77
Scallops, Bay	202,479	66,825	3.03	383,625	137,474	2.79	455,649	168,206	2.71
Scallops, Calico	101,977	38,628	2.64	1,184	448	2.64	-	-	-
Scallops, Sea	26,306	4,698	5.60	170,443	22,773	7.48	12,550	1,583	7.93

Table 5. Preliminary North Carolina shrimp landings (heads off pounds and dockside value) by month by species, 1983.

Species	Rock	Brown	Pink	White	TOTAL
Month	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value
Jan.	-	-	2,954	-	2,954
	-	-	$ 8,065	-	$ 8,065
Feb.	-	-	1,869	-	1,869
	-	-	$ 3,940	-	$ 3,940
Mar.	-	-	4,145	-	4,145
	-	-	$ 10,757	-	$ 10,757
Apr.	-	-	63,244	388	63,632
	-	-	$ 178,012	$ 2,209	$ 180,221
May	-	-	258,475	1,772	260,247
	-	-	$ 807,737	$ 10,763	$ 818,500
Jun.	-	14,824	514,855	3,251	532,930
	-	$ 41,625	$1,665,040	$ 18,751	$ 1,725,416
Jul.	137	645,560	152,040	417	798,154
	$286	$2,110,812	$ 498,136	$ 2,893	$ 2,612,127
Aug.	-	817,392	78,847	5,033	901,272
	-	$3,469,647	$ 215,818	$ 19,582	$ 3,705,047
Sep.	-	303,008	172,462	52,791	528,261
	-	$1,511,025	$ 429,077	$ 198,689	$ 2,138,791
Oct.	570	79,759	224,429	165,021	469,779
	$453	$ 383,194	$ 572,762	$ 656,178	$ 1,612,587
Nov.	-	21,435	153,834	61,197	236,466
	-	$ 93,758	$ 364,499	$ 233,488	$ 691,745
Dec.	-	541	18,542	2,555	21,638
	-	$ 2,257	$ 48,788	$ 6,595	$ 57,640
TOTAL	707	1,882,519	1,645,696	292,425	3,821,347
	$739	$7,612,318	$4,802,631	$1,149,148	$13,564,836

Table 6. Preliminary North Carolina shrimp landings (heads off pounds and dockside value) by month by species, 1984.

Species	Rock	Brown	Pink	White	TOTAL
Month	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value
Jan.	-	-	39	-	39
	-	-	$ 133	-	$ 133
Feb.	-	-	2,377	-	2,377
	-	-	$ 14,057	-	$ 14,057
Mar.	-	-	5,582	8,356	13,938
	-	-	$ 31,152	$ 47,312	$ 78,464
Apr.	1,378	-	32,555	7,628	41,561
	$ 2,218	-	$ 126,627	$ 43,508	$ 172,353
May	1,604	-	158,349	-	159,953
	$ 2,637	-	$ 670,694	-	$ 673,331
Jun.	430	261,949	202,794	-	465,173
	$ 548	$ 813,435	$ 768,383	-	$ 1,582,366
Jul.	-	1,242,451	4,825	42	1,247,318
	-	$3,874,740	$ 15,804	$ 235	$ 3,890,779
Aug.	-	622,990	15,787	-	638,777
	-	$2,342,175	$ 32,228	-	$ 2,374,403
Sep.	932	125,942	96,360	15,727	238,961
	$ 652	$ 536,010	$ 230,212	$ 57,543	$ 824,417
Oct.	1,160	21,218	186,525	18,751	227,654
	$ 959	$ 80,077	$ 426,326	$ 75,592	$ 582,954
Nov.	136	415	85,004	12,515	98,070
	$ 82	$ 1,871	$ 216,528	$ 53,477	$ 271,958
Dec.	-	-	8,045	-	8,045
	-	$ -	$ 17,643	-	$ 17,643
TOTAL	5,640	2,274,965	798,242	63,019	3,141,866
	$ 7,096	$7,648,308	$2,549,787	$ 277,667	$10,482,858

Table 7. Preliminary North Carolina shrimp landings (heads off pounds and dockside value) by month by species, 1985.

Species	Rock	Brown	Pink	White	TOTAL
Month	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value	Pounds/Value
Jan.	-	-	3,879	-	3,879
	-	-	$ 10,861	-	$ 10,861
Feb.	-	-	-	-	-
	-	-	-	-	-
Mar.	-	-	4,734	-	4,734
	-	-	$ 13,255	-	$ 13,255
Apr.	340	-	26,787	-	27,127
	$ 380	-	$ 92,914	-	$ 93,294
May	1,584	594	130,446	-	132,624
	$ 2,609	$ 1,663	$ 506,808	-	$ 511,080
Jun.	187	516,833	117,079	-	634,099
	$ 158	$ 1,039,592	$ 372,831	-	$ 1,412,581
Jul.	-	3,310,804	-	-	3,310,804
	-	$ 8,419,507	-	-	$ 8,419,507
Aug.	-	1,710,559	17,894	2,492	1,730,945
	-	$ 5,918,538	$ 25,976	$ 6,896	$ 5,951,410
Sep.	-	381,289	108,146	9,523	498,958
	-	$ 1,459,993	$ 202,159	$ 26,948	$ 1,689,100
Oct.	-	405,770	154,999	15,740	576,509
	-	$ 1,562,887	$ 365,316	$ 52,685	$ 1,980,888
Nov.	1,932	118,421	181,827	1,262	303,442
	$ 2,234	$ 439,282	$ 495,075	$ 3,832	$ 940,423
Dec.	-	1,280	37,803	-	39,083
	-	$ 3,908	$ 101,446	-	$ 105,354
TOTAL	4,043	6,445,550	783,594	29,017	7,262,204
	$ 5,381	$18,845,370	$2,186,641	$ 90,361	$21,127,753

WEEKLY SUMMARY -- One week period ending midnight 7/3 (Cont'd)

GULF FINFISH LANDINGS -- Selected Areas (1,000 lb.)

	FL				AL	MS		LA		
	a/ Key West	Mara-thon	Ft. Myers Area	St.Pete, Tarpon Spgs.	b/ Panama	Bayou LaBatre Area*	Pasca-goula	N.O. Area	Morgan City Area	a/ Cam-eron Area	Total
Amberjack		-	-	-		0.7	-	-	-		0.7
Bluerunner		-	-	-		-	3.0	-	-		3.0
Buffalofish		-	-	-		-	-	-	5.3		5.3
Catfish,fr.water		-	-	-		-	-	-	27.2		27.2
Crevalle jack		-	0.4	-		-	-	-	-		0.4
Drum,black		-	-	-		2.0	-	-	-		2.0
Flounder		-	-	-		0.9	-	-	-		0.9
Gaspergou		-	-	-		-	-	-	1.2		1.2
Grouper		-	75.8	35.3		-	-	-	-		111.1
Jewfish(warsaw)		-	0.3	-		-	-	-	-		0.3
King mackerel		-	-	-		0.2	-	-	-		0.2
King whiting		-	-	-		2.0	0.6	-	-		2.6
Mullet(lisa)		-	24.0	-		4.0	2.1	-	-		30.1
Scamp		-	-	-		0.8	-	-	-		0.8
Sea trout, spttd		-	1.1	-		-	-	-	-		1.1
Sheepshead		-	-	-		2.4	-	-	-		2.4
Snapper		-	1.5	1.5		-	-	-	-		3.0
Snapper, white		-	0.3	-		—	-	-	-		0.3
Unclassified		-	1.3	-		0.3	1.1	-	-		2.7
Total		-	104.7	36.8		13.3	6.8	-	33.7		195.3

*Includes Mobile. a/No report received.

NORTH CAROLINA LANDINGS -- By District (6/27-7/2) & AVERAGE PRICES

Commercial landings of fish and shellfish as reported by selected producers and wholesalers. Quantities are in 1,000 pounds unless otherwise stated. SOURCE: North Carolina Department of Natural Resources and Community Development in cooperation with National Marine Fisheries Service.

FINFISH:	SOUTHERN	CENTRAL	NORTHERN	TOTAL	AVG. PRICE PER LB. a/
Bluefish	2.0	11.2	5.0	18.2	.13
Catfish,fr.water	-	-	6.0	6.0	.15
Croaker	1.0	3.9	112.0	116.9	.29
Drum,red	1.0	1.0	-	2.0	.40
Flounder	3.0	10.2	6.0	19.2	1.16
Grouper	2.0	3.0	-	5.0	1.39
Harvest fish	-	1.3	5.0	6.3	.60
King mackerel	2.0	1.0	-	3.0	1.00
King whiting	2.0	2.3	-	4.3	.40
Mullet,black	1.0	2.0	3.0	6.0	.14
Scup/Porgy	2.0	3.0	-	5.0	1.04
Sea bass	1.0	1.0	-	2.0	.75
Sea trout,gray	2.0	4.2	37.0	43.2	.46
Sea trout,spttd	1.0	1.0	-	2.0	.63
Snapper	4.0	2.0	-	6.0	1.78
Spanish mackerel	1.0	1.0	-	2.0	.25
Spot	2.0	17.1	8.0	27.1	.20
White perch	-	-	2.0	2.0	.45
Total	27.0	65.2	184.0	276.2	
SHELLFISH:					
Clams(bushels)	900	1,025	-	1,925	39.80
Crabs,hard	9.0	242.2	375.0	626.2	.30
Crabs,soft(dozens)	-	84	-	84	3.00
Shrimp,heads-off	36.0*	102.9**	8.0***	146.9	4.15 Pink
					2.79 Brown

*Pink(46-50)3.0; Brown(60-70)33.0. **Pink(41-45)27.3; Brown(60-70)75.6;
***Pink(41-45)6.0; Brown(60-70)2.0.

a/Represents prices paid to the vessel (dockside prices).

Figure 5. Example of the NMFS New Orleans Fishery Market News Report (0-079) for North Carolina by district, June 27 - July 2 1986.

Table 8. North Carolina river herring poundage by week for the Northern District, 1984 - 1986 seasons.

Week	1984	Pounds	1985	Pounds	1986	Pounds
1	Jan. 1-7	40	Dec. 30-Jan.7	41	Jan. 5-11	1,187
2	Jan. 8-14	102	Jan. 8-12	249	Jan. 12-18	2,032
3	Jan. 15-21	669	Jan. 13-19	655	Jan. 19-25	10,825
4	Jan. 22-28	1,910	Jan. 20-26	2,156	Jan. 26-Feb. 1	8,272
5	Jan. 29-Feb. 4	12,309	Jan. 27-Feb. 2	2,403	Feb. 2-8	10,243
6	Feb. 5-11	28,777	Feb. 3-19	1,894	Feb. 9-15	20,291
7	Feb. 12-18	58,057	Feb. 10-16	14,637	Feb. 16-22	26,906
8	Feb. 19-25	105,246	Feb. 17-23	302,204	Feb. 23-Mar. 1	45,848
9	Feb. 26-Mar. 3	58,948	Feb. 24-Mar. 2	137,604	Mar. 2-8	36,439
10	Mar. 4-10	102,971	Mar. 3-9	239,937	Mar. 9-15	241,548
11	Mar. 11-17	187,695	Mar. 10-16	203,183	Mar. 16-22	300,749
12	Mar. 18-24	249,909	Mar. 17-23	449,946	Mar. 23-29	438,474
13	Mar. 25-31	273,381	Mar. 24-30	3,520,223	Mar. 30-Apr. 5	1,718,197
14	Apr. 1-7	497,500	Mar. 31-Apr. 6	2,603,403	Apr. 6-12	1,645,223
15	Apr. 8-14	488,454	Apr. 7-13	2,363,807	Apr. 13-19	881,527
16	Apr. 15-21	2,165,831	Apr. 14-20	1,675,308	Apr. 20-26	457,913
17	Apr. 22-28	598,987	Apr. 21-27	175,748	Apr. 27-May 3	968,494
18	Apr. 29-May 5	1,117,562	Apr. 28-May 4	22,325	May 4-10	24,434
19	May 6-12	512,788	May 5-11	7,652	May 11-17	14,245
20	May 13-19	79,977	May 12-18	2,500	May 18-24	2,500
Total	1984 Season	6,541,113	1985 Season	11,725,875	1986 Season	6,855,347

Table 9. Chowan River pound net fishery catch (pounds) and number of pound nets fished by week, 1984 - 1986 seasons.

	1984		1985		1986	
Week Number	Number of nets	pounds	Number of nets	pounds	Number of nets	pounds
1 - 5	0	0	0	0	0	0
6	0	0	20	38	0	0
7	0	0	75	1,344	0	0
8	75	1,978	101	4,330	35	86
9	250	2,506	196	77,766	104	11,964
10	350	1,026	301	144,326	295	14,398
11	480	5,280	371	89,179	382	120,034
12	480	25,049	421	133,973	451	158,874
13	480	43,826	421	2,684,277	451	1,536,642
14	480	64,959	421	1,957,760	451	1,519,793
15	480	160,172	421	1,951,791	451	839,403
16	480	2,025,121	421	1,391,054	451	445,355
17	480	563,712	421	141,164	400	900,194
18	480	1,081,347	171	4,240	380	222,934
19	400	507,388	42	5,152	308	14,245
20	200	79,494	0	0	117	2,500
Total		4,561,858		8,586,394		5,786,422

Table 10. Estimates of long haul seine effort (trips) and reported landings for North Carolina by month, April 1983 - March 1986.

	1984 Season						1985 Season						1986 Season					
Mo.	No. of dealers handling crews	No. of crews w/trips recorded	No. of trips recorded	Total no. of crews	Estimate of total trips	Landings (1,000 of lbs.)	No. of dealers handling crews	No. of crews w/trips recorded	No. of trips recorded	Total no. of crews	Estimate of total trips	Landings (1,000 of lbs.)	No. of dealers handling crews	No. of crews w/trips recorded	No. of trips recorded	Total no. of crews	Estimate of total trips	Landings (1,000 of lbs.)
Apr.	*	*	*	*	*	241	10	12	39	20	65	648	9	13	57	19	75	621
May	*	*	*	*	*	2,098	16	23	148	32	210	1,718	17	19	172	27	246	1,391
Jun.	21	25	247	45	450	2,630	16	29	261	38	310	2,572	15	18	152	44	258	1,068
Jul.	21	30	310	43	450	1,871	20	24	200	40	324	1,747	12	14	175	21	240	1,348
Aug.	18	31	313	46	465	1,973	22	23	254	41	425	1,872	14	22	177	41	217	1,313
Sep.	22	34	245	42	300	1,989	17	22	174	31	244	1,400	17	23	204	37	288	1,422
Oct.	15	22	212	33	320	1,893	16	23	223	31	303	2,100	13	16	192	19	276	1,774
Nov.	2	*	*	2	*	194	6	7	21	10	30	193	8	11	53	15	83	434
Dec.	2	*	*	4	*	8	-	-	-	-	-	-	-	-	-	-	-	-
Jan.	3	*	*	5	*	64	-	-	-	-	-	-	2	3	12	3	12	19
Feb.	3	*	*	4	*	61	-	-	-	-	-	-	2	2	8	2	8	49
Mar.	2	*	*	4	*	17	1	1	4	1	4	30	1	2	9	2	9	69

*Data not recorded.

Table 11. Estimates of winter trawl fishery effort (trips) and reported landings for North Carolina by month, April 1983 - March 1986.

	1984 Season						1985 Season						1986 Season					
Mo.	No. of dealers handling vessels	No. of vessels w/trips recorded	No. of trips recorded	Total no. of trips	Estimate of total trips	Landings (1,000 of lbs.)	No. of dealers handling vessels	No. of vessels w/trips recorded	No. of trips recorded	Total no. of trips	Estimate of total trips	Landings (1,000 of lbs.)	No. of dealers handling vessels	No. of vessels w/trips recorded	No. of trips recorded	Total no. of trips	Estimate of total trips	Landings (1,000 of lbs.)
Apr.	*	*	*	*	*	1,98/	26	64	140	68	147	2,753	25	76	117	78	117	1,689
May	*	*	*	*	*	4	14	24	35	24	35	438	14	39	51	39	51	431
Jun.	2	*	*	*	*	21	3	3	3	3	3	14	9	20	25	20	25	247
Jul.	6	2	2	2	2	/8	1	1	1	1	1	8	6	7	12	7	12	96
Aug.	3	*	*	*	*	16	3	4	7	4	7	146	2	5	10	5	10	18
Sep.	1	5	12	5	12	16	7	17	24	17	24	382	4	8	9	8	9	70
Oct.	3	9	17	9	17	233	12	29	62	30	64	1,019	6	14	32	14	31	360
Nov.	23	64	134	65	152	1,846	38	74	212	84	231	2,896	20	58	153	70	245	1,716
Dec.	23	116	228	125	302	4,493	38	133	397	142	440	5,969	38	111	280	130	342	3,702
Jan.	34	129	374	135	398	7,804	28	116	311	126	344	5,819	40	119	324	145	389	5,099
Feb.	30	90	257	94	279	5,446	26	97	228	104	263	4,821	38	101	255	124	332	5,356
Mar.	24	77	186	81	200	3,377	34	95	228	99	238	3,638	35	80	207	97	235	3,371

*Data not recorded.

period of time, an indication of trends in stock abundance is provided. Figures 6 and 7 are monthly seasonal catch/effort graphs for the long haul and winter trawl fisheries, respectively, from June 1983 to March 1986.

The state summary of the numerical information (vessel characteristics, gear types, etc.) contained on the 1983, 1984, and 1985 Marine Fisheries Vessel License file are shown in Figures 8, 9, and 10, respectively. The summaries for the state of the number of full-time, part-time, pleasure, charter boat, and head boat license holders, broken down by vessel size, are shown in Figures 11, 12, and 13 for 1983, 1984, and 1985, respectively. Similar summaries could be generated for a county, city, or some other specified grouping of license holders. Copies of the state and county summary reports were given to the NMFS Statistics Office at Beaufort, NC and were used to answer data requests. All the state and federal port agents were also supplied with listings of license holders in their counties sorted by name and U.S. Custom Documentation Number. These listings were used as references in completing the annual Operating Units Survey (General Canvas). Summaries of information from the license file can only be considered estimates because not all license applicants fill out the license application completely and accurately. The Division will continue to work with the field license agents on this problem.

The data gathered during this project provide an historical basis for evaluating the various fisheries. The data gathered during the project were compiled and published in the annual Division reports "Trends in North Carolina's Commercial Fisheries" (Street 1984, 1985, 1986) and the NMFS Current Fisheries Statistics series, "Fisheries of The United States" (1983, 1984, and 1985).

The initiation of a computerized system for the North Carolina landings data has allowed the Division to quickly access and sort landings statistics. This has been a great benefit in making, evaluating, and promoting management decisions, as well as in responding to requests for fishery statistics from industry, researchers, news media, and other management agencies. Fisheries statistics were supplied to state and federal management agencies, local economic development organizations, consulting firms, loan institutions, seafood businesses, and university researchers. The South Atlantic Fisheries Management Council was provided with landings data on snappers, groupers, king mackerel, and calico scallops. Timely landings data were also beneficial in Division public relations. The Division was able to give quick and accurate responses to the news media, coastal legislators, and other concerned parties when they requested landings data. Over 450 requests for fishery statistics were answered during this project.

RECOMMENDATIONS

In general the North Carolina/NMFS Cooperative Statistics Program functioned well. During the project definite improvements in operations were made and the relationship between NMFS and the state improved. The following recommendations would improve the effectiveness of the North Carolina/NMFS Cooperative Statistics Program, as well as the overall South Atlantic Regional Statistics Program:

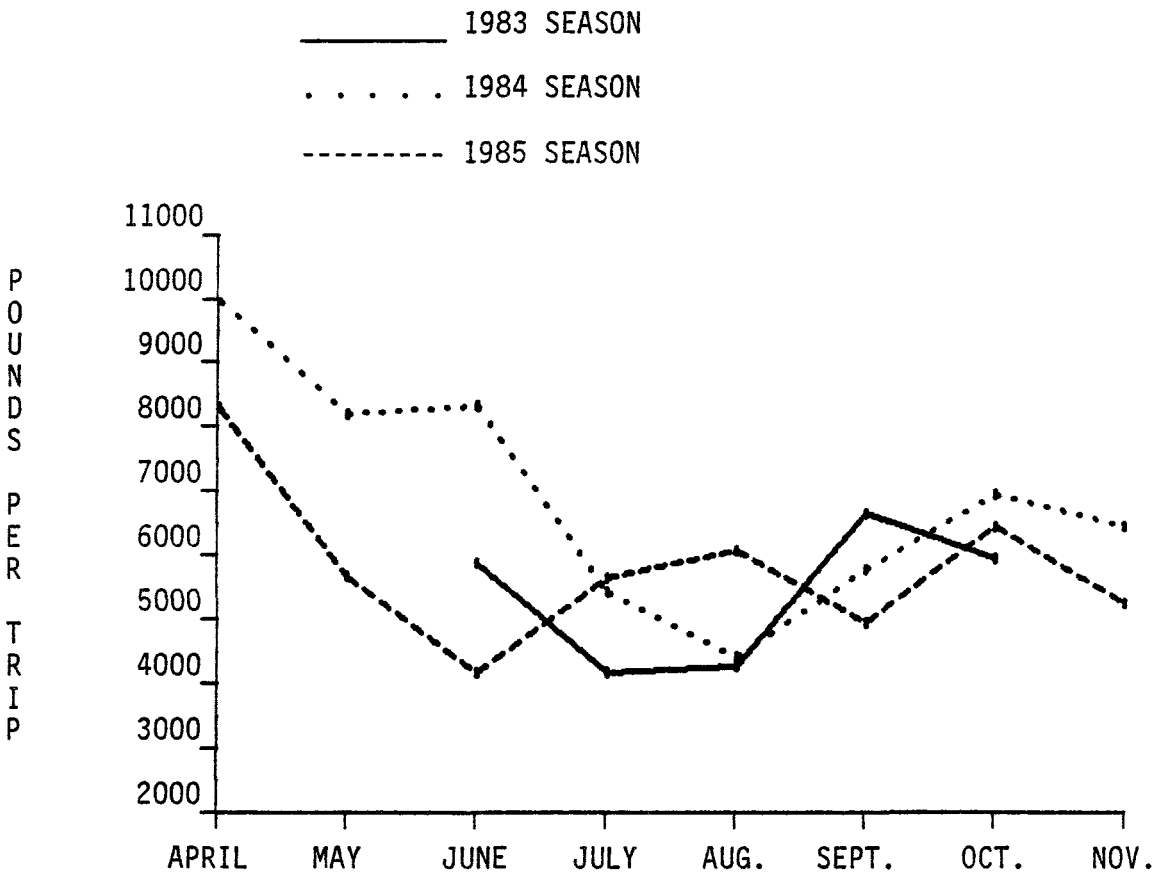

Figure 6. North Carolina long haul pounds per trip by month, June 1983-March 1986.

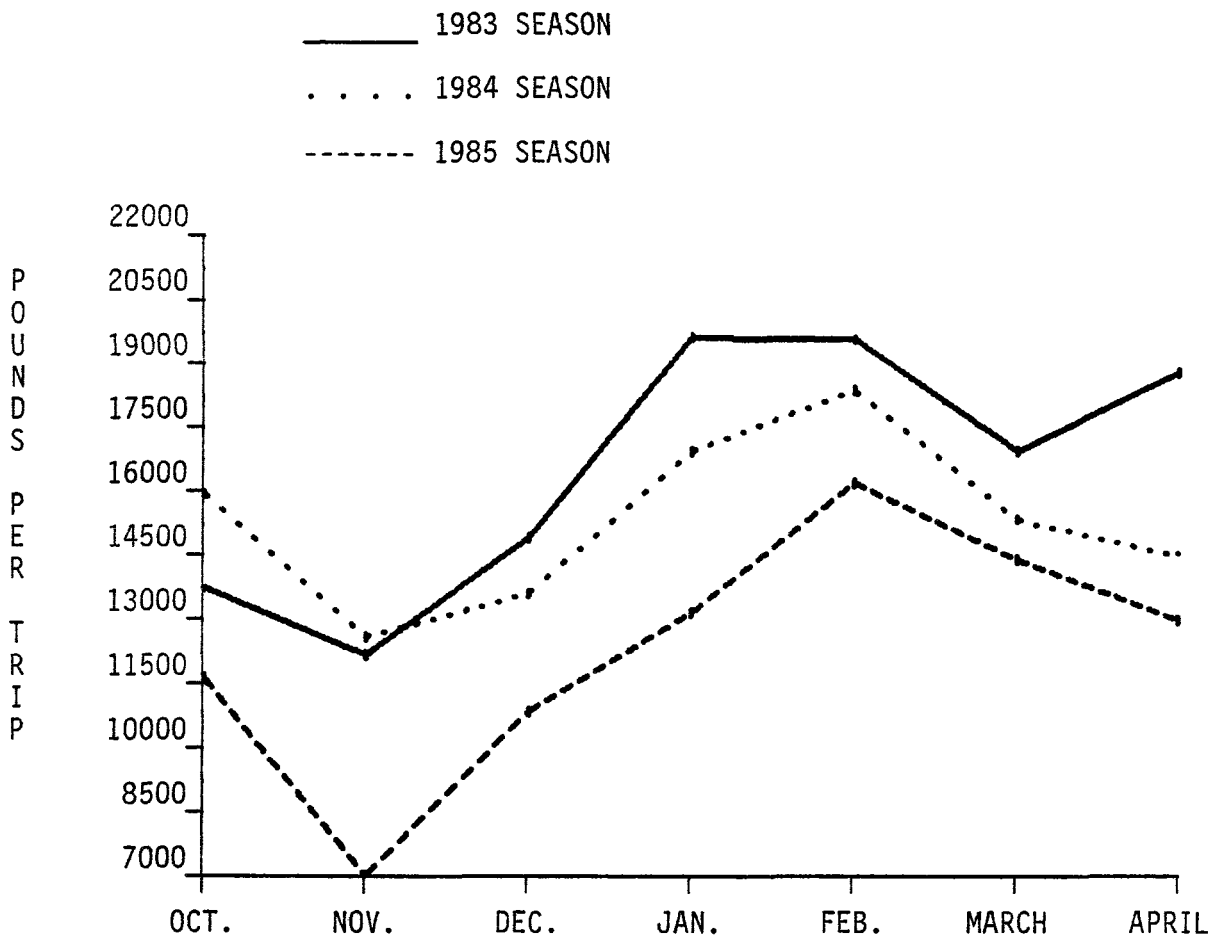

Figure 7. North Carolina winter trawl pounds per trip by month, October 1983-April 1986.

CG26C DIVISION OF MARINE FISHERIES - 1983 VESSEL LICENSE DATA
03/01/84 STATE TOTALS

BOAT INFORMATION	OWNERS BIRTH YR	VESSEL LENGTH	NO CREW	HORSE POWER	YEAR BUILT
FREQUENCY	24,495	24,783	23,543	20,161	20,542
TOTAL	850,539	430,377	52,507	1,304,321	1,513,216

OWNERS INCOME	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN
FREQUENCY	4,061	6,336	14,413	0	0	0

HULL MATERIAL	WOOD	STEEL	F.GLASS	ALUMINUM	UNKNOWN
FREQUENCY	9,037	82	11,813	3,729	149

FUEL	GAS	DIESEL	UNKNOWN
FREQUENCY	22,974	1,165	671

PROPULSION	OUTBOARD	INBOARD	I/O	UNKNOWN
FREQUENCY	21,042	2,682	440	646

SEINES AND NETS	PURSE SEINE	COMMON SEINE	HAND SEINE	LONG HAUL
FREQUENCY	52	169	174	252
TOTAL YDS	14,990	57,087	12,066	241,473

	CHANNEL NET	STAKE GILL NET	ANCHOR GILL NET	DRIFT GILL NET
FREQUENCY	379	3,308	9,305	8,435
TOTAL YDS	38,602	1,013,010	2,947,813	1,289,968

TRAWL RIG	SINGLE	DOUBLE	TWIN TRAWL	UNKNOWN
FREQUENCY	7,954	697	80	16,117

TRAWLS	CRAB	FISH	SCALLOP	SHRIMP	CLAM
FREQUENCY	1,373	583	154	8,325	279
TOTAL FT	38,812	22,540	4,894	220,631	5,141

DREDGES	HYDRAULIC CLAM	OYSTER	BAY SCALLOP	SEA SCALLOP
FREQUENCY	44	747	1,124	45
TOTAL NO.	124	979	2,653	152

POTS/TRAPS	CRAB	EEL	FISH	LOBSTER	POUND NET
FREQUENCY	7,223	653	667	27	230
TOTAL NO.	350,999	47,806	13,535	869	4,144

LINES	CRAB TROTLINE	FISH TROTLINE	HANDLINE	LONGLINE
FREQUENCY	224	472	256	75
TOTAL NO.	1,202	4,249	1,083	453

HANDGEAR	RAKE	TONG	GIG	HAND
FREQUENCY	6,333	4,644	6,479	3,452

Figure 8. North Carolina Marine Fisheries Vessel Licenses summary of vessel characteristics and gear data, 1983.

CG260 DIVISION OF MARINE FISHERIES - 1984 VESSEL LICENSE DATA
09/03/86 STATE TOTALS PAGE 109

BOAT INFORMATION	OWNERS BIRTH YR	VESSEL LENGTH	NO. CREW	HORSE POWER	YEAR BUILT	
FREQUENCY	20,929	21,162	18,272	16,838	18,081	
TOTAL	750,631	377,513	36,978	1,146,568	1,345,155	
OWNERS INCOME	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN
FREQUENCY	3,981	5,921	11,171	105	8	0
HULL MATERIAL	WOOD	STEEL	F.GLASS	ALUMINUM	UNKNOWN	
FREQUENCY	7,711	70	10,181	3,061	163	
FUEL	GAS	DIESEL	UNKNOWN			
FREQUENCY	19,549	1,258	379			
PROPULSION	OUTBOARD	INBOARD	I/O	UNKNOWN		
FREQUENCY	17,833	2,645	343	365		
SEINES AND NETS	PURSE SEINE	COMMON SEINE	HAND SEINE	LONG HAUL		
FREQUENCY	29	167	144	215		
TOTAL YDS	12,692	40,555	14,787	210,106		
	CHANNEL NET	STAKE GILL NET	ANCHOR GILL NET	DRIFT GILL NET		
FREQUENCY	329	2,698	8,149	7,011		
TOTAL YDS	36,015	936,276	2,923,838	1,235,959		
TRAWL RIG	SINGLE	DOUBLE	TWIN TRAWL	UNKNOWN		
FREQUENCY	7,290	654	99	13,217		
TRAWLS	CRAB	FISH	SCALLOP	SHRIMP	CLAM	
FREQUENCY	1,259	577	131	7,659	243	
TOTAL FT	35,509	20,995	4,180	204,794	4,567	
DREDGES	HYDRAULIC CLAM	OYSTER	BAY SCALLOP	SEA SCALLOP		
FREQUENCY	40	833	1,246	36		
TOTAL NO.	86	1,173	2,859	88		
POTS/TRAPS	CRAB	EEL	FISH	LOBSTER	POUND NET	
FREQUENCY	6,509	524	572	27	198	
TOTAL NO.	345,536	40,361	12,186	359	3,431	
LINES	CRAB TROTLINE	FISH TROTLINE	HANDLINE	LONGLINE		
FREQUENCY	195	405	211	77		
TOTAL NO.	1,344	4,142	1,136	826		
HANDGEAR	RAKE	TONG	GIG	HAND		
FREQUENCY	7,959	5,098	6,147	3,328		

Figure 9. North Carolina Marine Fisheries Vessel Licenses summary of vessel characteristics and gear data, 1984.

CG260 DIVISION OF MARINE FISHERIES - 1985 VESSEL LICENSE DATA
03/12/86 STATE TOTALS

BOAT INFORMATION	OWNERS BIRTH YR	VESSEL LENGTH	NO. CREW	HORSE POWER	YEAR BUILT
FREQUENCY	20,993	21,399	14,638	17,008	18,534
TOTAL	774,336	386,188	33,674	1,221,760	1,391,476

OWNERS INCOME	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN
FREQUENCY	4,303	5,638	11,381	93	6	0

HULL MATERIAL	WOOD	STEEL	F.GLASS	ALUMINUM	UNKNOWN
FREQUENCY	7,425	82	10,551	3,234	129

FUEL	GAS	DIESEL	UNKNOWN
FREQUENCY	19,752	1,339	330

PROPULSION	OUTBOARD	INBOARD	I/O	UNKNOWN
FREQUENCY	17,987	2,781	335	318

SEINES AND NETS	PURSE SEINE	COMMON SEINE	HAND SEINE	LONG HAUL
FREQUENCY	41	142	182	245
TOTAL YDS	6,244	29,123	19,918	201,639

	CHANNEL NET	STAKE GILL NET	ANCHOR GILL NET	DRIFT GILL NET
FREQUENCY	406	2,724	8,668	7,228
TOTAL YDS	54,949	966,390	3,327,668	1,376,891

TRAWL RIG	SINGLE	DOUBLE	TWIN TRAWL	UNKNOWN
FREQUENCY	7,675	636	153	13,020

TRAWLS	CRAB	FISH	SCALLOP	SHRIMP	CLAM
FREQUENCY	1,246	402	138	8,094	249
TOTAL FT	40,485	21,083	5,072	223,702	4,561

DREDGES	HYDRAULIC CLAM	OYSTER	BAY SCALLOP	SEA SCALLOP
FREQUENCY	32	745	1,333	60
TOTAL NO.	38	1,015	3,178	279

POTS/TRAPS	CRAB	EEL	FISH	LOBSTER	POUND NET
FREQUENCY	6,547	540	736	15	263
TOTAL NO.	349,831	37,298	18,712	353	4,674

LINES	CRAB TROTLINE	FISH TROTLINE	HANDLINE	LONGLINE
FREQUENCY	210	541	219	80
TOTAL NO.	1,391	5,131	1,285	588

HANDGEAR	RAKE	TONG	GIG	HAND
FREQUENCY	8,210	5,584	6,651	4,394

Figure 10. North Carolina Marine Fisheries Vessel Licenses summary of vessel characteristics and gear data, 1985.

3250 DIVISION OF MARINE FISHERIES - 1983 VESSEL LICENSE DATA

03/01/84 STATE TOTALS

VESSEL SIZE	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN	TOTAL
0 - 13	105	419	1,591	0	0	0	2,115
14 - 15	491	1,933	6,365	0	0	0	8,789
16 - 17	912	2,195	4,335	0	0	0	7,442
18 - 20	754	1,016	1,594	0	0	0	3,364
21 - 23	431	350	347	0	0	0	1,128
24 - 25	326	204	106	0	0	0	636
26 - 35	443	160	61	0	0	0	664
36 - 50	362	56	8	0	0	0	426
51 - 60	87	2	3	0	0	0	92
61 - 70	59	0	0	0	0	0	59
+71	91	1	3	0	0	0	95
TOTAL	4,061	6,336	14,413	0	0	0	24,810

Figure 11. North Carolina Marine Fisheries Vessel Licenses summary of vessel use by vessel size categories, 1983.

CG250 DIVISION OF MARINE FISHERIES - 1984 VESSEL LICENSE DATA

03/05/85 STATE TOTALS

VESSEL SIZE	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN	TOTAL
0 - 13	93	339	1,112	0	0	0	1,544
14 - 15	499	1,661	4,820	9	1	0	6,980
16 - 17	924	2,176	3,572	2	0	0	6,674
18 - 20	721	1,006	1,275	1	0	0	3,003
21 - 23	405	319	263	3	0	0	990
24 - 25	292	197	80	2	0	0	571
26 - 35	442	157	45	21	0	0	665
36 - 50	382	57	3	59	1	0	502
51 - 60	77	5	0	7	2	0	91
61 - 70	66	1	0	0	3	0	70
+71	90	3	1	1	1	0	96
TOTAL	3,981	5,921	11,171	105	8	0	21,186

Figure 12. North Carolina Marine Fisheries Vessel Licenses summary of vessel use by vessel size categories, 1984.

CG250 DIVISION OF MARINE FISHERIES - 1985 VESSEL LICENSE DATA

03/12/86 STATE TOTALS

VESSEL SIZE	FULL TIME	PART TIME	REC.	CHARTER	HEADBOAT	UNKNOWN	TOTAL
0 - 13	103	315	1,069	0	0	0	1,487
14 - 15	488	1,532	4,845	1	0	0	6,866
16 - 17	1,022	2,040	3,695	0	0	0	6,757
18 - 20	762	964	1,315	1	0	0	3,042
21 - 23	432	355	287	2	0	0	1,076
24 - 25	334	220	109	3	0	0	666
26 - 35	472	161	56	26	0	0	715
36 - 50	415	44	5	50	1	0	515
51 - 60	88	2	0	9	1	0	100
61 - 70	81	1	0	0	2	0	84
+71	106	4	0	1	2	0	113
TOTAL	4,303	5,638	11,381	93	6	0	21,421

Figure 13. North Carolina Marine Fisheries Vessel Licenses summary of vessel use by vessel size categories, 1985.

1. The regional emphasis of the program should be continued. The South Atlantic Statistical Committee should continue to be the states primary mechanism for working with NMFS on common problems encountered by the states.

2. A detailed description of the current computer system should be developed. This documentation would give the users of the system the information they need to interpret the data adequately, to understand the limitations of the system and to recommend improvements to the system.

3. The General Canvas data (processed products, wholesale dealers, and operating units) should be stored on the NMFS Southeast Region Burrough's computer system. NMFS should develop the software for each state to access its General Canvas data.

4. Modify procedures to store or access the shrimp data by dealer code through the Bulletin program. Currently all the shrimp data are flagged as confidential because all the data (regardless of origin) are stored under a single dealer code. Also, provide for a district summary in the Bulletin program.

5. Provide stable long term funding for the regional program and streamline the unreasonably lengthy and cumbersome review process of the project documents.

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LITERATURE CITED

STUDY I

North Carolina Department of Natural Resources and Community Development
1980. Division of Marine Fisheries confidentiality policy, 8p.

South Atlantic State/Federal Statistical Committee
1980. South Atlantic regional shrimp trip interview from instructions, 26p.

Street, Michael W.
1983. Trends in North Carolina's commercial fisheries, 1965-1983. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 20p.

_____ 1984. Trends in North Carolina's commercial fisheries, 1965-1984. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish.,

_____ 1985. Trends in North Carolina's commercial fisheries, 1965-1985. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish.

Theiling, Dale
1981. Accomplishments of a pilot study relative to implementation of a cooperative State-Federal regional statistical program along the South Atlantic coast of the United States. Compl. Rep., Contract 03-7-042-35144. S.C. Dept. Wildl. Mar. Res., Mar. Res. Div., 22p.

U.S. Dept. Comm. NOAA, NMFS
1985. Fisheries of the United States, 1984. Current Fish. Stat. No. 8360, 121p.

U.S. Dept. Interior, Bur. Com. Fish.
1964. Manual for conducting statistical surveys of the fisheries of the United States. Commercial fisheries AL-11, 59p.

West, Katy H.
1980. South Atlantic pilot statistics project completion report - North Carolina. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 12p.

_____ 1981. Description of the computer systems for commercial fisheries landings statistics and biological monitoring data. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 19p.

_____ 1982. North Carolina/National Marine Fisheries Service commercial fisheries statistics project, October 1980 - April 1982. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 23p.

LITERATURE CITED

STUDY I

_____ 1983. North Carolina/National Marine Fisheries Service commercial fisheries statistics project, 16 April 1982 - 31 May 1983. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 32p.

West, Katy H. and F. C. Rohde
1984. North Carolina/National Marine Fisheries Service Regional Cooperative Statistical Program, June 1983 - March 1984. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 65p.

West, Katy H., S. P. Epperly and F. C. Rohde
1985. North Carolina/Natural Marine Fisheries Service Regional Cooperative Statistical Program April 1984 - March 1985. N.C. Dept. Nat. Res. Comm. Devel., Div. Mar. Fish., 111 p.

Appendix A - North Carolina Landings Bulletins for December 1983, 1984, 1985, and March 1986.

NORTH CAROLINA LANDINGS
DECEMBER 1983

83-12

PRELIMINARY COMMERCIAL FISHERIES STATISTICS NUMBER

DATE ISSUED: April 3, 1984

Issued by the North Carolina DIVISION OF MARINE FISHERIES, Department of Natural Resources and Community Development, in cooperation with the National Marine Fisheries Service For additional information contact Statistics Coordinator, P O Box 769 Morehead City, N C 28557, telephone 919-726-7021

NORTH CAROLINA LANDINGS BY DISTRICT, DECEMBER 1983

	NORTHERN DISTRICT		CENTRAL DISTRICT		SOUTHERN DISTRICT	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS	POUNDS	DOLLARS
AMBERJACKS	88	9	-	-	199	10
ANGLERFISH	453	136	157	118	1,251	626
BLUEFISHES	142,170	19,885	148,731	15,083	72,763	8,271
BUTTERFISH	3,308	1,314	1,476	432	1,613	484
CARP	2,754	26	-	-	-	-
CATFISHES AND BULLHEADS	65,810	12,990	111	13	6,095	2,273
CROAKER	41,576	22,450	405,281	163,237	36,650	15,466
DOLPHINFISHES	-	-	45	29	61	51
DRUM, BLACK	371	37	200	21	172	17
DRUM, RED	698	76	23,552	5,369	3,844	969
FLOUNDERS, FLUKE, UNCLASSIFIED	1,247,582	698,144	1,535,765	660,550	386,768	177,428
FLOUNDER, YELLOWTAIL	-	-	-	-	21	4
GIZZARD SHAD	915	45	-	-	-	-
GROUPERS	206	309	28,537	22,938	26,324	21,877
GRUNTS	-	-	856	275	2,794	636
HAKES	1,011	101	52	5	-	-
HARVESTFISH	-	-	12,231	1,837	-	-
HICKORY SHAD	297	57	-	-	-	-
HOGFISH	-	-	-	-	127	117
JACKS	309	31	-	-	-	-
KING MACKEREL	48,286	29,230	20,850	10,720	29,703	15,282
KING WHITING	2,464	805	21,252	7,502	10,384	3,962
MULLETS	18,847	3,353	13,674	2,368	5,979	1,449
PIGFISH	-	-	3,212	491	600	120
PINFISH	-	-	-	-	42	11
SCUPS OR PORGIES	198	81	37,103	20,754	15,076	12,236
SEA BASSES, UNCLASSIFIED	4,691	3,947	12,403	11,765	40,359	28,124
SEA TROUT, GREY	250,827	105,993	366,722	109,690	108,294	51,251
SEA TROUT, SPOTTED	7,844	6,251	23,422	17,594	255	236
SHAD	918	448	113	31	30	6
SHARKS	10,294	2,240	13,755	2,832	380	95
SHEEPSHEAD	67	9	1,320	169	3,584	358
SNAPPERS	101	177	7,131	12,971	16,466	31,164
SPANISH MACKEREL	-	-	-	-	21	7
SPOT	18	5	48,260	9,907	21,858	5,755
STRIPED BASS, UNCLASSIFIED	76,228	38,300	235	360	656	1,074
STURGEONS	1,906	924	1,049	345	462	231
SWELLFISHES	236	81	6,149	2,137	328	153
TAUTOG	195	60	-	-	-	-
TILEFISH	2,068	1,523	1,413	766	5	2
TRIGGERFISHES	40	4	809	384	1,361	433
TUNA, LITTLE	25,293	1,722	3,575	244	1,967	98
TUNA, YELLOWFIN	1,016	1,016	-	-	-	-
TUNAS	302	302	637	566	25	25
TUNA, BLACKFIN	144	86	-	-	-	-
WHITE PERCH	19,474	9,082	50	25	-	-
WHITING	-	-	-	-	50	8
YELLOW PERCH	91	27	-	-	-	-
UNCLASSIFIED FOR INDUSTRIAL	25,789	953	623,613	23,636	15,666	477
TOTAL FISH	2,004,935	962,229	3,363,741	1,105,164	812,233	380,791
SHELLFISH						
CRAB, BLUE, HARD	352,190	69,929	778,705	175,781	135,943	27,138
CRAB, BLUE, SOFT	-	-	4	8	-	-
*SHRIMPS (HEADS ON)	1,609	2,476	28,927	43,569	3,934	6,595
CLAMS, HARD (MEATS)	-	-	102,105	429,355	61,667	241,236
OCTOPUS	193	116	179	47	1,585	1,341
OYSTER, PUBLIC, FALL (MEATS)	125,833	134,348	33,053	52,383	34,485	51,444
OYSTER, PRIVATE, FALL (MEATS)	4,962	6,947	-	-	4,891	9,293
SCALLOP, BAY (MEATS)	-	-	91,807	166,132	4,000	8,401
SQUIDS	40,024	10,328	16,314	4,836	22,389	6,717
TOTAL SHELLFISH	524,811	274,144	1,051,094	877,711	269,694	352,275
GRAND TOTAL	2,529,746	1,236,373	4,414,835	1,982,875	1,081,927	733,066

NOTE: To avoid disclosure of private enterprise, landings of menhaden, sea scallops, swordfish, eels and conchs are not shown by district. The Northern District includes Currituck, Camden, Pasquotank, Perquimans, Chowan, Bertie, Martin, Washington, Tyrrell, Dare, Hyde and Beaufort Counties. The Central District includes Craven, Pamlico, and Carteret Counties. The Southern District includes Onslow, Pender, New Hanover, and Brunswick Counties. Bivalve mollusks are reported in pounds of meat.

*See Page 2

NORTH CAROLINA LANDINGS, DECEMBER 1982 AND 1983

FISH	1982 POUNDS	1982 DOLLARS	1983 POUNDS	1983 DOLLARS
ALEWIVES	4	2	-	-
AMBERJACKS	1,007	176	287	19
ANGLERFISH	1,017	339	1,861	880
BLUEFISH	570,720	94,424	363,664	43,239
BONITO	2,660	266	-	-
BUTTERFISHES	91,534	14,810	6,397	2,230
COBIA	229	67	-	-
CARP	9,042	90	2,754	26
CATFISHES AND BULLHEADS	93,991	20,686	72,016	15,276
CROAKER	439,058	194,985	483,507	201,153
DOLPHINFISHES	83	62	106	80
DRUM, BLACK	566	57	743	75
DRUM, RED	5,084	1,048	28,094	6,414
EEL, COMMON	34,466	27,746	80	4
FLOUNDERS, FLUKE, UNCLASSIFIED	2,701,410	1,460,700	3,170,115	1,536,122
FLOUNDER, YELLOWTAIL	-	-	21	4
GIZZARD SHAD	-	-	915	45
GROUPERS	46,440	38,717	55,067	45,124
GRUNTS	3,966	1,018	3,650	911
HAKES	135	14	1,063	106
HARVESTFISH	58,700	8,687	12,231	1,837
HICKORY SHAD	1	-	297	57
HOGFISH	135	122	127	117
JACKS	-	-	309	31
KING MACKEREL	144,809	139,220	98,839	55,232
KING WHITING	48,697	15,265	34,100	12,269
MENHADEN	61,190,430	1,973,732	84,903,070	3,009,532
MULLETS	14,612	3,144	38,500	7,170
PIGFISH	3,662	572	3,812	611
PINFISH	-	-	42	11
SCUPS OR PORGIES	39,341	26,193	52,377	33,071
SEA BASSES, UNCLASSIFIED	50,236	30,100	57,453	43,836
SEA TROUT, GREY	1,128,470	453,296	725,843	266,934
SEA TROUT, SPOTTED	4,842	3,708	31,521	24,081
SHAD	842	558	1,061	485
SHARKS	2,948	512	24,429	5,167
SHEEPSHEAD	622	94	4,971	536
SNAPPERS	35,119	66,425	23,698	44,312
SPANISH MACKEREL	519	217	21	7
SPOT	12,718	3,570	70,136	15,667
STRIPED BASS, UNCLASSIFIED	9,277	11,564	77,119	39,734
STURGEONS	2,766	817	3,417	1,500
SWELLFISHES	7,075	11,047	6,763	2,376
SWORDFISH	7,277	21,039	825	3,300
TAUTOG	101	20	195	60
TILEFISH	3,423	2,027	3,486	2,291
TRIGGERFISHES	1,427	417	2,210	821
TUNA, LITTLE	1,402	204	30,835	2,064
TUNA, YELLOWFIN	293	243	1,016	1,016
TUNAS	533	442	964	893
TUNA, BLACKFIN	150	75	144	86
WHITE PERCH	14,770	7,088	19,524	9,107
WHITING	-	-	50	8
YELLOW PERCH	402	202	91	27
UNCLASSIFIED FOR INDUSTRIAL	407,366	12,712	665,068	25,066
TOTAL FISH	67,194,377	4,648,519	91,034,884	5,461,020
SHELLFISH				
CRAB, BLUE, HARD	1,408,642	343,352	1,266,838	272,898
CRAB, BLUE, SOFT	-	-	4	8
**SHRIMPS (HEADS ON)	32,017	56,473	34,470	57,640
CLAMS, HARD (MEATS)	166,263	534,453	163,772	671,251
CONCHS (MEATS)	580	357	4,239	1,206
OCTOPUS	594	297	1,957	1,504
OYSTER, PUBLIC, FALL (MEATS)	128,989	207,533	193,371	288,175
OYSTER, PRIVATE, FALL (MEATS)	-	-	9,853	16,240
SCALLOP, BAY (MEATS)	53,668	164,257	96,607	174,533
SQUIDS	25,206	6,933	78,727	21,881
TOTAL SHELLFISH	1,815,959	1,313,655	1,849,838	1,505,336
GRAND TOTAL	69,010,336	5,962,174	92,934,722	6,966,356

NOTE: The comparative and cumulative monthly data may include revisions.

**The species breakdown for shrimp (heads on, pounds/value) for December 1983:
Brown - 870/$2,257
Pink - 29,666/$48,788
White - 3,934/$6,595

*The species breakdown for shrimp (heads on pounds/value) is as follows: Northern District - Pink 1,609/$2,476; Central District - Brown 870/$2,257, Pink 28,057/$46,312; Southern District - White 3,934/$6,595.

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, DECEMBER 1982 AND 1983

12 MONTHS ENDING WITH DECEMBER

	1982		1983	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	9,437,703	704,599	5,868,332	464,389
AMBERJACKS	5,018	1,010	6,364	1,036
ANGELFISH	120	24	120	24
ANGLERFISH	140,118	57,590	64,522	23,540
BLUEFISH	4,290,809	1,045,693	6,746,955	794,348
BONITO	30,749	4,320	11,041	1,277
BOWFIN	1,577	16	-	-
BUTTERFISHES	263,662	69,969	107,531	31,823
COBIA	10,574	3,549	4,279	1,649
CARP	103,323	1,435	148,618	2,251
CATFISHES AND BULLHEADS	1,342,456	247,791	1,177,170	210,477
COD	1,883	375	1,940	291
CROAKER	10,824,953	4,031,186	7,249,680	2,842,139
CUTLASSFISH	-	-	22,533	3,564
DOLPHINFISHES	41,448	32,471	30,393	23,985
DRUM, BLACK	80,523	4,958	13,754	1,555
DRUM, RED	52,561	12,273	219,871	51,958
EEL, COMMON	475,524	291,352	404,307	270,708
FLOUNDER, BLACKBACK	794	160	1,592	413
FLOUNDERS, FLUKE, UNCLASSIFIED	8,439,980	5,671,835	9,812,796	5,684,173
FLOUNDER, GREY SOLE	20,396	6,672	4,926	924
FLOUNDER, YELLOWTAIL	7,663	3,834	471	94
GIZZARD SHAD	529,076	26,446	255,966	13,494
GROUPERS	914,496	739,446	949,537	798,338
GRUNTS	83,622	22,206	85,744	28,738
HADDOCK	16	3	-	-
HAKES	110,163	19,073	10,412	1,511
HARVESTFISH	456,232	130,239	243,855	64,032
HERRING, THREAD	84,420	2,430	3,014,330	116,695
HICKORY SHAD	24,742	5,006	69,966	14,341
HOGFISH	1,229	1,116	1,743	1,569
JACKS	2,738	548	26,486	4,033
KING MACKEREL	1,207,108	1,157,301	843,336	608,183
KING WHITING	361,052	123,817	441,881	155,857
MACKEREL	70,549	8,419	50	8
MARLINS	250	25	-	-
MENHADEN	187,015,090	5,773,042	177,973,440	6,167,878
MULLETS	1,492,179	283,196	1,068,014	206,253
PERMIT	-	-	80	28
PIGFISH	114,115	21,282	131,155	21,734
PINFISH	866	101	496	100
POLLOCK	992	261	2,564	265
POMPANO	31,186	32,621	4,982	3,796
SAND PERCH	465	93	-	-
SCUPS OR PORGIES	2,297,459	1,334,546	1,473,107	825,370
SEA BASSES, UNCLASSIFIED	810,302	573,699	532,500	413,660
SEA TROUT, GREY	12,052,232	5,319,001	10,233,738	4,308,345
SEA TROUT, SPOTTED	83,847	59,896	165,360	125,432
SHAD	411,852	183,483	445,879	187,360
SHARKS	100,985	24,387	136,702	28,399
SHEEPSHEAD	13,922	1,973	28,224	3,604
SNAPPERS	598,093	1,048,857	485,591	908,669
SPADEFISH	4,309	604	1,370	249
SPANISH MACKEREL	189,217	61,268	41,336	15,221
SPOT	4,918,763	1,080,090	2,952,295	685,370
STRIPED BASS, UNCLASSIFIED	338,310	531,470	361,275	491,491
STURGEONS	23,367	8,504	17,977	12,338
SWELLFISHES	25,300	23,222	10,881	5,703
SWORDFISH	146,565	378,204	160,740	419,324
TAUTOG	656	104	319	102
TILEFISH	57,241	25,357	80,711	44,807
TRIGGERFISHES	59,386	20,190	33,936	9,690
TRIPLETAIL	196	49	-	-
TUNA, BLUEFIN	2,284	1,863	20	17
TUNA, LITTLE	17,533	2,315	55,464	6,273
TUNA, YELLOWFIN	40,122	31,839	71,731	57,351
TUNAS	3,797	8,366	28,736	18,360
TUNA, BIGEYE	-	-	1,997	1,616
TUNA, BLACKFIN	1,078	644	1,392	764
WAHOO	2,708	1,674	7,274	6,495
WHITE PERCH	665,082	276,147	498,694	205,319
WHITING	585,577	102,148	18,396	4,690
YELLOW PERCH	10,003	3,429	11,000	3,733
UNCLASSIFIED FOR INDUSTRIAL	8,352,069	333,329	9,208,233	344,173
TOTAL FISH	259,889,675	31,974,441	244,086,111	27,752,454

SHELLFISH

SEE PAGE 4

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, DECEMBER 1982 AND 1983

12 MONTHS ENDING WITH DECEMBER

	1982		1983	
SHELLFISH	POUNDS	DOLLARS	POUNDS	DOLLARS
CRAB, BLUE, HARD	38,206,327	7,184,748	34,689,455	8,144,863
CRAB, BLUE, SOFT	148,364	296,838	87,570	188,223
CRAB, HORSESHOE	2,267	453	1,732	302
*SHRIMPS (HEADS ON)	7,027,164	16,411,472	6,115,273	13,564,846
CLAMS, HARD (MEATS)	1,701,793	6,606,132	1,341,620	5,401,824
CONCHS (MEATS)	80,512	35,042	26,912	13,750
OCTOPUS	2,573	1,437	4,156	3,813
OYSTER, PUBLIC, FALL (MEATS)	383,477	600,357	446,387	678,479
OYSTER, PRIVATE, FALL (MEATS)	3,626	5,651	17,795	27,934
OYSTER, PUBLIC, SPRING (MEATS)	223,301	300,418	255,329	409,020
OYSTER, PRIVATE, SPRING (MEATS)	1,594	2,250	4,998	8,714
SCALLOP, BAY (MEATS)	136,634	352,169	202,479	498,539
SCALLOP, CALICO (MEATS)	-	-	101,977	178,476
SCALLOP, SEA (MEATS)	407	1,324	26,306	150,656
SQUIDS	135,935	43,884	305,567	97,342
TURTLES, SNAPPER	24,274	7,236	19,158	5,750
TOTAL SHELLFISH	48,078,248	31,849,411	43,646,719	29,672,531
GRAND TOTAL	307,967,923	63,823,852	287,732,830	57,424,985

NOTE: *The species breakdown for shrimp (heads on, pounds/value) January through December 1983 is as follows:
Brown - 3,030,727/$7,612,327
Pink - 2,633,067/$4,302,628
Rock - 1,179/$740
White - 450,305/$1,149,151

NORTH CAROLINA LANDINGS
DECEMBER 1984

PRELIMINARY COMMERCIAL FISHERIES STATISTICS NUMBER 84-12

DATE ISSUED: May 16, 1985

Issued by the North Carolina DIVISION OF MARINE FISHERIES Department of Natural Resources and Community Development, in cooperation with the National Marine Fisheries Service For additional information contact Statistics Coordinator, P O Box 769, Morehead City, N C 28557, telephone 919-726-7021

NORTH CAROLINA LANDINGS, DECEMBER 1984

	NORTHERN DISTRICT		CENTRAL DISTRICT		SOUTHERN DISTRICT	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	1,360	91	-	-	-	-
AMBERJACKS	126	25	-	-	-	-
ANGLERFISH	781	238	74	30	-	-
BLUEFISH	236,981	12,375	33,717	4,060	14,890	2,346
BONITO	-	-	137	36	-	-
BUTTERFISHES	10,194	4,408	1,213	264	-	-
CARP	7,954	159	-	-	-	-
CATFISHES AND BULLHEADS	71,013	14,040	-	-	5,150	1,935
COBIA	-	-	-	-	72	54
CROAKER	187,668	41,468	1,472,007	328,641	135,894	44,968
DOLPHINFISHES	-	-	212	159	284	426
DRUM, BLACK	428	32	7	2	-	-
DRUM, RED	2,343	698	17,768	5,600	7,111	2,204
FLOUNDER, BLACKBACK	100	40	-	-	-	-
FLOUNDERS, FLUKE, UNCLASSIFIED	2,248,688	1,309,904	1,916,145	1,111,124	28,330	19,419
FLOUNDER, YELLOWTAIL	1,050	525	-	-	-	-
GROUPERS	-	-	18,846	23,387	50,609	75,982
GRUNTS	-	-	518	130	7,842	1,961
HAKES	3,410	370	-	-	-	-
HARVESTFISH	-	-	50,635	23,786	-	-
HICKORY SHAD	104	12	93	9	-	-
KING MACKEREL	44,189	26,514	14,549	11,102	8,016	8,231
KING WHITING	11,954	3,464	34,917	13,243	19,002	6,985
MULLETS	40,941	8,002	15,448	2,739	11,103	2,443
PIGFISH	-	-	3,512	575	2,982	531
SCUPS OR PORGIES	78	45	32,679	31,046	16,598	13,989
SEA BASSES, UNCLASSIFIED	4,439	3,754	27,540	43,754	34,758	26,476
SEA TROUT, GREY	603,099	148,870	523,666	133,761	82,349	23,916
SEA TROUT, SPOTTED	4,236	4,015	9,954	7,324	2,096	1,649
SHAD	130	22	-	-	-	-
SHARKS	2,047	1,247	8,882	2,565	242	68
SHEEPSHEAD	72	7	866	99	-	-
SNAPPERS	-	-	37,968	73,515	21,535	42,619
SPOT	483	124	54,405	13,892	19,536	5,727
STRIPED BASS, UNCLASSIFIED	51,999	31,977	5	5	133	166
STURGEONS	5,314	2,919	516	161	-	-
SWELLFISHES	1,650	922	6,244	2,997	-	-
TAUTOG	37	4	-	-	-	-
TILEFISHES	-	-	1,512	720	1,937	2,675
TRIGGERFISHES	-	-	915	229	1,376	344
TUNAS	23,809	22,113	1,072	858	719	1,037
WAHOO	-	-	-	-	119	179
WHITE PERCH	44,260	30,775	-	-	-	-
YELLOW PERCH	1,756	440	-	-	-	-
UNCLASSIFIED FOR INDUSTRIAL	38,583	1,292	659,147	19,774	20,401	629
TOTAL FISH	3,651,296	1,670,891	4,945,169	1,855,587	493,084	286,959
SHELLFISH						
CRAB, BLUE, HARD	424,058	81,331	606,877	114,604	68,422	15,435
CRAB, BLUE, SOFT	-	-	2	4	-	-
*SHRIMPS (HEADS ON)	-	-	12,872	17,643	-	-
CLAMS, HARD (MEATS)	-	-	118,675	514,325	51,389	195,318
OCTOPUS	-	-	-	-	5	3
OYSTER, PUBLIC, FALL (MEATS)	101,998	192,486	42,406	73,273	32,309	55,319
OYSTER, PRIVATE, FALL (MEATS)	-	-	1,040	2,445	522	913
SCALLOP, BAY (MEATS)	-	-	81,619	133,514	3,392	5,090
SQUIDS	61,976	12,607	4,691	1,078	-	-
TOTAL SHELLFISH	588,032	286,424	868,182	856,886	156,039	272,078
GRAND TOTAL	4,239,328	1,957,315	5,813,351	2,712,473	649,123	559,037

NOTE: To avoid disclosure of private enterprise, landings of menhaden, sea scallops, swordfish, eels and conchs are not shown by district. The Northern District includes Currituck, Camden, Pasquotank, Perquimans, Chowan, Bertie, Martin, Washington, Tyrrell, Dare, Hyde, and Beaufort Counties. The Central District includes Craven, Pamlico, and Carteret Counties. The Southern District includes Onlsow, Pender, New Hanover, and Brunswick Counties. Bivalve Mollusks are reported in pounds of meat.

*The species breakdown for shrimp (heads on pounds/value) is as follows: Central District - Pink 12,872/$17,643.

NORTH CAROLINA LANDINGS, DECEMBER 1983 AND 1984

FISH	1983 POUNDS	1983 DOLLARS	1984 POUNDS	1984 DOLLARS
ALEWIVES	-	-	1,360	91
AMBERJACKS	287	19	126	25
ANGLERFISH	1,861	880	855	268
BLUEFISH	363,664	43,239	285,588	18,781
BONITO	-	-	137	36
BUTTERFISHES	6,397	2,230	11,407	4,672
CARP	2,754	26	7,954	159
CATFISHES AND BULLHEADS	72,016	15,276	76,163	15,975
COBIA	-	-	72	54
CROAKER	483,507	201,153	1,795,569	415,077
DOLPHINFISHES	106	80	496	585
DRUM, BLACK	743	75	435	34
DRUM, RED	28,094	6,414	27,222	8,502
EEL, COMMON	80	4	39,037	33,156
FLOUNDER, BLACKBACK	-	-	100	40
FLOUNDERS, FLUKE, UNCLASSIFIED	3,170,115	1,536,122	4,193,163	2,440,447
FLOUNDER, YELLOWTAIL	21	4	1,050	525
GIZZARD SHAD	915	45	-	-
GROUPERS	55,067	45,124	69,455	99,369
GRUNTS	3,650	911	8,360	2,091
HAKES	1,063	106	3,410	370
HARVESTFISH	12,231	1,837	50,635	23,786
HICKORY SHAD	297	57	197	21
HOGFISH	127	117	-	-
JACKS	309	31	-	-
KING MACKEREL	98,839	55,232	66,754	45,847
KING WHITING	34,100	12,269	65,873	23,692
MENHADEN	84,903,070	3,009,532	75,075,940	2,016,491
MULLETS	38,500	7,170	67,492	13,184
PIGFISH	3,812	611	6,494	1,106
PINFISH	42	11	-	-
SCUPS OR PORGIES	52,377	33,071	49,355	45,080
SEA BASSES, UNCLASSIFIED	57,453	43,836	66,737	73,984
SEA TROUT, GREY	725,843	266,934	1,209,114	306,547
SEA TROUT, SPOTTED	31,521	24,081	16,286	12,988
SHAD	1,061	485	130	22
SHARKS	24,429	5,167	11,171	3,880
SHEEPSHEAD	4,971	536	938	106
SNAPPERS	23,698	44,312	59,503	116,134
SPANISH MACKEREL	21	7	-	-
SPOT	70,136	15,667	74,424	19,743
STRIPED BASS, UNCLASSIFIED	77,119	39,734	52,137	32,148
STURGEONS	3,417	1,500	5,830	3,080
SWELLFISHES	6,763	2,376	7,894	3,919
SWORDFISH	825	3,300	23,426	57,393
TAUTOG	195	60	37	4
TILEFISH	3,486	2,291	3,449	3,395
TRIGGERFISHES	2,210	821	2,291	573
TUNAS	32,959	4,059	25,600	24,008
WAHOO	-	-	119	179
WHITE PERCH	19,524	9,107	44,280	30,775
WHITING	50	8	-	-
YELLOW PERCH	91	27	1,756	440
UNCLASSIFIED FOR INDUSTRIAL	665,068	25,066	718,131	21,695
TOTAL FISH	91,084,884	5,461,020	84,227,952	5,920,477
SHELLFISH				
CRAB, BLUE, HARD	1,266,838	272,898	1,099,357	211,370
CRAB, BLUE, SOFT	4	8	2	4
*SHRIMPS (HEADS ON)	34,470	57,640	12,872	17,643
CLAMS, HARD (MEATS)	163,772	671,251	170,064	709,643
CONCHS (MEATS)	4,239	1,206	11,833	5,133
OCTOPUS	1,957	1,504	5	3
OYSTER, PUBLIC, FALL (MEATS)	193,371	288,175	176,713	321,078
OYSTER, PRIVATE, FALL (MEATS)	9,853	16,240	1,562	3,358
SCALLOP, BAY (MEATS)	96,607	174,533	85,011	138,604
SQUIDS	78,727	21,881	66,667	13,685
TOTAL SHELLFISH	1,849,838	1,505,336	1,624,086	1,420,521
GRAND TOTAL	92,934,722	6,966,356	85,852,038	7,340,998

NOTE: The comparative and cumulative monthly data may include revisions.

*The species breakdown for shrimp (heads on, pounds/value) for December 1984 is as follows:
Pink - 12,872/$17,643.

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, 1983 AND 1984

12 MONTHS ENDING WITH DECEMBER

	1983		1984	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	5,868,332	464,389	6,516,109	596,428
AMBERJACKS	6,364	1,036	3,477	791
ANGELFISH	120	24	8	2
ANGLERFISH	64,522	23,540	195,428	69,479
BLUEFISH	6,746,956	794,848	3,559,997	557,672
BONITO	11,041	1,277	893	165
BOWFIN	-	-	349	3
BUTTERFISHES	107,531	31,823	172,374	67,449
CARP	148,618	2,251	94,095	1,258
CATFISHES AND BULLHEADS	1,177,170	210,477	1,394,307	253,331
COBIA	4,279	1,649	6,701	2,577
COD	1,940	291	5,905	1,180
CROAKER	7,249,680	2,842,139	9,170,775	3,027,261
CUTLASSFISH	22,533	3,564	2,286	359
DOLPHINFISHES	30,393	23,985	47,144	41,162
DRUM, BLACK	13,754	1,555	12,083	1,474
DRUM, RED	219,871	51,958	283,020	82,458
EEL, COMMON	404,157	270,670	706,298	483,051
EEL, CONGER	150	38	1,724	180
FLOUNDER, BLACKBACK	1,592	413	19,216	7,774
FLOUNDERS, FLUKE, UNCLASSIFIED	9,812,796	5,684,173	15,086,489	9,038,316
FLOUNDER, GREY SOLE	4,926	924	24,560	3,882
FLOUNDER, YELLOWTAIL	471	94	2,321	1,055
GIZZARD SHAD	255,966	13,494	120,808	6,448
GROUPERS	949,537	798,338	910,907	1,075,403
GRUNTS	85,744	28,738	62,768	18,249
HADDOCK	-	-	364	218
HAKES	10,412	1,511	304,340	23,525
HARVESTFISH	243,855	64,032	232,587	94,699
HERRING, THREAD	3,014,330	116,695	3,358,710	104,118
HICKORY SHAD	69,966	14,841	59,698	13,300
HOGFISH	1,743	1,569	2,219	2,107
JACKS	26,486	4,033	19,670	2,996
KING MACKEREL	843,336	608,183	757,598	658,613
KING WHITING	441,881	155,857	464,351	174,597
LAMPREY	-	-	497	125
MACKEREL	50	8	275,088	36,457
MENHADEN	177,973,440	6,167,878	157,667,480	4,745,831
MULLETS	1,068,014	206,253	1,688,522	323,123
PERMIT	80	28	-	-
PIGFISH	131,155	21,734	137,057	22,774
PINFISH	496	100	8,628	2,147
POLLOCK	2,564	265	99	14
POMPANO	4,982	3,796	8,956	10,607
SAND PERCH	-	-	693	96
SCUPS OR PORGIES	1,473,107	825,378	1,561,644	854,968
SEA BASSES, UNCLASSIFIED	532,500	413,660	990,089	740,632
SEA TROUT, GREY	10,233,738	4,308,345	12,990,726	4,096,964
SEA TROUT, SPOTTED	165,360	125,482	152,934	123,686
SHAD	445,879	187,360	584,843	241,009
SHARKS	136,702	28,399	202,952	53,203
SHEEPSHEAD	28,224	3,604	36,267	4,678
SNAPPERS	485,591	908,669	434,042	824,785
SPADEFISH	1,370	249	15,736	1,768
SPANISH MACKEREL	41,336	15,221	127,467	42,043
SPOT	2,952,295	685,370	3,481,920	813,587
STRIPED BASS, UNCLASSIFIED	361,275	491,491	512,896	452,002
STURGEONS	17,977	12,338	44,949	34,432
SWELLFISHES	10,881	5,703	16,974	8,007
SWORDFISH	160,740	419,324	132,302	419,142
TAUTOG	319	102	4,715	477
TILEFISH	80,711	44,807	142,675	101,305
TRIGGERFISHES	33,936	9,690	33,278	9,040
TUNAS	159,340	84,381	254,249	202,280
WAHOO	7,274	6,495	8,716	7,640
WHITE PERCH	498,694	205,319	440,774	189,347
WHITING	18,396	4,690	276,215	41,454
YELLOW PERCH	11,000	3,733	19,505	4,944
UNCLASSIFIED FOR INDUSTRIAL	9,208,233	344,173	9,992,362	394,207
TOTAL FISH	244,086,111	27,752,454	235,844,829	31,214,354
SHELLFISH				
CRAB, BLUE, HARD	34,689,455	8,444,863	32,490,769	6,664,731
CRAB, BLUE, SOFT	87,570	188,223	199,771	276,302
CRAB, HORSESHOE	1,732	302	9,060	2,264
*SHRIMPS (HEADS ON)	6,115,278	13,564,846	5,046,163	10,482,761
CLAMS, HARD (MEATS)	1,341,620	5,401,824	1,387,864	5,506,233
CONCHS (MEATS)	26,912	13,750	59,701	28,919
OCTOPUS	4,156	3,813	5,314	2,701
OYSTER, PUBLIC, SPRING (MEATS)	255,329	409,020	272,992	413,718
OYSTER, PUBLIC, FALL (MEATS)	446,387	678,479	411,329	733,891
OYSTER, PRIVATE, SPRING (MEATS)	4,998	8,714	38,674	56,309
OYSTER, PRIVATE, FALL (MEATS)	17,795	27,934	1,562	3,358
SCALLOP, BAY (MEATS)	202,479	498,539	383,625	876,122
SCALLOP, CALICO (MEATS)	101,977	178,476	1,184	888
SCALLOP, SEA (MEATS)	26,306	150,656	170,443	816,327
SQUIDS	305,567	97,342	822,575	176,979
TURTLES, SNAPPER	19,158	5,750	23,136	7,210
TOTAL SHELLFISH	43,646,719	29,672,531	41,324,162	26,048,713
GRAND TOTAL	287,732,830	57,424,985	277,168,991	57,263,067

NOTE: *The Species breakdown for shrimp (heads on, pounds/value) January through December 1984 is as follows: Brown - 3,662,603/$7,648,310; Pink - 1,277,111/$2,549,688; Rock - 9,414/$7,096; White - 97,035/$277,667.

NORTH CAROLINA LANDINGS
DECEMBER 1985

85-12

PRELIMINARY COMMERCIAL FISHERIES STATISTICS NUMBER

DATE ISSUED: March 28, 1986

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NORTH CAROLINA LANDINGS, DECEMBER 1985

	NORTHERN DISTRICT		CENTRAL DISTRICT		SOUTHERN DISTRICT	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	615	123	-	-	-	-
AMBERJACKS	223	45	-	-	440	88
ANGLERFISH	76	30	50	50	-	-
BLUEFISH	253,021	29,765	168,516	17,264	51,617	6,226
BONITO	112	1	413	83	287	43
BUTTERFISHES	13,100	5,011	7,371	3,215	1,047	315
CARP	32,635	706	-	-	-	-
CATFISHES AND BULLHEADS	78,893	15,034	70	11	2,134	853
COBIA	-	-	-	-	493	504
CROAKER	238,670	73,551	768,748	378,241	88,735	44,371
DOLPHINFISHES	-	-	215	172	246	240
DRUM, BLACK	543	57	3,002	617	407	74
DRUM, RED	410	303	6,930	2,265	5,641	1,734
FLOUNDERS, FLUKE, UNCLASSIFIED	770,440	820,575	903,201	772,083	69,099	59,600
GARFISH	1,007	10	-	-	-	-
GROUPERS	-	-	15,126	16,152	49,176	66,287
GRUNTS	-	-	315	114	9,514	2,855
HAKES	-	-	18	3	-	-
HARVESTFISH	-	-	22,205	7,851	1,672	499
HICKORY SHAD	870	126	-	-	-	-
HOGFISH	-	-	-	-	437	511
JACKS	-	-	138	28	-	-
KING MACKEREL	44,969	46,173	9,173	8,923	12,241	10,594
KING WHITING	32,651	9,725	85,196	33,382	26,792	11,075
MULLETS	42,419	12,425	29,498	5,681	8,562	2,051
PIGFISH	52	5	8,625	1,718	5,539	1,119
POMPANO	5	7	25	44	-	-
PORGIES	-	-	7,957	7,559	15,665	13,713
SCUPS	-	-	48	11	-	-
*SCUPS OR PORGIES	-	-	5,161	5,161	-	-
SEA BASSES, UNCLASSIFIED	2,821	6,784	11,131	15,727	59,431	41,652
SEA TROUT, GREY	812,257	322,926	497,615	136,285	99,800	28,483
SEA TROUT, SPOTTED	8,272	8,199	19,066	15,252	3,060	2,593
SHAD	84	16	-	-	-	-
SHARKS	1,346	136	1,420	369	1,973	582
SHEEPSHEAD	714	108	6,761	1,064	744	127
SNAPPERS	-	-	5,822	11,958	13,881	26,364
SPANISH MACKEREL	24	12	1,957	782	651	315
SPOT	2,917	730	30,949	9.044	13,293	3,792
STRIPED BASS, UNCLASSIFIED	73,641	65,053	119	119	337	415
STURGEONS	2,433	984	125	54	-	-
SWELLFISHES	14,900	7,604	20,200	9,102	331	83
TAUTOG	91	10	-	-	-	-
TILEFISHES	-	-	250	126	57	44
TRIGGERFISHES	-	-	430	108	1,855	557
TUNAS	11,296	579	1,470	1,250	429	468
WAHOO	-	-	-	-	348	340
WHITE PERCH	47,227	29,196	28	10	-	-
WHITING	-	-	311	93	-	-
YELLOW PERCH	840	421	-	-	-	-
UNCLASSIFIED FOR INDUSTRIAL	52,122	2,536	638,379	25,545	-	-
TOTAL FISH	2,541,696	1,458,966	3,278,034	1,487,516	545,934	328,567
SHELLFISH						
CRAB, BLUE, HARD	507,696	112,041	346,857	78,674	65,905	15,135
CRAB, BLUE, SOFT	-	-	11	13	-	-
**SHRIMPS (HEADS ON)	47,409	79,612	14,044	23,281	1,089	2,461
CLAMS, HARD (MEATS)	-	-	151,562	1,037,564	39,070	169,455
OCTOPUS	169	130	68	40	3,413	2,650
OYSTER, PUBLIC, FALL (MEATS)	70,015	131,477	40,271	75,149	29,604	64,888
OYSTER, PRIVATE, FALL (MEATS)	-	-	-	-	2,372	5,086
SCALLOP, BAY (MEATS)	-	-	107,827	346,578	4,617	16,991
SQUIDS	41,715	19,929	14,757	3,983	-	-
TOTAL SHELLFISH	667,004	343,189	675,397	1,565,282	146,070	276,666
GRAND TOTAL	3,208,700	1,802,155	3,953,431	3,052,798	692,004	605,233

NOTE: To avoid disclosure of private enterprise, landings of menhaden, sea scallops, swordfish, eels and conchs are not shown by district. The Northern District includes Currituck, Camden, Pasquotank, Perquimans, Chowan, Bertie, Martin, Washington, Tyrrell, Dare, Hyde, and Beaufort Counties. The Central District includes Craven, Pamlico, and Carteret Counties. The Southern District includes Onlsow, Pender, New Hanover, and Brunswick Counties. Bivalve Mollusks are reported in pounds of meat.

*Effective June 1985 the Scups/Porgies Category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The species breakdown for shrimp (heads on pounds/value) is as follows: Northern District - Pink 47,409/$79,612; Central District - Brown 970/$1,447, Pink 13,074/$21,834; Southern District - Brown 1,089/$2,461.

NORTH CAROLINA LANDINGS, DECEMBER 1984 AND 1985

FISH	1984 POUNDS	1984 DOLLARS	1985 POUNDS	1985 DOLLARS
ALEWIVES	1,360	91	615	123
AMBERJACKS	126	25	663	133
ANGLERFISH	855	268	126	80
BLUEFISH	285,588	18,781	473,154	53,255
BONITO	137	36	812	127
BUTTERFISHES	11,407	4,672	21,518	8,541
CARP	7,954	159	32,635	706
CATFISHES AND BULLHEADS	76,163	15,975	81,097	15,898
COBIA	72	54	493	504
CROAKER	1,795,569	415,077	1,096,153	496,163
DOLPHINFISHES	496	585	461	412
DRUM, BLACK	435	34	3,952	748
DRUM, RED	27,222	8,502	12,981	4,302
EEL, COMMON	39,037	33,156	1,447	1,013
FLOUNDER, BLACKBACK	100	40	-	-
FLOUNDERS, FLUKE, UNCLASSIFIED	4,193,163	2,440,447	1,742,740	1,652,258
FLOUNDER, YELLOWTAIL	1,050	525	-	-
CARFISH	-	-	1,007	10
GROUPERS	69,455	99,369	64,302	82,439
GRUNTS	8,360	2,091	9,829	2,969
HAKES	3,410	370	18	3
HARVESTFISH	50,635	23,786	23,877	8,350
HICKORY SHAD	197	21	870	126
HOGFISH	-	-	437	511
JACKS	-	-	138	28
KING MACKEREL	66,754	45,847	66,383	65,690
KING WHITING	65,873	23,692	144,639	54,182
MENHADEN	75,075,940	2,016,491	59,630	1,789
MULLETS	67,492	13,184	80,479	20,157
PIGFISH	6,494	1,106	14,216	2,842
POMPANO	-	-	30	51
PORGIES	-	-	23,622	21,272
SCUPS	-	-	48	11
*SCUPS OR PORGIES	49,355	45,080	5,161	5,161
SEA BASSES, UNCLASSIFIED	66,737	73,984	73,383	64,163
SEA TROUT, GREY	1,209,114	306,547	1,409,672	487,694
SEA TROUT, SPOTTED	16,286	12,988	30,398	26,044
SHAD	130	22	84	16
SHARKS	11,171	3,880	4,739	1,087
SHEEPSHEAD	938	106	8,219	1,299
SNAPPERS	59,503	116,134	19,703	38,322
SPANISH MACKEREL	-	-	2,632	1,109
SPOT	74,424	19,743	47,159	13,566
STRIPED BASS, UNCLASSIFIED	52,137	32,148	74,097	65,587
STURGEONS	5,830	3,080	2,558	1,038
SWELLFISHES	7,894	3,919	35,431	16,789
SWORDFISH	23,426	57,393	-	-
TAUTOG	37	4	91	10
TILEFISH	3,449	3,395	307	170
TRIGGERFISHES	2,291	573	2,285	665
TUNAS	25,600	24,008	13,195	2,297
WAHOO	119	179	348	340
WHITE PERCH	44,280	30,775	47,255	29,206
WHITING	-	-	311	93
YELLOW PERCH	1,756	440	840	421
UNCLASSIFIED FOR INDUSTRIAL	718,131	21,695	690,501	28,081
TOTAL FISH	84,227,952	5,920,477	6,426,741	3,277,851
SHELLFISH				
CRAB, BLUE, HARD	1,099,357	211,370	920,458	205,850
CRAB, BLUE, SOFT	2	4	11	13
**SHRIMPS (HEADS ON)	12,872	17,643	62,542	105,354
CLAMS, HARD (MEATS)	170,064	709,643	190,632	1,207,019
CONCHS (MEATS)	11,833	5,133	18,591	8,418
OCTOPUS	5	3	3,650	2,820
OYSTER, PUBLIC, FALL (MEATS)	176,713	321,078	139,890	271,514
OYSTER, PRIVATE, FALL (MEATS)	1,562	3,358	2,372	5,086
SCALLOP, BAY (MEATS)	85,011	138,604	112,444	363,569
SQUIDS	66,667	13,685	56,472	23,912
TOTAL SHELLFISH	1,624,086	1,420,521	1,507,062	2,193,555
GRAND TOTAL	85,852,038	7,340,998	7,933,803	5,471,406

NOTE: The comparative and cumulative monthly data may include revisions.

*Effective June 1985 the Scups/Porgies Category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The species breakdown for shrimp (heads on, pounds/value) for December 1985 is as follows:
Brown - 2,059/$3,908
Pink - 60,483/$101,446

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, 1984 AND 1985

12 MONTHS ENDING WITH DECEMBER

	1984		1985	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	6,516,109	596,428	11,548,278	845,906
AMBERJACKS	3,477	791	11,403	2,295
ANGELFISH	8	2	20	4
ANGLERFISH	195,428	69,479	340,988	127,968
BARRACUDA	-	-	170	114
BLUEFISH	3,559,997	557,672	3,604,445	576,234
BONITO	893	165	1,449	316
BOWFIN	349	3	1,152	24
BUTTERFISHES	172,374	67,449	158,581	52,828
CARP	94,095	1,258	135,487	3,105
CATFISHES AND BULL HEADS	1,394,307	253,331	1,297,728	261,774
COBIA	6,701	2,577	6,640	3,718
COD	5,905	1,180	433	127
CREOLE-FISH	-	-	20	17
CROAKER	9,170,775	3,027,261	8,714,432	2,946,914
CUTLASSFISH	2,286	359	14,375	3,123
DOLPHINFISHES	47,144	41,162	42,348	44,805
DRUM, BLACK	12,083	1,474	17,100	2,954
DRUM, RED	283,020	82,458	152,676	50,384
EEL, COMMON	706,298	483,051	224,263	165,834
EEL, CONGER	1,724	180	811	169
FLOUNDER, BLACKBACK	19,216	7,774	12,795	4,725
FLOUNDERS, FLUKE, UNCLASSIFIED	15,086,489	9,038,316	10,964,585	9,544,821
FLOUNDER, GREY SOLE	24,560	3,882	8,549	1,043
FLOUNDER, YELLOWTAIL	2,321	1,055	132	27
GARFISH	-	-	2,678	27
GIZZARD SHAD	120,808	6,448	160,147	5,034
GROUPERS	910,907	1,075,403	724,579	958,716
GRUNTS	62,768	18,249	70,120	19,600
HADDOCK	364	218	-	-
HAKES	304,340	23,525	5,523	627
HARVESTFISH	232,587	94,699	349,808	184,130
HERRING, THREAD	3,358,710	104,118	3,364,773	110,048
HICKORY SHAD	59,698	13,300	42,121	8,898
HOGFISH	2,219	2,107	4,683	5,729
JACKS	19,670	2,996	38,484	7,017
KING MACKEREL	757,598	658,613	833,357	896,959
KING WHITING	464,351	174,597	632,440	241,653
LAMPREY	497	125	37	2
MACKEREL	275,088	36,457	252,809	28,973
MARLINS	-	-	2,233	1,217
MENHADEN	157,667,480	4,745,831	97,738,403	2,330,061
MULLETS	1,688,522	323,123	1,486,583	310,804
PIGFISH	137,057	22,774	183,055	31,601
PINFISH	8,628	2,147	1,511	292
POLLOCK	99	14	-	-
POMPANO	8,956	10,607	24,535	32,264
PORGIES	-	-	232,622	209,345
SAND PERCH	693	96	-	-
SCUPS	-	-	351	134
*SCUPS OR PORGIES	1,561,644	854,968	797,820	524,051
SEA BASSES, UNCLASSIFIED	990,089	740,632	1,218,762	1,002,066
SEA TROUT, GREY	12,990,726	4,096,964	9,825,498	3,893,055
SEA TROUT, SPOTTED	152,934	123,686	109,048	93,076
SHAD	584,843	241,009	329,639	152,547
SHARKS	202,952	53,203	124,695	30,783
SHEEPSHEAD	36,267	4,678	61,190	9,475
SNAPPERS	434,042	824,785	511,347	963,869
SPADEFISH	15,736	1,768	49,149	5,144
SPANISH MACKEREL	127,467	42,043	173,186	67,127
SPOT	3,481,920	813,587	4,043,843	874,490
STRIPED BASS, UNCLASSIFIED	512,896	452,002	279,940	229,586
STURGEONS	44,949	34,432	26,945	12,127
SWELLFISHES	16,974	8,007	48,699	23,718
SWORDFISH	132,302	419,142	77,729	224,722
TAUTOG	4,715	477	531	81
TILEFISH	142,675	101,305	81,185	65,846
TRIGGERFISHES	33,278	9,040	29,831	8,597
TUNAS	254,249	202,280	183,713	135,102
WAHOO	8,716	7,640	9,426	9,175
WHITE PERCH	440,774	189,347	701,278	376,791
WHITING	276,215	41,454	63,502	7,950
YELLOW PERCH	19,505	4,944	49,383	13,214
UNCLASSIFIED FOR FOOD	-	-	1,952	612
UNCLASSIFIED FOR INDUSTRIAL	9,992,362	394,207	8,159,475	247,348
TOTAL FISH	235,844,829	31,214,354	170,367,478	28,992,912

Continued on page 4.

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, 1984 AND 1985

12 MONTHS ENDING WITH DECEMBER

	1984		1985	
SHELLFISH	POUNDS	DOLLARS	POUNDS	DOLLARS
CRAB, BLUE, HARD	32,490,769	6,664,731	29,293,547	6,083,502
CRAB, BLUE, SOFT	199,771	276,302	326,978	350,373
CRAB, HORSESHOE	9,060	2,264	40,739	8,572
**SHRIMPS (HEADS ON)	5,046,163	10,482,761	11,683,427	21,130,334
CLAMS, HARD (MEATS)	1,387,864	5,506,233	1,393,294	5,653,779
CONCHS (MEATS)	59,701	28,919	89,423	46,040
OCTOPUS	5,314	2,701	11,555	7,365
OYSTER, PUBLIC, SPRING (MEATS)	272,992	413,719	265,146	489,679
OYSTER, PUBLIC, FALL (MEATS)	411,329	733,891	267,904	521,432
OYSTER, PRIVATE, SPRING (MEATS)	38,674	56,309	9,850	20,622
OYSTER, PRIVATE, FALL (MEATS)	1,562	3,358	2,539	5,420
SCALLOP, BAY (MEATS)	383,625	876,122	455,649	1,072,296
SCALLOP, CALICO (MEATS)	1,184	888	-	-
SCALLOP, SEA (MEATS)	170,443	816,327	12,550	56,487
SQUIDS	822,575	176,979	642,808	150,203
TURTLES, SNAPPER	23,136	7,210	11,201	3,881
TOTAL SHELLFISH	41,324,162	26,048,714	44,506,610	35,599,985
GRAND TOTAL	277,168,991	57,263,068	214,874,088	64,592,897

NOTE: *Effective June 1985 the Scups/Porgies Category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The Species breakdown for shrimp (heads on, pounds/value) January through December 1985 is as follows:
Brown - 10,377,162/$18,845,277
Pink - 1,254,851/$2,189,311
White - 44,666/$90,365
Rock - 6,748/$5,381

NORTH CAROLINA LANDINGS
MARCH 1986

PRELIMINARY COMMERCIAL FISHERIES STATISTICS NUMBER 86-03

DATE ISSUED: May 21, 1986
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NORTH CAROLINA LANDINGS, MARCH 1986

	NORTHERN DISTRICT		CENTRAL DISTRICT		SOUTHERN DISTRICT	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	1,101,172	148,824	-	-	-	-
AMBERJACKS	-	-	841	126	1,351	302
ANGLERFISH	13,609	7,251	29,448	15,690	-	-
BARRACUDA	-	-	-	-	59	30
BLUEFISH	596,529	89,008	54,833	3,812	6,832	904
BONITO	-	-	-	-	8	2
BOWFIN	1,803	19	-	-	-	-
BUTTERFISHES	4,714	1,382	1,475	391	-	-
CARP	16,608	601	-	-	-	-
CATFISHES AND BULLHEADS	158,253	24,816	674	101	2,152	902
COBIA	-	-	-	-	1,378	1,090
CROAKER	47,284	21,660	323,915	97,783	27,023	9,570
DRUM, BLACK	38	4	15	2	-	-
DRUM, RED	77	24	3,219	1,114	3,036	935
FLOUNDERS, FLUKE, UNCLASSIFIED	252,634	300,760	391,182	403,411	12,957	12,092
FLOUNDERS, GREY SOLE	3,051	875	-	-	-	-
GARFISH	143	4	-	-	-	-
GIZZARD SHAD	189,157	9,458	-	-	-	-
GROUPERS	-	-	10,881	16,914	35,488	57,760
GRUNTS	-	-	13	4	3,422	1,027
HAKES	2,324	453	-	-	-	-
HARVESTFISH	-	-	2,739	960	350	119
HICKORY SHAD	7,988	1,886	1,553	287	-	-
HOGFISH	-	-	-	-	212	251
KING MACKEREL	-	-	110	126	42,124	47,982
KING WHITING	5,358	2,268	34,375	12,632	5,324	2,581
LAMPREY	493	49	-	-	-	-
MACKEREL	309,093	30,910	-	-	-	-
MULLETS	58,441	9,352	35,642	6,189	3,205	851
PIGFISH	519	52	733	168	1,150	238
PORGIES	-	-	5,853	6,609	19,659	18,448
SCUP	104,900	50,596	21,932	7,876	-	-
*SCUPS OR PORGIES	2,230	892	4,244	4,631	-	-
SEA BASSES, UNCLASSIFIED	179,201	153,968	45,375	39,960	14,459	11,623
SEA TROUT, GREY	1,190,725	541,851	1,153,497	217,711	26,890	8,174
SEA TROUT, SPOTTED	958	872	1,488	1,026	1,100	891
SHAD	99,221	63,002	42,127	31,685	51,324	25,649
SHARKS	8,064	1,571	413	143	5,109	1,379
SHEEPSHEAD	-	-	120	18	-	-
SNAPPERS	-	-	13,307	33,345	12,328	23,146
SPOT	466	128	10,105	2,338	12,214	3,768
STRIPED BASS, UNCLASSIFIED	43,634	47,679	141	176	125	188
STURGEONS	-	-	689	347	314	273
SWELLFISHES	113	113	1,406	373	123	62
TILEFISHES	-	-	69	28	12,787	19,635
TRIGGERFISHES	-	-	847	255	852	257
TUNAS	5,445	543	440	440	1,078	1,258
WAHOO	-	-	-	-	25	25
WHITE PERCH	152,364	74,414	207	91	-	-
WHITING	8,439	1,688	-	-	-	-
YELLOW PERCH	7,809	2,588	-	-	-	-
UNCLASSIFIED FOR FOOD	-	-	-	-	328	164
UNCLASSIFIED FOR INDUSTRIAL	3,235	65	766,009	24,083	-	-
TOTAL FISH	4,576,092	1,589,626	2,959,917	930,845	304,786	251,576
SHELLFISH						
CRAB, BLUE, HARD	481,229	197,023	250,609	92,461	55,780	18,003
CRAB, BLUE, SOFT	-	-	817	1,634	-	-
CRAB, HORSESHOE	-	-	100	51	-	-
**SHRIMPS (HEADS ON)	-	-	24,895	73,924	-	-
CLAMS, HARD (MEATS)	-	-	91,302	469,250	45,938	169,879
OCTOPUS	131	98	2,380	1,904	149	119
OYSTERS, PUBLIC, SPRING (MEATS)	9,053	16,246	18,390	33,564	7,272	14,544
OYSTERS, PRIVATE, SPRING (MEATS)	-	-	880	1,724	1,969	4,924
SCALLOPS, BAY (MEATS)	-	-	54,187	165,613	-	-
SQUIDS	41,695	12,460	16,287	4,461	89	27
TOTAL SHELLFISH	532,108	225,827	459,847	844,586	111,197	207,496
GRAND TOTAL	5,108,200	1,815,453	3,419,764	1,775,431	415,983	459,072

NOTE: To avoid disclosure of private enterprise, landings of menhaden, sea scallops, swordfish, eels and conchs are not shown by district. The Northern District includes Currituck, Camden, Pasquotank, Perquimans, Chowan, Bertie, Martin, Washington, Tyrrell, Dare, Hyde, and Beaufort Counties. The Central District includes Craven, Pamlico, and Carteret Counties. The Southern District includes Onlsow, Pender, New Hanover, and Brunswick Counties. Bivalve Mollusks are reported in pounds of meat.

*Effective June 1985 the Scups/Porgies category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The species breakdown for shrimp (heads on pounds/value) is as follows: Central District - Brown 24,860/$73,871, Rock 35/$53.

NORTH CAROLINA LANDINGS, MARCH 1985 AND 1986

	1985		1986	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	1,027,132	113,354	1,101,172	148,824
AMBERJACKS	333	83	2,192	428
ANGLERFISH	85,927	34,302	43,057	22,941
BARRACUDA	143	109	59	30
BLUEFISH	475,733	82,377	658,194	93,724
BONITO	212	8	8	2
BOWFIN	1,127	23	1,803	19
BUTTERFISHES	22,471	5,568	6,189	1,773
CARP	24,189	309	16,608	601
CATFISHES AND BULLHEADS	142,750	27,460	161,079	25,819
COBIA	330	196	1,378	1,090
COD	33	7	-	-
CROAKER	416,966	143,999	398,222	129,013
DOLPHINFISHES	18	19	-	-
DRUM, BLACK	-	-	53	6
DRUM, RED	7,261	2,195	6,332	2,073
EEL, COMMON	1,981	564	7,962	8,417
EEL, CONGER	576	136	119	12
FLOUNDERS, FLUKE, UNCLASSIFIED	1,005,125	872,380	656,773	716,263
FLOUNDERS, GREY SOLE	1,653	192	3,051	875
GARFISH	-	-	143	4
GIZZARD SHAD	1,568	78	189,157	9,458
GROUPERS	60,251	96,511	46,369	74,674
GRUNTS	2,076	625	3,435	1,031
HAKES	50	8	2,324	453
HARVESTFISH	72	18	3,089	1,079
HERRING, THREAD	33	3	-	-
HICKORY SHAD	30,151	6,651	9,541	2,173
HOGFISH	223	415	212	251
KING MACKEREL	26,403	27,535	42,234	48,108
KING WHITING	33,112	10,920	45,057	17,481
LAMPREY	-	-	493	49
MACKEREL	125,398	12,687	309,093	30,910
MENHADEN	-	-	170,850	5,126
MULLETS	59,350	10,790	97,288	16,392
PIGFISH	850	150	2,402	458
PORGIES	-	-	25,512	25,057
SCUP	-	-	126,832	58,472
*SCUPS OR PORGIES	340,343	186,521	6,474	5,523
SEA BASSES, UNCLASSIFIED	351,049	232,516	239,035	205,551
SEA TROUT, GREY	1,925,538	892,390	2,371,112	767,736
SEA TROUT, SPOTTED	1,258	1,095	3,546	2,789
SHAD	177,767	87,797	192,672	120,336
SHARKS	22,003	5,669	13,586	3,093
SHEEPSHEAD	1,948	231	120	18
SNAPPERS	26,600	53,397	25,635	56,491
SPOT	33,424	6,650	22,785	6,234
STRIPED BASS, UNCLASSIFIED	33,545	26,948	43,900	48,043
STURGEONS	3,105	1,712	1,003	620
SWELLFISHES	244	53	1,642	548
SWORDFISH	5,410	20,288	-	-
TAUTOG	8	1	-	-
TILEFISH	4,503	3,184	12,856	19,663
TRIGGERFISHES	3,440	1,130	1,699	512
TUNAS	21,729	6,187	6,963	2,241
WAHOO	597	740	25	25
WHITE PERCH	156,235	86,410	152,571	74,505
WHITING	1,834	347	8,439	1,688
YELLOW PERCH	11,210	2,940	7,809	2,588
UNCLASSIFIED FOR FOOD	17	9	328	164
UNCLASSIFIED FOR INDUSTRIAL	539,573	20,598	769,244	24,148
TOTAL FISH	7,214,877	3,086,485	8,019,726	2,785,602
SHELLFISH				
CRAB, BLUE, HARD	1,194,191	448,919	787,618	307,487
CRAB, BLUE, SOFT	5,379	5,379	817	1,634
CRAB, HORSESHOE	1,166	128	100	51
**SHRIMPS (HEADS ON)	7,574	13,255	24,895	73,924
CLAMS, HARD (MEATS)	144,353	512,809	137,240	639,129
CONCHS (MEATS)	13,328	6,853	10,728	6,262
OCTOPUS	334	247	2,660	2,121
OYSTERS, PUBLIC, SPRING (MEATS)	47,458	91,872	34,715	64,354
OYSTERS, PRIVATE, SPRING (MEATS)	3,455	7,602	2,849	6,648
SCALLOP, BAY (MEATS)	87,516	190,953	54,187	165,613
SCALLOP, SEA (MEATS)	434	2,204	174	790
SQUIDS	182,215	31,372	58,071	16,948
TURTLES, SNAPPER	138	41	-	-
TOTAL SHELLFISH	1,687,541	1,311,634	1,114,054	1,284,961
GRAND TOTAL	8,902,418	4,398,119	9,133,780	4,070,563

NOTE: The comparative and cumulative monthly data may include revisions.

*Effective June 1985 the Scups/Porgies category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The species breakdown for shrimp (heads on, pounds/value) for March 1986 is as follows: Pink - 24,860/$73,871; Rock - 35/$53.

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, 1983 AND 1984

3 MONTHS ENDING WITH MARCH

	1985		1986	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	1,153,078	130,960	1,310,014	180,189
AMBERJACKS	1,323	358	4,878	909
ANGLERFISH	185,328	70,465	107,017	62,009
BARRACUDA	143	109	59	30
BLUEFISH	1,216,531	284,889	1,591,089	232,178
BONITO	330	20	383	71
BOWFIN	1,152	24	1,803	19
BUTTERFISHES	77,792	22,546	36,517	10,380
CARP	72,551	1,367	129,396	5,369
CATFISHES AND BULLHEADS	267,680	53,111	302,518	53,655
COBIA	663	368	4,060	3,539
COD	33	7	-	-
CROAKER	2,432,727	789,012	3,217,989	1,049,137
DOLPHINFISHES	38	49	61	64
DRUM, BLACK	59	3	2,425	363
DRUM, RED	21,412	6,550	36,940	12,524
EEL, COMMON	2,772	739	8,116	8,539
EEL, CONGER	629	141	580	69
FLOUNDERS, FLUKE, UNCLASSIFIED	5,187,099	4,307,558	3,572,431	4,009,650
FLOUNDER, GREY SOLE	3,607	469	3,975	1,046
GARFISH	-	-	2,892	42
GIZZARD SHAD	1,707	85	212,733	10,637
GROUPERS	108,653	172,652	153,100	241,587
GRUNTS	5,147	1,525	14,883	4,718
HAKES	4,419	555	7,522	1,043
HARVESTFISH	17,166	3,384	110,241	35,155
HERRING, THREAD	3,364,773	110,048	-	-
HICKORY SHAD	40,691	8,671	18,785	3,509
HOGFISH	557	846	1,270	1,251
JACKS	57	17	1,133	340
KING MACKEREL	32,700	33,939	83,841	95,958
KING WHITING	137,249	53,447	417,894	161,708
LAMPREY	10	1	516	58
MACKEREL	221,950	27,170	468,427	56,189
MENHADEN	94,813,143	2,248,998	321,600	9,649
MULLETS	305,794	60,023	323,306	60,769
PIGFISH	2,950	538	7,464	1,518
SAND PERCH	-	-	32	6
PORGIES	-	-	90,959	90,917
SCUPS	-	-	281,624	130,515
*SCUPS OR PORGIES	488,656	290,022	28,515	24,289
SEA BASSES, UNCLASSIFIED	775,538	583,254	559,884	508,405
SEA TROUT, GREY	5,100,402	2,091,248	9,109,375	2,335,601
SEA TROUT, SPOTTED	8,646	7,355	39,222	29,694
SHAD	209,580	106,257	272,481	174,318
SHARKS	34,127	9,531	47,772	15,206
SHEEPSHEAD	2,203	269	1,859	272
SNAPPERS	65,469	132,544	80,215	180,443
SPOT	93,491	20,207	115,732	32,431
STRIPED BASS, UNCLASSIFIED	112,458	77,860	94,226	94,526
STURGEONS	14,380	7,443	5,983	3,118
SWELLFISHES	4,370	1,445	79,907	37,558
SWORDFISH	29,924	86,356	34,612	106,313
TAUTOG	37	4	377	37
TILEFISH	6,683	5,102	17,414	24,290
TRIGGERFISHES	5,283	1,703	6,333	1,802
TUNAS	42,440	13,532	29,639	26,027
WAHOO	668	821	202	213
WHITE PERCH	355,764	212,974	327,593	173,661
WHITING	57,085	6,851	8,439	1,688
YELLOW PERCH	43,864	11,229	23,091	6,731
UNCLASSIFIED FOR FOOD	17	9	328	164
UNCLASSIFIED FOR INDUSTRIAL	2,867,154	90,823	2,684,689	81,986
TOTAL FISH	120,000,152	12,147,483	26,416,361	10,394,082
SHELLFISH				
CRAB, BLUE, HARD	1,488,130	528,833	1,002,910	370,516
CRAB, BLUE, SOFT	5,379	5,379	817	1,634
CRAB, HORSESHOE	1,166	128	847	425
**SHRIMPS (HEADS ON)	13,780	24,116	27,025	81,315
CLAMS, HARD (MEATS)	510,395	1,877,572	488,724	2,507,340
CONCHS (MEATS)	22,540	12,167	38,597	20,545
OCTOPUS	6,844	3,537	14,731	10,973
OYSTER, PUBLIC, SPRING (MEATS)	264,938	489,280	238,646	451,784
OYSTER, PRIVATE, SPRING (MEATS)	8,974	18,703	10,378	21,593
SCALLOP, BAY (MEATS)	280,920	566,920	264,297	706,639
SCALLOP, SEA (MEATS)	1,030	5,471	893	4,505
SQUIDS	483,547	101,845	209,494	59,742
TURTLES, SNAPPER	138	41	-	-
TOTAL SHELLFISH	3,087,781	3,633,992	2,297,359	4,237,011
GRAND TOTAL	123,087,933	15,781,475	28,713,720	14,631,093

NOTE: *Effective June 1985 the Scups/Porgies category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The Species breakdown for shrimp (heads on, pounds/value) January through March 1986 is as follows: Brown - 2,130/$7,391; Pink - 24,860/$73,871; Rock - 35/$53.

NORTH CAROLINA LANDINGS FOR SPECIFIED PERIODS, 1983 AND 1984

3 MONTHS ENDING WITH MARCH

	1985		1986	
FISH	POUNDS	DOLLARS	POUNDS	DOLLARS
ALEWIVES	1,153,078	130,960	1,310,014	180,189
AMBERJACKS	1,323	358	4,878	909
ANGLERFISH	185,328	70,465	107,017	62,009
BARRACUDA	143	109	59	30
BLUEFISH	1,216,531	284,889	1,591,089	232,178
BONITO	330	20	383	71
BOWFIN	1,152	24	1,803	19
BUTTERFISHES	77,792	22,546	36,517	10,380
CARP	72,551	1,367	129,396	5,369
CATFISHES AND BULLHEADS	267,680	53,111	302,518	53,655
COBIA	663	368	4,060	3,539
COD	33	7	-	-
CROAKER	2,432,727	789,012	3,217,989	1,049,137
DOLPHINFISHES	38	49	61	64
DRUM, BLACK	59	3	2,425	363
DRUM, RED	21,412	6,550	36,940	12,524
EEL, COMMON	2,772	739	8,116	8,539
EEL, CONGER	629	141	580	69
FLOUNDERS, FLUKE, UNCLASSIFIED	5,187,099	4,307,558	3,572,431	4,009,650
FLOUNDER, GREY SOLE	3,607	469	3,975	1,046
GARFISH	-	-	2,892	42
GIZZARD SHAD	1,707	85	212,733	10,637
GROUPERS	108,653	172,652	153,100	241,587
GRUNTS	5,147	1,525	14,883	4,718
HAKES	4,419	555	7,522	1,043
HARVESTFISH	17,166	3,384	110,241	35,155
HERRING, THREAD	3,364,773	110,048	-	-
HICKORY SHAD	40,691	8,671	18,785	3,509
HOGFISH	557	846	1,270	1,251
JACKS	57	17	1,133	340
KING MACKEREL	32,700	33,939	83,841	95,958
KING WHITING	137,249	53,447	417,894	161,708
LAMPREY	10	1	516	58
MACKEREL	221,950	27,170	468,427	56,189
MENHADEN	94,813,143	2,248,998	321,600	9,649
MULLETS	305,794	60,023	323,306	60,769
PIGFISH	2,950	538	7,464	1,518
SAND PERCH	-	-	32	6
PORGIES	-	-	90,959	90,917
SCUPS	-	-	281,624	130,515
*SCUPS OR PORGIES	488,656	290,022	28,515	24,289
SEA BASSES, UNCLASSIFIED	775,538	583,254	559,884	508,405
SEA TROUT, GREY	5,100,402	2,091,248	9,109,375	2,335,601
SEA TROUT, SPOTTED	8,646	7,355	39,222	29,694
SHAD	209,580	106,257	272,481	174,318
SHARKS	34,127	9,531	47,772	15,206
SHEEPSHEAD	2,203	269	1,859	272
SNAPPERS	65,469	132,544	80,215	180,443
SPOT	93,491	20,207	115,732	32,431
STRIPED BASS, UNCLASSIFIED	112,458	77,860	94,226	94,526
STURGEONS	14,380	7,443	5,983	3,118
SWELLFISHES	4,370	1,445	79,907	37,558
SWORDFISH	29,924	86,356	34,612	106,313
TAUTOG	37	4	377	37
TILEFISH	6,683	5,102	17,414	24,290
TRIGGERFISHES	5,283	1,703	6,333	1,802
TUNAS	42,440	13,532	29,639	26,027
WAHOO	668	821	202	213
WHITE PERCH	355,764	212,974	327,593	173,661
WHITING	57,085	6,851	8,439	1,688
YELLOW PERCH	43,864	11,229	23,091	6,731
UNCLASSIFIED FOR FOOD	17	9	328	164
UNCLASSIFIED FOR INDUSTRIAL	2,867,154	90,823	2,684,689	81,986
TOTAL FISH	120,000,152	12,147,483	26,416,361	10,394,082
SHELLFISH				
CRAB, BLUE, HARD	1,488,130	528,833	1,002,910	370,516
CRAB, BLUE, SOFT	5,379	5,379	817	1,634
CRAB, HORSESHOE	1,166	128	847	425
**SHRIMPS (HEADS ON)	13,780	24,116	27,025	81,315
CLAMS, HARD (MEATS)	510,395	1,877,572	488,724	2,507,340
CONCHS (MEATS)	22,540	12,167	38,597	20,545
OCTOPUS	6,844	3,537	14,731	10,973
OYSTER, PUBLIC, SPRING (MEATS)	264,938	489,280	238,646	451,784
OYSTER, PRIVATE, SPRING (MEATS)	8,974	18,703	10,378	21,593
SCALLOP, BAY (MEATS)	280,920	566,920	264,297	706,639
SCALLOP, SEA (MEATS)	1,030	5,471	893	4,505
SQUIDS	483,547	101,845	209,494	59,742
TURTLES, SNAPPER	138	41	-	-
TOTAL SHELLFISH	3,087,781	3,633,992	2,297,359	4,237,011
GRAND TOTAL	123,087,933	15,781,475	28,713,720	14,631,093

NOTE: *Effective June 1985 the Scups/Porgies category is being reported as Scups or Porgies. Cumulative total is obtained by summing all three categories.

**The Species breakdown for shrimp (heads on, pounds/value) January through March 1986 is as follows: Brown - 2,130/$7,391; Pink - 24,860/$73,871; Rock - 35/$53.

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STUDY II

North Carolina Commercial Fisheries Stock Assessment
July 1983 - March 1986

by

Linda P. Mercer

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December 1986

Study Objective: Collect and process bioprofile data from North Carolina commercial fisheries to determine species composition, size distribution, and number of fishing trips for commercially harvested species.

ABSTRACT

Bioprofile data were collected monthly from the North Carolina commercial reef fish fishery to determine species composition, size distribution, and number of fishing trips for commercially harvested species. The seabasses (Serranidae) were the dominant family represented in 1983-1985 commercial reef fish landings, followed by the snappers (Lutjanidae), porgies (Sparidae), and tilefishes (Malacanthidae). Black sea bass (*Centropristis striata*), snowy grouper (*Epinephelus niveatus*), blueline tilefish (*Caulolatilus microps*), and red porgy (*Pagrus pagrus*) were most important in northern district commercial reef fish landings. Central district landings were dominated by snowy grouper, black sea bass, gag (*Mycteroperca microlepis*), scamp (*M. phenax*), vermilion snapper (*Rhomboplites aurorubens*), red snapper (*Lutjanus campechamus*), red porgy, blueline tilefish, gray triggerfish (*Balistes capriscus*), and white grunt (*Haemulon plumieri*). Gag, black sea bass, snowy grouper, scamp, red grouper (*E. morio*), speckled hind (*E. drummondhayi*), red hind (*E. guttatus*), vermilion snapper, red snapper, silk snapper (*L. vivanus*), red porgy, knobbed porgy (*Calamus nodosus*), tilefish (*Lopholatilus chamaeleonticeps*), blueline tilefish, and gray triggerfish were most important in southern district landings. Black sea bass, red grouper, gag, scamp, and red snapper were most abundant at the shallowest depths fished (<64 m), vermilion snapper and red porgy were most abundant at intermediate depths (64-165 m), and at depths >165 m, snowy grouper and tilefish predominated. Catch per unit effort of snowy grouper, speckled hind, red grouper, gag, and red porgy increased from 1984 to 1985, while CPUE for scamp, vermilion snapper, red snapper, and tilefish decreased.

North Carolina commercial landings of king mackerel were primarily harvested by troll lines. Spanish mackerel were primarily harvested by gill nets. The commercial pelagic fishery for king mackerel was concentrated in the northern district in the fall. King mackerel was sampled sporadically year round in the commercial reef fishery. The size distribution of king mackerel was similar for the two fisheries in 1984 and 1985. Data on size distribution, catch and effort, and socioeconomic information are presented for three fall king mackerel tournaments.

INTRODUCTION

The reef fish communities of the outer continental shelf of the southeastern United States consists of demersal tropical and subtropical species of snappers (Lutjanidae), sea basses and groupers (Serranidae), porgies (Sparidae), tilefishes (Malacanthidae), grunts (Pomadasyidae), triggerfishes (Balistidae), wrasses (Labridae), and jacks (Carangidae). These communities inhabit the sparse and patchily distributed, nearshore sponge-coral ("live bottom") habitats or the offshore rocky outcrop habitats. Fish populations of these types of habitats are difficult to inventory because of obstructions to trawling and the secretive behavior of the fish. Recent descriptions of these communities have been published based on analyses of headboat catch records, exploratory hook and line, trawl, and trap fishing, and underwater television, diver, and submersible observations (Struhsaker 1969; Miller and Richards 1980; Powles and Barans 1980; Grimes et al. 1982; Wenner 1983; Barans and Henry 1984; Chester et al. 1984; Sedberry and Van Dolah 1984; Parker and Ross 1986). This rich fauna supports a thriving recreational headboat fishery, and in recent years a commercial fishery off North Carolina and South Carolina (Huntsman 1976; Ulrich et al. 1976). From 1972 to 1974, headboats fishing on the outer continental shelf of North Carolina and South Carolina landed between 590-725 t of reef fishes annually (exclusive of black sea bass, *Centropristis striata*). The red porgy (*Pagrus pagrus*) and vermilion snapper (*Rhomboplites aurorubens*) are usually the two most frequently caught species (Huntsman 1976). In addition to the reef fishes, there are several species of recreationally and commercially important coastal pelagic fishes, including Spanish mackerel (*Scomberomorus maculatus*), king mackerel (*S. cavalla*), and cobia (*Rachycentron canadum*) which occur seasonally along the North Carolina coast.

State and Federal management agencies have long recognized the importance of cooperation in managing fishery resources and of obtaining reliable information upon which to formulate and evaluate management decisions. Management of interjurisdictional species found primarily in the states' territorial waters (weakfish, menhaden, striped bass, etc.) is coordinated through the Atlantic States Marine Fisheries Commission (ASMFC)/ Interstate Fisheries Management Program.

Conservation and management of the marine fishery resources within the fishery conservation zone (FCZ) of the United States are under jurisdiction of the National Marine Fisheries Service (NMFS) through regional fishery management councils. Council fishery management plans have been developed for the snapper-grouper complex of the South Atlantic region and for coastal migratory pelagic resources (mackerels) in the South Atlantic region and the Gulf of Mexico (Anonymous 1983; Anonymous 1985). The purpose of this project is to collect biological and fisheries data from the commercial fisheries for reef fishes and coastal pelagic species and supply this information to state and regional fishery management agencies. This information will be used to formulate, as well as judge the effectiveness of management plans developed by state and interstate fishery management agencies and the Fishery Management Councils.

METHODS AND MATERIALS

Reef Fish Fishery

A list of the landing sites for the commercial reef fish fishery was compiled and maintained from 1 July 1983 through 31 March 1986 by the state and federal port agents. The site list consisted of the following data items: dealer name, dealer code, and location. This list was compiled from historical records of snapper/grouper landings and the port agents' knowledge of current fishing activities. This list is confidential and will be distributed in accordance with DMF and NMFS policies.

On a monthly basis by site and gear type, study personnel obtained an estimate of the number of landings (trips) from the commercial reef fish fishery. This estimate was obtained by one of the following means: dealer records, the individual's direct observation at the site, or from an informed second party. Data were coded on the standard DMF biological data form.

A list of the vessels operating in the commercial fishery was compiled and maintained by the Study biologist. The list consisted of the following data items (if available): vessel name, landing site, quantity of gear and average crew size. For each segment of the study personnel attempted to sample at

least 40 of the commercial trips landed in the southern and central districts and 10% of the trips in the northern district for bioprofile data from the reef fish fishery. The federal agent based in the northern district was responsible for collecting the trip data for the reef fish fishery in the northern district. Sampling effort was distributed throughout each month within the limits of the fishery (unloading times, weather, etc.) and efficiency of data collection.

All species in an individual trip were identified. For each species, as many random samples (22.6 or 45.4 kg fish boxes) as possible were obtained from each market (size) category, e.g. small, medium, large. The individual fish packed in a fish box were identified to species and the total number of individuals by species were counted. The total weight for each market category was obtained from the trip ticket supplied by the fisherman or fish house dealer. In addition, as time and fish house packing procedures allowed, a random sample of individuals by species was measured for lengths (mm TL for all species except scamp - mm FL). Weight (whole or gutted in g) and sex were also recorded if the data were available and time permitted. For each segment, the following minimum target number of individuals from each of the following species and gears were to be measured and lengths recorded:

red snapper/hook and line/100 fish
vermilion snapper/hook and line/300 fish
red grouper/hook and line/250 fish
sea bass/pots/550 fish
gag/hook and line/300 fish
scamp/hook and line/1,000 fish
speckled hind/hook and line/750 fish
snowy grouper/hook and line/750 fish
red porgy/hook and line/650 fish
tilefish/hook and line/150 fish

The number of fish measured was allocated on a quarterly basis. Data on other species and gears were also recorded if available. The captain or a crew member on the trip was interviewed to obtain general fishing location, type and quantity of gear, number of days fished and other miscellaneous information.

The actual number of trips sampled and individuals measured was dependent on availability of fish, weather conditions, and the cooperation of fishermen and seafood dealers.

The data elements taken were in accordance with the items specified by the South Atlantic Statistics Committee and the NMFS Creel Survey and Biological Sampling Program (CSBSP). Data were recorded on the standard DMF biological data forms. The data described above were collected under North Carolina's authority to collect fisheries statistics (North Carolina's G.S. 113-163, G.S. 113-228 and G.S. 113-181). The NMFS General Council has determined that North Carolina's authority to collect data and confidentiality statutes are equivalent to federal authority. Each agency is responsible for determining the uses of and maintaining the confidentiality of data collected under its own authority.

Tables of species composition and species length frequency distributions were calculated for target species in the reef fish fishery. Individual species weight/catch were obtained from the trip tickets.

The number of fish/species (N_{catch}) was calculated by first calculating the number of fish per grade by the equation:

$$N_{grade} = \frac{W_{grade}}{SW_{grade}} \times N_{grade}$$

where: N_{grade} = number of fish per grade per species
W_{grade} = total weight per grade per species (from the trip ticket)
SW_{grade} = sample weight per grade per species
N_{sample} = number of fish sampled per grade per species

so that: $$N_{catch} = \sum_{x=1}^{n} grade$$

where: x = market grade
n = number of market grades per species
N_{catch} = number of fish per species per catch

Monthly species-specific commercial landings were obtained by first determining the percent composition of each species in the monthly samples by district and landings category (e.g. groupers, snappers, porgies) and multiplying each species' percentage by the total reported monthly commercial

landings of the appropriate category and district. When no bioprofile sample was taken for a particular sampling cell (district, category, month), the market category reported in the commercial landings statistics was used.

Raising factors to expand length frequencies for a species were calculated where the raising factor equaled:

$$\frac{W_{grade}}{SW_{grade}}$$

Length frequencies were then combined within a district and weighted by the district's annual catch for that species when combined for an overall species length-frequency distribution.

In cases where only partial data sets were obtained (i.e. N_{catch} but not W_{catch}; or $W_{species}$ but not $N_{samples}$) estimations based on means calculated from recent catches were used to fill in missing values if deemed statistically and biologically reasonable.

Weight-length regressions using whole weight or gutted weight were calculated for the target species.

Coastal Pelagic Fishery

A list of landing sites for the commercial coastal pelagic fishery was compiled and maintained by the state and federal port agents from 1 July 1983 through 31 March 1986. The site list contained the following data items: dealer name, dealer code, and location. This list was compiled from historical records of coastal pelagic landings and the port agents' knowledge of current fishing activities. This list is confidential and would be distributed in accordance with DMF and NMFS policies.

On a monthly basis by site and gear type, state and federal study personnel obtained an estimate of the number of landings (trips) from the commercial coastal pelagic fishery. This estimate was obtained by one of the following means: dealer records, the individual's direct observation at the site, or from an informed second party. Data were coded on a standard DMF biological data form.

Three types of samples were collected: market summaries; bioprofile data; and tournament data. A market summary consisted of the weight and market category data from the dealer "trip ticket" and was recorded by gear. The collection of bioprofile data included identification of all species in the trip landings, a count of individuals (all or a portion) of target species with the corresponding market category weight, and length measurements of a sample of individuals by species (sex and weight were also recorded if the data were available and time permitted). In addition, the fishermen or dealer was interviewed to provide information on areas of catch, time fished, and fishing gear. King mackerel fishing tournaments were sampled to obtain catch/effort data, information on fishing location and disposition of the catch, and individual length, weight, and sex data. In 1984 tournament sampling, commercial fish houses in the tournament area were sampled to obtain measurements of fish that were not entered in the tournament. The tournament sampling design was modified in 1985 to obtain unbiased catch data. Fifty volunteer entrants per tournament were offered a chance for a $200 drawing by completing a catch and effort questionnaire and socioeconomic survey and by measuring their total king mackerel catch using punch sheets on measuring boards.

The following target number of individuals from each of the following species were to be measured (fork length) during each segment:

king mackerel/hook and line/200 fish (sexed)
king mackerel/gill net/200 fish (sexed)
Spanish mackerel/hook and line/50 fish
cobia/hook and line/50 fish

The number of fish measured was allocated on a quarterly basis. The actual number of individuals measured was dependent on availability of fish, weather conditions, and the cooperation of fishermen and seafood dealers. The data elements taken were in accordance with the items specified by the South Atlantic Statistics Committee and NMFS CSBSP. Data were recorded on the standard DMF biological data forms. The Federal agent in the northern district had the primary responsibility for acquiring the commercial king mackerel data because the commercial fishery for coastal pelagics is most intense in the northern district.

RESULTS AND DISCUSSION

Reef Fish Fishery

There are five primary North Carolina ports where reef fishes are landed: Southport, Carolina Beach, and Wrightsville Beach in the southern district; Morehead City in the central district, and Hatteras in the northern district (Figure 1). The central and southern districts together accounted for >90% of the reef fish landings from 1983 to 1985 (Table 1). Northern and southern district landings increased from 1984 to 1985, while landings in the central district decreased. Catches by all gear types decreased in the central district and bottom longline catches also decreased in the southern district.

There were 122 vessels identified as commercially landing reef fishes at North Carolina ports from July 1983 through March 1986. It is estimated that at least 50-60 vessels fished on a full-time basis in North Carolina waters; the others fished only part-time or often landed in South Carolina or Florida ports, depending on weather and market prices. Twenty-nine vessels were sampled in 1983 (July-December), 64 vessels were sampled in 1984, and 69 vessels were sampled in 1985.

Three types of gear were regularly used: handlines, (hydraulic or electric reels), long lines, and fish traps. Most fish were caught on handlines (Table 1). Handlines were usually fished near the bottom with two hooks per line (Table 2), but occasionally a rally or "pinky" rig with up to five smaller hooks was used to target on vermilion snapper (*Rhomboplites aurorubens*) and red porgy (*Pagrus pagrus*). Handlines were also fished near the surface for coastal pelagic species such as king mackerel (*Scomberomorus cavalla*), dolphin (*Coryphaena hippurus*), and tunas (*Thunnus* sp.). The number of reels per boat ranged from two to six; in 1984 and 1985 boats in the southern district averaged 3.7 to 4.0 reels per boat while northern and central district boats averaged 2.7 to 3.3 reels (Table 2). Bottom longlines were also used over the offshore live bottom habitat, and landings from this gear were predominantly in the southern district. Longlines averaged from 2,400 to 3,360 m in length with an average of 150-500 hooks per set (Table 2). Duration of the sets ranged from a half hour up to 4-5 hours. Bait used for both handlines and

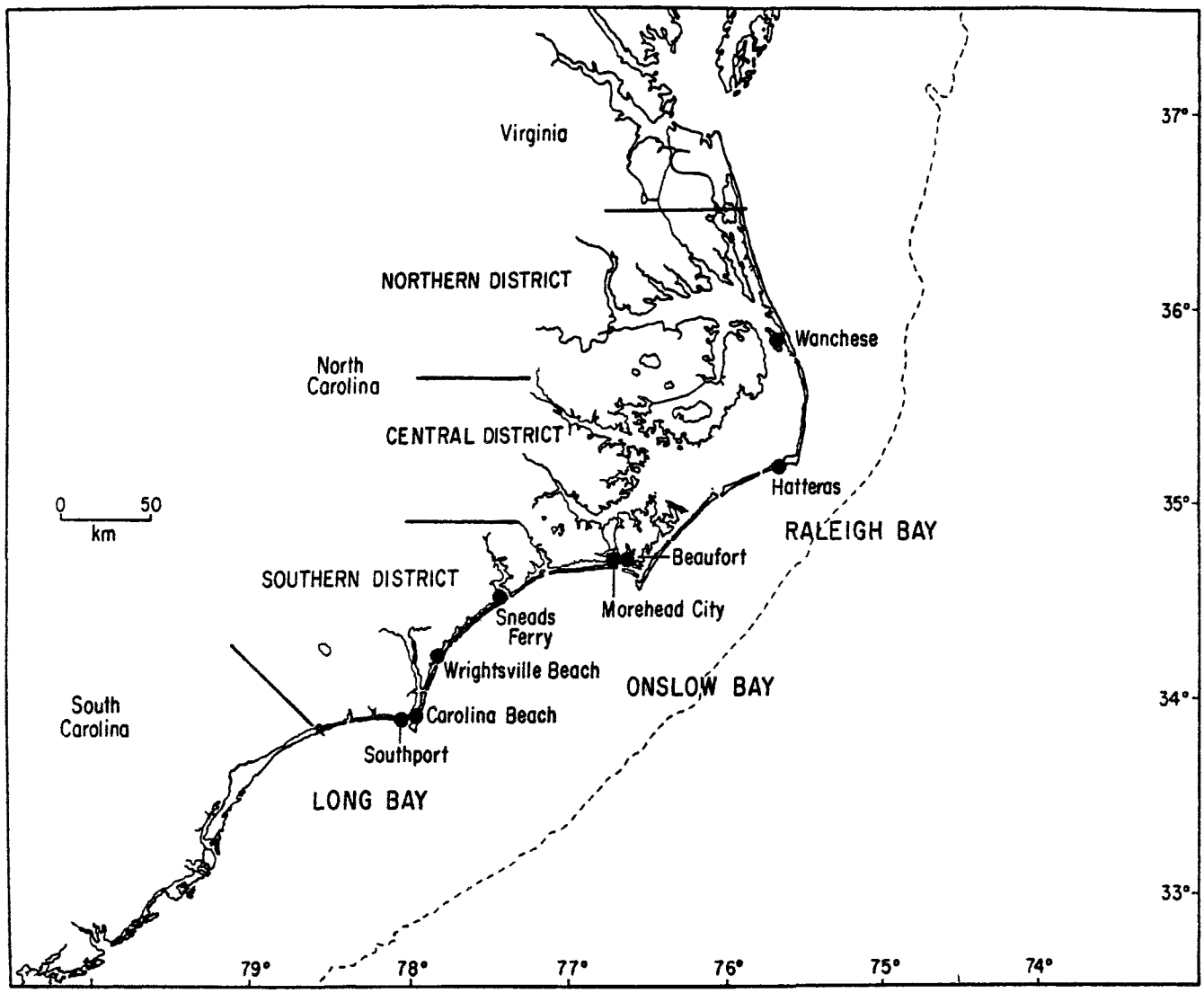

Figure 1. North Carolina ports handling reef fish landings.

Table 1. North Carolina commercial reef fish landings in kilograms (pounds), by year, district, and method of capture.

Year	District	GEAR: Bottom handlines	GEAR: Bottom longlines	GEAR: Fish traps	Total
1983 (Jul-Dec)	Northern	27,920 (61,497)	-	-	27,920 (61,497)
	Central	415,500 (915,199)	13,136 (28,935)	20,240 (44,582)	448,877 (988,716)
	Southern	243,875 (537,170)	4,051 (8,922)	52,798 (116,295)	300,724 (662,387)
	Total	687,295 (1,513,866)	17,187 (37,857)	73,038 (160,877)	777,520 (1,712,600)
1984	Northern	59,300 (130,616)	-	7,785 (17,148)	67,085 (147,764)
	Central	438,491 (965,840)	89,879 (197,971)	51,973 (114,478)	580,343 (1,278,289)
	Southern	431,996 (951,532)	65,434 (144,127)	78,141 (172,116)	575,570 (1,267,775)
	Total	929,787 (2,047,988)	155,312 (342,098)	137,899 (303,742)	1,222,998 (2,693,828)
1985	Northern	67,396 (148,449)	-	5,081 (11,191)	72,477 (159,640)
	Central	320,003 (704,853)	8,465 (18,646)	26,136 (57,568)	354,604 (781,067)
	Southern	497,527 (1,095,874)	31,099 (68,500)	109,088 (240,282)	637,714 (1,404,656)
	Total	884,926 (1,949,176)	39,564 (87,146)	140,305 (309,041)	1,064,795 (2,345,363)

Table 2. Profiles of the gears used in the North Carolina commercial reef fish fishery, 1983-1985, by district (N = Northern District, C = Central District, S = Southern District).

Gear	1983 (Jul-Dec)				1984				1985			
	N	C	S	Total	N	C	S	Total	N	C	S	Total
Handlines												
No. of samples	1	3	32	36	3	71	75	149	11	91	48	150
Mean no. of reels/boat	4.0	4.0	3.9	3.9	2.7	3.1	3.7	3.4	3.3	3.3	4.0	3.5
Mean no. of hooks/line	*	*	*	*	2.0	2.0	2.0	2.0	2.5	2.3	2.0	2.2
Long lines												
No. of samples	0	0	0	0	0	1	10	11	0	0	3	3
Mean length (m)						*	3,360.6	3,360.6			2,414.9	2,414.9
Mean no. of hooks/line						150.0	313.5	298.6			516.7	516.7
Mean soak time/trip (h)						*	25.6	25.6			11.5	11.5
Fish traps												
No. of samples	0	0	8	8	1	3	10	14	0	1	1	2
Mean no. of traps/set			73.8	73.8	4.0	88.3	66.6	66.8		35.0	20.0	27.5
Mean soak time/trip (h)			*		28.5	35.0	24.0	30.2		*	*	*

* not available

longlines included round scad or cigar minnows (Decapterus punctatus). Atlantic or Boston mackerel (Scomber scombrus), and squid. Some of the smaller or economically less important fishes caught were also used for bait. In the central and southern districts fish traps were set for black sea bass primarily in the winter, although some were set throughout the year. Traps were set for an average soak time of 24-35 hours in waters from 16 to 24 m in depth (Table 2). Mean soak time was greater in the central district. Fishermen fished from 20 to 125 traps per set with an average of 67 to 88 traps per set.

Four depth strata were typically fished by reef fish vessels landing in North Carolina: <55 m (30 fm), 73-101 m (40-55 fm), 119-146 m (65-80 fm) and >165 m (90 fm). Vessels landing in the southern district were generally large, 13-15 m (40-50 ft), fished in the shallow waters (<55 m) of Long Bay and southern Onslow Bay, and usually fished an average of five days per trip (Table 3). Vessels landing in the central district were smaller, 9-13 m (30-40 ft), fished the deeper waters in Onslow Bay and Raleigh Bay, and fished an average of about two days per trip. Fishing in the northern district was exclusively in deep water, particularly in Raleigh Bay, and trips were usually for one day.

The number of boats sampled by district and month (Table 3) varied due to weather conditions and time of landing. The number of individuals of all species measured and number of trips in which each species occurred is presented in Table 4. For the entire state the minimum number of lengths for the target species was obtained except for speckled hind (Epinephelus drummondhayi) and red grouper (E. morio), and tilefish (Lopholatilus chamaeleonticeps) in 1985 which were not abundant in the landings.

The sea basses (Serranidae) were the dominant family represented in 1983-1985 North Carolina commercial reef fish landings, both overall and within each district followed by snappers (Lutjanidae), porgies (Sparidae) and tilefishes (Malacanthidae) (Figures 2-10). Numerous other reef and non-reef families are of minor importance in the reef fish catches. In the northern district landings of sea basses (mainly black sea bass and snowy grouper) contributed the most to the landings, followed by tilefishes (blueline tilefish), snappers

Table 3. Summary of reef fish landings per trip, days fished, and number of crew per boat by district, (excluding sea bass trap and longline catches).

Year	Month	Landings (kg) Mean	Landings (kg) Range	Days fished Mean	Days fished Range	Number of Crew Mean	Number of Crew Range	No. boats sampled
			NORTHERN DISTRICT					
1983 Jul-Dec	October	694.7	-	5.0	-	-	-	1
			CENTRAL DISTRICT					
	August	1,385.7	-	3.5	-	-	-	1
	November	115.7	-	1.0	-	-	-	1
	December	810.5	-	2.0	-	-	-	1
	Average	770.6	115.7-1,385.7	2.2	1.0- 3.5	-	-	
								Total 3
			SOUTHERN DISTRICT					
	July	674.4	32.3-1,388.6	4.5	2.5- 7.0	-	-	7
	August	923.7	95.7-1,291.4	5.0	4.0- 6.0	-	-	5
	October	1,333.6	333.6-2,537.7	5.8	3.0- 8.0	-	-	9
	November	889.7	150.2-1,935.0	4.9	1.0- 7.0	-	-	11
	December	687.6	225.5-1,767.1	3.4	2.0- 5.0	-	-	7
	Average	921.6	32.3-2,537.7	4.9	1.0- 8.0	-	-	
								Total 39
1984 Jan-Dec			NORTHERN DISTRICT					
	August	461.7	-	0.8	-	2.0	-	1
	September	46.6	-	0.2		6.0		1
	October	47.5	-	0.4		2.0		1
	Average	185.3	46.6- 461.7	0.5	0.2- 0.8	3.3	2.0-6.0	
								Total 3
			CENTRAL DISTRICT					
	February	265.3	-	2.0	-	-	-	1
	March	470.9	255.3- 837.9	2.0	1.0- 2.0	-	-	5
	April	738.3	78.4-1,337.2	2.4	1.0- 4.0	-	-	9
	May	269.9	111.0- 428.8	1.5	1.0- 2.0	-	-	2
	June	560.0	420.0- 682.6	3.0	3.0- 3.0	3.3	2.0-4.0	3
	July	425.8	209.1- 646.3	3.5	1.5- 7.0	2.8	2.0-3.0	4
	August	322.5	69.8- 539.4	2.3	1.0- 3.0	2.8	2.0-3.0	5
	September	694.2	409.1- 944.3	1.8	1.0- 2.0	3.5	3.0-4.0	4
	October	672.5	154.1-1,314.3	1.8	0.2- 3.5	3.6	2.0-4.0	10
	November	785.9	85.1-2,445.8	1.0	0.5- 1.8	3.5	2.0-4.0	6
	December	627.4	121.3-1,295.7	1.0	0.5- 1.5	3.4	2.0-4.0	17
	Average	601.3	69.8-2,445.8	1.9	0.2- 7.0	3.3	2.0-4.0	
								Total 66

Table 3. (continued)

Year	Month	Landings (kg) Mean	Landings (kg) Range	Days fished Mean	Days fished Range	Number of Crew Mean	Number of Crew Range	No. boats sampled
			SOUTHERN DISTRICT					
	January	805.8	302.8-1,706.3	5.1	3.5- 6.0	-	-	8
	February	1,266.0	645.1-2,552.3	5.8	4.0- 8.0	-	-	5
	March	470.5	176.1- 652.3	6.5	2.5-10.0	-	-	3
	April	441.2	116.2- 872.2	3.2	2.0- 5.0	-	-	6
	May	2,340.1	1,564.8-3,672.3	6.3	5.0- 7.0	-	-	3
	June	1,391.2	525.3-3,657.3	6.1	1.0-10.0	3.3	2.0-6.0	8
	July	1,067.1	207.6-2,188.2	5.3	2.0- 9.0	3.5	2.0-6.0	6
	August	641.3	467.6-1,210.9	4.8	2.0- 6.0	3.2	3.0-4.0	7
	September	1,325.3	618.4-2,661.3	5.1	3.5- 6.0	3.7	2.0-6.0	9
	October	971.4	69.7-2,915.3	3.9	1.0-10.0	3.8	2.0-6.0	9
	November	851.4	373.4-2,130.7	5.2	2.0- 9.0	3.6	3.0-4.0	5
	December	1,175.4	282.9-2,327.9	3.3	1.0- 4.5	3.3	2.0-5.0	7
	Average	1,039.9	69.7-3,672.3	4.9	1.0-10.0	3.5	2.0-6.0	
								Total 76
			NORTHERN DISTRICT					
1985	June	1,147.9	614.5-1,681.2	1.3	1.0-1.5	2.0	2.0-2.0	2
Jan-	August	271.5	114.8- 428.2	0.3	0.2-0.4	2.0	2.0-2.0	2
Dec	September	147.1	-	0.4	-	2.0	-	1
	November	595.9	-	1.0	-	2.0	-	1
	Average	597.0	114.8-1,681.2	0.8	0.2-1.5	2.0	2.0-2.0	
								Total 6
			CENTRAL DISTRICT					
	January	412.6	166.8- 685.4	0.9	0.3-1.5	4.0	4.0-4.0	3
	February	584.8	203.0-1,380.3	1.7	0.5-3.5	3.8	2.0-5.0	6
	March	963.9	695.4-1,496.8	2.2	2.0-2.5	5.0	4.0-7.0	4
	April	722.1	313.9-1,893.5	1.9	1.0-4.0	3.4	2.0-5.0	14
	May	746.0	221.3-1,697.2	1.4	1.3-1.5	3.7	3.0-4.0	8
	June	1,396.6	517.8-2,192.8	1.4	1.0-1.7	3.3	2.0-4.0	3
	July	1,023.1	498.6-2,466.6	1.0	0.3-2.1	3.2	2.0-4.0	6
	August	837.8	430.3-1,333.0	2.0	1.0-4.5	3.3	2.0-4.0	8
	October	538.8	104.3-1,077.9	1.5	0.5-4.0	2.8	2.0-4.0	11
	November	924.6	294.1-2,534.5	2.0	0.9-5.0	3.6	2.0-4.0	12
	December	702.0	188.9-1,450.1	2.2	0.1-5.0	3.8	3.0-4.0	12
	Average	771.9	104.3-2,534.5	1.8	0.1-5.0	3.5	2.0-7.0	
								Total 87

Table 3. (continued)

Year	Month	Landings (kg) Mean	Landings (kg) Range	Days fished Mean	Days fished Range	Number of Crew Mean	Number of Crew Range	No. boats sampled
			SOUTHERN DISTRICT					
	January	596.7	231.0-1,243.9	4.8	1.0-8.0	3.0	2.0-4.0	4
	February	921.7	268.7-1,433.8	4.4	2.0-9.0	3.8	2.0-5.0	6
	March	1,370.2	423.1-3,115.0	4.5	4.0-5.0	4.0	3.0-6.0	6
	April	1,584.1	688.6-2,919.0	6.3	4.0-10.0	4.1	3.0-6.0	8
	May	942.8	384.2-1,944.6	1.9	1.5-2.5	3.3	3.0-4.0	6
	June	2,244.6	1,852.5-2,929.0	2.5	-	5.7	5.0-6.0	3
	July	445.4	193.2- 653.4	2.3	1.5-3.0	3.3	3.0-4.0	3
	August	1,655.7	398.0-3,972.6	4.8	1.5-9.0	4.2	3.0-6.0	5
	September	1,408.0	1,025.5-2,026.9	5.5	5.0-6.0	4.0	4.0-4.0	3
	October	1,935.5	1,907.9-1,963.1	3.8	3.0-4.5	3.0	3.0-3.0	2
	November	1,238.9	587.3-2,848.7	5.3	1.5-8.5	3.0	2.0-6.0	7
	December	1,227.6	1,119.9-1,335.3	6.0	5.5-6.5	3.5	3.0-4.0	2
	Average	1,273.4	193.2-3,972.6	4.6	1.0-10.0	3.7	2.0-6.0	
								Total 55

Table 4 Number of individuals measured, and number of trips in which sampled species occurred taken by year and quarter, and the minimum target number of individuals to be measured annually.

Species	1983 Jul-Sep No. trips	1983 Jul-Sep No. lengths	1983 Oct-Dec No. trips	1983 Oct-Dec No. lengths	1983 Total No. trips	1983 Total No. lengths	1984 Jan-Mar No. trips	1984 Jan-Mar No. lengths	1984 Apr-Jun No. trips	1984 Apr-Jun No. lengths	1984 Jul-Sep No. trips	1984 Jul-Sep No. lengths	1984 Oct-Dec No. trips	1984 Oct-Dec No. lengths	1984 Total No. trips	1984 Total No. lengths	Target no. of individuals to measure
Centropristis striata Black sea bass	3	5	7	328	10	333	9	586	15	359	20	422	23	597	67	1,964	500
C. ocyurus Bank sea bass	-	-	-	-	-	-	1	1	2	2	1	1	1	1	5	5	
C. philadelphica Rock sea bass	-	-	-	-	-	-	-	-	-	-	1	6	1	11	2	17	
Diplectrum formosum Sand perch	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	
Epinephelus adscensionis Rock hind	5	23	9	18	14	41	8	37	13	42	14	89	12	33	47	201	
E. cruentatus Graysby	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	
E. drummondhayi Speckled hind	4	20	11	34	15	54	12	85	21	197	20	93	36	175	89	550	750
E. flavolimbatus Yellowedge grouper	-	-	-	-	-	-	4	11	8	28	4	6	1	2	17	47	
E. fulvus Coney	-	-	1	1	1	1	2	5	2	2	2	3	2	2	8	12	
E. guttatus Red hind	4	22	4	10	8	32	4	40	8	28	8	69	7	59	27	196	
E. inermis Marbled grouper	1	2	2	2	3	4	2	3	2	2	2	2	1	1	7	8	
E. morio Red grouper	7	56	4	23	11	79	7	41	11	33	16	85	13	57	47	216	250
E. mystacinus Misty grouper	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	
E. nigritus Warsaw grouper	-	-	1	3	1	3	2	2	2	2	3	3	6	7	13	14	
E. niveatus Snowy grouper	4	83	4	12	8	95	11	336	18	657	20	491	20	251	69	1,735	750
Mycteroperca bonaci Black grouper	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	1	
M. interstitialis Yellowmouth grouper	-	-	-	-	-	-	1	5	6	13	5	45	6	29	18	92	
M. microlepis Gag	8	78	8	41	16	119	15	151	21	345	24	323	40	742	100	1,561	300
M. phenax Scamp	8	189	10	54	18	243	13	262	24	416	23	661	29	614	8	1,953	1,000
M. venenosa Yellowfin grouper	-	-	1	1	1	1	2	2	1	1	4	7	1	27	8	37	
Paranthias furcifer Creole-fish	1	5	8	21	9	26	2	8	6	25	9	23	9	17	26	73	
Lutjanus analis Mutton snapper	-	-	1	1	1	1	1	1	-	-	-	-	3	10	4	11	
L. buccanella Blackfin snapper	-	-	3	3	3	3	-	-	2	4	3	5	6	7	11	16	
L. campechanus Red snapper	4	19	7	16	11	35	10	98	17	78	18	94	36	803	81	1,073	100
L. cyanopterus Cubera snapper	1	2	1	1	2	3	-	-	-	-	-	-	3	5	3	5	
L. griseus Gray snapper	-	-	-	-	-	-	-	-	1	1	2	2	2	2	5	5	
L. synagris Lane snapper	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	

Table 4 (continued)

Species	1983 Jul-Sep No. trips	1983 Jul-Sep No. lengths	1983 Oct-Dec No. trips	1983 Oct-Dec No. lengths	1983 Total No. trips	1983 Total No. lengths	1984 Jan-Mar No. trips	1984 Jan-Mar No. lengths	1984 Apr-Jun No. trips	1984 Apr-Jun No. lengths	1984 Jul-Sep No. trips	1984 Jul-Sep No. lengths	1984 Oct-Dec No. trips	1984 Oct-Dec No. lengths	1984 Total No. trips	1984 Total No. lengths	Target no. of individuals to measure
L. vivanus Silk snapper	-	-	8	34	8	34	8	13	6	29	6	23	21	191	41	256	
Ocyurus chrysurus Yellowtail snapper	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	
Rhomboplites aurorubens Vermilion snapper	4	148	23	243	27	391	25	488	33	1,327	36	1,439	54	1,708	148	4,922	300
Calamus calamus Saucereye porgy	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	
C. leucosteus Whitebone porgy	-	-	-	-	-	-	1	1	3	6	-	-	4	5	8	12	
C. nodosus Knobbed porgy	4	8	4	11	8	19	5	19	9	31	14	99	31	118	59	267	
C. proridens Littlehead porty	-	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1	
Diplodus holbrooki Spottail pinfish	-	-	-	-	-	-	-	-	1	1	2	8	4	10	7	19	
Lagodon rhomboides Pinfish	-	-	-	-	-	-	-	-	-	-	-	-	1	23	1	23	
Pagrus pagrus Red porgy	6	230	7	107	13	337	17	618	26	676	32	1,093	43	959	118	3,346	650
Stenotomus chrysops Scup	-	-	-	-	-	-	-	-	-	-	-	-	4	22	4	22	
Caulolatilus chrysops Goldface tilefish	-	-	-	-	-	-	-	-	2	3	5	9	-	-	7	12	
C. cyanops Blackline tilefish	-	-	-	-	-	-	1	1	1	2	1	1	-	-	3	4	
C. microps Blueline tilefish	1	11	4	11	5	22	7	50	11	157	13	97	9	22	40	326	
Lopholatilus chamaeleonticeps Tilefish	-	-	-	-	-	-	1	3	3	180	1	53	2	56	7	292	150
Malacanthus plumieri Sand tilefish	-	-	1	1	1	1	-	-	-	-	-	-	3	6	3	6	
Haemulon aurolineatum Tomtate	4	34	5	41	9	75	-	-	-	-	-	-	-	-	-	-	
H. plumieri White grunt	-	-	-	-	-	-	6	41	11	59	16	273	24	231	57	604	
Orthopristis chrysoptera Pigfish	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	
Balistes capriscus Gray triggerfish	2	3	5	7	7	10	2	7	11	58	11	78	20	139	44	282	
B. vetula Queen triggerfish	-	-	3	3	3	3	-	-	1	1	-	-	2	5	3	6	
Lachnolaimus maximus Hogfish	2	4	4	5	6	9	3	8	4	5	3	12	10	29	20	54	
Tautoga onitis Tautog	-	-	-	-	-	-	-	-	1	1	-	-	1	1	2	2	
Coryphaena hippurus Dolphin	2	2	-	-	2	2	1	1	1	6	-	-	2	29	4	36	
Rachycentron canadum Cobia	-	-	1	2	1	2	4	5	4	6	3	3	5	5	16	19	
Acanthocybium solanderi Wahoo	-	-	-	-	-	-	-	-	2	5	-	-	1	1	3	6	
Scomberomorus cavalla King mackerel	-	-	4	20	4	20	-	-	2	34	4	7	15	55	21	96	

Table 4 (continued)

Species	1983 Jul-Sep No. trips	1983 Jul-Sep No. lengths	1983 Oct-Dec No. trips	1983 Oct-Dec No. lengths	1983 Total No. trips	1983 Total No. lengths	1984 Jan-Mar No. trips	1984 Jan-Mar No. lengths	1984 Apr-Jun No. trips	1984 Apr-Jun No. lengths	1984 Jul-Sep No. trips	1984 Jul-Sep No. lengths	1984 Oct-Dec No. trips	1984 Oct-Dec No. lengths	1984 Total No. trips	1984 Total No. lengths	Target no. of individuals to measure
S. maculatus Spanish mackerel	-	-	-	-	-	-	-	-	1	2	1	1	-	-	2	3	
Thunnus albacares Yellowfin tuna	-	-	-	-	-	-	-	-	3	10	-	-	1	1	4	11	
T. atlanticus Blackfin tuna	-	-	2	3	2	3	-	-	1	1	-	-	1	1	2	2	
Seriola dumerili Greater amberjack	1	1	-	-	1	1	-	-	-	-	1	1	-	-	1	1	
Pomatomus saltatrix Bluefish	-	-	-	-	-	-	-	-	1	1	-	-	1	3	2	4	
Polyprion americanus Wreckfish	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	1	
Priacanthus arenatus Bigeye	1	1	1	2	2	3	-	-	-	-	-	-	1	1	1	1	
Pristigenys alta Short bigeye	-	-	-	-	-	-	1	1	1	3	-	-	1	1	3	5	
Hyperoglyphe perciformis Barrelfish	-	-	-	-	-	-	-	-	1	3	-	-	-	-	1	3	
Equetus n. sp. Blackbar drum	1	1	-	-	1	1	-	-	-	-	1	2	1	2	2	4	
Neomerinthe hemingwayi Spinycheek scorpionfish	-	-	-	-	-	-	1	1	1	1	-	-	1	2	3	4	
Sphyraena barracuda Great barracuda	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	
Urophycis floridana Southern hake	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	2	
Conger oceanicus Conger eel	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	
Squaliformes Sharks	-	-	-	-	-	-	-	-	-	-	-	-	1	10	1	10	
Carcharhinus falciformis Silky shark	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	
Rhizoprionodon terraenovae Atlantic sharpnose shark	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	
Scyliorhinus retifer Chain dogfish	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	

Species	1985 Jan-Mar No. trips	1985 Jan-Mar No. lengths	1985 Apr-Jun No. trips	1985 Apr-Jun No. lengths	1985 Jul-Sep No. trips	1985 Jul-Sep No. lengths	1985 Oct-Dec No. trips	1985 Oct-Dec No. lengths	1985 Total No. trips	1985 Total No. lengths	1986 Jan-Mar No. trips	1986 Jan-Mar No. lengths	Target no. of individuals to measure
Centropristis striata Black sea bass	15	475	17	221	14	210	22	436	68	1,342	19	624	550
Epinephelus adscensionis Rock hind	5	24	16	78	9	57	14	50	44	209	6	17	
E. cruentatus Graysby	-	-	-	-	1	1	1	1	2	2	-	-	
E. drummondhayi Speckled hind	23	240	33	263	22	141	28	368	106	1,012	23	233	750
E. flavolimbatus Yellowedge grouper	5	24	8	30	9	42	4	6	26	102	4	6	

Table 4 (continued)

Species	1985 Jan-Mar No. trips	1985 Jan-Mar No. lengths	1985 Apr-Jun No. trips	1985 Apr-Jun No. lengths	1985 Jul-Sep No. trips	1985 Jul-Sep No. lengths	1985 Oct-Dec No. trips	1985 Oct-Dec No. lengths	1985 Total No. trips	1985 Total No. lengths	1986 Jan-Mar No. trips	1986 Jan-Mar No. lengths	Target no. of individuals to measure
E. fulvus Coney	1	1	5	7	5	14	6	10	17	32	2	2	
E. guttatus Red hind	3	14	10	72	6	63	16	124	35	273	4	12	
E. inermis Marbled grouper	-	-	2	2	-	-	6	8	8	10	1	1	
E. morio Red grouper	3	5	10	65	6	64	15	74	34	208	6	29	250
E. mystacinus Misty grouper	-	-	-	-	1	1	-	-	1	1	-	-	
E. nigritus Warsaw grouper	5	6	3	3	3	3	5	5	16	17	6	7	
E. niveatus Snowy grouper	16	447	39	1,303	21	870	21	428	97	3,048	19	384	750
Mycteroperca bonaci Black grouper	2	4	3	45	2	4	2	2	9	55	-	-	
M. interstitialis Yellowmouth grouper	4	5	12	23	4	31	7	25	27	84	4	14	
M. microlepis Gag	23	259	28	277	16	111	31	560	98	1,207	27	464	300
M. phenax Scamp	23	437	30	497	22	263	32	496	107	1,693	23	335	1,000
M. venenosa Yellowfin grouper	-	-	1	3	1	19	4	9	6	31	2	2	
Paranthias furcifer Creole-fish	4	8	17	57	8	32	8	33	37	130	5	8	
Lutjanus analis Mutton snapper	-	-	2	5	1	13	2	2	5	20	-	-	
L. buccanella Blackfin snapper	2	5	5	8	1	1	3	8	11	22	-	-	
L. campechanus Red snapper	27	212	32	250	17	76	31	301	107	839	29	429	100
L. cyanopterus Cubera snapper	-	-	2	2	-	-	1	1	3	3	-	-	
L. griseus Gray snapper	-	-	1	1	1	2	-	-	2	3	1	1	
L. vivanus Silk snapper	18	303	20	281	10	91	21	234	69	909	12	102	
Rhomboplites aurorubens Vermillion snapper	23	763	32	1,302	26	994	41	2,514	122	5,573	28	1,334	300
Calamus calamus Saucereye porgy	-	-	2	4	3	6	2	3	7	13	-	-	
C. leucosteus Whitebone porgy	6	9	1	1	4	6	6	25	17	41	4	19	
C. nodosus Knobbed porgy	10	46	19	98	11	55	18	86	58	285	10	39	
Diplodus holbrooki Spottail pinfish	3	25	2	2	2	2	7	31	14	60	6	14	
Lagodon rhomboides Pinfish	1	2	-	-	-	-	-	-	1	2	-	-	
Pagrus pagrus Red porgy	23	935	31	890	23	513	41	1,109	118	3,447	31	1,539	650
Stenotomus caprinus Longspine porgy	1	1	-	-	-	-	-	-	1	1	-	-	

Table 4 (continued)

Species	1985 Jan-Mar No. trips	1985 Jan-Mar No. lengths	1985 Apr-Jun No. trips	1985 Apr-Jun No. lengths	1985 Jul-Sep No. trips	1985 Jul-Sep No. lengths	1985 Oct-Dec No. trips	1985 Oct-Dec No. lengths	1985 Total No. trips	1985 Total No. lengths	1986 Jan-Mar No. trips	1986 Jan-Mar No. lengths	Target no. of individuals to measure
Caulolatilus chrysops Goldface tilefish	1	1	-	-	5	9	4	6	10	16	3	173	
C. cyanops Blackline tilefish	1	1	-	-	-	-	1	2	2	3	-	-	
C. microps Blueline tilefish	13	103	28	296	11	102	14	49	66	550	8	26	
Lopholatilus chamaeleonticeps Tilefish	1	5	2	5	2	98	1	1	6	109	-	-	150
Malacanthus plumieri Sand tilefish	-	-	-	-	-	-	-	-	-	-	1	1	
Haemulon aurolineatum Tomtate	2	2	2	4	1	3	3	14	8	23	1	5	
H. plumieri White grunt	15	170	17	193	10	148	11	103	53	614	12	62	
Orthopristis chrysoptera Pigfish	-	-	-	-	-	-	1	4	1	4	-	-	
Balistes capriscus Gray triggerfish	12	130	17	182	6	82	20	167	55	561	13	91	
Balistes vetula Queen triggerfish	-	-	2	4	-	-	2	3	4	7	-	-	
Lachnolaimus maximus Hogfish	7	14	3	5	4	15	9	45	23	79	1	1	
Tautoga onitis Tautog	2	8	-	-	-	-	-	-	2	8	-	-	
Coryphaena hippurus Dolphin	1	2	4	6	10	84	4	22	19	114	1	4	
Rachycentron canadum Cobia	8	13	3	6	2	2	7	15	20	36	5	10	
Acanthocybium solanderi Wahoo	-	-	1	1	2	2	4	4	7	7	-	-	
Euthynnus alletteratus Little tunny	-	-	1	8	-	-	-	-	1	8	-	-	
Sarda sarda Atlantic bonito	-	-	-	-	-	-	-	-	-	-	1	4	
Scomberomorus cavalla King mackerel	6	16	9	87	5	35	20	175	40	313	7	330	
S. maculatus Spanish mackerel	-	-	-	-	1	2	1	1	2	3	-	-	
Thunnus albacares Yellowfin tuna	1	1	-	-	1	1	4	5	6	7	2	3	
T. atlanticus Blackfin tuna	1	1	2	3	-	-	-	-	3	4	3	4	
Caranx crysos Blue runner	-	-	1	1	-	-	1	1	2	2	-	-	
Pseudocaranx dentex Guelly jack	-	-	-	-	-	-	1	1	1	1	1	1	
Seriola sp. Amberjack	-	-	1	4	-	-	-	-	1	4	1	1	
S. dumerili Greater amberjack	-	-	3	14	1	1	2	7	6	22	-	-	
S. fasciata Lesser amberjack	1	1	1	1	1	1	-	-	3	3	1	7	
S. rivoliana Almaco jack	-	-	2	7	4	24	6	26	12	57	3	14	

Table 4 (continued)

Species	1985 Jan-Mar No. trips	1985 Jan-Mar No. lengths	1985 Apr-Jun No. trips	1985 Apr-Jun No. lengths	1985 Jul-Sep No. trips	1985 Jul-Sep No. lengths	1985 Oct-Dec No. trips	1985 Oct-Dec No. lengths	1985 Total No. trips	1985 Total No. lengths	1986 Jan-Mar No. trips	1986 Jan-Mar No. lengths	Target no. of individuals to measure
S. zonata Banded rudderfish	1	1	-	-	4	32	3	5	8	38	-	-	
Pomatomus saltatrix Bluefish	1	3	4	5	-	-	4	10	9	18	4	9	
Priacanthus arenatus Bigeye	-	-	1	2	-	-	-	-	1	2	1	1	
Pristigenys alta Short bigeye	-	-	1	1	1	2	1	1	3	4	1	1	
Equetus n. sp. Blackbar drum	3	5	5	6	3	6	2	3	13	20	1	1	
E. umbrosus Cubbyu	2	8	-	-	-	-	-	-	2	8	-	-	
Neomerinthe hemingwayi Spinycheek scorpionfish	-	-	1	2	1	1	-	-	2	3	-	-	
Chaetodipterus faber Atlantic spadefish	-	-	-	-	-	-	1	1	1	1	-	-	
Macrorhamphosus gracilis Slender snipefish	-	-	1	1	-	-	-	-	-	-	-	-	
Urophycis floridana Southern hake	-	-	1	1	-	-	1	1	2	2	-	-	
Conger oceanicus Conger eel	4	9	1	3	1	1	-	-	6	13	1	1	
Muraena retifera Reticulate moray	-	-	1	1	-	-	-	-	1	1	-	-	
Ophichthus ocellatus Palespotted eel	-	-	1	1	-	-	-	-	1	1	-	-	
Isurus oxyrinchus Shortfin mako	-	-	1	2	-	-	-	-	1	2	-	-	
Carcharhinus falciformis Silky shark	-	-	1	1	-	-	2	4	3	5	-	-	
Mustelus canis Smooth dogfish	-	-	-	-	-	-	1	1	1	1	-	-	
Rhizoprionodon terraenovase Atlantic sharpnose shark	1	2	-	-	-	-	1	4	2	6	1	7	

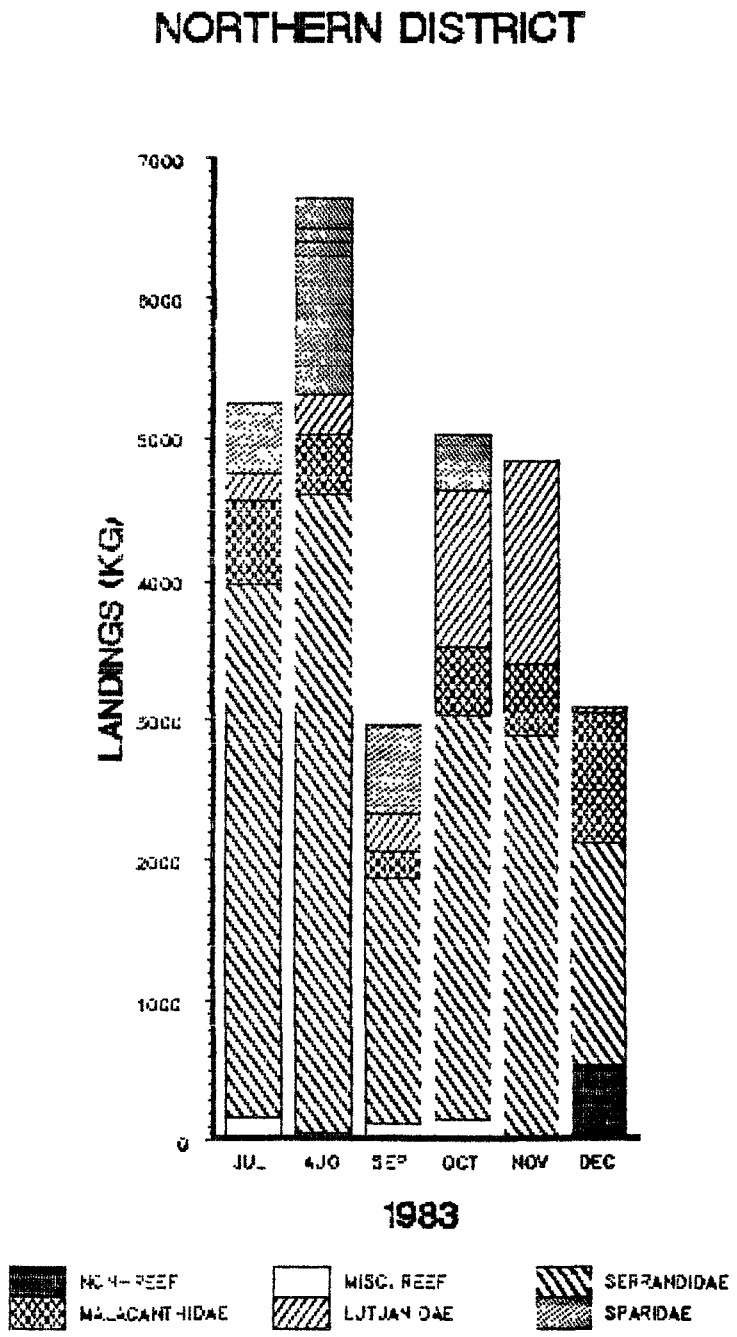

Figure 2. North Carolina 1983 northern district commercial reef fish landings by family.

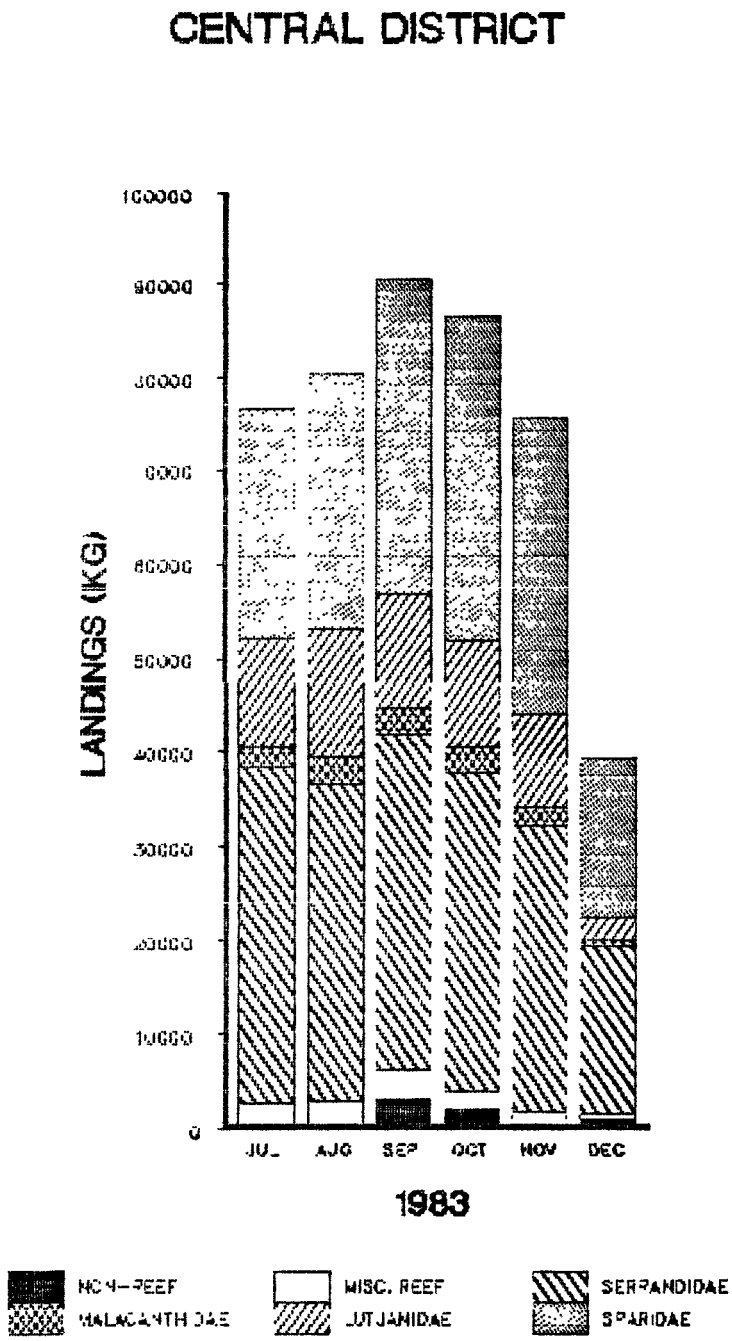

Figure 3. North Carolina 1983 central district commercial reef fish landings by family.

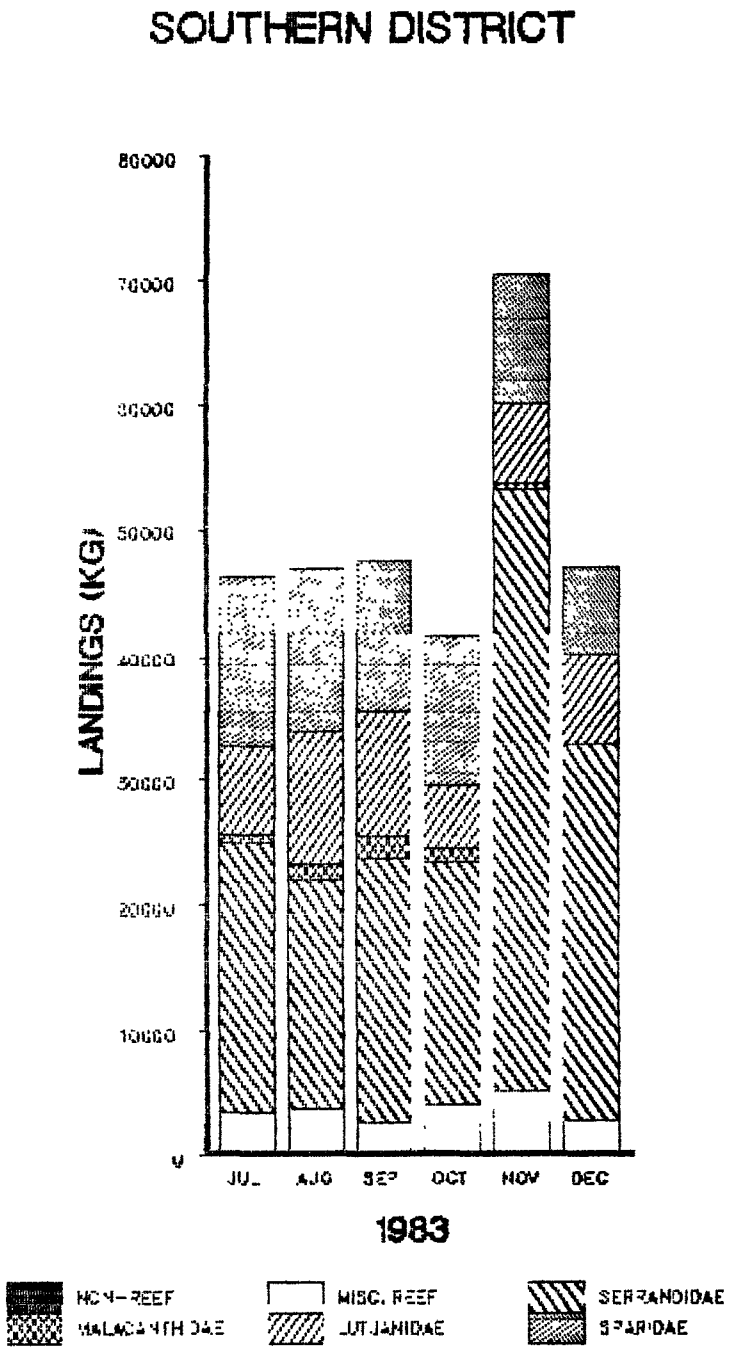

Figure 4. North Carolina 1983 southern district commercial reef fish landings by family.

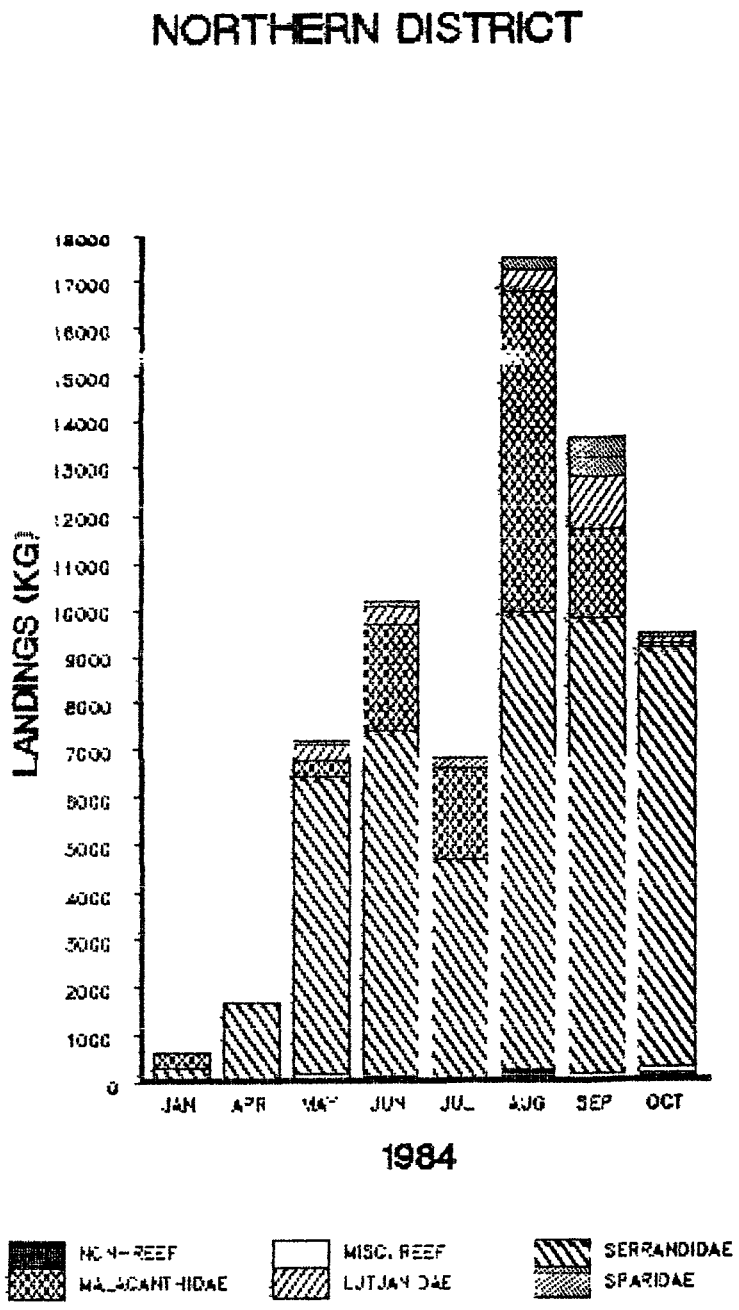

Figure 5. North Carolina 1984 northern district commercial reef fish landings by family.

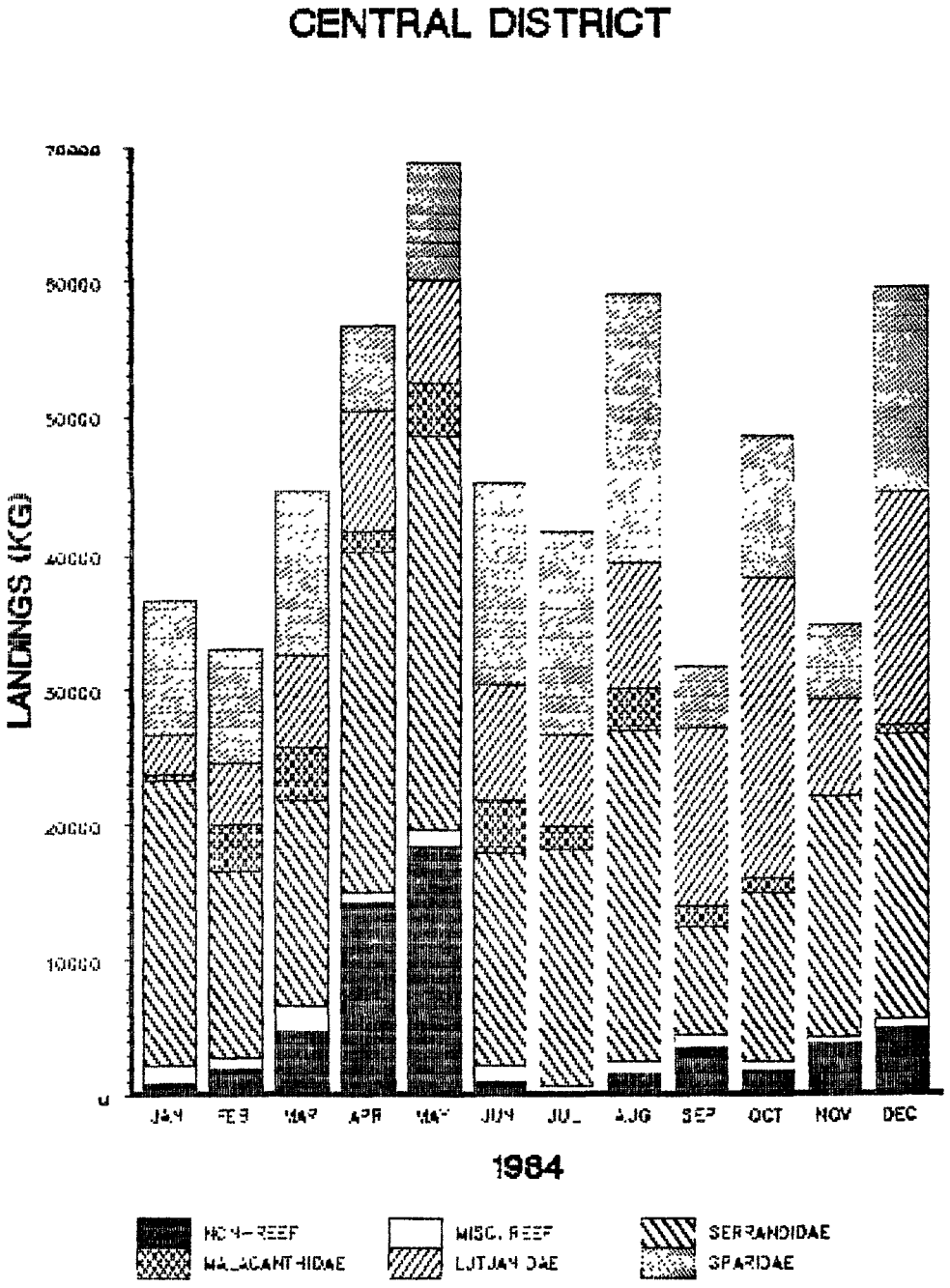

Figure 6. North Carolina 1984 central district commercial reef fish landings by family.

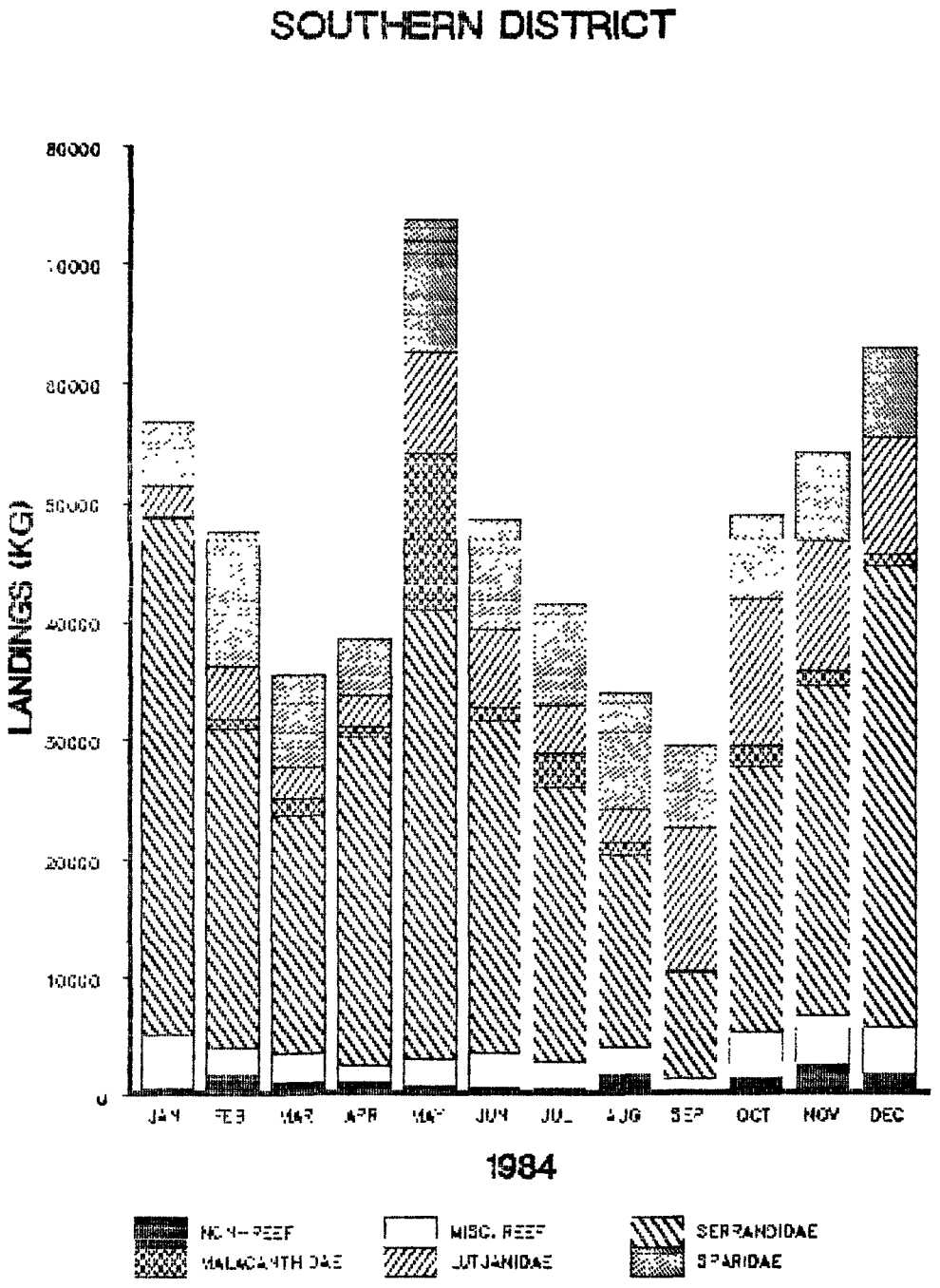

Figure 7. North Carolina 1984 southern district commercial reef fish landings by family.

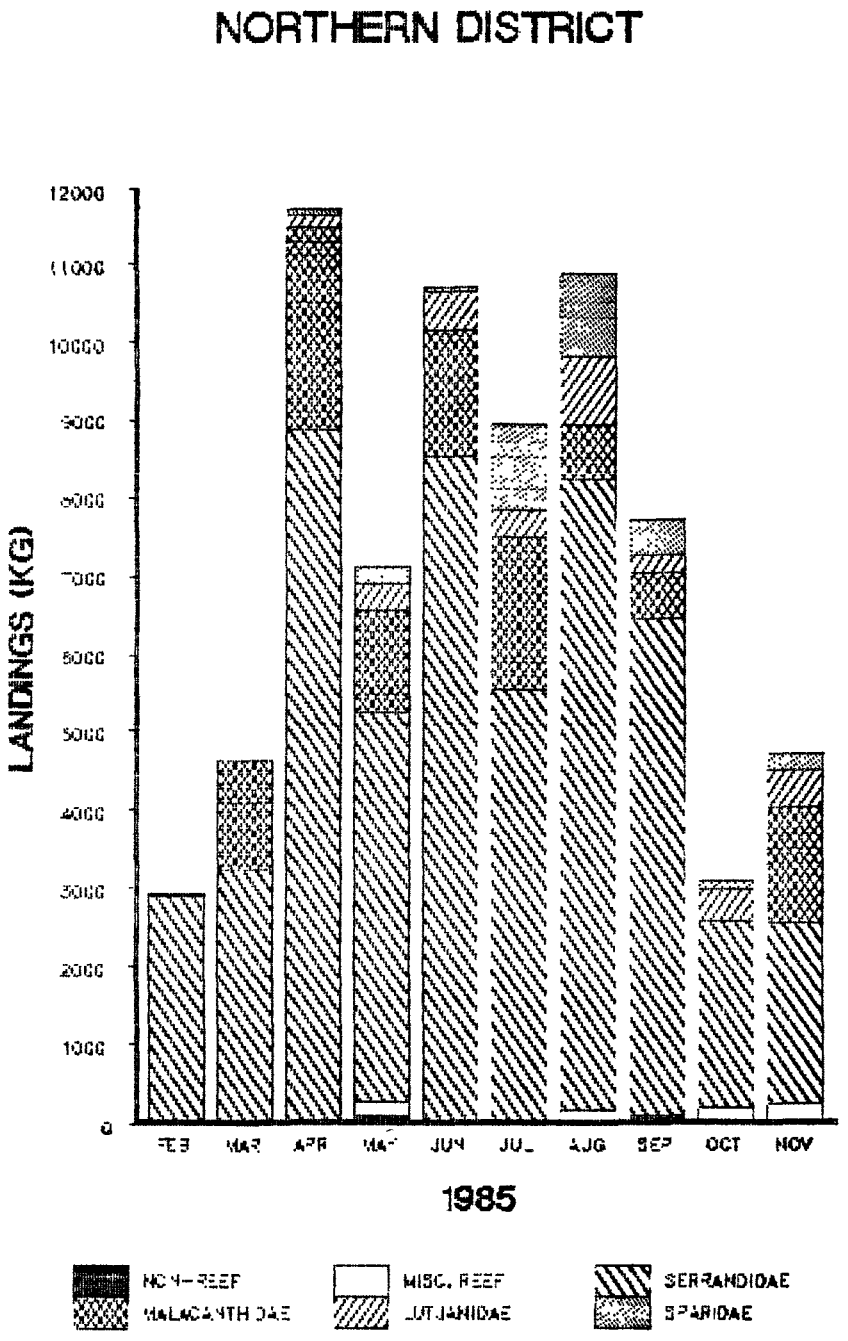

Figure 8. North Carolina 1985 northern district commercial reef fish landings by family.

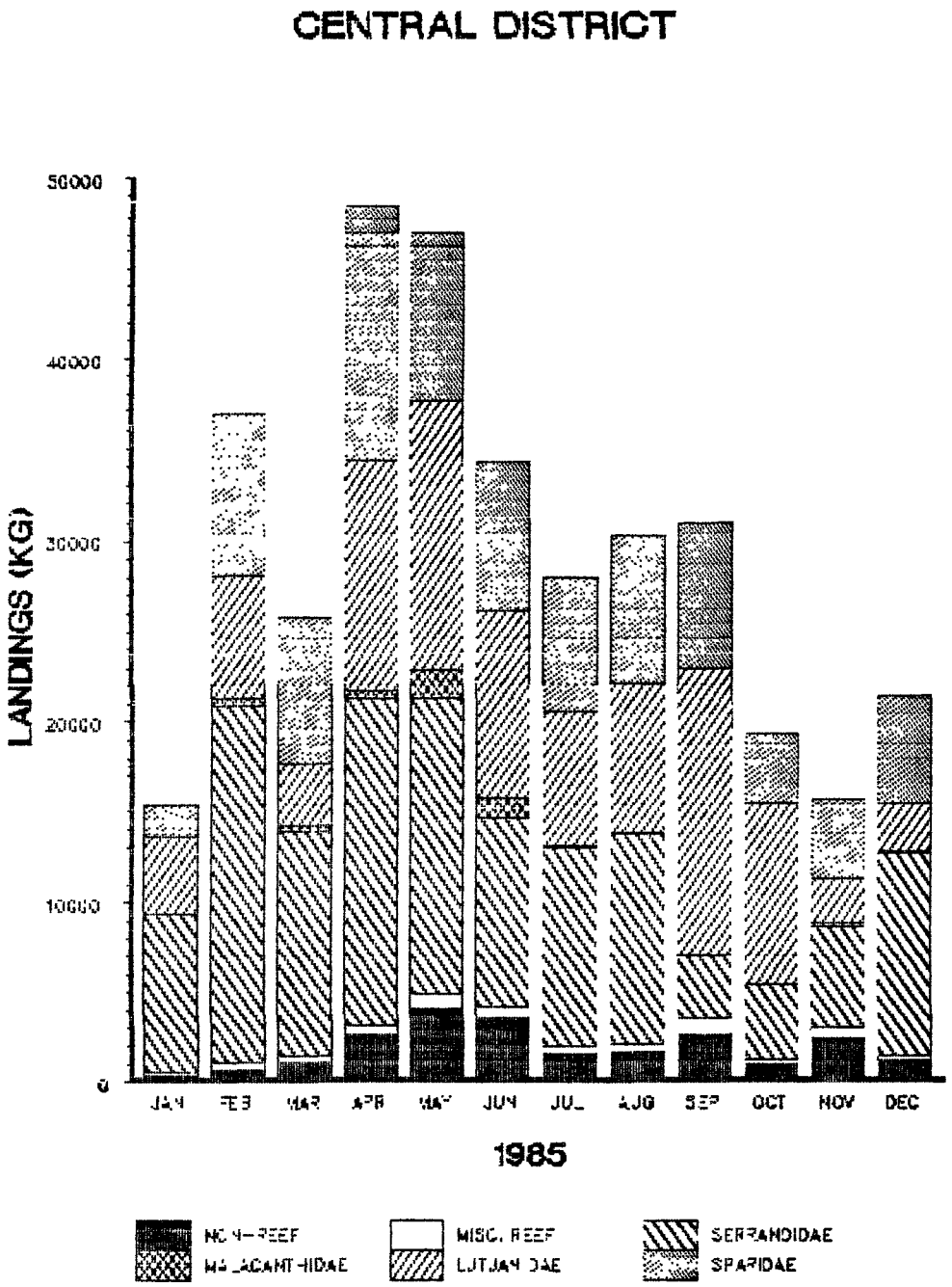

Figure 9. North Carolina 1985 central district commercial reef fish landings by family.

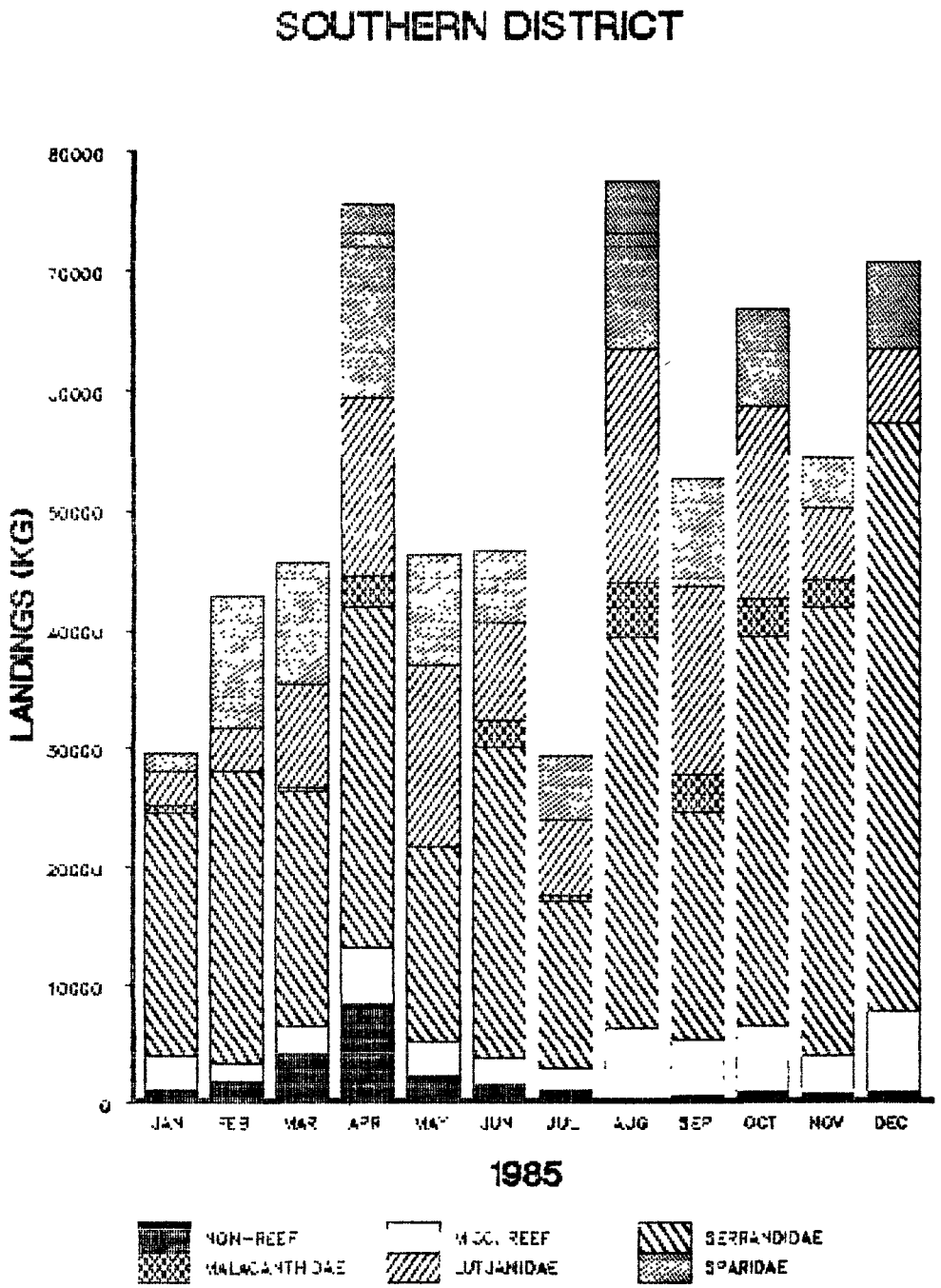

Figure 10. North Carolina 1985 southern district commercial reef fish landings by family.

(vermilion snapper) and porgies (red porgy). In the central and southern district sea basses are followed in importance by porgies in 1984 and snappers in 1985. Tilefishes ranked fourth in the central district, while grunts were fourth in the southern district. Southern district catches were diverse (often up to 18 species) and consisted primarily of red porgy, vermilion snapper, gag, scamp, and other groupers. Central district were less diverse (usually 6-10 species) and consisted primarily of red porgy, vermilion snapper, snowy grouper, gag, and blueline tilefish. Several species, including black sea bass, vermilion snapper, red snapper, and red porgy, were marketed by size grades (Table 5).

Serranidae

Four species of sea basses, black sea bass (*Centropristis striata*), snowy grouper (*Epinephelus niveatus*), gag (*Mycteroperca microlepis*), and scamp (*M. phenax*), accounted for the majority of the serranid biomass landed (Tables 6-8). Winter landings were dominated by black sea bass and gag, while spring and summer landings consisted of snowy grouper, gag, scamp, and lesser amounts of black sea bass (Figures 11-13). Black sea bass (64-77%) and snowy grouper (20-33%) accounted for 97% of the sea bass catches in the northern district in 1984 and 1985, with only three other species [rock sea bass (*C. philadelphica*), speckled hind (*E. drummondhayi*), yellowedge grouper (*E. flavolimbatus*)] of minor importance. Highest landings of serranids in the northern district occurred in the summer. Central district sea bass catches were composed mainly of snowy grouper (35-55%), black sea bass (15-31%), and gag (10-45%) with an additional 9 to 13 species accounting for <10% of the catch (Tables 6-8) Central district catches of serranids were generally highest in the winter and spring. Eighteen species of serranids were marketed in the southern district but only five species, black sea bass (26-36%), scamp (12-23%), snowy grouper (8-17%), and red grouper (*E. morio*) (2-8%), dominated the landings (Tables 6-8). Southern district landings of sea basses were highest in winter.

Centropristis striata

Black sea bass were seasonally important in all three districts but most were landed in the southern district (Table 6-8). Highest landings occurred from

Table 5. Market size grades of black sea bass, vermilion snapper, red snapper, red porgy, and tilefish by district.

Species	DISTRICT	
	Central	Southern
C. striata Black sea bass	<0.340 kg (3/4 lb)	<0.227 kg (½ lb)
	0.340-0.681 kg (3/4-1½ lb)	0.227-0.454 kg (½-1 lb)
	0.681-0.908 kg (1½-2 lb)	>0.454 kg (1 lb)
	>0.908 kg (2 lb)	
R. aurorubens Vermilion snapper	<0.454 kg (1 lb)	<0.454 kg (1 lb)
	0.454-0.908 kg (1-2 lb)	0.454-0.908 kg (1-2 lb)
	0.908-1.816 kg (2-4 lb)	0.908-1.816 kg (2-4 lb)
	>1.816 kg (4 lb)	>1.816 kg (4 lb)
L. campechamus Red snapper	<1.362 kg (3 lb)	<1.816 kg (4 lb)
	1.362-2.724 kg (3-6 lb)	1.816-3.632 kg (4-8 lb)
	>2.724 kg (6 lb)	>3.632 kg (8 lb)
P. pagrus Red porgy	<0.454 kg (1 lb)	<0.454 kg (1 lb)
	0.454-0.908 kg (1-2 lb)	0.454-0.908 kg (1-2 lb)
	0.908-1.816 kg (2-4 lb)	0.908-1.816 kg (2-4 lb)
	>1.816 kg (4 lb)	>1.816 kg (4 lb)
L. chamaeleonticeps Tilefish		<3.632 kg (8 lb)
		>3.632 kg (8 lb)

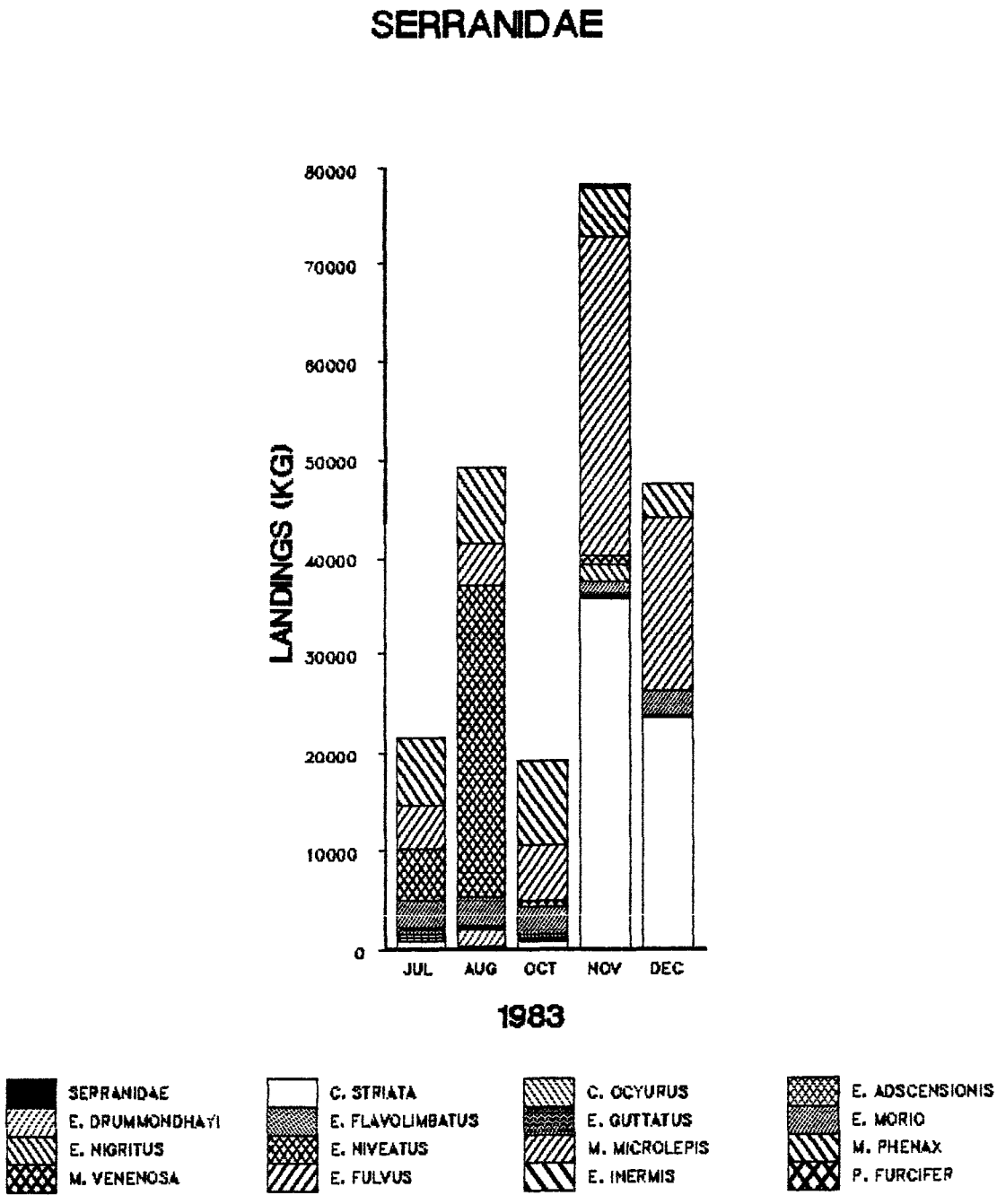

Figure 11. Monthly serranid (grouper) landings for 1983.

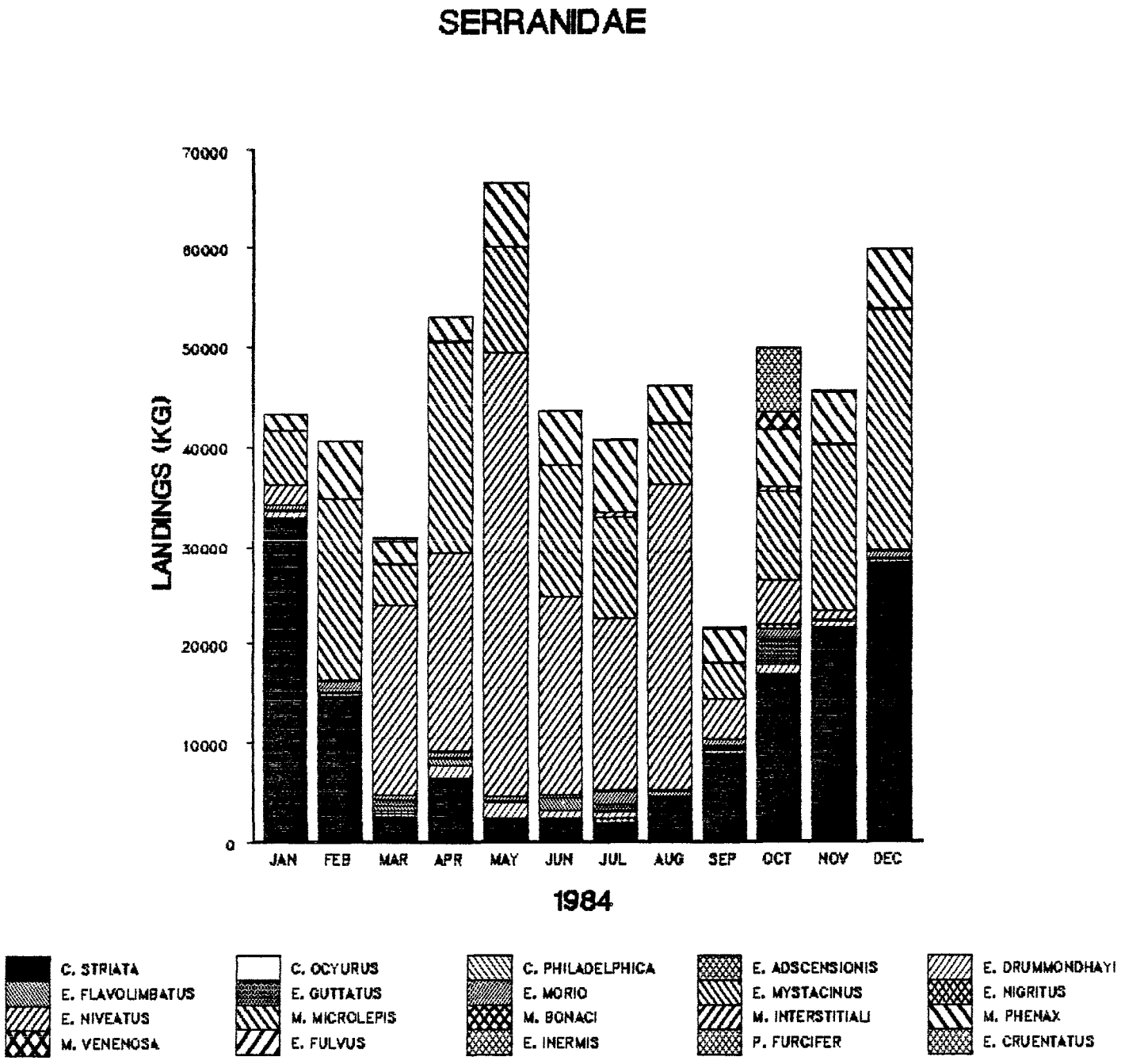

Figure 12. Monthly serranid (grouper) landings for 1984.

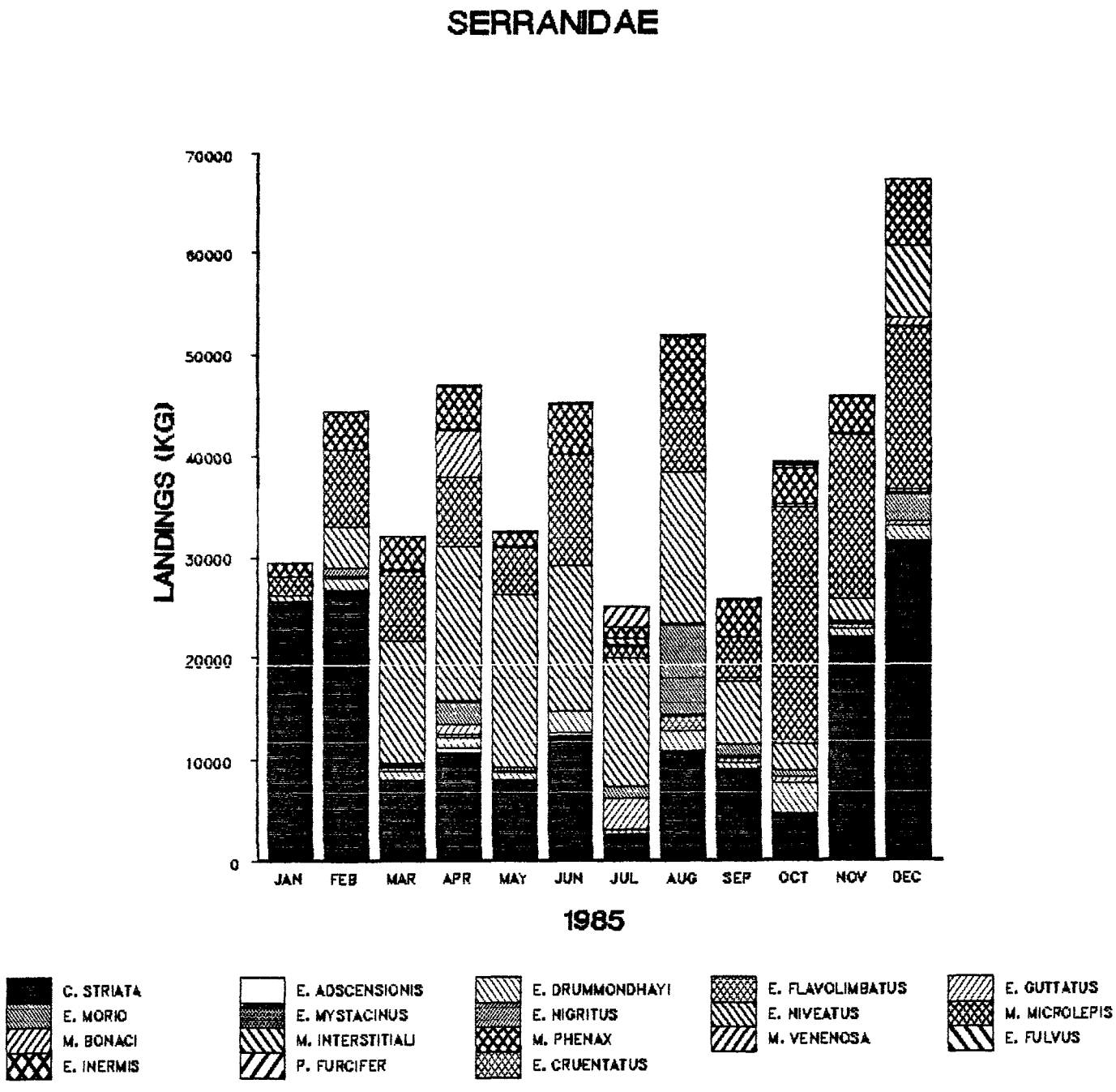

Figure 13. Monthly serranid (grouper) landings for 1985.

Table 6. Species composition in kilograms (pounds in parentheses) for the North Carolina commercial reef fish landings by district, based on catches sampled from the fishery, July-December 1983 (n = number of boats sampled; [ ] indicate no catches were sampled).

NORTHERN DISTRICT

Species	MONTH Jul n=0	Aug n=0	Sep n=0	Oct n=0	Nov n=0	Dec n=0	Total n=0	% of species composition within major market categories
Serranide Sea basses	[3,813 (8,406)]	[4,546 (10,022)]	[1,744 (3,845)]	[2,881 (6,352)]	[2,843 (6,268)]	[1,574 (3,47)]	-	-
Centropristis striata Black sea bass	[1,900 (4,189)]	[2,996 (6,605)]	[1,017 (2,242)]	[2,118 (4,669)]	[2,707 (5,968)]	[1,481 (3,265)]	-	-
Lutjanidae Snappers	[175 (386)]	[268 (591)]	[265 (584)]	[1,106 (2,438)]	[1,406 (3,100)]	[46 (101)]	-	-
Sparidae Porgies	[510 (1,124)]	[1,428 (3,148)]	[647 (1,426)]	[384 (847)]	[12 (26)]	-	-	-
Malacanthidae Tilefishes	[585 (1,290)]	[420 (926)]	[188 (414)]	[500 (1,102)]	[541 (1,193)]	[939 (2,070)]	-	-
Balistidae Leatherjackets	[154 (340)]	[64 (141)]	[95 (209)]	[55 (121)]	[34 (75)]	[4 (9)]	-	-
Haemulidae Grunts	-	-	-	[95 (209)]	-	-	-	-
Carangidae Jacks	[20 (44)]	-	[36 (79)]	-	-	-	-	-
Scombridae Mackerels	-	-	-	[5 (11)]	-	-	-	-
Thunnus spp. Tunas, unclassified	-	-	-	[5 (11)]	-	-	-	-
Squaliformes Sharks, unclassified	-	-	-	-	-	[537 (1,184)]	-	-

CENTRAL DISTRICT

Species	MONTH Jul n=0	Aug n=1	Sep n=0	Oct n=0	Nov n=1	Dec n=1	Total n=3	% of species composition within major market categories
Serranidae Sea basses	[35,594 (78,471)]	30,844 (67,999)	[35,775 (78,870)]	[33,881 (74,694)]	30,281 (66,758)	17,755 (39,143)	78,880 (176,105)	100.0
Mycteroperca microlepis Gag	-	-	-	-	23,236 (51,227)	12,143 (26,771)	35,379 (77,997)	44.9
Epinephelus niveatus Snowy grouper	-	27,755 (61,410)	-	-	-	-	27,855 (61,410)	35.3
Centropristis striata Black sea bass	[3,713 (8,186)]	[2,714 (5,983)]	[5,101 (11,246)]	[7,911 (17,441)]	6,131 (13,517)	5,611 (12,370)	11,742 (25,887)	14.9
Epinephelus drummondhayi Speckled hind	-	1,866 (4,114)	-	-	-	-	1,866 (4,114)	2.4
Mycteroperca phenax Scamp	-	1,123 (2,476)	-	-	-	-	1,123 (2,476)	1.4
Epinephelus morio Red grouper	-	-	-	-	914 (2,015)	-	914 (2,015)	1.2
Lutjanidae Snappers	[11,705 (25,805)]	13,765 (30,347)	[12,168 (26,826)]	[11,456 (25,256)]	10,009 (22,066)	2,536 (5,591)	26,310 (58,004)	100.0
Rhomboplites aurorubens Vermilion snapper	-	11,785 (25,981)	-	-	10,009 (22,066)	2,458 (5,419)	24,252 (53,466)	92.2
Lutjanus campechanus Red snapper	-	1,980 (4,365)	-	-	-	78 (172)	2,058 (4,537)	7.8
Sparidae Porgies	[24,339 (53,658)]	27,167 (59,893)	[33,450 (73,745)]	[34,445 (75,938)]	31,603 (69,673)	16,770 (36,972)	75,540 (166,537)	100.0
Pagrus pagrus Red porgy	-	27,167 (59,893)	-	-	31,603 (69,673)	16,715 (36,850)	75,485 (166,416)	99.9
Calamus leucosteus Whitebone porgy	-	-	-	-	-	54 (119)	54 (119)	<0.1
Malacanthidae Tilefishes	[2,088 (4,603)]	3,026 (6,671)	[2,848 (6,279)]	[2,665 (5,875)]	[1,887 (4,160)]	[532 (1,173)]	3,026 (6,671)	100.0

Table 6. (continued)

Species	CENTRAL DISTRICT MONTH Jul n=0	Aug n=1	Sep n=0	Oct n=0	Nov n=1	Dec n=1	Total n=3	% of species composition within major market categories
Caulolatilus microps Blueline tilefish	-	3,026 (6,671)	-	-	-	-	3,026 (6,671)	100.0
Balistidae Leatherjackets	[952 (2,099)]	1,317 (2,903)	[1,485 (3,274)]	[892 (1,967)]	[733 (1,616)]	367 (809)	367 (809)	100.0
Balistes capriscus Gray triggerfish	-	-	-	-	-	367 (809)	367 (809)	100.0
Haemulidae Grunts	[1,591 (3,508)]	[1,336 (2,945)]	[1,499 (3,305)]	[1,101 (2,427)]	843 (1,858)	[264 (582)]	843 (1,858)	100.0
Haemulon plumieri White grunt	-	-	-	-	843 (1,858)	-	843 (1,858)	100.0
Scombridae Mackerels	-	-	[889 (1,960)]	[972 (2,143)]	-	[97 (214)]	-	-
Scomberomorus cavalla King mackerel	-	-	[889 (1,960)]	[972 (2,143)]	-	-	-	-
Thunnus spp. Tunas, unclassified	-	-	-	-	-	[97 (214)]	-	-
Squaliformes Sharks, unclassified	[305 (672)]	[261 (575)]	[2,364 (5,212)]	[1,051 (2,317)]	[261 (575)]	[999 (2,202)]	-	-

Species	SOUTHERN DISTRICT MONTH Jul n=7	Aug n=7	Sep n=0	Oct n=10	Nov n=11	Dec n=17	Total n=52	% of species composition within major market categories
Serranidae Sea basses	21,692 (47,823)	18,456 (40,689)	[21,115 (46,551)]	19,413 (42,798)	48,116 (106,078)	29,908 (65,935)	137,585 (303,323)	100.0
Centropristis striata Black sea bass	1,000 (2,205)	274 (604)	[1,031 (2,273)]	1,004 (2,213)	29,748 (65,583)	17,954 (39,582)	49,980 (110,187)	36.3
Mycteroperca phenax Scamp	6,976 (15,379)	6,610 (14,573)	-	8,682 (19,141)	5,380 (11,861)	3,460 (7,628)	31,108 (68,581)	22.6
Mycteroperca microlepis Gag	4,319 (9,522)	4,307 (9,495)	-	5,623 (12,397)	9,091 (20,042)	5,640 (12,434)	28,980 (63,890)	21.1
Epinephelus morio Red grouper	2,628 (5,794)	2,818 (6,213)	-	2,737 (6,034)	521 (1,149)	2,511 (5,536)	11,215 (24,725)	8.1
Epinephelus niveatus Snowy grouper	5,300 (11,685)	4,035 (8,896)	-	688 (1,517)	911 (2,008)	19 (42)	10,953 (24,147)	8.0
Epinephelus nigritus Warsaw grouper	-	-	-	-	1,747 (3,851)	-	1,747 (3,851)	1.3
Epinephelus guttatus Red hind	689 (1,519)	277 (611)	-	275 (606)	61 (134)	-	1,302 (2,870)	0.9
Epinephelus drummondhayi Speckled hind	353 (778)	-	-	228 (503)	185 (408)	219 (483)	985 (2,172)	0.7
Epinephelus adscensionis Rock hind	305 (672)	109 (240)	-	109 (240)	109 (240)	33 (73)	665 (1,466)	0.5
Paranthias furcifer Creole-fish	50 (110)	-	-	23 (51)	244 (538)	56 (123)	373 (822)	0.3
Mycteroperca venenosa Yellowfin grouper	-	27 (60)	-	34 (75)	100 (220)	-	161 (355)	0.1
Epinephelus inermis Marbled grouper	35 (77)	-	-	-	17 (37)	13 (29)	65 (143)	<0.1
Epinephelus flavolimbatus Yellowedge grouper	38 (84)	-	-	-	-	-	38 (84)	<0.1
Epinephelus fulvus Coney	-	-	-	11 (24)	-	-	11 (24)	<0.1
Centropristis ocyurus Bank sea bass	-	-	-	-	-	3 (7)	3 (7)	<0.1

Table 6. (continued)

Species	SOUTHERN DISTRICT MONTH Jul n=7	Aug n=7	Sep n=0	Oct n=10	Nov n=11	Dec n=17	Total n=52	% of species composition within major market categories
Lutjanidae Snappers	7,017 (15,470)	10,670 (23,523)	[10,221 (22,533)]	4,971 (10,959)	6,447 (14,213)	7,476 (16,482)	36,581 (80,647)	100.0
Rhomboplites aurorubens Vermilion snapper	6,446 (14,211)	8,524 (18,792)	-	4,892 (10,785)	5,917 (13,045)	7,211 (15,898)	32,990 (72,731)	90.2
Lutjanus campechanus Red snapper	236 (520)	1,604 (3,536)	-	28 (62)	136 (300)	153 (337)	2,157 (4,755)	5.9
Lutjanus vivanus Silk snapper	179 (395)	133 (293)	-	27 (60)	351 (774)	68 (150)	758 (1,671)	2.1
Lutjanus cyanopterus Cubera snapper	-	408 (899)	-	-	27 (60)	-	435 (959)	1.2
Lutjanus buccanella Blackfin snapper	115 (254)	-	-	24 (53)	16 (35)	-	155 (342)	0.4
Lutjanus analis Mutton snapper	-	-	-	-	-	43 (95)	43 (95)	0.1
Lutjanus synagris Lane snapper	41 (90)	-	-	-	-	-	41 (90)	0.1
Sparidae Porgies	13,648 (30,089)	13,021 (28,706)	[11,911 (26,259)]	12,051 (26,568)	10,424 (22,981)	6,864 (15,133)	56,008 (123,477)	100.0
Pagrus pagrus Red porgy	13,396 (29,533)	12,774 (28,162)	-	11,002 (24,255)	9,381 (20,682)	6,193 (13,653)	52,746 (116,285)	94.2
Calamus nodosus Knobbed porgy	252 (556)	246 (542)	-	1,049 (2,313)	911 (2,008)	650 (1,433)	3,108 (6,852)	5.5
Diplodus holbrooki Spottail pinfish	-	-	-	-	131 (289)	-	131 289)	0.2
Calamus leucosteus Whitebone porgy	-	-	-	-	-	19 (42)	19 (42)	<0.1
Malacanthidae Tilefishes	[625 (1,378)]	1,117 (2,463)	[1,722 (3,796)]	1,135 (2,502)	445 (981)	2 (4)	2,699 (5,950)	100.0
Caulolatilus microps Blueline tilefish	-	244 (538)	-	1,135 (2,502)	445 (981)	2 (4)	1,826 (4,026)	67.7
Lopholatilus chamaeleonticeps Tilefish	-	716 (1,579)	-	-	-	-	716 (1,579)	26.5
Malacanthus plumieri Sand tilefish	-	157 (346)	-	-	-	-	157 (346)	5.8
Balistidae Leatherjackets	681 (1,501)	[503 (1,109)]	[360 (794)]	951 (2,097)	1,176 (2,593)	618 (1,362)	3,426 (7,553)	100.0
Balistes capriscus Gray triggerfish	681 (1,501)	-	-	947 (2,088)	1,151 (2,537)	602 (1,327)	3,381 (7,454)	98.7
Balistes vetula Queen triggerfish	-	-	-	4 (9)	26 (57)	16 (35)	46 (101)	1.3
Haemulidae Grunts	2,290 (5,049)	3,074 (6,777)	[2,251 (4,963)]	3,041 (6,704)	2,476 (5,459)	1,269 (2,798)	12,150 (26,786)	100.0
Haemulon plumieri White grunt	2,290 (5,049)	3,074 (6,777)	-	3,041 (6,704)	2,476 (5,459)	1,269 (2,798)	12,150 (26,786)	100.0
Labridae (Wrasses)	128 (282)	99 (218)	[59 (130)]	77 (170)	61 (134)	58 (128)	423 (933)	100.0
Lachnolaimus maximus Hogfish	128 (282)	99 (218)	[59 (130)]	77 (170)	61 (134)	58 (128)	423 (933)	100.0
Scombridae Mackerels	[227 (500)]	-	-	-	-	-	-	-
Tetraodontidae Puffers	-	-	-	-	[136 (300)]	[137 (302)]	-	-
Priacanthidae Bigeyes	3 (7)	-	-	-	-	-	3 (7)	100.0
Priacanthus arenatus Bigeye	3 (7)	-	-	-	-	-	3 (7)	100.0

Table 6. (continued)

Species	SOUTHERN DISTRICT MONTH Jul n=7	Aug n=7	Sep n=0	Oct n=10	Nov n=11	Dec n=17	Total n=52	% of species composition within major market categories
Sciaenidae Drums	2 (4)	-	-	-	-	-	2 (4)	100.0
Equetus n. sp. Blackbar drum	2 (4)	-	-	-	-	-	2 (4)	100.0
Squaliformes Sharks, unclassified	[114 (251)]	[45 (99)]	[8 (18)]	-	[264 (582)]	[173 (381)]	-	-
Octopus vulgaris Octopus	-	-	-	-	[988 (2,179)]	[663 (1,462)]	-	-

Table 7. Species composition in kilograms (pounds in parentheses) for the North Carolina commercial reef fish landings by district, based on catches sampled from the fishery, January-December 1984 (n = number of boats sampled; [ ] indicate no catches were sampled).

NORTHERN DISTRICT

Species	Jan n=0	Feb n=0	Mar n=0	Apr n=0	May n=0	Jun n=0	Jul n=0	Aug n=1	Sep n=1	Oct n=1	Nov n=0	Dec n=0	Total n=3	% of species composition within major market categories
Serranidae Sea basses	[251 (553)]	-	-	[1,696 (3,739)]	[6,253 (13,786)]	[7,260 (16,006)]	[4,611 (10,166)]	9,688 (21,358)	8,658 (19,088)	8,699 (19,619)	-	-	27,245 (62,203)	100.0
Centropristis striata Black sea bass	[220 (485)]	-	-	[150 (331)]	[4,122 (9,087)]	[1,030 (2,271)]	[3,308 (7,293)]	4,145 (9,138)	8,305 (18,309)	8,618 (18,999)	-	-	21,068 (46,447)	77.3
Epinephelus niveatus Snowy grouper	-	-	-	-	-	-	-	5,442 (11,998)	-	37 (82)	-	-	5,479 (12,079)	20.1
Centropristis philadelphica Rock sea bass	-	-	-	-	-	-	-	-	353 (778)	-	-	-	353 (778)	1.3
Epinephelus drummondhayi Speckled hind	-	-	-	-	-	-	-	-	-	244 (538)	-	-	244 (538)	0.9
Epinephelus flavolimbatus Yellowedge grouper	-	-	-	-	-	-	-	101 (223)	-	-	-	-	101 (223)	0.4
Lutjanidae Snappers	-	-	-	-	[316 (697)]	[263 (798)]	[34 (75)]	[426 (939)]	1,085 (2,392)	[144 (317)]	-	-	1,085 (2,392)	100.0
Rhomboplites aurorubens Vermilion snapper	-	-	-	-	-	-	-	-	1,085 (2,392)	-	-	-	1,085 (2,392)	100.0
Sparidae Porgies	-	-	-	-	[89 (196)]	[135 (298)]	[208 (459)]	[253 (558)]	832 (1,834)	[92 (203)]	-	-	832 (1,834)	100.0
Pagrus pagrus Red porgy	-	-	-	-	-	-	-	-	832 (1,834)	-	-	-	832 (1,834)	100.0
Malacanthidae Tilefishes	[307 (677)]	-	-	-	[338 (745)]	[2,301 (5,073)]	[1,880 (4,145)]	6,821 (15,038)	[1,892 (4,171)]	[64 (141)]	-	-	6,821 (15,038)	100.0
Caulolatilus microps Blueline tilefish	-	-	-	-	-	-	-	6,821 (15,038)	-	-	-	-	6,821 (15,038)	100.0
Balistidae Leatherjackets	-	-	-	-	[159 (351)]	[53 (117)]	[8 (18)]	[21 (46)]	[146 (322)]	103 (227)	-	-	103 (227)	100.0
Balistes capriscus Gray triggerfish	-	-	-	-	-	-	-	-	-	103 (227)	-	-	103	100.0
Scombridae Mackerels	-	-	-	-	-	-	-	-	20 (44)	19 (42)	-	-	39 (86)	100.0
Thunnus atlanticus Blackfin tuna	-	-	-	-	-	-	-	-	20 (44)	-	-	-	20 (44)	51.3
Scomberomorus cavalla King mackerel	-	-	-	-	-	-	-	-	-	19 (42)	-	-	19 (42)	48.7
Carangidae Jacks	-	-	-	-	[17 (37)]	[99 (218)]	[85 (187)]	[142 (313)]	[30 (66)]	[129 (284)]	-	-	-	-
Squaliformes Sharks, unclassified	[64 (141)]	-	-	-	-	-	-	[94 (207)]	[8 (18)]	[62 (137)]	-	-	-	-

CENTRAL DISTRICT

Species	Jan n=0	Feb n=1	Mar n=6	Apr n=9	May n=2	Jun n=3	Jul n=4	Aug n=5	Sep n=4	Oct n=10	Nov n=6	Dec n=18	Total n=68	% of species composition within major market categories
Serranidae Sea basses	[20,954 (46,196)]	13,772 (30,362)	10,940 (24,119)	25,267 (55,704)	28,818 (63,533)	15,679 (34,566)	17,429 (38,424)	24,323 (53,623)	4,127 (9,098)	12,326 (27,174)	17,740 (39,110)	20,928 (46,138)	191,349 (421,852)	100.0
Epinephelus niveatus Snowy grouper	-	-	10,440 (23,016)	16,541 (36,467)	24,380 (53,749)	11,655 (25,695)	12,709 (28,019)	21,225 (46,793)	4,026 (8,876)	2,417 (5,329)	893 (1,969)	129 (284)	104,414 (230,193)	54.6
Centropristis striata Black sea bass	[13,745 (30,303)]	4,787 (10,554)	[4,166 (9,184)]	4,472 (9,859)	565 (1,246)	767 (1,691)	1,200 (2,646)	2,258 (4,978)	[3,786 (8,346)]	6,016 (13,263)	11,492 (25,336)	12,372 (27,276)	43,930 (96,849)	23.0
Mycteroperca microlepis Gag	-	8,985 (19,809)	63 (139)	2,742 (6,045)	2,416 (5,326)	2,194 (4,837)	1,753 (3,865)	598 (1,318)	78 (172)	2,437 (5,373)	5,259 (11,594)	8,059 (17,767)	34,585 (76,247)	18.1

Table 7. (continued)

Species	CENTRAL DISTRICT MONTH Jan n=0	Feb n=1	Mar n=6	Apr n=9	May n=2	Jun n=3	Jul n=4	Aug n=5	Sep n=4	Oct n=10	Nov n=6	Dec n=18	Total n=68	% of species composition within major market categories
Mycteroperca phenax Scamp	-	-	-	683 (1,506)	320 (705)	453 (999)	916 (2,019)	-	-	351 (774)	74 (163)	64 (141)	2,861 (6,307)	1.5
Epinephelus drummondhayi Speckled hind	-	-	28 (62)	184 (406)	1,030 (2,271)	147 (324)	368 (811)	102 (225)	9 (20)	341 (752)	21 (46)	108 (238)	2,338 (5,154)	1.2
Epinephelus flavolimbatus Yellowedge grouper	-	-	409 (902)	591 (1,303)	-	463 (1,021)	162 (357)	-	-	22 (49)	-	-	1,647 (3,631)	0.9
Epinephelus nigritus Warsaw grouper	-	-	-	14 (31)	-	-	148 (326)	-	-	531 (1,171)	-	78 (172)	772 (1,702)	0.4
Epinephelus morio Red grouper	-	-	-	9 (20)	-	-	160 (353)	-	13 (29)	178 (392)	-	115 (254)	475 (1,047)	0.2
Epinephelus mystacinus Misty grouper	-	-	-	-	-	-	-	139 (306)	-	11 (24)	-	-	150 (331)	<0.1
Epinephelus adscensionis Rock hind	-	-	-	-	107 (236)	-	12 (26)	-	-	24 (53)	-	-	143 (315)	<0.1
Polyprion americanus Wreckfish	-	-	-	31 (68)	-	-	-	-	-	-	-	-	31 (68)	<0.1
Paranthias furcifer Creole-fish	-	-	-	-	-	-	-	-	-	-	-	4 (9)	4 (9)	<0.1
Lutjanidae Snappers	[3,037 (6,695)]	4,444 (9,797)	7,008 (15,450)	8,567 (18,887)	7,561 (16,669)	8,409 (18,539)	6,749 (14,879)	9,279 (20,457)	13,182 (29,061)	22,224 (48,996)	7,082 (15,613)	17,237 (38,001)	111,741 (246,347)	100.0
Rhomboplites aurorubens Vermilion snapper	-	3,671 (8,093)	6,744 (14,868)	8,075 (17,802)	7,004 (15,441)	7,889 (17,392)	4,622 (10,190)	8,210 (18,100)	12,871 (28,376)	21,720 (47,884)	6,739 (14,857)	11,307 (24,928)	98,852 (217,931)	88.5
Lutjanus campechanus Red snapper	-	773 (1,704)	81 (179)	482 (1,063)	-	520 (1,146)	1,960 (4,321)	474 (1,045)	311 (686)	430 (948)	201 (443)	5,860 (12,919)	11,092 (24,454)	9.9
Lutjanus vivanus Silk snapper	-	-	184 (406)	10 (22)	558 (1,230)	-	167 (368)	594 (1,309)	-	73 (161)	142 (313)	67 (148)	1,795 (3,957)	1.6
Lutjanus buccanella Blackfin snapper	-	-	-	-	-	-	-	-	-	-	-	2 (4)	2 (4)	<0.1
Sparidae Porgies	[10,108 (22,284)]	8,557 (18,865)	12,029 (26,519)	6,306 (13,902)	8,611 (18,984)	14,903 (32,855)	15,125 (33,345)	19,626 (43,268)	4,667 (10,289)	10,257 (22,613)	5,471 (12,061)	14,836 (32,708)	120,388 (265,410)	100.0
Pagrus pagrus Red porgy	-	8,498 (18,735)	12,029 (26,519)	6,282 (13,849)	8,561 (18,874)	14,903 (32,855)	15,125 (33,345)	19,600 (43,211)	4,667 (10,289)	10,190 (22,465)	5,447 (12,009)	14,692 (32,390)	119,933 (264,539)	99.7
Calamus nodosus Knobbed porgy	-	-	-	-	28 (62)	-	-	26 (57)	-	35 (77)	5 (11)	54 (119)	149 (328)	0.1
Calamus leucosteus Whitebone porgy	-	60 (132)	-	24 (53)	-	-	-	-	-	-	-	21 (46)	105 (231)	0.1
Diplodus holbrooki Spottail pinfish	-	-	-	-	21 (46)	-	-	-	-	32 (71)	19 (42)	20 (44)	92 (203)	0.1
Stenotomus chrysops Scup	-	-	-	-	-	-	-	-	-	-	-	48 (106)	48 (106)	<0.1
Malacanthidae Tilefishes	[375 (827)]	[3,408 (7,513)]	3,735 (8,234)	1,465 (3,230)	3,967 (8,746)	4,021 (8,865)	1,786 (3,937)	3,257 (7,180)	1,524 (3,360)	1,155 (2,546)	45 (99)	686 (1,512)	21,641 (47,710)	100.0
Caulolatilus microps Blueline tilefish	-	-	3,717 (8,195)	1,461 (3,221)	3,967 (8,746)	3,879 (8,552)	1,331 (2,934)	3,013 (6,643)	1,356 (2,989)	1,155 (2,546)	45 (99)	625 (1,378)	20,550 (45,305)	95.0
Caulolatilus chrysops Goldface tilefish	-	-	-	-	-	141 (311)	455 (1,003)	244 (538)	90 (198)	-	-	-	930 (2,050)	4.3
Caulolatilus cyanops Blackline tilefish	-	-	18 (40)	4 (9)	-	-	-	-	78 (172)	-	-	61 (134)	161 (355)	0.7
Balistidae Leatherjackets	[679 (1,497)]	319 (703)	[864 (1,905)]	362 (798)	[641 (1,413)]	[801 (1,766)]	329 (725)	415 (915)	859 (1,894)	460 (1,014)	461 (1,016)	415 (915)	3,620 (7,981)	100.0
Balistes capriscus Gray triggerfish	-	319 (703)	-	362 (798)	-	-	329 (725)	415 (915)	859 (1,894)	460 (1,014)	461 (1,016)	415 (915)	3,620 (7,981)	100.0
Haemulidae Grunts	[695 (1,532)]	[561 (1,237)]	[1,143 (2,520)]	402 (886)	604 (1,332)	[409 (902)]	361 (796)	495 (1,091)	[127 (280)]	283 (624)	136 (300)	235 (518)	2,516 (5,547)	100.0

Table 7. (continued)

Species	CENTRAL DISTRICT MONTH Jan n=0	Feb n=1	Mar n=6	Apr n=9	May n=2	Jun n=3	Jul n=4	Aug n=5	Sep n=4	Oct n=10	Nov n=6	Dec n=18	Total n=68	% of species composition within major market categories
Haemulon plumieri White grunt	-	-	-	402 (886)	548 (1,208)	-	361 (796)	495 (1,091)	-	283 (624)	135 (298)	227 (500)	2,452 (5,406)	97.5
Haemulon aurolineatum Tomtate	-	-	-	-	56 (123)	-	-	-	-	-	1 (2)	1 (2)	58 (128)	2.3
Orthopristis chrysoptera Pigfish	-	-	-	-	-	-	-	-	-	-	-	7 (15)	7 (15)	0.3
Scombridae Mackerels	-	-	-	-	[1,950 (4,299)]	-	40 (88)	20 (44)	39 (86)	457 (1,008)	522 (1,151)	1,550 (3,417)	2,628 (5,794)	100.0
Scomberomorus cavalla King mackerel	-	-	-	-	-	-	10 (22)	20 (44)	17 (37)	394 (869)	522 (1,151)	1,519 (3,349)	2,482 (5,472)	94.4
Thunnus albacares Yellowfin tuna	-	-	-	-	-	-	30 (66)	-	-	63 (139)	-	-	93 (205)	3.5
Thunnus atlanticus Blackfin tuna	-	-	-	-	-	-	-	-	-	-	-	31 (68)	31 (68)	1.2
Acanthocybium solanderi Wahoo	-	-	-	-	-	-	-	-	22 (49)	-	-	-	22 (49)	0.8
Carangidae Jacks	-	-	-	-	-	-	-	-	-	-	19 (42)	-	19 (42)	100.0
Seriola dumerili Greater amberjack	-	-	-	-	-	-	-	-	-	-	19 (42)	-	19 (42)	100.0
Coryphaenidae Dolphins	-	-	-	-	-	10 (22)	57 (126)	125 (276)	4 (9)	60 (132)	-	-	256 (564)	100.0
Coryphaena hippurus Dolphin	-	-	-	-	-	10 (22)	57 (126)	125 (276)	4 (9)	60 (132)	-	-	256 (564)	100.0
Rachycentridae Cobia	-	-	-	-	-	-	13 (29)	-	-	12 (26)	-	31 (68)	56 (123)	100.0
Rachycentron canadum Cobia	-	-	-	-	-	-	13 (29)	-	-	12 (26)	-	31 (68)	56 (123)	100.0
Pomatomidae Bluefishes	-	-	-	-	-	-	-	-	-	-	-	27 (60)	27 (60)	100.0
Pomatomus saltatrix Bluefish	-	-	-	-	-	-	-	-	-	-	-	27 (60)	27 (60)	100.0
Congridae Conger eels	-	-	-	-	-	-	-	-	-	-	-	1 (2)	1 (2)	100.0
Conger oceanicus Conger eel	-	-	-	-	-	-	-	-	-	-	-	1 (2)	1 (2)	100.0
Squaliformes Sharks	[901 (1,986)]	[1,984 (4,374)]	[4,748 (10,468)]	[14,256 (31,429)]	[16,502 (36,381)]	[999 (2,202)]	299 (660)	1,575 (3,472)	[3,459 (7,626)]	1,812 (3,995)	[3,287 (7,247)]	3,485 (7,683)	7,171 (15,809)	100.0
Odontaspididae Sand tigers	-	-	-	-	-	-	-	-	-	-	-	100 (221)	100 (221)	100.0
Odontaspis taurus Sand tiger	-	-	-	-	-	-	-	-	-	-	-	100 (221)	100 (221)	100.0
Carcharhinidae Requiem sharks	-	-	-	-	-	-	299 (660)	11 (24)	-	44 (98)	-	22 (46)	376 (829)	100.0
Rhizoprionodon terraenovae Atlantic sharpnose shark	-	-	-	-	-	-	-	-	-	44 (98)	-	5 (10)	49 (108)	13.0
Galeocerdo cuvieri Tiger shark	-	-	-	-	-	-	-	-	-	-	-	17 (36)	17 (36)	4.5
Octopus vulgaris Octopus	-	-	-	-	-	-	-	-	-	-	-	15 (33)	15 (33)	100.0

Table 7. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=17	Feb n=5	Mar n=4	Apr n=9	May n=4	Jun n=9	Jul n=7	Aug n=6	Sep n=9	Oct n=10	Nov n=5	Dec n=8	Total n=93	% of species composition within major market categories
Serranidae Sea basses	43,454 (95,800)	26,847 (59,188)	19,916 (43,907)	27,717 (61,106)	37,921 (83,601)	27,986 (61,699)	23,300 (51,367)	16,208 (35,732)	8,834 (19,475)	22,337 (49,244)	27,771 (61,225)	38,747 (85,423)	321,038 (707,768)	100.0
Mycteroperca microlepis Gag	5,389 (11,881)	9,348 (20,609)	4,003 (8,825)	18,203 (40,130)	8,214 (18,109)	11,026 (24,308)	8,522 (18,787)	5,653 (12,463)	3,492 (7,699)	6,598 (14,545)	11,503 (25,361)	15,972 (35,212)	107,923 (237,929)	33.6
Centropristis striata Black sea bass	32,784 (72,276)	9,874 (21,768)	2,719 (5,944)	2,129 (4,694)	1,747 (3,850)	1,591 (3,508)	899 (1,983)	2,103 (4,637)	678 (1,494)	2,107 (4,645)	10,128 (22,328)	15,780 (34,789)	82,539 (181,967)	25.7
Epinephelus niveatus Snowy grouper	2,072 (4,568)	131 (289)	8,629 (19,024)	3,755 (8,059)	20,290 (44,733)	8,271 (18,234)	4,507 (9,935)	4,148 (9,144)	68 (150)	1,957 (4,315)	41 (90)	69 (153)	53,838 (118,692)	16.8
Mycteroperca phenax Scamp	1,810 (3,990)	5,842 (12,879)	2,371 (5,227)	1,634 (3,602)	6,344 (13,986)	5,083 (11,207)	6,414 (14,141)	3,605 (7,947)	3,329 (7,339)	5,546 (12,226)	5,134 (11,318)	5,917 (13,046)	53,029 (116,909)	16.5
Epinephelus morio Red grouper	478 (1,054)	1,141 (2,515)	468 (1,032)	450 (991)	361 (797)	239 (526)	1,236 (2,726)	392 (864)	459 (1,012)	862 (1,901)	-	491 (1,082)	6,577 (14,500)	2.0
Epinephelus drummondhayi Speckled hind	733 (1,616)	360 (794)	212 (282)	971 (2,142)	562 (1,240)	623 (1,373)	306 (674)	81 (179)	147 (324)	254 (560)	492 (1,305)	268 (592)	5,109 (11,263)	1.6
Epinephelus guttatus Red hind	22 (49)	71 (157)	687 (1,515)	161 (355)	181 (400)	52 (114)	537 (1,184)	33 (73)	178 (392)	2,515 (5,545)	81 (179)	118 (259)	4,636 (10,221)	1.4
Mycteroperca venenosa Yellowfin grouper	-	-	128 (282)	-	-	7 (15)	74 (163)	-	49 (108)	1,827 (4,028)	-	-	2,085 (4,597)	0.6
Mycteroperca interstitialis Yellowmouth grouper	-	-	202 (445)	157 (347)	-	72 (158)	381 (839)	111 (245)	198 (437)	393 (866)	186 (409)	71 (156)	1,771 (3,904)	0.6
Epinephelus adscensionis Rock hind	59 (130)	66 (146)	304 (670)	73 (160)	69 (151)	130 (286)	394 (870)	79 (174)	144 (317)	239 (526)	54 (119)	49 (108)	1,660 (3,660)	0.5
Epinephelus flavolimbatus Yellowedge grouper	9 (19)	-	76 (168)	-	44 (97)	829 (1,827)	-	-	-	-	-	-	1,057 (2,330)	0.3
Epinephelus nigritus Warsaw grouper	81 (178)	-	-	143 (315)	-	46 (101)	-	-	48 (106)	-	-	-	318 (701)	0.1
Paranthias furcifer Creole-fish	18 (39)	-	-	24 (53)	102 (225)	7 (15)	7 (15)	-	38 (84)	33 (73)	39 (86)	-	268 (591)	0.1
Epinephelus inermis Marbled grouper	-	14 (31)	86 (191)	-	6 (13)	9 (19)	11 (24)	-	4 (8)	-	-	12 (26)	142 (313)	<0.1
Mycteroperca bonaci Black grouper	-	-	-	109 (240)	-	-	-	-	-	-	-	-	109 (240)	<0.1
Epinephelus fulvus Coney	-	-	29 (64)	3 (6)	-	4 (10)	11 (24)	-	2 (4)	6 (13)	13 (29)	-	68 (150)	<0.1
Centropristis ocyurus Black sea bass	-	-	-	6 (13)	-	2 (3)	-	2 (5)	-	-	-	-	10 (22)	<0.1
Lutjanidae Snappers	2,536 (5,590)	4,604 (10,150)	2,603 (5,739)	2,731 (6,021)	8,568 (18,889)	6,464 (14,251)	4,078 (8,990)	2,790 (6,151)	12,042 (26,548)	12,513 (27,586)	10,839 (23,896)	9,777 (21,554)	79,544 (175,365)	100.0
Rhomboplites aurorubens Vermilion snapper	1,718 (3,778)	3,785 (8,344)	968 (2,134)	1,838 (4,052)	8,428 (18,579)	6,016 (13,263)	3,409 (7,516)	2,137 (4,711)	11,698 (25,790)	11,692 (25,776)	9,225 (20,338)	8,636 (19,040)	69,551 (153,334)	87.4
Lutjanus campechanus Red snapper	767 (1,691)	743 (1,638)	1,600 (3,527)	184 (406)	125 (275)	436 (961)	226 (497)	609 (1,343)	283 (623)	299 (659)	331 (730)	462 (1,019)	6,064 (13,369)	7.6
Lutjanus vivanus Silk snapper	50 (110)	33 (73)	34 (75)	693 (1,528)	-	-	424 (935)	-	47 (104)	208 (458)	516 (1,138)	625 (1,378)	2,631 (5,800)	3.3
Lutjanus cyanopterus Cubera snapper	-	-	-	-	-	-	-	-	-	44 (97)	654 (1,443)	-	698 (1,539)	0.9
Lutjanus analis Mutton snapper	-	43 (95)	-	-	-	-	-	-	-	205 (452)	75 (165)	-	323 (712)	0.4
Lutjanus buccanella Blackfin snapper	-	-	-	16 (35)	-	12 (26)	20 (43)	7 (15)	3 (6)	2 (5)	37 (82)	53 (118)	150 (331)	0.2
Lutjanus griseus Gray snapper	-	-	-	-	16 (35)	-	-	37 (82)	11 (24)	30 (67)	-	-	94 (207)	0.1
Ocyurus chrysurus Yellowtail snapper	-	-	-	-	-	-	-	-	-	33 (73)	-	-	33 (73)	<0.1

Table 7. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=17	Feb n=5	Mar n=4	Apr n=9	May n=4	Jun n=9	Jul n=7	Aug n=6	Sep n=9	Oct n=10	Nov n=5	Dec n=8	Total n=93	% of species composition within major market categories
Sparidae Porgies	5,364 (11,826)	11,153 (24,588)	7,822 (17,245)	4,710 (10,384)	11,399 (25,130)	9,346 (20,604)	8,685 (19,147)	9,815 (21,638)	6,955 (15,333)	6,938 (15,296)	7,181 (15,831)	7,536 (16,613)	96,404 (212,534)	100.0
Pagrus pagrus Red porgy	5,108 (11,261)	10,824 (23,863)	7,325 (16,149)	4,513 (9,949)	11,323 (24,962)	9,208 (20,299)	8,347 (18,402)	9,428 (20,785)	6,283 (13,852)	6,338 (13,973)	5,336 (11,763)	6,749 (14,879)	90,781 (200,138)	94.2
Calamus nodosus Knobbed porgy	256 (564)	310 (683)	498 (1,098)	188 (414)	74 (163)	133 (292)	338 (745)	380 (838)	668 (1,473)	588 (1,297)	1,809 (3,989)	776 (1,710)	5,522 (12,174)	5.7
Calamus calamus Saucereye porgy	-	-	-	-	-	-	-	-	-	6 (14)	36 (79)	11 (24)	53 (117)	0.1
Calamus leucosteus Whitebone porgy	-	16 (35)	-	9 (20)	2 (4)	6 (13)	-	6 (13)	-	4 (9)	-	-	41 (90)	<0.1
Calamus proridens Littlehead porgy	-	-	-	-	-	-	-	-	4 (8)	-	-	-	4 (8)	<0.1
Diplodus holbrooki Spottail pinfish	-	1 (2)	-	-	-	-	-	-	-	2 (3)	-	-	2 (4)	<0.1
Malacanthidae Tilefishes	118 (259)	798 (1,759)	1,536 (3,386)	837 (1,845)	12,852 (28,334)	1,212 (2,671)	2,742 (6,044)	962 (2,120)	199 (438)	1,647 (3,631)	[1,301 (2,868)]	[879 (1,939)]	22,902 (50,490)	100.0
Lopholatilus chamaeleonticeps Tilefish	-	-	1,469 (3,239)	837 (1,845)	10,729 (23,653)	748 (1,649)	2,630 (5,798)	933 (2,057)	-	1,647 (3,631)	-	-	18,992 (41,870)	82.9
Caulolatilus microps Blueline tilefish	118 (259)	798 (1,759)	67 (148)	-	2,124 (4,682)	458 (1,009)	108 (238)	28 (63)	199 (438)	-	-	-	3,899 (8,596)	17.0
Caulolatilus chrysops Goldface tilefish	-	-	-	-	-	7 (14)	4 (8)	-	-	-	-	-	11 (24)	<0.1
Balistidae Leatherjackets	1,100 (2,425)	716 (1,579)	442 (974)	271 (598)	771 (1,700)	445 (980)	462 (1,018)	201 (443)	445 (981)	1,098 (2,421)	1,438 (3,171)	625 (1,377)	8,014 (17,668)	100.0
Balistes capriscus Gray triggerfish	1,100 (2,425)	716 (1,579)	442 (974)	271 (598)	771 (1,700)	441 (971)	462 (1,018)	201 (443)	445 (981)	1,055 (2,326)	1,438 (3,171)	625 (1,377)	7,967 (17,564)	99.4
Balistes vetula Queen triggerfish	-	-	-	-	-	4 (9)	-	-	-	43 (95)	-	-	47 (104)	0.6
Haemulidae Grunts	1,366 (3,012)	1,254 (2,765)	1,909 (4,209)	999 (2,202)	1,493 (3,292)	2,359 (5,201)	1,686 (3,717)	2,078 (4,581)	641 (1,413)	2,822 (6,221)	2,839 (6,259)	3,560 (7,848)	23,004 (50,715)	100.0
Haemulon plumieri White grunt	1,366 (3,012)	1,254 (2,765)	1,909 (4,209)	999 (2,202)	1,493 (3,292)	2,359 (5,201)	1,686 (3,717)	2,078 (4,581)	641 (1,413)	2,822 (6,221)	2,839 (6,259)	3,560 (7,848)	23,004 (50,715)	100.0
Labridae Wrasses	20 (44)	[72 (159)]	119 (262)	106 (234)	62 (137)	190 (419)	153 (337)	[50 (110)]	44 (97)	137 (301)	35 (78)	44 (97)	693 (1,528)	100.0
Lachnolaimus maximus Hogfish	20 (44)	[72 (159)]	119 (262)	106 (234)	62 (137)	190 (419)	153 (337)	[50 (110)]	44 (97)	137 (301)	35 (78)	44 (97)	693 (1,528)	100.0
Scombridae Mackerels	-	-	-	[107 (236)]	[166 (366)]	216 (476)	86 (190)	1,492 (3,289)	356 (785)	601 (1,325)	2,140 (4,718)	1,407 (3,102)	6,298 (13,885)	100.0
Scomberomorus cavalla King mackerel	-	-	-	[6 (14)]	-	129 (284)	83 (183)	1,465 (3,230)	287 (633)	575 (1,268)	2,069 (4,561)	576 (1,270)	5,212 (11,490)	82.8
Thunnus albacares Yellowfin tuna	-	-	-	-	-	87 (192)	-	-	38 (84)	25 (55)	57 (126)	694 (1,530)	901 (1,986)	14.3
Thunnus atlanticus Blackfin tuna	-	-	-	-	-	-	-	-	-	-	13 (29)	101 (223)	114 (251)	1.8
Acanthocybium solanderi Wahoo	-	-	-	[13 (29)]	-	-	3 (7)	[27 (60)]	32 (71)	-	-	36 (79)	70 (154)	1.1
Thunnus spp. Tunas, unclassified	-	-	-	[107 (235)]	[166 (366)]	-	-	-	-	-	-	-	-	-
Carangidae Jacks	-	-	15 (33)	115 (254)	-	-	-	-	10 (22)	18 (39)	-	-	43 (95)	100.0
Seriola dumerili Greater amberjack	-	-	-	-	-	-	-	-	10 (22)	12 (26)	-	-	22 (48)	51.2
Seriola spp. Amberjacks	-	-	15 (33)	-	-	-	-	-	-	-	-	-	15 (33)	34.9

Table 7. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=17	Feb n=5	Mar n=4	Apr n=9	May n=4	Jun n=9	Jul n=7	Aug n=6	Sep n=9	Oct n=10	Nov n=5	Dec n=8	Total n=93	% of species composition within major market categories
Seriola rivoliana Almaco jack	-	-	-	-	-	-	-	-	-	6 (13)	-	-	6 (13)	13.9
Coryphaenidae Dolphins	-	-	-	-	-	283 (624)	49 (108)	113 (249)	35 (77)	6 (12)	40 (89)	55 (120)	581 (1,281)	100.0
Coryphaena hippurus Dolphins	-	-	-	-	-	283 (624)	49 (108)	113 (249)	35 (77)	6 (12)	40 (89)	55 (120)	581 (1,281)	100.0
Rachycentridae Cobias	-	-	-	[14 (31)]	-	-	22 (49)	-	-	8 (18)	14 (31)	33 (72)	77 (170)	100.0
Rachycentron canadum Cobia	-	-	-	[14 (31)]	-	-	22 (49)	-	-	8 (18)	14 (31)	33 (72)	77 (170)	100.0
Pomatomidae Bluefishes	-	-	-	-	-	-	-	-	-	-	[89 (195)]	133 (293)	133 (293)	100.0
Pomatomus saltatrix Bluefish	-	-	-	-	-	-	-	-	-	-	[89 (195)]	133 (293)	133 (293)	100.0
Tetraodontidae Puffers	220 (485)	[11 (24)]	-	-	-	-	-	-	-	-	-	-	220 (485)	100.0
Sphoerodies maculatus Northern puffer	220 (485)	-	-	-	-	-	-	-	-	-	-	-	220 (485)	100.0
Congridae Conger eels	7 (15)	-	-	-	-	-	-	-	-	-	-	-	7 (15)	100.0
Conger oceanicus Conger eel	7 (15)	-	-	-	-	-	-	-	-	-	-	-	7 (15)	100.0
Sciaenidae Drums	-	-	-	-	-	-	-	-	2 (4)	1 (3)	-	-	3 (7)	100.0
Equetus n. sp. Blackbar drum	-	-	-	-	-	-	-	-	2 (4)	1 (3)	-	-	3 (7)	100.0
Squaliformes Sharks, unclassified	[568 (1,253)]	[1,706 (3,758)]	[1,169 (2,576)]	[911 (2,006)]	[629 (1,385)]	375 (826)	332 (733)	315 (695)	-	[874 (1,925)]	[268 (590)]	110 (242)	1,022 (2,253)	100.0
Carcharhinidae Requiem sharks	-	-	-	-	-	320 (705)	332 (733)	315 (695)	-	-	-	-	967 (2,132)	94.6
Galeocerdo cuvieri Tiger shark	-	-	-	-	-	55 (120)	-	-	-	-	-	110 (242)	165 (362)	5.4
Octopus vulgaris Octopus	1,959 (4,319)	[361 (796)]	[32 (71)]	[19 (42)]	-	-	-	-	-	-	-	-	1,959 (4,319)	100.0

Table 8. Species composition in kilograms (pounds in parentheses) for the North Carolina commercial reef fish landings by district, based on catches sampled from the fishery, January-December 1985. (n = number of boats sampled; [ ] indicate no catches were sampled).

NORTHERN DISTRICT

Species	Jan n=0	Feb n=0	Mar n=0	Apr n=0	May n=0	Jun n=2	Jul n=0	Aug n=2	Sep n=1	Oct n=1	Nov n=1	Dec n=0	Total n=7	% of species composition within major market categories
Serranidae Sea basses	-	[2,920 (6,437)]	[3,217 (7,092)]	[8,843 (19,495)]	[4,968 (10,953)]	8,457 (18,644)	[5,496 (12,117)]	8,064 (17,778)	6,337 (13,971)	2,362 (5,207)	2,313 (5,099)	-	27,533 (60,700)	100.0
Centropristis striata Black sea bass	-	[2,910 (6,437)]	-	[1,419 (3,128)]	[967 (2,132)]	2,194 (4,837)	[3,645 (8,036)]	5,378 (11,856)	5,956 (13,131)	2,351 (5,183)	1,752 (3,862)	-	17,631 (38,870)	64.0
Epinephelus niveatus Snowy grouper	-	-	-	-	-	6,140 (13,536)	-	2,392 (5,273)	-	-	495 (1,091)	-	9,027 (19,901)	32.8
Epinephelus drummondhayi Speckled hind	-	-	-	-	-	123 (271)	-	239 (527)	381 (840)	12 (26)	65 (143)	-	820 (1,808)	3.0
Epinephelus flavolimbatus Yellowedge grouper	-	-	-	-	-	-	-	67 (148)	-	-	-	-	67 (148)	0.2
Lutjanidae Snappers	-	[7 (15)]	-	[154 (339)]	[346 (763)]	[506 (1,115)]	[353 (778)]	868 (1,914)	214 (472)	412 (908)	478 (1,054)	-	1,972 (4,348)	100.0
Rhomboplites aurorubens Vermilion snapper	-	-	-	-	-	-	-	161 (355)	214 (472)	412 (908)	222 (489)	-	1,009 (2,224)	51.2
Lutjanus campechanus Red snapper	-	-	-	-	-	-	-	701 (1,545)	-	-	256 (564)	-	957 (2,110)	48.5
Lutjanus vivanus Silk snapper	-	-	-	-	-	-	-	6 (13)	-	-	-	-	6 (13)	0.3
Sparidae Porgies	-	-	[5 (11)]	[69 (152)]	[207 (456)]	59 (130)	[1,106 (2,438)]	1,062 (2,341)	452 (996)	94 (207)	181 (399)	-	1,848 (4,074)	100.0
Pagrus pagrus Red porgy	-	-	-	-	-	59 (130)	-	1,062 (2,341)	452 (996)	94 (207)	181 (399)	-	1,848 (4,074)	100.0
Malacanthidae Tilefishes	-	-	[1,401 (3,089)]	[2,667 (5,880)]	[1,306 (2,879)]	1,630 (3,593)	[1,936 (4,268)]	[711 (1,567)]	598 (1,318)	-	1,482 (3,267)	-	3,710 (8,179)	100.0
Caulolatilus microps Blueline tilefish	-	-	-	-	-	1,630 (3,593)	-	-	598 (1,318)	-	1,482 (3,267)	-	3,710 (8,179)	100.0
Balistidae Leatherjackets	-	-	-	[18 (40)]	[169 (373)]	5 (11)	[67 (148)]	[175 (386)]	[21 (46)]	217 (478)	248 (547)	-	470 (1,036)	100.0
Balistes capriscus Gray triggerfish	-	-	-	-	-	5 (11)	-	-	-	217 (478)	248 (547)	-	470 (1,036)	100.0
Scombridae Mackerels	-	-	[15 (33)]	-	-	-	-	-	-	-	-	-	-	100.0
Thunnus sp. Tuna	-	-	[15 (33)]	-	-	-	-	-	-	-	-	-	-	100.0
Carangidae Jacks	-	-	-	-	[37 (82)]	[45 (99)]	-	[4 (9)]	[97 (214)]	-	-	-	-	100.0
Squaliformes Sharks, unclassified	-	-	-	-	[80 (176)]	-	-	-	-	-	-	-	-	100.0

CENTRAL DISTRICT

Species	Jan n=3	Feb n=7	Mar n=4	Apr n=14	May n=8	Jun n=3	Jul n=6	Aug n=8	Sep n=0	Oct n=11	Nov n=12	Dec n=12	Total n=88	% of species composition within major market categories
Serranidae Sea basses	8,901 (19,623)	19,864 (43,793)	12,417 (27,375)	18,184 (40,089)	16,295 (35,924)	10,490 (23,126)	10,876 (23,977)	10,828 (23,872)	[3,514 (7,747)]	4,190 (9,237)	5,682 (12,527)	11,184 (24,656)	128,911 (284,200)	100.0
Epinephelus niveatus Snowy grouper	687 (1,515)	3,517 (7,754)	8,058 (17,765)	11,176 (24,639)	10,808 (23,828)	7,941 (17,507)	9,715 (21,418)	10,020 (22,090)	-	1,692 (3,730)	1,508 (3,325)	318 (701)	65,441 (144,273)	50.0
Centropristis striata Black sea bass	8,027 (17,697)	10,518 (23,188)	3,311 (7,300)	5,967 (13,155)	4,445 (9,800)	1,568 (3,457)	695 (1,532)	[691 (1,523)]	[725 (1,598)]	271 (597)	766 (1,689)	4,317 (9,517)	39,885 (87,931)	30.9

Table 8. (continued)

Species	CENTRAL DISTRICT MONTH Jan n=3	Feb n=7	Mar n=4	Apr n=14	May n=8	Jun n=3	Jul n=6	Aug n=8	Sep n=0	Oct n=11	Nov n=12	Dec n=12	Total n=88	% of species composition within major market categories
Mycteroperca microlepis Gag	111 (245)	2,459 (5,421)	624 (1,376)	431 (950)	416 (917)	404 (891)	205 (452)	404 (891)	-	1,119 (2,467)	2,127 (4,689)	4,349 (9,588)	12,650 (27,888)	9.8
Mycteroperca phenax Scamp	20 (44)	1,880 (4,145)	55 (121)	148 (326)	241 (531)	409 (902)	106 (234)	230 (507)	-	615 (1,356)	960 (2,116)	1,080 (2,381)	5,743 (12,661)	4.5
Epinephelus drummondhayi Speckled hind	13 (29)	608 (1,340)	90 (198)	214 (472)	165 (364)	98 (216)	26 (57)	59 (130)	-	154 (340)	173 (381)	229 (505)	1,828 (4,030)	1.4
Epinephelus nigritus Warsaw grouper	-	874 (1,927)	90 (198)	17 (37)	-	-	15 (33)	42 (93)	-	-	102 (225)	42 (93)	1,182 (2,606)	0.9
Epinephelus morio Red grouper	43 (95)	-	-	22 (49)	21 (46)	39 (86)	2 (4)	24 (53)	-	69 (152)	-	784 (1,728)	1,005 (2,216)	0.8
Epinephelus flavolimbatus Yellowedge grouper	-	-	186 (410)	185 (408)	59 (130)	17 (37)	18 (40)	17 (37)	-	3 (7)	25 (55)	14 (31)	524 (1,155)	0.4
Epinephelus guttatus Red hind	-	-	-	-	23 (51)	-	-	-	-	121 (267)	10 (22)	29 (64)	184 (406)	0.1
Mycteroperca bonaci Black grouper	-	-	-	16 (35)	63 (139)	-	86 (190)	-	-	-	-	-	165 (364)	0.1
Mycteroperca interstialis Yellowmouth grouper	-	-	-	7 (15)	33 (73)	9 (20)	7 (15)	5 (11)	-	86 (190)	-	-	147 (324)	0.1
Epinephelus adscensionis Rock hind	-	8 (18)	-	-	10 (22)	5 (11)	-	1 (2)	-	26 (57)	3 (7)	16 (35)	68 (150)	<0.1
Paranthias furcifer Creole-fish	-	-	4 (9)	-	5 (11)	-	-	16 (35)	-	14 (31)	6 (13)	6 (13)	52 (115)	<0.1
Epinephelus inermis Marbled grouper	-	-	-	-	6 (13)	-	-	-	-	10 (22)	-	-	16 (35)	<0.1
Epinephelus mystacinus Misty grouper	-	-	-	-	-	-	-	6 (13)	-	-	-	-	6 (13)	<0.1
Epinephelus fulvus Coney	-	-	-	-	-	-	-	4 (9)	-	1 (2)	-	-	5 (11)	<0.1
Lutjanidae Snappers	4,103 (9,046)	6,706 (14,784)	3,369 (7,427)	12,553 (27,675)	14,747 (32,512)	10,342 (22,800)	7,585 (16,722)	8,303 (18,305)	[15,826 (34,890)]	9,980 (22,002)	2,423 (5,342)	2,643 (5,827)	82,754 (182,441)	100.0
Rhomboplites aurorubens Vermilion snapper	3,851 (8,490)	4,148 (9,145)	3,143 (6,929)	10,574 (23,312)	11,359 (25,042)	9,692 (21,367)	7,127 (15,712)	7,953 (17,533)	-	9,010 (19,864)	2,233 (4,923)	2,078 (4,581)	71,167 (156,896)	86.0
Lutjanus campechanus Red snapper	238 (525)	1,876 (4,136)	192 (423)	600 (1,323)	1,941 (4,279)	454 (1,001)	319 (703)	54 (119)	-	511 (1,127)	123 (271)	439 (968)	6,749 (14,879)	8.2
Lutjanus vivanus Silk snapper	13 (29)	670 (1,477)	33 (73)	1,377 (3,036)	1,447 (3,190)	196 (432)	139 (306)	294 (648)	-	433 (955)	67 (148)	127 (280)	4,795 (10,571)	5.8
Lutjanus analis Mutton snapper	-	-	-	-	-	-	-	-	-	25 (55)	-	-	25 (55)	<0.1
Lutjanus buccanella Blackfin snapper	-	11 (24)	-	2 (4)	-	-	-	2 (4)	-	1 (2)	-	-	17 (37)	<0.1
Sparidae Porgies	1,775 (3,913)	8,842 (19,493)	8,182 (18,038)	14,366 (31,672)	9,432 (20,794)	8,124 (17,910)	7,377 (16,264)	8,191 (18,058)	[8,045 (17,736)]	3,858 (8,505)	4,397 (9,694)	5,956 (13,131)	80,477 (177,355)	100.0
Pagrus pagrus Red porgy	1,697 (3,741)	8,632 (19,030)	8,164 (17,999)	14,285 (31,493)	8,946 (19,723)	8,087 (17,829)	6,850 (15,102)	8,006 (17,650)	-	3,465 (7,639)	4,369 (9,632)	5,842 (12,879)	78,343 (172,717)	97.4
Calamus nodosus Knobbed porgy	-	60 (132)	18 (40)	66 (146)	458 (1,010)	37 (82)	487 (1,074)	163 (359)	-	281 (619)	21 (46)	40 (88)	1,632 (3,598)	2.0
Diplodus holbrooki Spottail pinfish	78 (172)	127 (280)	-	7 (15)	-	-	25 (55)	-	-	8 (18)	-	47 (104)	293 (646)	0.4
Calamus leucosteus Whitebone porgy	-	19 (42)	-	8 (18)	14 (31)	-	14 (31)	-	-	-	7 (15)	27 (60)	88 (194)	0.1
Calamus calamus Saucereye porgy	-	-	-	-	-	-	-	22 (49)	-	-	-	-	22 (49)	<0.1
Stenotomus chrysops Scup	-	-	-	-	14 (31)	-	-	-	-	-	-	-	14 (31)	<0.1

Table 8. (continued)

Species	CENTRAL DISTRICT MONTH Jan n=3	Feb n=7	Mar n=4	Apr n=14	May n=8	Jun n=3	Jul n=6	Aug n=8	Sep n=0	Oct n=11	Nov n=12	Dec n=12	Total n=88	% of species composition within major market categories
Stenotomus caprinus Longspine porgy	-	3 (7)	-	-	-	-	-	-	-	-	-	-	3 (7)	<0.1
Malacanthidae Tilefishes	35 (77)	404 (891)	316 (697)	444 (979)	1,608 (3,545)	1,147 (2,529)	111 (245)	179 (395)	34 (75)	75 (165)	165 (364)	114 (251)	4,598 (10,137)	100.0
Caulolatilus microps Blueline tilefish	35 (77)	404 (891)	316 (697)	442 (975)	1,608 (3,545)	1,147 (2,529)	111 (245)	170 (374)	-	67 (148)	137 (302)	94 (207)	4,531 (9,989)	98.5
Caulolatilus chrysops Goldface tilefish	-	-	-	-	-	-	-	10 (22)	-	-	28 (62)	12 (26)	49 (108)	1.1
Lopholatilus chamaeleonticeps Tilefish	-	-	-	2 (4)	-	-	-	-	-	8 (18)	-	-	10 (22)	0.2
Caulolatilus cyanops Blackline tilefish	-	-	-	-	-	-	-	-	-	-	-	8 (18)	8 (18)	0.2
Balistidae Leatherjackets	[236 (520)]	359 (791)	[325 (717)]	436 (961)	479 (1,056)	579 (1,276)	306 (675)	339 (747)	[622 (1,371)]	86 (190)	504 (1,111)	195 (430)	2,833 (6,246)	100.0
Balistes capriscus Gray triggerfish	-	359 (791)	-	436 (961)	479 (1,056)	579 (1,276)	306 (675)	339 (747)	-	86 (190)	504 (1,111)	193 (426)	2,831 (6,242)	99.9
Balistes vetula Queen triggerfish	-	-	-	-	-	-	-	-	-	-	-	2 (4)	2 (4)	0.1
Haemulidae Grunts	2 (4)	89 (196)	1 (2)	24 (53)	405 (893)	-	113 (249)	100 (220)	[378 (833)]	152 (335)	109 (240)	143 (315)	1,138 (2,509)	100.0
Haemulon plumieri White grunt	2 (4)	89 (196)	1 (2)	24 (53)	377 (831)	-	113 (249)	-	-	150 (331)	109 (240)	142 (313)	1,007 (2,220)	88.5
Haemulon aurolineatum Tomtate	-	-	-	-	28 (62)	-	-	100 (220)	-	2 (4)	-	1 (2)	131 (289)	11.5
Scombridae Mackerels	26 (57)	-	[672 (1,482)]	2,275 (5,016)	3,392 (7,478)	[1,686 (3,717)]	1,292 (2,848)	1,169 (2,577)	[1,769 (3,900)]	678 (1,495)	1,560 (3,439)	899 (1,982)	11,291 (24,892)	100.0
Scomberomorus cavalla King mackerel	26 (57)	-	-	2,176 (4,797)	1,124 (2,478)	-	1,161 (2,560)	323 (712)	[1,666 (3,673)]	678 (1,495)	1,479 (3,261)	869 (1,916)	7,836 (17,275)	69.4
Thunnus albacares Yellowfin tuna	-	-	-	-	2,268 (5,000)	-	-	-	-	-	50 (110)	30 (66)	2,348 (5,176)	20.8
Acanthocybium solanderi Wahoo	-	-	-	-	-	-	-	846 (1,865)	[39 (86)]	-	-	-	846 (1,865)	7.5
Thunnus sp. Tuna	-	-	-	-	-	-	131 (289)	-	[64 (141)]	-	-	-	131 (289)	1.2
Thunnus atlanticus Blackfin tuna	-	-	-	98 (216)	-	-	-	-	-	-	-	-	98 (216)	0.9
Sarda sarda Atlantic bonito	-	-	-	-	-	-	-	-	-	-	31 (68)	-	31 (68)	0.3
Scomberomorus maculatus Spanish mackerel	-	-	-	-	-	[463 (1,021)]	-	-	-	-	-	-	-	-
Carangidae Jacks	38 (84)	210 (463)	-	404 (891)	80 (176)	-	48 (106)	163 (359)	[230 (507)]	81 (179)	68 (150)	75 (165)	1,167 (2,573)	100.0
Seriola rivoliana Almaco jack	-	2 (4)	-	146 (322)	44 (97)	-	32 (71)	72 (159)	-	10 (22)	38 (84)	69 (152)	413 (910)	35.4
Seriola dumerili Greater amberjack	-	44 (97)	-	255 (562)	7 (15)	-	5 (11)	-	-	70 (154)	-	-	381 (840)	32.6
Seriola sp. Amberjacks	38 (84)	104 (229)	-	-	18 (40)	-	-	-	-	-	29 (64)	-	189 (417)	16.2
Seriola zonata Banded rudderfish	-	50 (130)	-	-	11 (24)	-	10 (22)	93 (205)	-	1 (2)	1 (2)	6 (13)	181 (399)	15.5
Seriola fasciata Lesser amberjack	-	1 (2)	-	3 (7)	-	-	1 (2)	-	-	-	-	-	5 (11)	0.4

Table 8. (continued)

Species	CENTRAL DISTRICT MONTH Jan n=3	Feb n=7	Mar n=4	Apr n=14	May n=8	Jun n=3	Jul n=6	Aug n=8	Sep n=0	Oct n=11	Nov n=12	Dec n=12	Total n=88	% of species composition within major market categories
Elagatis bipinnulata Rainbow runner	-	-	-	-	-	-	-	-	-	6 (13)	-	-	6 (13)	0.5
Caranx chrysos Blue runner	-	-	-	-	-	-	-	-	-	-	-	2 (4)	2 (4)	0.2
Coryphaenidae Dolphins	-	-	4 (9)	-	52 (115)	51 (112)	135 (298)	65 (143)	[41 (90)]	36 (79)	-	12 (26)	355 (783)	100.0
Coryphaena hippurus Dolphin	-	-	4 (9)	-	52 (115)	51 (112)	135 (298)	65 (143)	-	36 (79)	-	12 (26)	355 (783)	100.0
Rachycentridae Cobias	60 (132)	-	-	-	-	-	14 (31)	[89 (196)]	-	6 (13)	16 (35)	28 (62)	124 (273)	100.0
Rachycentron canadum Cobia	60 (132)	-	-	-	-	-	14 (31)	[89 (196)]	-	6 (13)	16 (35)	28 (62)	124 (273)	100.0
Congridae Conger eels	2 (4)	24 (53)	71 (157)	18 (40)	-	-	-	2 (4)	-	-	-	-	117 (258)	100.0
Conger oceanicus Conger eel	2 (4)	24 (53)	71 (157)	18 (40)	-	-	-	2 (4)	-	-	-	-	117 (258)	100.0
Squaliformes Sharks	[322 (710)]	608 (1,304)	[490 (970)]	384 (847)	695 (1,532)	[1,419 (3,128)]	288 (635)	433 (955)	[573 (1,263)]	[220 (485)]	779 (1,717)	261 (575)	2,840 (6,261)	100.0
Lamnidae Mackerel sharks	-	-	-	13 (28)	-	-	-	-	-	-	-	-	13 (28)	100.0
Isurus oxyrinchus Shortfin mako	-	-	-	13 (28)	-	-	-	-	-	-	-	-	13 (28)	100.0
Carcharhinidae Requiem sharks	-	10 (21)	-	128 (283)	15 (34)	0	41 (89)	4 (9)	-	-	9 (20)	156 (344)	363 (800)	100.0
Rhizoprionodon terraenovae Atlantic sharpnose shark	-	-	-	32 (71)	-	-	-	-	-	-	-	85 (186)	117 (258)	32.2
Carcharhinus obscurus Dusky shark	-	-	-	-	-	-	-	-	-	-	-	55 (121)	55 (121)	15.2
Carcharhinus falciformis Silky shark	-	-	-	15 (33)	-	-	15 (33)	-	-	-	6 (14)	16 (35)	52 (115)	14.3
Carcharhinus altimus Bignose shark	-	-	-	36 (80)	-	-	-	-	-	-	-	-	36 (80)	9.9
Carcharhinus plumbeus Sandbar shark	-	-	-	-	-	-	26 (56)	-	-	-	-	-	26 (56)	7.2
Carcharhinus limbatus Blacktip shark	-	-	-	18 (39)	-	-	-	-	-	-	-	-	18 (39)	5.0
Galeocerdo cuvieri Tiger shark	-	10 (21)	-	-	-	-	-	4 (9)	-	-	-	-	14 (30)	3.9
Mustelus canis Smooth dogfish	-	-	-	-	-	-	-	-	-	-	3 (6)	-	3 (6)	0.8

Species	SOUTHERN DISTRICT MONTH Jan n=4	Feb n=7	Mar n=6	Apr n=9	May n=7	Jun n=3	Jul n=3	Aug n=6	Sep n=4	Oct n=2	Nov n=7	Dec n=2	Total n=60	% of species composition within major market categories
Serranidae Sea basses	20,605 (45,426)	24,615 (54,267)	19,673 (43,372)	28,681 (63,231)	16,361 (36,070)	26,104 (57,549)	14,078 (31,037)	32,969 (72,684)	19,345 (42,648)	32,744 (72,188)	37,703 (83,121)	49,308 (108,706)	322,186 (710,299)	100.0
Centropristis striata Black sea bass	17,381 (38,319)	16,095 (35,483)	4,641 (10,232)	4,820 (10,626)	3,550 (7,826)	8,563 (18,878)	1,773 (3,909)	5,440 (11,993)	3,059 (6,744)	2,100 (4,630)	19,305 (42,560)	26,982 (59,485)	113,709 (250,685)	35.3
Mycteroperca microlepis Gag	1,704 (3,757)	5,131 (11,312)	6,461 (14,244)	6,490 (14,308)	4,197 (9,253)	10,596 (23,360)	976 (2,152)	5,717 (12,604)	4,263 (9,398)	22,150 (48,832)	14,173 (31,246)	11,747 (25,898)	93,605 (206,364)	29.1

Table 8. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=4	Feb n=7	Mar n=6	Apr n=9	May n=7	Jun n=3	Jul n=3	Aug n=6	Sep n=4	Oct n=2	Nov n=7	Dec n=2	Total n=60	% of species composition within major market categories
Mycteroperca phenax Scamp	1,467 (3,234)	1,881 (4,147)	3,149 (6,942)	3,918 (8,638)	1,147 (2,529)	4,401 (9,703)	974 (2,147)	6,907 (15,227)	3,602 (7,941)	2,895 (6,382)	2,390 (5,269)	5,742 (12,659)	38,473 (84,818)	11.9
Epinephelus niveatus Snowy grouper	4 (9)	458 (1,010)	3,787 (8,349)	4,089 (9,015)	6,127 (13,508)	240 (529)	2,828 (6,235)	2,657 (5,858)	6,071 (13,384)	1,065 (2,348)	111 (245)	-	27,437 (60,488)	8.5
Epinephelus morio Red grouper	-	292 (644)	155 (342)	2,247 (4,954)	183 (403)	-	1,014 (2,235)	8,603 (18,966)	1,304 (2,875)	426 (939)	241 (531)	1,887 (4,160)	16,352 (36,050)	5.1
Epinephelus drummondhayi Speckled hind	49 (108)	613 (1,351)	872 (1,922)	649 (1,431)	531 (1,171)	1,823 (4,019)	48 (106)	1,503 (3,314)	190 (419)	2,709 (5,972)	568 (1,252)	1,324 (2,919)	10,879 (23,984)	3.4
Epinephelus guttatus Red hind	-	3 (7)	83 (183)	817 (1,801)	168 (370)	-	3,170 (6,989)	218 (481)	198 (437)	607 (1,338)	389 (858)	477 (1,052)	6,130 (13,514)	1.9
Mycteroperca bonaci Black grouper	-	-	160 (353)	4,413 (9,729)	-	-	29 (64)	-	-	-	51 (112)	768 (1,693)	5,421 (11,951)	1.7
Mycteroperca venenosa Yellowfin grouper	-	-	-	110 (243)	-	-	2,009 (4,429)	-	-	305 (672)	132 (291)	-	2,556 (5,635)	0.8
Epinephelus flavolimbatus Yellowedge grouper	-	-	66 (146)	234 (516)	-	-	385 (849)	1,337 (2,948)	448 (988)	-	-	-	2,470 (5,445)	0.8
Epinephelus adscensionis Rock hind	-	18 (40)	116 (256)	550 (1,213)	65 (143)	352 (776)	196 (432)	242 (533)	130 (287)	28 (62)	116 (256)	171 (377)	1,984 (4,374)	0.6
Mycteroperca interstitialis Yellowmouth grouper	-	15 (33)	47 (104)	167 (368)	125 (276)	46 (101)	633 (1,396)	-	-	213 (470)	143 (315)	174 (377)	1,560 (3,439)	0.5
Paranthias furcifer Creole-fish	-	18 (40)	9 (20)	103 (227)	174 (384)	81 (179)	-	201 (443)	68 (150)	153 (337)	10 (22)	-	817 (1,801)	0.3
Epinephelus nigritus Warsaw grouper	-	-	127 (280)	49 (108)	77 (170)	-	-	120 (265)	-	-	38 (84)	-	411 (906)	0.1
Epinephelus fulvus Coney	-	4 (9)	-	17 (37)	4 (9)	-	42 (93)	7 (15)	11 (24)	23 (51)	9 (20)	29 (64)	146 (322)	<0.1
Epinephelus inermis Marbled grouper	-	-	-	9 (20)	12 (26)	-	-	-	-	69 (152)	27 (60)	-	117 (258)	<0.1
Epinephelus striatus Nassau grouper	-	87 (192)	-	-	-	-	-	-	-	-	-	-	87 (192)	<0.1
Epinephelus cruentatus Graysby	-	-	-	-	-	-	-	-	-	-	-	10 (22)	10 (22)	<0.1
Lutjanidae Snappers	2,789 (6,149)	3,591 (7,917)	8,708 (19,198)	14,736 (32,487)	15,334 (33,806)	8,336 (18,378)	6,488 (14,304)	19,487 (42,961)	15,867 (34,981)	15,996 (35,265)	6,016 (13,263)	6,302 (13,894)	123,650 (272,602)	100.0
Rhomboplites aurorubens Vermillion snapper	1,960 (4,321)	1,961 (4,323)	7,445 (16,413)	12,910 (28,426)	12,828 (28,281)	8,153 (17,974)	2,436 (5,370)	19,279 (42,503)	15,324 (33,784)	13,234 (29,176)	5,052 (11,138)	5,491 (12,106)	106,091 (233,891)	85.5
Lutjanus vivanus Silk snapper	154 (340)	1,000 (2,205)	788 (1,737)	717 (1,581)	1,226 (2,703)	20 (44)	2,035 (4,486)	-	98 (216)	2,306 (5,084)	710 (1,565)	232 (511)	9,286 (20,472)	7.5
Lutjanus campechanus Red snapper	675 (1,488)	630 (1,389)	475 (1,047)	1,014 (2,235)	1,027 (2,264)	120 (265)	283 (624)	165 (364)	445 (981)	457 (1,007)	167 (368)	580 (1,279)	6,038 (13,312)	4.9
Lutjanus analis Mutton snapper	-	-	-	87 (192)	112 (247)	-	1,286 (2,835)	-	-	-	12 (26)	-	1,497 (3,300)	1.2
Lutjanus cyanopterus Cubera snapper	-	-	-	-	112 (247)	37 (82)	447 (985)	-	-	-	38 (84)	-	634 (1,398)	0.5
Lutjanus buccanella Blackfin snapper	-	-	-	9 (20)	31 (68)	-	-	-	-	-	24 (153)	-	64 (141)	0.1
Lutjanus griseus Gray snapper	-	-	-	-	-	6 (13)	-	25 (55)	-	-	13 (29)	-	44 (97)	0.1
Sparidae Porgies	1,571 (3,463)	11,314 (24,943)	10,394 (22,915)	16,193 (35,699)	9,380 (20,679)	6,068 (13,378)	5,237 (11,546)	14,006 (30,878)	8,913 (19,650)	8,003 (17,644)	4,125 (9,094)	7,112 (15,679)	102,316 (225,568)	100.0
Pagrus pagrus Red porgy	1,548 (3,413)	10,715 (23,623)	10,234 (22,562)	15,735 (34,690)	9,117 (20,100)	5,940 (13,095)	4,991 (11,003)	13,833 (30,497)	8,419 (18,561)	7,180 (15,829)	3,894 (8,585)	6,865 (15,135)	98,471 (217,091)	96.2
Calamus nodosus Knobbed porgy	23 (51)	585 (1,290)	155 (342)	458 (1,010)	259 (571)	106 (234)	157 (346)	148 (326)	471 (1,038)	662 (1,459)	231 (509)	247 (545)	3,502 (7,721)	3.4

Table 8. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=4	Feb n=7	Mar n=6	Apr n=9	May n=7	Jun n=3	Jul n=3	Aug n=6	Sep n=4	Oct n=2	Nov n=7	Dec n=2	Total n=60	% of species composition within major market categories
Calamus calamus Saucereye porgy	-	-	-	-	-	17 (37)	73 (161)	22 (49)	-	111 (245)	-	-	223 (492)	0.2
Calamus leucosteus Whitebone porgy	-	12 (26)	5 (11)	-	-	4 (9)	-	4 (9)	23 (51)	51 (112)	-	-	99 (218)	0.1
Lagodon rhomboides Pinfish	-	-	-	-	4 (9)	-	15 (33)	-	-	-	-	-	19 (42)	<0.1
Diplodus holbrooki Spottail pinfish	-	2 (4)	-	-	-	-	-	-	-	-	-	-	2 (4)	<0.1
Malacanthidae Tilefishes	[564 (1,243)]	21 (46)	328 (723)	2,709 (5,972)	44 (97)	2,156 (4,753)	523 (1,153)	4,649 (10,249)	3,132 (6,905)	3,300 (7,275)	2,266 (4,996)	[26 (57)]	19,128 (42,170)	100.0
Caulolatilus microps Blueline tilefish	-	20 (44)	263 (580)	2,709 (5,972)	44 (97)	2,156 (4,753)	523 (1,153)	4,131 (9,107)	477 (1,052)	3,300 (7,275)	2,266 (4,996)	-	15,889 (35,029)	83.1
Lopholatilus chamaeleonticeps Tilefish	-	-	65 (143)	-	-	-	-	494 (1,089)	2,654 (5,851)	-	-	-	3,213 (7,083)	16.8
Caulolatilus chrysops Goldface tilefish	-	-	-	-	-	-	-	23 (51)	-	-	-	-	23 (51)	0.1
Caulolatilus cyanops Blackline tilefish	-	1 (2)	-	-	-	-	-	-	-	-	-	-	1 (2)	0.1
Balistidae Leatherjackets	28 (62)	214 (472)	1,237 (2,727)	2,660 (5,864)	412 (908)	200 (441)	233 (514)	689 (1,519)	722 (1,592)	817 (1,801)	54 (119)	842 (1,856)	7,836 (16,283)	100.0
Balistes capriscus Gray triggerfish	28 (62)	210 (463)	1,237 (2,727)	2,615 (5,765)	412 (908)	200 (441)	233 (514)	689 (1,519)	-	817 (1,801)	48 (106)	842 (1,856)	7,332 (16,164)	99.3
Balistes vetula Queen triggerfish	-	4 (9)	-	45 (99)	-	-	-	-	-	-	6 (13)	-	54 (119)	0.7
Haemulidae Grunts	410 (904)	894 (1,971)	943 (2,079)	2,005 (4,420)	2,300 (5,071)	2,077 (4,579)	1,468 (3,236)	5,237 (11,546)	3,764 (8,298)	4,152 (9,154)	2,733 (6,025)	4,319 (9,522)	30,302 (66,804)	100.0
Haemulon plumieri White grunt	410 (904)	894 (1,971)	943 (2,079)	2,005 (4,420)	2,300 (5,071)	2,077 (4,579)	1,468 (3,236)	5,237 (11,546)	3,764 (8,298)	4,152 (9,1534)	1,746 (3,849)	4,319 (9,522)	29,315 (64,629)	96.7
Orthopristis chrysoptera Pigfish	-	-	-	-	-	-	-	-	-	-	987 (2,176)	-	987 (2,176)	3.3
Labridae Wrasses	117 (258)	35 (77)	106 (234)	99 (218)	[58 (229)]	[104 (229)]	170 (375)	[231 (509)]	180 (387)	632 (1,393)	167 (368)	198 (437)	1,704 (3,757)	100.0
Lachnolaimus maximus Hogfish	117 (258)	25 (55)	106 (234)	99 (218)	[58 (229)]	[104 (229)]	170 (375)	[231 (509)]	180 (397)	632 (1,393)	167 (368)	198 (437)	1,694 (3,735)	99.4
Tautoga onitis Tautog	-	10 (22)	-	-	-	-	-	-	-	-	3 (7)	-	10 (22)	0.6
Scombridae Mackerels	739 (1,629)	604 (1,332)	3,681 (8,115)	6,347 (13,993)	1,126 (2,482)	854 (1,883)	293 (646)	694 (1,530)	411 (906)	166 (366)	940 (2,072)	212 (467)	16,067 (35,422)	100.0
Scomberomorus cavalla King mackerel	618 (1,362)	604 (1,332)	3,540 (7,804)	6,193 (13,653)	1,069 (2,357)	819 (1,806)	273 (602)	624 (1,376)	388 (855)	166 (366)	890 (1,962)	130 (287)	15,314 (33,762)	95.3
Thunnus albacares Yellowfin tuna	102 (225)	-	56 (123)	93 (205)	42 (93)	33 (73)	-	44 (97)	20 (44)	-	23 (51)	38 (84)	451 (994)	2.8
Thunnus atlanticus Blackfin tuna	19 (42)	-	44 (97)	51 (112)	15 (33)	-	-	-	-	-	27 (60)	-	156 (344)	1.0
Acanthocybium solanderi Wahoo	-	-	41 (90)	-	-	2 (4)	20 (44)	26 (57)	-	-	-	44 (97)	133 (293)	0.8
Sarda sarda Atlantic bonito	-	-		10 (22)	-	-	-	-	-	-	-	-	10 (22)	0.1
Scomberomorus maculatus Spanish mackerel	-	-	-	-	-	-	-	-	3 (7)	-	-	-	3 (7)	<0.1
Carangidae Jacks	114 (251)	[312 (688)]	[136 (300)]	[3 (7)]	35 (77)	[66 (146)]	-	[9 (20)]	134 (295)	[142 (313)]	318 (701)	-	601 (1,325)	100.0
Seriola rivoliana Almaco jack	114 (251)	-	-	-	-	-	-	-	-	-	232 (511)	-	346 (763)	57.6

Table 8. (continued)

Species	SOUTHERN DISTRICT MONTH Jan n=4	Feb n=7	Mar n=6	Apr n=9	May n=7	Jun n=3	Jul n=3	Aug n=6	Sep n=4	Oct n=2	Nov n=7	Dec n=2	Total n=60	% of species composition within major market categories
Seriola sp. Amberjack	-	-	-	-	-	-	-	-	134 (295)	-	-	-	134 (295)	22.3
Seriola dumerili Greater amberjack	-	-	-	-	35 (77)	-	-	-	-	-	58 (128)	-	93 (205)	15.5
Seriola fasciata Lesser amberjack	-	-	-	-	-	-	-	-	-	-	17 (37)	-	17 (37)	2.8
Pseudocaranx dentex Guelly jack	-	-	-	-	-	-	-	-	-	-	11 (24)	-	11 (24)	1.8
Coryphaenidae Dolphins	10 (22)	-	-	[1 (2)]	79 (174)	302 (666)	83 (183)	15 (33)	177 (390)	-	-	-	667 (1,470)	100.0
Coryphaena hippurus Dolphin	10 (22)	-	-	[1 (2)]	79 (174)	302 (666)	83 (183)	15 (33)	177 (390)	-	-	-	667 (1,470)	100.0
Rachycentridae Cobia	22 (49)	129 (284)	150 (331)	126 (278)	16 (35)	[105 (231)]	204 (450)	26 (57)	21 (46)	49 (108)	26 (57)	-	769 (1,695)	100.0
Rachycentrol canadum Cobia	22 (49)	129 (284)	150 (331)	126 (278)	16 (35)	[105 (231)]	204 (450)	26 (57)	21 (46)	49 (108)	26 (57)	-	769 (1,695)	100.0
Pomatomidae Bluefishes	96 (212)	520 (1,146)	[85 (187)]	487 (1,074)	[125 (276)]	[49 (108)]	-	-	-	-	-	[9 (20)]	1,103 (2,432)	100.0
Pomatomus saltatrix Bluefish	96 (212)	520 (1,146)	[85 (187)]	487 (1,074)	[125 (276)]	[49 (108)]	-	-	-	-	-	[9 (20)]	1,103 (2,432)	100.0
Congridae Conger eels	-	[8 (18)]	-	-	-	-	-	-	-	-	-	-	-	-
Conger oceanicus Conger eel	-	[8 (18)]	-	-	-	-	-	-	-	-	-	-	-	-
Tetraodontidae Puffers	[38 (84)]	-	[7 (15)]	[1 (2)]	-	-	-	-	-	-	[11 (24)]	-	-	-
Octopus vulgaris Octopus	[2,383 (5,254)]	[425 (937)]	[152 (335)]	[47 (104)]	-	-	-	-	-	[14 (31)]	[418 (922)]	[1,550 (3,417)]	-	-
Squaliformes Sharks	[76 (168)]	[279 (615)]	179 (395)	1,214 (2,676)	1,098 (2,421)	238 (525)	[490 (1,080)]	187 (412)	[487 (1,074)]	811 (1,788)	779 (1,717)	896 (1,975)	4,506 (9,934)	100.0
Lamnidae Mackerel sharks	-	-	-	98 (216)	54 (119)	-	-	-	-	-	-	-	152 (335)	100.0
Isurus oxyrinchus Shortfin mako	-	-	-	98 (216)	54 (119)	-	-	-	-	-	-	-	152 (335)	100.0
Carcharhinidae Requiem sharks	-	-	14 (31)	3 (6)	24 (52)	-	-	-	-	-	-	-	41 (89)	100.0
Galeocerdo cuvieri Tiger shark	-	-	8 (18)	-	12 (26)	-	-	-	-	-	-	-	20 (44)	48.8
Rhizoprionodon terraenovae Atlantic sharpnose shark	-	-	6 (13)	3 (6)	-	-	-	-	-	-	-	-	9 (19)	22.0

November through January in the central and southern districts, but in summer in the northern district. It is estimated that 367,144 and 402,334 individuals were landed in North Carolina in 1984 and 1985, respectively, for those months in which black sea bass were sampled (Table 9). The catch per unit effort (CPUE) of black sea bass, as expressed in kilograms of fish caught per day fished, was highest in the shallowest depth stratum (<64 m) which is consistent with reported depth distributions for this species (Chester et al. 1984) (Table 10). Individuals landed in the central district in 1984 were larger than those landed in the other districts; however, this was not true for 1985 (Figures 14-16). More large (>350 mm) black sea bass were landed in 1983 than in 1985. Most black sea bass were 2-7 years old (Link 1980; Mercer 1978). A length-weight relationship for black sea bass is presented in Table 11.

Epinephelus niveatus

Snowy grouper landings were highest in the central district and contributed the most to central district serranid landings. The estimated number of individuals marketed decreased from 34,209 in 1984 to 22,728 in 1985. Snowy grouper CPUE was highest in the deepest depth stratum (>165 m) (Table 10) Highest landings of snowy grouper occurred in spring and summer (Figures 2-4). Annual CPUE increased from 221.6 kg/day fished in 1983 to 603.6 kg/day fished in 1985 (Table 12). Snowy grouper ranged in length from 275-1,225 mm TL with most between 400-700 mm TL (Figures 17-19). Most snowy grouper were ages 3-10 (Matheson and Huntsman 1984). A length-weight relationship for snowy grouper is presented in Table 11.

Epinephelus drummondhayi

The estimated number of speckled hind landed in North Carolina increased from 4,291 individuals in 1984 to 7,099 in 1985 (Table 9). Most were landed in the southern district. Speckled hind CPUE was relatively uniform across all depth strata (Table 10). Annual CPUE for speckled hind increased from 64.9 kg/day fished in 1983 to 95.4 kg/day fished in 1985 (Table 12). Speckled hind ranged in size from 190-1,000 mm TL with more large individuals landed in the southern district (Figures 20-22). Based on the size frequency data, most speckled hind in the catches were <7 years (Matheson and Huntsman 1984). A total weight-length relationship for speckled hind is presented in Table 11.

Table 9 Estimated number of individuals marketed in the North Carolina commercial reef fish fishery by district and year, based on sampled catches (n=number of boats sampled).

	1983 (Jul-Dec)				1984				1985			
	Northern n=0	Central n=3	Southern n=52	Total n=55	Northern n=3	Central n=68	Southern n=93	Total n=164	Northern n=7	Central n=88	Southern n=60	Total n=155
Centropristis striata Black sea bass	-	26,904	158,475	185,379	43,708	103,673	219,763	367,144	27,314	109,004	266,016	402,334
C. ocyurus Bank sea bass	-	-	8	8	-	-	41	41	-	-	-	-
C. philadelphica Rock sea bass	-	-	-	-	1,983	-	-	1,983	-	-	-	-
Epinephelus adscensionis Rock hind	-	-	675	675	-	76	1,165	1,241	-	67	1,436	1,503
E. cruentatus Graysby	-	-	-	-	-	-	-	-	-	-	15	15
E. drummondhayi Speckled hind	-	826	601	1,426	611	1,202	2,478	4,291	626	994	5,479	7,099
E. flavolimbatus Yellowedge grouper	-	-	17	17	33	276	149	457	22	161	452	635
E. fulvus Coney	-	-	8	8	-	-	89	-	-	9	161	170
E. guttatus Red hind	-	-	735	735	-	-	2,402	2,402	-	94	3,187	3,281
E. inermis Marbled grouper	-	-	32	32	-	-	46	46	-	6	37	42
E. morio Red grouper	-	522	2,004	2,526	-	67	949	1,016	-	148	2,109	2,257
E. mystacinus Misty grouper	-	-	-	-	-	48	-	48	-	2	-	2
E. nigritus Warsaw grouper	-	-	20	20	-	63	20	83	-	65	32	97
E. niveatus Snowy grouper	-	11,558	2,396	13,954	780	26,561	6,868	34,209	1,588	14,614	6,526	22,728
Mycteroperca bonaci Black grouper	-	-	-	-	-	-	5	5	-	35	702	737
M. interstitialis Yellowmouth grouper	-	-	-	-	-	-	514	514	-	1,721	374	2,095
M. microlepis Gag	-	8,436	4,150	12,586	-	6,970	10,869	17,839	-	3,417	8,377	11,794
M. phenax Scamp	-	495	12,184	12,679	-	741	14,971	15,713	-	1,758	11,944	13,702
M. venenosa Yellowfin grouper	-	-	22	22	-	-	214	214	-	-	234	234
Paranthias furcifer Creole-fish	-	-	571	571	-	5	320	325	-	73	1,121	1,194
Lutjanus analis Mutton snapper	-	-	6	6	-	-	41	41	-	3	183	186
L. buccanella Blackfin snapper	-	-	68	68	-	4	92	96	-	35	41	76
L. campechanus Red snapper	-	282	371	653	-	6,666	1,867	8,533	618	2,759	1,708	5,086
L. cyanopterus Cubera snapper	-	-	59	59	-	-	29	29	-	-	31	31
L. griseus Gray snapper	-	-	-	-	-	-	18	18	-	-	9	9
L. synagris Lane snapper	-	-	18	18	-	-	-	-	-	-	-	-
L. vivanus Silk snapper	-	-	391	391	-	1,120	1,415	2,535	6	4,399	7,212	11,617
Ocyurus chrysurus Yellowtail snapper	-	-	-	-	-	8	8	8	-	-	-	-

Table 9 (continued)

	1983 (Jul-Dec)				1984				1985			
	Northern n=0	Central n=3	Southern n=52	Total n=55	Northern n=3	Central n=68	Southern n=93	Total n=164	Northern n=7	Central n=88	Southern n=60	Total n=155
Rhomboplites aurorubens Vermilion snapper	-	24,455	40,405	64,860	1,240	100,571	72,641	174,451	1,363	159,407	127,286	288,056
Calamus calamus Saucereye porgy	-	-	-	-	-	-	32	32	-	9	140	149
C. leucosteus Whitebone porgy	-	136	4	140	-	111	76	187	-	106	102	208
C. nodosus Knobbed porgy	-	-	2,268	2,268	-	207	4,555	4,762	-	1,493	2,736	4,228
C. proridens Littlehead porgy	-	-	-	-	-	-	2	2	-	-	-	-
Diplodus holbrooki Spottail pinfish	-	-	4	4	-	177	20	197	-	598	13,422	14,020
Lagodon rhomboides Pinfish	-	-	-	-	-	-	-	-	-	-	7	7
Pagrus pagrus Red porgy	-	62,551	56,732	119,283	451	106,135	88,287	194,873	1,076	72,027	87,677	160,780
Stenotomus caprinus Longspine porgy	-	-	-	-	-	-	-	-	-	7	-	7
S. chrysops Scup	-	-	-	-	-	94	-	94	-	15	-	15
Caulotatilus chrysops Goldface tilefish	-	-	-	-	-	561	5	566	-	33	8	41
C. cyanops Blackline tilefish	-	-	-	-	-	188	-	188	-	5	1	6
C. microps Blueline tilefish	-	1,063	691	1,754	3,113	9,158	1,343	13,614	1,582	2,134	6,159	9,876
Lopholatilus chamaeleonticeps Tilefish	-	-	175	175	-	-	2,429	2,429	-	8	594	-
Malacanthus plumieri Sand tilefish	-	-	349	349	-	-	-	-	-	-	-	-
Balistes capriscus Gray triggerfish	-	185	1,511	1,696	45	1,891	3,835	5,771	120	1,499	3,072	4,691
B. vetula Queen triggerfish	-	-	16	16	-	-	17	17	-	1	22	23
Haemulon aurolineatum Tomtate	-	-	-	-	-	211	-	211	-	457	-	457
H. plumieri White grunt	-	949	12,695	13,645	-	3,130	25,737	28,867	-	99	28,570	29,560
Orthopristis chrysoptera Pigfish	-	-	-	-	-	21	-	21	-	-	1,049	1,049
Lachnolaimus maximus Hogfish	-	-	95	95	-	-	169	169	-	7	309	316
Tautoga onitis Tautog	-	-	-	-	-	-	-	-	-	3	10	13
Acanthocybium solanderi Wahoo	-	-	-	-	-	-	3	3	-	-	5	5
Sarda sarda Atlantic bonito	-	-	-	-	-	-	-	-	-	5	-	5
Scomberomorus cavalla King mackerel	-	-	-	-	-	301	830	1,131	-	1,226	815	2,041
S. maculatus Spanish mackerel	-	-	-	-	-	-	-	-	-	-	2	2
Thunnus albacares Yellowfin tuna	-	-	-	-	-	4	-	4	-	113	175	288
T. atlanticus Blackfin tuna	-	-	-	-	-	3	-	3	-	20	9	29
Caranx crysos Blue runner	-	-	-	-	-	-	-	-	-	1	-	1

Table 9 (continued)

	1983 (Jul-Dec)				1984				1985			
	Northern n=0	Central n=3	Southern n=52	Total n=55	Northern n=3	Central n=68	Southern n=93	Total n=164	Northern n=7	Central n=88	Southern n=60	Total n=155
Pseudocaranx dentex Guelly jack	-	-	-	-	-	-	-	-	-	-	1	1
Seriola sp. Amberjack	-	-	-	-	-	-	2	2	-	42	31	73
S. dumerili Greater amberjack	-	-	-	-	-	2	4	6	-	47	15	62
S. fasciata Lesser amberjack	-	-	-	-	-	-	-	-	-	3	2	5
S. rivoliana Almaro jack	-	-	-	-	-	-	1	1	-	56	45	101
S. zonata Banded rudderfish	-	-	-	-	-	-	-	-	-	39	-	39
Coryphaena hippurus Dolphin	-	-	-	-	-	132	-	132	-	141	284	425
Rachycentron canadum Cobia	-	-	-	-	-	5	9	14	-	10	90	100
Pomatomus saltatrix Bluefish	-	-	-	-	-	4	25	29	-	15	181	196
Equetus n. sp. Blackbar drum	-	-	2	2	-	-	4	4	-	16	-	16
Equetus umbrosus Cubbyu	-	-	-	-	-	-	-	-	-	1	-	1
Priacanthus arenatus Bigeye	-	-	2	2	-	-	-	-	-	-	-	-
Pristigenys alta Short bigeye	-	-	-	-	-	-	-	-	-	3	-	3
Neomerinthe hemingwayi Spinycheek scorpionfish	-	-	1	1	-	-	-	-	-	-	-	-
Polyprion americanus Wreckfish	-	-	-	-	-	5	-	5	-	-	-	-
Conger oceanicus Conger eel	-	-	-	-	-	1	-	1	-	53	5	58
Squaliformes Sharks	-	-	-	-	-	311	10	321	-	571	104	675
Odontaspis taurus Sand tiger	-	-	-	-	-	1	-	1	-	-	-	-
Isurus oxyrinchus Shortfin mako	-	-	-	-	-	-	-	-	-	1	2	3
Carcharhinidae Requiem sharks	-	-	-	-	-	36	7	43	-	3	1	4
Carcharhinus falciformis Silky shark	-	-	-	-	-	-	-	-	-	4	-	4
C. limbatus Blacktip shark	-	-	-	-	-	-	-	-	-	2	-	2
C. obscurus Dusky shark	-	-	-	-	-	-	-	-	-	1	-	1
C. plumbeus Sandbar shark	-	-	-	-	-	-	-	-	-	1	-	1
Galeocerdo cuvieri Tiger shark	-	-	-	-	-	1	1	2	-	1	1	2
Mustelus canis Smooth dogfish	-	-	-	-	-	-	-	-	-	1	-	1
Rhizoprionodon terraenovae Atlantic sharpnose shark	-	-	-	-	-	12	-	12	-	29	2	31
Octopus sp. Octopus	-	-	-	-	-	12	-	12	-	3	-	3

Table 10. Selected species catch (kilograms) per unit effort (day fished) by depth stratum.

Species	Depth stratum			
	Less than 64 m (35 fm)	64-119 m (35-65 fm)	119-165 m (65-90 fm)	Greater than 165 m (90 fm)
Serranidae				
C. striata Black sea bass	12.76	4.70	6.76	6.96
E. drummondhayi Speckled hind	3.11	4.52	3.90	2.03
E. morio Red grouper	8.34	2.22	3.03	5.11
E. niveatus Snowy grouper	17.22	42.97	177.92	314.40
M. microlepis Gag	53.85	49.97	43.44	8.77
M. phenax Scamp	22.05	15.82	7.51	6.69
Lutjanidae				
L. campechanus Red snapper	6.47	5.34	4.25	2.51
R. aurorubens Vermilion snapper	67.73	102.34	87.53	41.86
Sparidae				
P. pagrus Red porgy	52.58	52.02	64.08	33.23
Malacanthidae				
L. chamaeleonticeps Tilefish	1.17	0.23	0.63	58.20

Table 11. Weight-length regressions for target species of reef fishes from the North Carolina reef fish fishery, July 1983-March 1986 [n=number of fish, W=gutted weight (g), L=length (mm TL)].

Species	n	Regression	r^2
Centropristis striata+ Black sea bass	176	log W=-16.3328+2.6897 log L	0.90
Epinephelus drummondhayi Speckled hind	573	log W=-17.6167+2.9604 log L	0.93
E. morio Red grouper	37	log W=-18.5166+3.0911 log L	0.96
E. niveatus Snowy grouper	221	log W=-17.3871+2.9002 log L	0.98
Mycteroperca microlepis Gag	120	log W=-18.4129+3.0251 log L	0.99
*M. phenax** Scamp	69	log W=-16.9582+2.8321 log L	0.96
Lutjanus campechanus Red snapper	548	log W=-18.0083+2.9975 log L	0.97
Rhomboplites aurorubens Vermilion snapper	655	log W=-17.4495+2.8607 log L	0.96
Pagrus pagrus Red porgy	376	log W=-16.3765+2.7084 log L	0.96
Rachycentron canadum Cobia	21	log W=-18.9990+3.0718 log L	0.98
Scomberomorus cavalla King mackerel	634	log W=-18.5673+2.9886 log L	0.95
S. maculatus Spanish mackerel	19	log W=-11.8192+1.9690 log L	0.76

+ whole weight
* fork length

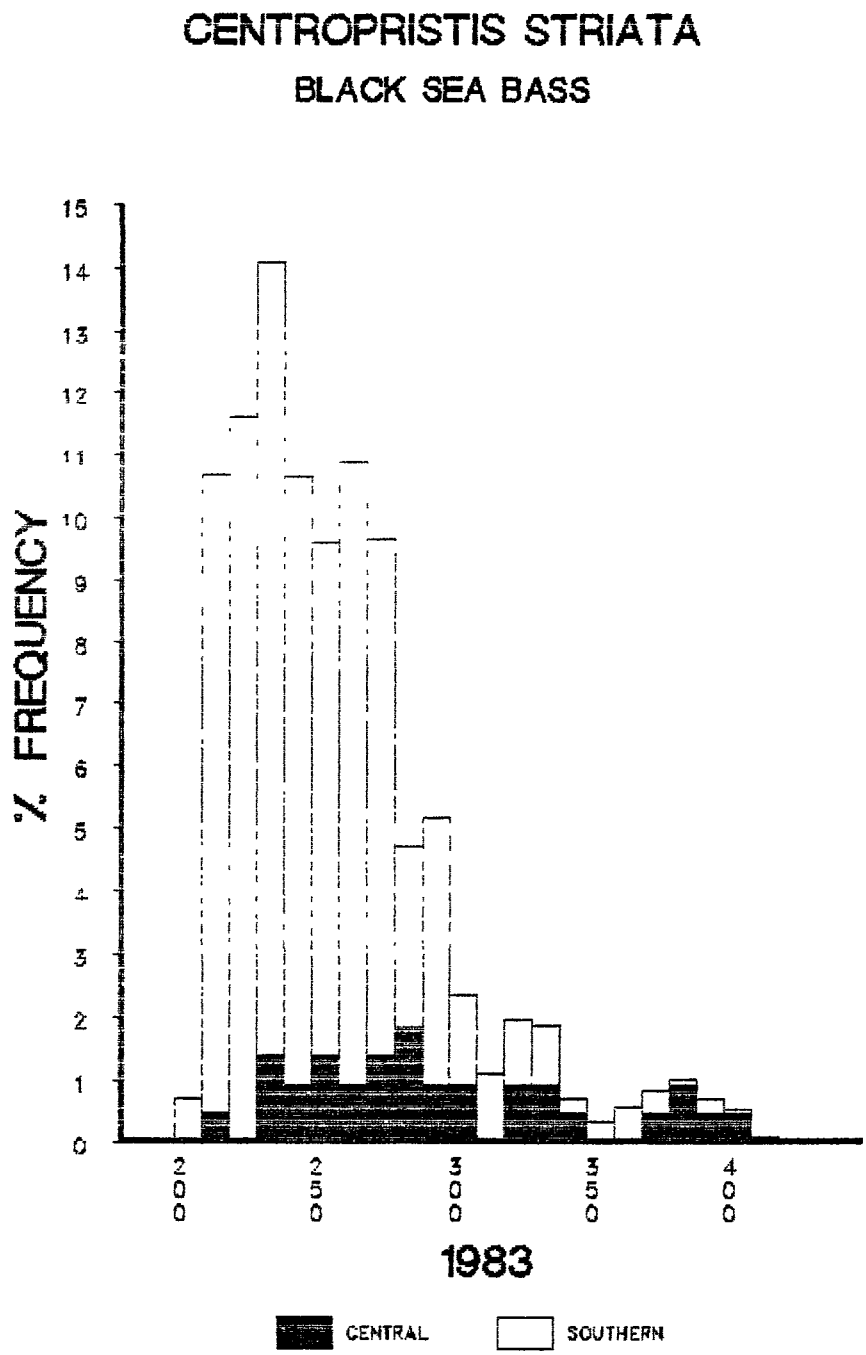

Figure 14. Size frequency of Centropristis striata (black sea bass) landed in North Carolina in 1983.

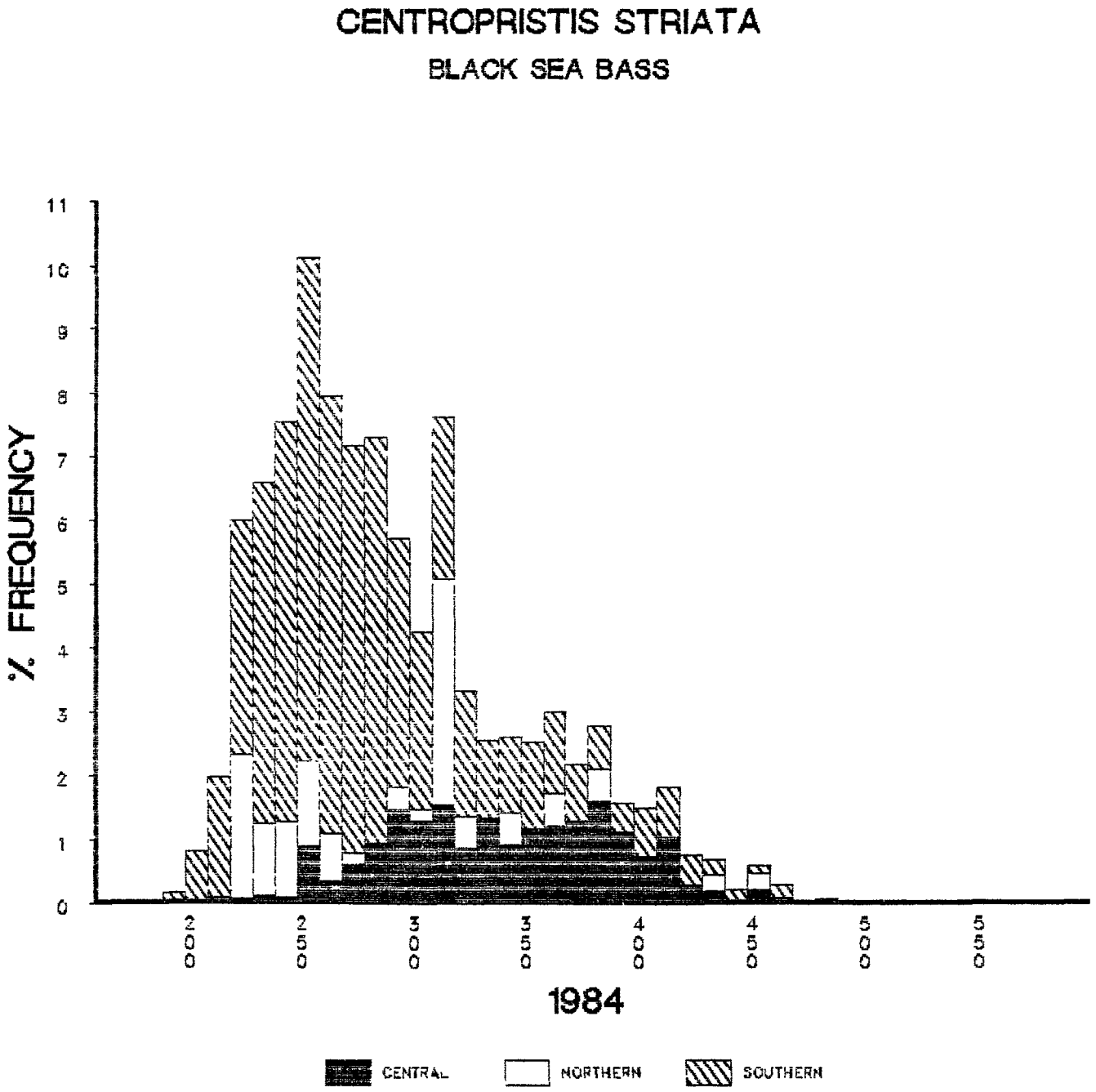

Figure 15. Size frequency of Centropristis striata (black sea bass) landed in North Carolina in 1984.

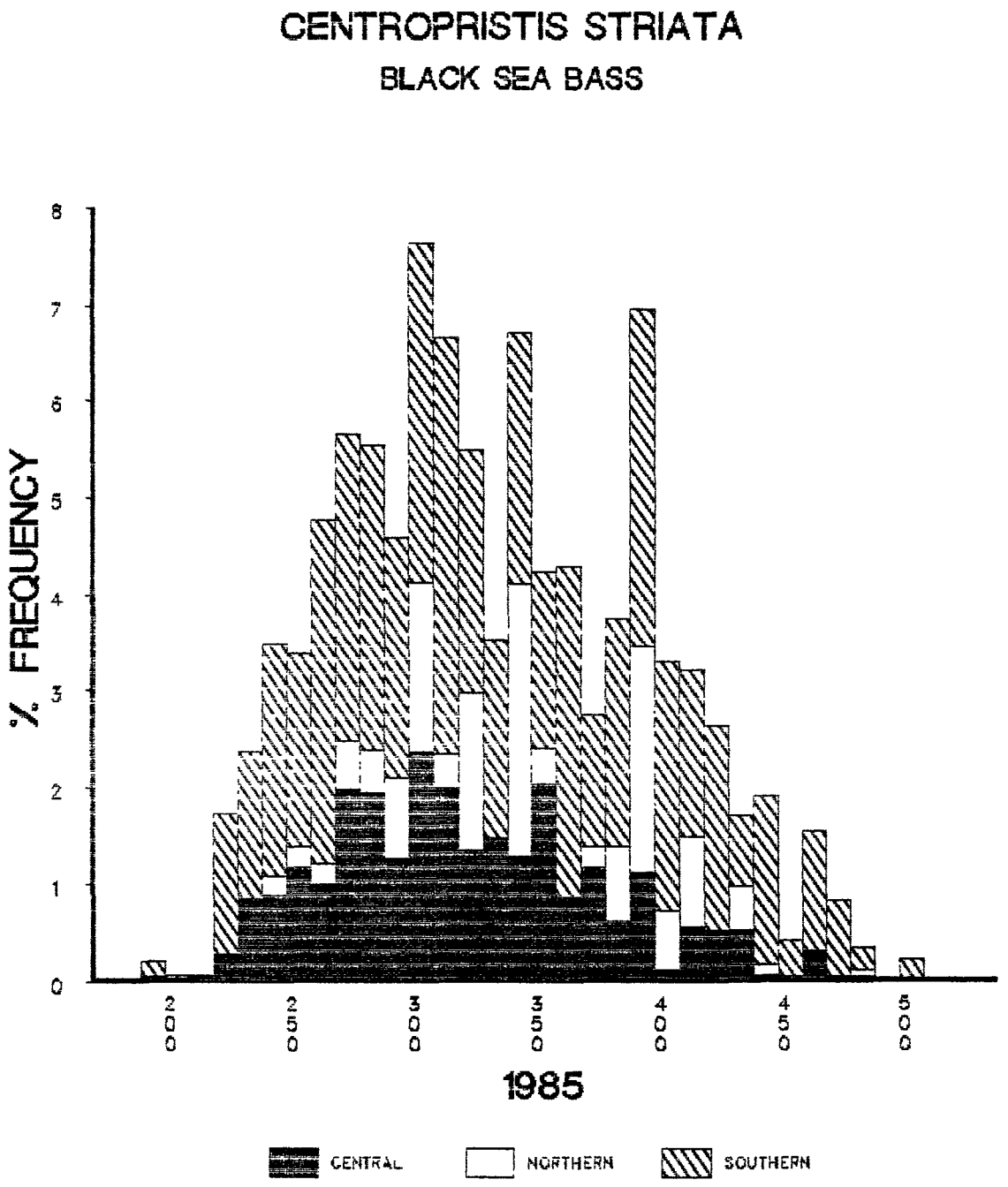

Figure 16. Size frequency of Centropristis striata (black sea bass) landed in North Carolina in 1985.

Table 12. Selected species catch (kg) per unit effort (days fished) by year.

Species	YEAR 1983	1984	1985
Epinephelus niveatus Snowy grouper	221.6	403.9	603.6
Epinephelus drummondhayi Speckled hind	64.9	74.9	95.4
Epinephelus morio Red grouper	248.7	240.8	264.2
Mycteroperca microlepis Gag	148.4	193.8	303.4
Mycteroperca phenax Scamp	208.4	362.1	295.6
Rhomboplites aurorubens Vermilion snapper	136.5	239.9	208.8
Lutjanus campechanus Red snapper	-	832.8	535.7
Pagrus pagrus Red porgy	228.3	197.5	256.4
Lopholatilus chamaeleonticeps Tilefish	-	662.2	359.6

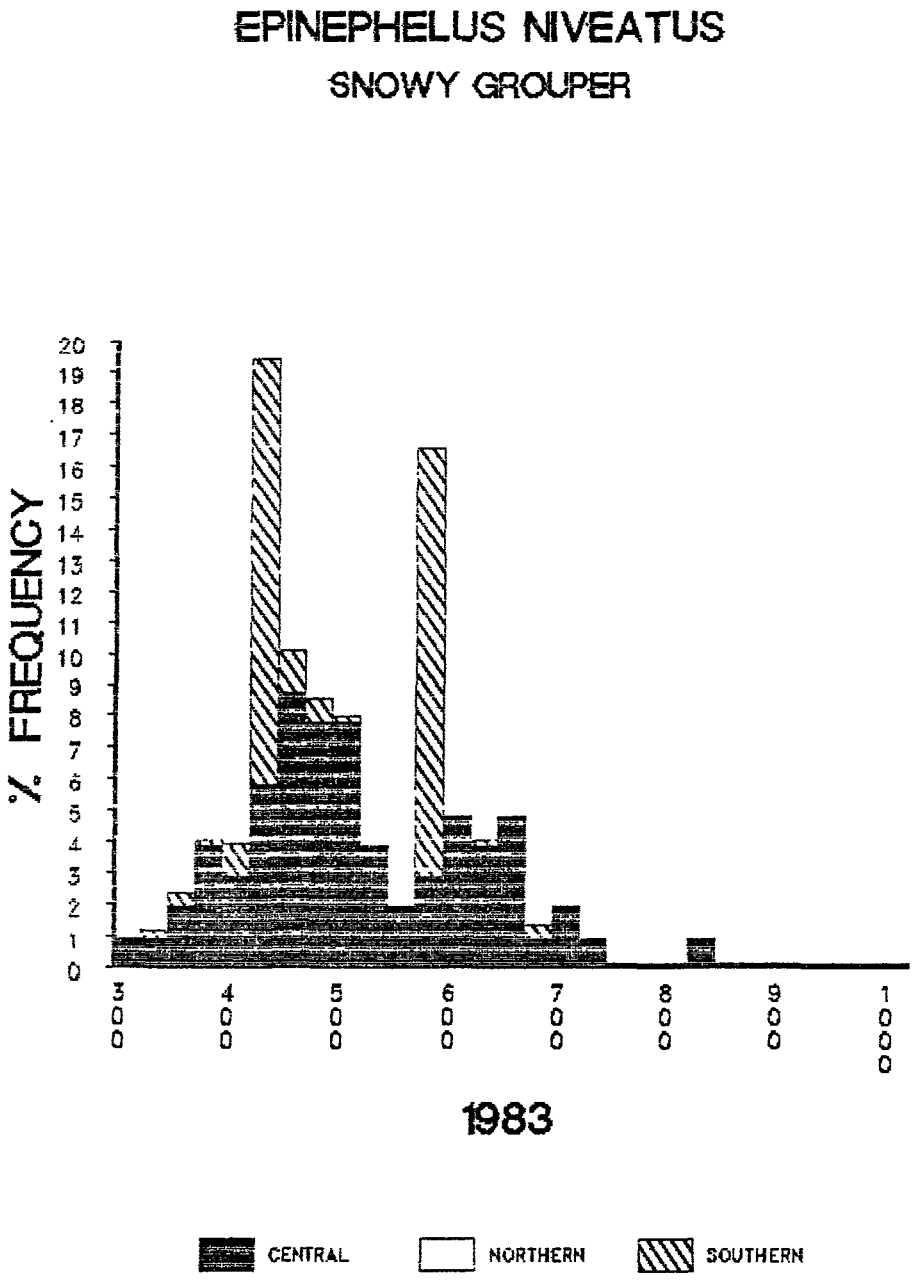

Figure 17. Size frequency of Epinephelus niveatus (snowy grouper) landed in North Carolina in 1983.

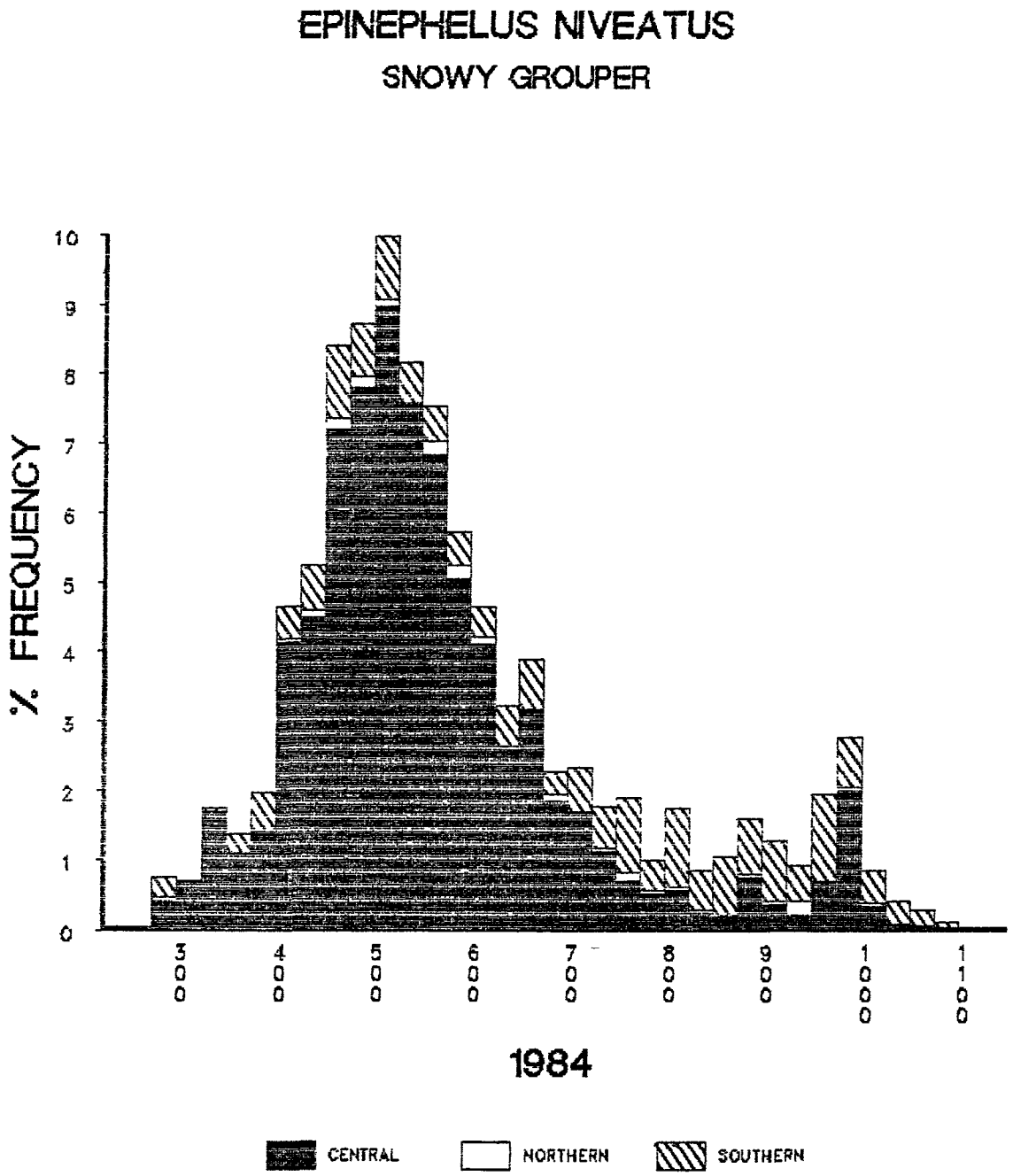

Figure 18. Size frequency of Epinephelus niveatus (snowy grouper) landed in North Carolina in 1984.

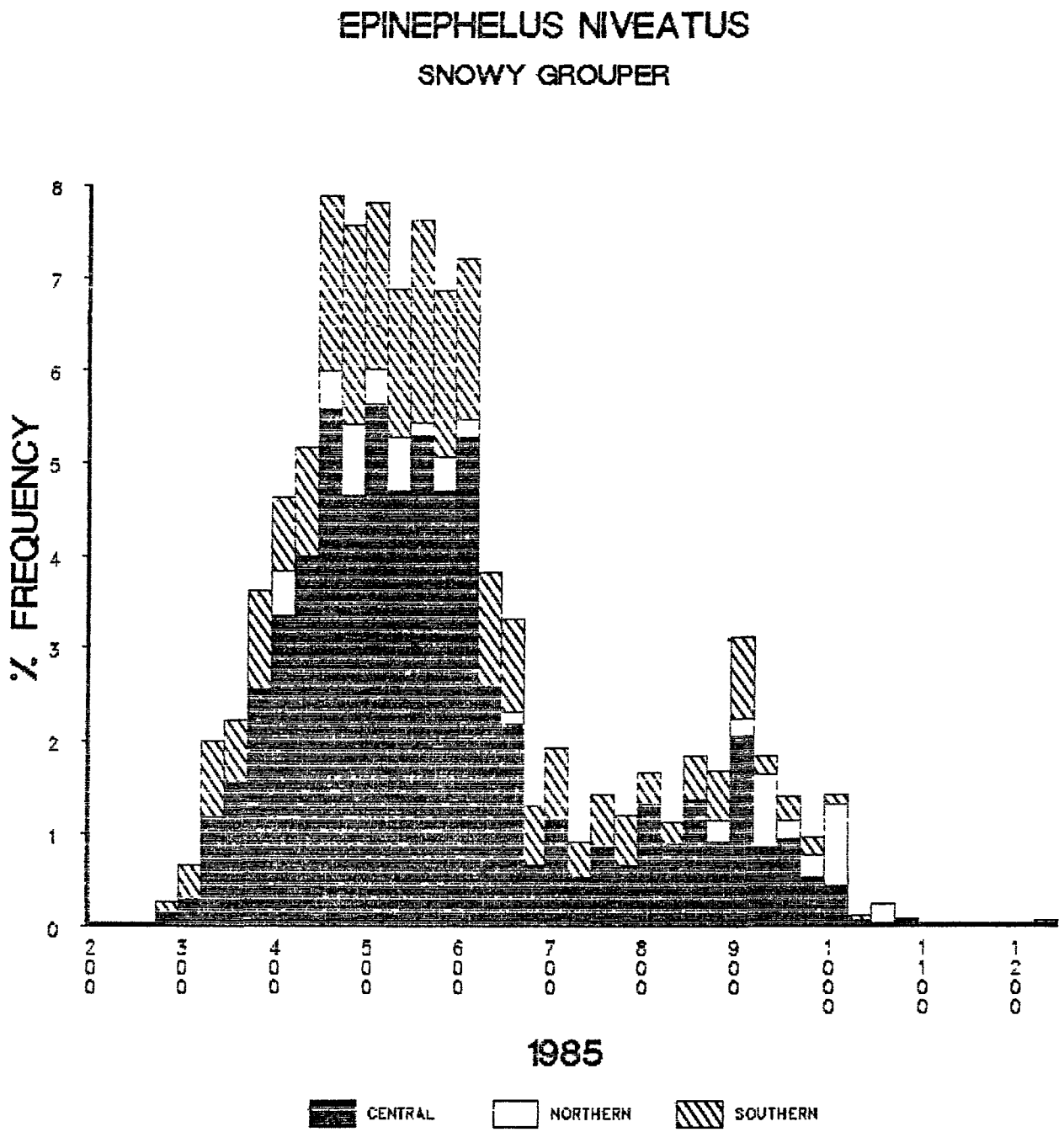

Figure 19. Size frequency of Epinephelus niveatus (snowy grouper) landed in North Carolina in 1985.

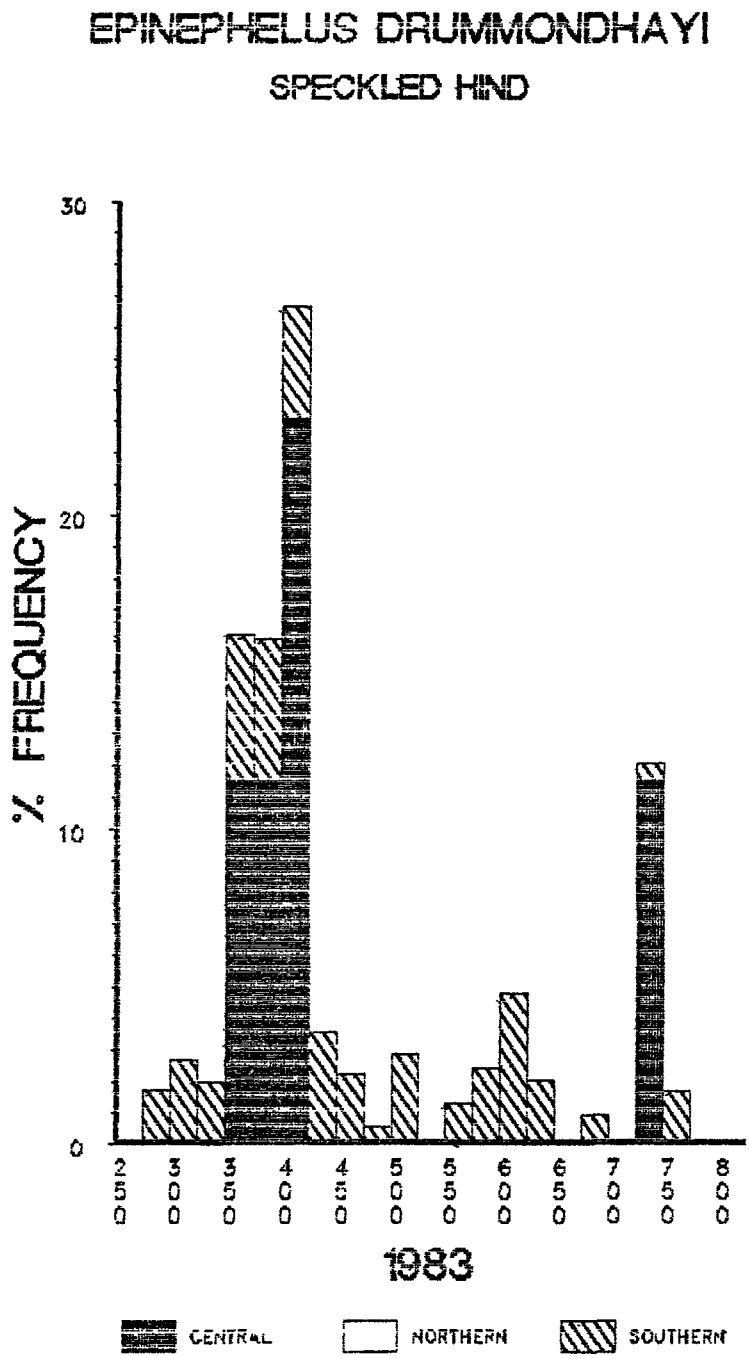

Figure 20. Size frequency of Epinephelus drummondhayi (speckled hind) landed in North Carolina in 1983.

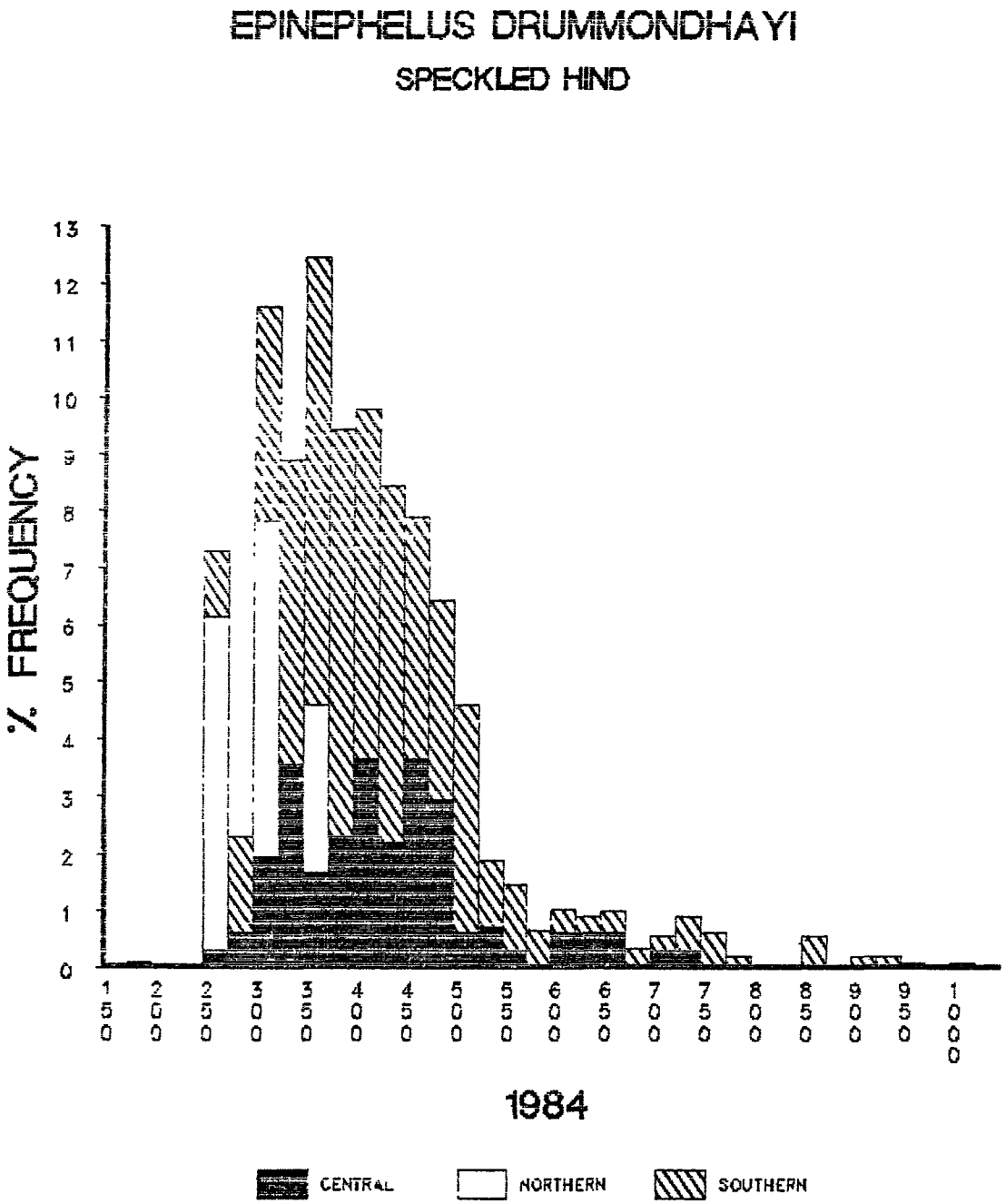

Figure 21. Size frequency of Epinephelus drummondhayi (speckled hind) landed in North Carolina in 1984.

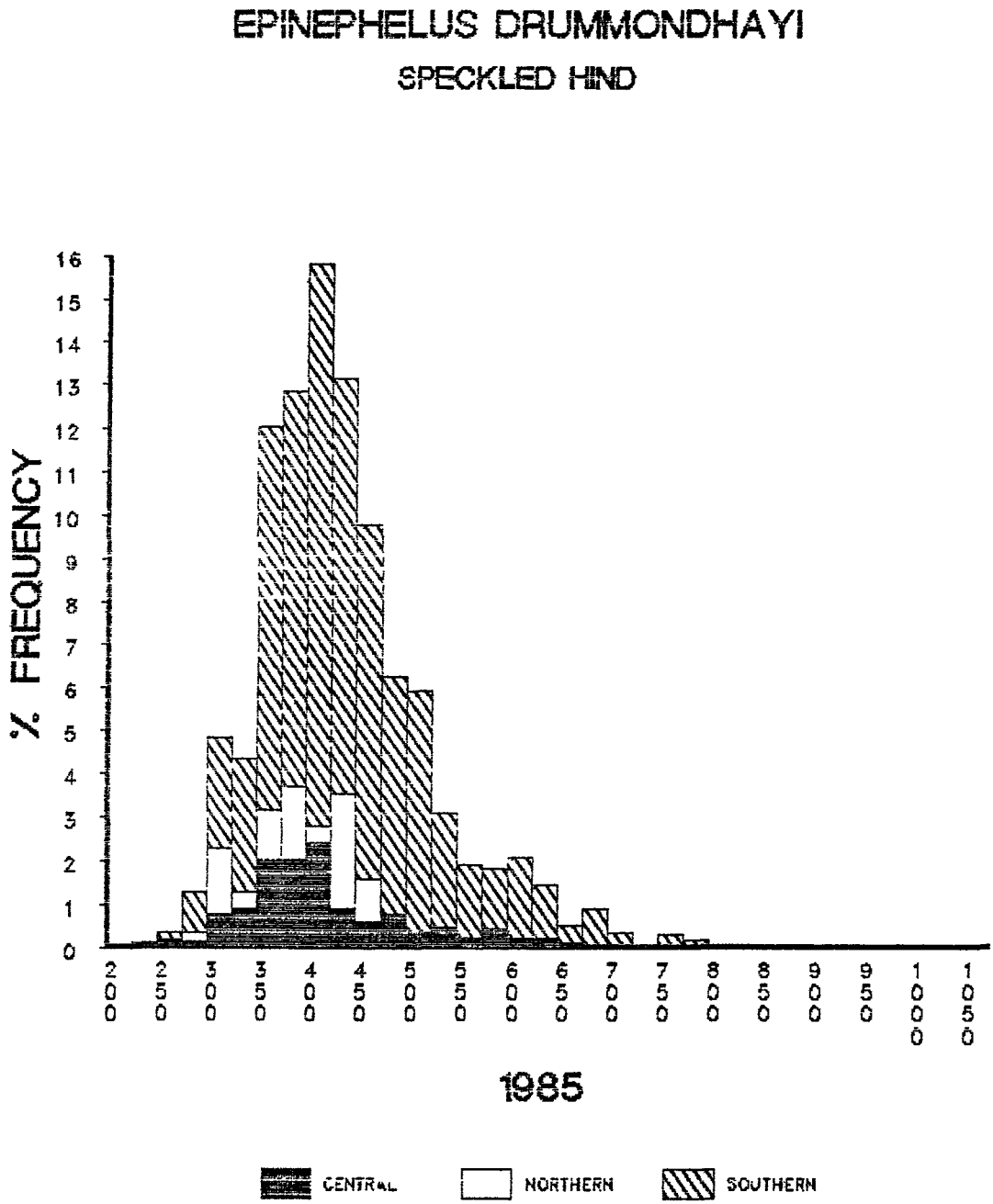

Figure 22. Size frequency of Epinephelus drummondhayi (speckled hind) landed in North Carolina in 1985.

Epinephelus morio

Red grouper ranked fifth in importance in grouper landings and were highest in the southern district (Tables 7 and 8). The estimated number of individuals marketed approximately doubled from 1,016 individuals in 1984 to 2,257 individuals in 1985 (Table 9). Most were relatively large individuals (>600 mm TL) (Figures 23-25). Catch per unit effort of red grouper was highest in the shallowest depth stratum (Table 10). Annual CPUE of red grouper was relatively constant from 1983 to 1985 (Table 12). A weight-length relationship for red grouper is presented in Table 11.

Mycteroperca microlepis

Gag rank first in southern district grouper landings in 1984 (107,923 kg) and second in 1985 (93,605 kg) (Tables 7 and 8). Central district landings of gag decreased from 34,585 kg in 1984 to 12,650 kg in 1985. The estimated number of gag marketed in 1984 and 1985 were 17,839 and 11,794 individuals, respectively (Table 9). Highest CPUE effort of gag occurred in the shallowest depth stratum and decreased sharply at depths >165 m (Table 10). Annual CPUE for gag increased from 148.4 kg/day fished in 1983 to 303.4/kg/day fished in 1985 (Table 12). The size frequency data shown in Figures 26-28 indicate that gag landed in the southern district were larger than those landed in the central districts. Most gag landed were ages 5-10 (Manooch and Haimovici 1978). A weight-length relationship for gag is presented in Table 11.

Mycteroperca phenax

Highest landings of scamp occur in the southern district. It was not observed in samples from the northern district and seldom occurred in the catches landed in the central district. The estimated number of individuals marketed in 1984 and 1985 were 15,713 and 13,702 (Table 9). Most scamp ranged from 400 to 750 mm FL (Figures 29 and 30)and ages 3-15 (Huntsman et al. 1983). Catch per unit effort of scamp was highest at the shallow depth stratum (Table 10). Annual CPUE for scamp increased from 208.4 kg/day fished in 1983 to 362.1 kg/day fished in 1984 and decreased in 1985 to 295.6 kg/day fished (Table 12). A weight-length relationship is presented in Table 11.

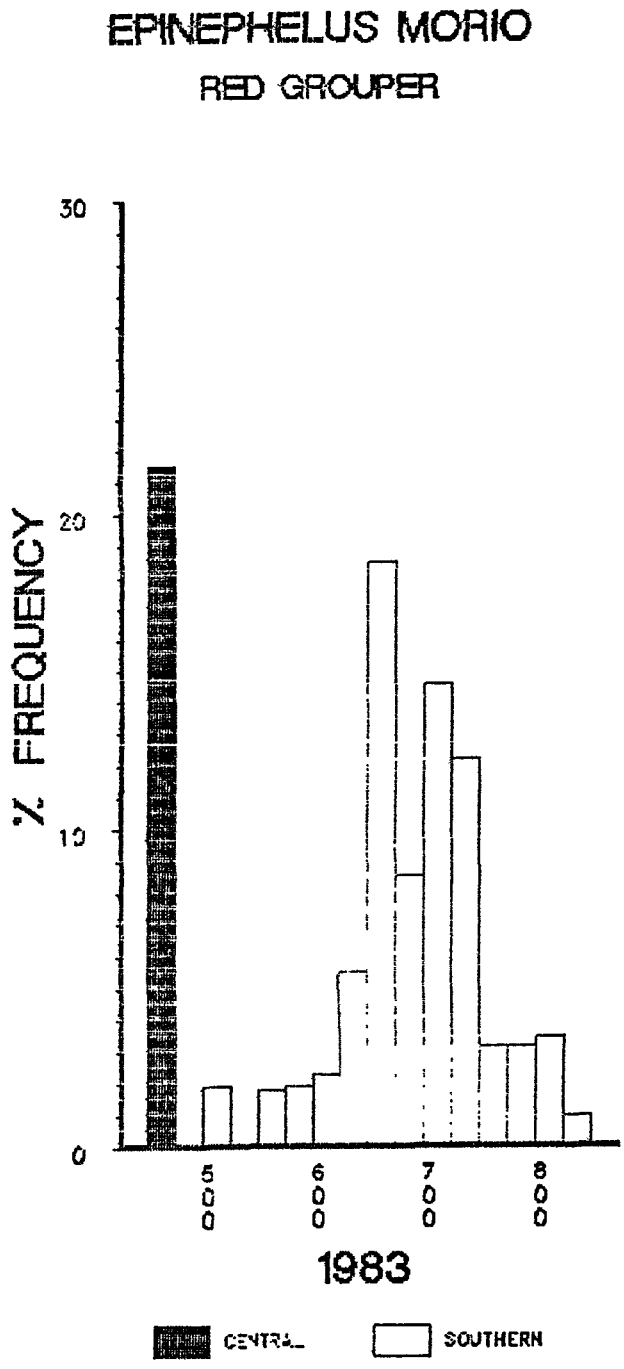

Figure 23. Size frequency of Epinephelus morio (red grouper) landed in North Carolina in 1983.

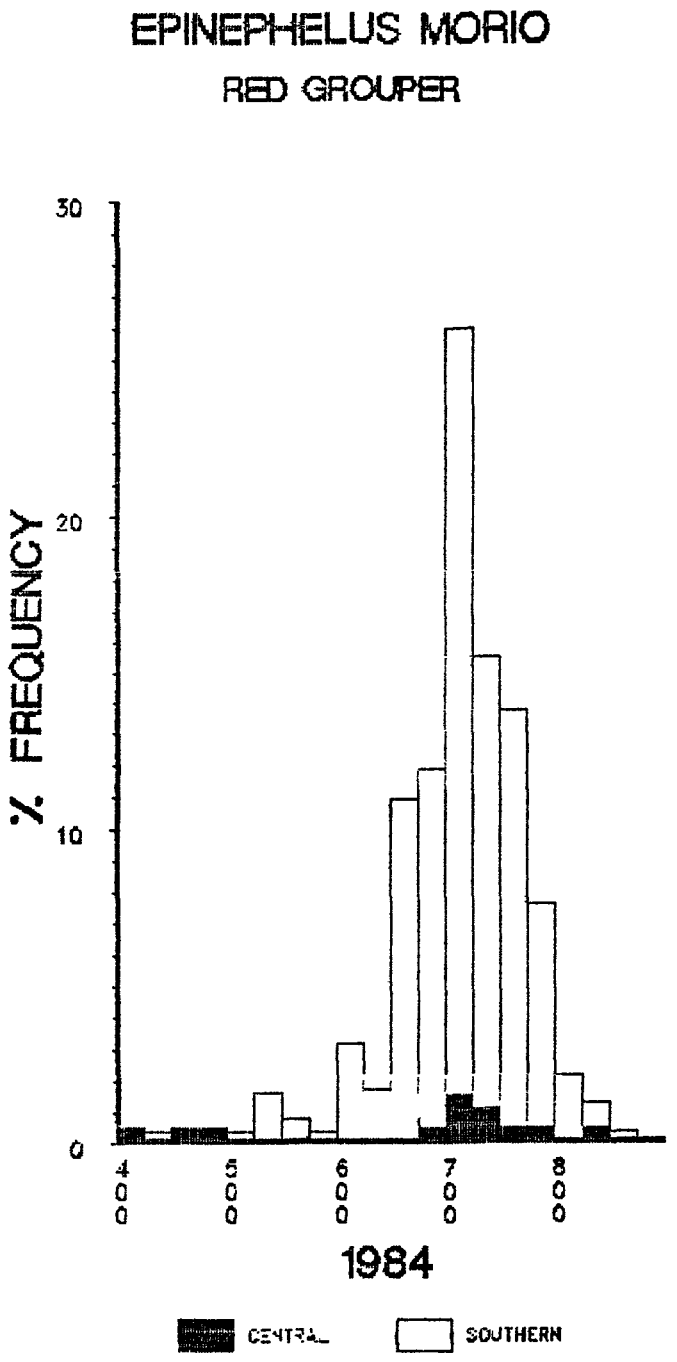

Figure 24. Size frequency of Epinephelus morio (red grouper) landed in North Carolina in 1984.

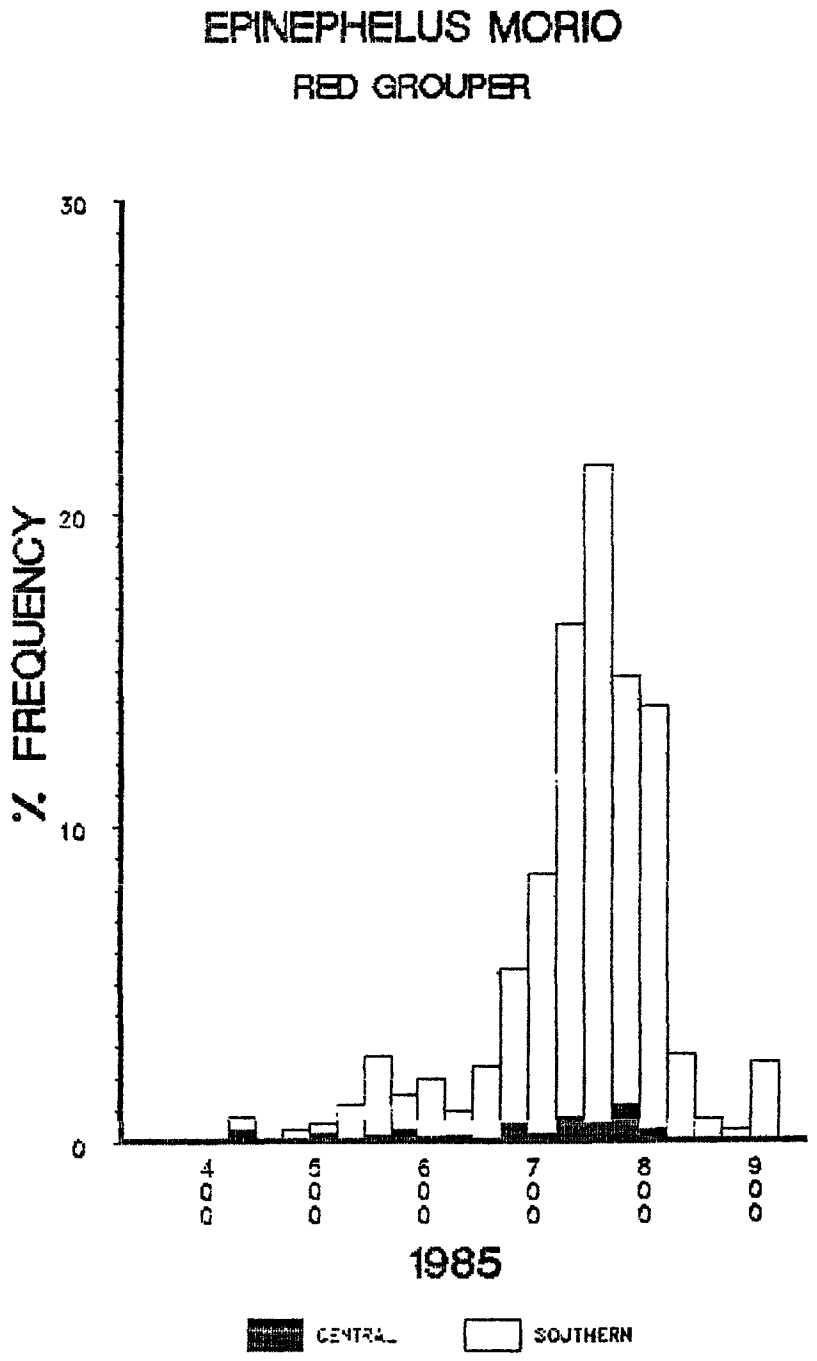

Figure 25. Size frequency of Epinephelus morio (red grouper) landed in North Carolina in 1985.

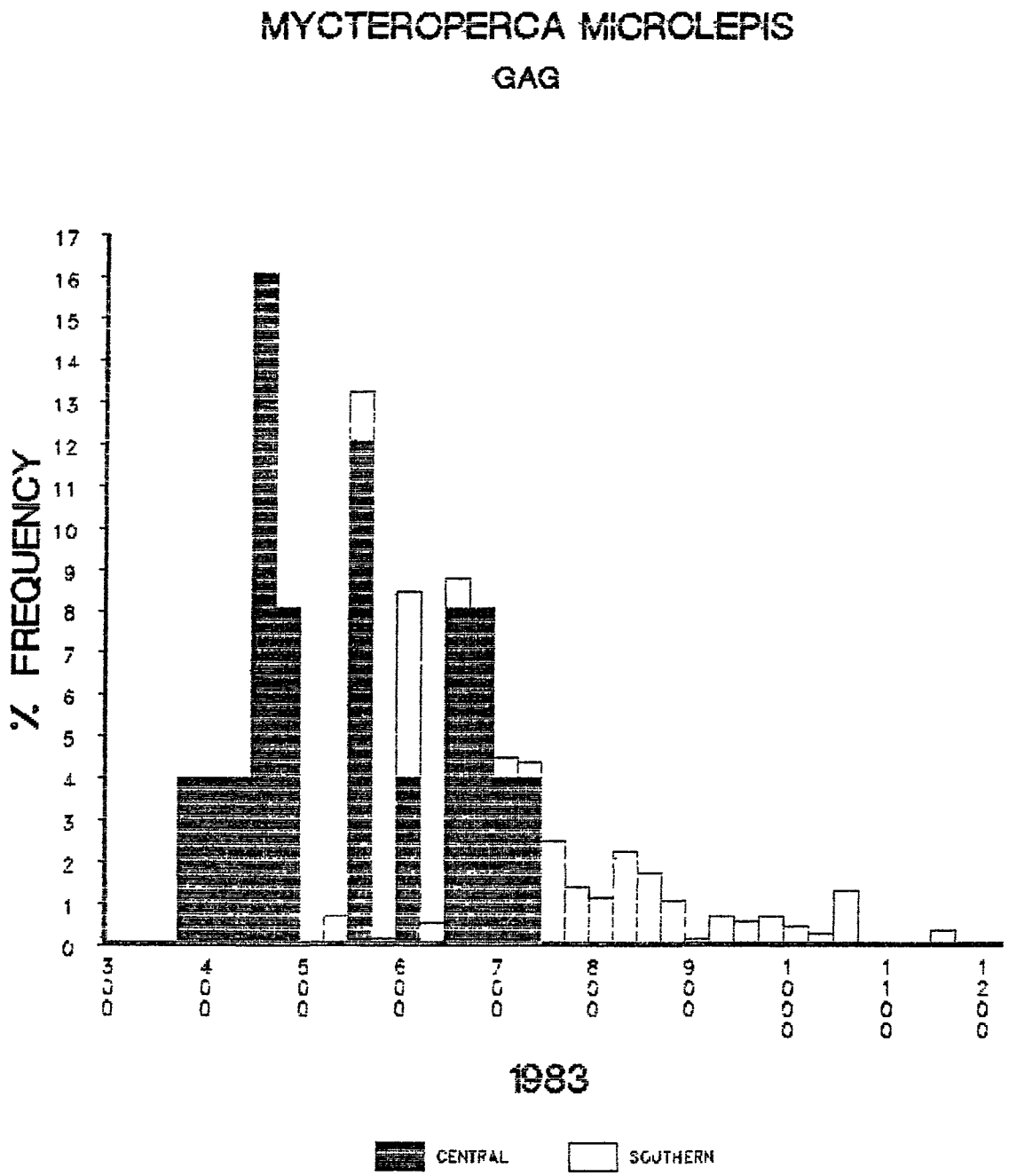

Figure 26. Size frequency of Mycteroperca microlepis (gag) landed in North Carolina in 1983.

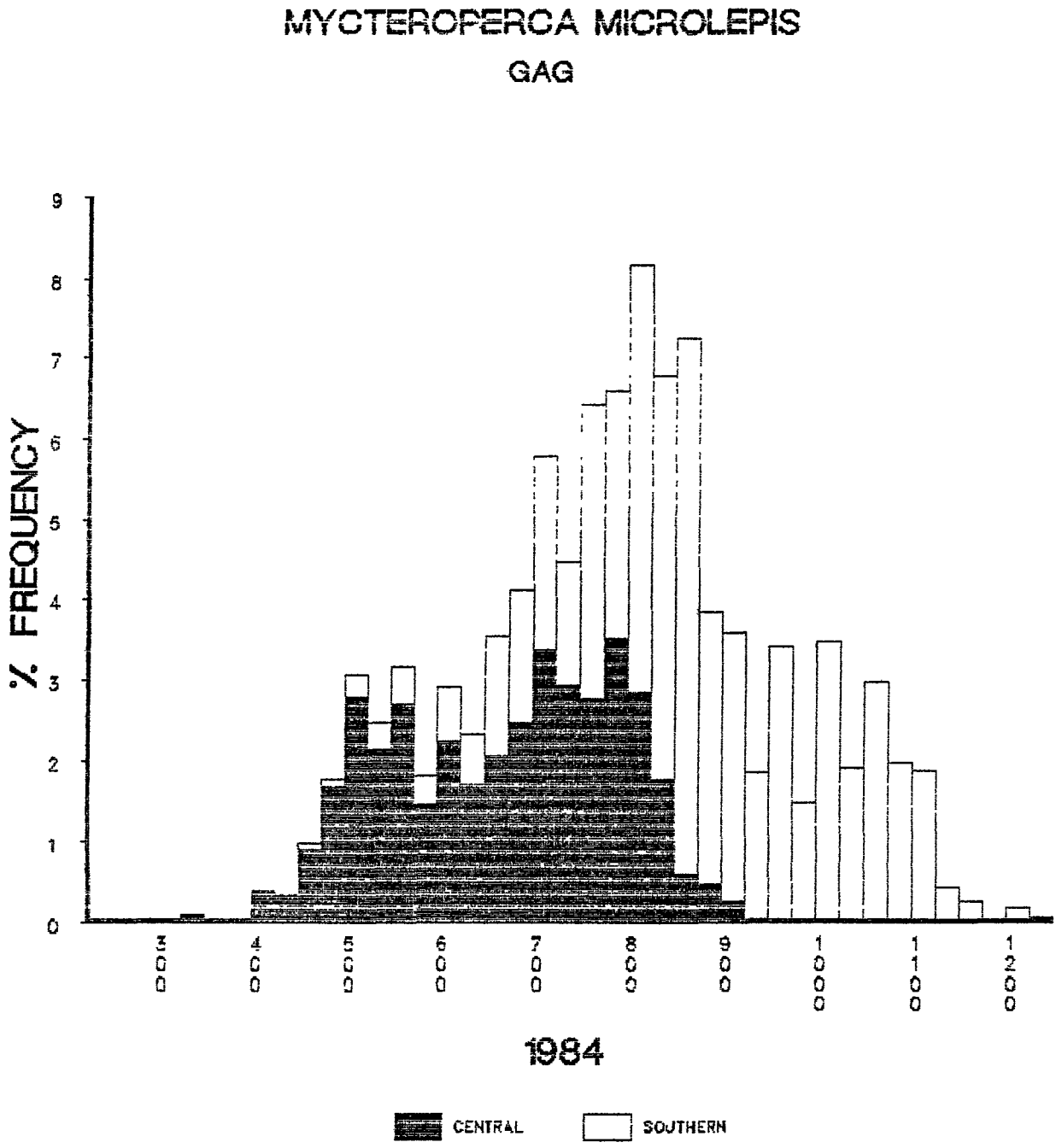

Figure 27. Size frequency of Mycteroperca microlepis (gag) landed in North Carolina in 1984.

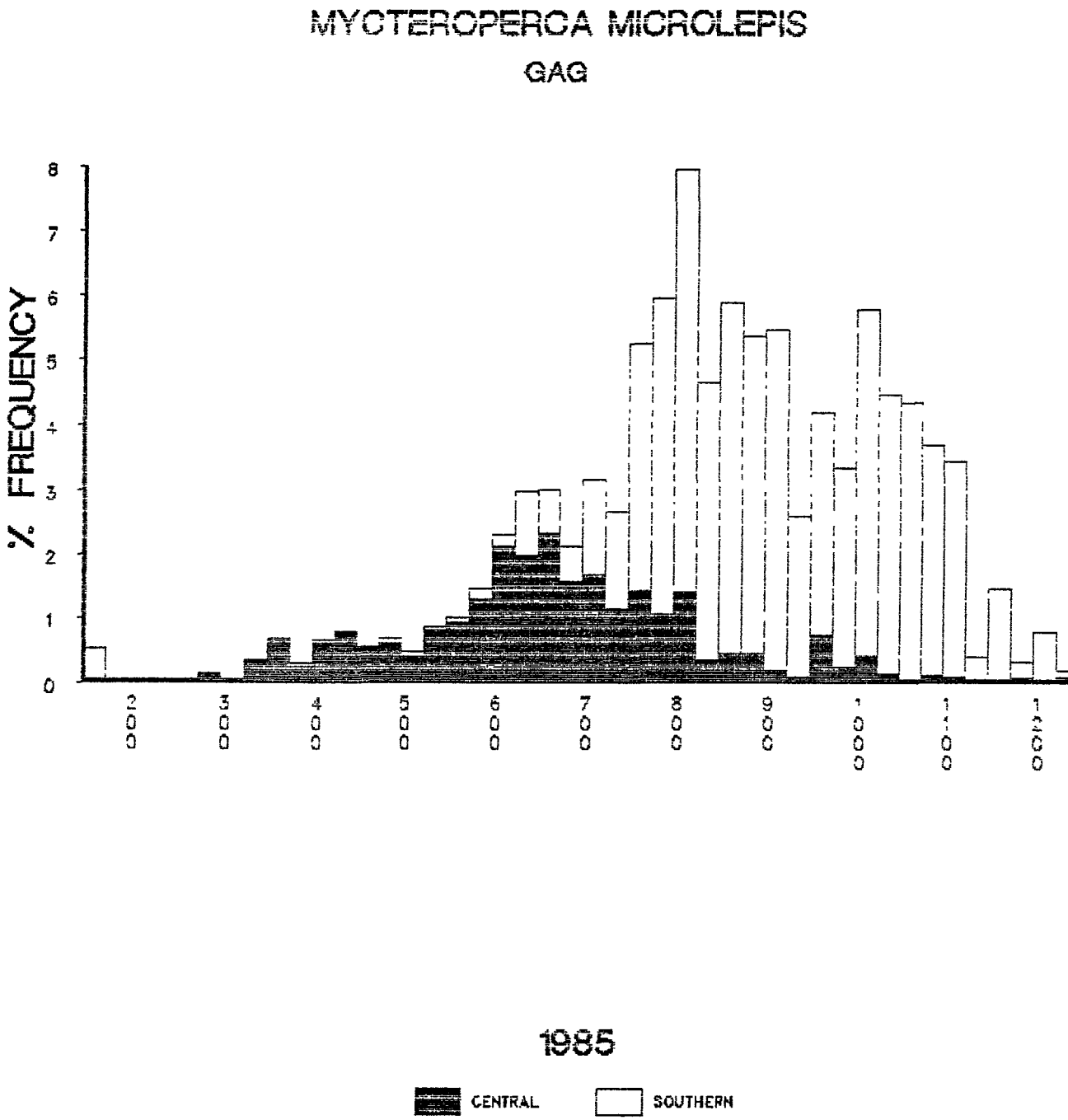

Figure 28. Size frequency of Mycteroperca microlepis (gag) landed in North Carolina in 1985.

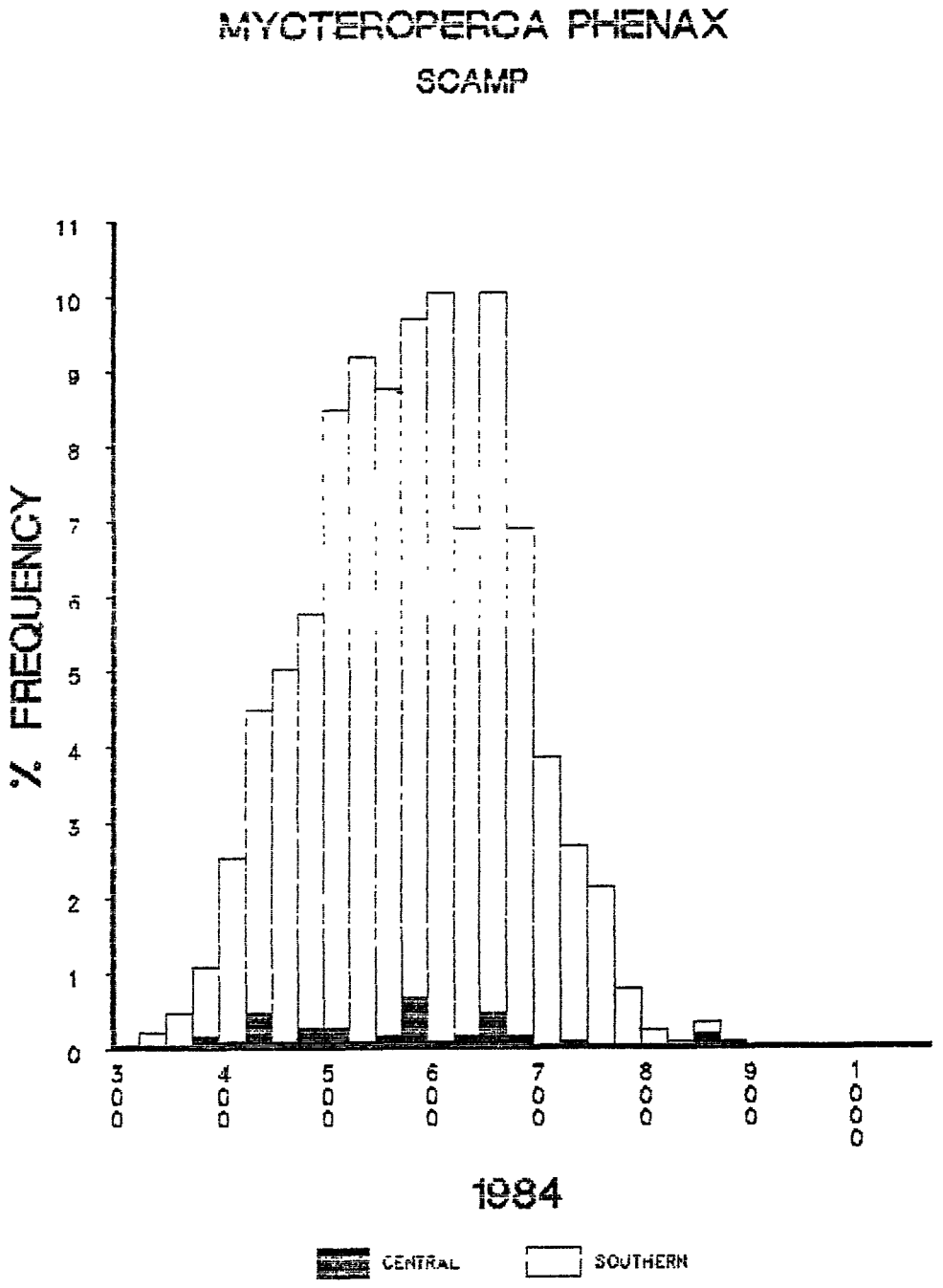

Figure 29. Size frequency of Mycteroperca phenax (scamp) landed in North Carolina in 1984.

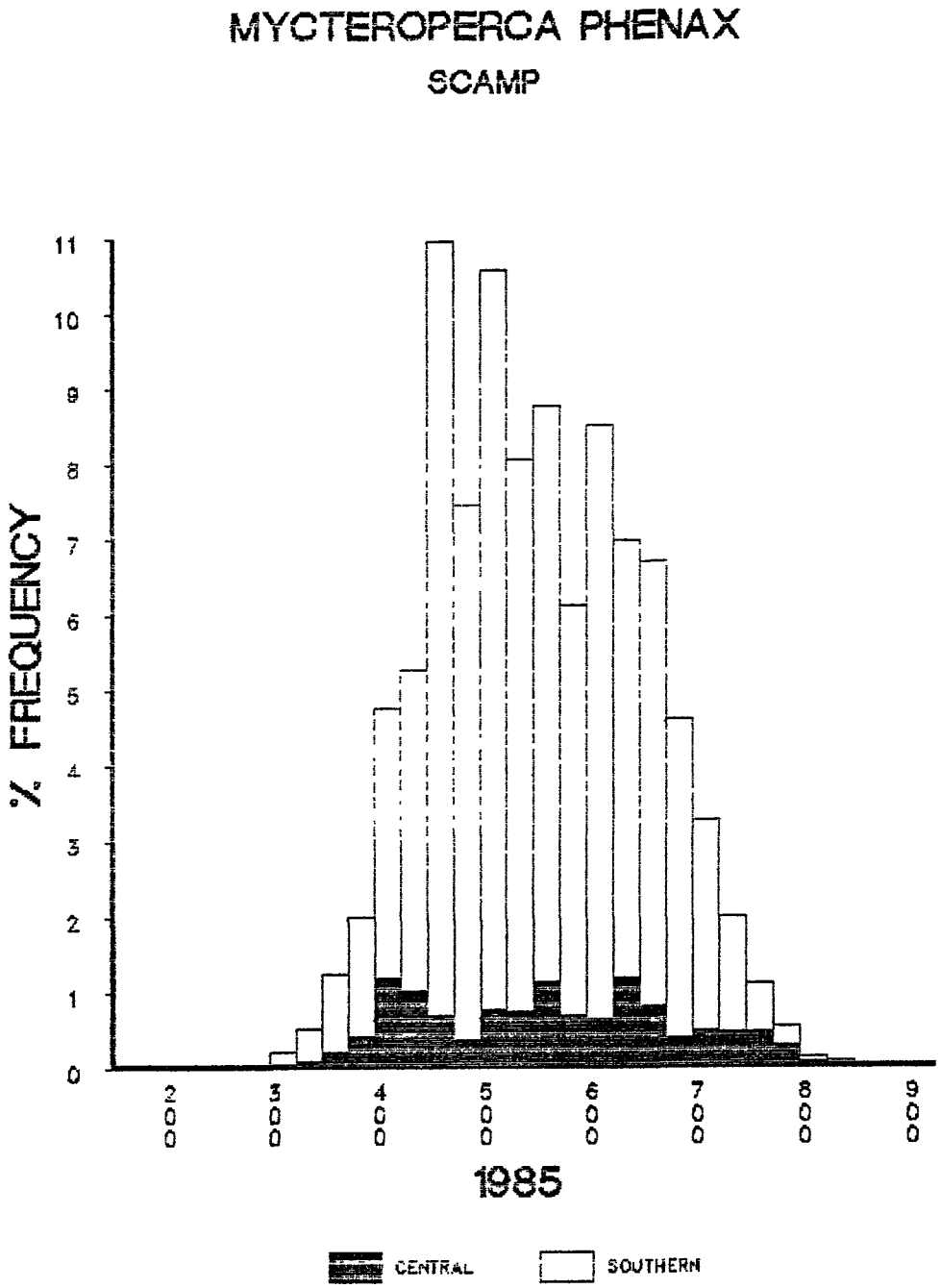

Figure 30. Size frequency of Mycteroperca phenax (scamp) landed in North Carolina in 1985.

Lutjanidae

As a family snappers were second in importance to the sea basses (Serranidae), particularly in the central and southern districts (figures 2-10. A single species, vermilion snapper (Rhomboplites aurorubens) accounted for >85% of the snapper catch in the central and southern districts in 1984 and 1985 (Tables 7 and 8). Vermilion snapper ranked second behind red porgy in state reef fish landed in 1984 and first in 1985. Red snapper (Lutjanus campechanus) and silk snapper (L. vivanus) also contributed significantly to snapper landings along with several species of minor importance (Figures 31-33). Snapper landings were highest in the fall in 1984 and in the spring and fall in 1985 (figures 31-33). Most species were usually graded by size (Table 5) and fishermen were paid more for the larger grades. Lutjanids were frequently targeted by the fishermen because of their higher value.

Rhomboplites aurorubens

Vermilion snapper are landed in all three districts but highest landings occur in the central and southern districts (Tables 0-8). The number of individuals landed increased by 65% from 174,451 in 1984 to 288,056 in 1985 (Table 9). Catch-per-unit effort of vermilion snapper was highest at the intermediate depth strata (64-105 m) (Table 10). Annual CPUE of vermilion snapper increased from 136.5 kg/day fished in 1983 to 239.9 kg/day fished in 1984 and decreased slightly in 1985 (208.8 kg/day fished) (Table 12). Vermilion snapper ranged in length from 200 to 600 mm TL (Figures 34-36). Most vermilion snappers landed were 3-8 years old (Grimes 1978). A weight-length relationship for vermilion snapper is presented in Table 11.

Lutjanus campechanus

Red snapper landings decreased from 17,156 kg in 1984 to 13,744 kg in 1985 (Tables 7 and 8). This was due primarily to a decrease in central district landings of red snapper. The estimated number of individuals landed statewide decreased from 8,533 in 1984 to 5,086 in 1985 (Table 9). Red snapper catch per unit effort was highest in the shallowest depth stratum (<64 m) (Table 10). Catch per unit effort of red snapper decreased from 832.8 kg/day fished in 1984 to 535.7 kg/day fished in 1985 (Table 12). Red snapper ranged in

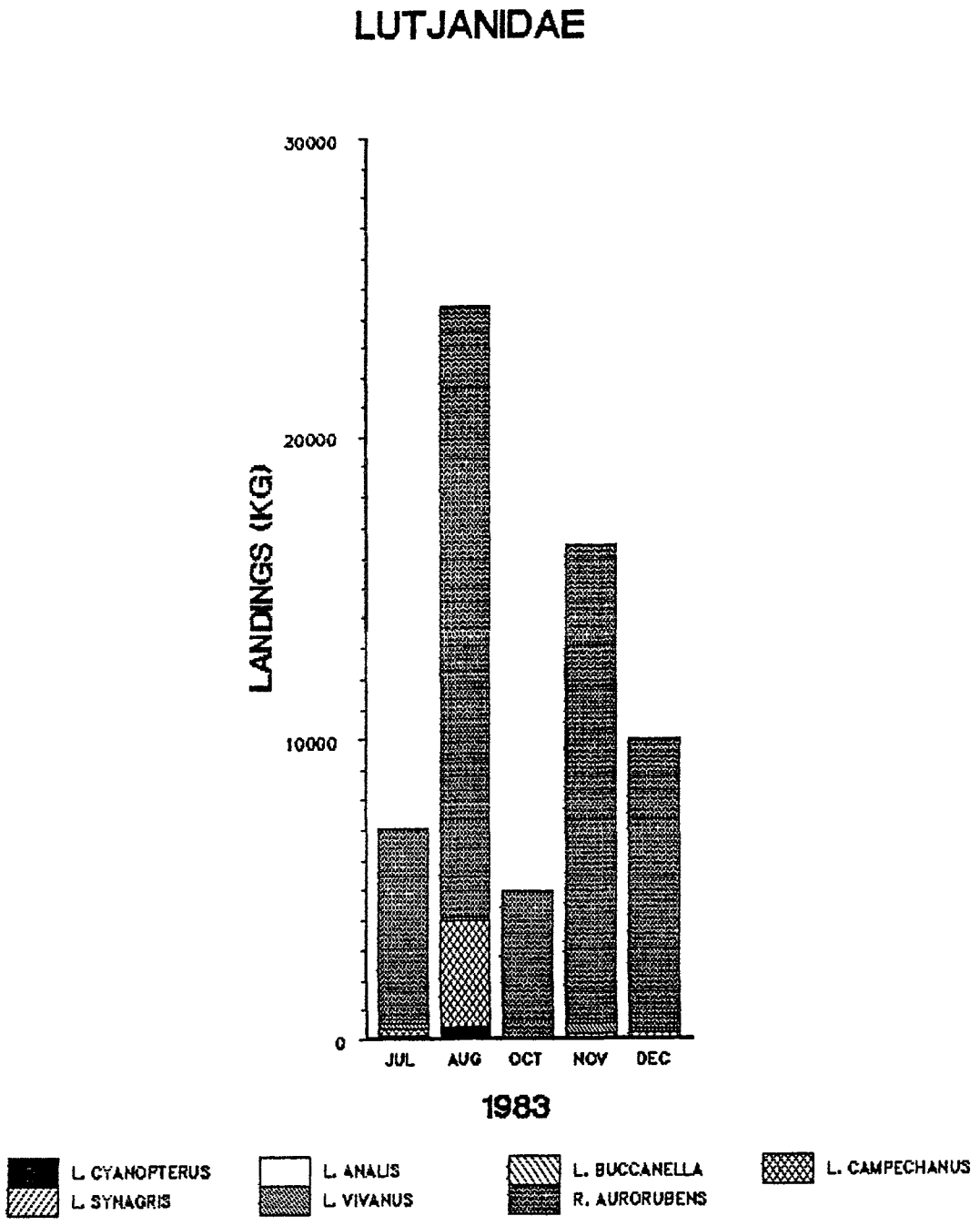

Figure 31. Monthly lutjanid (snapper) landings for 1983.

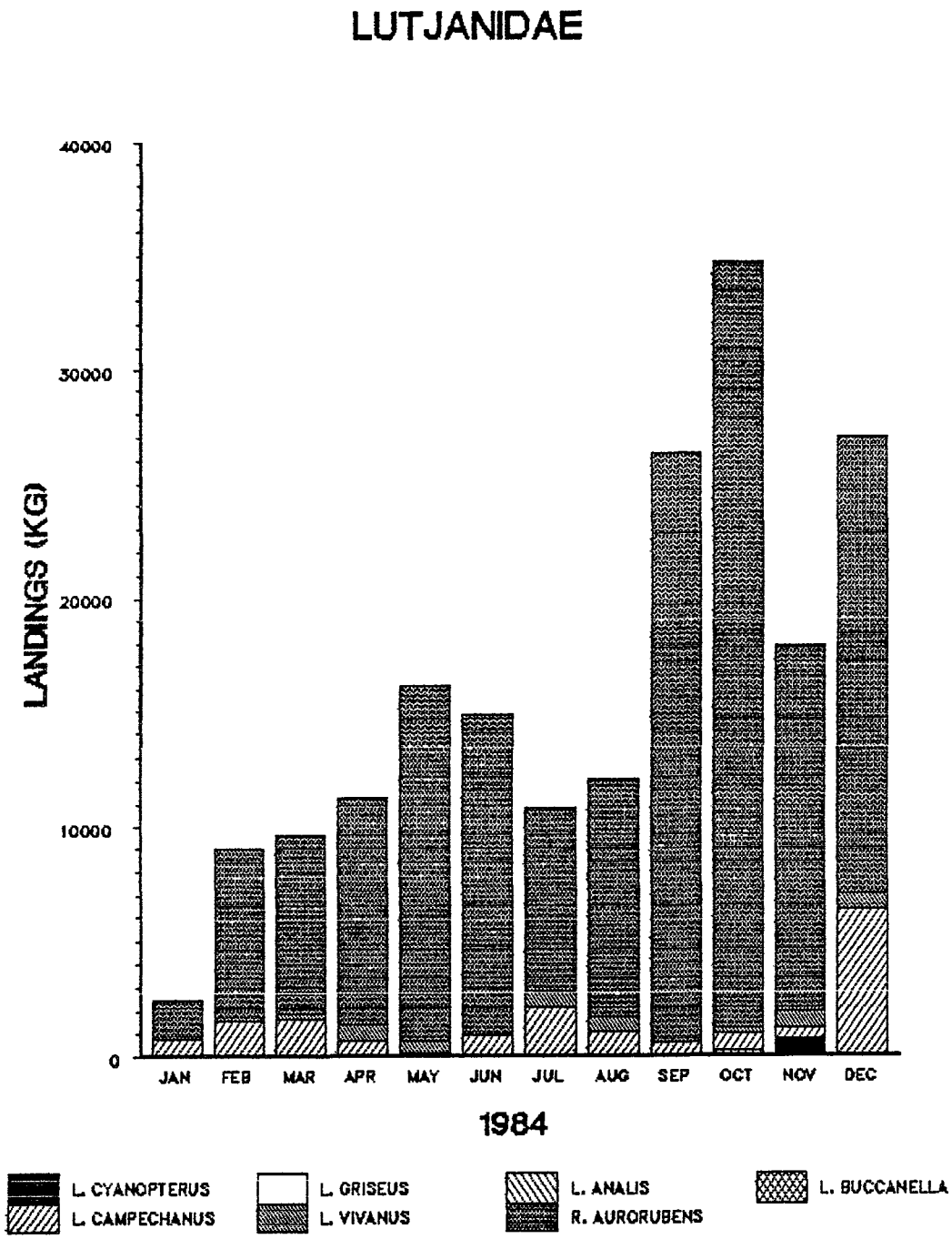

Figure 32. Monthly lutjanid (snapper) landings for 1984.

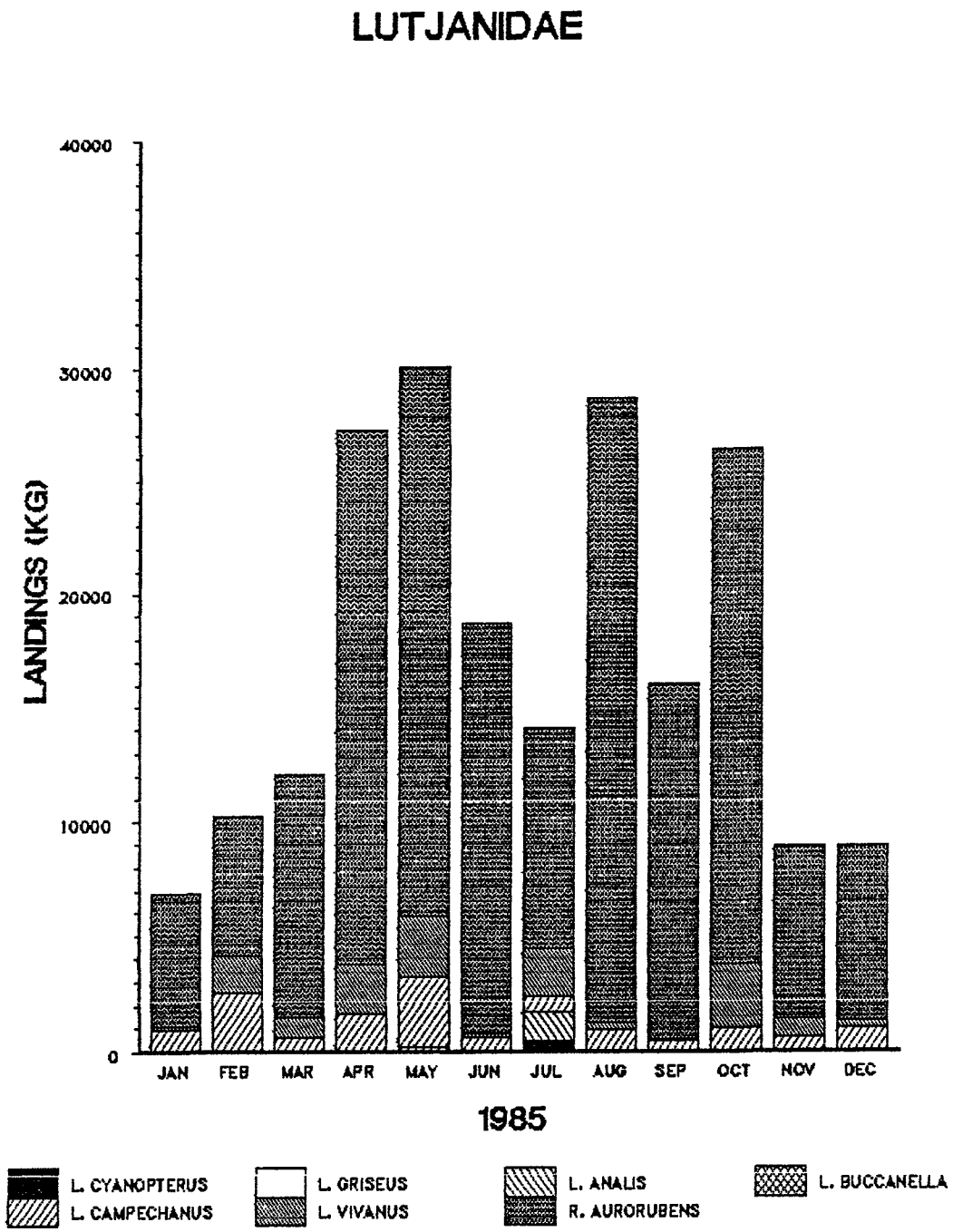

Figure 33. Monthly lutjanid (snapper) landings for 1985.

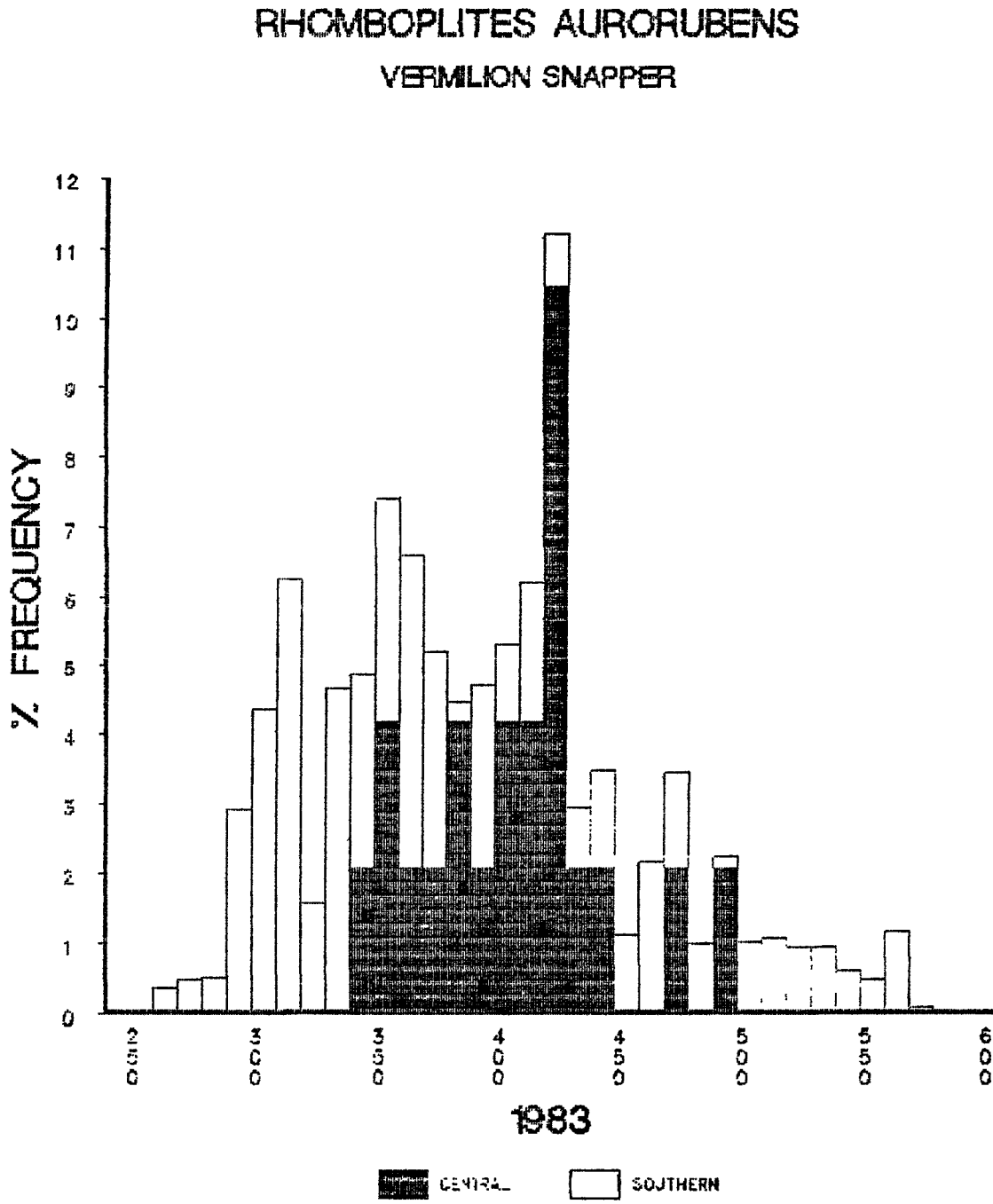

Figure 34. Size frequency of Rhomboplites aurorubens (vermilion snapper) landed in North Carolina in 1983.

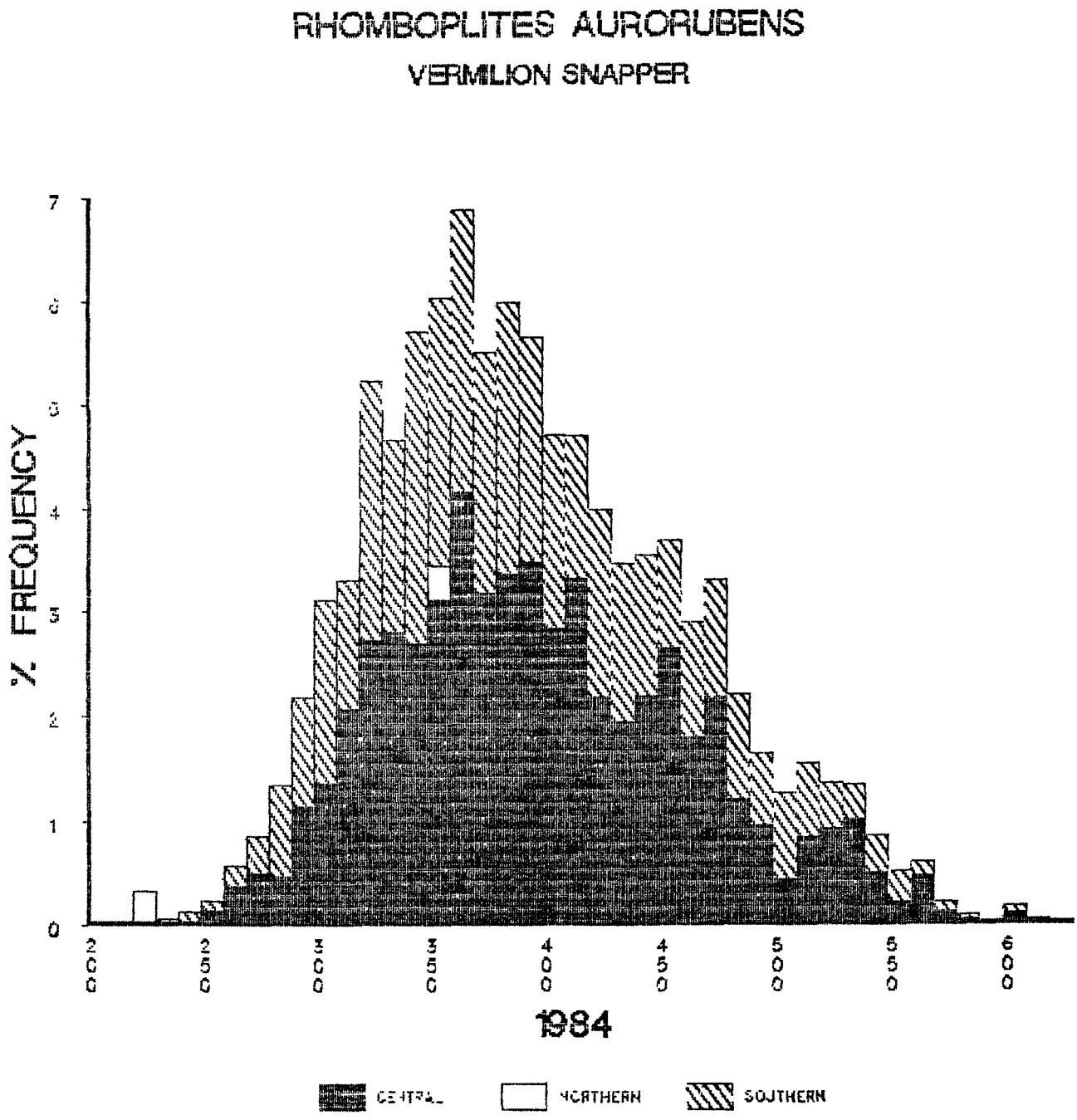

Figure 35. Size frequency of Rhomboplites aurorubens (vermilion snapper) landed in North Carolina in 1984.

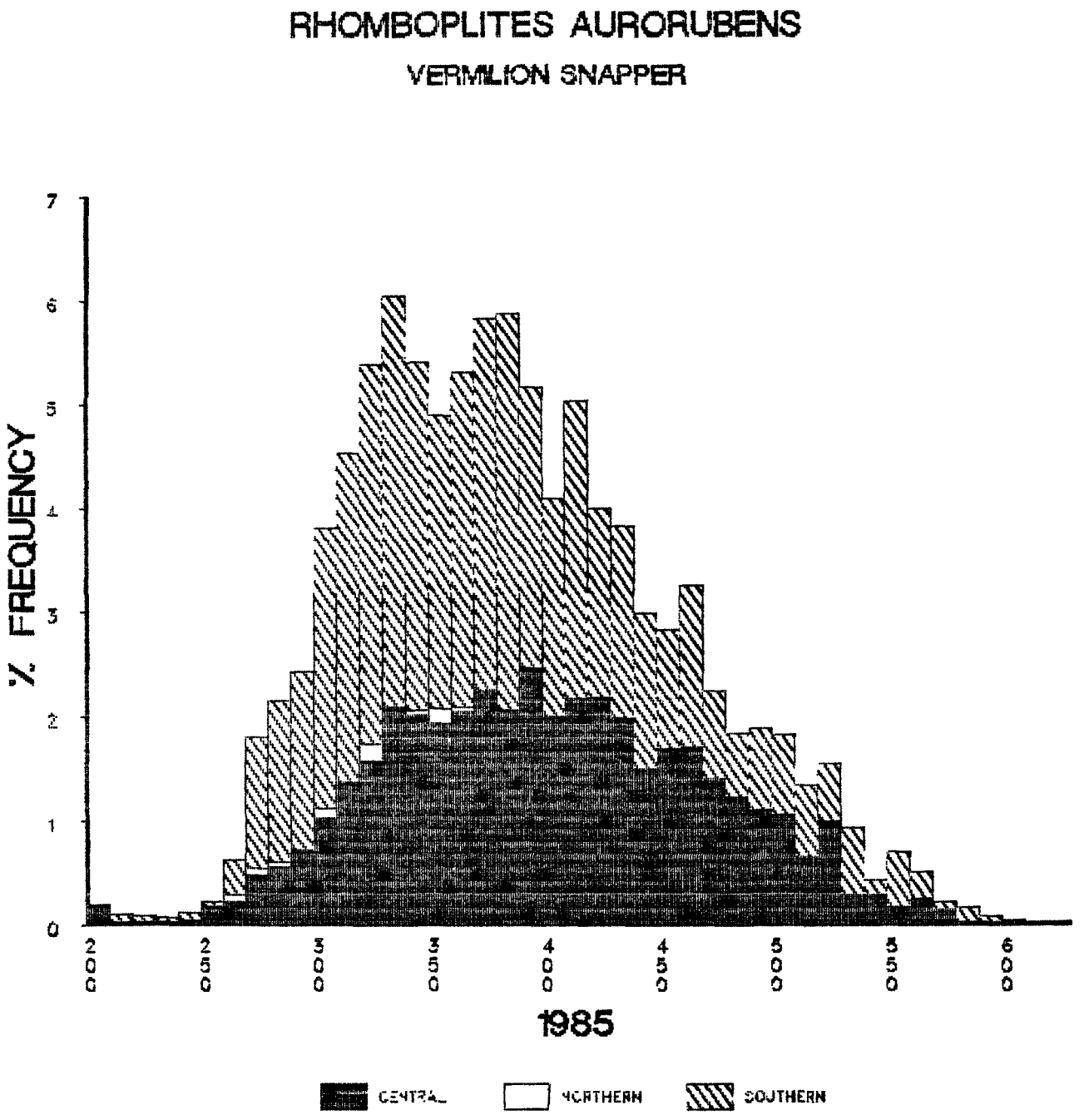

Figure 36. Size frequency of Rhomboplites aurorubens (vermilion snapper) landed in North Carolina in 1985.

length from 300-075 mm TL (Figures 37-39). Most red snapper were ages 2-5 but many exceeded age 10 (Nelson and Manooch 1982). A weight-length relationship for red snapper is presented in Table 11.

Sparidae

Red porgy (Pagrus pagrus) was the most important reef fish species in terms of weight landed in 1984 and second in 1985 and was the only sparid of significance in the landings (Figures 40-42). Knobbed porgy (Calamus nodosus) catches were frequent, especially in the southern district, but contributed less than 6.0% in weight to total porgy landings. With the exception of red porgy, the sparids do not command a high price. Red porgy is marketed as "pink snapper" and is graded in size categories paralleling those of vermilion snapper (Table 5).

Pagrus pagrus

Red porgy landing decreased from 210,714 kg in 1984 in the central and southern districts to 176,814 kg in 1985 (Tables 7 and 8). In 1984 an estimated 194,873 individuals were marketed while in 1985 the estimated number marketed was 160,780 (Table 9). Red porgy catch per unit effort was highest at depths <165 m (Table 10). Annual CPUE of red porgy decreased from 1983 (228.3 kg/day fished) to 1984 (197.5 kg/day fished) and then increased in 1985 (256.4 kg/day fished) (Table 12). Red porgy ranged from 200-675 mm TL and size distributions were similar in both years in the central and southern districts (Figures 43-45). The majority are 3-8 years old (Manooch and Huntsman 1977). A weight-length relationship is presented in Table 11.

Malacanthidae

Two species of tilefishes were major components of the reef fish landings, blueline tilefish (Caulolatilus microps) and tilefish (Lopholatilus chamaeleonticeps). Two other species, blackline tilefish (C. cyanops) and goldface tilefish (C. chrysops) were of minor importance. Malacanthids were second in importance to serranids in northern district reef fish landings (Table 6-8). Blueline tilefish catches were highest in the spring and summer (Figures 46-48). Blueline tilefish catches decreased from 20,550 kg in 1984

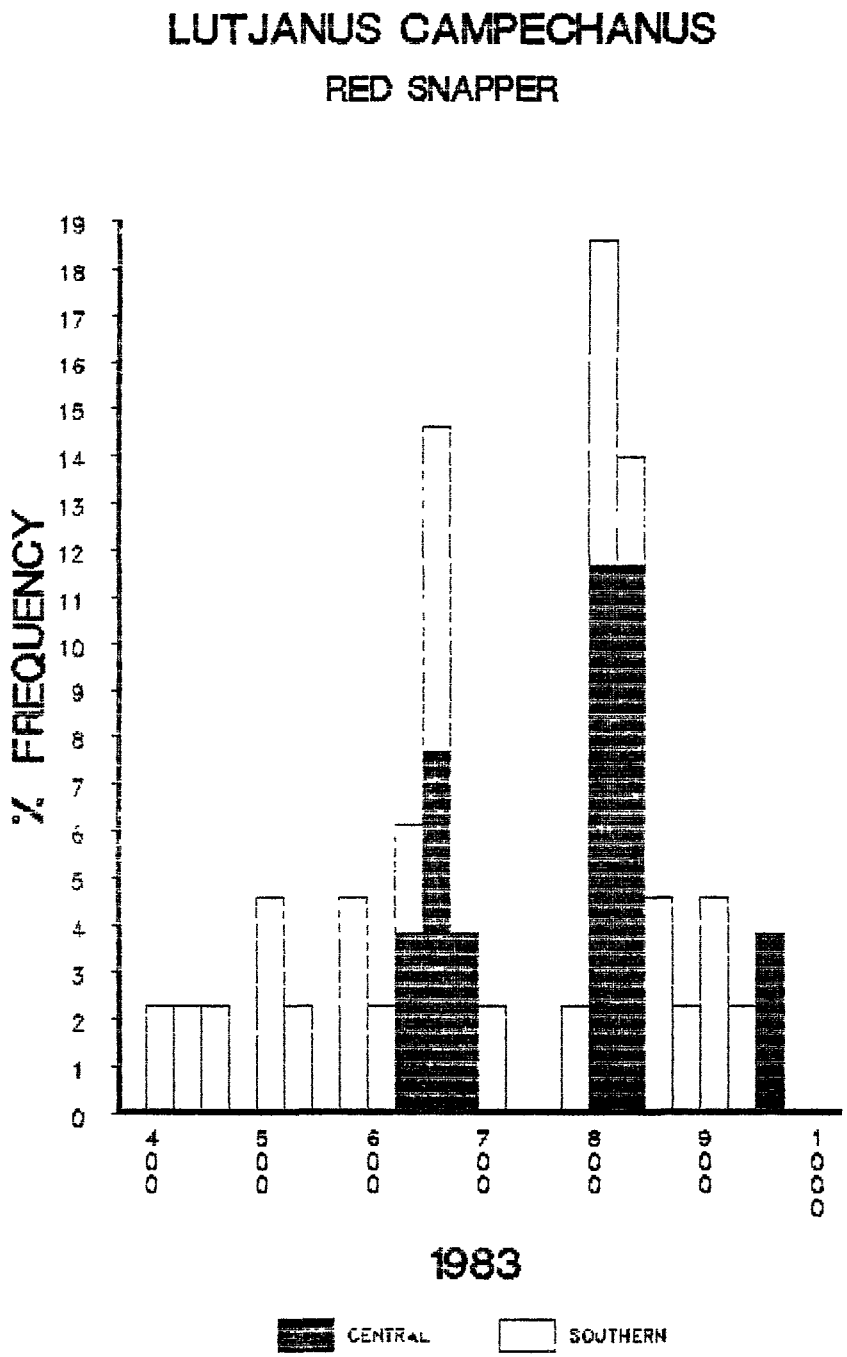

Figure 37. Size frequency of Lutjanus campechanus (red snapper) landed in North Carolina in 1983.

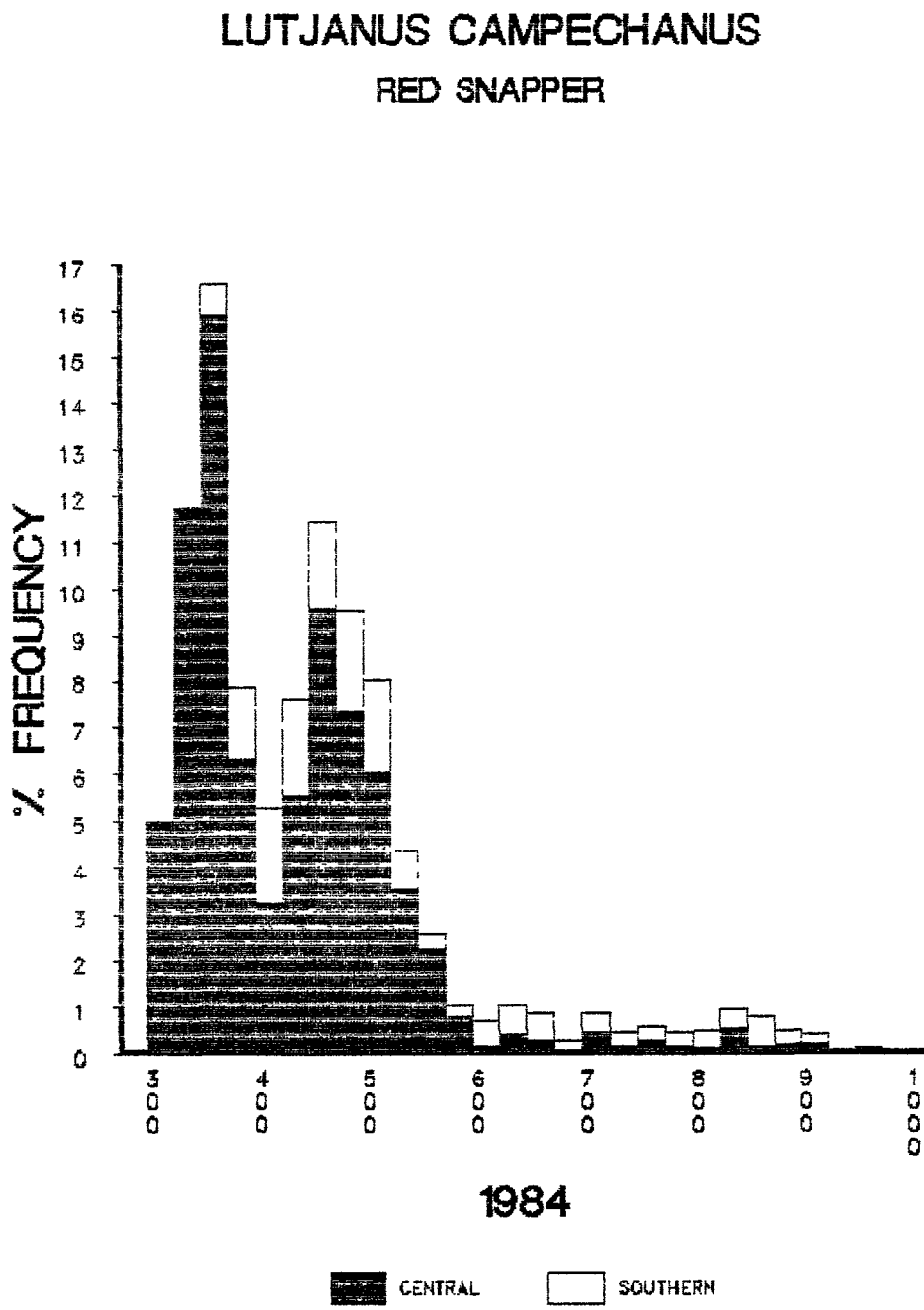

Figure 38. Size frequency of Lutjanus campechanus (red snapper) landed in North Carolina in 1984.

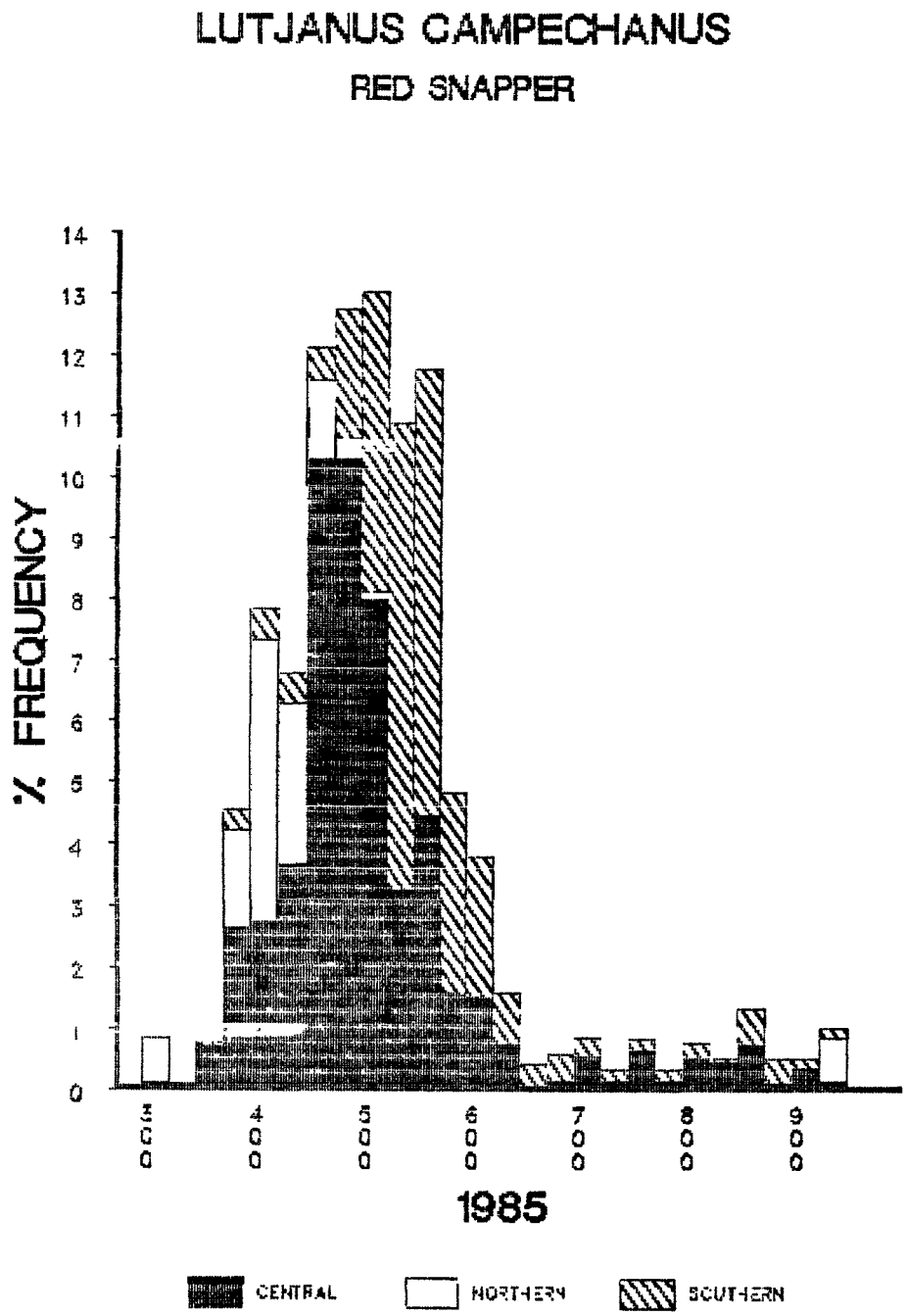

Figure 39. Size frequency of Lutjanus campechanus (red snapper) landed in North Carolina in 1985.

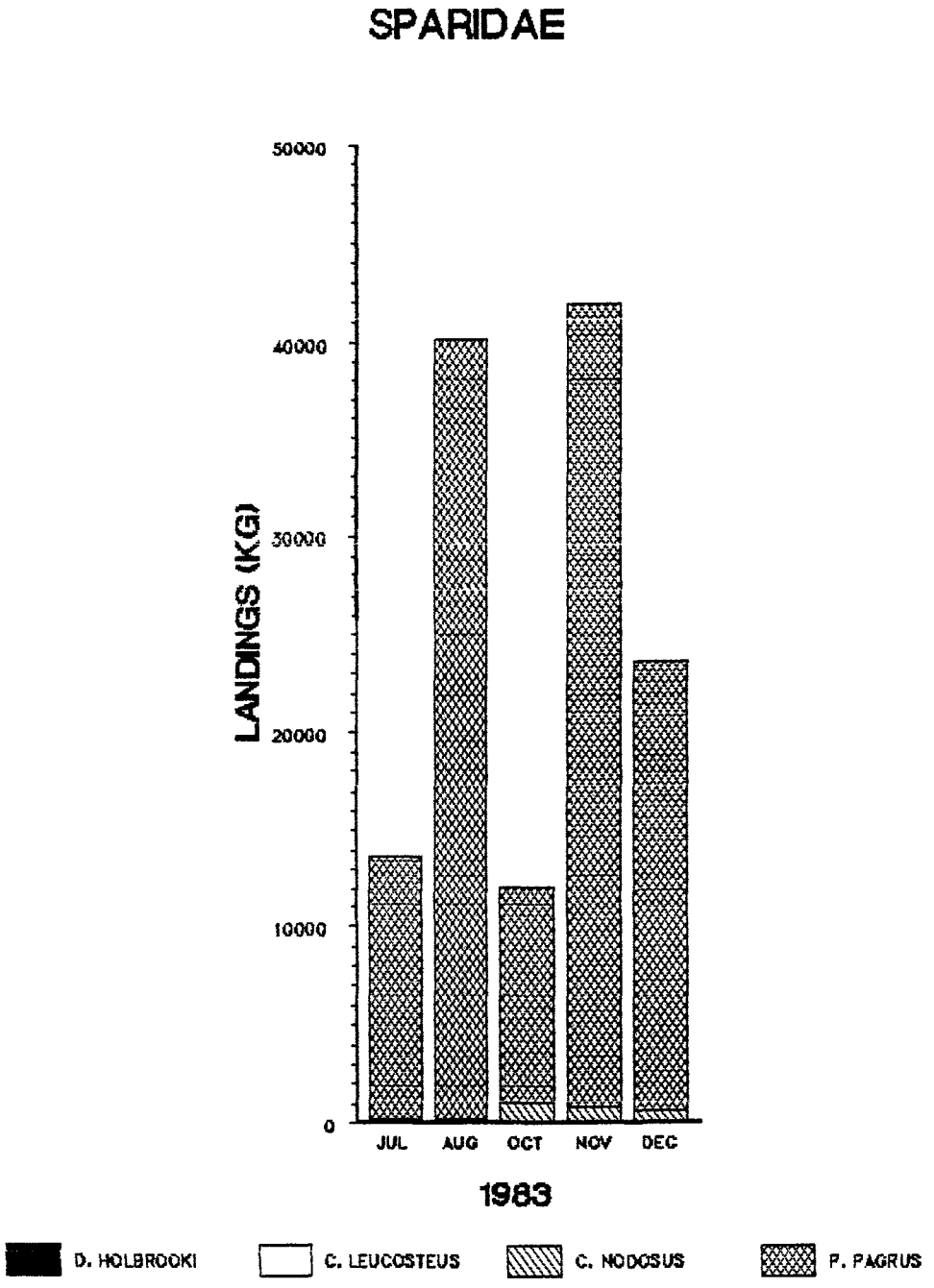

Figure 40. Monthly sparid (porgy) landings for 1983.

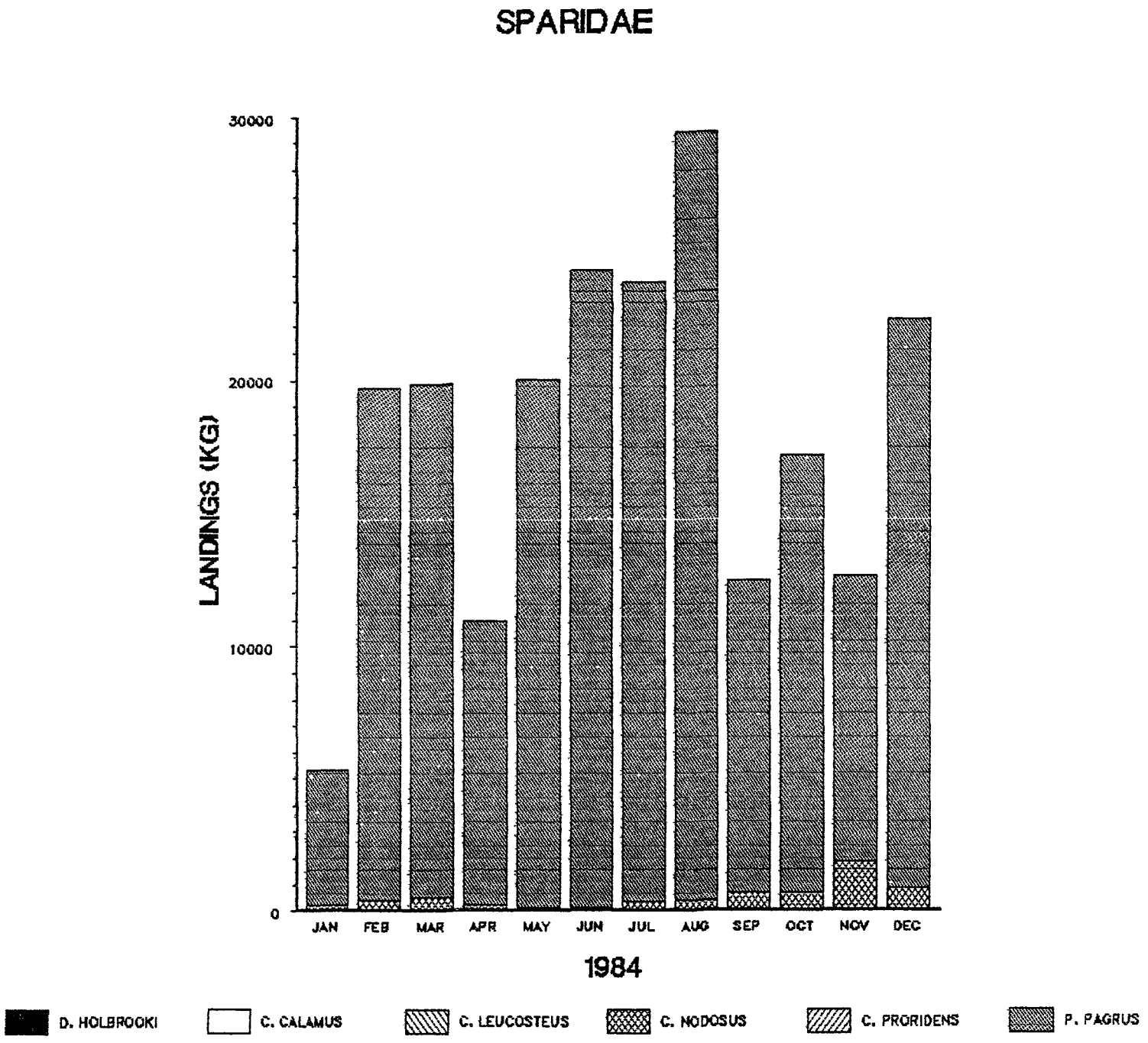

Figure 41. Monthly sparid (porgy) landings for 1984.

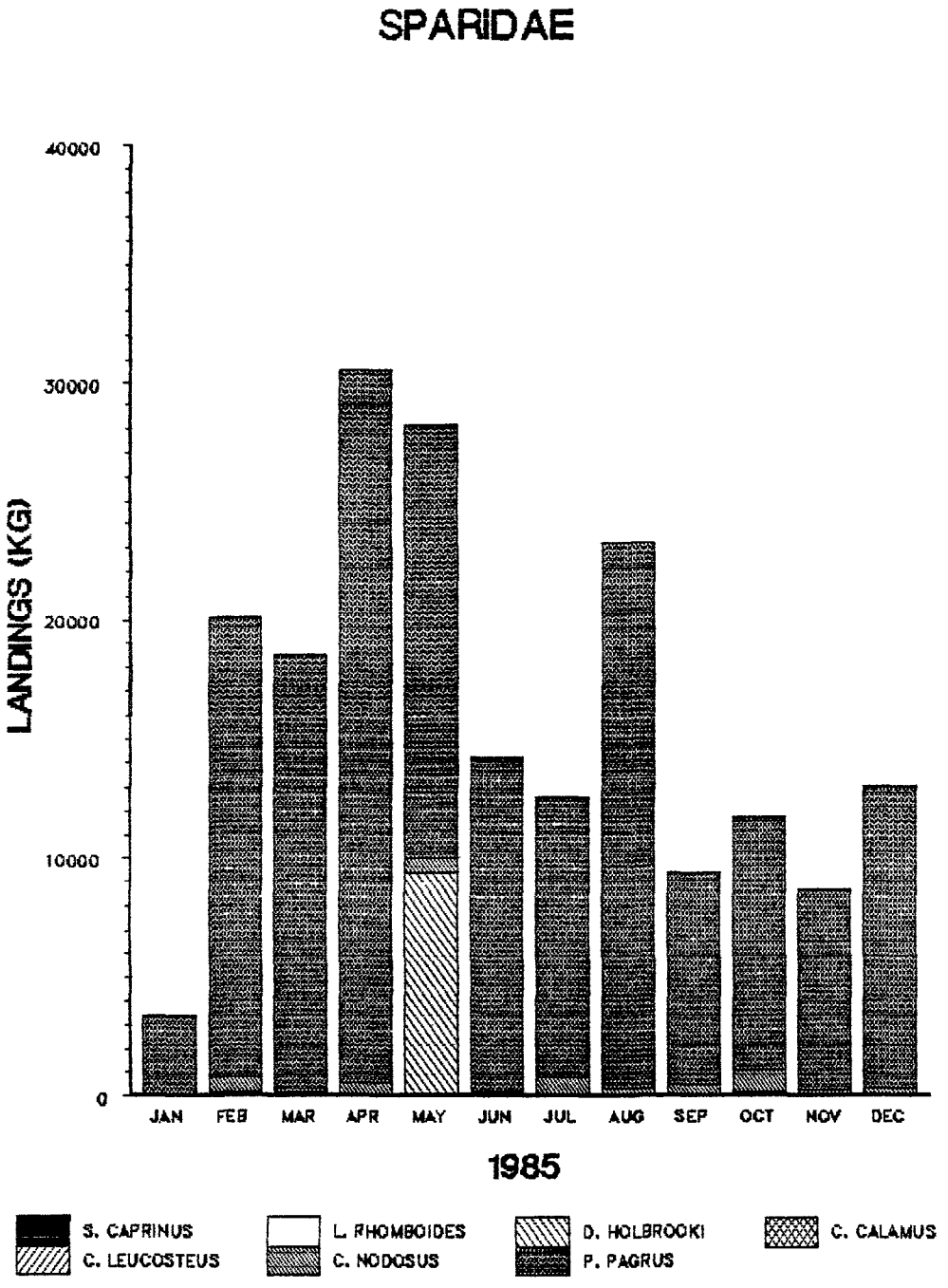

Figure 42. Monthly sparid (porgy) landings for 1985.

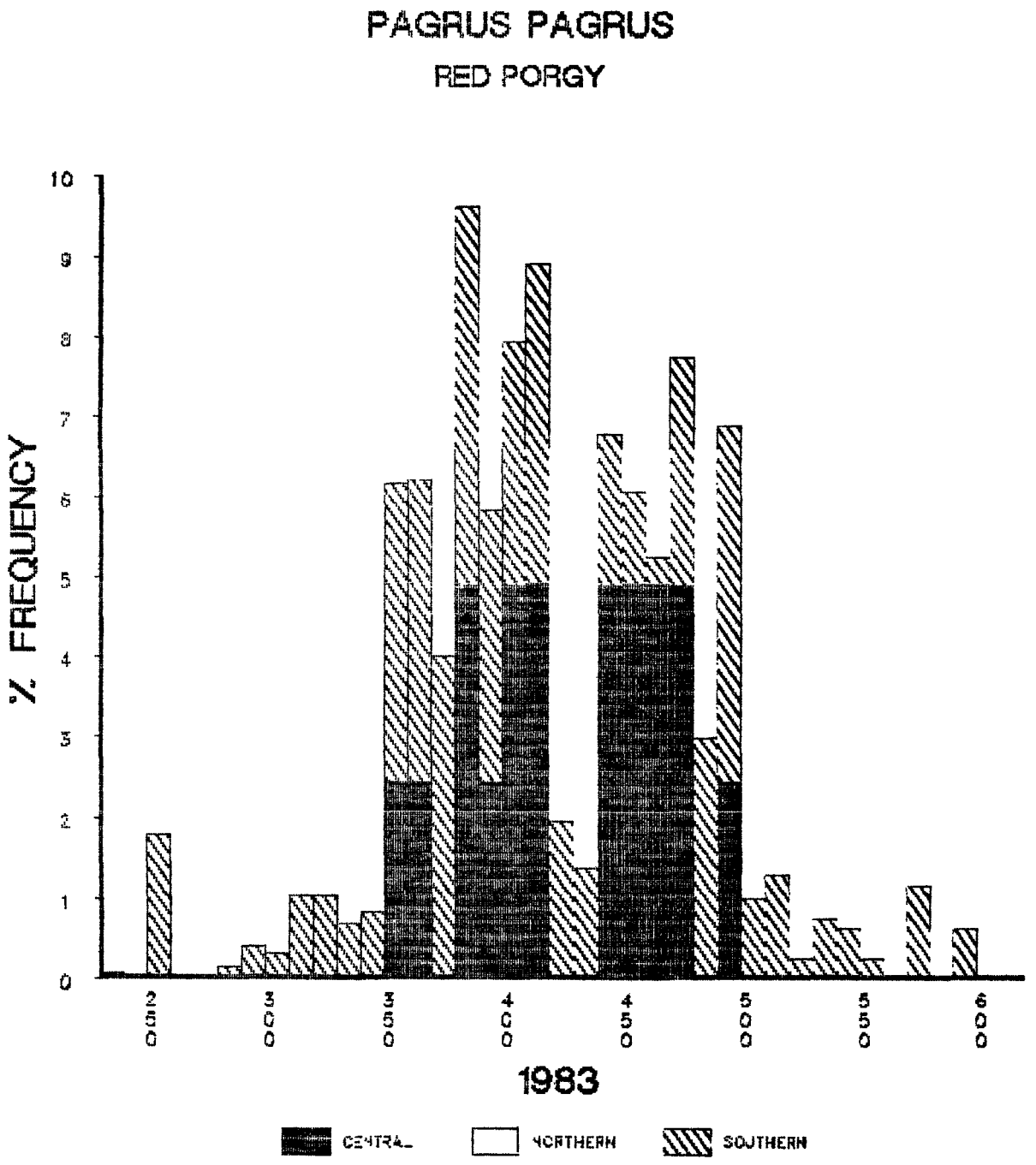

Figure 43. Size frequency of Pagrus pagrus (red porgy) landed in North Carolina in 1983.

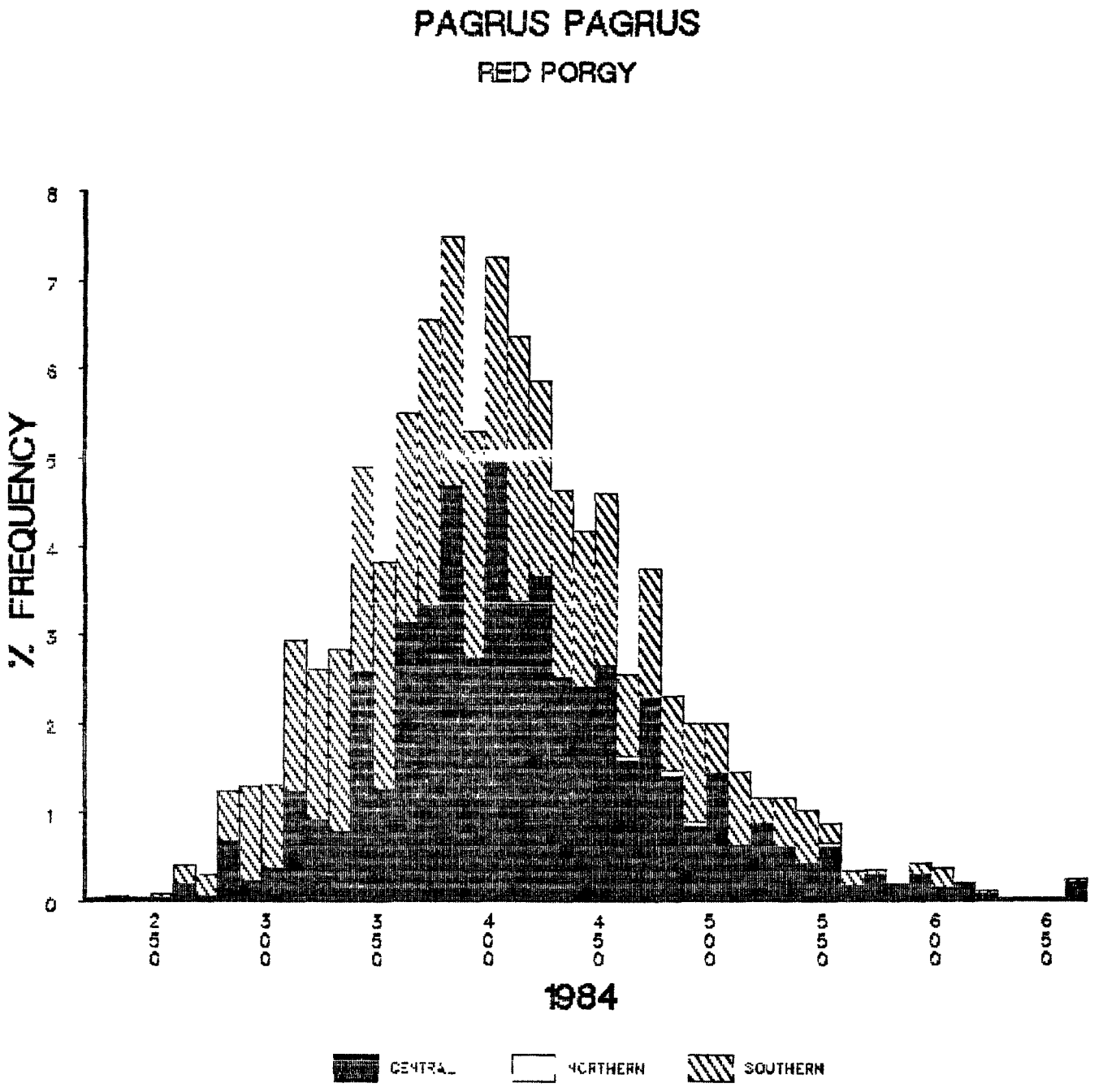

Figure 44. Size frequency of Pagrus pagrus (red porgy) landed in North Carolina in 1984.

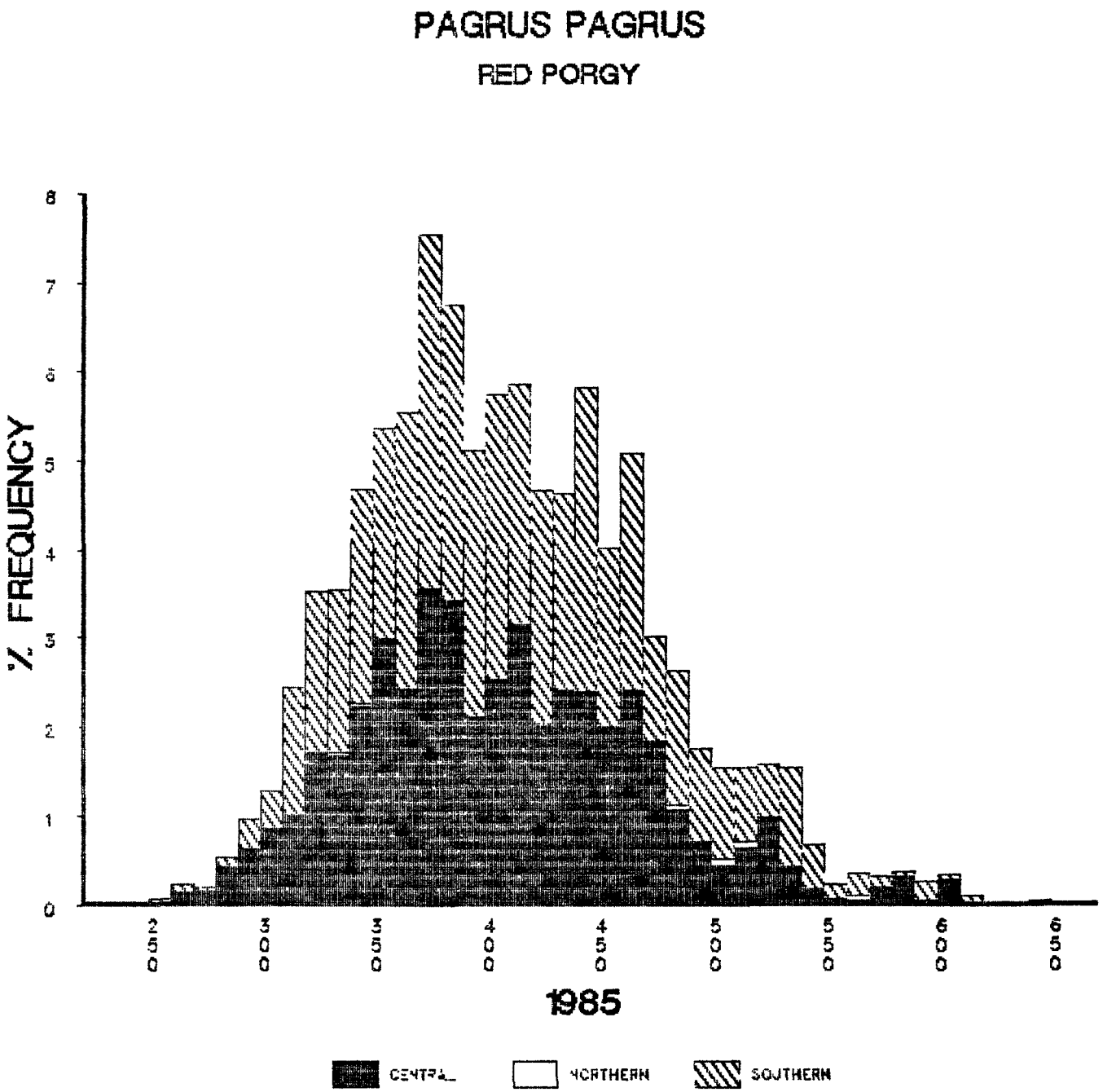

Figure 45. Size frequency of Pagrus pagrus (red porgy) landed in North Carolina in 1985.

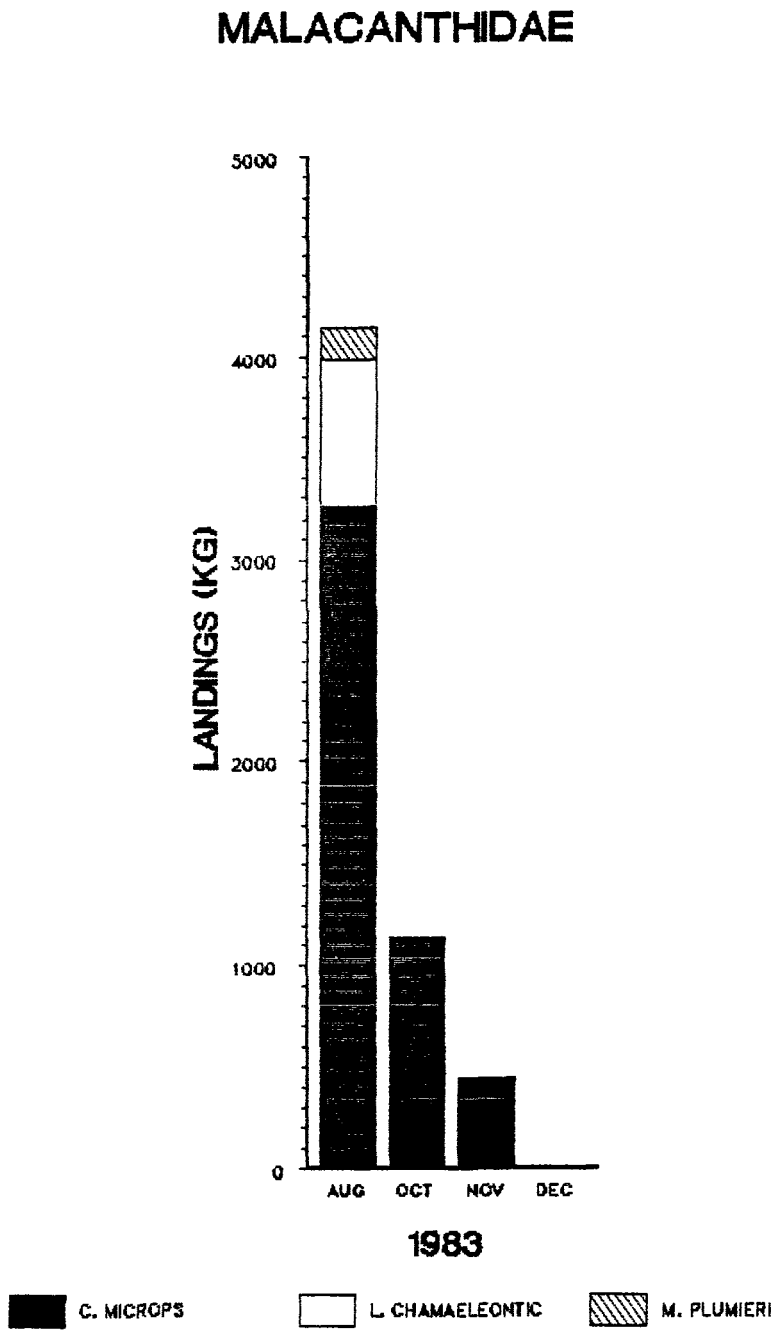

Figure 46. Monthly malacanthid (tilefish) landings for 1983.

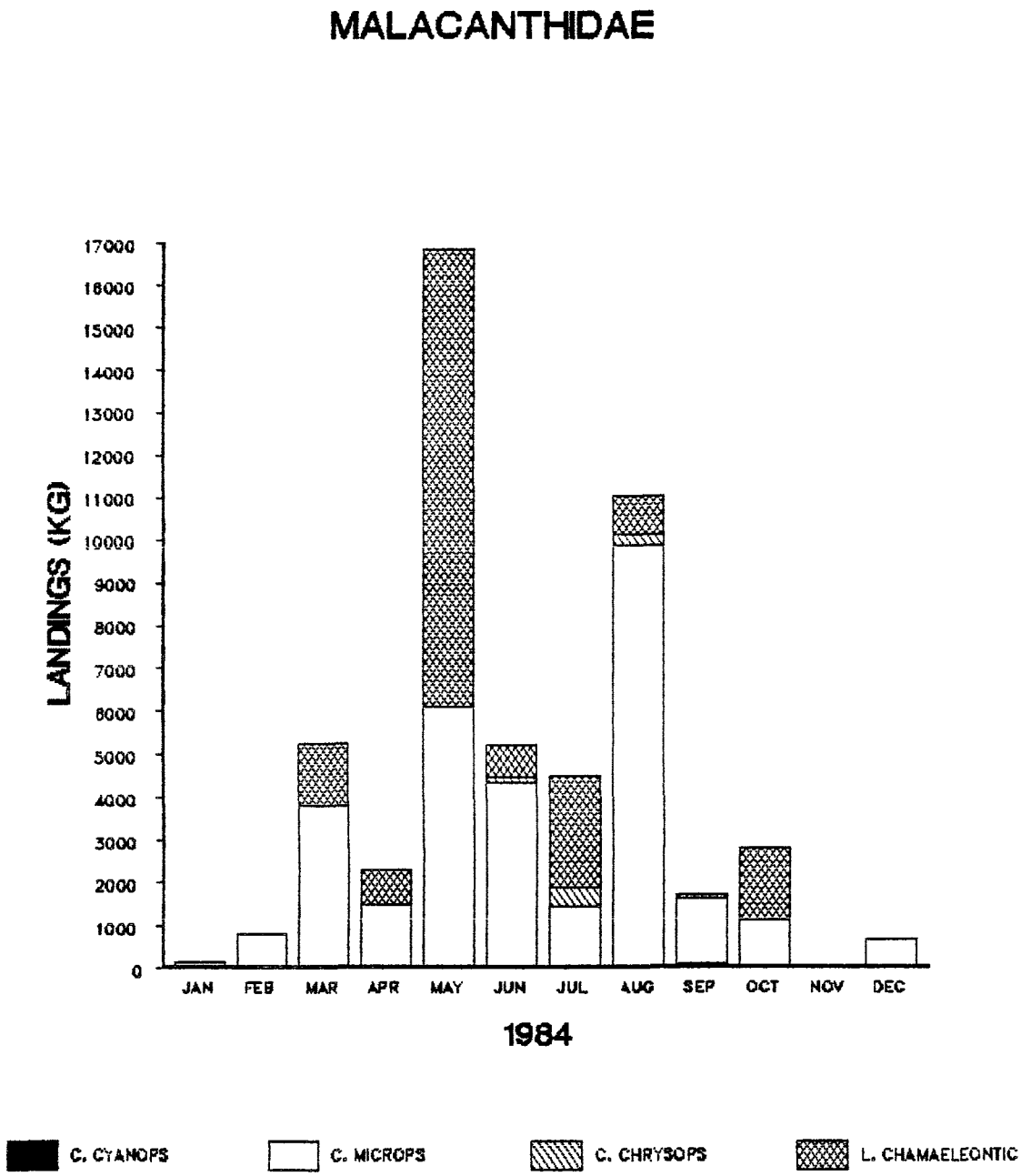

Figure 47. Monthly malacanthid (tilefish) landings for 1984.

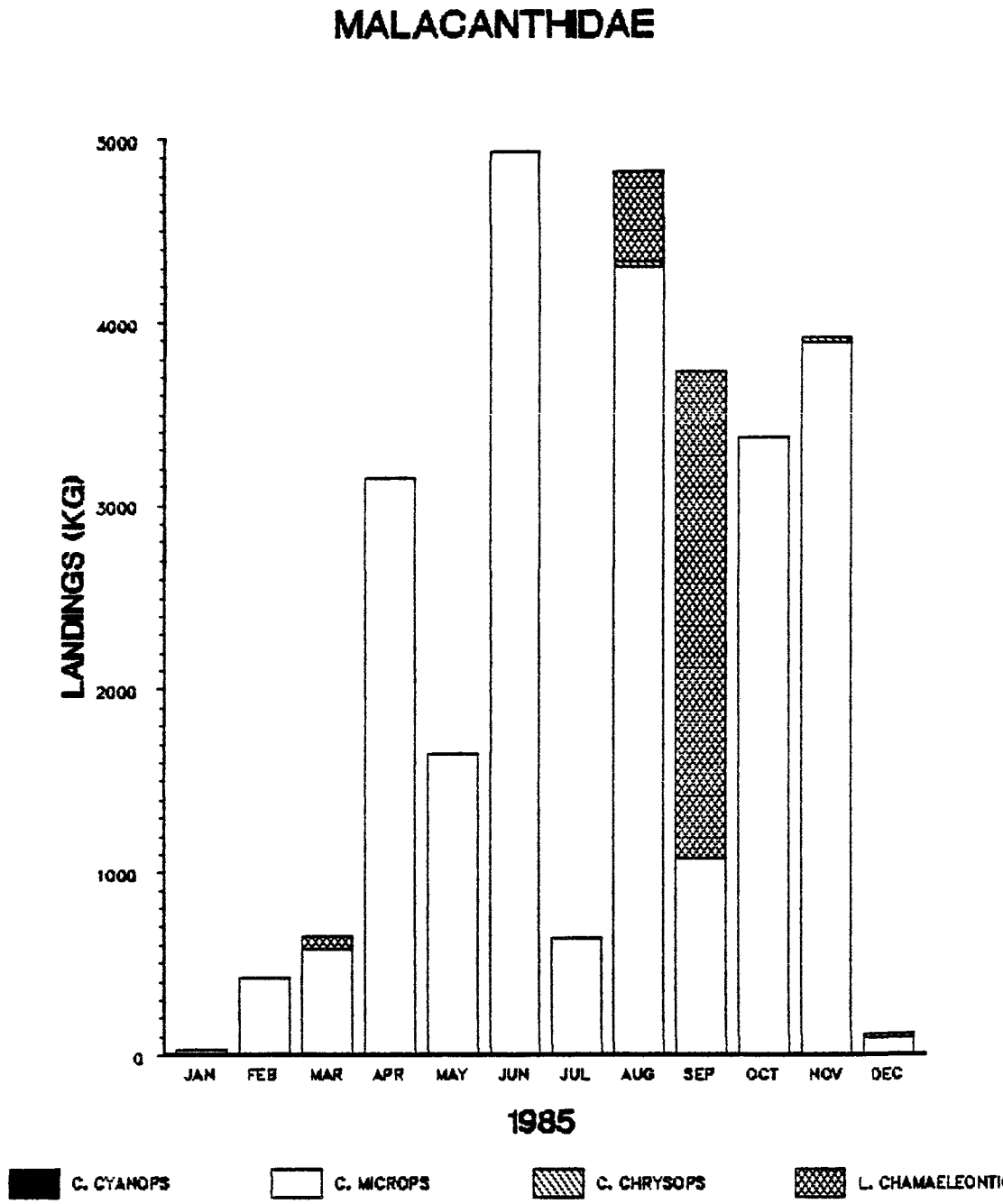

Figure 48. Monthly malacanthid (tilefish) landings for 1985.

to 4,531 kg in 1985 in the central district while in the southern district landings increased from 3,899 to 15,889 kg. Tilefish (L. chamaeleonticeps) are marketed as "goldtile" and are more valuable than Caulolatilus spp. which are marketed as "graytile."

Lopholatilus chamaeleonticeps

Tilefish were almost exclusively landed in the southern district (Tables 6-8) and most were taken on bottom longline sets made in Long Bay (Figure 1). Landings fluctuated with the fishing effort of those vessels targeting on this species. The estimated catch of tilefish decreased from 18,992 kg (2,429 individuals) in 1984 to 3,213 kg (602 individuals) in 1985 (Tables 7-9). Tilefish catch per unit effort was highest at depths >165 m. Annual CPUE decreased from 662.2 kg/day fished in 1984 to 359.6 kg/day fished in 1985 (Table 12). Tilefish ranged in length from 425-1,175 mm TL (Figures 49 and 50). A weight-length relationship for this species is presented in Table 11.

Miscellaneous Reef Species

Other reef species of lesser importance in the central and southern districts are the gray trigger fish (Balistes capriscus) and white grunt (Haemulon plumieri), and the hogfish (Lachnolaimus maximus) in the southern district. White grunt and hogfish catches increased substantially from 1984 to 1985 in the southern district (Tables 7 and 8).

Non-Reef Species

Bluefish (Pomatomus saltatrix), cobia (Rachycentron canadum), dolphin (Coryphaena hippurus), jacks (Carangidae), mackerels (Scombridae), and sharks (Squaliformes) were taken incidentally on the bottom fishing gear in all districts, but landings of these groups were greatest in the southern district (Tables 6-8). The number of individuals measured and the number of trips in which the species occurred by year and quarter, are presented in Table 5. The estimated number of individuals marketed in the commercial reef fish fishery are presented in Table 9. Length frequencies of the targeted coastal pelagic species are presented in the following section.

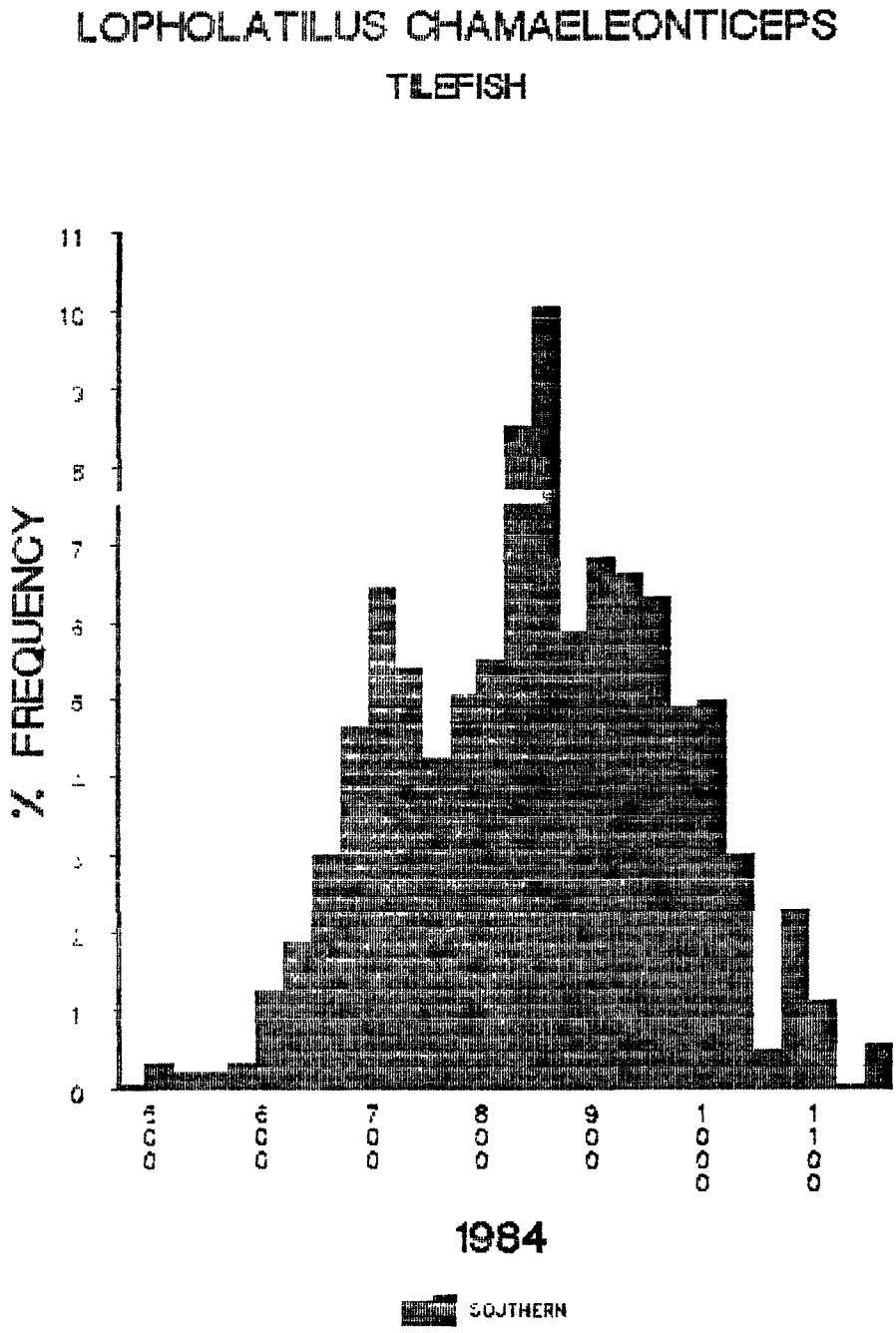

Figure 49. Size frequency of Lopholatilus chamaeleonticeps landed in North Carolina in 1984.

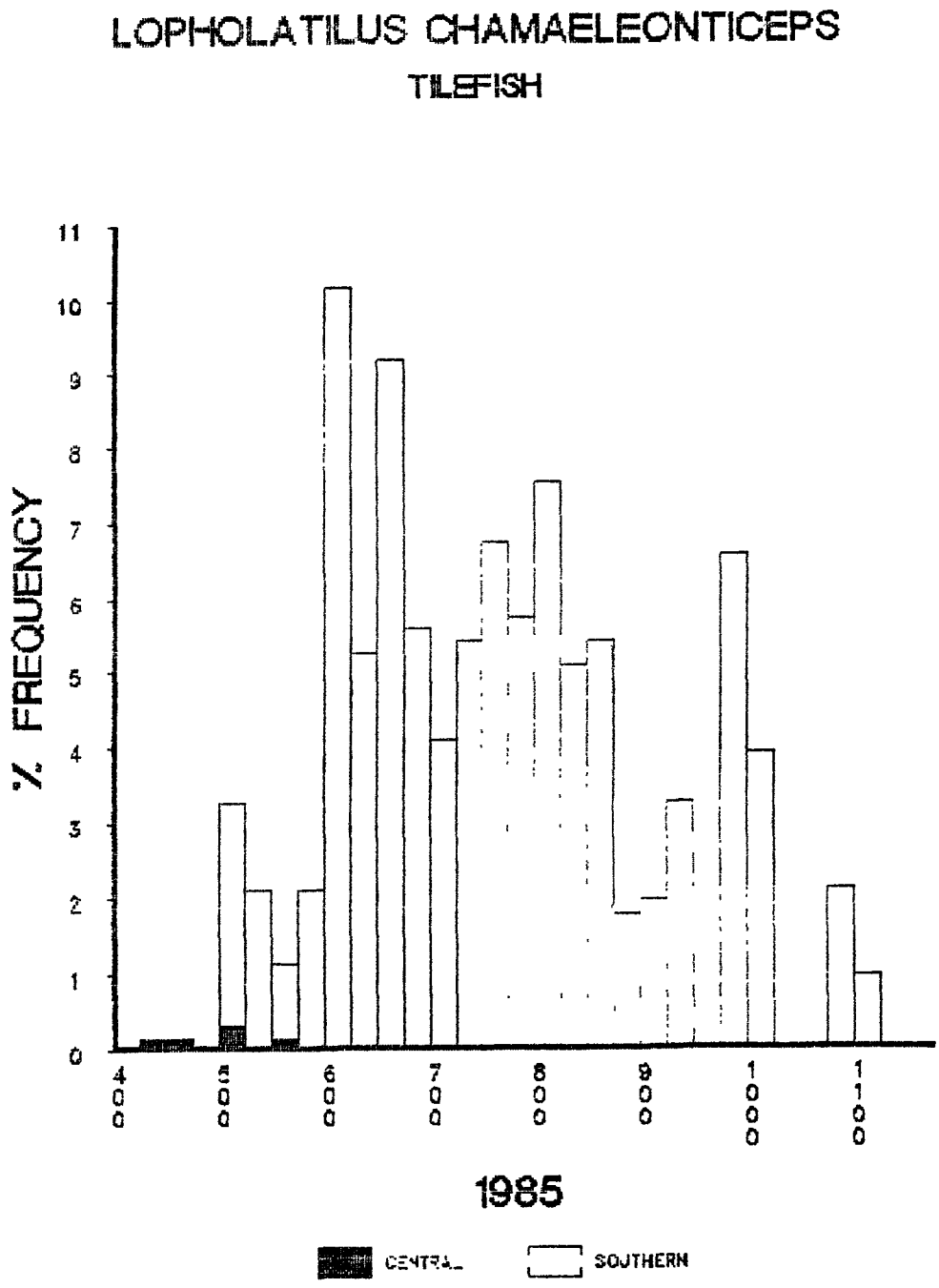

Figure 50. Size frequency of Lopholatilus chamaeleonticeps landed in North Carolina in 1985.

Coastal Pelagic Fishery

The commercial fishery for coastal pelagic species, king mackerel (Scomberomorus cavalla), Spanish mackerel (Scomberomorus maculatus), and cobia (Rachycentron canadum), primarily uses troll lines, gill nets, and hand lines. King mackerel and cobia are mainly harvested by troll lines and Spanish mackerel, by gill nets (Table 13). Thirteen catches (trolling) for king mackerel were sampled in 1984 and 65 catches (62 trolling and 3 gill net) in 1985 (Tables 14). Spanish mackerel were sampled from 4 trips in 1984 and 3 trips in 1985 (Table 14). Cobia was sampled in only one trolling catch in 1985 (Table 14). Length frequencies for king mackerel from reef (handlines) and pelagic (troll line) catches and Spanish mackerel from pelagic catches are presented in Figures 51-54. The size distribution of king mackerel was similar for the two fisheries in 1984 and 1985. Weight-length relationships for king mackerel, Spanish mackerel, and cobia are presented in Table 15.

Three king mackerel tournaments were sampled in 1984: the Wrightsville Beach King Mackerel Tournament, September 20-23, 1984; the Sixth Annual Atlantic Beach King Mackerel Tournament, October 17-20, 1984; and the Sixth Annual U. S. Open King Mackerel Tournament, October 4-6, 1984. The size distribution of king mackerel entered in these tournaments was similar (Figure 55). The sex ratio of king mackerel skews toward more females at larger sizes (Figures 56-58). It is important to note that the size distribution of king mackerel entered in tournaments, unlike commercial catches, is not necessarily representative of the population being harvested. The method of fishing "live-baiting" tends to select for larger fish. In addition, often only the largest fish caught are entered in the competition since prizes are usually only awarded for the largest fish caught. Fish are also kep for personal consumption or sold commercially to defray expenses.

Three tournaments were sampled in 1985: the Seventh Annual Atlantic Beach Tournament, September 12-14, 1985; the Wrightsville Beach King Mackerel Tournament, September 19-22, 1985; and the Seventh Annual U. S. Open King Mackerel Tournament, October 3-5, 1985. The size distributions of king mackerel measured in all three tournaments were similar (Figure 59).

Table 13. North Carolina commercial landings of king mackerel, Spanish mackerel, and cobia by gear for 1984 and 1985.

Species	1984 Hand line	1984 Troll line	1984 Gill net	1984 Total	1985 Hand line	1985 Troll line	1985 Gill net	1985 Total
Scomberomorus cavalla King mackerel	6,215 (13,702)	307,008 (676,837)	26,727 (58,923)	339,950 (749,461)	28,448 (62,717)	313,563 (691,288)	8,254 (18,197)	350,265 (772,202)
Scomberomorus maculatus Spanish mackerel	-	15,287 (33,702)	31,457 (69,351)	46,744 (103,053)	-	10,211 (22,512)	44,258 (97,572)	54,469 (120,084)
Rachycentron canadum Cobia	33 (72)	1,534 (3,382)	222 (489)	1,789 (3,943)	861 (1,889)	1,395 (3,075)	252 (556)	2,508 (5,530)

Table 14. Number of individuals of targeted coastal pelagic species measured and trips in which sampled species occurred, by year and quarter.

Species	Gear	1984 Jul-Sep # trips	1984 Jul-Sep # lengths	1984 Oct-Dec # trips	1984 Oct-Dec # lengths	1984 Total # trips	1984 Total # lengths	1985 Jul-Sep # trips	1985 Jul-Sep # lengths	1985 Oct-Dec # trips	1985 Oct-Dec # lengths	1985 Total # trips	1985 Total # lengths	Target no. of individuals to measure annually
Scombermorus cavalla King mackerel	troll line	3	114	10	264	13	378	1	10	61	596	62	606	200
S. cavalla King mackerel	gill net	-	-	-	-	-	-	-	-	3	32	3	32	200
S. maculatus Spanish mackerel	troll line	4	60	4	16	8	76	-	-	3	15	3	15	50
Rachycentron canadum Cobia	troll line	-	-	-	-	-	-	-	-	1	1	1	1	50

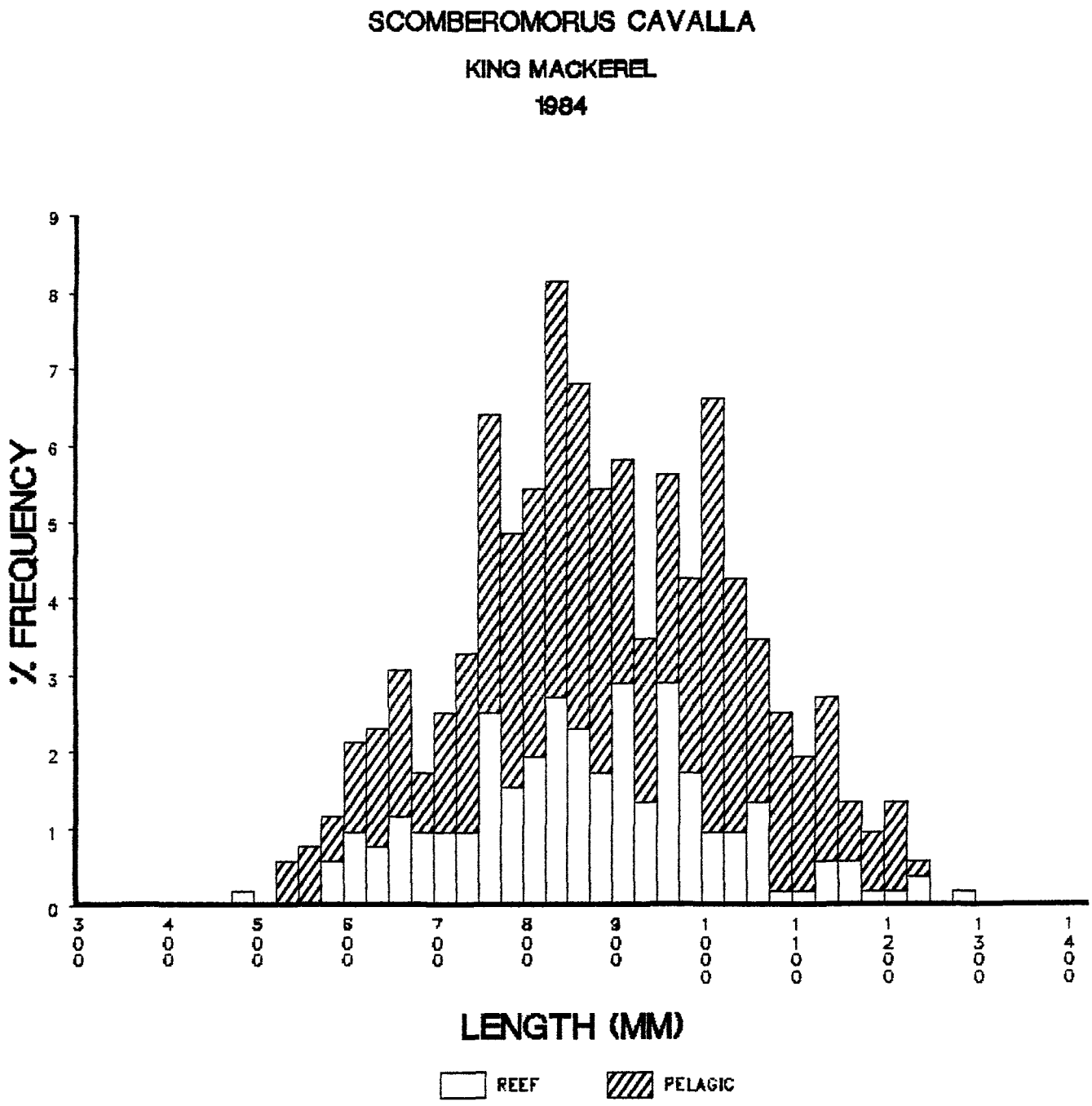

Figure 51. Size frequency of Scomberomorus cavalla (king mackerel) measured in the reef fish and coastal pelagic fisheries in 1984.

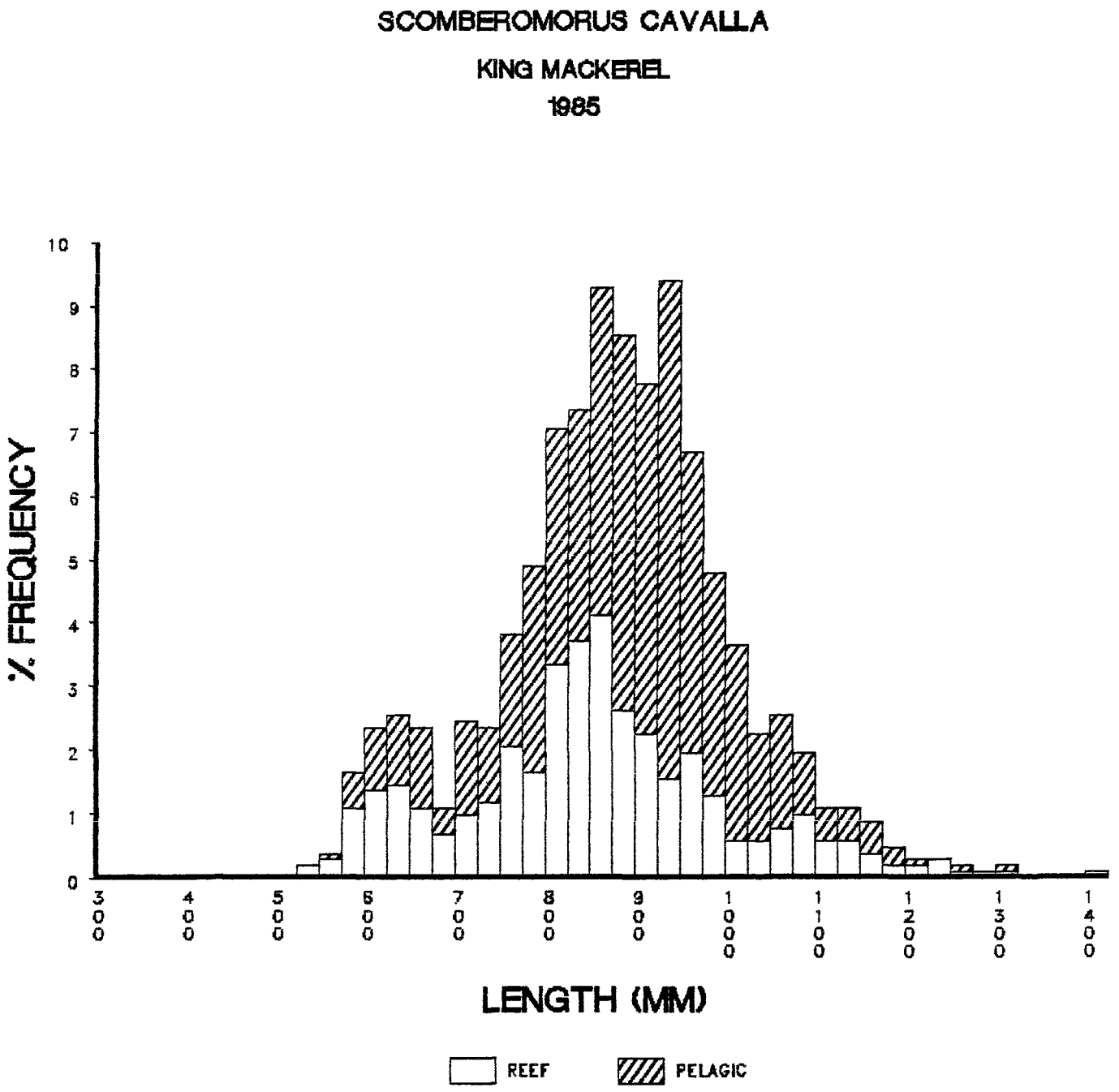

Figure 52. Size frequency of Scomberomorus cavalla (king mackerel) measured in the reef fish and coastal pelagic fisheries in 1985.

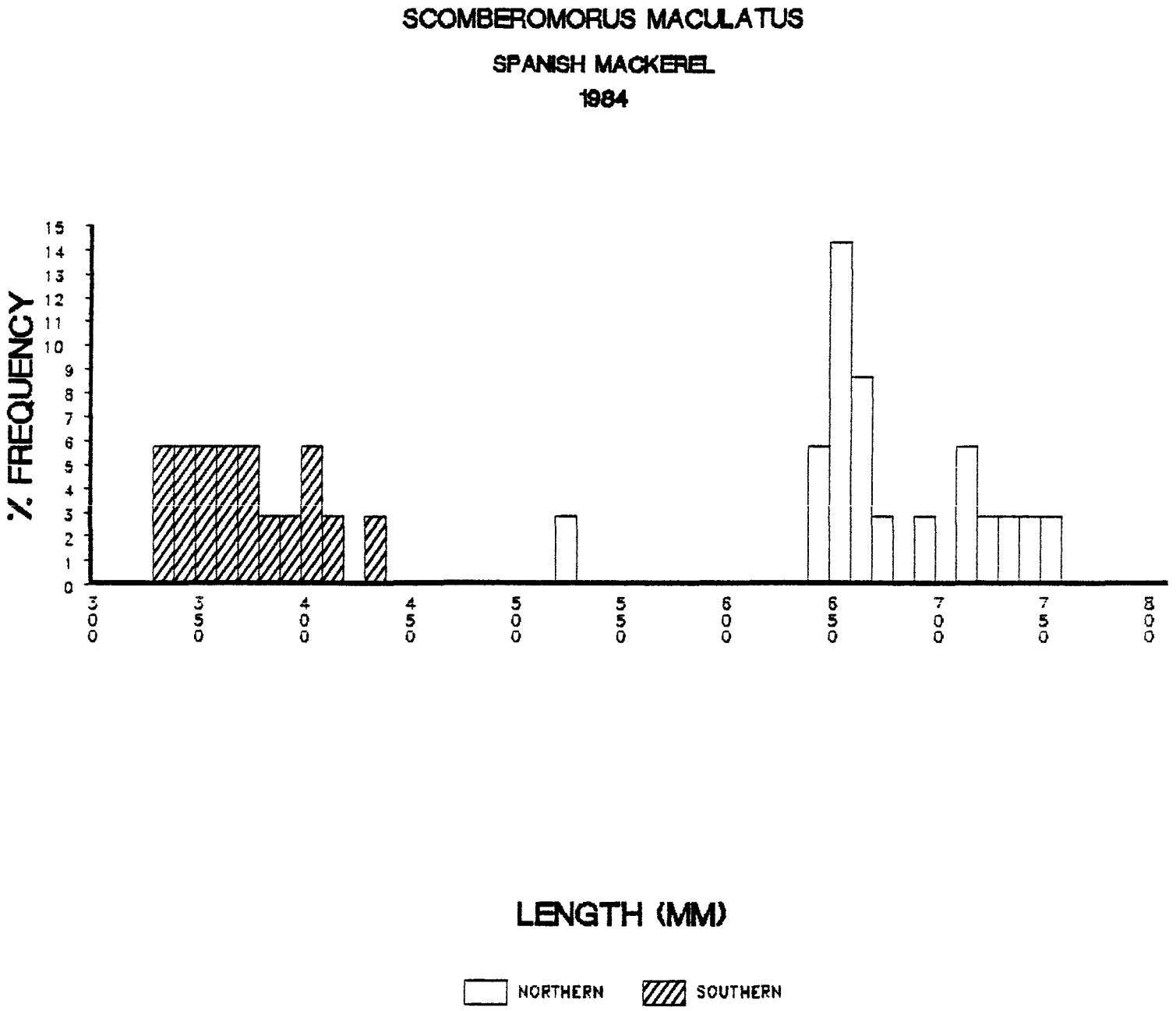

Figure 53. Size frequency of Scomberomorus maculatus (Spanish mackerel) measured in the coastal pelagic fishery in 1984 by district.

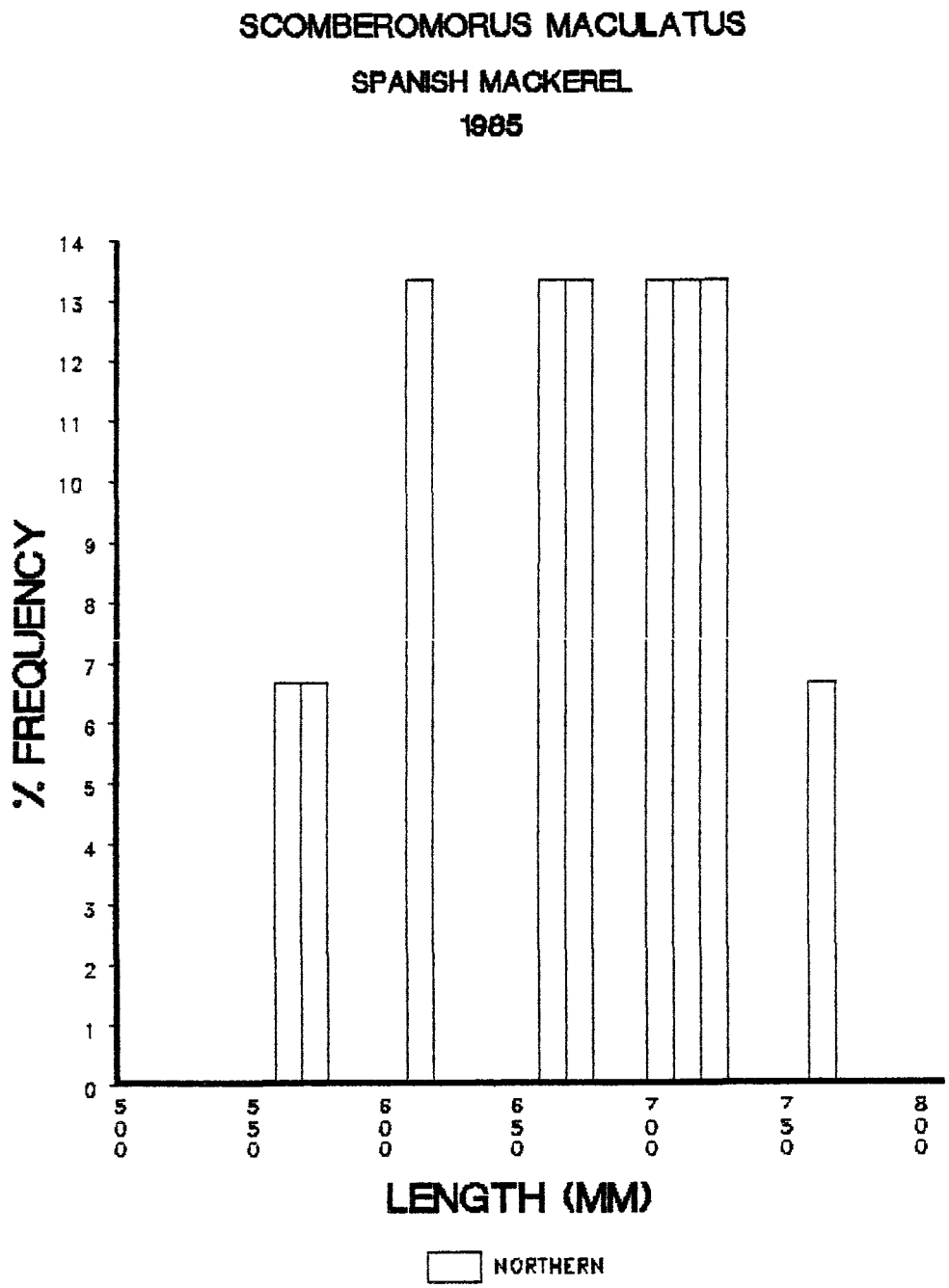

Figure 54. Size frequency of Scomberomorus maculatus (Spanish mackerel) measured in the coastal pelagic fishery in 1985 by district.

Table 15. Weight-length regressions for target species of coastal pelagic fishes from the North Carolina commercial hand and troll line fisheries, July 1983-March 1986 [n=number of fish, W=gutted weight (g), L=length (mm FL)].

Species	n	Regression	r^2
Scomberomorus cavalla King mackerel	634	log W=-18.5673 + 2.9886 log L	0.95
S. maculatus Spanish mackerel	19	log W=-11.8192 + 1.9690 log L	0.76
Rachycentron canadum Cobia	21	log W=-18.9990 + 3.0718 log W	0.98

Table 16. Crew sizes and percent distribution on boats surveyed in 1985 king mackerel tournaments.

	CREW SIZE				
Tournament	2	3	4	5	6
Atlantic Beach	26.20	47.70	19.60	-	6.40
Wrightsville Beach	26.03	49.32	20.55	1.37	2.74
U. S. Open	10.47	45.35	37.21	2.33	4.65

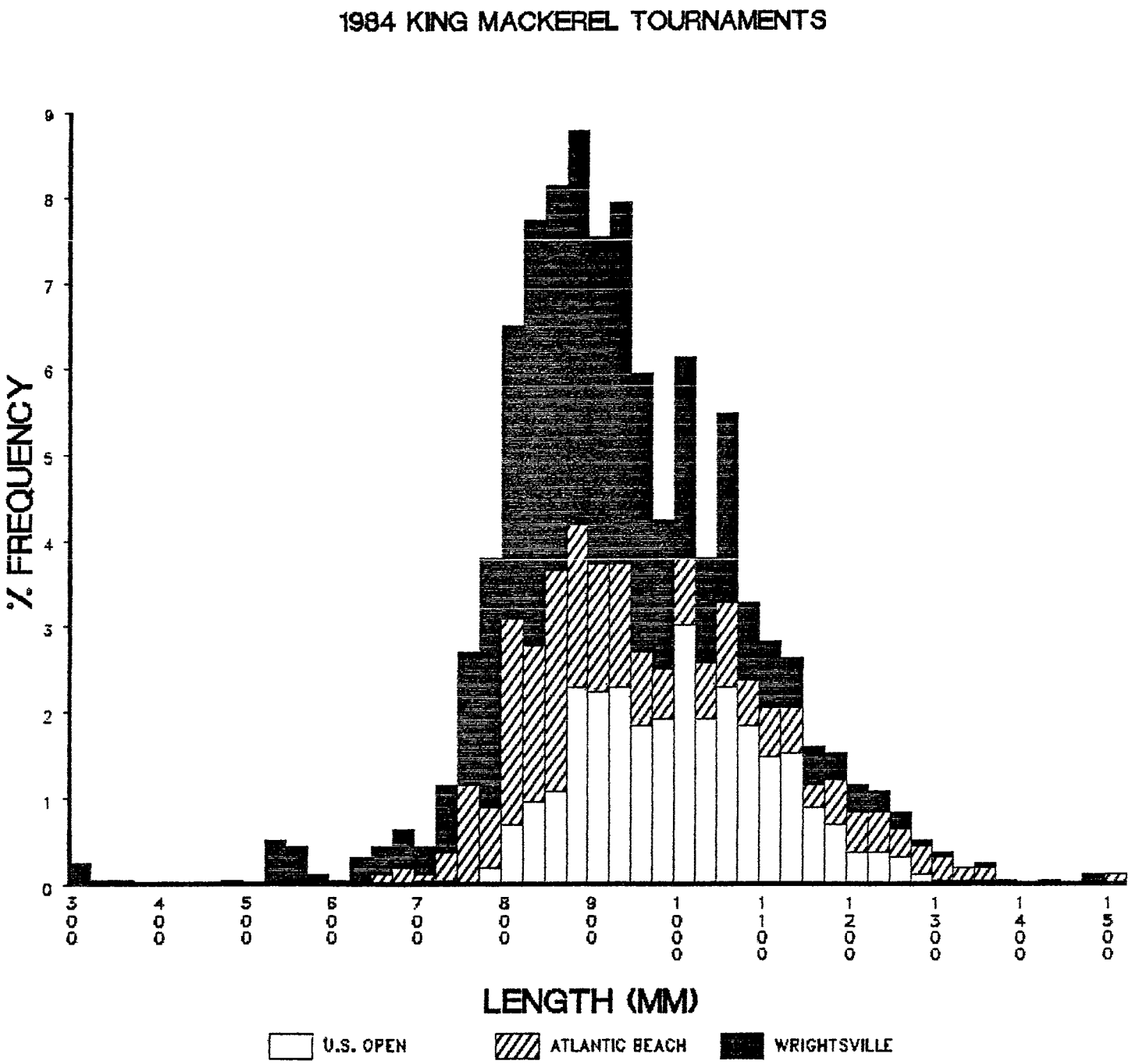

Figure 55. Size frequency of Scomberomorus cavalla (king mackerel) measured in king mackerel tournaments in 1984.

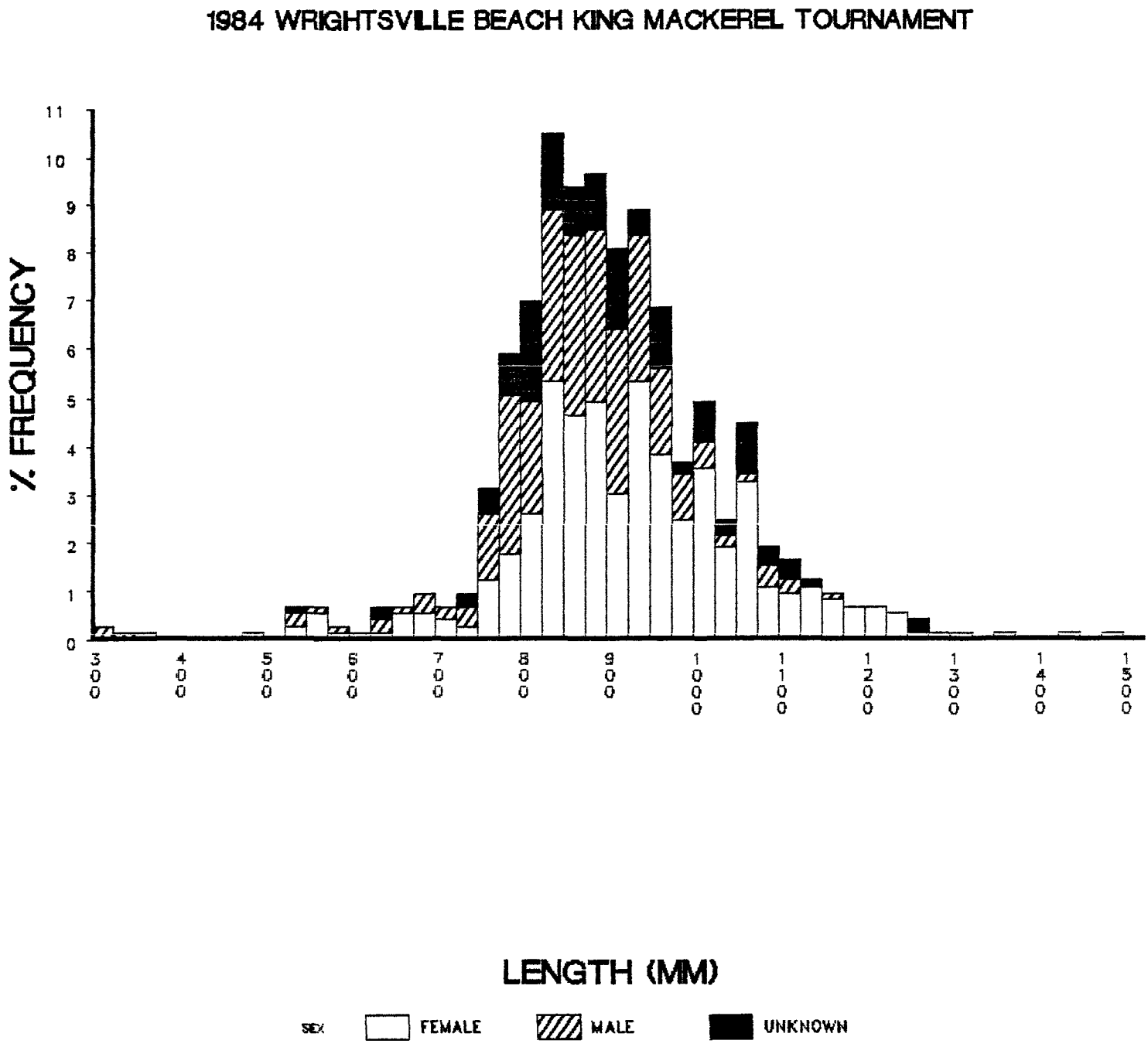

Figure 56. Size frequency of Scomberomorus cavalla (king mackerel) by sex measured in the 1984 Wrightsville Beach King Mackerel Tournament.

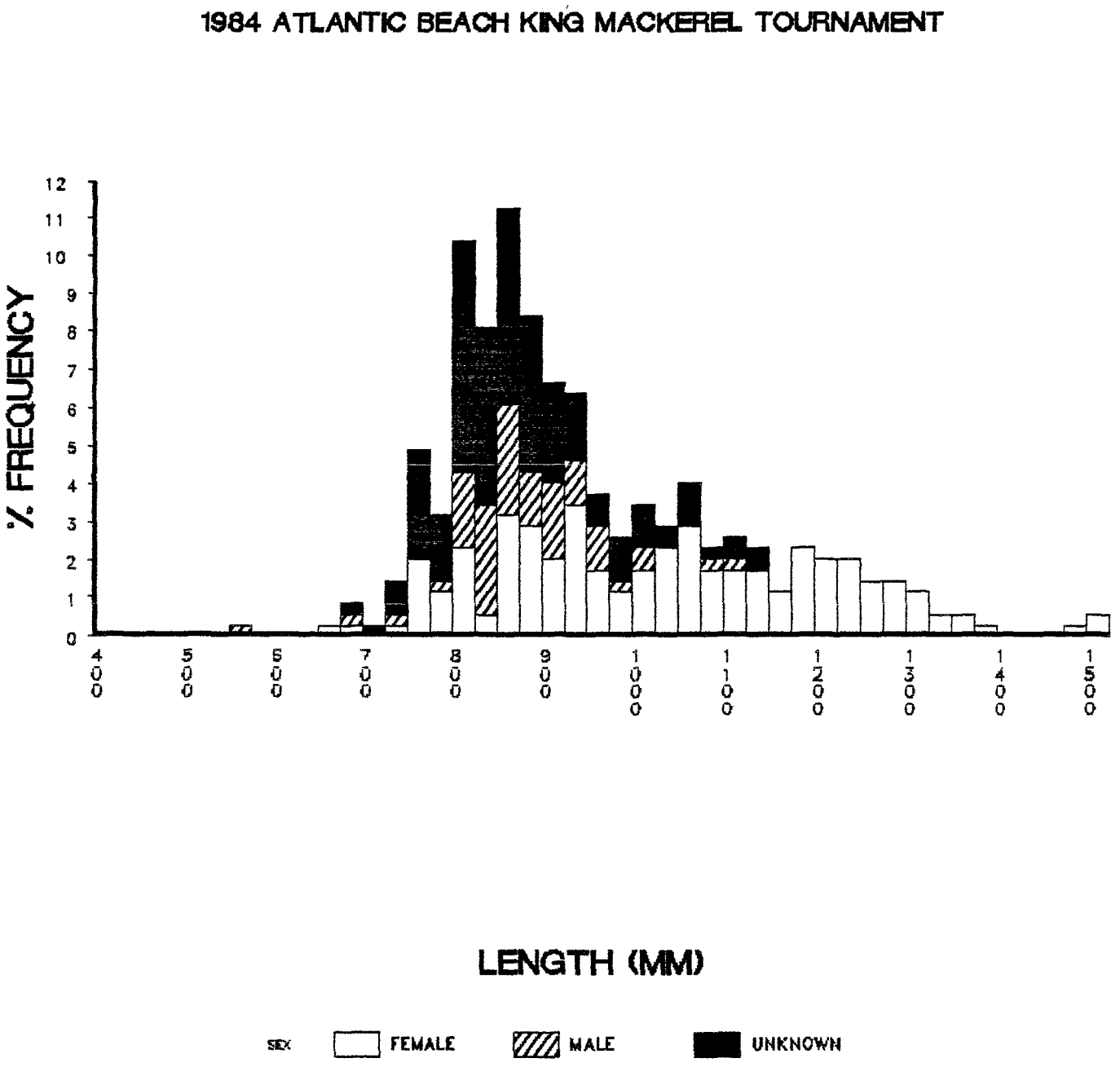

Figure 57. Size frequency of Scomberomorus cavalla (king mackerel) by sex measured in the 1984 Atlantic Beach King Mackerel Tournament.

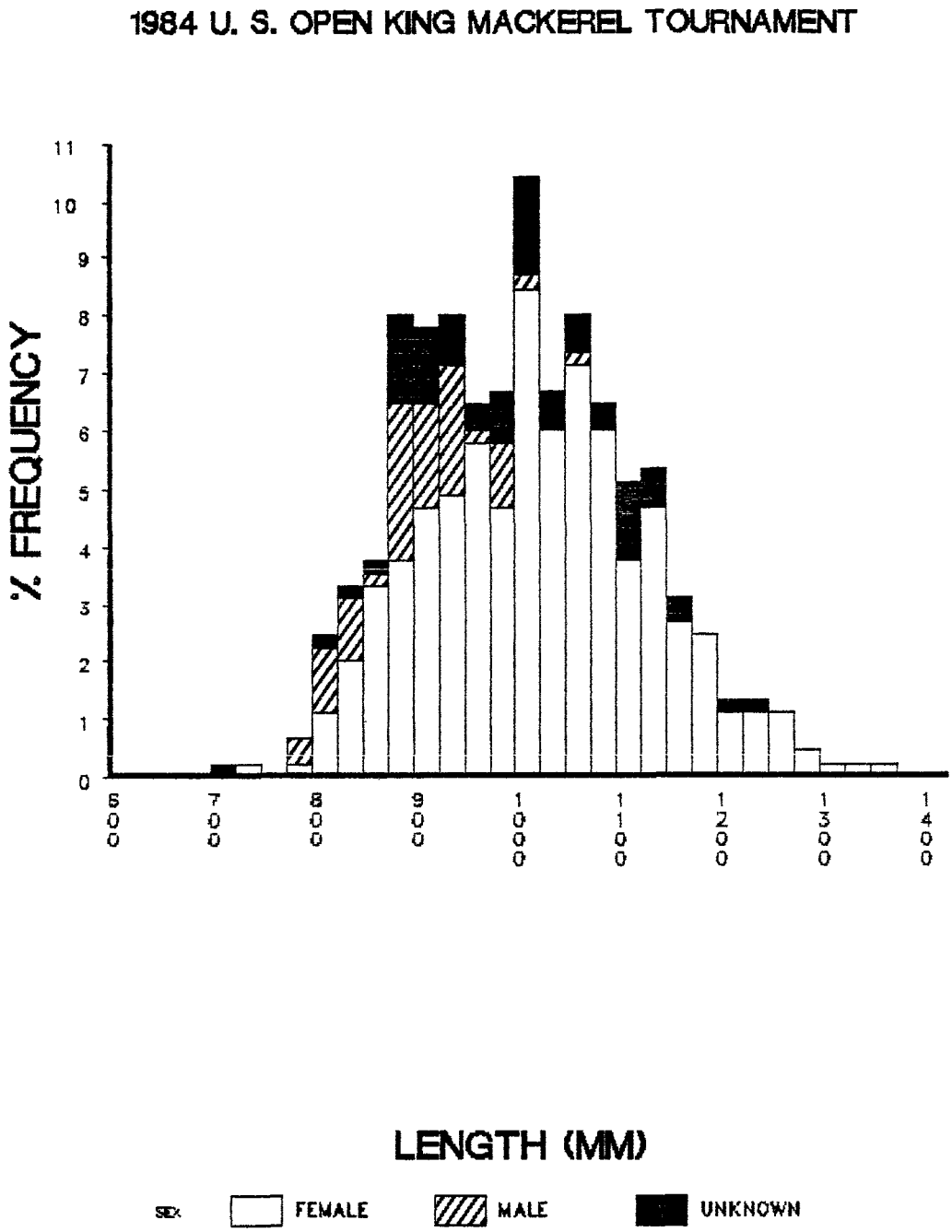

Figure 58. Size frequency of Scomberomorus cavalla (king mackerel) by sex measured in the 1984 U. S. Open King Mackerel Tournament.

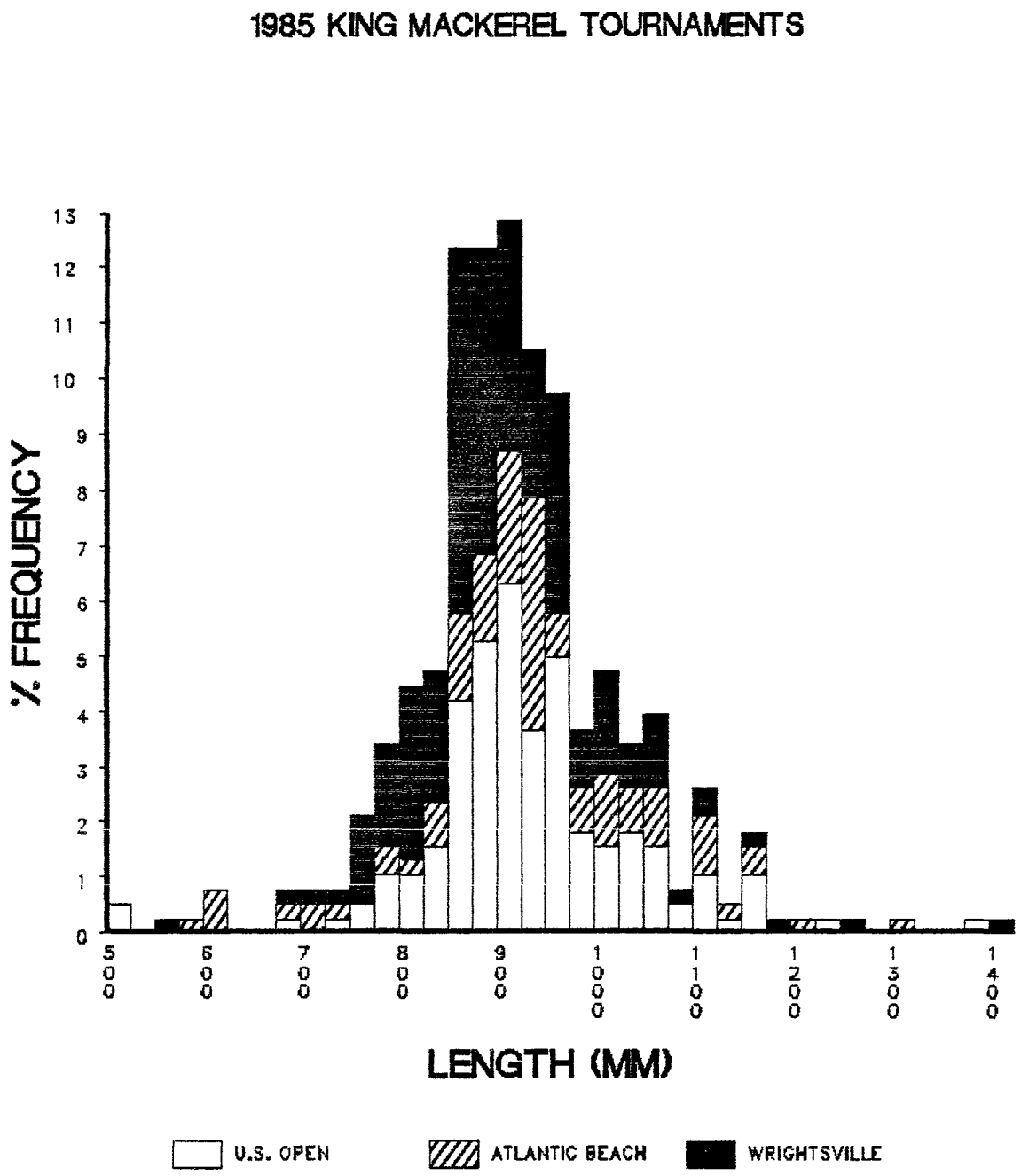

Figure 59. Size frequency of Scomberomorus cavalla (king mackerel) measured in king mackerel tournaments in 1985.

Thirty-one out of 50 questionnaires on catch, effort, and disposition of the catch, and measuring boards were completed and returned at the Atlantic Beach Tournament. Survey results indicated that the number of crew fishing per boat ranged from 2-6, and 47.7% had a crew size of 3 (Table 16). The number of lines fished per boat ranged from 2-6 and 67.05% fished 4 lines (Table 17). The depth range fished by those surveyed was 7-20 m (22-66 ft) and the average depth fished was 14.2 m, (47 ft). Catch per unit effort data are presented in Table 18. The size distribution of king mackerel in the sample was similar to the overall tournament size distribution (Figure 60). Female king mackerel predominated in the tournament landings (Figure 61).

Results of the Atlantic Beach Tournament socioeconomic survey are based on 85 responses from 30 boats. Tournament participants were predominantly males (95%) (Figure 62). Education level of the participants ranged from 7-9 years of education to graduate degrees (Figure 63). The survey indicated that 27% of the participants earned between $25,000=$34,999 (Figure 64). Occupation categories were diverse with 27% in the professional/managerial category (Figure 65). The mean age of participants was 39 years, the mean individual expenditure was $186, and the mean distance traveled per individual was 208 miles (round trip) (Figure 66). The average expenditure per boat was $528 (Figure 66).

Survey results of the 1985 Wrightsville Beach Tournament are based on 37 completed and returned questionnaires and measuring boards. The number of crew fishing per boat ranged from 2-6 with 49.32% of the boats having a crew size of three (Table 16). The number of lines fished per boat ranged from 2-6 and 41.26% of the boats fished 4 lines (Table 14). The depth range fished was 6-31 m (20-102 ft) and the average depth fished was 14.2 m (47 ft). Catch per unit effort data are presented in Table 18. The size distribution of sampled fish ranged from 550-1,250 mm (22-49 in) with the mode at 850 mm (33 in) FL (Figure 67).

Socioeconomic data from the 1985 Wrightsville Beach King Mackerel Tournament are based on responses from 105 individuals from 35 boats participating in the tournament. Ninety-four percent of the sampled participants were males (Figure 68) and 33% had a 4-year college education (Figure 69). The survey

Table 17. Number of lines fished and percent distribution on boats surveyed in 1985 king mackerel tournaments.

	CREW SIZE				
Tournament	2	3	4	5	6
Atlantic Beach	-	5.68	67.05	18.18	9.09
Wrightsville Beach	2.53	1.89	41.26	27.16	27.16
U. S. Open	1.37	9.59	41.10	31.51	16.44

Table 18. Catch (number of fish) per unit effort (hour fished, line fished, crew number) for 1985 king mackerel tournaments.

	Catch (Number of Fish)/		
Tournament	Hour Fished	Line Fished	Crew Member
Atlantic Beach	0.14	0.22	0.31
Wrightsville Beach	0.31	0.45	0.71
U. S. Open	0.14	0.19	0.24

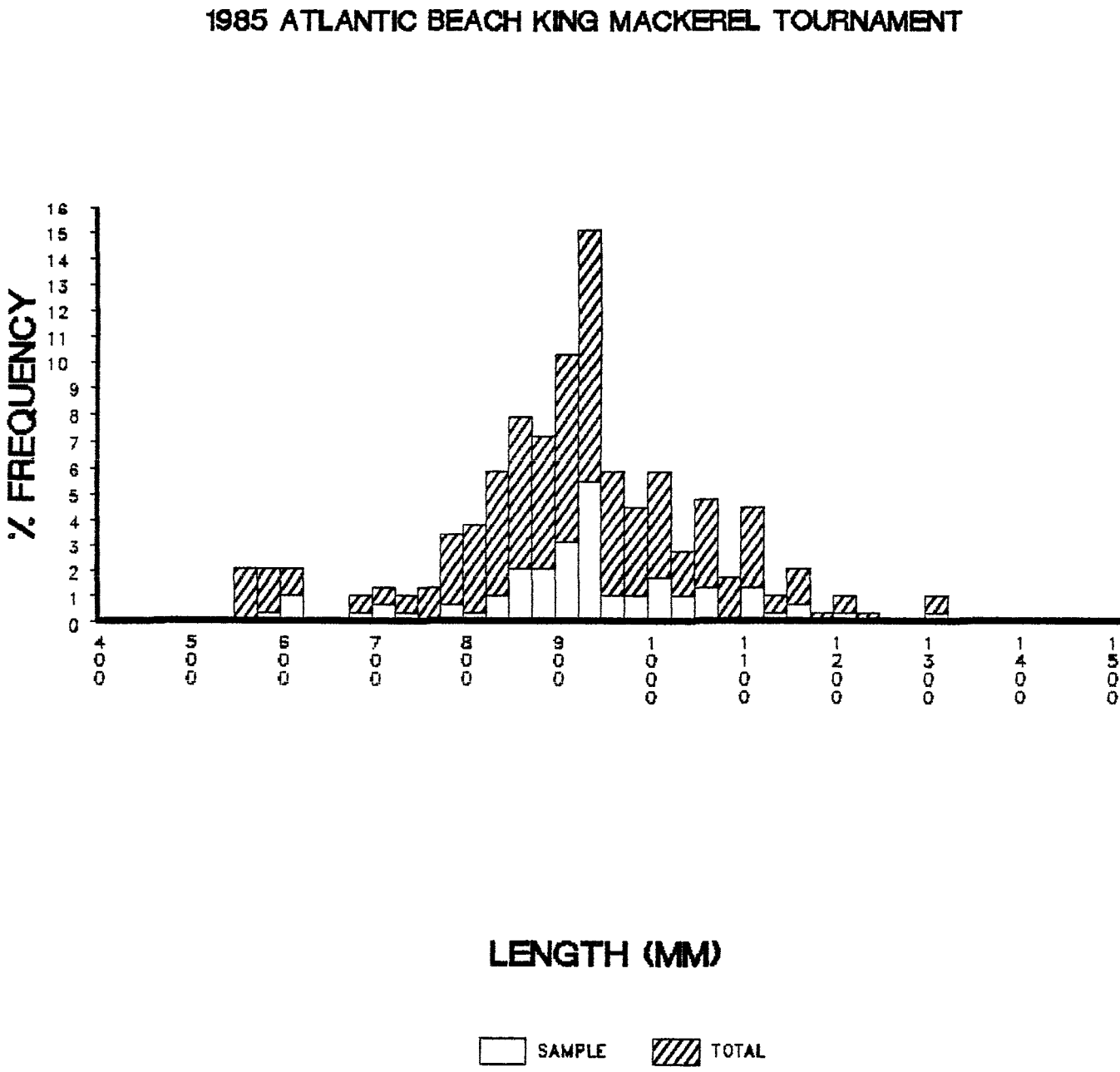

Figure 60. Size frequency of Scomberomorus cavalla (king mackerel) measured in the 1985 Atlantic Beach King Mackerel Tournament.

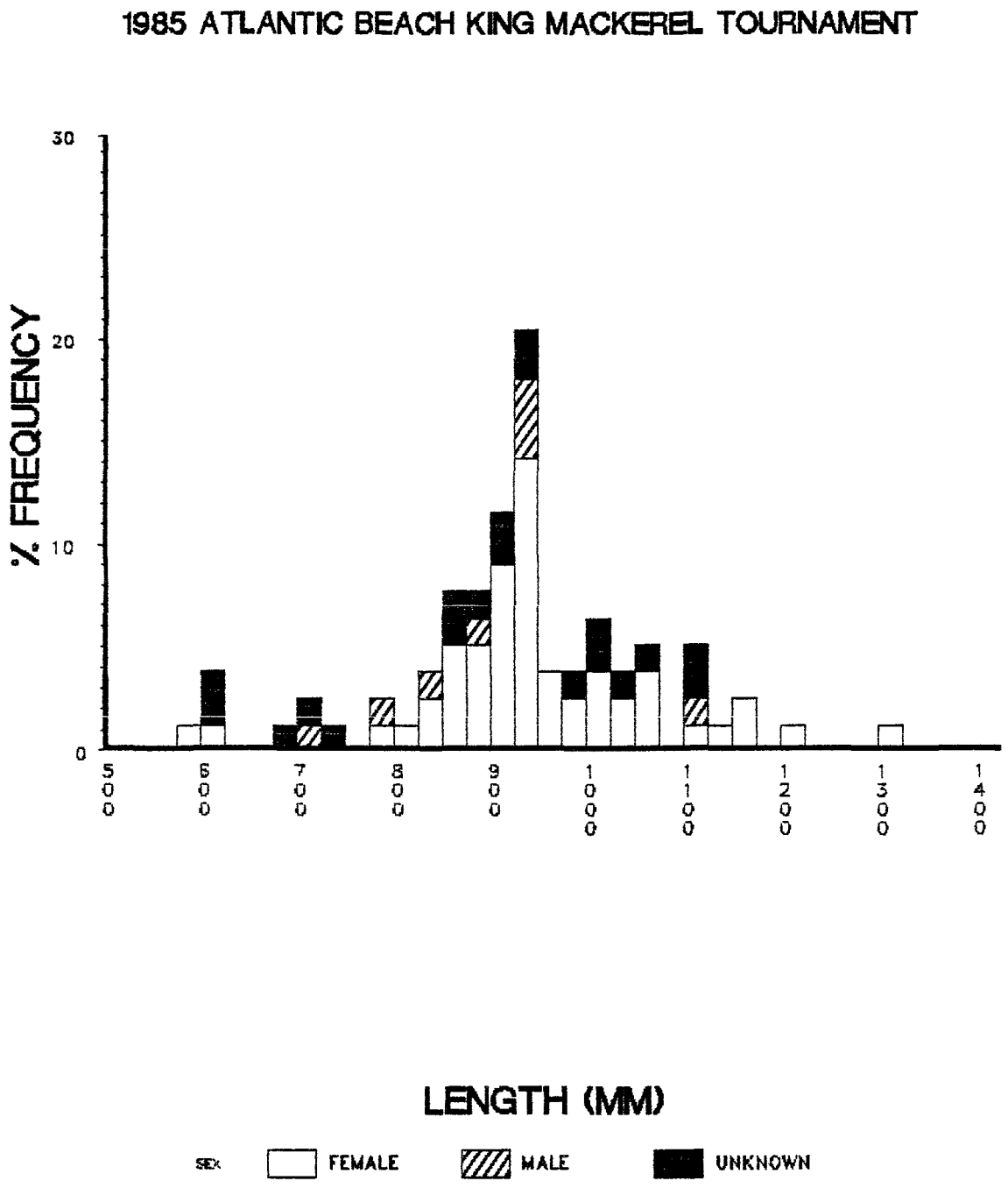

Figure 61. Size frequency of Scomberomorus cavalla (king mackerel) by sex measured in the 1985 Atlantic Beach King Mackerel Tournament.

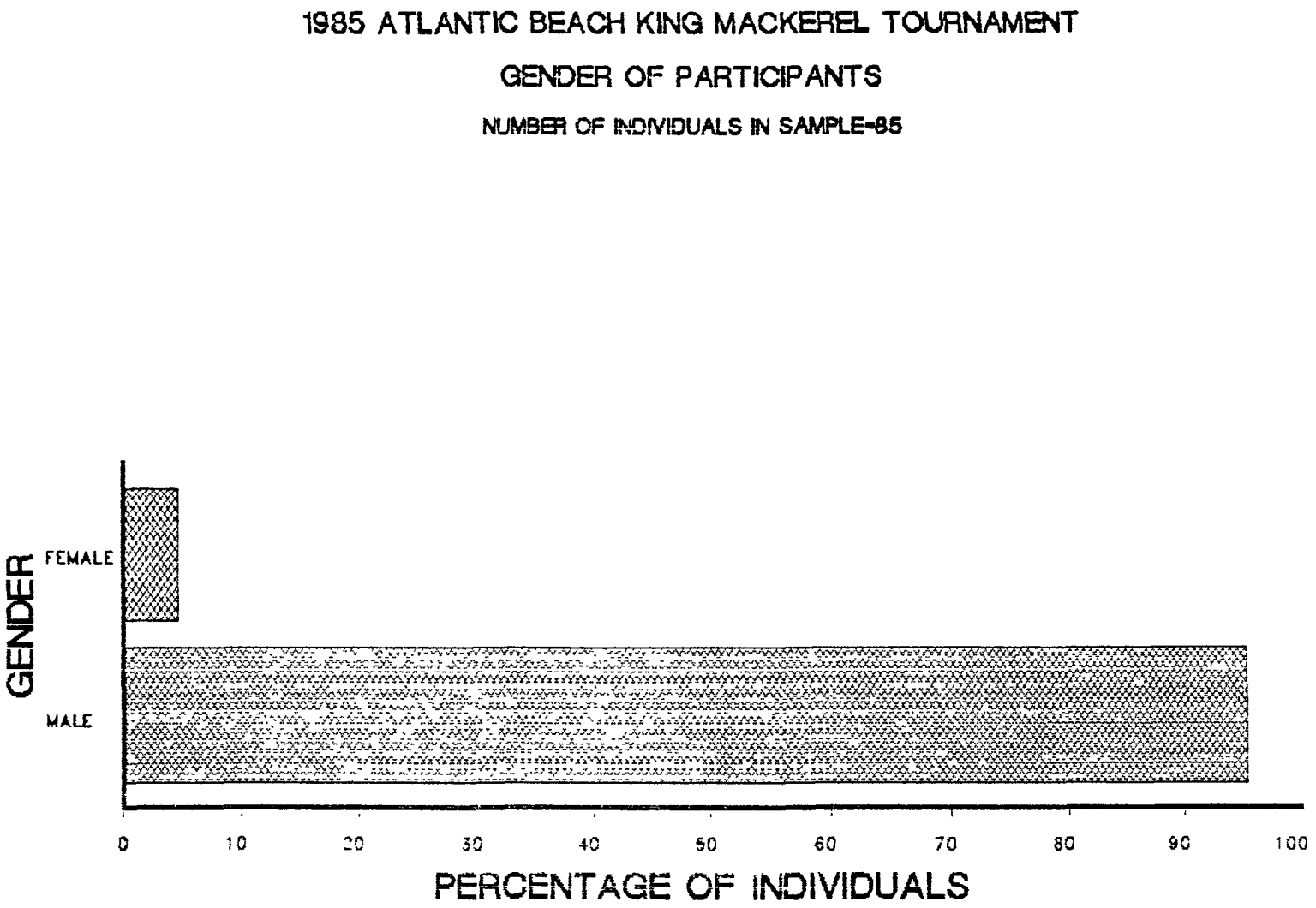

Figure 62. Gender of participants in the 1985 Atlantic Beach King Mackerel Tournament.

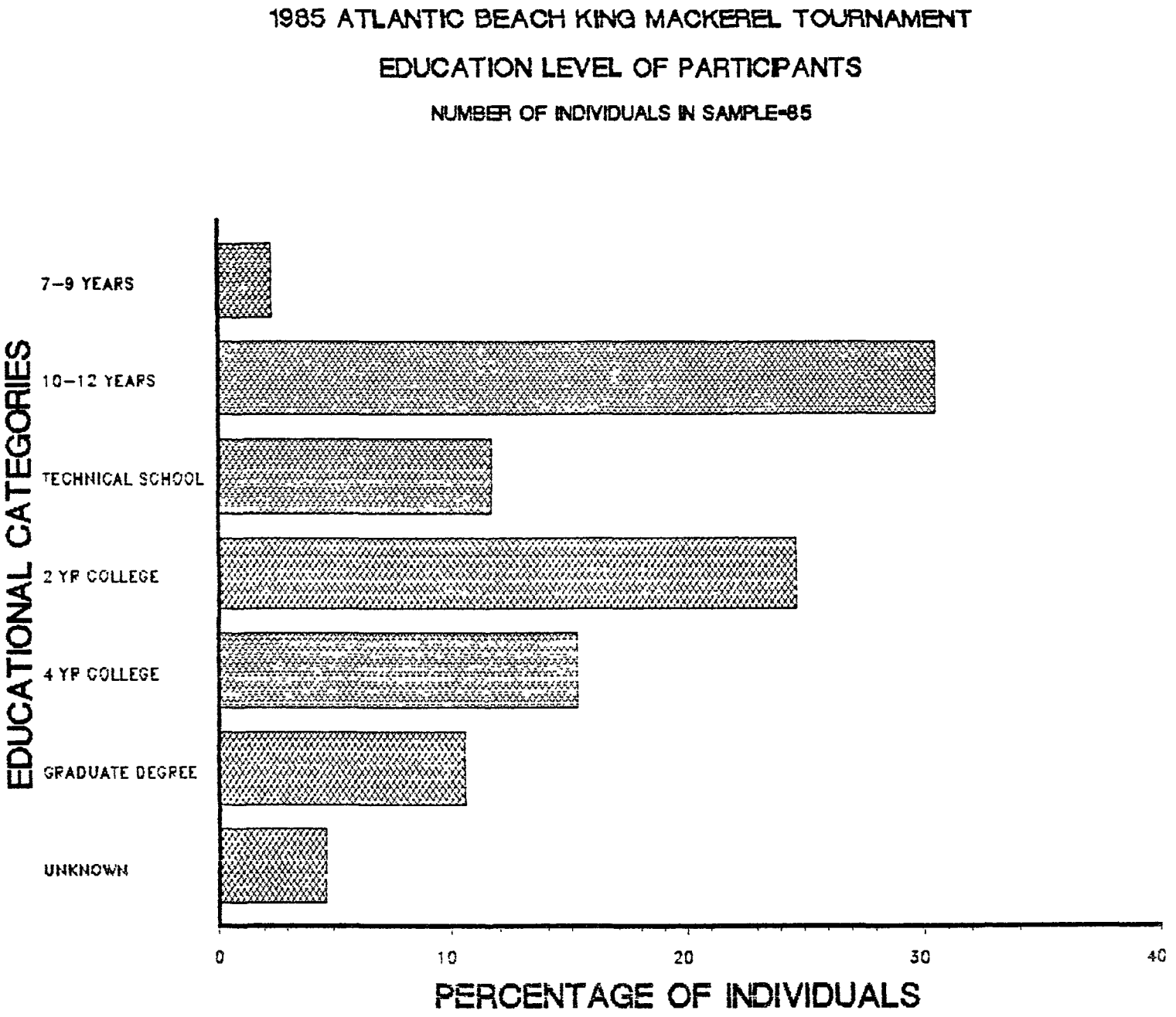

Figure 63. Education level of participants in the 1985 Atlantic Beach King Mackerel Tournament.

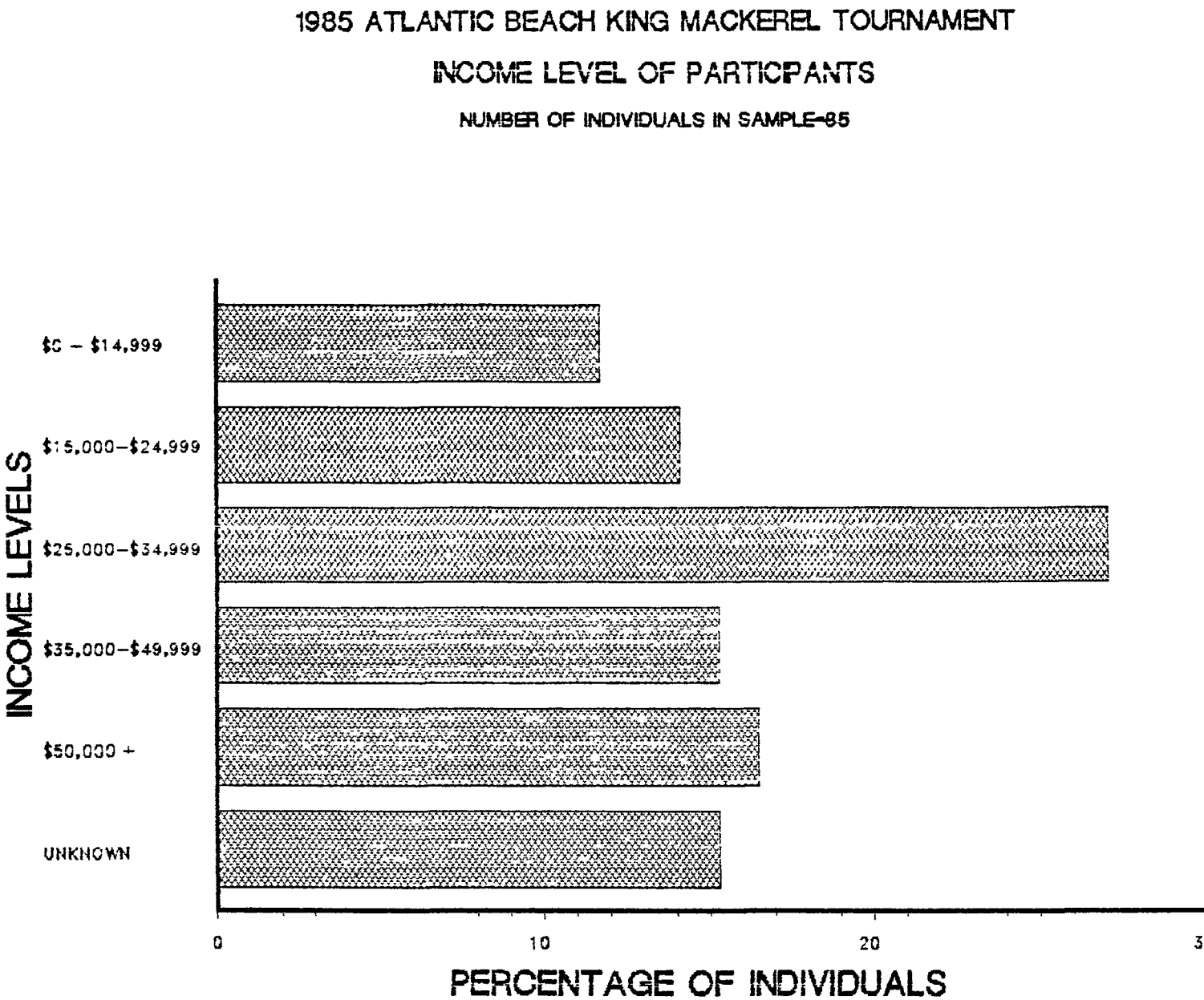

Figure 64. Income level of participants in the 1985 Atlantic Beach King Mackerel Tournament.

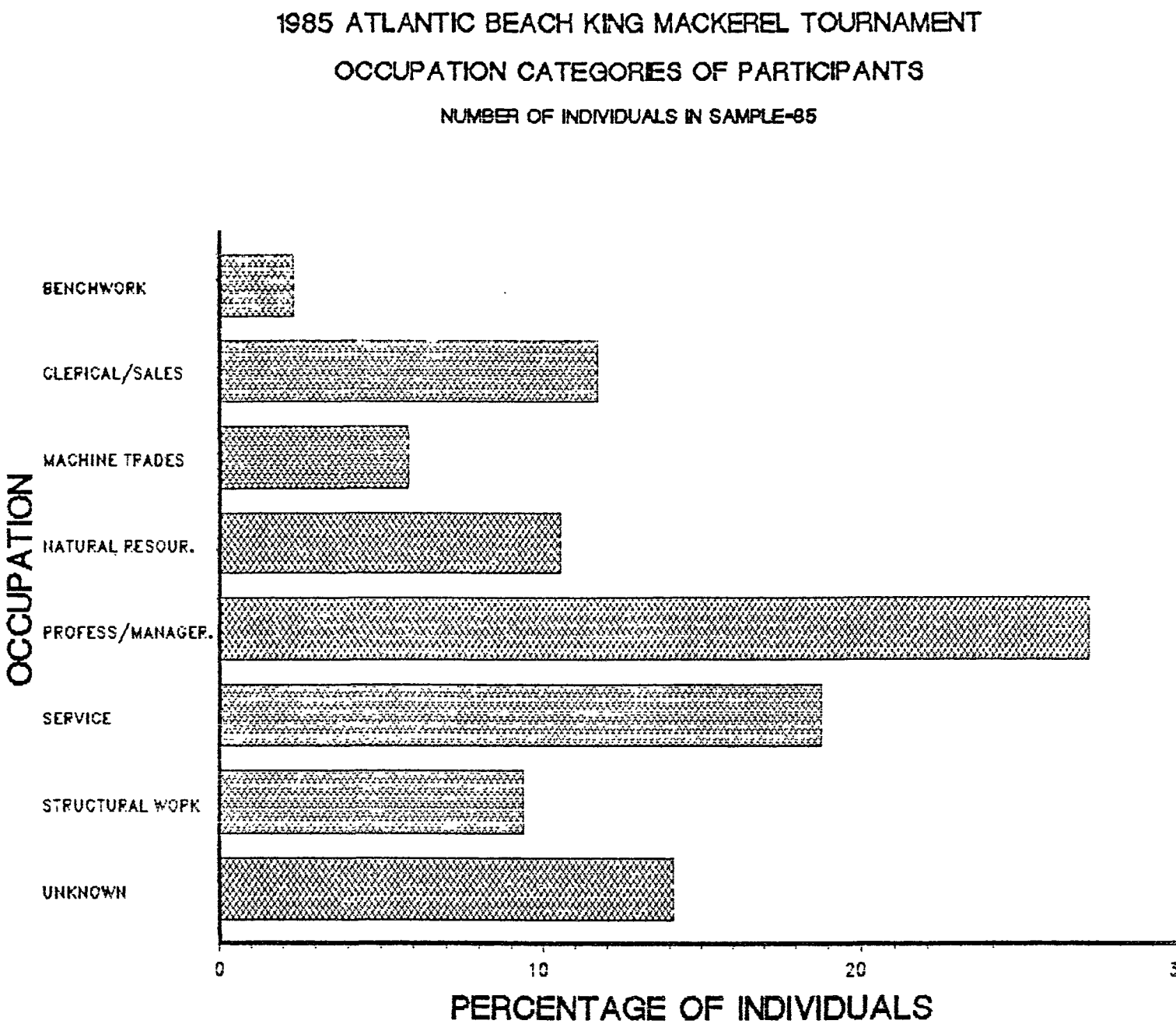

Figure 65. Occupation categories of participants in the 1985 Atlantic Beach King Mackerel Tournament.

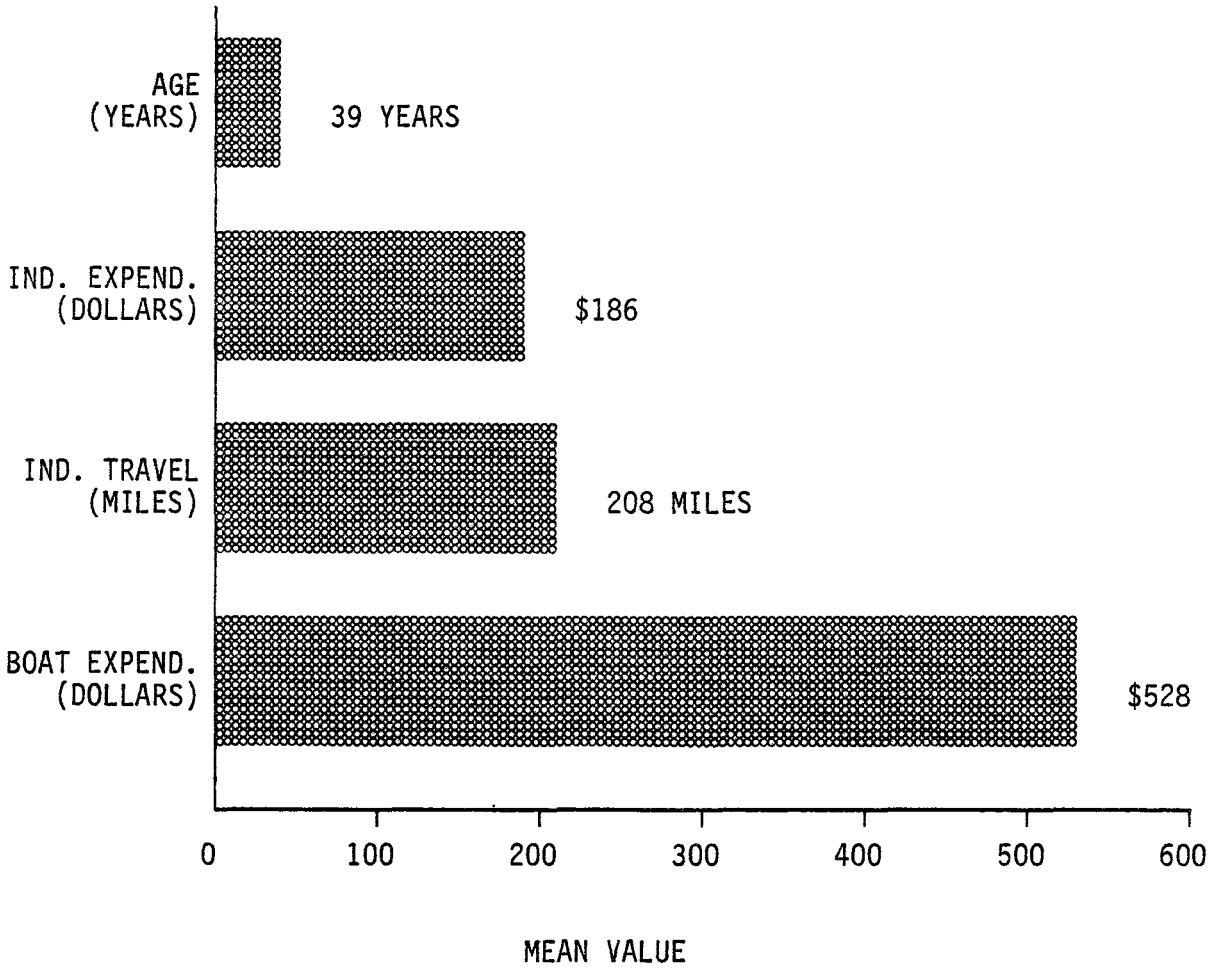

Figure 66. Mean socioeconomic values for the 1985 Atlantic Beach King Mackerel Tournament (N=85 individuals/ 30 boats).

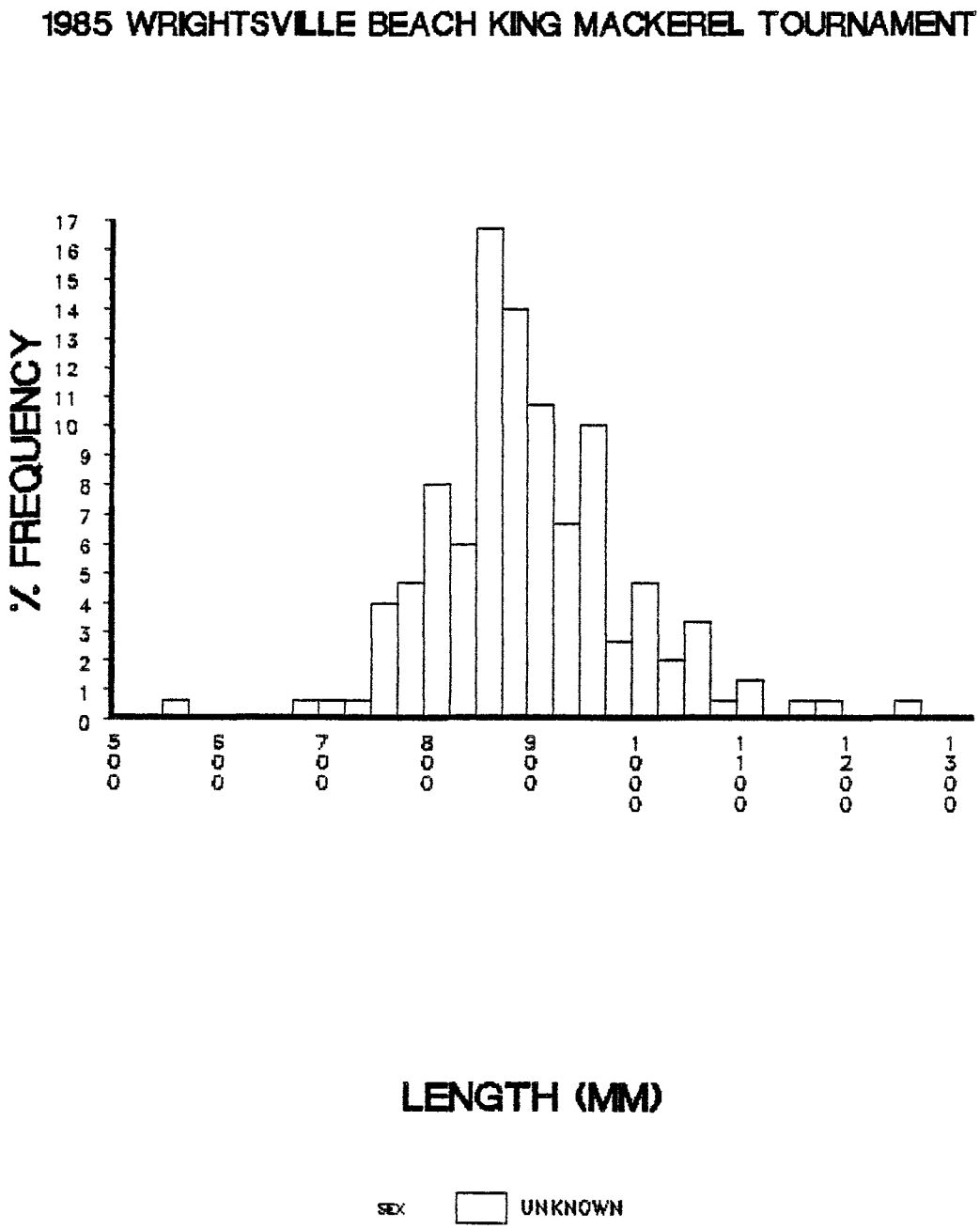

Figure 67. Size frequency of Scomberomorus cavalla (king mackerel) measured in the 1985 Wrightsville Beach King Mackerel Tournament.

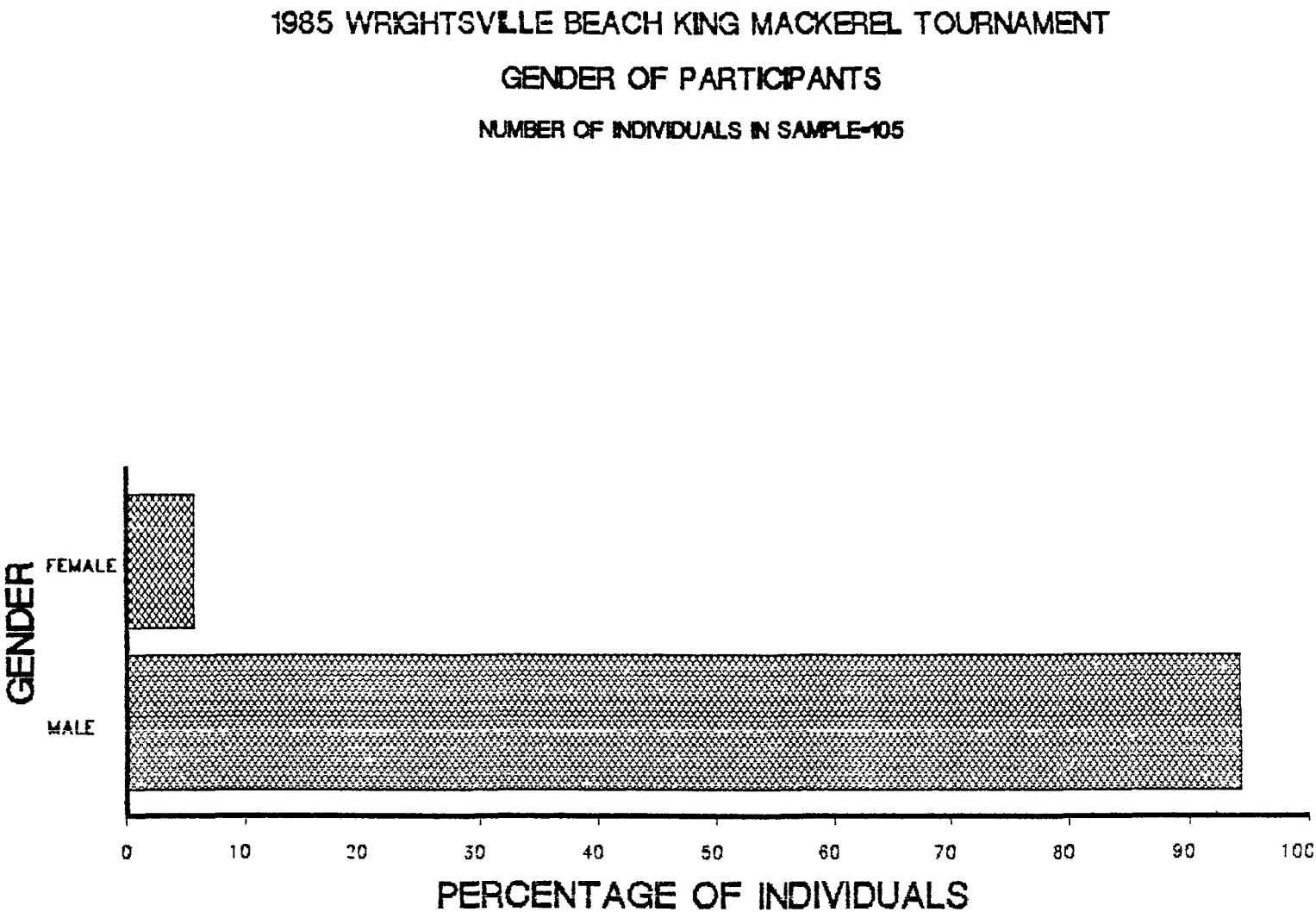

Figure 68. Gender of participants in the 1985 Wrightsville Beach King Mackerel Tournament.

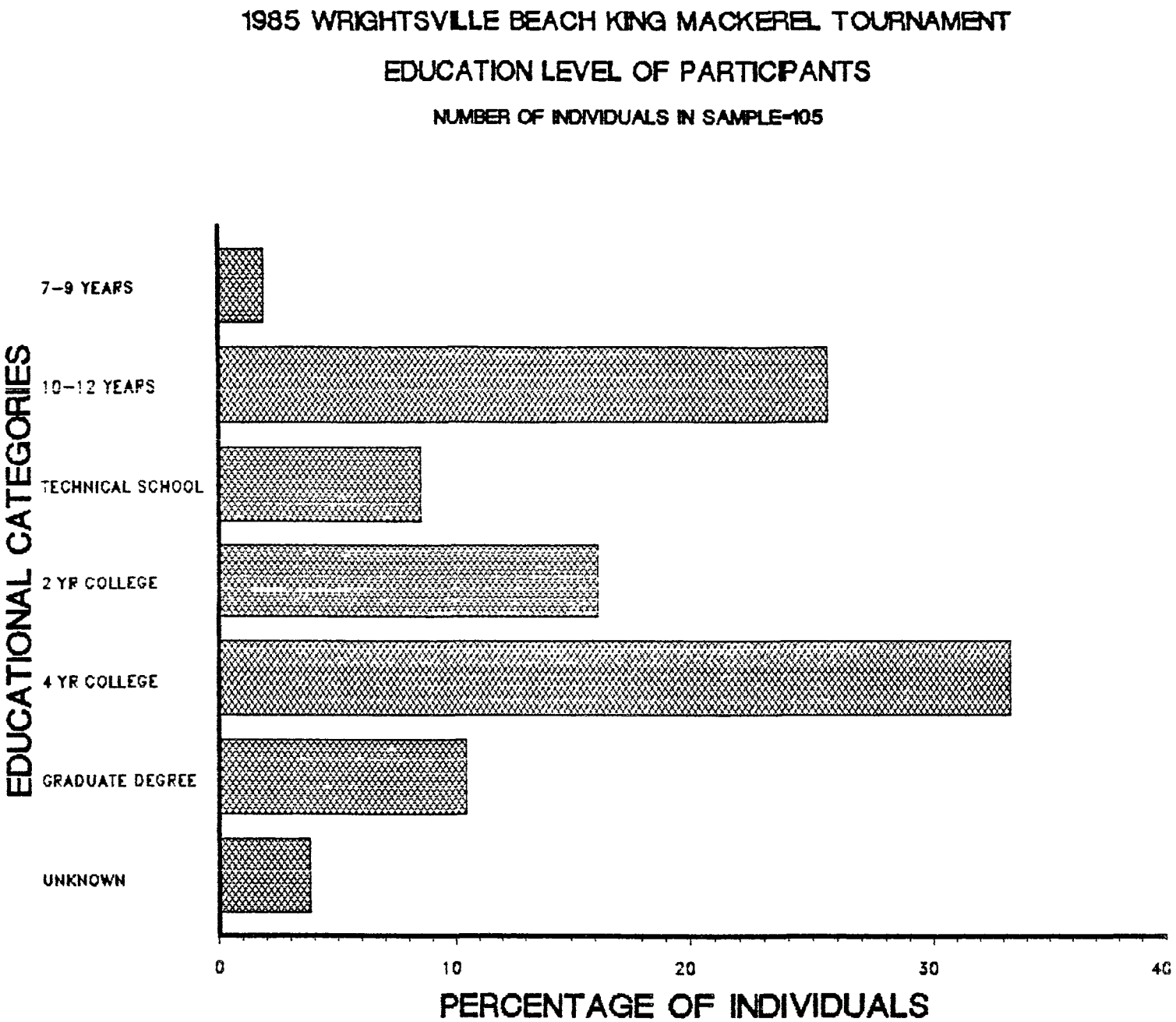

Figure 69. Education level of participants in the 1985 Wrightsville Beach King Mackerel Tournament.

indicated that 28.5% of the participants earned $25,000-$34,999 (Figure 70) and 33% were in the professional/managerial occupation category (Figure 71). The mean age of surveyed participants was 39 years, the mean individual expenditure was $188, and the average distance traveled (round trip) was 149 miles (Figure 72). The mean boat expenditure was $560 (Figure 72).

Survey results of the 1985 U. S. Open King Mackerel Tournament are based on 31 boat participants. The crew size per boat ranged from 2-6 and 45.35% of the boats had a crew size of three (Table 16). The number of lines fished per boat ranged from 2-6 and 41.10% fished 4 lines (Table 17). The depth range fished was 6-31 m (20-102 ft) and the average depth fished was 12.6 m (41 ft). Catch per unit effort data are presented in Table 18. The size distribution of sampled fished was skewed to smaller sizes than the overall distribution of tournament entered fish (Figure 73). The size frequency distribution by sex was heavily skewed toward females at larger sizes (Figure 74).

Socioeconomic data from the 1985 U. S. Open King Mackerel Tournament are based on responses from 103 individuals from 32 boats entered in the tournament. The sampled participants were predominantly males (94%) (Figure 75). Forty-six percent of the individuals were educated at the 10-12 year level (Figure 76) and 25% earned $15,000=$24,999 (Figure 77). The occupation categories were diverse (Figure 78). The mean age was 40 years, the mean individual expenditures was $221 and the mean distance traveled per individual was 281 miles (Figure 79). The mean expenditure per boat was $705.

SUMMARY

Reef Fish Fishery

The inshore waters of North Carolina's continental shelf support a diverse fauna of commercially and recreationally important species, including gag, scamp, snowy grouper, black sea bass, vermilion snapper, red porgy, blueline tilefish, tilefish, and white grunt. Numerous other species of groupers, red snapper, silk snapper, gray triggerfish, and knobbed porgy also make significant contributions to the landings. The species composition of the landings changes from north to south, becoming most diverse in the southern district. The species assemblage changes with depth as well. Black sea bass,

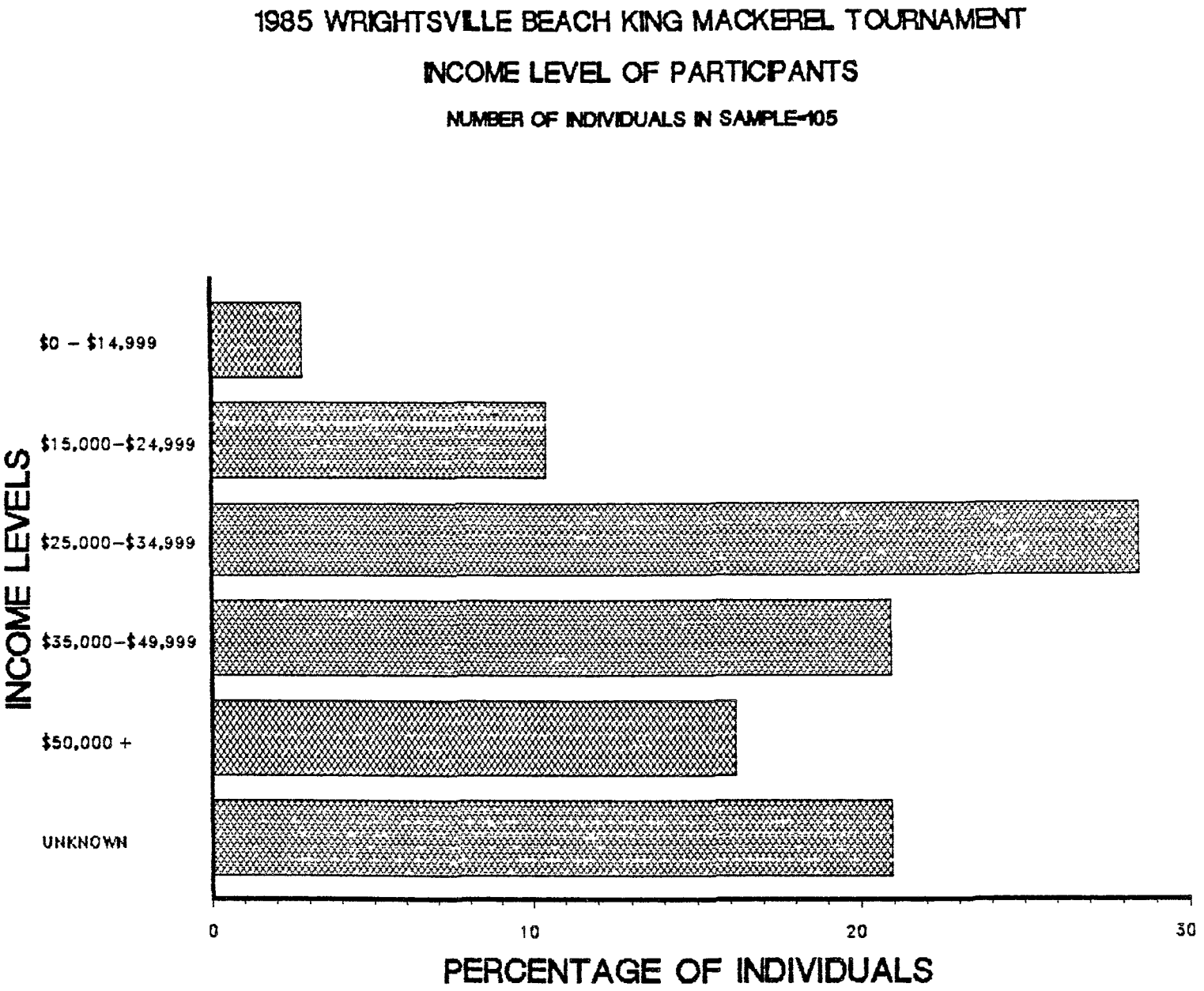

Figure 70. Income level of participants in the 1985 Wrightsville Beach King Mackerel Tournament.

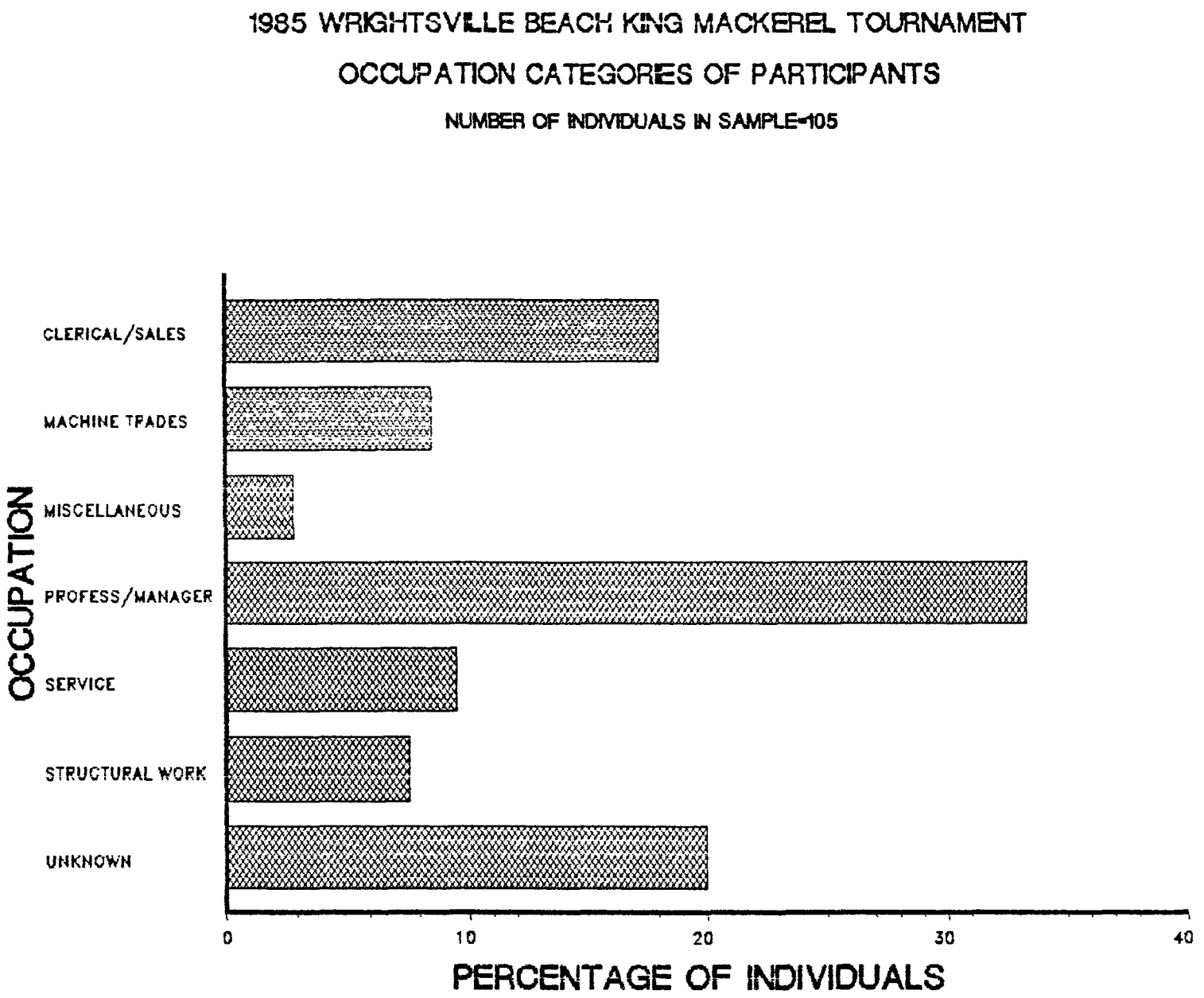

Figure 71. Occupation categories of participants in the 1985 Wrightsville Beach King Mackerel Tournament.

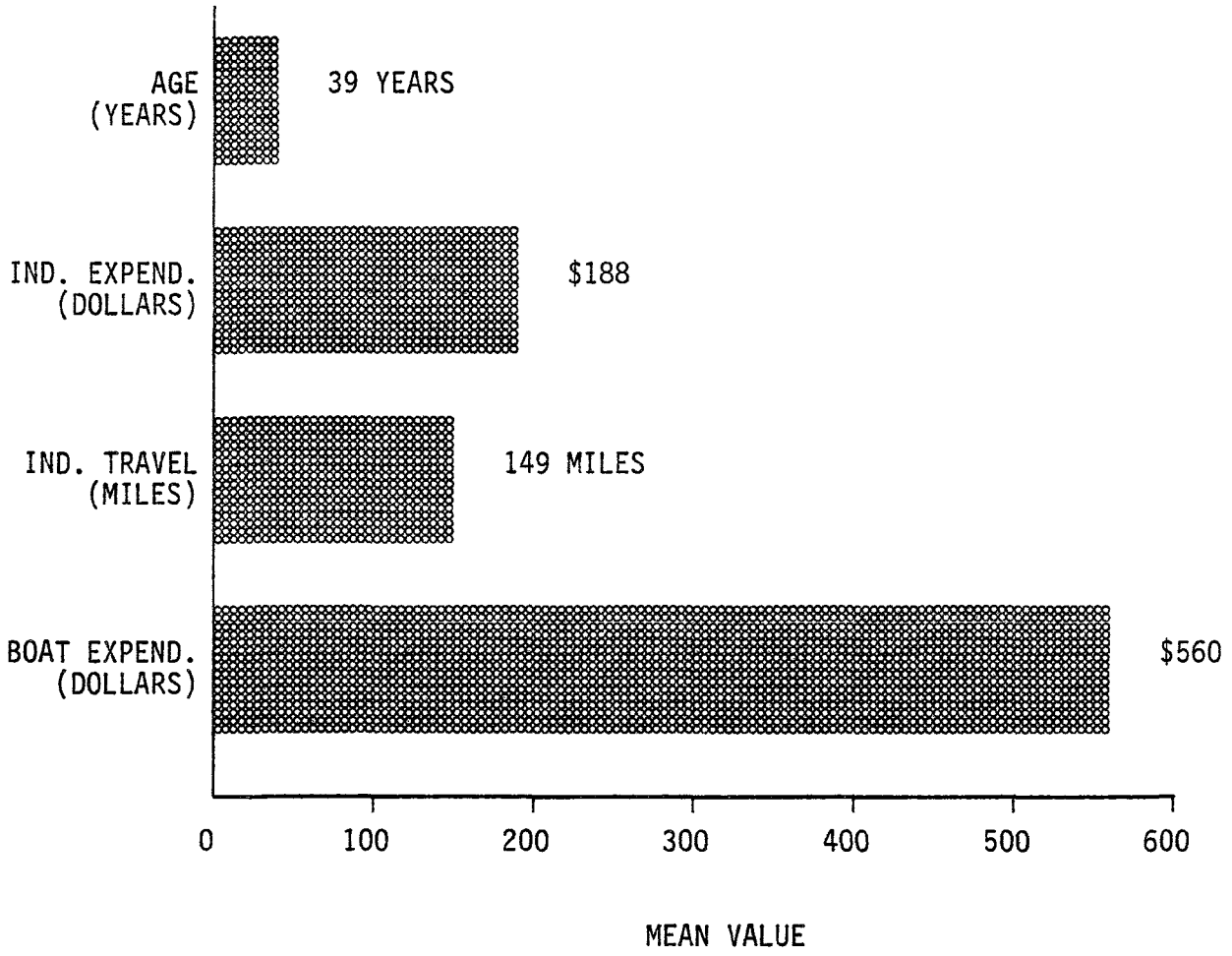

Figure 72. Mean socioeconomic values for the 1985 Wrightsville Beach King Mackerel Tournament (N=105 individuals/35 boats).

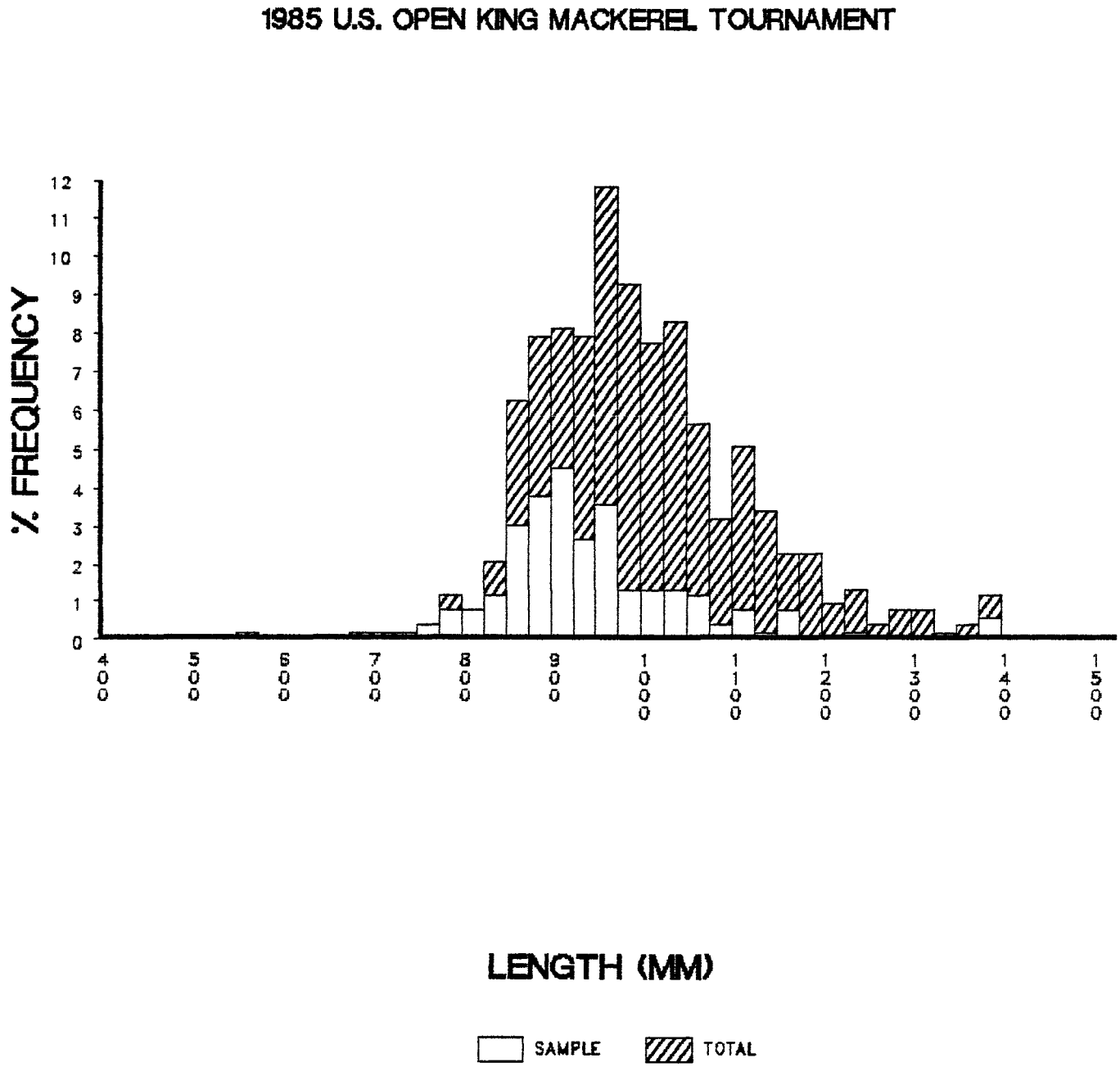

Figure 73. Size frequency of Scomberomorus cavalla (king mackerel) measured in the 1985 U. S. Open King Mackerel Tournament.

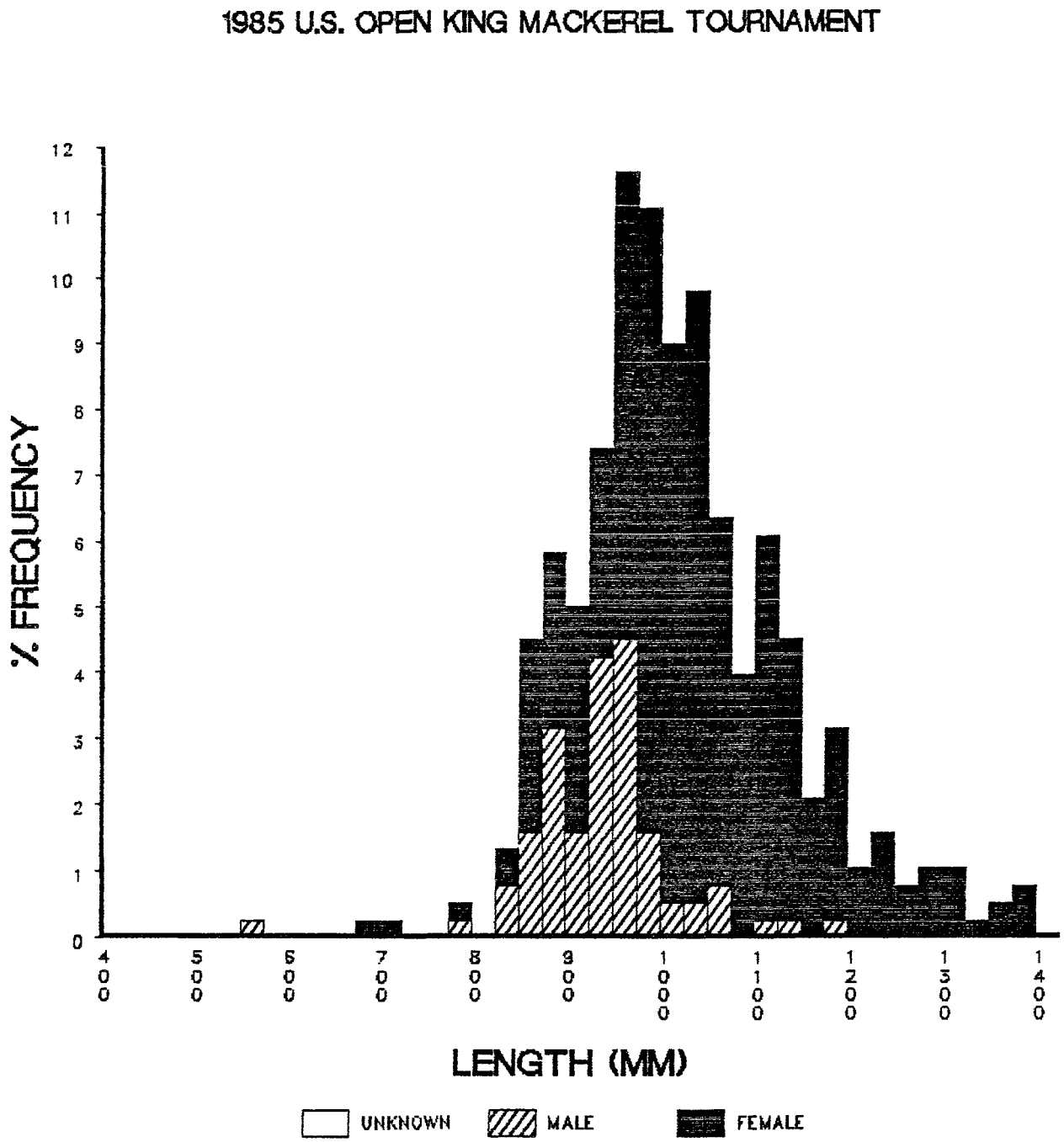

Figure 74. Size frequency of Scomberomorus cavalla (king mackerel) by sex measured in the 1985 U. S. Open King Mackerel Tournament.

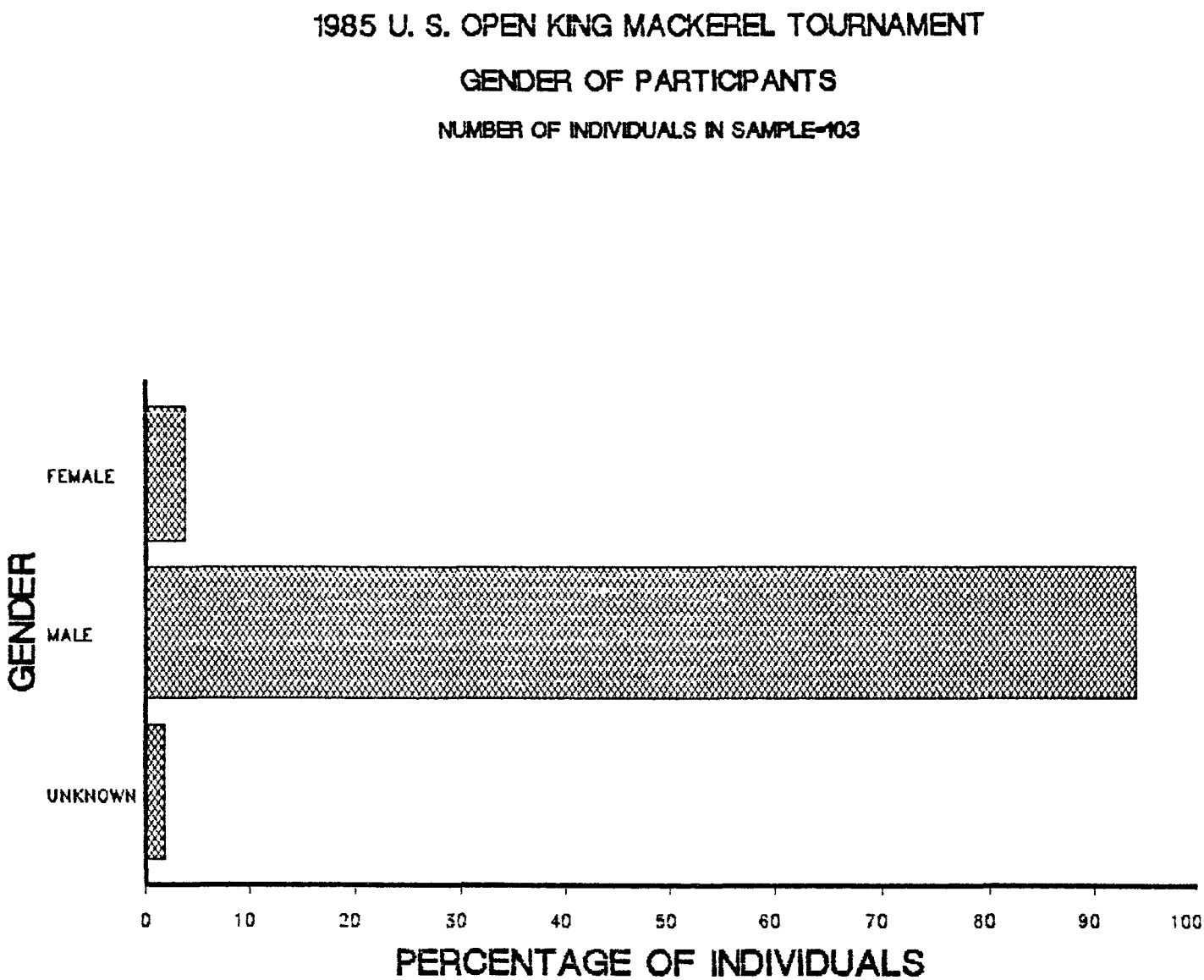

Figure 75. Gender of participants in the 1985 U. S. Open King Mackerel Tournament.

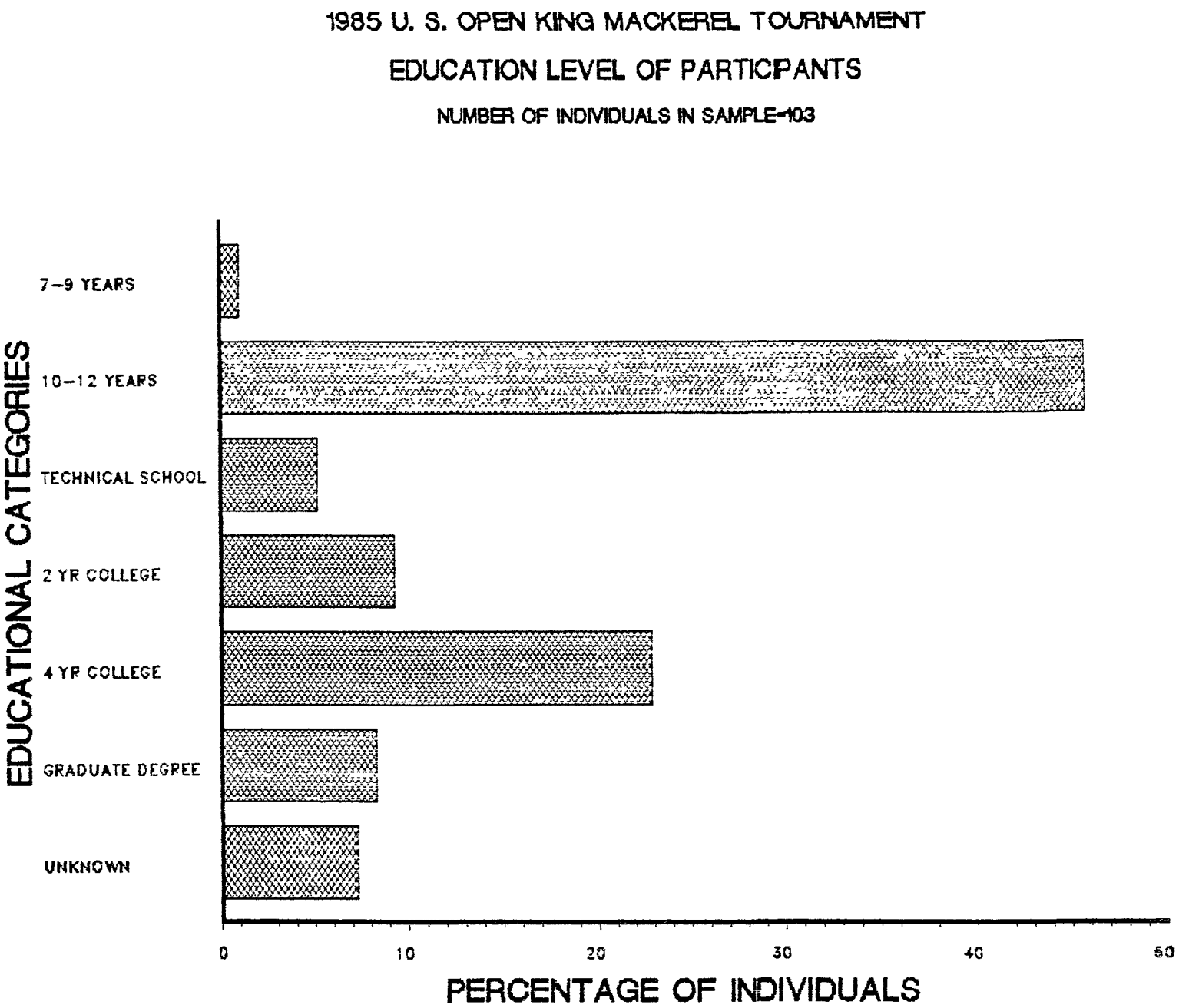

Figure 76. Education level of participants in the 1985 U. S. Open King Mackerel Tournament.

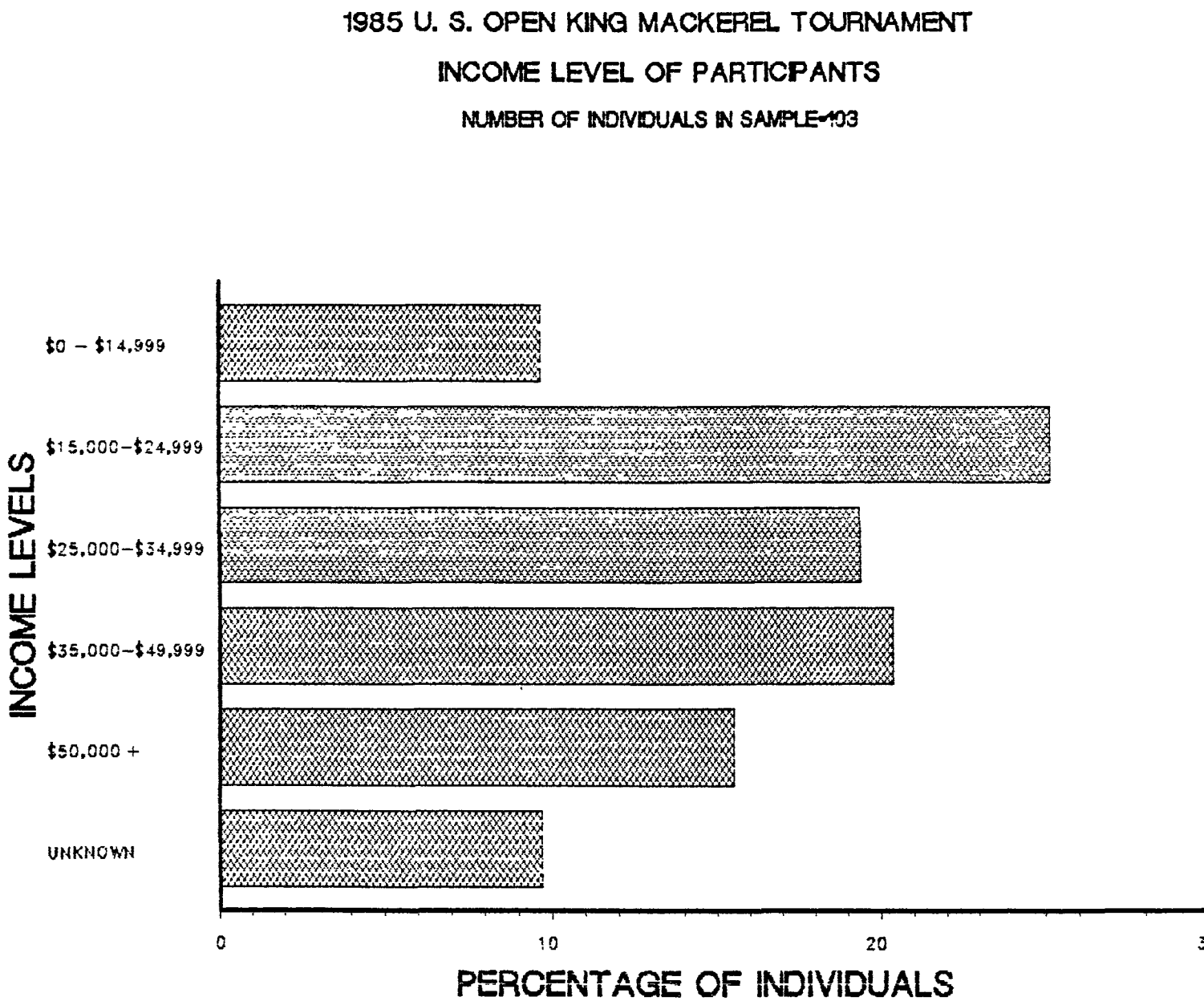

Figure 77. Income level of participants in the 1985 U. S. Open King Mackerel Tournament.

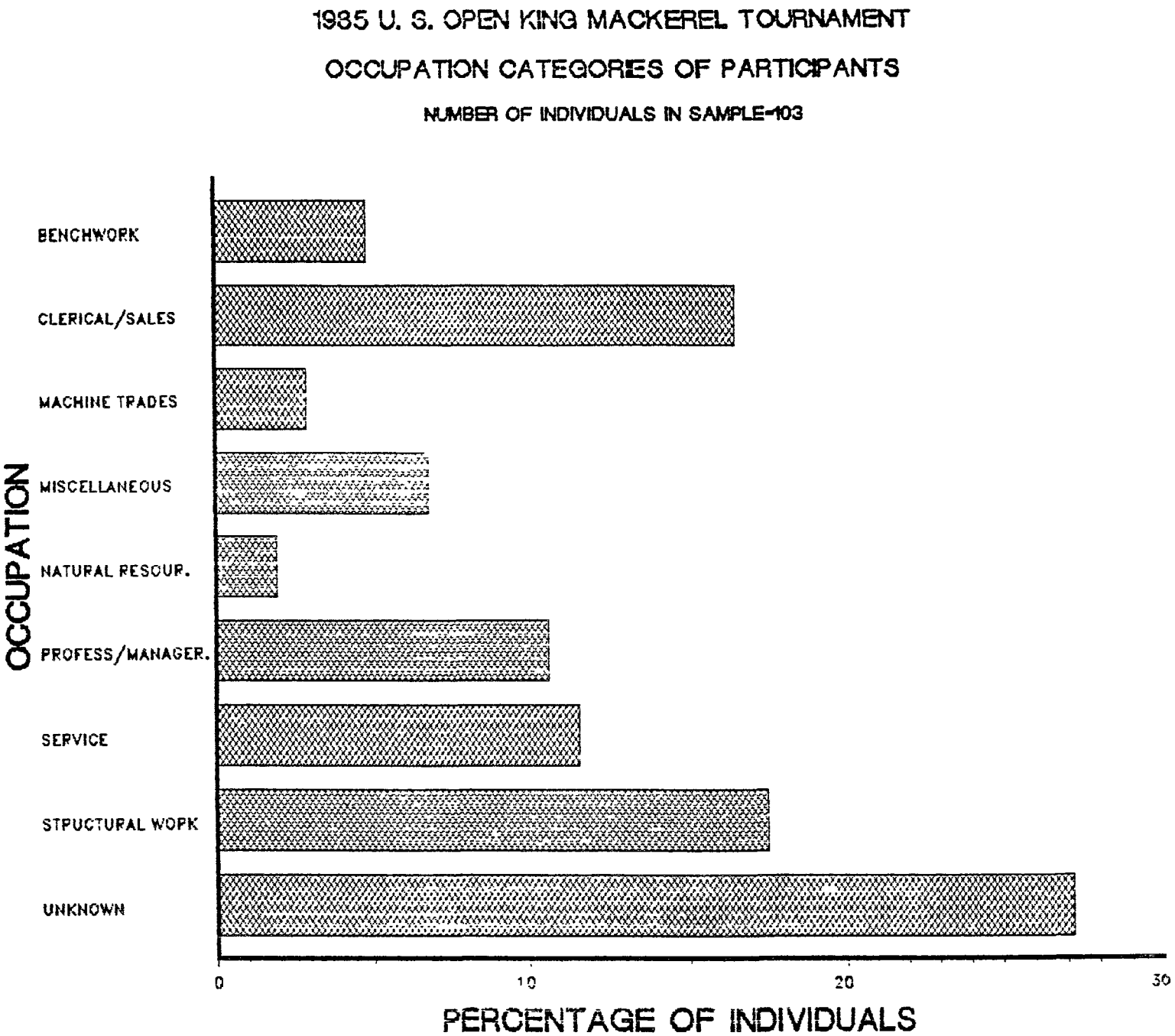

Figure 78. Occupation categories of participants in the 1985 U. S. Open King Mackerel Tournament.

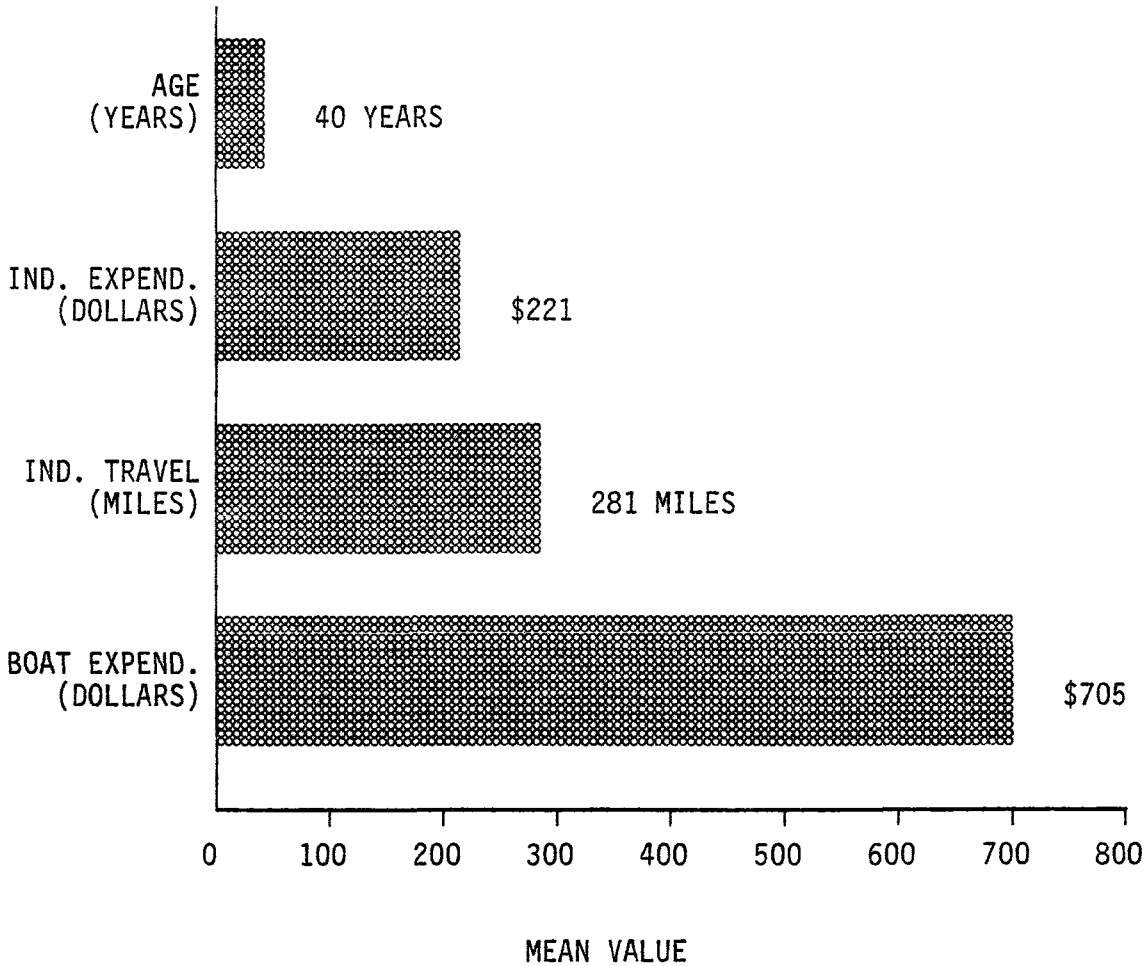

Figure 79. Mean socioeconomic values for the 1985 U. S. Open King Mackerel Tournament (N=105 individuals/32 boats).

red grouper, gag, scamp, and red snapper were most abundant inshore (<64 m). Vermilion snapper and red porgy were most abundant at intermediate depths (64-165 m) along with gag and speckled hind. The deepest waters support snowy grouper and tilefish. Catch per unit effort of snowy grouper, speckled hind, red grouper, gag, and red porgy increased from 1984 to 1985, while CPUE of scamp, vermilion snapper, red snapper, and tilefish decreased.

Coastal Pelagic Fishery

The coastal pelagic fishery for mackerels is primarily a fall fishery. The commercial fishery for king mackerel is centered in the northern district and the primary gear is troll lines with artificial lines. Recreational tournaments for king mackerel are concentrated in the fall, primarily in the central and southern districts. The recreational tournament fishery primarily uses troll lines with live bait which selects for larger sized fish. Size frequencies of commercialy-caught king mackerel indicate that the reef and pelagic fisheries harvest similar-sized fish. The size distributions of tournament-entered fish are larger than those for commercially-caught fish since only the largest fish are entered in tournaments.

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LITERATURE CITED

STUDY II

Barans, C. A. and V. J. Henry, Jr.
1984. A description of the shelf edge groundfish habitat along the southeastern United States. Northeast Gulf Sci. 7(1):77-97.

Chester, A. J., G. R. Huntsman, P. A. Tester, and C. S. Manooch III.
1984. South Atlantic Bight reef fish communities as represented in hook-and-line catches. Bull. Mar. Sci. 34(2):267-279.

Grimes, C. B.
1978. Age, growth and length-weight relationship of vermilion snapper, Rhomboplites aurorubens from North Carolina and South Carolina waters. Trans. Am. fish. Soc. 107:454-456.

Grimes, C. B., C. S. Manooch, and G. R. Huntsman.
1982. Reef and rock outcropping fishes of the outer continental shelf of North Carolina and South Carolina, and ecological notes on the red porgy and vermilion snapper. Bull. Mar. Sci. 32(1):277-289.

Huntsman, G. R.
1976. Offshore headboat fishing in North and South Carolina. U. S. Natl. Mar. Fish. Serv. Mar. Fish. Rev. 38(3):13-23.

Link, G. W., Jr.
1980. Age, growth, reproduction, feeding, and ecological observations on the three species of Centropristis (Pisces: Serranidae) in North Carolina waters. Ph.D. Dissertation, Univ. North Carolina at Chapel Hill, Chapel Hill, NC, 277 p.

Manooch, C. S., III and G. R. Huntsman.
1977. Age, growth, and mortality of the red porgy, Pagrus pagrus. Trans. Am. Fish. Soc. 106:26-33.

Manooch, C. S., III and M. Haimovici.
1978. Age and growth of the gag, Mycteroperca microlepis, and size, age composition of the recreational catch off the southeastern United States. Trans. Am. Fish. Soc. 107:234-240.

Matheson, R. H., III and G. R. Huntsman.
1984. Growth, mortality, and yield-per-recruit models for speckled hind and snowy grouper from the United States South Atlantic Bight. Trans. Am. Fish. Soc. 113:607-616.

Mercer, L. P.
1978. The reproductive biology and population dynamics of black sea bass, Centropristis striata. Ph.D. Dissertation, Coll. William and Mary, Williamsburg, VA, 196 p.

Miller, G. C. and W. J. Richards.
1980. Reef fish habitat, faunal assemblages and factors determining distributions in the South Atlantic Bight. Proc. Gulf Caribb. Fish. Inst. 32:114-130.

Nelson, R. R. and C. S. Manooch III.
1982. Growth and mortality of the red snapper, Lutjanus campechanus, in the west-central Atlantic and northern Gulf of Mexico. Trans. Am. Fish. Soc. 111:465-475.

Parker, R. O., Jr. and S. W. Ross.
1986. Observing reef fishes from submersibles off North Carolina. Northeast Gulf Sci. 8(1):31-49.

Powles, H. and C. A. Barans.
1980. Groundfish monitoring in sponge-coral areas off the southeastern United States. U. S. Natl. Mar. Fish. Serv. Mar. Fish. Rev. 42(5):21-35.

Sedberry, G. R. and R. F. Van Dolah.
1984. Demersal fish assemblages associated with hard bottom in the South Atlantic Bight of the U.S.A. Environ. Biol. Fish. 11(4):241-258.

Struhsaker, P.
1969. Demersal fish resources: composition, distribution and commercial potential of the continental shelf stocks off the southeastern United States. Fish. Ind. Res. 4:261-300.

Ulrich, G. F., R. J. Rhodes, and K. J. Roberts.
1976. Status report on the commercial snapper-grouper fisheries off South Carolina. pp. 102-125 in Proc. Gulf Caribb. Fish. Inst., 29th Annu. Sess. Nov. 1976.

Wenner, C. A.
1983. Species associations and day-night variability of trawl-caught fishes from the inshore sponge-coral habitat, South Atlantic Bight. U. S. Natl. Mar. Fish. Serv. Fish. Bull. 81:532-552.