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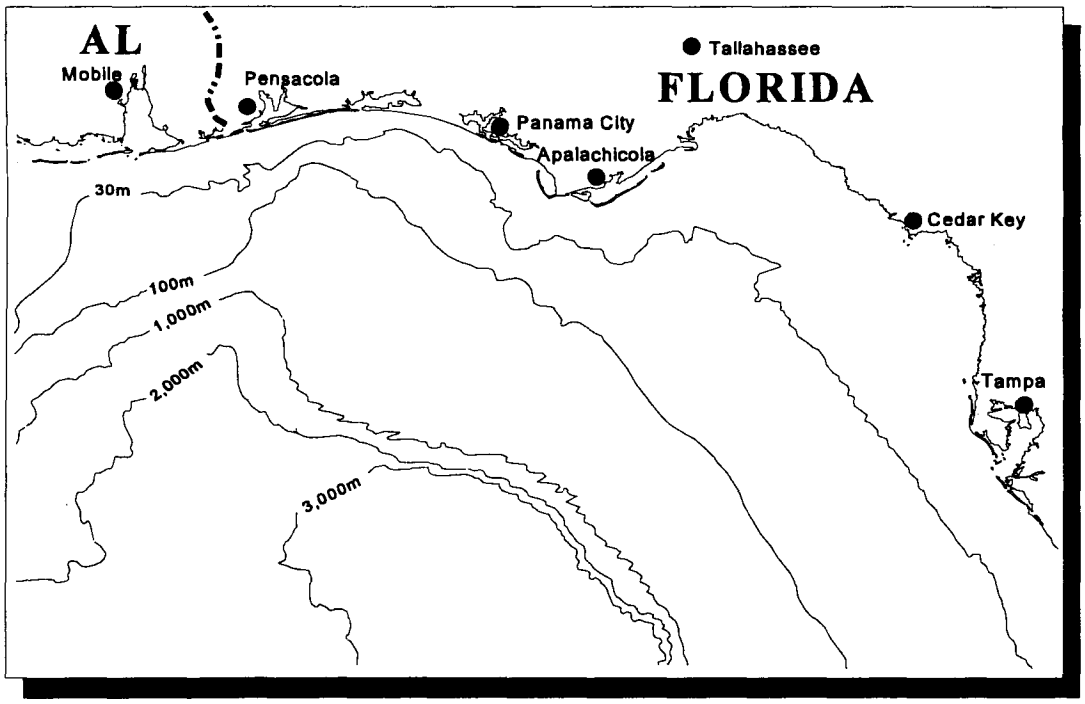

Characterization and Trends of Recreational and Commercial Fishing from the Florida Panhandle

U.S. Department of the Interior
U.S. Geological Survey
Biological Resources Division

MMS
U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

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in cooperation with the

U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

PROJECT COOPERATION

This study was procured to meet information needs identified by the Minerals Management Service (MMS) in concert with the U.S. Geological Survey, Biological Resources Division (BRD).

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Abstract

The continental shelf offshore of the Florida panhandle is an area of interest for oil and gas exploration and development. This area also supports diverse fish and invertebrate assemblages that form the basis for multi-species commercial and recreational fisheries. The U.S. Geological Survey Biological Resources Division needs, as part of the overall environmental assessment of the region prior to oil and gas development, a description of the recreational and commercial fisheries to guide decisions that may affect these fisheries. The study objectives were to 1) determine the number of marine recreational and commercial fishing trips initiated from the Florida panhandle; 2) determine the fishery gear-type and the species groups targeted for the trips; 3) determine the location(s), including but not limited to features such as natural live bottom or artificial reefs, where fishing was performed during the trips; 4) describe trends in recreational and commercial fishing as related to the first three objectives; and 5) identify any relationship(s) between recreational and commercial fisheries initiated from the panhandle and outer continental shelf oil and gas structures within the Gulf of Mexico.

Characteristics and trends of Florida panhandle fisheries were described using existing commercial and recreational fisheries data sets obtained from the National Marine Fisheries Service (NMFS) and the Florida Department of Environmental Protection (FDEP). The primary commercial database included annual dockside values and weights of fishes and invertebrates landed in the panhandle counties of Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, and Wakulla from 1983 to 1993. Commercial fishing effort data (number of trips) were available for the same counties from 1986 to 1993. Gear types used in commercial fisheries of the panhandle region (statistical grids 7 through 10) during the 1983 to 1993 period were obtained from NMFS General Canvass Landings Statistics database. Recreational survey data were obtained from the Marine Recreational Fishery Statistics Survey (MRFSS) and the Headboat Survey (HS). The MRFSS data provided estimated catch and effort by species, mode of fishing (shore, private vessel, charter vessel), and area (inland, offshore, inshore). Data from both recreational and commercial data sets were aggregated into species groups prior to analyses. These groups were baitfishes, coastal pelagic fishes, reef fishes, oceanic pelagic fishes, demersal fishes, other fishes, shrimps, crabs, lobsters, oysters, and other invertebrates. Commercial gear types were classified as gill nets, purse net, trawl, hook and line, trap, and other. Trends in pounds landed, effort, dockside price, nominal value, and dockside value were analyzed by linear, log-linear, and parabolic (quadratic) regression using data from all counties combined for each species group. MRFSS data were post-stratified to a geographical unit corresponding to the eight panhandle counties prior to tabular, graphic, and statistical presentations.

Headboats operating from panhandle ports caught mostly reef fishes. Vermilion snapper, red porgy, and tomtate numerically dominated the catches. Headboats averaged 2,463 trips annually from 1986 to 1993. These trips yielded an annual average of 987,048 fish at 336,879 kgs. Over the 1986 to 1993 period, headboat catch and effort declined. Recreational fishers operating in inland waters averaged about 3 million fish in

651,118 trips over the 1983 to 1993 study period. Inland catches consisted of Atlantic croaker, pinfish, spot, seatrout, and striped mullet. There was a downward trend in catch and number of trips made by inland fishers over the study period. Fishing in inshore (≤16 km from shore) Gulf of Mexico waters from shore, private, and charter vessels, recreational anglers averaged 2,096,735 trips and 15 million fish per year. The inshore fishing area produced the highest recreational catches and effort over the study period. Catches from inshore waters consisted mostly of reef and demersal species. There was a significant decline in the numbers of fish caught by private boat anglers over the 1983 to 1993 period. Offshore (>16 km from shore) fishers working from private and charter vessels caught an average of under 3 million fish in 184,586 trips. Species caught in offshore waters by recreational fishers included vermilion snapper, black seabass, gag, and red snapper.

The number of commercial fishing trips in the eight county region targeting finfish averaged 49,012 per year. Eighty percent of these trips targeted reef and demersal fishes. Finfish landings averaged 15,229,353 kg per year and were dominated by baitfish and coastal pelagic species groups. The average value of finfish landings was $15,596,592 per year. Oceanic pelagic and reef fish species groups were the highest valued species groups in the panhandle fisheries. Commercial fishing trips targeting invertebrates (crabs, oysters, and shrimps) averaged 45,4538 per year. Franklin County consistently produced the highest total commercial landings, primarily due to high catches of shrimps and oysters. Shrimps and oysters were also the most valuable commercial entities.

Trends in commercial fisheries varied with species group. Baitfish fisheries increased in effort and dockside value during the study period. The fishery for reef fishes showed an early decline and a late increase in landings. Coastal pelagic species showed no significant trend in landings, but dockside value and effort increased. Oceanic pelagic landings increased exponentially from 1983 to 1986 then leveled off from 1987 to 1993. Demersal fish landings decreased while dockside value and effort increased. Invertebrate (crabs, shrimps, and oysters) landings declined while dockside value increased over the 1983 to 1993 period. These trends had many causes including overfishing, regulatory measures, and environmental degradation.

Fishing areas in offshore waters of the panhandle consisted mostly of natural and artificial hard substrate. These areas attract reef, coastal pelagic, pelagic, and demersal species groups and the anglers seeking these groups. Landings data alone were insufficient to track the actual fishing areas used by panhandle anglers.

Table of Contents

Table of Contents
(Continued)

List of Figures

List of Figures
(Continued)

List of Tables

List of Acronyms

CPUE	Catch Per Unit of Fishing Effort
FDEP	Florida Department of Environmental Protection
FE	Fishing Effort
FTTS	Florida Trip Ticket System
GCLS	General Canvass Landings Statistics
HS	Headboat Survey
MRFSS	Marine Recreational Fishery Statistics Survey
NBS	National Biological Service
NMFS	National Marine Fisheries Service
OCS	outer continental shelf
TEDs	turtle excluder devices

Chapter 1

Introduction

The waters off the Florida panhandle support abundant fish and invertebrate populations that form the basis for multispecies commercial and recreational fisheries. The region is also an area of interest for oil and gas exploration which may potentially lead to development and production activities. Because of the interest of the oil and gas industry and the potential for impact to fisheries, the U.S Geological Survey Biological Resources Division requested a characterization of commercial and recreational fisheries of the Florida panhandle that would provide information to improve understanding of fishing activities in the area and identify potential conflicts with oil and gas operations. The information gathered will help determine the impacts that development of petroleum resources may exert upon recreational and commercial fisheries of the region.

The need for this study arose because no synthesis of fisheries information is presently available for the panhandle. Several gulf-wide fisheries profiles (e.g., Richards and McGowan 1989; Browder et al. 1990; and U.S. Department of Commerce 1992) exist, but they do not treat the Florida panhandle as a separate entity. Past studies of panhandle fisheries include a status report on the red snapper fishery of Pensacola (Camber 1955); a profile of the Choctawhatchee Bay area (Irby 1974); a survey of commercial snapper/grouper anglers based in panhandle ports (Dimitroff 1982); and an overview of recreational and commercial fisheries of the panhandle for the late 1970's (Joyce 1983). Statewide studies of Florida's recreational fisheries by Bell et al. (1982), Bell (1992), and Milon and Thunberg (1993) recognized the panhandle as a geographical subunit of the entire state. Newlin (1993) summarized commercial and recreational information for the southeastern United States, including the Florida panhandle counties, for the 1992 season. Catches by charter boat fleets operating from panhandle ports have been monitored from time to time as part of gulf-wide or regional studies (Brusher et al. 1984; Brusher and Palko 1985; Holland et al. 1992). Summaries of recreational billfishing in the eastern gulf of Mexico, including the study area, have been compiled for more than 20 years by the National Marine Fisheries Service (NMFS) Laboratory in Panama City, Florida (Pristas et al. 1992). While these studies provided a general account of panhandle fisheries over various time scales, our study drew together the available landings and survey data into a comprehensive synthesis with an analysis of recent trends and practices in recreation and commerce. This report provides managers with a basis for evaluating potential conflicts between oil and gas development and the extant fisheries of the region.

Objectives

The main goal of this study was to describe marine recreational and commercial fishing from the Florida panhandle during the 1983 to 1993 calendar years using available fisheries landings and survey data. For this study, the Florida panhandle

encompasses the inland, inshore, and offshore waters of Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, and Wakulla counties (Figure 1).

Specific objectives were to

- determine the total number of recreational and commercial fishing trips initiated from the Florida panhandle;
- determine the fishery gear type and species groups targeted by the trips;
- describe trends in recreational and commercial fishing (landings, trips, and value) for major species groups;
- determine fishing locations, including but not limited to features such as natural live bottoms or artificial reefs; and
- identify any relationship(s) between recreational and commercial fishing initiated from the panhandle and oil and gas structures in the Gulf of Mexico.

Methods

Data Acquisition

Four data sets, two recreational and two commercial (Table 1), were identified to provide the information needed to satisfy the stated objectives. Two data sets used to characterize recreational fishing were the Marine Recreational Fishery Statistics Survey (MRFSS) and the Headboat Survey (HS). Both data sets are administered by the NMFS and they are complementary.

The MRFSS provided estimates of catch (numbers and weights of fish) by species, fishing area (inland, inshore [≤16 km from shore], and offshore [>16 km from shore]) (Figure 2) and fishing mode (shore, private boat, charter boat) as well as the estimated number of fishing trips by mode and area. The MRFSS was designed to provide estimates of catch and effort based upon combined telephone and onsite (intercept) interviews for large geographical areas such as the entire west coast of Florida. Therefore, using published MRFSS information (Essig et al. 1988) to characterize just the Florida panhandle would be highly inaccurate. Fortunately, the NMFS has the raw survey data available at smaller geographical scales, in this case the county level. Through the procedure of post-stratification (Cochran 1977) new estimates can be developed from the archived data using smaller geographic regions (strata) such as the Florida panhandle. For this study, raw intercept and estimate data for the entire Gulf of Mexico were post-stratified to generate estimates of catch and effort for the eight panhandle counties. This post-stratified panhandle unit comprised the same eight counties used for the commercial data. In addition to catch and effort estimates, the MRFSS data set also

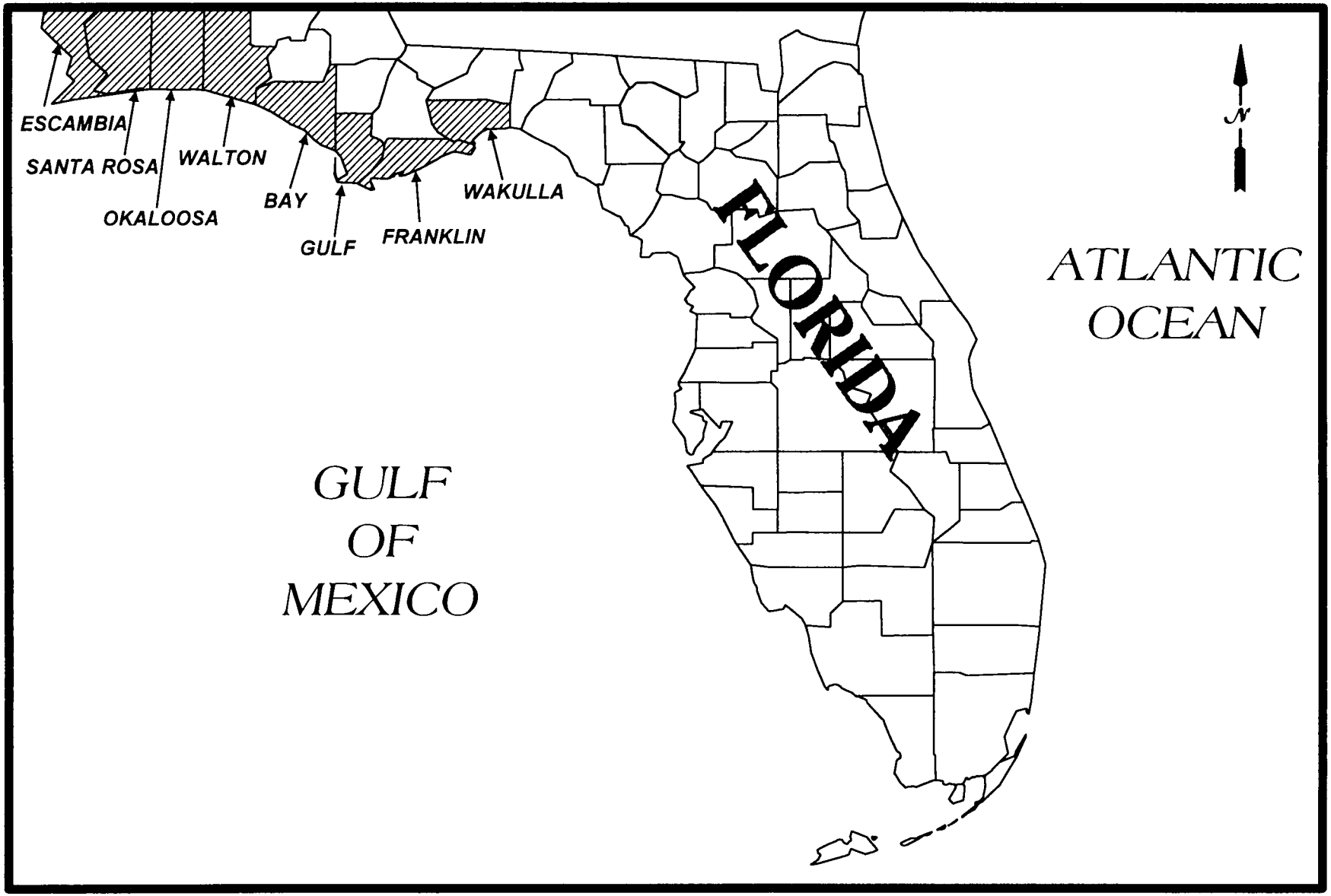

Figure 1. The Florida panhandle study area.

Table 1. Summary of recreational and commercial data sets used to characterize Florida panhandle fisheries.

Data Set	Agency	Data Type	Spatial Scope	Temporal Scope
Marine Recreational Fishery Statistics Survey	National Marine Fisheries Service (NMFS)	Estimated catch in numbers of fish by species, area, and mode. Estimated number of trips by mode and area.	Poststratified to the eight Panhandle counties as one geographical unit	1983 to 1993
Headboat Survey	NMFS	Numbers and weights of fish caught aboard headboats. Number of fishing trips made by duration of trip.	Florida Panhandle is treated as a single geographical unit	1986 to 1993
Florida Trip Ticket System	Florida Department of Environmental Protection	Weights and trips by species.	Individual Florida counties	1983 to 1993 for weights; 1986 to 1993 for trips
General Canvass Landings Survey	NMFS	Weights and gear type by species.	NMFS Statistical Grids	1983 to 1993

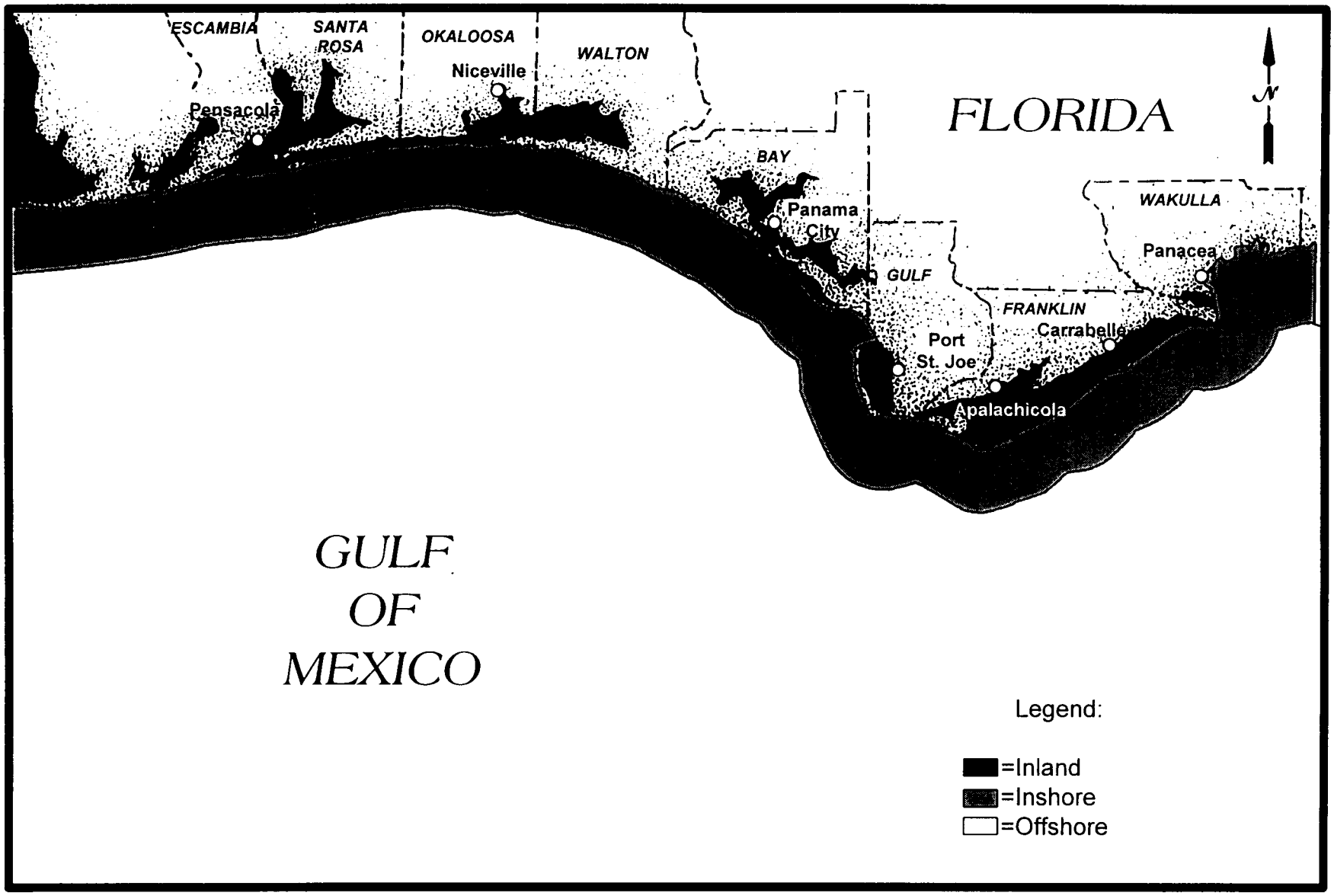

Figure 2. Inland, inshore (≤16 km from shore), and offshore (>16 km from shore) fishing areas as defined by the Marine Recreational Fishery Statistics Survey.

contained information on recreational fishing in the vicinity of oil and gas platforms (Witzig 1986). When interviewed, recreational fishers were asked if during their fishing trip they did or did not fish around an oil and gas platform or an artificial reef. Responses to these questions were only available for years 1984 to 1992.

The second recreational data set was the NMFS HS data set. Headboats are vessels that charge recreational anglers by the "head" to fish for 1/2, 1, 2, or 3 day trips in offshore waters. Because the eastern Gulf of Mexico MRFSS did not provide headboat estimates, these two data sets complemented one another. The HS data set contains catch (numbers and weights by species) and effort (number and duration of trips) data for headboats operating from different regions of the southeastern United States. The survey recognizes the Florida panhandle (Carabelle to Perdido Pass) as a geographic subarea of the overall survey area. Because of this subdivision, the headboat data did not have to be post-stratified. Raw data from the panhandle region for all years available (1986 to 1993) were requested.

The two data sets used to characterize commercial fishing were the Florida Trip Ticket System (FTTS) and the General Canvass Landings Statistics (GCLS).

FTTS, the primary commercial data source, provided annual commercial landings by species for all Florida coastal counties from 1983 to 1993 and number of commercial fishing trips for all coastal counties from 1986 to 1993. The State of Florida took over the collection and management of commercial landings data from the NMFS in 1984, but the FTTS data are not available until 1986. Therefore, all landings data prior to 1986 collected by the NMFS are now maintained by the Florida Department of Environmental Protection (FDEP). FTTS data were requested for Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, and Wakulla counties for years 1983 to 1993. Although the FTTS includes categories for gear types used, the data are incomplete for the 1983 to 1993 study period.

The second commercial data set was the GCLS which was used to obtain information on fishing gear types used. Although ultimately derived from the FTTS county landings data, the GCLS data are reported in spatial units termed statistical grids (Figure 3). Unfortunately, direct comparisons of county landings with adjacent statistical grids do not always correspond. For this reason the FTTS was chosen as the primary commercial data set for analyzing trends of landings, trips, and value in the panhandle region. The GCLS data set provided general landings trends for different gear types and these data were expressed as percentages of landings for grids 7 to 10 that correspond to the panhandle region.

Data Analysis

To aid in the description and interpretation of catch and effort, recreational and commercial data sets were classified into major species groups. Commercial data were first divided into finfish and invertebrate groups then further subdivided into major species groups. The groups and their key species are as follows:

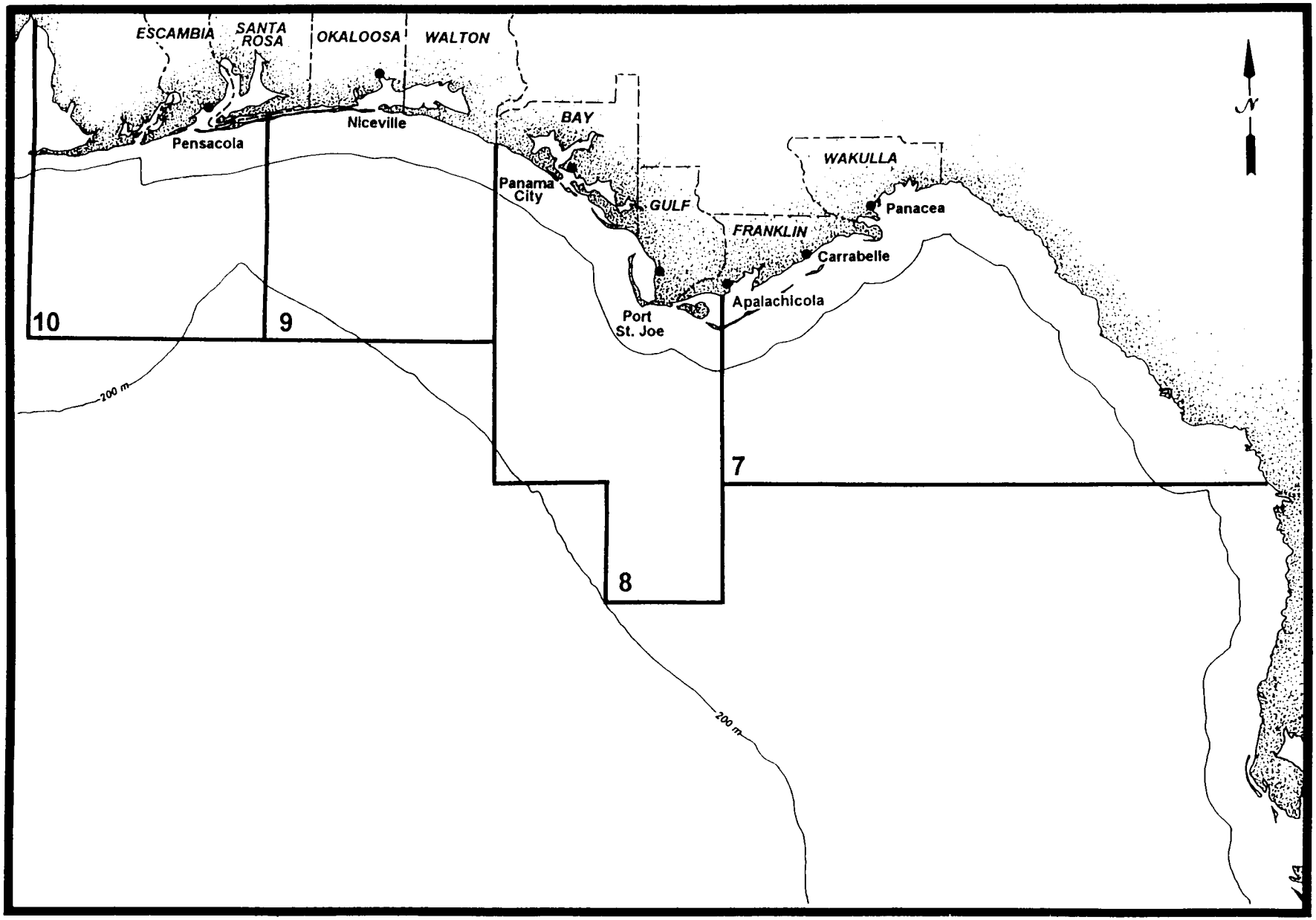

Figure 3. Statistical grids as defined by the General Canvass Landings Statistical Survey in relation to Florida panhandle counties and primary recreational and commercial fishing ports.

Finfishes

- *Baitfishes* (Gulf menhaden, Spanish sardine, scads);
- *Coastal Pelagic Fishes* (ladyfish, jack crevalle, king and Spanish mackerels);
- *Demersal Fishes* (striped mullet, black drum, spot, seatrouts);
- *Oceanic Pelagic Fishes* (swordfish, tunas, billfishes, dolphin);
- *Reef Fishes* (groupers, snappers, porgies, amberjacks); and
- *Other Fishes*.

Invertebrates

- *Shrimps* (brown shrimp, pink shrimp, white shrimp, rock shrimp);
- *Crabs* (blue crab, stone crab);
- *Oysters*;
- *Lobsters* (spiny lobsters, slipper lobsters); and
- *Other Invertebrates* (scallops, squid, clams).

Complete listings of species by major grouping for all four data sets are in Appendix A.

Commercial fishing gear from the GCLS data set were also classified into smaller subsets to facilitate the description of trends and overall gear use. These gear groups were as follows:

- *Hook and line* (hand line, rod and reel);
- *Longline* (surface longline, bottom longline, vertical longline);
- *Purse net* (purse net, encircling net, menhaden net);
- *Gill net* (trammel net, gill net, runaround gill net);
- *Seine* (beach seine, haul seine);
- *Trawl* (otter trawl, beam trawl, butterfly trawl, chopstick trawl);
- *Tongs* (oyster tongs);
- *Trap* (crab pot, crab trap, fish trap); and
- *Other* (scuba diving).

Appendix Table A.3 gives the classification based upon the variety of gears in the GCLS data set.

Trend analyses were performed on major species groups for commercial landings, values, and trips, and for recreational total catch and total trips by fishing area

and fishing mode. Three forms of statistical trend analyses were used in this report. These forms were 1) linear; 2) logarithmic; and 3) parabolic (quadratic) or simply regression analysis of the time trend (see Figure 4 for the forms of these functions). Since the period under analysis is at most only 11 years, it is not prudent to attempt more sophisticated procedures (higher degree polynomials, sine functions, exponential smoothing techniques [Box-Jenkins]). The main reason for the simplified approach is the lack of a long annual time series (20 to 25 years). The species groups were only analyzed for commercial fishing since fleets usually target a particular type of species such as reef fishes or coastal pelagic species. Such groupings have been discussed in earlier sections of this report and need no elaboration here. The three functional forms for the trend analysis are as follows:

1) Dependent Variable = $a + bT + e_t$
2) Log Dependent Variable = $a + bT + e_t$
3) Dependent Variable = $a + bT + cT^2 + e_t$

where the dependent variable relates to the particular variable being analyzed (see above) for the particular species group while "T" is time and "e" is the error term. Time or T was started at unity (one) for the beginning of the time series to simplify analysis. Thus, 1983 was set at 1 and 1993 at 11. All data series ran from 1 to 11 and for consistency shorter series conformed to this procedure in that the first year coincided with the 1 to 11 format. For example, a series starting in 1986 would start at four and not one. This is an important technical point for the reader who wishes to check the predicted time series value (using equations 1 to 3 above) with the observed value.

Of further note, this analysis was restricted to time trends. Deviations from such trends were <u>not</u> analyzed in terms of the reasons for such departures from a computed trend. Fisheries tend to be cyclical because of the cyclical nature of many environmental variables that impact the population such as sea water temperature, rainfall, and salinity. In addition, pollution, alterations in habitat, and fishery management rulemaking may be a one-time shock to fishery variables, thereby producing significant oscillations in fishery landings and consequently prices and dockside value. Such an analysis of deviations from trends is beyond the scope of this report, although the reader interested in this area will have the necessary trend analysis by which to study oscillations for any species group of interest. However, the use of the parabola may help identify peaks and valleys in the data trend.

Also, the simple Schaefer model of populations dynamics will be employed by relating Catch Per Unit of Fishing Effort (CPUE) to aggregate fishing effort. It is hypothesized that this relation will be inverse for both commercial and recreational fisheries. This does not represent any final conclusion on population dynamics for the fisheries under study.

In the statistical analysis of the time series, time (T) will be "statistically significant" at the 5% or lower percent level (.05 or lower). From time to time, it will be pointed out if time is statistically significant at a different level to alert the reader that he

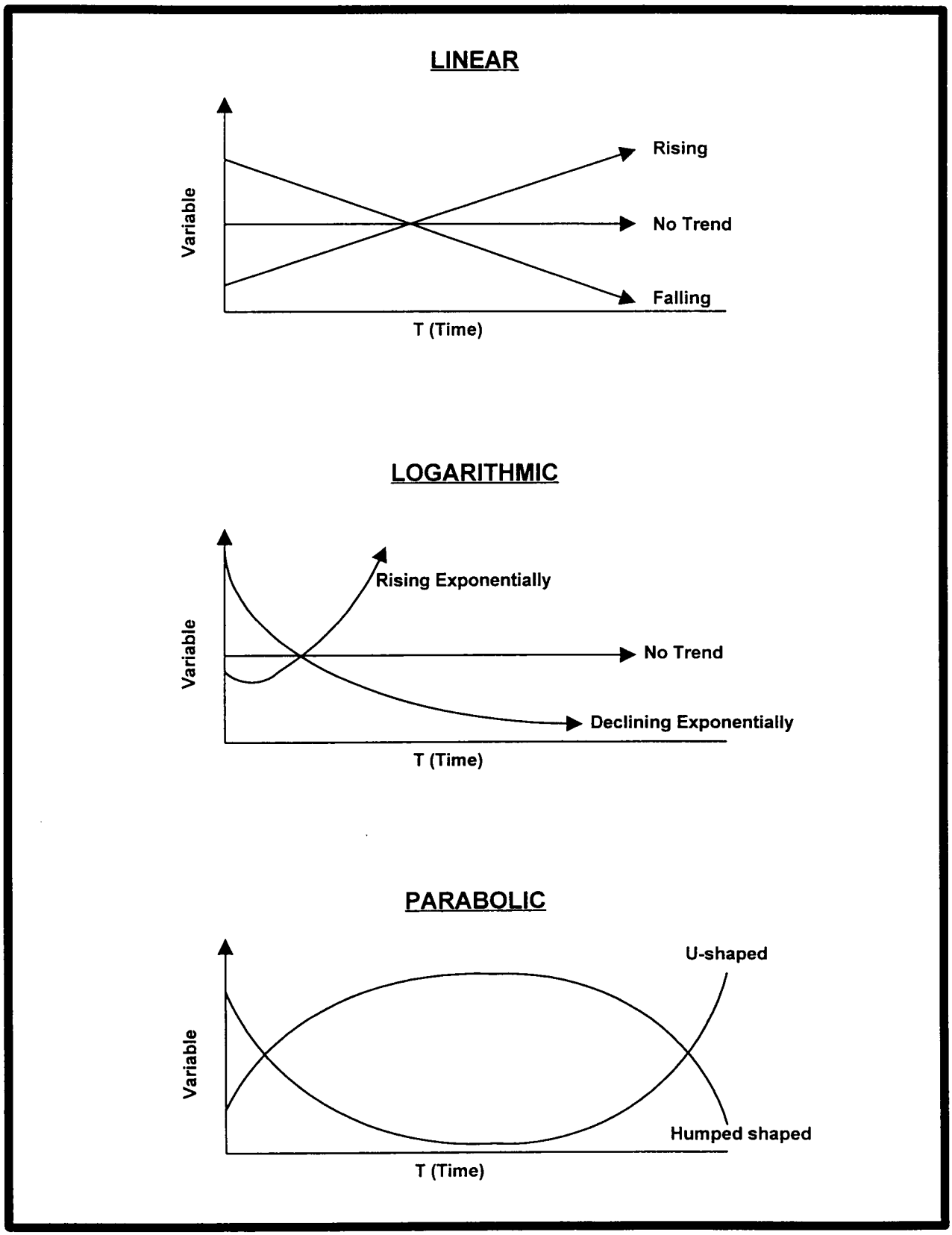

Figure 4. Graphical illustration of linear, logarithmic, and parabolic (quadratic) time series functions.

or she may want to re-evaluate the time variable since level of significance varies among disciplines and even researchers in the same discipline. The notation Pr > |t| is the probability that the parameter for T may actually be zero, but is non-zero in the population. This is the familiar null hypothesis. For example, if Pr > |t| was .0001 it would mean that there is a 1 in 10,000 chance the parameter is, in fact, zero. A Pr > |t| of .5 means it is a 50-50 chance that the time trend is zero (no time trend - see Figure 4). Pr > |t| will be in parentheses in all statistical tables.

Chapter 2

Regional Characterization of Recreational and Commercial Fisheries

This chapter summarizes recreational and commercial fisheries data for the Florida panhandle region during the 1983 to 1993 period. Recreational fisheries are covered first with overviews of the MRFSS and HS data. The HS data including catch (numbers and weights of fish) and effort (numbers of trips) are presented first. Next, the more complex MRFSS data are discussed within the spatial framework of inland, inshore (≤16 km), and offshore (>16 km) areas. Within each of these fishing areas, the catch (numbers of fish) and effort (numbers of trips) are summarized by fishing mode (shore, private vessel, or charter vessel).

The section on commercial fisheries summarizes the landings (average weights and values) and effort (number of trips) for the major groups of finfishes and invertebrates. Summaries of landings, trips, and values for 1983 to 1993 data are given for the entire panhandle and for each county. Complete summary tables have been placed in Appendices at the end of the report (Appendix B contains recreational data and Appendix C contains commercial data). The primary gear types used in panhandle fisheries are described for the region as whole using the GCLS data.

Before proceeding the reader should be aware that certain assumptions were made when interpreting the commercial landings data for this chapter and Chapter 3. The data reported from each coastal county reflect only *landings* and not the actual location where the catch was made. For example, red snapper caught offshore of Bay County could have been landed in another county or even another state, and conversely, red snapper caught near another county or state could have been landed in Bay County. The other caveat to consider regarding these landings data is the identification of component species. In the data sets reviewed, apparent identification problems exist for the black and gag groupers. These two common names refer to two distinct species (black grouper, *Mycteroperca bonaci* and gag, *M. microlepis*) (Heemstra and Randall 1993). While the black grouper's range extends into the Gulf of Mexico, it is most common in southern Florida, the Bahamas, and Caribbean Sea, not the northern gulf (Bullock and Smith 1991). Because the gag is called "black grouper" in the panhandle region, we suspect that most of the reported landings of black grouper for the panhandle counties are actually gag. Nevertheless, the names in the data set have not been changed. A similar confusion may exist with the pink and brown shrimps, and again the names in the data sets have not been changed. There may be other taxonomic problems in the data sets based on misidentifications, but we feel these two examples were the most obvious. Therefore, with these problems in mind the data were accepted at face value in our analyses and interpretations.

Recreational Fisheries

Headboat Fishery

Unlike the MRFSS, the HS data set does not identify the actual area of fishing. However, it can be assumed, based upon the species composition of the catch, that the headboats in the panhandle region operate in either inshore or offshore waters of the Gulf of Mexico and not inland waters. The average number of headboat trips made per year for the 1986 to 1993 period was 2,463. Most of these trips were either one half (1,047 trips) or one full (859 trips) day long. Fewer trips were 2 (500 trips) or 3 (28 trips) days long. The annual headboat catch for the period averaged 987,048 fish at 336,879 kgs. On average about 90% of the numerical catch consisted of reef fishes. The predominant species in average contribution to the headboat catch were vermilion snapper (47%), red porgy (17%), tomtate (11%), bank sea bass (8%), gray triggerfish (5%), sand perch (3%), and red snapper (2%). The number of headboats operating from Florida panhandle ports averaged 17 vessels over the 1986 to 1993 period.

Inland Waters

Recreational fishing trips in inland waters of the panhandle averaged 651,118 per year. Seventy-eight percent of the trips were made from shore, 21.7 % from private vessels, and 0.3% from charter vessels. The number of fish caught in inland waters by all modes averaged more than 3 million per year for the 1983 to 1993 period. Inland anglers fishing from shore caught (in decreasing order of abundance) Atlantic croaker, pinfish, sand seatrout, and striped mullet. The top ranked species caught from private vessels were spotted seatrout, sand seatrout, sheepshead, Atlantic croaker, and striped mullet. Charter vessels working in inland waters of the panhandle caught Spanish mackerel, spotted seatrout, red drum, bluefish, and hardhead catfish.

Inshore Waters

In the inshore (≤16 km) Gulf of Mexico waters, recreational fishers made an average of 2,096,735 trips per year during the 1983 to 1993 period. The trips were divided unevenly among shore (59.2%), private (38.7%), and charter (1.9%) vessels. These anglers caught an average of more than 15 million fish per year. Private vessels reported the highest average numbers of fishes (8,880,194). This was followed by shore and charter vessels which averaged 6,632,851 and 601,369 fish per year, respectively. Anglers in private vessels caught striped mullet, sand seatrout, spotted seatrout, Spanish mackerel, and pinfish. Anglers fishing from shore (Gulf of Mexico beaches) caught pinfish, gulf kingfish, round scad, scaled sardine, blue runner, and Atlantic croaker. Anglers in charter vessels fishing inshore waters caught, in decreasing order of abundance, spotted seatrout, gray triggerfish, vermilion snapper, sheepshead, greater amberjack, and red drum.

Offshore Waters

Recreational fishing in waters >16 km from shore did not involve shore fishing. Private and charter offshore anglers made an average of 184,586 trips per year between 1985 and 1993. About 76% of these trips were made from private vessels and the remaining 24% were made from charter vessels. Private vessel anglers averaged 2,012,591 fish per year for the 1985 to 1993 period. Charter vessel anglers produced an average of 823,416 fish per year. Fishing from both types of vessels caught primarily reef fishes, as evidenced by top-ranked species in estimated catch. For private vessels the catch, ranked in decreasing order of abundance, consisted of black seabass, bluestriped grunt, red porgy, black grouper, and white grunt. Top ranked species in the charter vessel catch included vermilion snapper, gag, red snapper, greater amberjack, red porgy, and bank seabass.

Commercial Fisheries

Weight of Commercial Landings

Finfishes represented about 75% (15,229,353 kg) of the average kilograms landed by commercial fishers in the panhandle region during the 1983 to 1993 period. Of these, baitfishes and coastal pelagic fishes accounted for 38.2% and 22.5%, respectively (Figure 5). The other species groups contributed the following proportions: reef fishes (14.2%); demersal fishes (12.2%); other fishes (8.1%); and oceanic pelagic fishes (4.7%). Individual species contributing most to the overall landings were menhaden, ladyfish, striped (black) mullet, round scad, Spanish sardine, yellowfin tuna, red snapper, blue runner, and vermilion snapper.

At the county level, average finfish landings for the period were highest (6,532,205 kg) in Gulf County. Bay County and Okaloosa County had 3,718,364 kg and 1,677,085 kg respectively (Figure 6). Finfish landings for the remaining counties averaged less than 2 million lbs per year. Walton County's 7,412 kg per year ranked the lowest for the period. The percent composition of landings for each fish species group varied considerably. Certain species groups dominated the landings in some counties. For example, more than 50% of landings in Gulf and Santa Rosa counties were baitfishes. In Wakulla and Walton counties more than 70% of average landings were demersal fishes. In Escambia and Franklin counties, reef fishes accounted for over 50% of fish landings. Okaloosa County, on average, landed similar percentages of coastal pelagic (35%) and reef fishes (33%). Fish landings in Bay County were mostly composed of baitfishes (23%), coastal pelagic fishes (36%), reef fishes (16%), and oceanic pelagic species (14%). Bay County was the only county to register high proportions of oceanic pelagic species in its average landings.

Invertebrate landings for the panhandle region averaged 4,962,329 kg per year. This represented 25% of the combined average fish and invertebrate landings for the 1983 to 1993 period. Shrimps, crabs, and oysters collectively contributed about 87% of the average invertebrate landings for 1983 to 1993 (Figure 5). Shrimps (pink, white, and

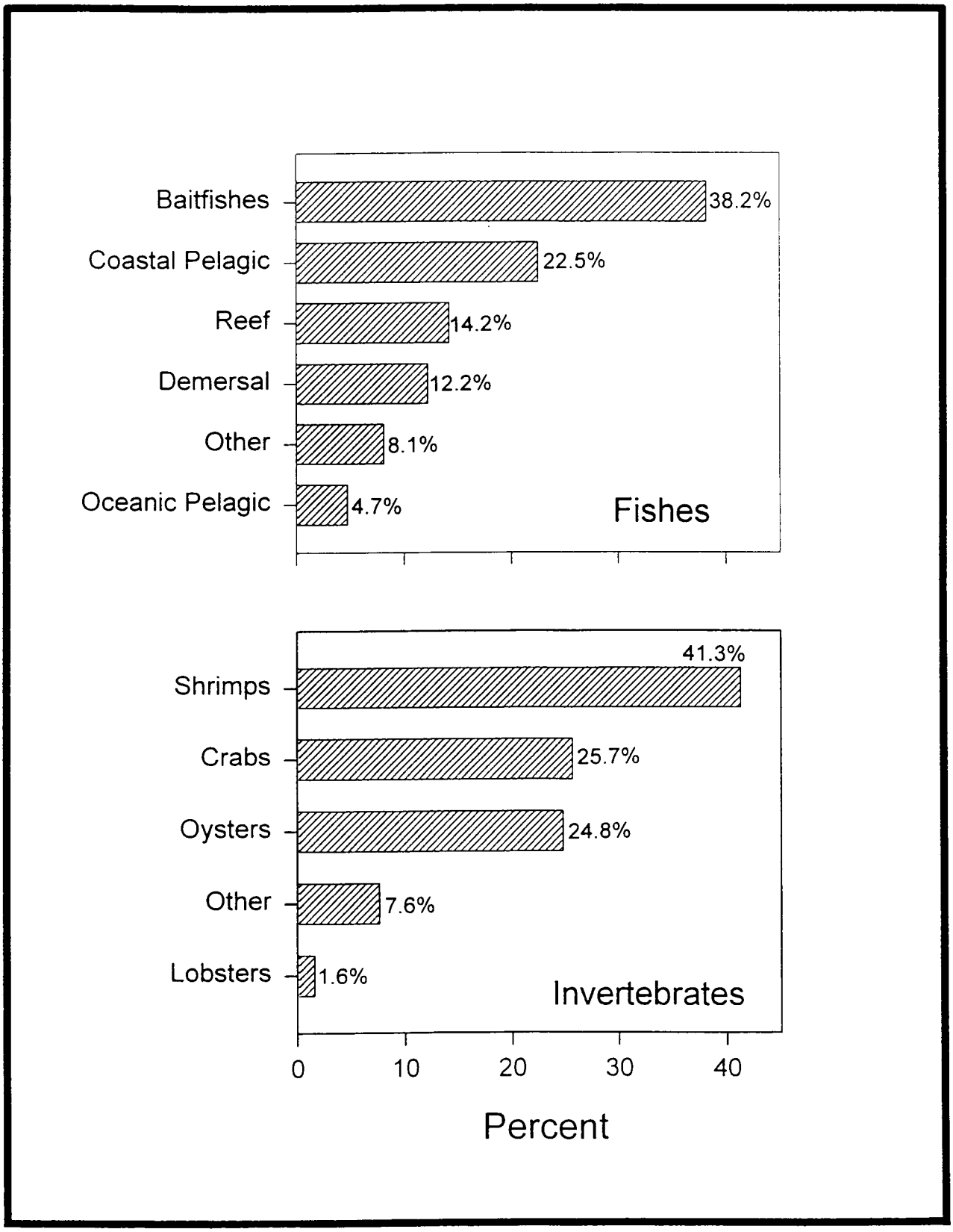

Figure 5. Percentage of commercial landings contributed by fish and invertebrate species groups for the Florida panhandle, 1983-1993.

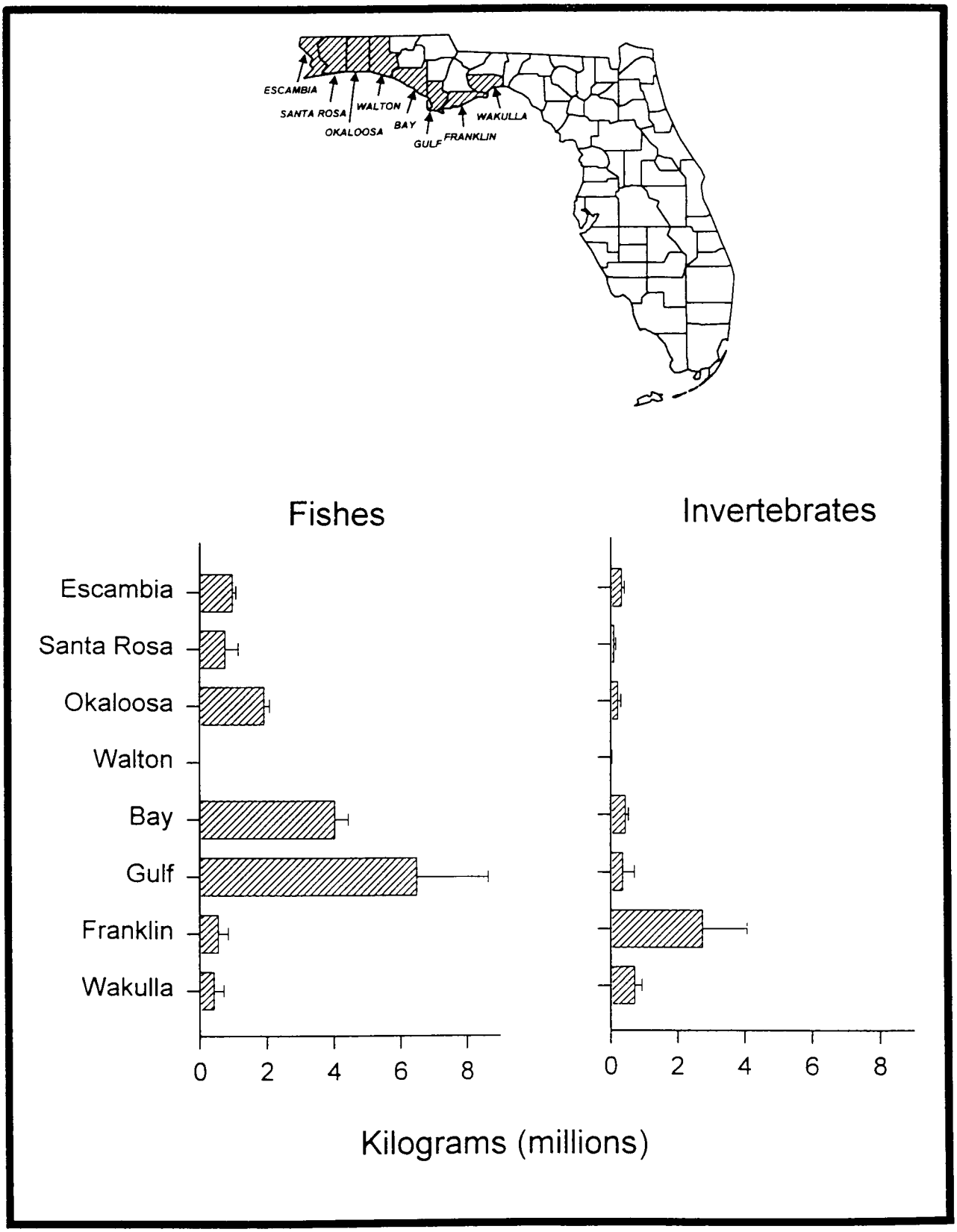

Figure 6. Average (+standard deviation) fish and invertebrate landings by county for the Florida panhandle, 1986-1993.

brown) accounted for the highest proportion (38%) of the invertebrate landings. Oysters ranked second contributing 25% of the average invertebrate landings. Crab landings, consisting mostly of blue crab, ranked third, contributing about 24%. The only other invertebrate species contributing appreciable landings in the region was the calico scallop (7%). Lobsters represented only 1% of the landings.

Franklin County's average invertebrate landings (3,042,530 kg) greatly exceeded those of the other seven counties during the 1983 to 1993 period (Figure 6). With the exception of Wakulla County (722,942 kg), all other counties reported average invertebrate landings of less than 500,000 kg per year. In Franklin, Bay, Santa Rosa, and Walton counties, the landings were composed of varying proportions of crabs, oysters, and shrimps. Average landings from top producing Franklin County consisted mostly of shrimps (43%), oysters (38%), and blue crabs (10%). Bay County landings included shrimps (43%), crabs (38%) and oysters (18%), and in Santa Rosa County shrimps (64%), oysters (29%) and crabs (8%). Walton County invertebrate landings were contributed mostly by blue crabs (71%), and lesser amounts of shrimps (16%) and oysters (12%). In Wakulla, Okaloosa, and Escambia, one group generally dominated the invertebrate landings. Okaloosa County's landings were predominantly (94%) shrimps. Wakulla County's average invertebrate landings were 94% blue crab, and Escambia County landings were 85% shrimps. Gulf County invertebrate landings were 46% shrimps and 49% other species. In this case the other species was the calico scallop.

Value of Landings

The average dockside value of the commercial finfish landings for the panhandle region was $15,596,592 per year. This represents 48% of total dockside dollar value of the combined fish and invertebrate landings for the 1983 to 1993 period. Reef fishes lead the species groups in dockside value contributing about 44% of the annual average (Figure 7). Oceanic pelagic fishes accounted for the second highest percentage (17%) of the landings value. The remaining groups of fishes contributed similar proportions of the dockside values with coastal pelagic and demersal fishes contributing about 12% each, baitfishes contributed 10% of the average value for the period. The most important finfish species in terms of increasing dockside value were red snapper, yellowfin tuna, black (striped) mullet, vermilion snapper, menhaden, grouper (mixed), swordfish, ladyfish, red grouper, and yellowedge grouper.

The highest average values of finfish landings were reported by Bay ($5,872,127), Okaloosa ($3,125,823), Escambia ($1,946,710), and Franklin ($1,187,054) counties (Figure 8). The collective landings values of Gulf, Wakulla, Santa Rosa, and Walton counties averaged less than $1 million per year.

The dockside dollar value of invertebrate landings averaged $16,497,219 over the 1983 to 1993 period. Shrimps contributed 55% of this value for the entire region (Figure 7). Oysters represented just under 30% of the value followed by crabs and other invertebrates (mostly calico scallops) which contributed about 10% each. As with the invertebrate landings by weight, Franklin County reported the highest average dockside

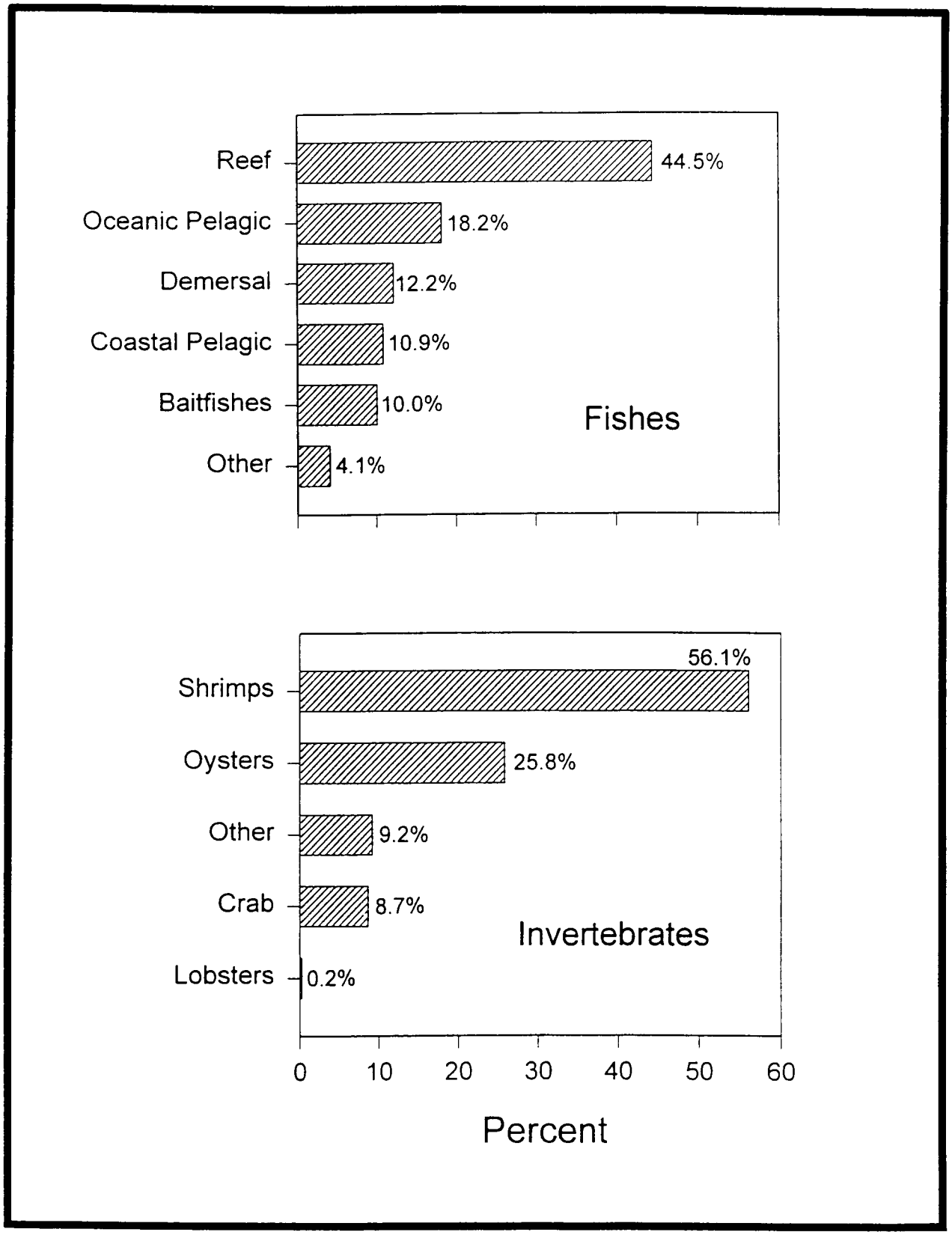

Figure 7 Percentage of dockside value contributed by fish and invertebrate species groups for the Florida panhandle, 1983-1993.

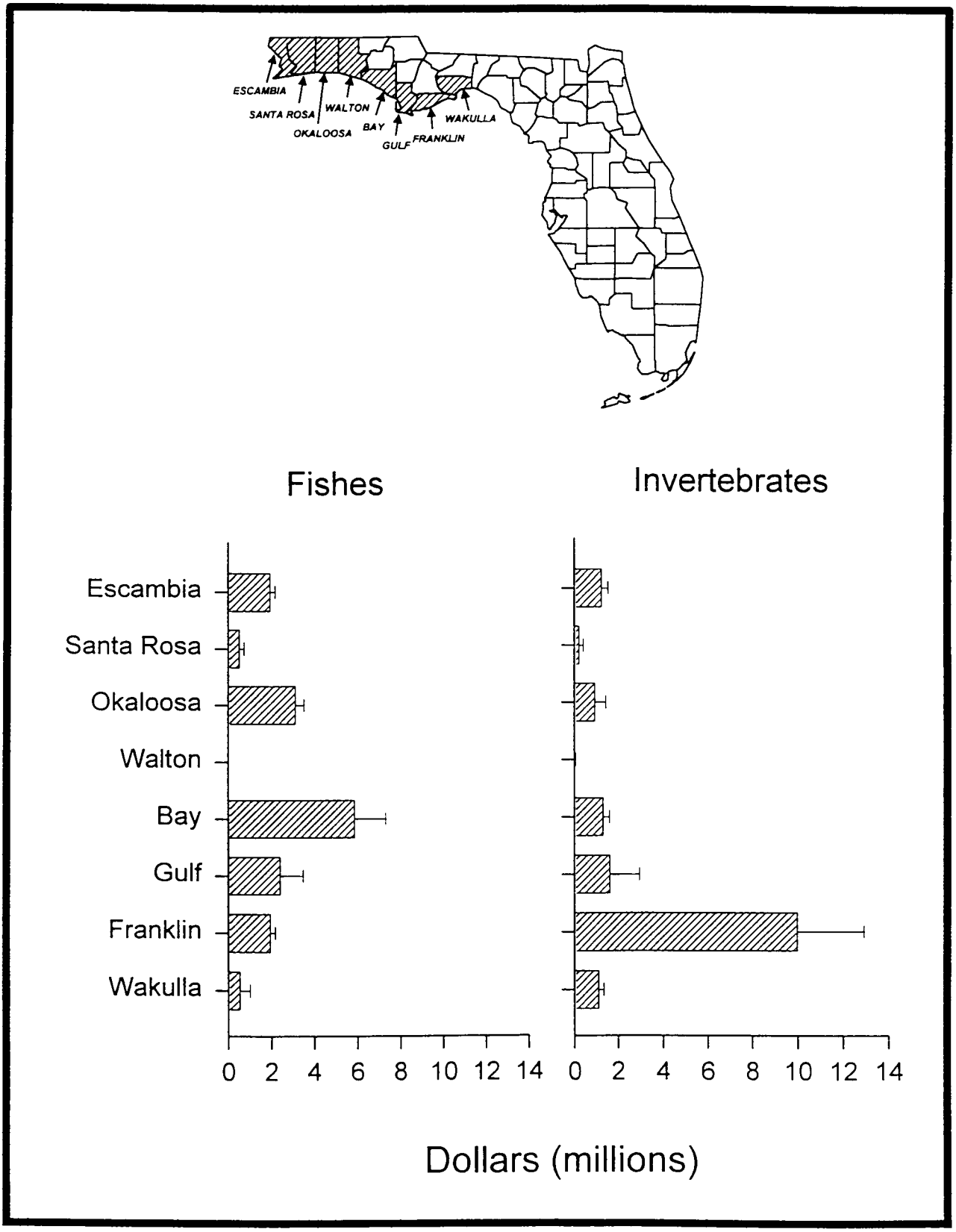

Figure 8. Average (+standard deviation) fish and invertebrate dockside values by county for the Florida panhandle, 1983-1993.

value for invertebrates during the period. At $9,980,109 per year, Franklin County's average landings value was at least six times greater than the average landings value for Gulf County, the next highest at $1,627,826 (Figure 8). Bay, Escambia, Gulf, and Wakulla counties all had average dockside values between $1 million and $1.5 million while average values for Okaloosa and Walton counties were less than $1 million per year.

Commercial Fishing Trips

An average of 49,012 commercial fishing trips that produced fish were made annually during 1986 to 1993 from the Florida panhandle. This represents about 52% of all commercial fishing reported from the panhandle counties during the period. Combined catches of reef fishes and demersal fishes contributed about 80% of the catch from these trips (Figure 9). The contribution of the remaining species groups were as follows: coastal pelagic fishes, 11%; baitfishes, 3%; oceanic pelagic fishes, 3%; and other fishes, 2.3%. The top species ranked by number of trips were black (striped) mullet, spotted seatrout, red snapper, flounder, vermilion snapper, triggerfish, porgies, amberjacks, and Spanish mackerel.

By county, the highest average trips for finfishes were from Escambia (11,467) and Bay (10,384) counties, followed by Okaloosa (8,446), Santa Rosa (6,617), Franklin (5,016), Wakulla (5,003), and Walton (230) counties (Figure 10). Escambia County's trips mostly targeted reef fishes (50%) and demersal fishes (41%). In Bay County, the trips targeted reef fishes (37%), demersal fishes (27%), and coastal pelagic fishes (19%). Demersal fishes and reef fishes were responsible for high percentages of the trips made in several counties. Sixty-three percent of Okaloosa County's trips produced reef fishes while 15% produced demersal fishes. In Santa Rosa County, 61% of the trips produced demersal fishes and 27% produced reef fishes. Similarly, Wakulla County reported that 68% of the average number of trips were for demersal fishes and 23% were for reef fishes. In Gulf County, the county producing the highest weight of fish landings, most of the trips were made for demersal fishes (46%), with 22% contributed by coastal pelagics and 19% by baitfishes. In Walton County, where the lowest average number of trips was reported, 87% of those trips were for demersal fishes.

Commercial fishing trips producing invertebrates averaged 45,538 during the 1986 to 1993 period with more than 65% of these trips targeting oysters. Shrimps and crabs followed distantly behind oysters, being targeted for 17% and 14% of the trips, respectively. in terms of reported trips (Figure 9). Franklin County more than tripled any other county in number of trips producing invertebrates (28,480) (Figure 10). Bay (6,381), Escambia (3,667), Wakulla (3,168), and Santa Rosa (1,607) counties followed in descending rank order of average trips. Gulf, Okaloosa, and Walton counties each averaged less than 1,000 invertebrate trips per year.

Gear Types

Major gear types used in panhandle commercial fisheries were obtained from landings data that are available for statistical grids. For the combined statistical

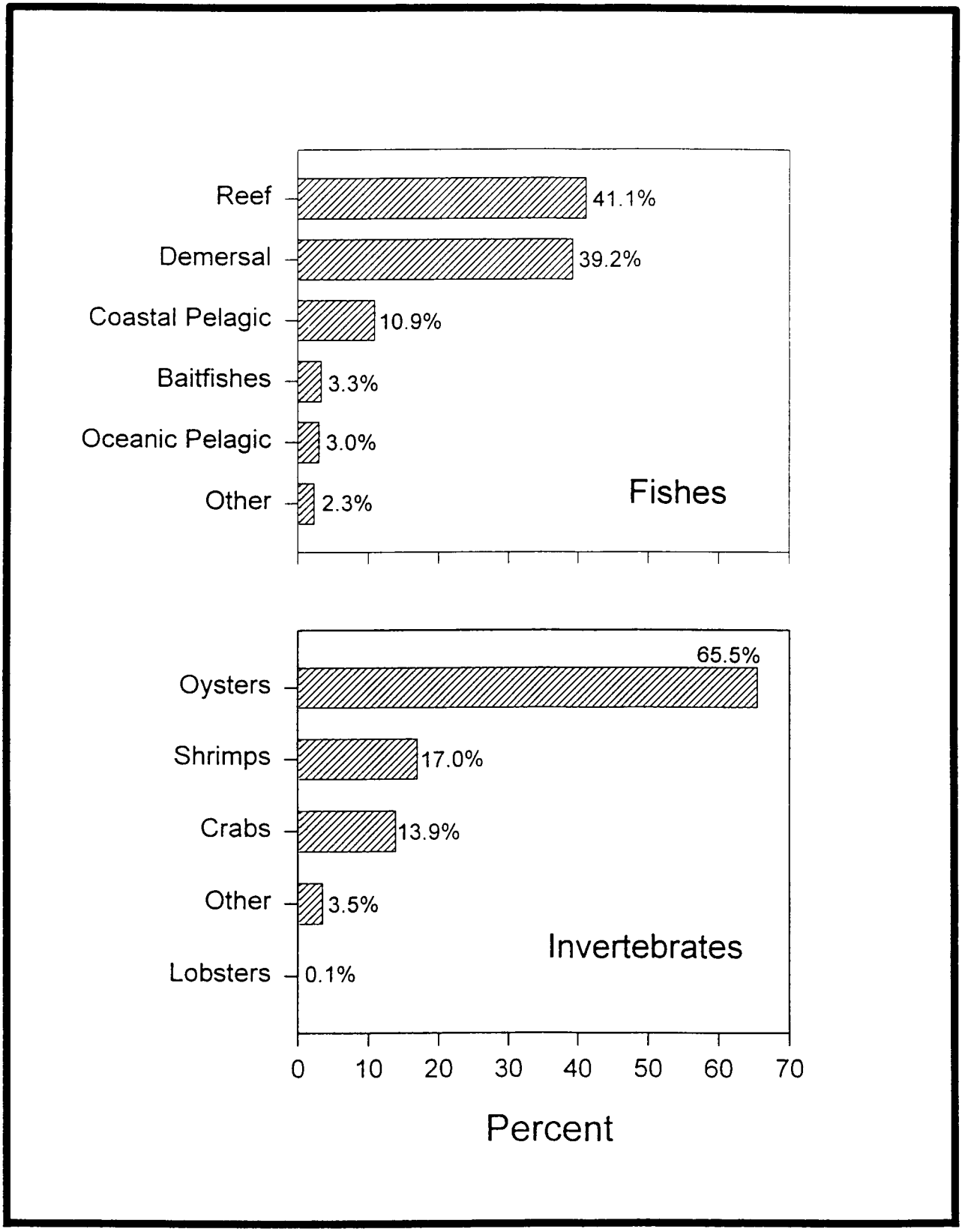

Figure 9. Percentage of commercial fishing trips contributed by fish and invertebrate species groups for the Florida panhandle, 1986-1993.

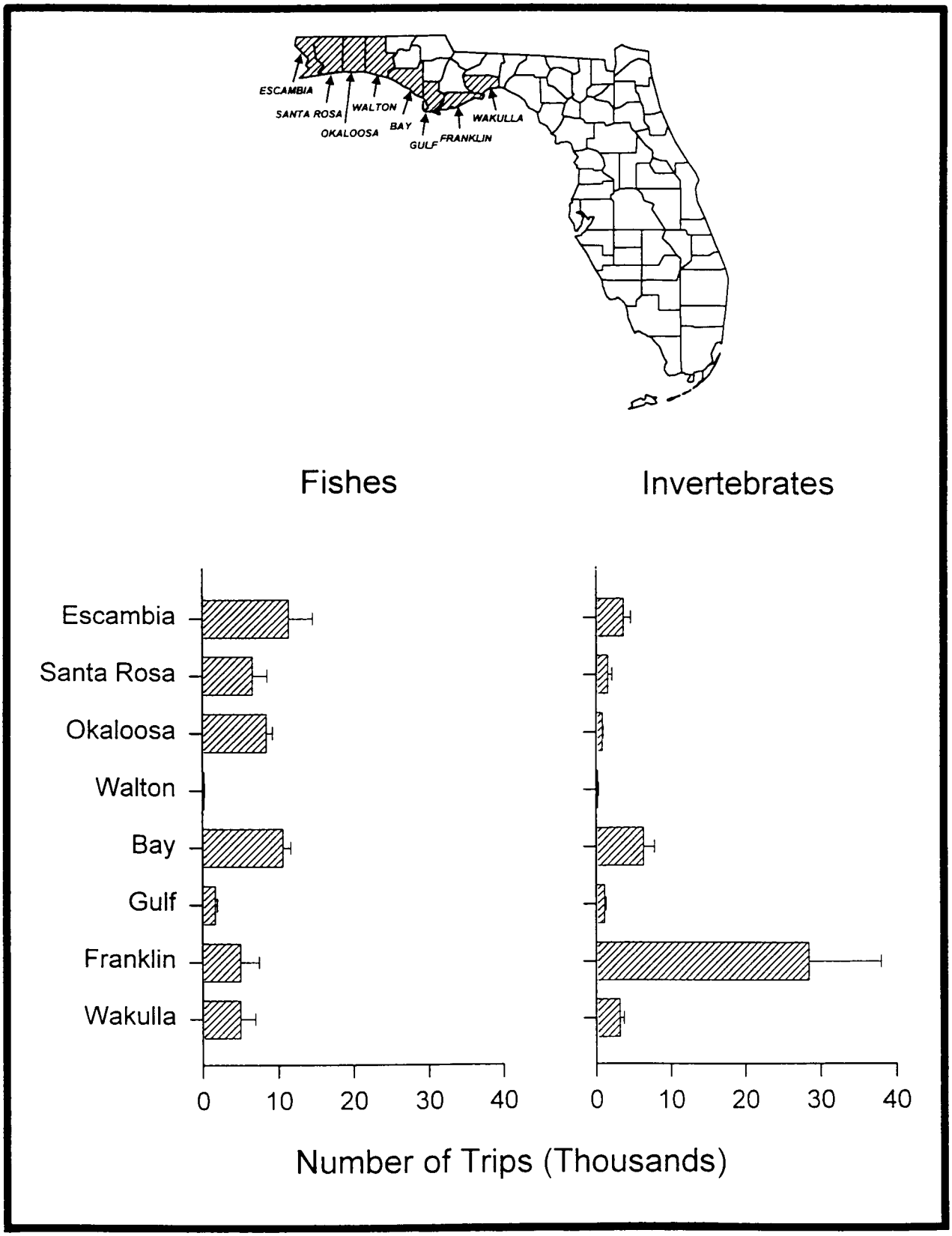

Figure 10. Average (+standard deviation) fish and invertebrate trips by county for the Florida panhandle, 1986-1993.

grids 7 to 10 which include the eight panhandle counties discussed, the GCLS reported 89 gear types. For this study, these gear types were classified into several subcategories (see Table A.3).

A breakdown showing percent contribution of various gear types to the average landings for the period is given in Figure 11. Purse nets produced the highest average finfish landings for the 1983 to 1993 period. Purse nets caught primarily baitfishes and coastal pelagic fishes; as previously discussed, both of these groups were major components of the finfish landings. The most important species caught in purse nets included menhaden, ladyfish, round scad, jack crevalle, blue runner, and Spanish sardine. Gill nets were the next most productive gear type accounting for about 15% of the average fish landings for the region. The most important species in the gill net catch were striped (black) mullet and Spanish mackerel. Handlines used mostly for reef fishes such as red and vermilion snappers, triggerfish, and groupers, ranked third in proportional contribution to the finfish landings (Figure 11). Hook and line also produced some oceanic and coastal pelagic fishes. Haul seines contributed about 10% of the finfish landings for statistical grids 7 to 10. This gear caught primarily baitfishes. Longlines set both surface and bottom were the third most important gear type producing roughly 8% of the finfish landings. Surface longlines produced most of the oceanic pelagic landings of tuna, swordfish, and dolphin. Bottom longlines were used for reef fishes, particularly groupers. Traps produced smaller quantities of reef fishes, and trawl produced mostly demersal species. Most of the fish caught by trawling were probably incidental to shrimping.

The highest average landings of invertebrates for grids 7 to 10 were caught by tongs and trawl (Figure 11). Tongs are used strictly for harvesting oysters. Trawls catch primarily shrimps but will catch crabs and scallops. Traps were fished for blue crabs and dredges caught most of the calico scallops landed in the panhandle region for the 1983 to 1993 period.

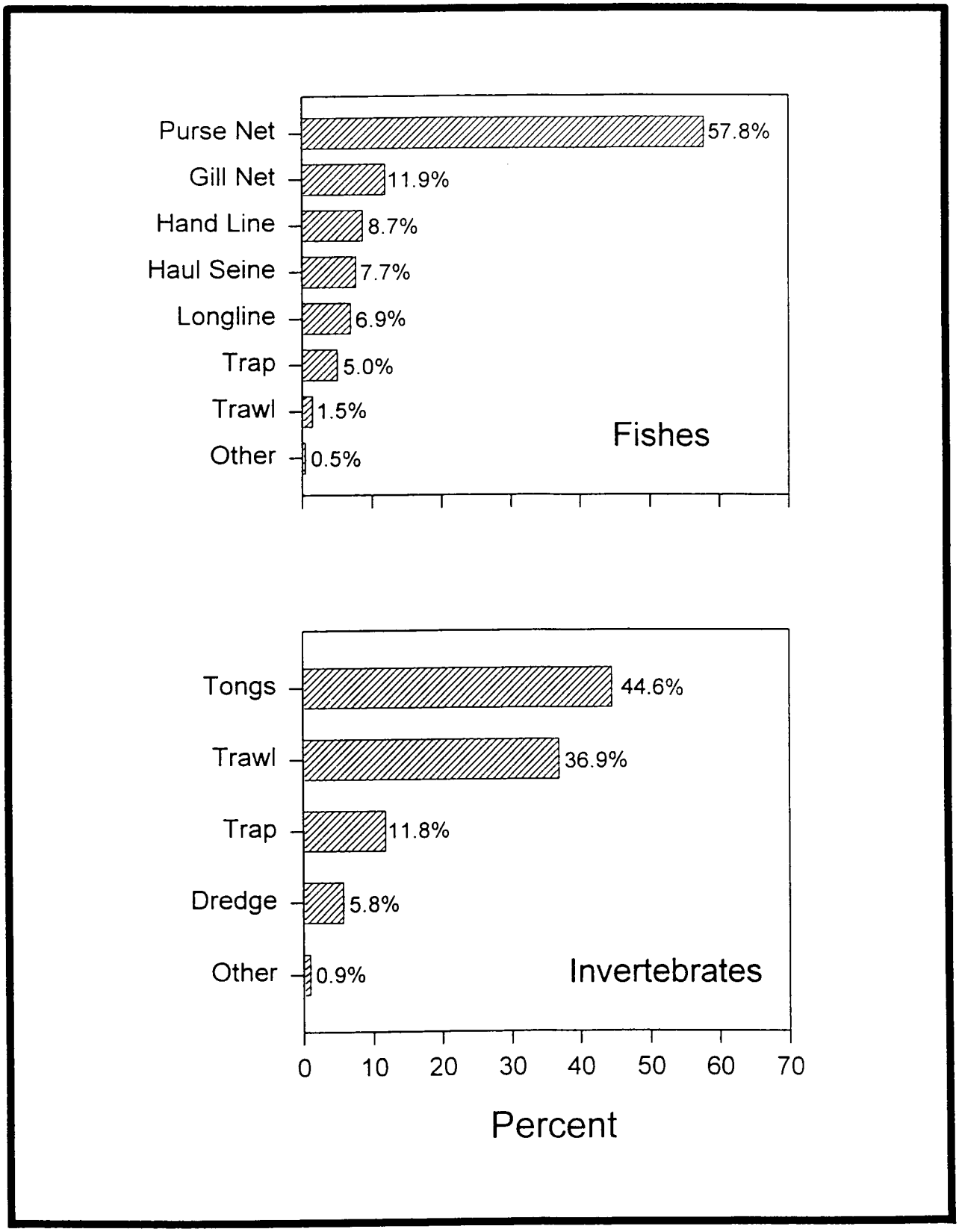

Figure 11. Percentage of fish and invertebrate landings made by various gear types for the Florida panhandle region (statistical grids 7 to 10), 1983-1993.

Chapter 3

Trends in Recreational and Commercial Fisheries

In this section, the statistical trends in commercial and recreational fishing in northwest Florida are analyzed. This trend analysis embraces two distinct industries that use a common fishery resource. For the most part, this common resource is restricted to finfishes since recreational shell (invertebrate) fishing is of very minor importance in this particular area of Florida. In general, the period of trend analysis covers the years from 1983 to 1993 with exceptions where observations are missing in the early part of the time series. This is due to non-collection by the agencies or proprietary reasons for not releasing the data.

The first part of the time trend regression analysis covers all eight counties from Escambia County to Wakulla County, Florida. This is designated the "aggregate analysis" which is believed to be the most meaningful since county level analysis is subject to shifts in economic variables from year to year such as the best county to land commercial fish for the highest price. The aggregate analysis may smooth this possibility out, thereby giving a more reliable reading of the trend in a particular variable such as the dockside value of landings, for example. This does not mean that county level trend analyses are not presented, but that the emphasis is on what is called the aggregate level.

The following variables were analyzed using three forms of statistical trend analysis by species group for commercial fisheries:

1) Dockside Landings (kg);
2) Nominal Dockside Value of Landings;
3) Nominal Dockside Price;
4) Real Dockside Value of Landings;
5) Real Dockside Price (State of Florida Average);
6) Fishing Effort (FE) (Number of Trips);
7) Catch Per Unit of Fishing Effort or CPUE; and
8) CPUE and FE.

The word "nominal" means the actual reported dockside prices and values over the 1983 to 1993 period. Because inflation will tend to push up nominal prices, they must be adjusted by index to derive real values. In this case, the producer price index for crude consumer food was used to deflate nominal prices and values where 1993=100% (see Appendix C). This section also describes trends in major fishing gear types used for each species group during the 1983 to 1993 period.

In the case of recreational fishing, the time series analyses will cover the following variables for the entire fishery over the 1983 to 1993 period:

1) Number of Fish;
2) Weight of Fish (kg) (HS data set only);
3) Fishing Effort (FE) (Number of Trips);
4) Number of Fish per Trip (Numbers of Fish/Trip);
5) Kilograms of Fish per Trip (Weight of Fish/Trip) (HS data set only); and
6) CPUE and Fishing Trips.

Recreational fishing was studied as one species group since data on trips is for all species caught. Although anglers are known to target various species, most anglers fish for what they can catch. Catch is usually secondary to the main reason for recreational fishing, which is to engage in the process of leisure. Tabular material on species groups for the recreational sector is presented in Appendix B, but the trend analysis will be restricted to all recreational species combined. In addition, no county breakdown of recreational fishing is statistically feasible so the analysis will always refer to the eight counties as a unit or an aggregate.

Recreational Fisheries

Marine recreational fishing offers enjoyment to both residents and tourists in northwest Florida. It is important to recognize that the recreational fishing industry is quite different from the commercial fishing industry even though they share, in many cases, the same fishery resource. While commercial fish are harvested for food, an angler fishes for enjoyment of a leisure activity. In numerous surveys of recreational anglers, the actual catching of a fish is secondary to the pursuit of leisure. This is not to say that fish are unimportant to the recreational angler. In economic terms, the demand for recreational fishing is determined by leisure time and available money to purchase the necessary equipment, supplies, and services to engage in this activity. Many studies have indicated that the success rate or fish caught per day or hour is a determinant in shifting demand for recreational fishing. That is, increases in the success rate will draw more anglers to the fishery in question, all other factors held constant. The CPUE does play a role in recreational fishing which is quite different from that played in commercial fishing. In recreational fishing, CPUE is a "demand shifter" while in commercial fishing it is an important determinant of the cost of fishing since it is a measure of productivity. In the latter case, declines in CPUE will be a factor in increasing cost to the consumer that purchases the fish for food. These things must be kept in mind when analyzing the recreational as compared to the commercial fishery. Also, the measure of output or consumption in a recreational fishery is not measured by landings, but by the time spent fishing - a recreational day. Time fishing can be measured in hours, days, or trips and all three are used by researchers in this field. A gray area in this discussion is the so-called "subsistence fishery" where individuals depend upon the resource for all or part of their daily protein supply. Such individuals will be part of the recreational fishery, since the database used in this study is lacking in its ability to differentiate in a clear way between the true recreational fishers and the subsistence fishers. In so many cases, the distinction is blurred by the two motives mixed together as the angler enjoys the activity (i.e.,

recreation), but keeps the fish for food. Thus, no clear distinction can easily be made in the data.

As the trends in recreational fishing in northwest Florida are discussed, an elaboration will be made on some of the economic principles discussed above. One of the data sets is on headboat fishing, which is a service offered to anglers in a quest for recreation. In fact, all kinds of guides (i.e., charter vessels) have emerged in recreational fishing to help the angler engage in fishing. But, most of the time, the angler engages in this activity using one's own private boat or spot on a pier or jetty.

Headboat Fishery

Appendix Table D.1 shows selected trends in recreational headboat fishing in the eight county region over the 1986 to 1993 period. Remember that all the species that are taken by headboat anglers are included in these trends which was discussed in the introduction. As a measure of the trend in the catch from the fishery resource by anglers, the number and weight expressed in kilograms are used in this trend analysis. The number of fish caught by anglers over the 1986 to 1989 period in northwest Florida appeared to decline as the sign on the linear and logarithmic time trend functions was negative, but not statistically significant at the 5% level. However, these trends were significant at the 10% level with the number of fish caught by headboat operations declining at an annual rate of 3.5% or in linear time, 34,550 fish per year. The parabolic trend was not evident in the data set as indicated in Table D.1.

As measured in kilograms, the headboat recreational catch did show a downward trend over the period under analysis, with the level of statistical significance being close to 5% (Table D.1). Headboat landings declined by 20,486 kg per year using the linear time trend equation. The logarithmic time trend showed a decline of 5.7% per year.

Table D.1 shows a slight downward trend in headboat fishing trips using the linear and logarithmic time trends. These were not statistically significant time trends. However, the parabolic trend showed a U-shaped time trend in headboat fishing trips as the series first declined and then increased over the 1986 to 1993 period. This was also true for the time series on the catch expressed in kilograms in Table D.1. Thus, as trips fell, catch followed and as trips rose, catch also followed this pattern.

Inland Waters: Private Vessels

Inland water fishing takes place in bays and inlets that are primarily estuarine. Some inland waters fishing is conducted from private vessels. The trend analysis for this segment of the recreational fishery is shown in Table D.2. There is a slight, but not statistically significant, downward trend in the number of fish caught over the 1983 to 1993 period via this mode in inland waters. There are wild fluctuations in catch from year to year as shown by the logarithmic form of the time trend analysis (statistically significant at the 8.29% level). Catch fell by 22.3% per year.

It appears that the number of trips had a downward trend over the period of analysis. In fact, the decline in trips is at an annual compound rate of 20% and this trend is the obvious reason that the catch declined. This does warrant further study since trips are falling by 15,945 per year according to Table D.2.

The catch per trip, as expected, had no statistically significant time trend since catch and effort moved together, so the success rate is not a factor in the declining usage of inland waters. Finally, the CPUE is not related to total trips as stipulated by the Schaefer model.

Inland Waters: Shore Fishing

As a recreational fishery segment, shore fishing in inland waters yielded 2.78 million fish by those anglers taking 372,574 trips to accomplish this task. This type of shore fishing is larger than that shore fishing on the Gulf of Mexico discussed above. Table D.3 shows the results of the trend analysis for the eight counties in northwest Florida. There was no trend in catch over the 1983 to 1993 period as shown in Table D.3. Little oscillation in the catch was observed.

Trips did fluctuate more than the catch from year to year, but they too showed no trend over the period of analysis. Naturally, CPUE was constant over the 1983 to 1993 period. There was no relation between CPUE and aggregate trips.

Inshore: Private Vessels

Most of the recreational fishing takes place inshore in the Gulf of Mexico. Trends in this area are extremely important. Table D.4 shows the results of this trend analysis. In the case of the number of fish, there was a definite decline over the 1983 to 1993 period. The trend was highly statistically significant and of course was negative. The linear time trend indicated that nearly 1.5 million fish were lost annually in this fishery. The logarithmic time trend indicated a drop of 21% per year which is substantial. In the case of the number of trips, they showed no statistically significant trend over the 1983 to 1993 period. Thus, even though the catch was in decline, trips did not show any significant trend. Hence, the catch per trip declined at a steady pace over the period. Catch per trip declined by nearly one fish per trip annually over this period as indicated by the regression in Table D.4. The rate of decline in CPUE was 9.8% per year.

Inshore: Charter Vessels

In great contrast to the inshore private vessel segment of this recreational fishery, Table D.5 shows no appreciable decline in the catch for inshore charter vessels either in catch or fishing effort. Also, CPUE is not statistically significant in terms of the time trend over the 1986 to 1993 period. Because of the lack of data in 1983 to 1985, the period of analysis is not exactly comparable to that of private vessels. In any event, it may be concluded that the inshore charter vessel fishery showed a static condition over the 1986 to 1990 period.

Inshore: Shore Fishing

This category of recreational fishing takes place from the Gulf of Mexico shore. It combines piers, jetties, and beaches as modes from which to fish from the shore. In some years, more fish are caught by private and charter vessels within 16 km of the shore (inshore). Therefore, it is important that shore fishing be analyzed with respect to recent trends. Table D.6 shows such trend analysis. Using the linear and logarithmic time trend equations, there was no trend over the 1983 to 1993 period in number of fish caught by anglers for the eight counties in northwest Florida. The parabolic trend equation was U-shaped, but neither T nor T^2 was statistically significant at the 5% level. Thus, this form of recreational fishing is rather static in terms of a time trend, but is subject to great year to year fluctuations as seen by this parabolic shift.

The trips to the Gulf of Mexico shore to engage in recreational fishing also showed no linear or logarithmic time trend over the 1983 to 1993 period as shown in Table D.6. However, the U-shaped parabolic function was statistically significant at about the 5% level and is also consistent with the mild parabolic trend in the recreational catch. Apparently, fishing trips declined from 1983 to 1987 and then increased thereafter. The catch per trip for shore fishing showed no trend using all three forms of the trend analysis. This is as anticipated as catch and trips moved in consort over the 1983 to 1993 period. Shore recreational fishing on the Gulf of Mexico for the eight counties was cyclical over this period (U-shaped). There was no relation between CPUE and total trips.

Offshore: Private Vessels

Table D.7 shows the time trend analysis for private vessels fishing offshore (16 km or greater) in the Gulf of Mexico. In contrast to headboat fishing, only the number of fish caught can be relied upon as a reasonably valid statistical series. For this group of anglers, there is no trend over the 1984 to 1993 period in the number of fish landed as indicated by all three of the time trends in Table D.7. In a similar manner, there was also no time trend in the number of trips taken over this same period of analysis. Finally, as expected by the trends in catch and trips discussed above, the catch per trip also showed no trend over the 1984 to 1994 period. In addition, there was a positive relation between CPUE and aggregate fishing effort which was statistically significant at the 5% level. This contradicts the basic Schaefer model.

Offshore: Charter Vessels

Charter vessels are rented by anglers and in many cases their captains are used as guides to the more productive fishing grounds. Table D.8 shows the trends in this segment of the offshore recreational fishery. In terms of the number of fish and the total trips, there was no trend over the 1986 to 1993 period in the data for all forms of the time trends used. For these two variables (i.e., catch and trips), the level of statistical significance did not come close to the 5% level. This was also true for the catch per trip which showed no trend over this period of analysis. Also, there was no relation between CPUE and total trips over this period. Therefore, the trends in the offshore private and

charter boat recreational fishery were almost identical. That is, they were both static. The absolute catch per trip was generally, but not always, higher for the charter boat recreational fishery.

Commercial Fisheries

Baitfishes

In 1993, baitfish landings in northwest Florida were over 5.5 million kg with a dockside value of $1.88 million. This fishery provides bait for other commercial fisheries and recreational anglers. Over the 1983 to 1993 period, baitfishes were caught mostly with purse nets and gill nets (Figure 12). The mendhaden species were considered part of the baitfish group because they are ecologically similar to the other baitfish species (Spanish sardine and thread herring) and in Florida, unlike Louisiana where it is an industrial species processed for fertilizer, fish meal, and oil, the menhaden is sold as bait. The bait fishery showed some increase in landings over the 1983 to 1993 period, but the linear and logarithmic trends were not statistically significant at the 5% level (Table D.9). However, the time trend in landings did exhibit a pronounced parabola of the humped variety. Catch increased from 1983 to 1989 and declined considerably for the remainder of the period.

Table D.10 does show an increase in dockside nominal value for the bait fishery over the entire 1983 to 1993 period and is very statistically significant. Nominal value rose at $152,335 per year using the linear time trend. Using the logarithmic trend analysis, nominal value rose by 15% annually. However, there was a tendency for value to decline in the years after 1989 as catches declined. This is readily apparent by the high statistical significance of the humped parabola for nominal value exhibited in Table D.10. The inflation adjustment from nominal to real value of the dockside catch did not alter the data analysis. Mild inflation did not alter underlying relationships in analysis of the bait catches (Table D.11).

Both the nominal and real dockside prices for the bait fishery exhibited a strong upward movement over the 1983 to 1993 period. Apparently, the increasing demand for bait shifted the demand curve out and to the right (i.e., user demand increased) despite no fall in bait landings. This increased real and nominal dockside values as reported above. As catches fell over the 1989 to 1993 period, price increases would be reinforced (Tables D.12 and D.13).

Fishing effort increased over the 1986 to 1993 period for baitfishes. This rate of increase was 6.7% per year (Table D.14). This trend was highly statistically significant for the linear and logarithmic time trends, but not the parabolic form. Since fishing effort was increasing and the bait catches fell after 1989, it is not surprising that CPUE fell in this fishery (Table D.15).

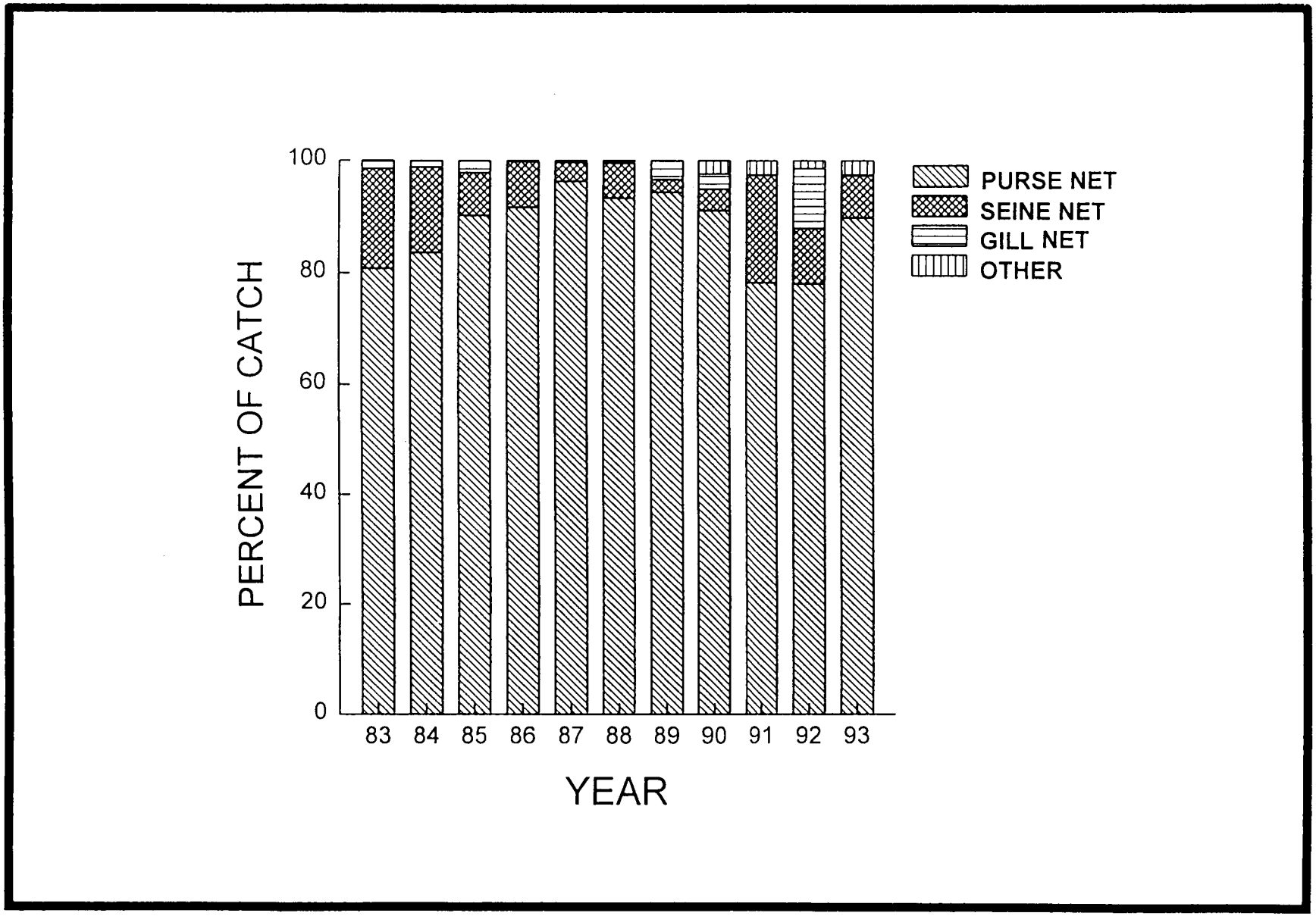

Figure 12. Percentage of baitfish landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993

Reef Fishes

The reef fish group is composed of snappers, groupers, tilefishes, porgies, gray triggerfish, and amberjacks. The principal gear type used for reef fishes is hook and line with bottom longline and fish traps making lesser contributions to the landings (Figure 13). Over the 1983 to 1993 period, landings from the northwest Florida reef fish fishery exhibited no statistically significant time trend. The t-value on the variable time was not statistically significant at either the 5% or 10% level for the linear or logarithmic functional forms used in the analysis. However, the parabolic form did pick up a statistically significant behavior in the time series. Both time variables (T and T^2) were easily statistically significant at the 5% level. These results are shown in Table D.16. Parabolic analysis indicates a drop in catch in the early part of the time series for reef fishes and rise in the catch in the latter part of the series. The trough in the parabolic occurred in about 1988. This is an excellent case to justify the use of the parabolic function to identify elementary forms of cyclical behavior. Thus, for the more recent years, the reef fish landings show somewhat of a revitalization which was not evident over the entire period of analysis. From 1986 to 1988, the average catch of reef fishes was 1.7 million kg, but the catch rebounded from 1989 to 1993, averaging 2.2 million kg.

As with the landings series, the nominal (actual dollars) dockside value showed no statistically significant time trend over the 1983 to 1993 period using the linear and logarithmic time series functions (see Table D.17). However, the parabolic equation exhibited the same U-shaped form as the landings series. Dockside value hit a low of $4.7 million in 1987, but rose to $8.5 million by 1993 or slightly below the 1983 value of $9.1 million.

Nominal dockside prices are, as discussed in the introduction, State of Florida average prices. As in the above analysis, there is no statistically significant (5% level) time trend in reef fish prices over the 1983 to 1993 period, but these prices do exhibit a U-shape using the parabolic form of the time trend (Table D.18). Thus, the falling reef fish catch combined with falling dockside prices at the state level depressed dockside value in the early part of the 1980's; rising landing and dockside prices in the latter part of the period ushered in a considerable rise in dockside value as mentioned above.

Over the 1983 to 1993 period, inflation (producers price index for raw food commodities) increased by 11.7%; therefore, real dockside prices in contrast to nominal dockside prices declined. The time trend for real prices was statistically significant at about the 10% level using the linear and logarithmic functions (Table D.19). Real dockside value did decline somewhat; however, the fall in real dockside prices was not enough to produce a statistically significant impact in the trend in real dockside value as indicated in Table D.20. But, real dockside value did exhibit the U-shaped trend over the period of analysis.

Fishing effort increased but not significantly over the 1986 to 1993 period (Table D.21). CPUE decreased over the same time period as shown in Table D.22.

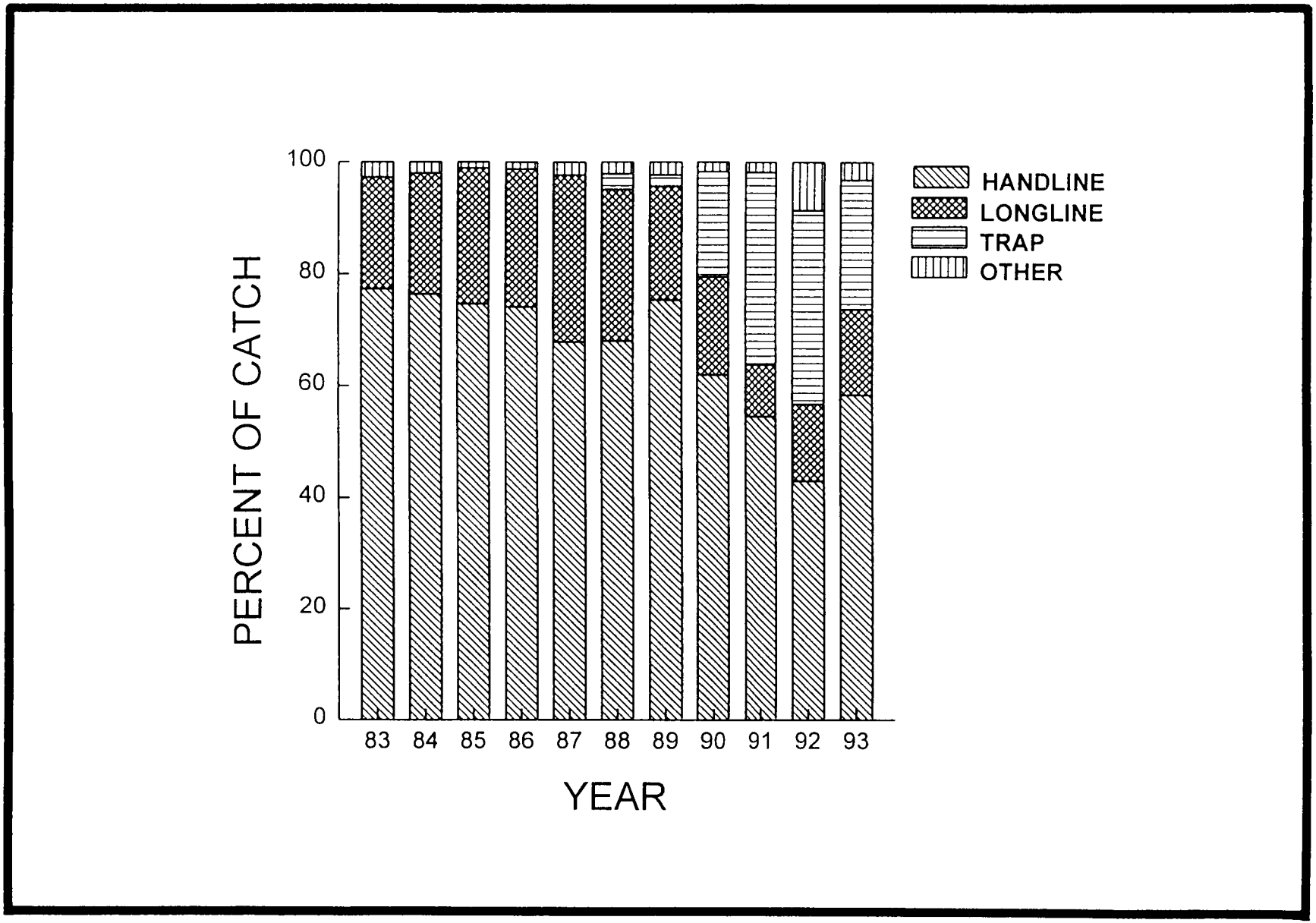

Figure 13. Percentage of reef fish landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

Coastal Pelagic Fishes

The coastal pelagic fish category contains such well known fish as Spanish and king mackerel as well as cobia. However, in the Florida panhandle the most important coastal pelagic fish was the ladyfish. Coastal pelagic fishes were taken by gill netting and purse netting throughout the period (Figure 14). In 1993, about 3.2 million kg were landed in northwest Florida at a dockside value of nearly $2.7 million. Table D.23 shows a slight upward trend in landings over the 1983 to 1993 period. Many of these coastal pelagic fish are overfished (e.g., king mackerel) and it is surprising that there is any elasticity of the catch to increases in fishing effort. The linear, logarithmic, and parabolic time trends were not statistically significant for the landings series.

In contrast to landings, nominal and real dockside value rose steadily over the 1983 to 1993 period. Nominal value rose by $210,390 per year using the linear equation in Table D.24. The logarithmic trend exhibited a 14.3% compound increase in nominal value per year. With a rather inelastic catch, the rise in value is directly attributable to an expansion in demand for the species in this coastal fishery. After adjusting for inflation, the real value exhibited the same trend as nominal value except the real annual increase was only $199,005. The parabolic trend was not statistically significant (Table D.25).

Since catch was very inelastic over the period in the face of rising demand - a reasonable working hypothesis - it is not at all surprising that nominal and real dockside prices rose rapidly as indicated in Tables D.26 and D.27. The trend in both prices was highly statistically significant where nominal prices rose by 2.3 cents per pound (2.1 cents in real 1993 dollars) annually. The logarithmic trend analysis showed a compound annual rate of growth of 10.8% and 9.6% for nominal and real price, respectively. The parabolic trend analysis of prices was not evident on statistical grounds and observation of the price series shows that it steadily marches forward over the 1983 to 1993 period.

Fishing effort increased significantly over the 1986 to 1993 period as shown in Table D.28. In fact, fishing effort increased by 486 trips per year and at an annual growth rate of 10.2% using the linear and logarithmic functions, respectively.

Finally, Table D.29 showed an appreciable decline in CPUE over the 1986 to 1993 period using the linear or logarithmic trend equations which were both statistically significant at the 5% level. In fact, CPUE declined by 9% per year over this period. The Schaefer model was also statistically significant.

Oceanic Pelagic Fishes

Oceanic pelagic fish as a category includes swordfish, yellowfin tuna, sharks, and wahoo as prime examples. Surface longline was the primary gear used for oceanic pelagic fishes during the 1983 to 1993 period (Figure 15). In 1993, 0.6 million kg were landed in this category of fish, yielding $2.8 million in dockside value. The time series on catch of oceanic pelagic fish increased exponentially from 1983 to 1986 and then

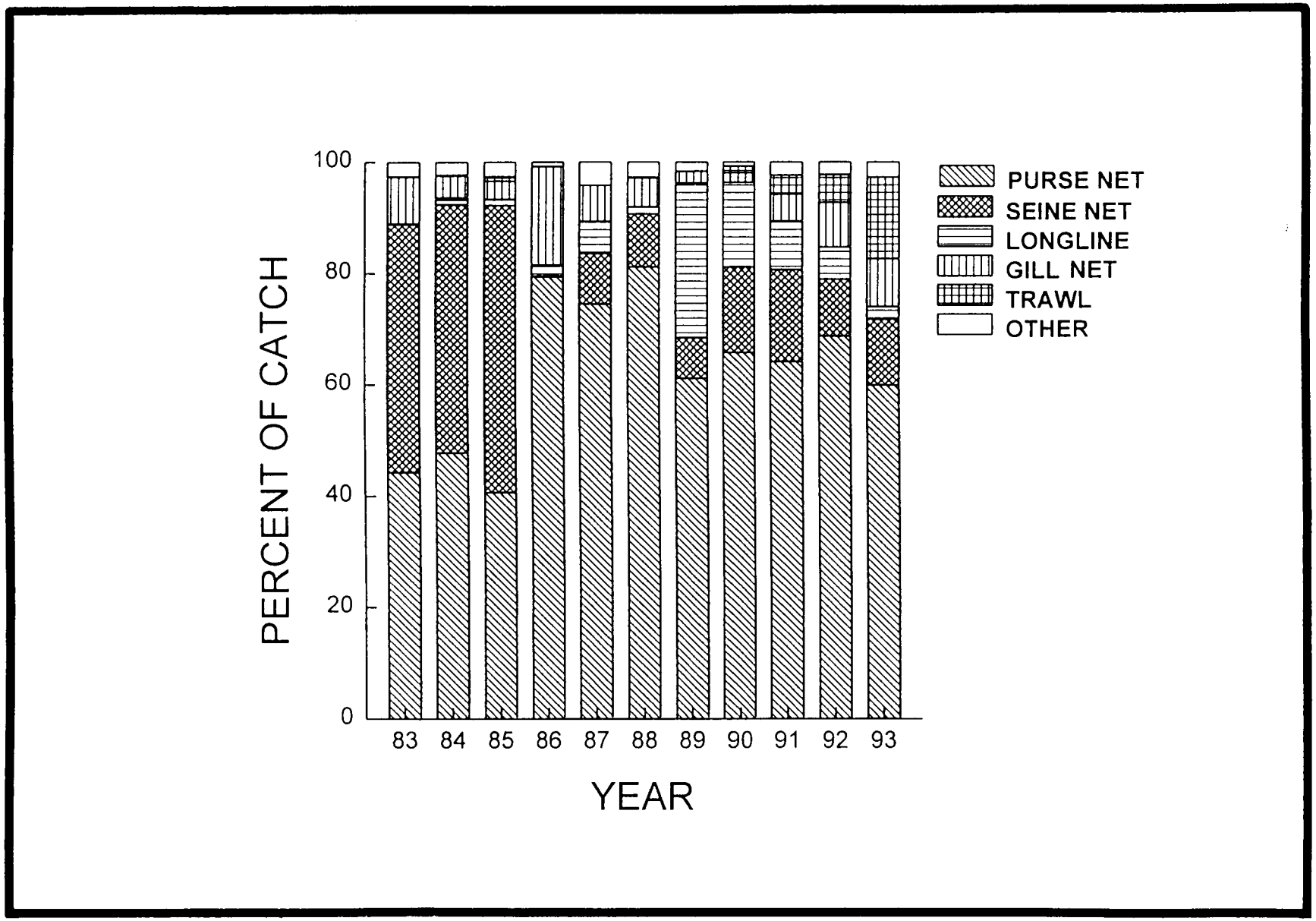

Figure 14. Percentage of coastal pelagic fish landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

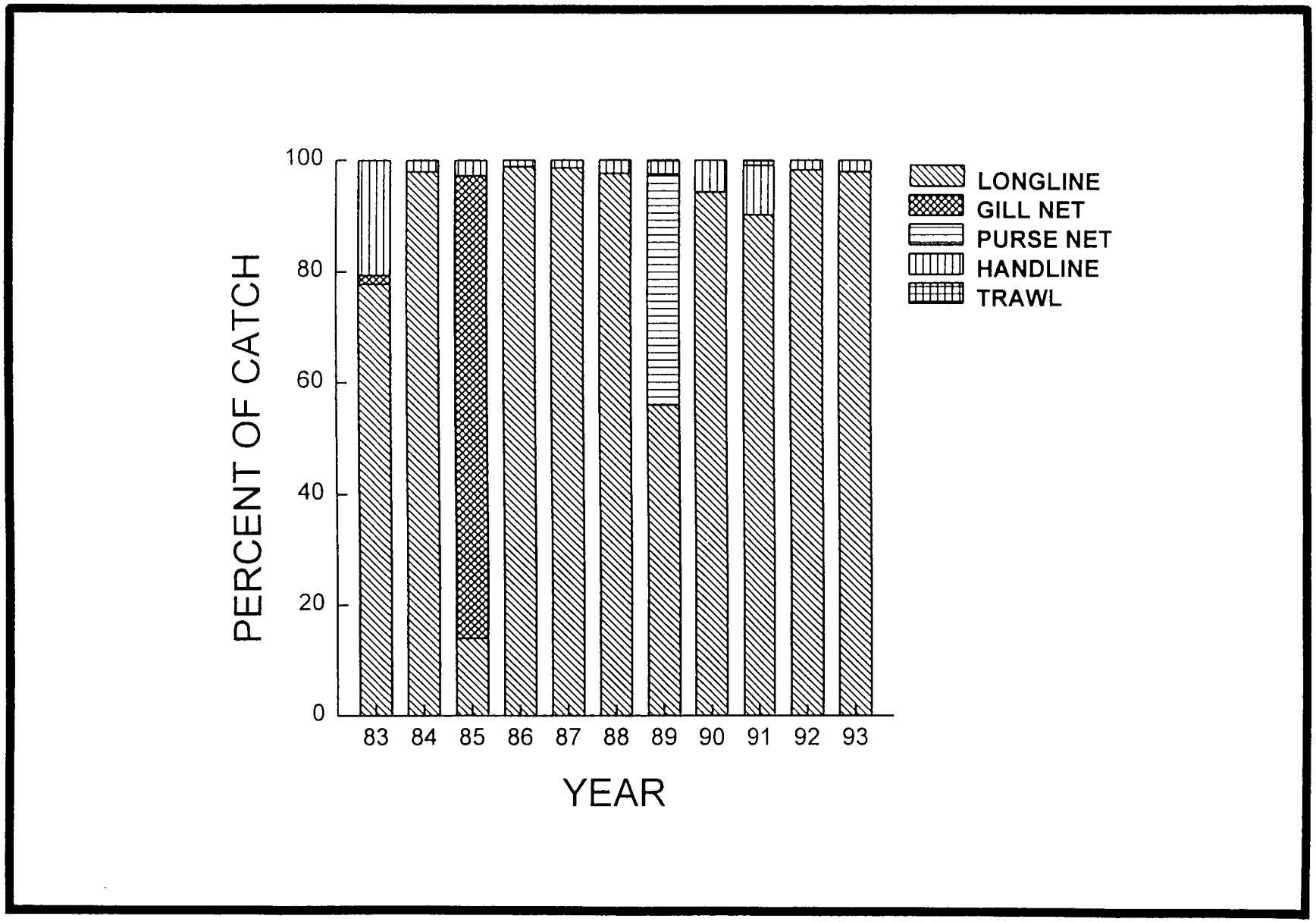

Figure 15. Percentage of oceanic pelagic fish landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

appeared to level off in a rather dramatic way. Thus, the time series on landings was difficult to analyze using the three functional forms discussed in the introduction.

Table D.30 shows the statistical results of the time trend analysis on landings. Because of the peculiar behavior of landings, the linear time trend was far from being statistically significant. However, the logarithmic function did capture the early exponential rise in time series on landings. The coefficient on T was statistically significant for this latter form at the 5% level. The annual rate of growth in landings was calculated at 30.5% which is an artifact of the early expansion in landings. This is not true of the 1988 to 1993 series on landings of oceanic pelagic fish. Although the coefficients are not statistically significant using the criterion on 5%, the parabolic form of the time trend on landings is indicative of the initial rapid growth followed by a plateau. This kind of time trend is rarely observed and is shown in Figure 16.

Table D.31 shows, as expected, no linear time trend for nominal dockside value which is dominated by the unusual nature of the underlying landings series. The logarithmic form of the nominal value of landings series is statistically significant showing an upward trend. The parabolic value trend is more indicative of the underlying catch as shown in Figure 16. After adjustment for inflation, the real value of the catch series was highly similar to that obtained for nominal value (see Table D.32). There was no statistical trend in prices of oceanic pelagic fishes (Tables D.33 and D.34).

Because of the rather two distinct periods in this fishery, it is of interest to analyze fishing effort over the 1986 to 1993 period which coincides with the plateau in oceanic pelagic fishery landings. Table D.35 shows a decided decline in fishing effort at a very high level of statistical significance. Fishing effort declined at 7.3% per year. Inspection of the catch series shows a decline after 1990 when the fall in fishing effort most reasonably took effect. Finally, Table D.36 shows a decline in CPUE over the 1986 to 1993 period, but neither the parabolic or logarithmic form of the trend analysis was statistically significant. However, increases (decreases) in fishing effort showed increases (decreases) in landings which is contrary to the basic Schaefer model.

Demersal Fishes

The northwest Florida demersal fishery contains such species as pinfish, spotted seatrout, and striped mullet. Demersal fishes were caught mostly with gill nets during the 1983 to 1993 period (Figure 17). Over the 1983 to 1993 period, the trend in demersal fishery landings was decidedly downward, falling from 2.9 million kg in 1983 to 1.9 million kgs in 1993, a 34% decline. Table D.37 shows the statistical trends in demersal catch. For both the linear and logarithmic trends, the coefficient on the T variable was statistically significant at the 1% level. In fact, the linear time trend showed a decline of 108,000 kg per year over the 1983 to 1993 period. The logarithmic function showed a compound rate of decline in commercial fishery landings of 5.3%. The parabolic function indicated a U-shaped time trend meaning that there was an upturn in demersal landings over the 1991 to 1993 period, as the catch rose from 1.3 million kgs in 1991 to 1.9 million kgs in 1993. Thus, what is true of an 11-year period under analysis

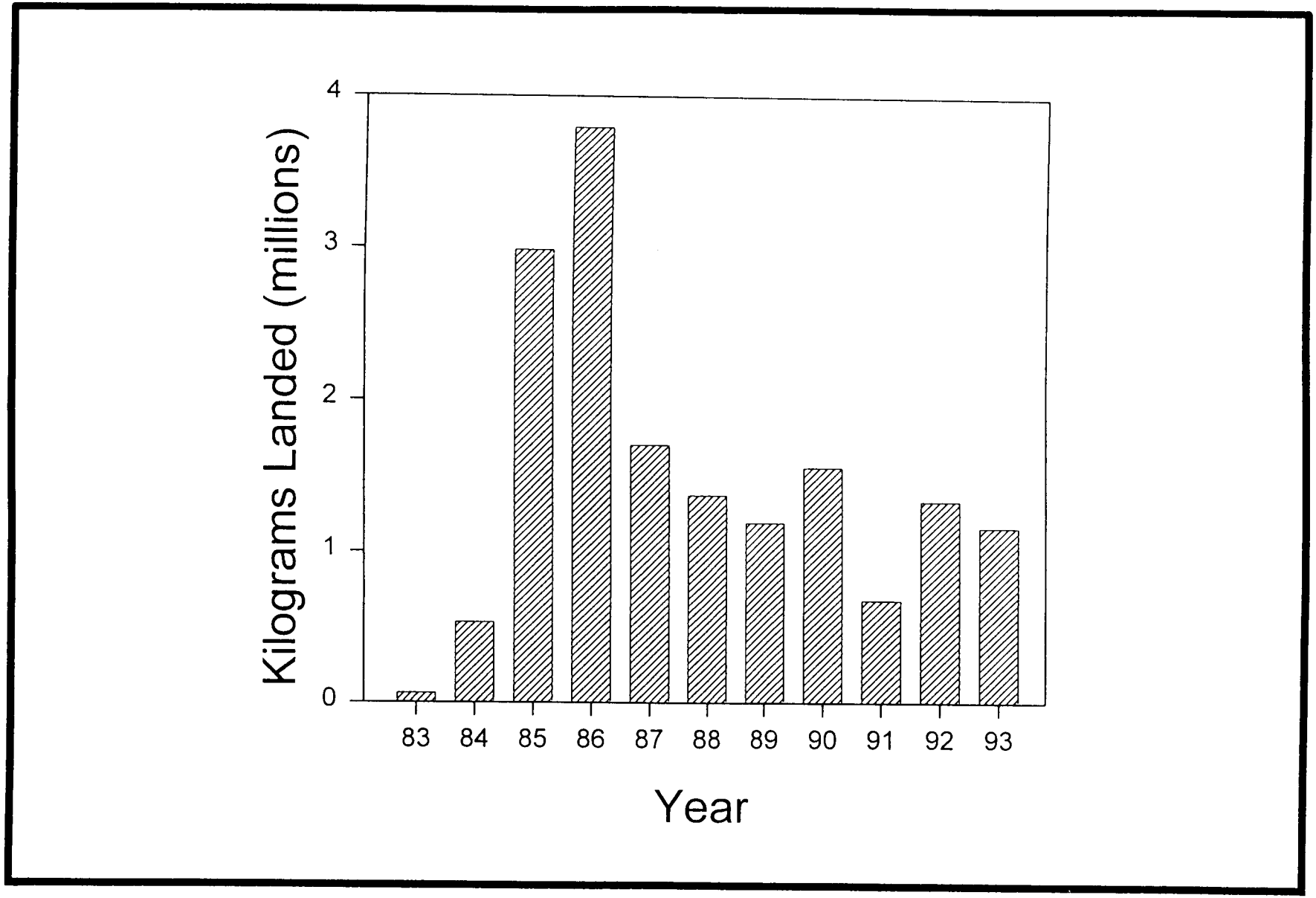

Figure 16. Kilograms of oceanic pelagic fishes landed in the eight Florida panhandle counties, 1983-1993.

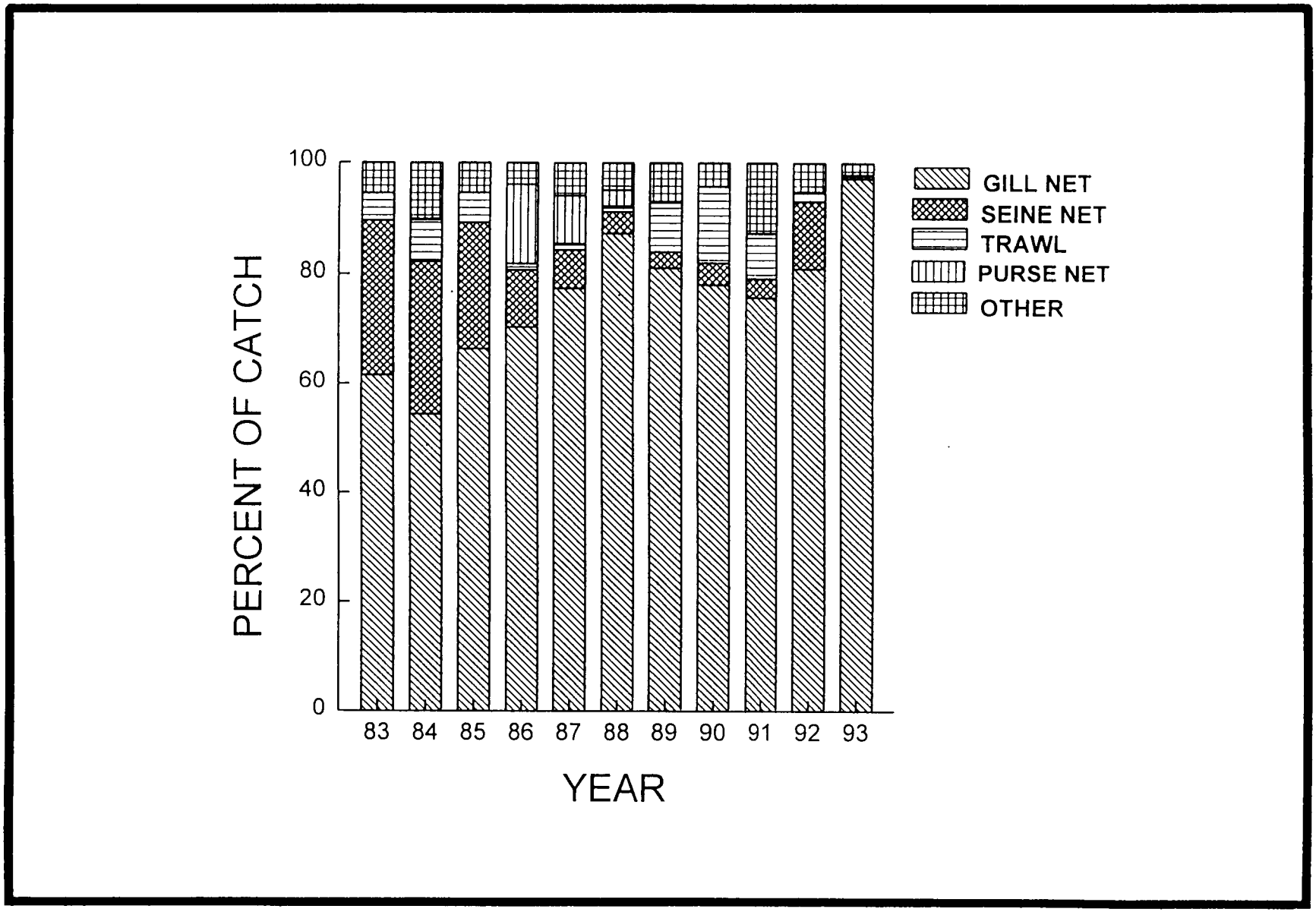

Figure 17 Percentage of demersal fish landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

may conceal parabolic behavior which was also found in the reef fish fishery discussed in an earlier section.

The nominal dockside value of the demersal fishery landings in northwest Florida increased over the 1983 to 1993 period, but the linear time trend was statistically significant at the 13% level. In Table D.38, the linear and logarithmic trends were weak in terms of statistical significance, but the parabolic function performed quite well in identifying a U-shaped time path for the nominal value of demersal landings. Thus, both catch and the value of landings exhibited the same functional form over the period.

Since the nominal value of demersal landings showed a weak upward rise over the period under study, it is not surprising the real value showed no statistically significant trend once it was adjusted for inflation. Inflation was very mild in crude food products increasing by only about 1% per year; however, this was enough to yield no time trend in the real dockside value of demersal fish landings using the linear and logarithmic functions shown in Table D.39. The inflation adjustment has no impact on the parabolic equation indicating, perhaps, the strong upturn in the demersal catch in the latter part of the period.

Both the nominal and real dockside price for the demersal fishery category showed a strong upturn over the 1983 to 1993 period as landings fell (Tables D.40 and D.41). This is what one might expect if the eight county landings have an appreciable impact on dockside prices. It should always be remembered that the price is a statewide average since no price data are available at the regional level (county level) for the most recent years of the period. The inflation adjustment did not alter the trend in the real dockside price for the demersal fishery category. As indicated above, inflation was very mild over this period so an adjustment from nominal to real value may only have slight effects. The growth rate in dockside price was lowered from 8% to 6.8% after the adjustment for inflation which was a little over 1% per year.

Both the linear and logarithmic time trends were negative and statistically significant at the 5% level. Fishing effort expressed in trips fell from 20,078 in 1983 to 18,005 in 1993, a 10.3% decline (Table D.42). The landings and fishing effort both declined over the 1983 to 1993 period; therefore, it is hardly surprising that there was no statistically significant trend in CPUE as is shown in Table D.43. The landings and effort moved downward together over the period. However, there is some weak support for the Schaefer model in Table D.43 as CPUE was inversely related to aggregate fishing effort over the entire period, but the coefficient on fishing effort was only statistically significant at the 12% level.

Crabs

This group includes all crabs, but consists primarily of blue crab. Blue crab was taken almost exclusively by trapping over the 11-year period 1983 to 1993 (Figure 18). In 1993, $1.96 million were generated from dockside landings in the eight county area. Over the 1983 to 1993 period, Table D.44 indicates that the crab fishery

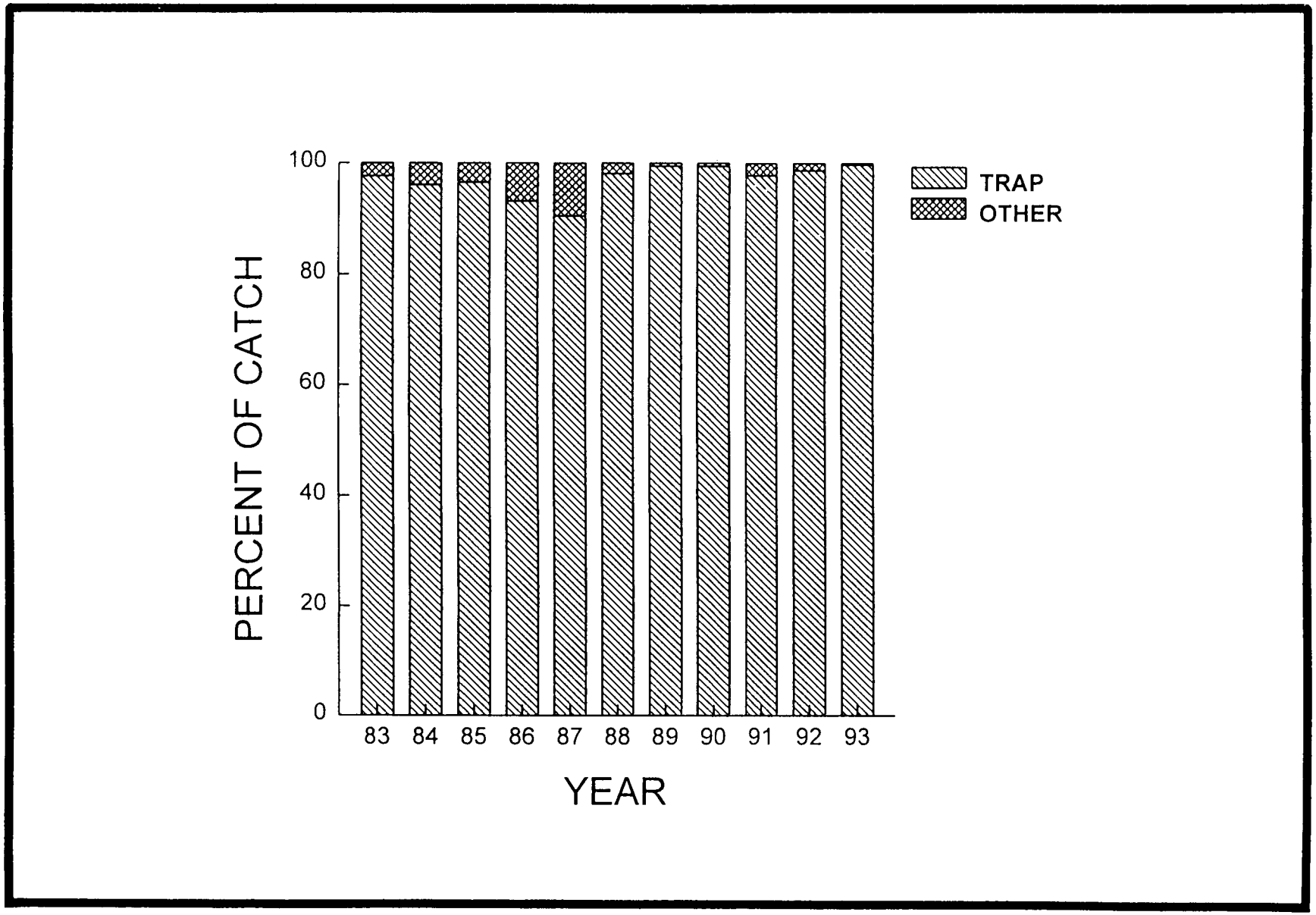

Figure 18. Percentage of crab landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

experienced a highly statistically significant decline in landings using the linear and logarithmic functions. The linear trend showed an annual decline of 74,954 kgs while the logarithmic function exhibited annual compound decline of 6%. No parabolic trend in landings was evident over the period of analysis.

As crab catches fell over the 1983 to 1993 period, nominal dockside value increased somewhat. Both the linear and logarithmic trend values were statistically significant at approximately the 10% level as can be observed in Table D.45. The parabolic function was not statistically significant. Because of mildly increasing inflation, the real value showed no statistically significant time trend over the period of analysis (Table D.46).

As would be expected, nominal dockside prices for crabs increased as catches declined. For both the linear and logarithmic time trends, the nominal and real dockside prices showed highly statistically significant results (Tables D.47 and D.48). In the nominal case, dockside prices rose by about $.045 per pound annually using the linear time trend. This can be observed in Table D.47. Logarithmically, dockside crab prices rose by 9.5% per year on a compound basis. Thus, the decline in crab catches had a pronounced impact on the rise in dockside prices. The trend analysis indicates that on a yearly basis, prices rose by 9.5% while landings declined by only 6% for an implied price elasticity of -.63 (i.e., % change in landings divided by % change in dockside price). This is a very crude analysis since all other variables (e.g., income) are not held constant. The lack of substitutes for blue crab gives rise to price inelasticity.

Finally, fishing effort showed no statistically significant time trend over the 1986 to 1993 period, averaging over 6,300 trips per year. Also, CPUE showed no statistically significant time trend (Tables D.49 and D.50). This was true since crab catches began to rise in the latter part of the 1983 to 1993 time period where observations on fishing effort are available.

Lobsters

Commercial lobster landings are small in both size and value in northwest Florida. In 1993, only $21,495 of spiny lobster was landed in all eight counties. The catch of lobsters showed a declining trend over the 1983 to 1993 period. Table D.51 indicates that the lobster catch declined at over 1825 kg per year, but this coefficient was statistically significant at a 6.62% level which is slightly above the criterion of 5% used in this study. The logarithmic trend equation was not statistically significant. The estimated parabola showed a U-shaped trend in lobster landings.

The dockside nominal value showed some tendency to fall over the 1983 to 1993 period, but neither the linear or logarithmic forms exhibited statistically significant trends. Dockside real value also showed a tendency to decline especially since it has been adjusted for inflation. Tables D.52 and D.53 present the trend analysis for the nominal and real dockside value of the lobster landings.

Nominal and real dockside prices showed no trend over the 1983 to 1993 period using the linear and logarithmic time trends (Tables D.54 and D.55). However, there was some consistency between nominal dockside prices and landings discussed above. When landings fell (U-shaped curve), dockside prices increased (humped parabola). This inverse relationship between price and landings illustrates that lobsters in northwest Florida apparently operate in a localized market.

Finally, fishing effort for lobsters did increase over the 1986 to 1993 period. This is constant with rise in the catch of lobsters over the 1987 to 1993 period (i.e., U-shaped parabola discussed above). The CPUE showed no trend over the 1986 to 1993 period indicating that proportional increases in catch were accompanied with a directly proportional increase in effort. Tables D.56 and D.57 present the detailed results discussed in this paragraph. In conclusion, it would appear that the lobster fishery is expanding, but is still a very small aspect of commercial fishing in northwest Florida.

Oysters

For the State of Florida, the oyster catch or harvest is concentrated in the northwest Florida areas with Franklin County accounting for most of this harvest. Manually operated tongs were the gear responsible for virtually all of the oyster harvest (Figure 19). Table D.58 indicates that the harvest has generally exhibited a negative time trend over the 1983 to 1993 period. For the linear time trend, the harvest of oysters fell at 133,957 kg per year when one looks at the coefficient on T. This time variable was statistically significant at the 6.3% level which is just a little less than the usual criterion of 5%. Although only statistically significant at the 17% level, the time trend using the logarithmic form indicated a compound rate of decline of 9% per year. The parabolic time trend was not statistically significant at the 5% level.

The nominal value of the oyster harvest exhibited a slight downward trend over the 1983 to 1993 period as indicated in Table D.59. This trend was not statistically significant for all three forms of equations used in the analysis. Because of inflation adjustment (i.e., dividing nominal value by the producers price index for raw foods), the real value of the harvest declined more rapidly than the nominal values. Table D.60 indicated that t-values for the time trends are absolutely higher for the real as compared to the nominal value of the catch. Even so, the time trend on real dockside value for oysters was not statistically significant. The static nature of both nominal and real dockside values of oysters does not help increase income to oyster fishers. This leads to an examination of dockside price over the period.

Both the linear and logarithmic trends in Table D.61 indicate a slightly increasing dockside price for oysters over the period, but this trend was not statistically significant at the 5% level. With the inflation adjustment, real dockside prices showed even a lesser increase over the period of analysis (Table D.62).

An analysis of the trend in fishing effort was reasonably consistent with the above analysis in that Table D.63 shows no statistically significant time trend in fishing

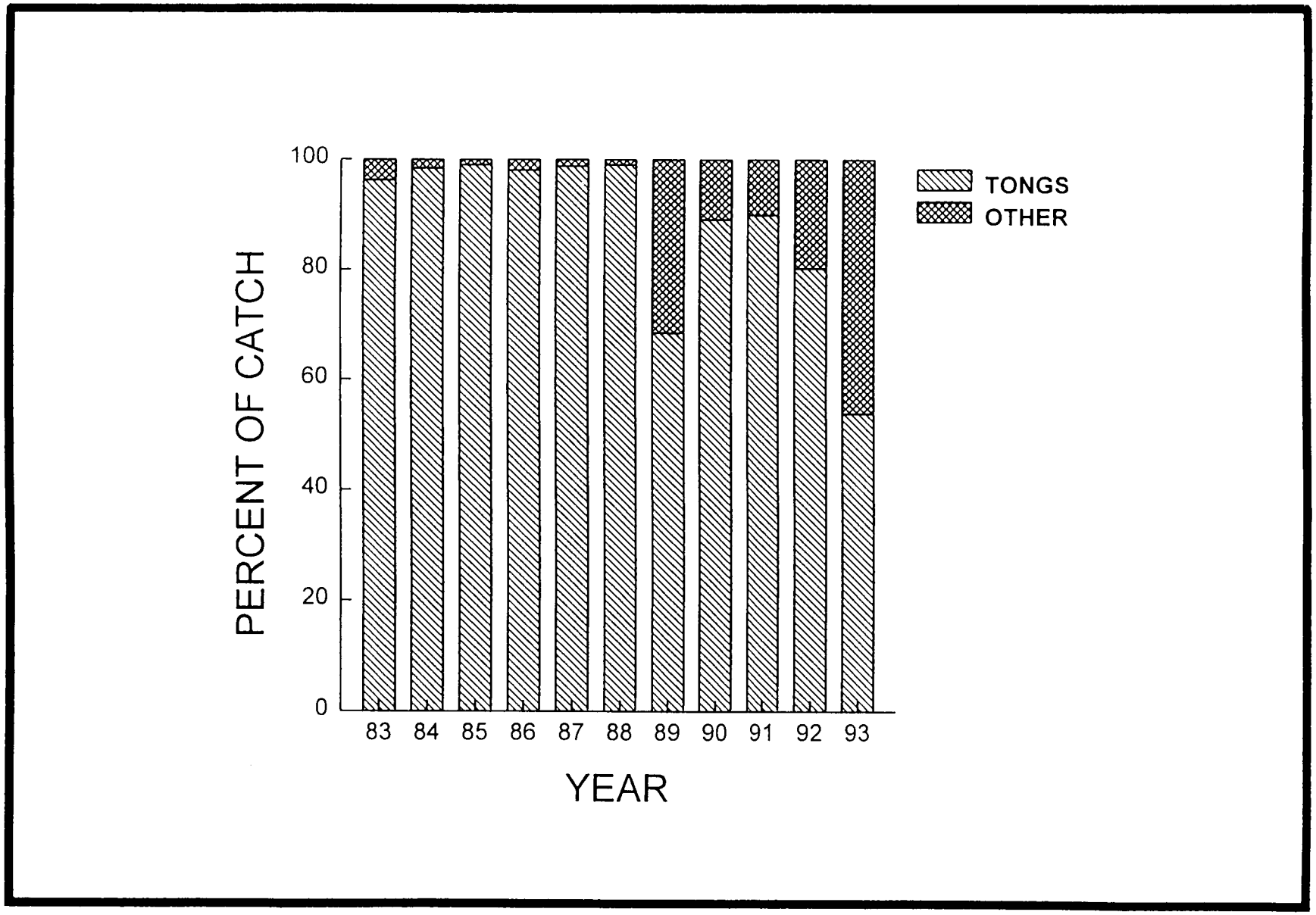

Figure 19. Percentage of oyster landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

effort or trips. Thus, the average number of trips of 29,821 from 1986 to 1993 is a good estimate for any year in the period.

Finally, the productivity of the oyster fishery showed no statistically significant time trend over the 1986 to 1993 period as indicated in Table D.64. The catch per trip (i.e., CPUE) remained static over the period using both the linear and logarithmic forms of the time trends.

Shrimps

In northwest Florida, the main shrimp catch includes brown, white, and pink species. They are harvested within mostly state waters. Otter trawl was the primary gear used for shrimping in Florida panhandle waters (Figure 20). Over the 1983 to 1993 period, landings have continually fallen as indicated in Table D.65. According to the linear time trend, landings have fallen by 174,607 kgs per year over this period. This trend is statistically significant at the 2.5% level. The logarithmic equation showed a compound rate of fall in the shrimp catch for the eight county area of 8.5% per year. This was a real adverse trend in the shrimp industry in the area.

Tables D.66 and D.67 show that the fall in shrimp landings was mainly responsible for a fall in the nominal and real value of the shrimp catch. The nominal value of the shrimp catch fell by $710,694 per year over the period of analysis as dockside prices were held down by increasing imports of shrimp as discussed above. The real value fell even more rapidly as even the moderate inflationary trend took its toll upon the nominal values unsupported by dockside price increases. Nominal and real value of the fishers' catch declined, thereby depressing incomes in this fishery.

Tables D.68 and D.69 indicate no statistically significant trend in nominal or real dockside price of shrimp. Shrimp prices have remained static over the 1983 to 1993 period while landings fell considerably.

Table D.70 shows that there was a slight, although small, decline in total fishing effort in the shrimp fishery over the period of study, but it was certainly not statistically significant. This is verified using the linear and logarithmic forms of the time trend equations. However, fishing effort did appear to peak in the late 1980's and then drop, indicated by the parabolic function (Table D.71). Finally, CPUE in the shrimp industry did not fall appreciably over the 1983 to 1993 period. This would have been expected since the catch fell considerably, but fishing effort showed a slight decline which was not statistically significant.

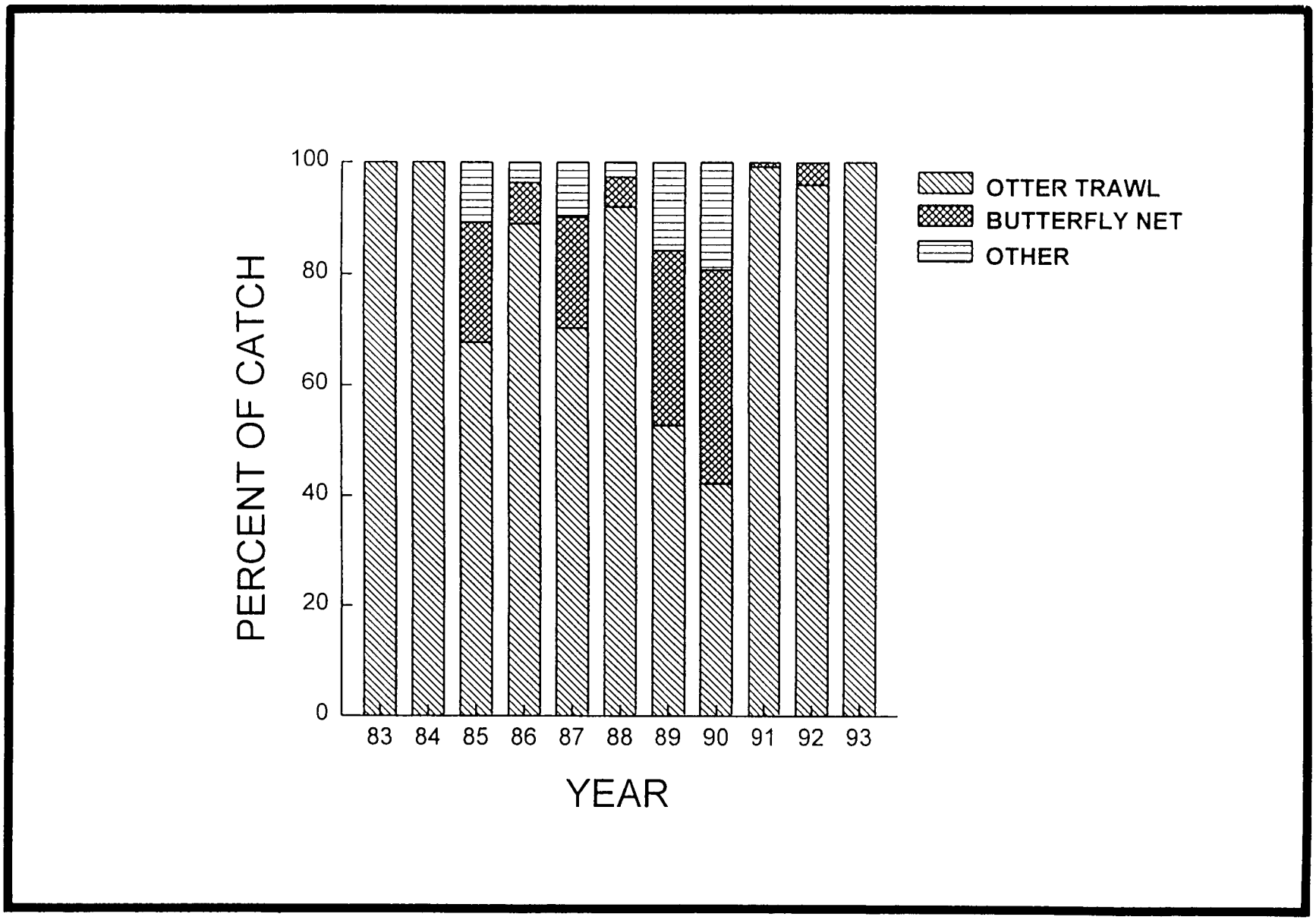

Figure 20. Percentage of shrimp landings by gear type for the Florida panhandle (statistical grids 7 to 10), 1983-1993.

Chapter 4

Major Fishing Areas on the Florida Panhandle Outer Continental Shelf

All marine organisms have specific criteria they require and actively seek out to insure their survival. These criteria include space, food, habitat, water depth, and water quality, among many others. Areas that offer a species its requisite conditions usually promote localized aggregations of that species. These localized aggregations are commonly utilized as fishing grounds by recreational and commercial fishers. Along the coast of the Florida panhandle, recreational and commercial fisheries are divided into three categories based upon location. The first category, inland fishery, includes fishing from shore (or very near shore from boats), piers, jetties, and bridges in inland waters. The inland fishery targets predominantly demersal fishes, and does not exist in outer continental shelf (OCS) waters. The second category, inshore (16 km or less from shore) does occur in OCS waters. (Our definition of OCS in this case would be any areas just seaward of the Florida 3-league [14.5-mile] boundary.) The inshore fishery targets reef, coastal pelagic, baitfishes, and some demersal fishes in OCS waters. The third category, offshore fishery, occurs in waters greater than 16 km from shore and encompasses the OCS. The offshore fishery targets reef fishes, some coastal pelagic fishes, and oceanic fishes in OCS and open ocean waters.

Fishing grounds are as varied as the organisms that use them. Most areas have features that makes them attractive to the inhabiting organisms. Reef fishes, for example, associate with artificial or natural structures (reefs). Substrate is the most obvious feature contributing to fishing aggregate areas. Less recognizable and sometimes undeterminable features can create localized areas within a large, seemingly homogeneous area that aggregates organisms. This is the case with calico scallop beds which periodically appear off Cape San Blas, Florida in depths of 40 m or less (Bullis and Ingle 1959; Carpenter 1967; Continental Shelf Associates, Inc. 1990). Although usually fished in shallow inshore waters, calico scallops periodically occur in localized aggregations on a vast sand plain well offshore of the normal fishing grounds. There is no obvious reason for their occurrence at a specific location, nor are there obvious barriers preventing them from inhabiting the entire area. However, most recreational and commercially important species have some habitat preferences that give fishers direction when searching for them.

Organisms, in this discussion, aggregate around hard substrate (natural or man-made) or have specific water column requirements (depth, current, temperature, and water quality). Important exceptions to this generality are the commercially fished penaeid shrimps (brown, pink, and white shrimps) and blue crab. The penaeid shrimps and blue crab display annual, seasonal migrations between shallow coastal bays and estuaries to the deeper offshore waters of the OCS. Fishing normally takes place in the

bays and estuaries. Found on soft sediment or in seagrass beds, they bury themselves to avoid predation during the day and emerge to forage at night.

Along the Florida panhandle coast, important fishing areas for both recreational and commercial fisheries occur in inland waters. Most commercial catches for striped mullet, shrimp, blue crab, oysters, and baitfishes come from inland waters. Detailed discussions of the fisheries for these species are found in Chapters 2 and 3.

Within the OCS region off the Florida panhandle, fishing areas for commercial and recreationally sought species are of two types: hard substrate and water column regimes. Hard substrate can be subdivided into natural hard bottoms, artificial reefs, and oil and gas structures. Water column areas within the OCS are beyond the estuarine, bay, and nearshore zones. Most are influenced by and best described as oceanic areas. The following text includes discussion of all of these fishing areas.

Natural Hard Bottom Areas

Natural hard bottom areas of indurated sediments are common in the northeastern gulf, near the western Florida coast. These areas generally occur in depths of 18 to 40 m (Schroeder et al. 1988a). Historically, this area was described as having soft bottom substrate with little or no relief. East of the Mississippi River, exposed hard bottom was not expected due to large amounts of sediment from adjacent rivers and estuaries. Parker et al. (1983) reported that reefs in depths between 9 and 91 m accounted for only 3.2% of the bottom from Pensacola, Florida to Pass Cavallo, Texas. For the Mississippi/Alabama/Florida continental shelf out to about 180 m however, more than 38% of the bottom was estimated to be hard bottom. Ludwick and Walton (1957) reported a prominent hard bottom feature in this area when they studied a region of topographic highs in 70 to 100 m of water near the shelf break. This 13 km^2 area is commonly known as the Pinnacles. Schroeder et al. (1988a) reported locations of four hard bottom areas near Florida waters: the Southeast Banks; the Southwest Rock; the 17 Fathom Hole; and the Big Rock/Trysler Grounds (Figure 21). In a subsequent report on the geological and biological aspects of these hard bottom environments, Schroeder et al. (1988b) documented hard bottom associated with the head of the De Soto Canyon in approximately 50 to 60 m of water. De Soto Canyon is a prominent submarine feature of the continental shelf off the northwest Florida coast which brings deep water relatively close to shore. Schroeder et al. (1988b) reported that these submerged hard bottoms often support extraordinary numbers of invertebrates and fishes. These areas serve as focal points for commercial and recreational fishing activity. Shipp and Hopkins (1978) found fishing tackle and other man-made debris on the hard bottom areas at the head of De Soto Canyon indicating that fishermen had visited the site. The biological assemblages of these areas are dominated by soft corals (*Leptogorgia virgulata* and *Lophogorgia hebes*), hydroids, bryozoans, urchins (*Arbacia punctulata* and *Lytechinus variegatus*), and portunid crabs. On the outer shelf, deep water octocorals dominate the epifauna along with solitary corals and antipatharians. Only the hard coral *Oculina diffusa* was found across the entire shelf. Ichthyofauna found around hard bottom areas was a diverse mix of demersal and

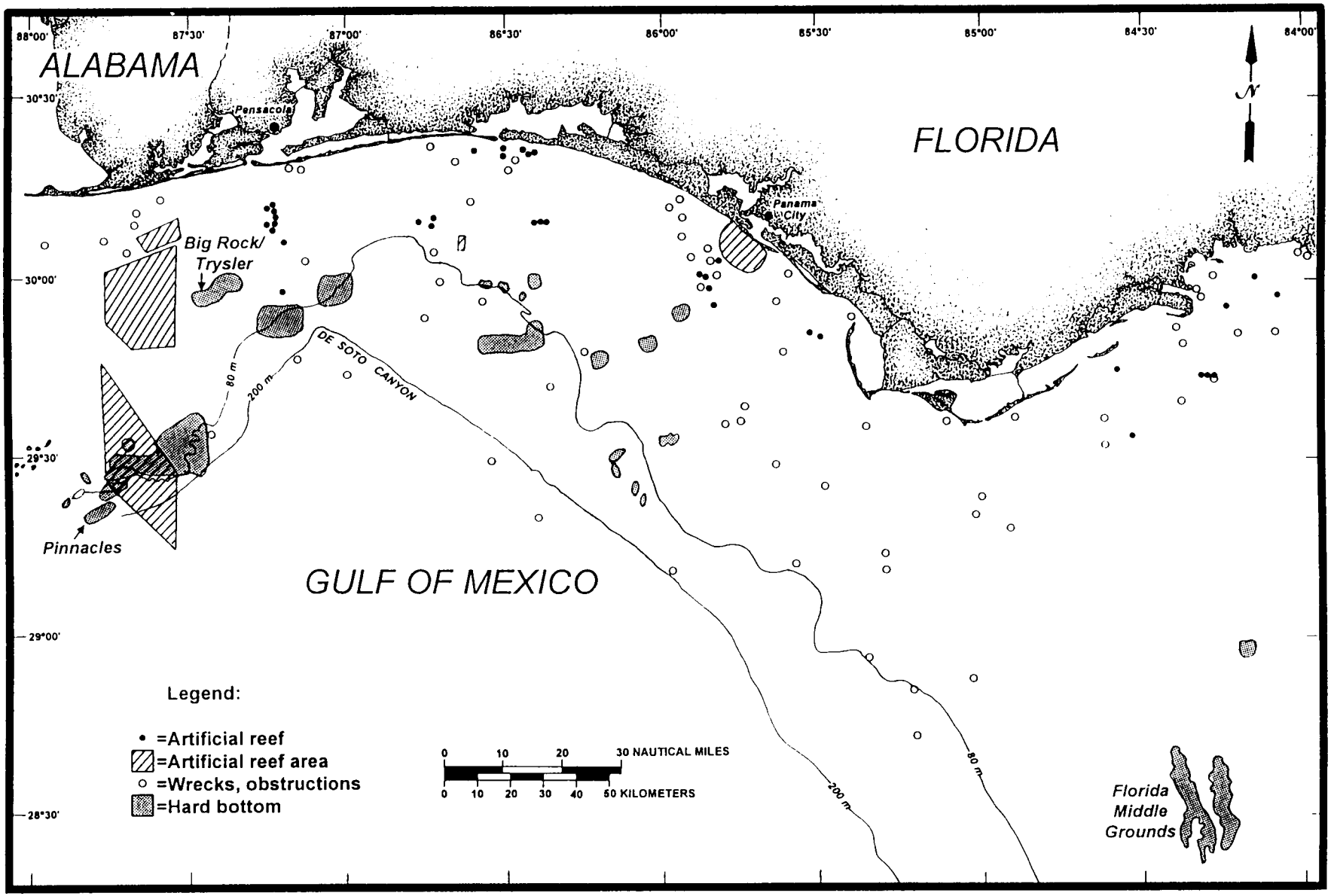

Figure 21. Artificial reefs, wrecks, obstructions, and natural hard bottom offshore of the Florida panhandle region.

pelagic fishes, including snappers, groupers, amberjacks and many tropical and subtropical species.

Eastward from the Florida/Alabama border, the topography and geology of the seafloor changes dramatically (Moe 1963). The submarine topography of the upper west coast of Florida is a limestone plateau exhibiting a young, drowned karst topography (Price 1954). The limestone base is covered with a thin veneer of detrital sediment and produces a gently rolling bottom with localized sinkholes, fissures, and protuberances of underlying rock. The occurrence of rock is much greater in the eastern portion of the northeastern Gulf of Mexico. The maximum relief of this bottom occurs in the Florida Middle Grounds where hills and cliffs up to 13 m have been measured. The Florida Middle Grounds is a prominent topographic feature that has supported reef fish fisheries since at least 1855 (Camber 1955).

According to interviews conducted by Moe (1963), fishers had the most success on small, isolated rocky areas or wrecks on large expanses of sand bottom. The primary recreational and commercial reef fishes sought throughout this area are gag (black) grouper, red grouper, and red snapper. Based upon the data reviewed for the present report, vermilion snapper, gray triggerfish, and greater amberjack may be added to the list. The positions of many of the frequented fishing areas along the upper west coast of Florida were provided by Moe (1963).

Artificial Reefs

Artificial habitat, intentionally constructed or coincidentally developed (such as petroleum platforms), has been found to increase local biomass, attract a wide variety of demersal and pelagic fishes, and locally increase production of the marine environment (Bohnsack 1989; Bohnsack and Sutherland 1985).

Various substances and objects can be utilized for the construction of artificial habitats or reefs. The main requirements are that it must be non-polluting (often requiring clean-up of objects prior to use as reef material) and durable enough to provide a reasonable longevity. Favorite building blocks for artificial reefs over the years have been a diverse array of concrete and steel items including construction rubble and debris, designed fish habitats, derelict vehicles, boats, airplanes, ships, and offshore structures associated with the petroleum industry. Automobile tires and decrepit wooden vessels have also been used for reef material, but are less desirable than the other mentioned materials.

The first recorded artificial reef in the Gulf of Mexico was established in 1932, 5 km off Gulf County, Florida (Pybas 1991). Since then, hundreds of artificial reefs have been developed for fisheries, habitat enhancement, and recreational purposes. Artificial reefs have been placed in depths ranging from several meters to hundreds of meters of water. Once the fishery potential of artificial reefs began to be realized by fishers, numerous "personal" reefs were constructed by anyone with the means to put reef material in a secret offshore location. Personal reefs were often made from unsuitable materials or

placed in problematic locations. As a result, design, construction, and placement of reefs were eventually regulated by State and Federal authorities. The National Fisheries Enhancement Act of 1984 (U.S.C secs. 2101 to 2105) encouraged coastal states to develop plans for artificial reefs in State and Federal waters. The National Oceanic and Atmospheric Administration was directed to develop a National Artificial Reef Plan and the U.S Army Corps of Engineers was given Federal regulatory responsibility.

In Florida, coastal counties submit artificial reef grant applications to the FDEP Office of Fisheries Management and Assistance Services for review. Following application evaluation and approval, the FDEP can then make monies, provided by several State and Federal sources, available for the actual construction of reefs. Ultimately, the artificial reefs are documented and their locations published in a continually updated document, "State and Federally Funded Artificial Reefs of Florida" (Evans 1995). The latest edition of this publication (1985-1995) documents nearly 300 reef sites along Florida shores created with the aid of State and Federal funding. The pamphlet does not include artificial reefs funded exclusively by county or city revenues, private contributions or volunteer efforts, wrecks not intentionally placed as artificial reefs, or illegally placed materials. The documented reefs that lie in the northeastern Gulf of Mexico area of interest are incorporated into Figure 21.

Artificial reefs attract diverse and plentiful biota. In addition to the invertebrate fauna that encrust reef substrate shortly after placement, many species of recreational and commercial value are drawn to reef sites. Depending upon location, water depth, physical dimensions, and relief, most reef, coastal pelagic and oceanic pelagic fishes can be attracted to artificial habitats. Hastings et al. (1976) reported fish attracting abilities of two navy research towers located in 18 and 32 m of water off Panama City, Florida. These structures were similar to petroleum platforms, without the associated production facilities. The towers, before and after demolition, functioned as artificial reefs and attracted a wide variety of marine life. Fishes normally associate with reefs to take advantage of feeding opportunities and receive protection from the environment (current break, refuge from predators, etc.). The most striking colonizations of artificial habitats often occur in the midst of large featureless expanses of bottom. Normal densities of marine organisms in such areas are low.

Once fishes are present at reef structures, fishers can attempt collection as illustrated by MRFSS results. Survey questionnaires, 1984 through 1992, asked if participants fished around artificial reefs. During 1984 and 1985, positive responses were low (3.4% and 1.7%, respectively), possibly because Florida's artificial reef program was fairly new. Responses, 1986 to 1992, were much higher (11.8% to 19.4%, respectively). Increased utilization of artificial habitats as fishing areas may be due to increased publicity about reef locations and improved fishing. Commercial fishers along northwest Florida also fish around artificial structures (Moe 1963). These fishers often construct their own secret artificial reefs. Though these reefs are usually quite small (a car body or boat hull), they can be very productive if not overfished.

Oceanic Features

While reef species seek topographic structures, pelagic fishes seek structure in the water column. Oceanographic features such as thermal discontinuities, water mass convergence or divergence zones, eddys, and current edges all constitute "structure" in the water column. These features are often associated with high productivity and accumulations of forage species for oceanic fishes. Off the Florida panhandle the most important oceanographic feature is the Loop Current. This current carries warm Caribbean water through the Yucatan Channel into the Gulf of Mexico and northward towards the panhandle where it deflects (loops) eastward and south along the west Florida shelf and out of the gulf through the Straits of Florida. The position of the landward edge of the Loop Current is unpredictable, but is generally closest in the vicinity of De Soto Canyon. Coastal pelagic and oceanic pelagic fishes, particularly cobia, mackerels, billfishes, tunas, and dolphin associate with oceanographic features. Japanese longline fishers who operated in the Gulf of Mexico during the 1970's had good success when fishing near the Loop Current boundary for tunas and billfishes (Maul et al. 1984). Regardless of the actual position of the Loop Current, recreational billfishers have had their best success seaward of the contour known as the "100 Fathom Curve" (e.g., Pristas et al. 1992, etc.).

Oil and Gas Structures in Adjacent Waters

In the central and western Gulf of Mexico, petroleum industry structures are common. There have been thousands of petroleum platforms constructed in OCS waters from Texas to Alabama. These platforms have been built in depths ranging from only a few meters to hundreds of meters. There are, however, no functional, permanent petroleum structures in the OCS region off northwest Florida. As a result, platforms do not constitute important fishing areas for Florida fishers, as they do for residents of other gulf coast states. MRFSS data, 1984 to 1992, reported that up to 3% of Florida fishers stated they had spent some time fishing around petroleum structures (Table 2). To fish around such structures, the fishers had to fish west of Florida waters. The main reason fishers are willing to travel to petroleum structures is because fish are attracted to them.

Typically, oil platforms are not built on hard bottom areas. This is both by design as a method to minimize impact to the marine environment, and by chance since the amount of hard, compared to soft, bottom in the gulf is small. Lack of habitat diversity on most soft bottoms limits the variety of marine life that can occur. Oil platforms extend throughout the entire water column from bottom to surface and thereby provide a greater variety of habitats and ecological niches than do bottom reefs, especially for soft bottom. A platform is, in effect, an artificial reef. Once a platform is put into the sea, some fishes are immediately drawn to the structure because they prefer to be around solid objects (thygmotaxis), and they use the platform to provide spatial references for orientation. Fishes also conserve energy by swimming in the disrupted current flow around platforms and can use the structure to avoid predators. Studies documenting the fish attracting properties of artificial structures have been done by numerous authors

Table 2. Marine Recreational Fishery Statistics Survey responses to questions regarding fishing near oil and gas platforms for Florida panhandle counties.

Fishing Area	Year								
	1984	1985	1986	1987[a]	1988	1989	1990	1991	1992
Did not fish by oil rig	243	269	1,313	--	1,587	859	356	313	539
Fished by oil rig	0	0	6	--	10	2	0	28	0
Fished by artificial reef	23	19	314	--	541	297	113	181	196
N/A (e.g., fished inshore)	418	810	383	--	645	485	257	500	922
TOTAL	684	1,098	2,016	0	2,783	1,643	726	1,022	1,657

[a] No data.

(Hunter and Mitchell 1967; Klima and Wickham 1971; Wickham et al. 1973; Gallaway and Lewbel 1982).

On average, an oil platform has 0.5 to 0.8 ha of surface area and all available surfaces are rapidly colonized by benthic organisms once it is put in the sea (Bull and Kendall 1993). The attached organisms attract predatory fishes, which in turn attract larger predatory fishes, and so on. Addition of the 0.5 to 0.8 ha of substrate available on most platforms greatly increases local habitat diversity and produces increases in numbers and types of organisms. Biological succession results in a complex, reef-type ecosystem in 5 to 6 years. Water depth is important in determining the species that occur around a platform. The deeper platforms are often visited by deep water pelagic fishes (sharks, tuna, dolphin, billfishes, etc.), in addition to shallow water species (vertebrates and invertebrates) which tend to inhabit platform structures in their particular, preferred shallower depth zones.

The importance of offshore structures as fishing areas was documented in MRFSS interviews conducted from 1984 to 1992 in Alabama and Louisiana. Unlike Florida, both of these states have platforms in their coastal waters, with the higher concentration found off Louisiana. The use of oil and gas structures by fishers off Louisiana has been investigated by Dugas et al. (1979), Ditton and Auyong (1984), Witzig (1986), and Stanley and Wilson (1989, 1990, 1991). Many of these platforms are close enough to shore to be accessible by even relatively small boats. MRFSS data showed that 11% of Alabama fishers and 23% of Louisiana fishers fished around oil platforms. The trend in both of these states was for increasing amounts of platform fishing. This trend is especially evident in the Alabama survey data.

Present regulations require that oil companies remove their petroleum production platforms from the sea once production has ceased. This requirement will affect an increasingly large number of platforms as oil field productivity diminishes over time. Platform removal is a difficult and expensive (several million dollars per platform) undertaking. The intricacies and costs of platform removal greatly increase with water depth. Given the number of production platforms in the gulf, removal will eventually amount to a considerable reduction in the amount of hard substrate that is available to marine organisms. As a result of these considerations, proposals have been offered to leave the platforms where they are, topple them over where they are, or move them to other offshore locations for use as artificial reefs.

Throughout the Gulf of Mexico, abandoned petroleum platforms have already been successfully utilized as artificial reefs (e.g., Reggio and Kasprzak 1991; Bull and Kendall 1993). Even northwest Florida (which has no oil fields under production) has two artificial reefs made from petroleum industry structures. These platform reefs lie southeast of Pensacola and Apalachicola. The main obstacle to using abandoned platforms as artificial reefs in locations other than where they originally were installed is the cost involved in removal and transportation. If platforms are taken out of the sea, costs can be offset by scrapyard sales. Relocation as a reef usually requires some funding from the authority receiving the platform.

In summary, fishing areas on the OCS offshore the Florida panhandle consist of hard bottom structures (artificial and natural), water column features, and some areas of level sedimentary bottom. Artificial habitat can very effectively enhance fishing opportunities in areas where natural hard bottom is scarce. Artificial reefs, including existing and toppled oil and gas platforms, attract a variety of fishes making them an important component of the recreational and commercial fisheries in the northern Gulf of Mexico.

Chapter 5

Discussion, Conclusions, and Recommendations

Fisheries Characterization and Trends

The Florida panhandle supports a variety of fisheries which over the 1983 to 1993 period showed declines, increases, or little change in catch, effort, and, in the commercial fisheries, dockside value and price. Trends in fisheries data may be caused by several factors acting independently or in concert (Bohnsack et al. 1994). The most important of these factors are overfishing, legislation, and environmental degradation. We discuss the characteristics and trends revealed by the analysis of available recreational and commercial databases below in light of these factors. Florida panhandle fisheries mirror situations found in other segments of the northern Gulf of Mexico, yet are unique to the region. Panhandle recreational and commercial fisheries share a common resource, and the recreational fisheries involve more participants. An example of this disparity is shown in the graph of recreational and commercial vessel registrations for the eight panhandle counties over the 1983 to 1993 period (Figure 22). Despite the discrepancy in numbers of participants, commercial fishing has been a traditional vocation in the panhandle region since the 1800's, and both fisheries deserve consideration prior to oil and gas development in the region.

Recreational Fisheries

Recreational fisheries were described from headboat and fishery survey data. Headboats which fished in both offshore and inshore gulf waters caught mostly (90%) reef fishes during their trips. In reviewing the trends in the headboat fishery over the 1986 to 1993 period, it would appear that this recreational fishery is in decline with both catch and the number of trips falling. This is the conclusion based upon the linear or logarithmic time trend analysis. If this decline is reflected in the success rate (catch per trip), demand for recreational headboat fishing may also decline in northwest Florida. The financial operations of headboat operators will be negatively impacted and tourists may be discouraged from visiting the region, thereby having a negative impact on the regional economic base. Using the linear and logarithmic time trends, there was no trend in the CPUE in headboat fishing over the 1986 to 1993 period. However, the parabolic trend analysis did show a humped (convex) curve for catch per trip which means that CPUE rose and then fell over the period of analysis. The reason for this is that the trips fell more than catch during the early part of the period, thereby increasing CPUE; the reverse took place in the latter part of the period. This oscillation in fishery data is quite normal. Using the Schaefer model, there was no statistically significant relation between CPUE and total fishing effort measured by the number of trips.

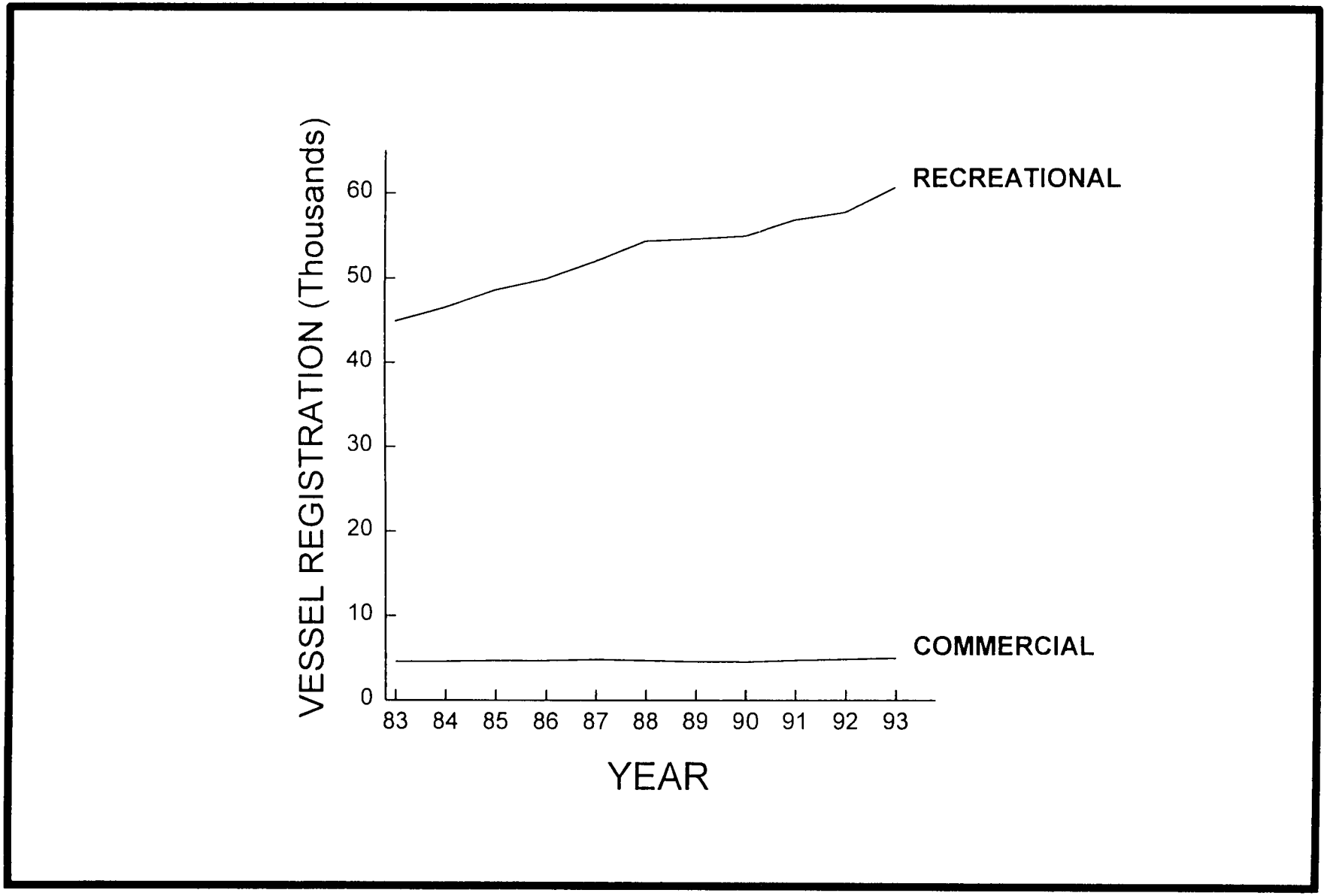

Figure 22. Recreational and commercial vessel registrations for the eight Florida panhandle counties, 1983-1993.

The reasons for the observed declines may have been more attractive fishing elsewhere or a gradual deterioration in the stocks due to previous pressures placed on the resource. In addition, bag and size limits imposed on reef fishes such as snappers, groupers, and porgies by State and Federal fisheries management agencies may have contributed to the observed declines. Nevertheless, the parabolic time trend does show more optimum in that catch and fishing trips are U-shaped over the period indicating a recent recovery (1990 to 1993) in the headboat fishery. Further, the analysis did not show any decline in CPUE over the entire period. Therefore, it appears that the northwest Florida headboat fishery remained stable over the 1986 to 1993 period except for the cycle described previously. Some may describe this as a static condition, but is in sharp contrast to many fisheries that are in decline due to extensive overfishing.

Recreational fishing in inland waters was very important to the region. In inland estuarine waters, fishing from shore or private vessels generated most of the estimated recreational catch and effort. The inland catch was composed primarily of baitfishes and demersal fishes. This segment of the recreational fishery was reasonably stable over the 1983 to 1993 period. Based on this trend, it is not expected that there will be anything more than a continuation of past behavior. The number of trips made by anglers fishing from private vessels declined over the study period. Catch per trip did not show a statistically significant trend, so this was not the reason for the for fewer trips being recorded over the time period. Marine anglers are fishing less in inland waters, perhaps because of the proximity to point and nonpoint source pollution discharges or even crowding in such waters.

Data showed that most of the fishing effort, measured as number of estimated trips, off the Florida panhandle occurred in inshore (≤16 km from shore) Gulf of Mexico waters. Consequently, the inshore fishing area also produced the highest numbers of fish for recreational fishers in the region. The composition of the inshore catch by anglers fishing from shore or private vessels consisted mostly of demersal fishes. Charter vessels working inshore waters concentrated on reef fishes. There was a significant negative trend in the number of fish caught by inshore private vessels, but no apparent trend in number of fishing trips made by private vessels in inshore waters. Thus the CPUE dropped 9.8% per year, which could deter anglers if demand is related to CPUE. The static nature of trips may indicate that the drop in CPUE is already impacting this fishery as anglers look elsewhere for better fishing. The CPUE does show some evidence of being U-shaped with an upturn in the 1990's, a possible consequence of the earlier decline in CPUE. In summary, the private vessel recreational fishery in northwest Florida shows every indication of a decline in catch and could be characterized as stressed if not overfished.

Offshore fishing areas (>16 km from shore) received the lowest effort and produced the lowest catch of the three fishing areas (inland, inshore, and offshore). There were no significant trends in the offshore private or charter fisheries. The catch in offshore waters consisted mostly of reef and demersal fishes. Over 80% of the charter catch was for reef fishes such as red snapper, gag, gray triggerfish, and vermilion snapper. Charter vessels generally but not always caught more fish per trip than recreational

anglers. This is probable due to the greater experience of the charter boat operators in locating and catching fish.

Commercial Fisheries

Baitfishes accounted for the highest commercial landings in the panhandle region. Like the fisheries in the central Gulf of Mexico, menhaden contributed the greatest proportion of the entire finfish landings; however, the panhandle landings for menhanden are orders of magnitude lower than those reported in Louisiana and Mississippi. Although menhaden are primarily an industrial fish in other parts of their range, along Florida's west coast most menhaden landed are sold as bait. Other important baitfishes include Spanish sardines, round scad, and thread herring. These high-quantity species were caught almost exclusively by purse net fishing in inshore gulf waters. When compared with the other fisheries, the numbers of trips required to produce baitfishes and coastal pelagic species were low. Although ranking first in weight landed, the purse net fishery for baitfishes was not as valuable as other fisheries. Gulf County produced the highest average baitfish landings within the panhandle region for the study period. Fishing effort increased over the 1983 to 1993 period while landings peaked in 1989 then fluctuated for the remainder of the period. Therefore the CPUE fell during the same time period. In fact, the baitfish fishery showed signs of overfishing or, at least, great stress. If user demand continues as it has over the 1983 to 1993 period, a collapse in the bait fishery is a distinct possibility unless fishery regulations are introduced.

Coastal pelagic fishes including king and Spanish mackerel, cobia, and jacks were an important group to the commercial fisheries of the panhandle. Landings of coastal pelagic fishes were highest on average in Bay County. The ladyfish or tenpounder accounted for the highest portion of the coastal pelagic landings. Gill nets and purse nets are the primary gear type used for coastal pelagic fishes. The panhandle is probably the most important fishing area for this species in the entire Gulf of Mexico (Joyce 1983). Coastal pelagic landings fell during the study period. This is certainly to be expected since both nominal and real income of the fishers is rising at a rapid pace, thereby inducing more fishers and vessels to this fishery. This is a common economic phenomenon in fishery economics where economic rents (e.g., higher than normal profit margins) induce new entrants to the fishery. It is possible that some coastal pelagic fishes landed in panhandle ports were actually caught off adjacent states or counties. This is particularly true for species such as king mackerel. The increase in fishing effort places stress on the coastal pelagic fishery resource which eventually leads to overfishing. The parabolic function did show some slacking time trend in fishing in the 1991 to 1993 period, although this was not statistically significant.

Ranking third in landings behind the baitfishes and coastal pelagic fishes were reef fishes. This species group involved more trips and many more species than the other species. The reef fishery also generated the highest valued finfish landings for the region. Hook and line, bottom longline, and traps were the most important gear types used to catch reef fishes in panhandle waters. Reef fishing for snappers, groupers, gray triggerfish, and amberjacks takes place in offshore shelf waters (20 to 100 m) over natural

or artificial hard bottom. Certain deep-water reef fishes such as snowy, yellowedge, and warsaw groupers are fished exclusively in waters off the shelf break. Reef fish landings were highest in Bay, Escambia, Franklin, and Okaloosa counties. It is important to note that reef fishes as a group could be caught off other states then landed in panhandle counties. In fact, reef fishes along with coastal pelagic fishes would be the most sought after groups by panhandle fishermen who venture over to the oil and gas platforms off the adjacent states. The reef fish fishery showed a decline during the early years of the 1983 to 1993 study period but finished the series on the rise. This may be explained by the overfishing of red snapper in the early 1980's and recent recovery in the stocks of this species due to various fishery management measures to protect this population (Gulf of Mexico Fishery Management Council 1995).

One might think that dockside value should move in the opposite direction when compared to landings. That is, a fall in landings should increase price, all other things remaining constant. However, this is only true if the eight county landings have a significant impact on dockside prices. It would appear that these counties are price-takers (see Figure 23(a)) in that their dockside prices are determined at the State or regional level and not by local landings. The conclusion is that despite the depressing impact on the value of inflation, the fundamental finding is that even real dockside value displayed the U-shaped time series and was statistically significant at the 5% level. The importance of this finding is that despite the depression in the reef fish fishery in the 1980's, the fishery is now experiencing rising real dockside value and hence income to the fishers. Whether this will continue is beyond the scope of this analysis.

Oceanic pelagic fishes were not landed in high quantities relative to other finfish groups; however, they were very valuable, ranking second to reef fishes in average dollar value of the landings. The most important species, yellowfin tuna and swordfish, were caught primarily by surface longline in oceanic waters offshore of the shelf break. Bay County and to lesser extent Santa Rosa County were the only counties reporting significant proportions of oceanic pelagic fishes in their landings. Because the oceanic pelagic fishery operates in the open gulf, catches responsible for panhandle landings could have been made in waters outside of the region. Of particular importance, neither nominal or real dockside price showed any time trends using the three forms of time trends selected for this study. For the eight counties, it is questionable whether the trend in landings greatly impacts dockside prices. That is, this fishery may be more of a price-taker (see Figure 23(a)) where the volume of landings has little, if any, impact on dockside prices. In this case, prices are determined at the State or collection of States level in the Gulf of Mexico. The working hypotheses is that demand for oceanic pelagic fishes accelerated very rapidly over the 1983 to 1986 period and leveled off over the remainder of the period. A further investigation of the reasons behind this hypothesis may entail a disaggregation of this category and further study of each species plus more sophisticated econometric analysis which is beyond the scope of this report. But, it can be said that the oceanic pelagic fishery in northwest Florida has exhibited rather static conditions in terms of catch, price, and of course, dockside value from 1987 to 1993.

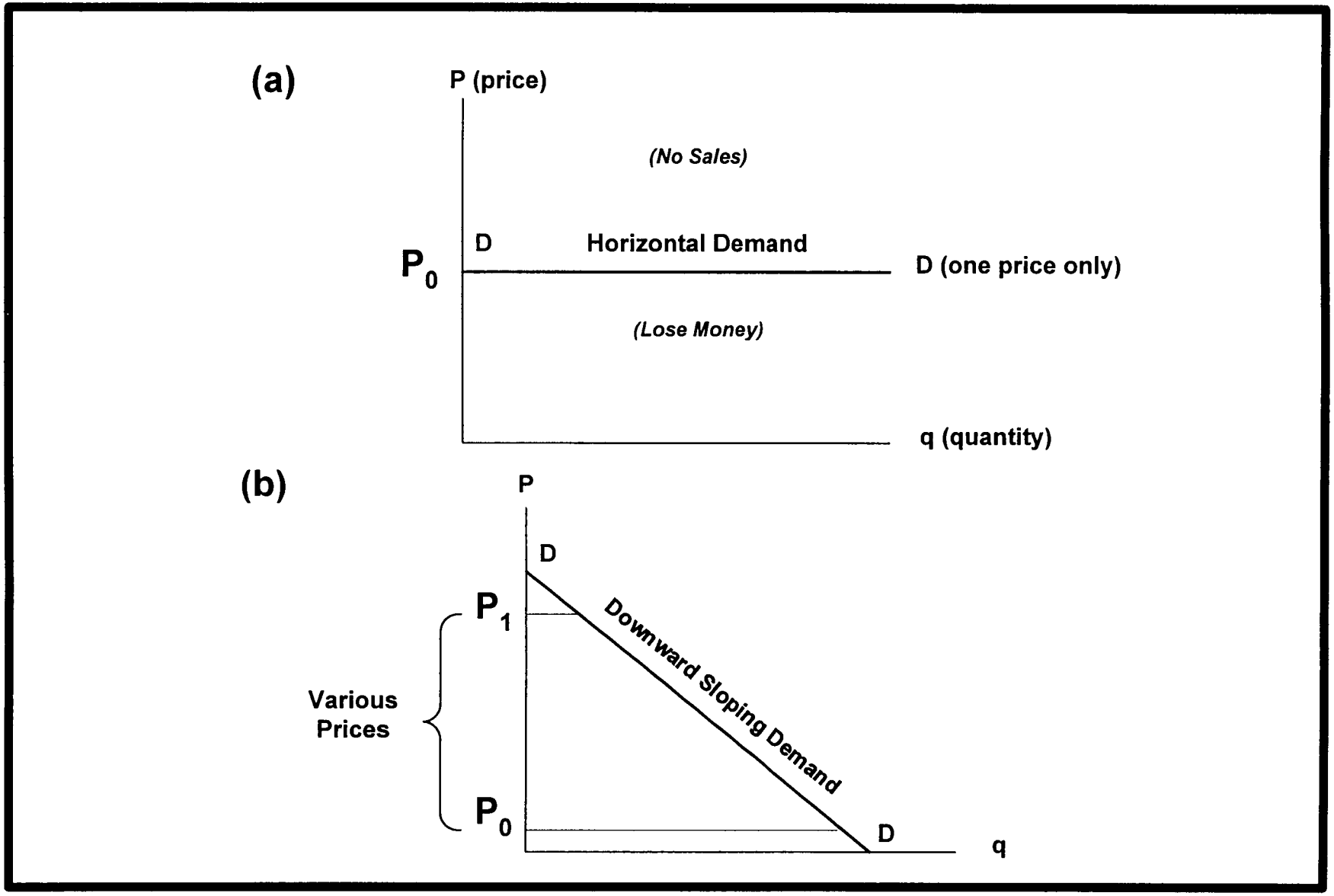

Figure 23. Examples of the relationship between price and quantity in commercial fisheries. A price-taker (a) has little control over market price and must sell at market price or lose money. A price-maker (b) has some control over market price because its product is somewhat differentiated from other products.

The remaining group of finfishes landed by commercial fishers in the panhandle, the demersal fishes, was taken almost exclusively from inland (estuarine) waters. The primary gear types used in this fishery are purse nets and gill nets. Readers should be aware that in July 1995, the State of Florida enacted a ban upon the use of entanglement nets (gill and purse nets but not trawls) in State waters (14.5 km offshore on the Gulf of Mexico side of the state). How this net ban will affect the panhandle's purse net and gill net fisheries which include baitfishes, coastal pelagic fishes, and demersal fishes is not known.

Striped mullet was the key species in the demersal landings, followed by spotted seatrout. These species were caught mostly by gill nets, and the number of trips made annually was high compared with the other net fisheries. The mullet fishery is relatively valuable, due in part to the recent increases in demand for the roe in foreign markets. Most panhandle counties reported significant landings of striped mullet, but Escambia and Franklin counties were the leaders. The landings of demersal species fell by 34% over the study period. Important variables impacting fishery landings include fishing pressure, management measures, loss of habitat, and pollution. Many of the demersal species are estuarine-dependent so the quality of the estuarine habitats is critical to maintaining catch levels. In addition, little data are available on trends in various pollutants that could impact the juvenile and adult segments of the populations. In terms of landings, the trend analysis indicated some optimism in the latter part of the 1983 to 1993 period. Several members of this species group were subject to legislation during the study period including red drum, striped mullet, and spotted seatrout. After a review of the trends in the demersal fishery discussed above, it is concluded that the fall in landings placed an upward pressure on dockside prices for the period as a whole. This amounted to traveling up the demand curve for the demersal fishery (as landings fall, prices rise to ration the product among buyers and hence the ultimate consumers) (Figure 24). The stability of both nominal and real dockside value indicates that the price elasticity (% change in landings in response to a % change in price) is near unity, other things held constant. It is believed that the U-shaped landings and value of the catch curves discussed above are due to very recent events as landings recovered over the 1991 to 1993 period. This finding is of interest since real income of the fishers has been rising over this recent period.

The dominant invertebrate species groups in the panhandle fisheries were shrimps, oysters, and blue crab. These three species groups were almost exclusively fished in inland (estuarine) waters. Some shrimping does occur in inshore gulf waters in the vicinity of Cape St. George and Cape San Blas, but the majority of the effort is in inland waters. Shrimps were the most important invertebrate group landed in the panhandle. The value of the shrimp landings exceeded that of all fish or invertebrate species groups. Shrimps were caught with otter trawls, butterfly nets, and beam trawls. Franklin County led all others in overall shrimp landings. The shrimps are the only invertebrate group where the actual catches may have been made in areas outside of the panhandle (i.e., other states or counties) region. Although little shrimping is done in shelf waters offshore of the Florida panhandle, shrimp trawling would be one fishery that may have conflicts with oil and gas development, primarily because the platforms and

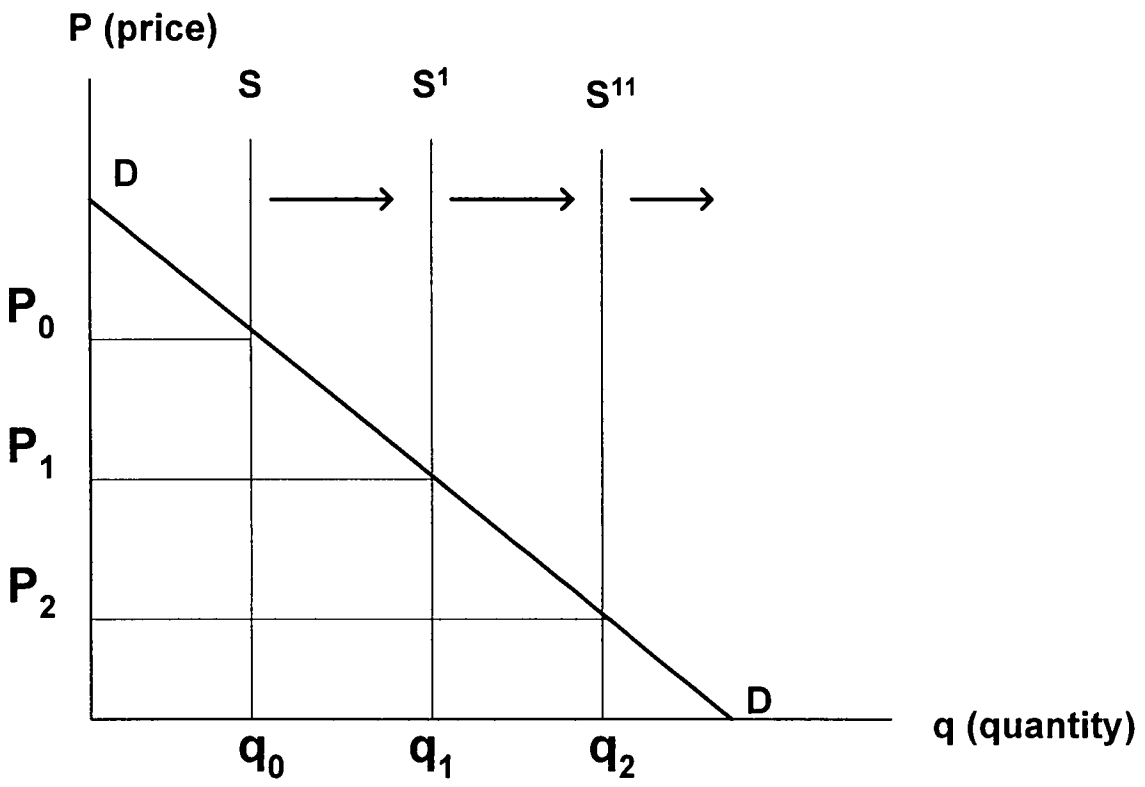

Figure 24. An example of a demand curve in commercial fisheries. Vertical lines are supply (S), slanted line is demand (D).

associated structures would act as snags to the trawling gear. The trend analysis revealed that shrimp landings fell by 382,659 kg over the study period. This is very convincing evidence that the shrimp fishery in northwest Florida is undergoing a serious economic decline. Turtle excluder devices (TEDs) were introduced during this period of analysis as a fishery management measure to protect endangered turtles that are a bycatch of the shrimping operation. In addition to TEDs, imports of pond raised shrimp from South America kept dockside prices from increasing in the gulf coast states. This, in turn, discouraged many shrimp fishers, thereby contributing to the decline in landings of shrimp. Such trends may continue as imports become an ever increasing share of the total consumption of shrimp in the United States. As a consequence, the domestic industry may suffer greatly. The shrimp industry is facing the introduction of devices to exclude other bycatch which may result in further reduction in the productivity of the individual shrimp fishers. This issue is far from solved and even is still open to debate as to the new devices' impact on productivity. However, it is important to mention here. It is possible that there may have been other environmental forces impinging on the shrimp stock during this period.

Blue crab was an important component of the invertebrate fishery. Blue crab was caught mostly by trap, but a small proportion was contributed by the shrimp trawl fishery. The value of blue crab landings was considerably less than the value of the shrimp landings. The number of trips expended to capture crabs was less than that for either oysters or shrimps. Most panhandle counties reported blue crab landings. The blue crab landings declined significantly while the dockside prices increased over the 1983 to 1993 period. The blue crab catch in northwest Florida is an important part of the United States supply of this food commodity; therefore, changes in this catch will greatly impact prices. In contrast to being a price-taker, this fishery could be described as a price-maker (Figure 23(b)). Generally, the price elasticity for crabs is less than unity; therefore, the time trend analysis revealed that there is a case for this assertion. That is, price increased as landings fell while the value of landings showed some increase. This is exactly what would be expected when price inelasticity is present (i.e., a rise in price is not completely offset by a reduction in catch resulting in an increase in revenues). In summary, the crab catches appear to be suffering from overfishing or environmental variables and this is producing an unhealthy economic condition for those using the crab resource.

Oyster landings ranked third in weight and second in value behind shrimps for the panhandle region. Oysters were harvested with tongs, a traditional method that is labor intensive, but allows for a more sustainable fishery than would be possible if more efficient means were used. The county contributing the most pounds and value to the landings was Franklin. Franklin County produced about 90% of the oysters landed in Florida. The Franklin landings come from the extensive oyster beds of Apalachicola Bay. The most common factor limiting the harvesting of oysters is high coliform counts or bacterial levels forming in bays and inlets. In addition, various kinds of toxic pollutants can effect oyster populations in bays where there is limited flushing into Gulf of Mexico waters.

Oyster landings declined over the study period. Prices rose as landings decreased. Thus, the following conclusion is evident: the oyster fishery in northwest Florida was static over the 1983 to 1993 period with the fall in the harvest offset by a gradual rise in prices, thereby holding nominal and real dockside value approximately constant. The static nature of the oyster fishery is also true with respect to fishing trips over the period of analysis. This means that real income per trip of the fishers showed no increase over an 11-year period. This trend will not attract individuals to the oyster fishery. Oysters are plagued by marketing problems in that the public is increasingly aware of public health problems associated with eating raw oysters. This factor undoubtedly held prices from increasing as the demand curve for oysters shifted down and to the left (i.e., demand for this product fell due to unfavorable publicity). The static nature of fishing effort and technology in the oyster industry is consistent with a lack of productivity in this fishery. In summary, the northwest Florida oyster fishery has shown little economic change over the 1983 to 1993 period in some of the fundamental economic indicators like prices and value; but, this static characteristic brings no economic progress to those engaged in this fishery.

Existing Relationship to OCS Oil and Gas Development

With the exception of the questions asked by the MRFSS interviewers regarding fishing around oil and gas platforms, none of the fisheries data sets reviewed provided exact locations of fishing. This greatly hampered our ability to assess the existing relationship between panhandle fisheries and the oil and gas structures in the northern Gulf of Mexico. The MRFSS results (see Chapter 4) showed that very few recreational anglers originating from Florida panhandle ports fished around oil and gas platforms offshore of Alabama, Mississippi, or Louisiana. The data also indicated, as expected, that numerous residents of Alabama, Mississippi, and Louisiana regularly fished around oil and gas platforms. We would not expect many recreational anglers based in the Florida panhandle to have vessels capable of making the long trips needed to reach most platforms. The exception to this would be in Escambia County where smaller vessels with less fuel capacity could make the trip to oil and gas platforms offshore of neighboring Alabama.

Commercial fishers equipped for offshore fishing do not have their operating ranges constrained by vessel size or fuel capacity. Many vessels equipped for longlining, hook and lining, or purse netting would be capable of travelling great distances to fish. Capture sites cannot be obtained from landings data. NMFS mandatory logbook data is required of persons holding Federal permits for shark longline and reef fish fisheries. Latitude and longitude of fishing area are to be entered, but these fields were rarely filled out in the data set or if they were submitted the positions were not accurate. Therefore, we can only speculate that the most likely candidates for long-range fishing from the panhandle are those fishers targeting oceanic pelagic, reef, and coastal pelagic (king mackerel) fishes. Members of all of these species groups will associate with oil and gas platforms and anglers seeking these species will often travel considerable distances to productive grounds.

There is some evidence that vessels in the reef fish fishery of the panhandle regularly fish around oil and gas platforms in neighboring waters. In 1981, Dimitroff (1982) interviewed panhandle-based commercial fishers who targeted reef fishes, mostly snappers and groupers. He found that those fishers based in the eastern counties of Gulf, Franklin, and Wakulla had smaller vessels equipped with less sophisticated electronic gear and were not motivated to travel long distances to fish. In contrast reef fishers operating from ports in western panhandle counties of Escambia, Santa Rosa, Okaloosa, and Bay had larger vessels with the latest in electronic fish finding and navigational equipment. These fishers were highly motivated and regularly traveled great distances to find productive fishing grounds. Dimitroff (1982) found that vessels from Pensacola (Escambia County) and Niceville (Okaloosa) fished almost exclusively around oil and gas structures in the waters of adjacent states. He estimated that 112 panhandle-based vessels regularly fished the offshore oil and gas structures off Mississippi and Louisiana. It is very likely that this trend is continuing today, however, only an on-site interview survey similar to Dimitroff's (1982) study will provide the necessary information.

The analysis of catches and trends provided in this report suggest that panhandle-based commercial fishers expend considerable effort to land high quantities of reef fishes. Unfortunately, from landings data alone we cannot determine the proportion of these landings currently being caught around oil and gas platforms.

Data Gaps and Recommendations

Obviously, as discussed above, the most important data gap that remains is the problem of ascertaining precisely where exactly anglers fish and how that relates to existing oil and gas structures. The statistical grid system used by NMFS was supposed to provide this information, as was the NMFS logbook programs. Similarly, Florida's FTTS data set includes a grid and distance from shore category to be filled out on angler trip tickets. Thus the problem is well known and has been incorporated into most of the existing data collection programs. The difficulty seems to be getting cooperation by fishers as to where they fish. This is an age old dilemma, and reef fishers in particular are reluctant to divulge accurate positions of fishing spots. In today's fisheries operations with the advent of navigation equipment such as Loran C and Global Positioning System, relocating fixed structures requires little more than a working knowledge of an electronic receiving unit. Once positions are available, more fishers will visit sites and the fishing pressure will increase to the point of overfishing. Commercial fishers are in a situation where the more information they provide fisheries and environmental managers the better jobs the managers can do, however, if some of that information involves relinquishing little known fishing areas, the fishers will perceive it as a negative process.

We recommend that if this issue of Florida fishers using oil and gas platforms offshore of other states as fishing sites remains important to managers charged with assessing the potential effects of oil and gas development in the Florida panhandle, then an independent survey should be conducted to provide the answers. A properly designed, statistically valid survey of commercial and recreational fishers in panhandle ports would be the most expedient route for obtaining the answer. The interview study by Dimitroff

(1982) provided the only information available at this time concerning the relationship between oil and gas structures and panhandle fishermen.

After summarizing and reviewing the available fisheries data for the Florida panhandle region we offer the following recommendations to be considered as part of the potential effects of oil and gas development offshore the Florida panhandle:

- Detail the success of known artificial reefs (particularly those consisting of old oil and gas platforms) in Florida waters with respect to fisheries enhancement;

- Conduct experiments with newly constructed or known artificial reefs to determine colonization rates, species composition, abundance, residence status, and behavior of fishes associating with the structures;

- Establish an experimental platform for detailed, statistically designed studies (preferably replicate platforms);

- Design and implement dockside interview surveys to determine unequivocally the extent to which panhandle anglers fish around oil and gas structures in adjacent waters; and

- Design and implement interview surveys to determine the locations of shrimping grounds to avert potential gear conflicts with trawlers.

These recommendations should help predict the type of fisheries most likely to be affected either negatively or positively by the placement oil and gas structures off the Florida panhandle.

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APPENDICES

APPENDIX A

SPECIES AND GEAR CLASSIFICATION LISTS FOR RECREATIONAL AND COMMERCIAL FISHERIES DATA SETS

List of Tables

Table A.1. Master species list for Marine Recreational Fisheries Statistics Survey (MRFSS) and Headboat Survey (HS) recreational data sets.

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
BAITFISHES			
Skipjack herring	*Alosa chrysochloris*	x	
Alewife	*Alosa pseudoharengus*	x	
Herring genus	*Alosa* spp.	x	
Silverside family	Atherinidae	x	
Finescale menhaden	*Brevoortia gunteri*	x	
Gulf menhaden	*Brevoortia patronus*	x	
Menhaden genus	*Brevoortia* spp.	x	
Herring family	Clupeidae	x	
Mackerel scad	*Decapterus macarellus*	x	x
Round scad	*Decapterus punctatus*	x	
Redtail scad	*Decapterus tabl*	x	
Round herring	*Etrumeus teres*	x	
Scaled sardine	*Harengula jaguana*	x	
Ballyhoo	*Hemiramphus brasiliensis*	x	
Atlantic thread herring	*Opisthonema oglinum*	x	
Bigeye scad	*Selar crumenophthalmus*	x	x
Rough scad	*Trachurus lathami*	x	
COASTAL PELAGIC FISHES			
African pompano	*Alectis ciliaris*	x	x
Bullet mackerel	*Auxis rochei*		x
Leatherjacket family	Balistidae	x	
Jack family	Carangidae	x	
Blue runner	*Caranx crysos*	x	x
Crevalle jack	*Caranx hippos*	x	x
Horse-eye jack	*Caranx latus*	x	
Jack genus	*Caranx* spp.	x	
Requiem shark family	Carcharhinidae	x	
Blacknose shark	*Carcharhinus acronotus*	x	
Finetooth shark	*Carcharhinus isodon*	x	
Bull shark	*Carcharhinus leucas*	x	x
Blacktip shark	*Carcharhinus limbatus*	x	x
Spinner shark	*Carcharhinus brevipinna*		x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Dusky shark	*Carcharhinus obscurus*	x	x
Sandbar shark	*Carcharhinus plumbeus*	x	x
Requiem shark genus	*Carcharhinus* spp.	x	
Atlantic bumper	*Chloroscombrus chrysurus*	x	
Ladyfish	*Elops saurus*	x	
Little tunny	*Euthynnus alletteratus*	x	x
Bluntnose jack	*Hemicaranx amblyrhynchus*	x	
Eagle ray family	Myliobatidae	x	
Lemon shark	*Negaprion brevirostris*	x	x
Sand tiger	*Odontaspis taurus*	x	
Leatherjack	*Oligoplites saurus*	x	x
Gulf butterfish	*Peprilus burti*	x	
Butterfish	*Peprilus triacanthus*	x	
Bluefish	*Pomatomus saltatrix*	x	x
Cobia	*Rachycentron canadum*	x	
Cownose ray	*Rhinoptera bonasus*	x	
Atlantic sharpnose shark	*Rhizoprionodon terraenovae*	x	x
Chub mackerel	*Scomber japonicus*	x	x
Atlantic mackerel	*Scomber scombrus*		x
King mackerel	*Scomberomorus cavalla*	x	x
Spanish mackerel	*Scomberomorus maculatus*	x	x
Cero	*Scomberomorus regalis*	x	x
Mackerel family	Scombridae	x	
Lookdown	*Selene vomer*	x	x
Banded rudderfish	*Seriola zonata*	x	
Scalloped hammerhead	*Sphyrna lewini*	x	
Bonnethead	*Sphyrna tiburo*	x	
Butterfish family	Stromateidae	x	
Permit	*Trachinotus falcatus*	x	
Ribbonfish family	Trachipteridae	x	
Cottonmouth jack	*Uraspis secunda*		x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
DEMERSAL FISHES			
Three-eye flounder	*Ancylopsetta dilecta*	x	
Ocellated flounder	*Ancylopsetta quadrocellata*	x	
Unidentified eel	Anguilliformes	x	
Sheepshead	*Archosargus probatocephalus*	x	
Sea bream	*Archosargus rhomboidalis*	x	
Sea catfish family	Ariidae	x	
Hardhead catfish	*Arius felis*	x	x
Gafftopsail catfish	*Bagre marinus*	x	x
Blue croaker	*Bairdiella batabana*	x	
Silver perch	*Bairdiella chrysoura*	x	
Toadfish family	Batrachoididae	x	x
Lefteye flounder family	Bothidae	x	x
Bearded brotula	*Brotula barbata*	x	x
Grass porgy	*Calamus arctifrons*	x	x
Whitebone porgy	*Calamus leucosteus*		x
Goldface tilefish	*Caulolatilus chrysops*		x
Rock sea bass	*Centropristis philadelphica*	x	x
Black dogfish	*Centroscyllium fabricii*	x	
Striped burrfish	*Chilomycterus schoepfi*	x	
Burrfish genus	*Chilomycterus* spp.	x	
Spotted whiff	*Citharichthys macrops*	x	
Conger eel	*Conger oceanicus*	x	x
Sand seatrout	*Cynoscion arenarius*	x	x
Spotted seatrout	*Cynoscion nebulosus*	x	
Silver seatrout	*Cynoscion nothus*	x	x
Seatrout genus	*Cynoscion* spp.	x	
Killifish family	Cyprinodontidae	x	
Flying gurnard	*Dactylopterus volitans*		x
Stingray family	Dasyatidae	x	x
Southern stingray	*Dasyatis americana*	x	
Atlantic stingray	*Dasyatis sabina*	x	
Bluntnose stingray	*Dasyatis say*	x	

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Stingray genus	*Dasyatis* spp.	x	
Dwarf sand perch	*Diplectrum bivittatum*	x	
Sand perch	*Diplectrum formosum*	x	x
Sand perch genus	*Diplectrum* spp.	x	
Spotfin mojarra	*Eucinostomus argenteus*	x	
Silver jenny	*Eucinostomus gula*	x	
Gulf killifish	*Fundulus grandis*	x	
Goby family	Gobiidae	x	
Blackedge moray	*Gymnothorax nigromarginatus*		x
Ocellated moray	*Gymnothorax saxicola*		x
Pearly razorfish	*Hemipteronotus novacula*		x
Shark, unidentified	Hexanchiformes		x
Smooth puffer	*Lagocephalus laevigatus*		x
Pinfish	*Lagodon rhomboides*	x	x
Spot	*Leiostomus xanthurus*	x	
Goosefish, unidentified	Lophiidae		x
Southern kingfish	*Menticirrhus americanus*	x	
Gulf kingfish	*Menticirrhus littoralis*	x	
Northern kingfish	*Menticirrhus saxatilis*	x	
Kingfish genus	*Menticirrhus* spp.	x	
Atlantic croaker	*Micropogonias undulatus*	x	
Striped mullet	*Mugil cephalus*	x	
White mullet	*Mugil curema*	x	
Mullet genus	*Mugil* spp.	x	
Mullet family	Mugilidae	x	
Smooth dogfish	*Mustelus canis*	x	x
Smoothhound genus	*Mustelus* spp.	x	
Batfish family	Ogcocephalidae	x	
Snake eel family	Ophichthidae	x	
Palespotted eel	*Ophichthus ocellatus*		x
Cusk-eel family	Ophidiidae	x	
Gulf toadfish	*Opsanus beta*	x	
Leopard toadfish	*Opsanus pardus*	x	

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Toadfish genus	*Opsanus* spp.	x	
Oyster toadfish	*Opsanus tau*	x	
Pigfish	*Orthopristis chrysoptera*	x	x
Gulf flounder	*Paralichthys albigutta*	x	
Summer flounder	*Paralichthys dentatus*		x
Southern flounder	*Paralichthys lethostigma*	x	
Lefteye flounder genus	*Paralichthys* spp.	x	
Unidentified flounder or sole	Pleuronectiformes	x	
Black drum	*Pogonias cromis*	x	x
Atlantic threadfin	*Polydactylus octonemus*	x	
Burro grunt	*Pomadasys crocro*	x	
Searobin genus	*Prionotus* spp.	x	
Clearnose skate	*Raja eglanteria*	x	
Skate genus	*Raja* spp.	x	
Unidentified skate or ray	Rajiformes	x	x
Atlantic guitarfish	*Rhinobatos lentiginosus*	x	
Drum family	Sciaenidae	x	
Red drum	*Sciaenops ocellatus*	x	x
Sole family	Soleidae	x	
Marbled puffer	*Sphoeroides dorsalis*	x	
Southern puffer	*Sphoeroides nephelus*	x	
Least puffer	*Sphoeroides parvus*	x	
Puffer genus	*Sphoeroides* spp.	x	
Dogfish shark family	Squalidae	x	
Longspine porgy	*Stenotomus caprinus*	x	
Scup	*Stenotomus chrysops*		x
Dusky flounder	*Syacium papillosum*	x	x
Tonguefish genus	*Symphurus* spp.	x	
Pipefish family	Syngnathidae	x	
Lizardfish family	Synodontidae	x	
Inshore lizardfish	*Synodus foetens*	x	x
Sand diver	*Synodus intermedius*	x	
Offshore lizardfish	*Synodus poeyi*	x	

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Lizardfish genus	*Synodus* spp.	x	
Puffer family	Tetraodontidae	x	x
Snakefish	*Trachinocephalus myops*	x	
Florida pompano	*Trachinotus carolinus*	x	
Atlantic cutlassfish	*Trichiurus lepturus*	x	
Searobin family	Triglidae	x	x
Stargazer family	Uranoscopidae	x	
Yellow stingray	*Urolophus jamaicensis*	x	
Carolina hake	*Urophycis earlli*		x
Southern hake	*Urophycis floridana*	x	x
Tricorn batfish	*Zalieutes mcgintyi*	x	
Eelpout family	Zoarcidae	x	
OCEANIC PELAGIC FISHES			
Wahoo	*Acanthocybium solandri*	x	x
Thresher shark	*Alopias vulpinus*	x	
Ocean triggerfish	*Canthidermis sufflamen*	x	
Silky shark	*Carcharhinus falciformis*	x	x
Pompano dolphin	*Coryphaena equisetis*	x	
Dolphin	*Coryphaena hippurus*	x	x
Dolphin genus	*Coryphaena* spp.	x	
Rainbow runner	*Elagatis bipinnulata*	x	x
Flyingfish family	Exocoetidae	x	
Tiger shark	*Galeocerdo cuvier*	x	x
Sailfish	*Istiophorus platypterus*		x
Shortfin mako	*Isurus oxyrinchus*	x	
Mako shark	*Isurus* sp.		x
Skipjack tuna	*Katsuwonus pelamis*	x	
Manta family	Mobulidae	x	
Pilotfish	*Naucrates ductor*	x	x
Blue shark	*Prionace glauca*	x	
Atlantic bonito	*Sarda sarda*	x	x
Scalloped hammerhead	*Sphyrna lewini*		x
Great hammerhead	*Sphyrna mokarran*	x	x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Hammerhead shark genus	*Sphyrna* spp.	x	
White marlin	*Tetrapturus albidus*	x	
Yellowfin tuna	*Thunnus albacares*		x
Blackfin tuna	*Thunnus atlanticus*	x	x
REEF FISHES			
Unicorn filefish	*Aluterus monoceros*	x	
Orange filefish	*Aluterus schoepfi*		x
Black margate	*Anisotremus surinamensis*	x	
Porkfish	*Anisotremus virginicus*		x
Frogfish genus	*Antennarius* spp.	x	
Black snapper	*Apsilus dentatus*	x	
Trumpetfish	*Aulostomus maculatus*	x	
Gray triggerfish	*Balistes capriscus*	x	x
Queen triggerfish	*Balistes vetula*	x	x
Filefish, unidentified	Balistidae		x
Spotfin hogfish	*Bodianus pulchellus*		x
Spanish hogfish	*Bodianus rufus*		x
Jolthead porgy	*Calamus bajonado*	x	x
Saucereye porgy	*Calamus calamus*	x	x
Whitebone porgy	*Calamus leucosteus*	x	x
Knobbed porgy	*Calamus nodosus*		x
Sheepshead porgy	*Calamus penna*	x	x
Littlehead porgy	*Calamus proridens*		x
Ocean triggerfish	*Canthidermis sufflamen*		x
Yellow jack	*Caranx bartholomaei*	x	
Black jack	*Caranx lugubris*	x	
Bar jack	*Caranx ruber*	x	
Blueline tilefish	*Caulolatilus microps*		x
Bank sea bass	*Centropristis ocyurus*	x	x
Sea bass genus	*Centropristis* spp.	x	
Black sea bass	*Centropristis striata*	x	x
Cherubfish	*Centropyge argi*	x	
Coney	*Epinephelus fulvus*		x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Atlantic spadefish	*Chaetodipterus faber*	x	x
Butterflyfish genus	*Chaetodon* spp.	x	
Clinid family	Clinidae	x	
Barred grunt	*Conodon nobilis*	x	
Red hogfish	*Decodon puellaris*	x	
Balloonfish	*Diodon holocanthus*	x	
Porcupinefish	*Diodon hystrix*	x	x
Spottail pinfish	*Diplodus holbrooki*	x	x
Marbled grouper	*Epinephelus inermis*	x	
Unidentified grouper	*Epinephelus/Mycteroperca* spp.	x	
Rock hind	*Epinephelus adscensionis*	x	x
Graysby	*Epinephelus cruentatus*	x	x
Speckled hind	*Epinephelus drummondhayi*	x	x
Yellowedge grouper	*Epinephelus flavolimbatus*	x	x
Red hind	*Epinephelus guttatus*	x	x
Jewfish	*Epinephelus itajara*	x	
Red grouper	*Epinephelus morio*	x	x
Warsaw grouper	*Epinephelus nigritus*	x	x
Snowy grouper	*Epinephelus niveatus*	x	x
Grouper genus (*Epinephelus*)	*Epinephelus* spp.	x	
Nassau grouper	*Epinephelus striatus*	x	x
Cubbyu	*Equetus umbrosus*		x
Queen snapper	*Etelis oculatus*	x	
Bluespotted cornetfish	*Fistularia tabacaria*	x	x
Red cornetfish	*Fistularia villosa*		x
Nurse shark	*Ginglymostoma cirratum*	x	x
Spanish flag	*Gonioplectrus hispanus*		x
Green moray	*Gymnothorax funebris*	x	
Spotted moray	*Gymnothorax moringa*	x	
Blackedge moray	*Gymnothorax nigromarginatus*	x	
Grunt family	Haemulidae	x	
Margate	*Haemulon album*	x	x
Tomtate	*Haemulon aurolineatum*	x	x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Spanish grunt	*Haemulon macrostomum*	x	
Sailors choice	*Haemulon parra*	x	
White grunt	*Haemulon plumieri*	x	x
Bluestriped grunt	*Haemulon sciurus*	x	x
Grunt genus	*Haemulon* spp.	x	
Striped grunt	*Haemulon striatum*	x	x
Slippery dick	*Halichoeres bivittatus*	x	x
Painted wrasse	*Halichoeres caudalis*	x	
Queen angelfish	*Holacanthus ciliaris*	x	x
Blue angelfish	*Holacanthus bermudensis*	x	
Squirrelfish family	Holocentridae	x	
Squirrelfish	*Holocentrus adscensionis*	x	x
Longspine squirrelfish	*Holocentrus rufus*	x	
Wrasse family	Labridae	x	
Hogfish	*Lachnolaimus maximus*	x	x
Scrawled cowfish	*Lactophrys quadricornis*	x	
Boxfish genus	*Lactophrys* spp.	x	
Trunkfish	*Lactophrys trigonus*	x	
Wrasse bass	*Liopropoma eukrines*	x	
Tripletail	*Lobotes surinamensis*	x	x
Snapper family	Lutjanidae	x	
Mutton snapper	*Lutjanus analis*	x	x
Schoolmaster	*Lutjanus apodus*	x	
Blackfin snapper	*Lutjanus buccanella*		x
Red snapper	*Lutjanus campechanus*	x	x
Cubera snapper	*Lutjanus cyanopterus*	x	x
Gray snapper	*Lutjanus griseus*	x	x
Dog snapper	*Lutjanus jocu*	x	x
Mahogany snapper	*Lutjanus mahogoni*	x	x
Snapper genus	*Lutjanus* spp.	x	
Lane snapper	*Lutjanus synagris*	x	x
Silk snapper	*Lutjanus vivanus*	x	x
Sand tilefish	*Malacanthus plumieri*		x

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
Bass genus	*Micropterus* spp.	x	
Moray, unidentified	Muraenidae		x
Moray family	Muraenidae	x	x
Black grouper	*Mycteroperca bonaci*	x	x
Yellowmouth grouper	*Mycteroperca interstitalis*	x	x
Gag	*Mycteroperca microlepis*	x	x
Scamp	*Mycteroperca phenax*	x	x
Comb grouper	*Mycteroperca rubra*	x	
Grouper genus (*Mycteroperca*)	*Mycteroperca* spp.	x	
Yellowfin grouper	*Mycteroperca venenosa*		x
Yellowtail snapper	*Ocyurus chrysurus*	x	x
Red porgy	*Pagrus pagrus*	x	x
Creole-fish	*Paranthias furcifer*		x
Bigeye	*Priacanthus arenatus*		x
Short bigeye	*Pristigenys alta*	x	x
Wenchman	*Pristipomoides aquilonaris*		x
Vermilion snapper	*Rhomboplites aurorubens*	x	x
Greater soapfish	*Rypticus saponaceus*	x	
Soapfish genus	*Rypticus* spp.	x	
Spotted soapfish	*Rypticus subbifrenatus*		x
Parrotfish family	Scaridae	x	x
Scorpionfish, unidentified	Scorpaenidae		x
Greater amberjack	*Seriola dumerili*	x	x
Lesser amberjack	*Seriola fasciata*	x	x
Almaco jack	*Seriola rivoliana*	x	x
Amberjack genus	*Seriola* spp.	x	
Sea bass family	Serranidae	x	
Tattler	*Serranus phoebe*		x
Porgy family	Sparidae	x	
Great barracuda	*Sphyraena barracuda*	x	x
Guaguanche	*Sphyraena guachancho*	x	x
Barracuda genus	*Sphyraena* spp.	x	

Table A.1. (Continued).

Common Name	Species Name	Data Set	
		MRFSS[a]	HS[b]
OTHER FISHES			
American eel	*Anguilla rostrata*	x	
Needlefish family	Belonidae	x	
Sunfish family	Centrarchidae	x	
Bulleye	*Cookeolus japonicus*	x	
Bigeye cigarfish	*Cubiceps pauciradiatus*	x	
Common carp	*Cyprinus carpio*	x	
Threadfin shad	*Dorosoma petenense*	x	
Remora family	Echeneidae	x	
Sharksucker	*Echeneis naucrates*	x	
Bullhead catfish family	Ictaluridae	x	
Channel catfish	*Ictalurus punctatus*	x	
Alligator gar	*Lepisosteus spatula*	x	
Gar genus	*Lepisosteus* spp.	x	
Bluegill	*Lepomis macrochirus*	x	
Atlantic tarpon	*Megalops atlanticus*	x	
Largemouth bass	*Micropterus salmoides*	x	
White perch	*Morone americana*	x	
Striped bass	*Morone saxatilis*	x	
Hybrid striped bass	*Morone saxatilis* x *M. chrysops*	x	
Livebearer family	Poeciliidae	x	
Crappie genus	*Pomoxis* spp.	x	
Remora	*Remora remora*	x	x
Atlantic needlefish	*Strongylura marina*	x	
Unidentified (bottom fish)	Unidentified bottom fish	x	
Unidentified fish	Unidentified fish	x	
Unidentified (sharks)	Unidentified shark	x	
Unidentified (surface fish)	Unidentified surface fish	x	

[a] Marine Recreational Statistics Survey, National Marine Fisheries Service, Silver Spring, Maryland.
[b] Headboat Survey, National Marine Fisheries Service, Beaufort, North Carolina.

Table A.2. Master species list for the Florida Trip Ticket System (FTTS) and General Canvass Landings Statistics (GCLS) commercial data sets.

Common Name	Scienfic Name	Data Set	
		FTTS[a]	GCLS[b]
BAITFISHES			
Baitfish		x	
Menhaden (pogies)	*Brevoortia* spp.	x	x
Scad, round (cigarfish)	*Decapterus punctatus*	x	x
Scads (except bigeye)	*Decapturus* spp.		x
Herring, round	*Etrumeus teres*		x
Sardine, scaled	*Harengula jaguana*	x	
Ballyhoo	*Hemiramphus balao or brasiliensis*	x	x
Herring, thread	*Opisthonema oglinum*	x	x
Sardines, Spanish	*Sardinella aurita*	x	x
Scad, bigeye	*Selar crumenophthalmus*	x	x
COASTAL PELAGIC FISHES			
Shark, unclassified		x	x
Shark, unclassified, fins		x	x
Shad (common)	*Alosa* spp.	x	
Jacks, mixed	Carangidae	x	
Jacks, other	Carangidae	x	
Blue runner	*Caranx crysos*	x	x
Jack, crevalle	*Caranx hippos*	x	x
Shark, sandbar	*Carcharhinus plumbeus*		x
Shark, bull	*Carcharhinus leucas*		x
Shark, blacktip	*Carcharhinus limbatus*		x
Shark, dusky	*Carcharhinus obscurus*		x
Atlantic bumper	*Chloroscombrus chrysurus*	x	
Ladyfish (Tenpounder)	*Elops saurus*	x	x
Tunny, little (bonito)	*Euthynnus alletteratus*	x	x
Shark, tiger	*Gaelocerdo cuvier*		x
Shark, lemon	*Negaprion brevirostris*		x
Butterfish, lg	*Peprilus* spp.		x
Butterfish, unc	*Peprilus* spp.		x
Bluefish	*Pomatomus saltatrix*	x	x
Cobia	*Rachycentron canadum*	x	x

Table A.2. (Continued).

Common Name	Scienfic Name	Data Set	
		FTTS[a]	GCLS[b]
Mackerel, king	*Scomberomorus cavalla*	x	x
Mackerel, Spanish	*Scomberomorus maculatus*	x	x
Shark, dogfish, spiny	*Squalus acanthias*		x
Pompano	*Trachinotus carolinus*	x	x
Permit	*Trachinotus falcatus*	x	x
Shark, hammerhead	*Sphyrna* spp.		x
DEMERSAL FISHES			
Sturgeon	*Acipenser* spp.	x	
Catfish	Ariidae	x	
Sea bass, mixed	*Centropristis* spp.	x	
Seatrout, sand (gray)	*Cynoscion arenarius*	x	x
Seatrout, spotted	*Cynoscion nebulosus*	x	x
Seatrout, silver (white)	*Cynoscion nothus*	x	x
Seatrout, weakfish	*Cynoscion* spp.	x	
Rays	Dasyatidae	x	x
Sand perch	*Diplectrum formosum*	x	x
Mojarra	Gerreidae	x	x
Pinfish	*Lagodon rhomboides*	x	x
Spot	*Leiostomus xanthurus*	x	x
Kingfish (whiting)	*Menticirrhus* spp.	x	x
Croaker, Atlantic	*Micropogonias undulatus*	x	x
Mullet, black (roe red)	*Mugil cephalus*	x	x
Mullet with (roe white) (milt)	*Mugil cephalus*		x
Mullet, black (striped)	*Mugil cephalus*	x	x
Mullet, silver	*Mugil curema*	x	x
Pigfish	*Orthopristis chrysoptera*	x	x
Flounders	*Paralichthys* spp.	x	x
Drum, black	*Pogonias cromis*	x	x
Drum, red	*Sciaenops ocellatus*	x	x
OCEANIC PELAGIC FISHES			
Wahoo	*Acanthocybium solandri*	x	x
Dolphin	*Coryphaena hippurus*	x	x
Tuna, skipjack	*Euthynnus pelamis*	x	x
Barrelfish	*Hyperoglyphe perciformis*		x

Table A.2. (Continued).

Common Name	Scienfic Name	Data Set	
		FTTS[a]	GCLS[b]
Marlin, unclassified	Istiophoridae	x	x
Marlin, blue	*Makaira nigricans*	x	x
Marlin, white	*Tetrapterus albidus*	x	x
Tuna, yellowfin	*Thunnus albacares*	x	x
Tuna, blackfin	*Thunnus atlanticus*	x	x
Tuna, bigeye	*Thunnus obesus*	x	x
Tuna, mixed	*Thunnus* spp.	x	x
Tuna, bluefin	*Thunnus thynnus*	x	x
Swordfish	*Xiphias gladius*	x	x
REEF FISHES			
Snapper, black	*Apsilus dentatus*		x
Sheepshead	*Archosargus probatocephalus*	x	x
Triggerfish	*Balistes* spp.	x	x
Tilefish, goldface	*Caulolatilus chrysops*	x	
Tilefish, blueline	*Caulolatilus microps*	x	x
Grouper, mixed	Epinephelinae	x	
Grouper, other	Epinephelinae	x	x
Hind, rock	*Epinephelus adscensionis*		x
Hind, speckled	*Epinephelus drummondhayi*		x
Grouper, yellowedge	*Epinephelus flavolimbatus*	x	x
Hind, red	*Epinephelus guttatus*		x
Jewfish	*Epinephelus itajara*	x	x
Grouper, red	*Epinephelus morio*	x	x
Grouper, misty	*Epinephelus mystacinus*		x
Grouper, warsaw	*Epinephelus nigritus*	x	x
Grouper, snowy	*Epinephelus niveatus*	x	x
Grouper, Nassau	*Epinephelus striatus*	x	x
Snapper, queen	*Etelus oculatus*		x
Grunts	Haemulidae	x	x
Hogfish	*Lachnolaimus maximus*	x	x
Tripletail	*Lobotes surinamensis*		x
Tilefish	*Lopholatilus chamaeleonticeps*	x	x
Snapper, mixed	Lutjanidae	x	
Snapper, other	Lutjanidae	x	

Table A.2. (Continued).

Common Name	Scienfic Name	Data Set	
		FTTS[a]	GCLS[b]
Snapper, mutton	*Lutjanus analis*	x	x
Snapper, blackfin	*Lutjanus buccanella*		x
Snapper, red	*Lutjanus campechanus*	x	x
Snapper, yellowtail	*Lutjanus (=Ocyurus) chrysurus*	x	x
Snapper, cubera	*Lutjanus cyanopterus*		x
Snapper, gray (mangrove)	*Lutjanus griseus*	x	x
Snapper, lane	*Lutjanus synagris*	x	x
Snapper, silk	*Lutjanus vivanus*	x	x
Tilefish, sand	*Malacanthus plumieri*		x
Goatfishes	Mullidae	x	x
Eel, morays	Muraenidae	x	x
Grouper, black	*Mycteroperca bonaci*	x	x
Grouper, gag	*Mycteroperca microlepis*	x	x
Grouper, scamp	*Mycteroperca phenax*	x	x
Grouper, yellowfin	*Mycteroperca venenosa*	x	x
Angelfish	Pomacanthidae	x	x
Wenchman	*Pristipomoides aquilonaris*		x
Snapper, vermilion	*Rhomboplites aurorubens*	x	x
Amberjacks	*Seriola* spp.	x	x
Porgies	Sparidae	x	x
Barracuda	*Sphyraena barracuda*	x	x
OTHER FISHES			
Misc. Food Fish		x	x
Misc. Industrial Fish		x	x
Eels	Anguilliformes	x	x
Tilapia	Cichlidae	x	x
INVERTEBRATES			
Crabs			
Crab, blue (hard)	*Callinectes sapidus*	x	x
Crab, blue (soft)	*Callinectes sapidus*	x	x
Crab, jumbo	*Menippe mercenaria*	x	x
Crab, large	*Menippe mercenaria*	x	x
Crab, medium	*Menippe mercenaria*	x	x
Crab, small	*Menippe mercenaria*	x	x

Table A.2. (Continued).

Common Name	Scienfic Name	Data Set	
		FTTS[a]	GCLS[b]
Crab, stone, ungraded	*Menippe mercenaria*	x	x
Lobsters			
Lobster, spiny	*Panulirus argus*	x	x
Lobster, Spanish	Scyllaridae	x	
Oysters			
Oysters	*Crassostrea virginica*	x	x
Shrimps			
Shrimp, other	Penaeidae	x	
Shrimp, saltwater	Penaeidae	x	
Shrimp, brown	*Penaeus aztecus*	x	x
Shrimp, pink	*Penaeus duorarum*	x	x
Shrimp, white	*Penaeus setiferus*	x	x
Shrimp, bait	*Penaeus* spp.	x	
Shrimp, royal red	*Pleoticus robustus*	x	x
Shrimp, rock	*Scyiconia* spp.	x	x
Other Invertebrates			
Misc. Invertebrates (shellfish)		x	x
Scallops, calico	*Argopecten gibbus*	x	x
Scallops, bay	*Argopecten irradians*	x	x
Squid	Loliginidae	x	x
Clams, hard, chowder	*Mercenaria* spp.	x	x
Clams, hard, littleneck	*Mercenaria* spp.	x	x
Clams, hard, middleneck	*Mercenaria* spp.	x	x
Clams, hard, topneck	*Mercenaria* spp.	x	x
Clams, hard, ungraded	*Mercenaria* spp.	x	x
Octopus	*Octopus* spp.	x	x
Sponge (pieces)	Spongiidae	x	
Conch (helmet and whelks)	Strombidae	x	x
Clams, sunray venus	*Tellina* spp.	x	x

[a] Florida Trip Ticket System, Florida Department of Environmental Protection, St. Petersburg, Florida, 1995.

[b] General Canvass Landings Statistics, National Marine Fisheries Service, Miami, Florida, 1995.

Table A.3. Major fishing gear groups for Florida panhandle commercial fisheries (grids 7 to 10) (From: General Canvass Landings Statistics, National Marine Fisheries Service, 1995).

Group	Gear Type
Cast Nets	Cast Nets
Dredge	Dredge Scallop, Bay
	Dredge Oyster, Common
	Dredge Clam
	Dredge Scallop, Sea
	Dredge Clam Hydraulic
Diving	Diving Outfits, Sponge
	Diving Outfits, Other
Gill Nets	Gill Nets, Drift, Shad
	Gill Nets, Other
	Gill Nets, Drift, Other
	Entangling Nets (Gill) Unspc
	Gill Nets, Stake
	Gill Nets, Drift, Runaround
	Trammel Nets
Hook and Line	Lines Hand, Other
	Rod and Reel
	Electric or Hydraulic Reel
	Lines Troll, Other
	Electric Rod and Reel (Hand)
Long Line	Lines Long Set With Hooks
	Lines Long, Vertical
	Lines Long, Shark
	Lines Long, Reef Fish
	Lines Long Drift With Hooks

Table A.3. (Continued).

Group	Gear Type
Other Gear	Rakes, Oyster
	Bag Nets
	Fyke And Hoop Nets, Turtle
	Fyke And Hoop Nets, Fish
	Hooks, Sponge
	Forks
	Dip Nets, Common
	Lampara & Ring Nets, Other
	Frog Grabs
	Pound Nets, Crab
	Brush Trap
	Push Net
	By Hand, Other
	By Hand, Oyster
	Combined Gears
	Shovels
	Spears
	Rakes, Other
	NOT CODED
Purse Nets	Encirclinling Nets (Purse)
	Purse Seines, Menhaden
	Purse Seines, Mackerel
	Purse Seines, Other
Seines	Haul Seines, Beach
	Haul Seines, Long

Table A.3. (Continued).

Group	Gear Type
Trawls	Trawl Midwater, Paired
	Otter Trawl Bottom, Crab
	Beam Trawls, Shrimp
	Trawls, Unspecified
	Otter Trawl Bottom, Shrimp
	Trawl Bottom, Paired
	Otter Trawl Bottom, Fish
	Beam Trawls, Chopsticks
	Beam Trawls, Crab
	Butterfly Nets
	Otter Trawl Bottom, Scallop
	Otter Trawl Bottom, Other
Tongs	Tongs and Grabs, Other
	Tongs and Grabs, Oyster
Traps	Pots And Traps, Crayfish (freshwater)
	Pots And Traps, Turtle
	Pots And Traps, Spiny Lobster
	Pots And Traps, Octopus
	Pots And Traps, Lobster Ofshor
	Pots And Traps, Lobster Inshor
	Pots And Traps, Fish
	Pots And Traps, Eel
	Pots And Traps, Crab, Other
	Pots And Traps, Crab, Blue

APPENDIX B

RECREATIONAL FISHERIES DATA FOR THE FLORIDA PANHANDLE, 1983-1993

List of Tables

Table B.1. Estimated number of fish (by species group) caught by recreational anglers fishing ≤16 km from shore off the Florida panhandle, 1983 to 1993.

Name	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Round scad	337,220	248,472	120,317	816,404	0	0	326,792	120,013	2,071,348	1,025,868	1,333,010	581,768
Scaled sardine	0	0	0	0	0	0	0	0	4,581,876	162,305	168,781	446,633
Gulf menhaden	0	0	19,082	117,264	0	0	2,905,993	412,954	249,452	111,045	967,163	434,814
Herring family	0	681,633	0	35,179	0	37,749	3,711	0	0	35,835	132,218	84,211
Rough scad	0	0	0	0	0	0	11,719	0	0	53,649	178,523	22,172
Alewife	230,501	0	0	0	0	0	0	0	0	0	0	20,955
Skipjack herring	0	202,575	7,017	0	0	0	0	0	0	0	0	19,054
Bigeye scad	0	29,068	0	0	0	0	0	0	0	126,829	0	14,172
Redtail scad	0	0	57,247	0	0	0	0	0	0	0	0	5,204
Round herring	0	0	56,712	0	0	0	0	0	0	0	0	5,156
Mackerel scad	0	0	0	0	0	0	0	0	0	35,403	0	3,218
Menhaden genus	0	0	19,082	0	0	0	0	0	0	0	0	1,735
Ballyhoo	0	0	0	0	8,404	0	0	0	0	0	0	764
Finescale menhaden	0	0	0	0	0	0	0	0	0	0	3,384	308
Silverside family	0	0	3,257	0	0	0	0	0	0	0	0	296
Total Baitfishes	567,722	1,161,748	282,715	968,847	8,404	37,749	3,248,214	532,967	6,902,677	1,550,933	2,783,078	1,640,459
COASTAL PELAGIC FISHES												
Spanish mackerel	172,851	12,545	153,177	2,821,760	207,561	664,415	412,914	246,508	649,512	598,413	701,682	603,758
Blue runner	805,151	33,922	279,618	226,670	173,565	389,583	231,916	284,503	1,000,875	602,674	1,853,373	534,714
Bluefish	1,164,549	352,952	42,715	201,173	260,512	422,158	196,466	145,012	435,746	195,974	76,480	317,612
Ladyfish	60,734	115,778	94,208	959,019	118,786	113,366	184,571	27,967	241,453	107,844	200,813	202,231
King mackerel	171,165	165,333	13,030	86,841	28,379	15,833	259,495	241,661	377,929	78,753	159,199	145,238
Little tunny	13,454	36,282	7,783	169,851	21,037	13,994	184,655	198,451	301,681	93,439	289,785	120,947
Jack family	8,787	0	21,300	17,771	6,184	175,003	247,450	54,650	284,889	3,540	137,762	87,030
Gulf butterfish	0	935,576	0	11,151	2,023	0	0	0	0	0	0	86,250
Crevalle jack	336,912	65,695	4,848	9,981	36,895	23,553	121,387	34,080	89,680	122,981	66,242	82,932

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Blacktip shark	0	8,733	23,148	186,617	64,925	53,356	34,386	18,721	37,019	0	9,770	39,698
Chub mackerel	0	108,039	29,753	0	0	0	0	0	132,108	0	0	24,536
Bluntnose jack	0	0	6,515	140,342	80,867	3,146	0	0	0	0	0	20,988
Mackerel family	0	0	3,438	10,943	3,710	143,928	2,309	0	0	15,857	756	16,449
Bonnethead	0	0	8,308	58,886	32,125	22,413	37,754	2,519	7,998	0	2,316	15,665
Banded rudderfish	0	0	0	0	0	0	0	9,690	0	0	162,475	15,651
Requiem shark genus	0	25,577	14,886	36,224	57,414	1,717	0	0	0	0	0	12,347
Cobia	0	0	9,109	16,749	14,064	15,688	8,268	8,564	12,036	6,170	12,538	9,381
Leatherjack	0	0	0	0	0	0	0	0	0	0	100,803	9,164
Butterfish family	0	0	95,411	0	0	0	0	0	0	342	0	8,705
Requiem shark family	0	21,775	0	6,674	0	12,583	15,820	13,081	9,919	2,696	9,273	8,347
Cero	0	0	0	63,723	0	0	0	0	0	0	0	5,793
Sandbar shark	0	0	1,678	32,094	12,333	0	3,516	1,281	0	0	0	4,627
Atlantic sharpnose shark	34,767	0	0	3,429	0	0	0	0	0	5,141	4,401	4,340
Jack genus	0	33,309	0	6,691	0	0	0	0	0	0	0	3,636
Scalloped hammerhead	0	0	28,854	1,777	0	0	1,758	0	0	0	1,445	3,076
African pompano	0	0	0	0	0	3,146	1,308	0	8,523	0	0	1,180
Sand tiger	0	0	9,541	0	0	0	0	0	0	0	3,107	1,150
Leatherjacket family	0	0	0	0	0	0	0	11,526	0	0	0	1,048
Pilotfish	8,787	0	0	257	0	0	0	0	0	1,083	622	977
Eagle ray family	0	0	0	0	0	0	0	0	7,957	0	0	723
Dusky shark	0	0	2,424	0	1,170	0	0	0	0	0	0	327
Atlantic bumper	0	0	0	0	0	0	0	0	0	0	3,516	320
Bull shark	0	0	0	3,303	0	0	0	0	0	0	0	300
Permit	0	1,973	0	0	0	0	0	0	0	0	779	250
Horse-eye jack	0	0	0	0	0	0	0	0	0	1,348	0	123
Cownose ray	0	0	0	1,343	0	0	0	0	0	0	0	122

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Lookdown	0	0	0	0	0	0	0	0	0	0	820	75
Lemon shark	0	0	0	0	0	0	0	0	0	0	653	59
Total Coastal Pelagic Fishes	2,777,157	1,917,487	849,745	5,073,269	1,121,551	2,073,882	1,943,971	1,298,214	3,597,324	1,836,255	3,798,610	2,389,770
DEMERSAL FISHES												
Pinfish	2,123,747	2,758,911	2,170,497	2,553,634	833,551	689,596	2,632,247	423,092	2,899,980	942,407	1,240,459	1,751,647
Spotted seatrout	575,681	2,353,581	1,848,650	3,136,638	1,639,780	569,079	1,695,213	597,184	1,688,187	370,159	514,837	1,362,635
Striped mullet	1,264,767	4,200,257	4,246,906	2,817,393	907,058	45,905	449,008	59,861	513,778	24,882	250,563	1,343,671
Sand seatrout	562,428	4,278,381	3,441,509	1,875,052	434,860	88,433	390,539	157,228	94,753	9,262	185,912	1,047,123
Atlantic croaker	876,328	2,727,366	2,439,179	1,798,682	369,814	194,548	266,864	55,401	203,806	106,965	229,069	842,547
Hardhead catfish	202,661	2,538,712	2,201,329	361,243	544,571	224,556	727,778	210,367	1,175,847	170,882	507,495	805,949
Gulf kingfish	286,773	1,384,220	995,946	3,098,731	161,886	65,610	268,631	39,560	521,243	10,206	11,179	622,180
Silver seatrout	417,266	1,834,171	335,990	51,675	49,680	16,702	54,908	43,864	8,523	81,427	57,298	268,318
Red drum	72,881	254,884	348,880	574,465	103,196	16,162	330,523	54,705	112,975	105,364	62,898	185,176
Gafftopsail catfish	0	559,014	390,488	157,836	212,050	14,698	193,865	47,294	76,740	29,903	68,142	159,094
Sheepshead	42,097	119,964	420,085	88,711	36,513	281,023	456,409	20,083	27,769	58,601	47,566	145,347
Silver perch	607,343	36,337	125,102	130,694	34,209	195,773	0	0	59,476	148,303	16,342	123,053
Pigfish	44,063	628,874	51,617	279,368	54,234	33,030	116,282	8,508	27,095	29,763	62,804	121,422
Sea catfish family	0	31,450	9,541	961,556	9,641	3,065	208,563	5,379	14,409	19,213	0	114,802
Stingray family	0	652,111	114,552	40,267	10,164	13,605	44,553	56,056	67,414	25,226	13,304	94,295
Sand perch	0	330,665	129,310	2,995	47,320	35,977	218,878	94,767	0	38,309	133,881	93,827
Southern kingfish	22,756	408,603	25,680	52,971	7,982	73,328	97,254	31,160	186,293	9,128	11,179	84,212
Gulf flounder	117,016	394,102	23,948	258,979	33,235	2,880	18,991	22,319	11,528	22,603	19,376	84,089
Rock sea bass	29,361	66,133	295,781	37,666	40,159	50,348	70,728	66,445	62,396	0	2,009	65,548
Florida pompano	83,889	25,096	12,348	229,117	15,628	5,816	87,167	47,934	16,682	21,786	48,276	53,976
Southern flounder	0	112,334	21,162	130,643	20,541	15,656	17,332	11,703	61,194	3,008	51,179	40,432
Black drum	21,203	21,177	110,815	50,523	45,548	45,569	34,314	3,621	44,071	4,144	3,037	34,911
Lizardfish family	35,147	3,565	161,476	0	0	436	44,461	115,794	0	1,083	0	32,906

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Lefteye flounder family	76,874	59,333	75,073	0	0	23,737	13,944	88,909	0	8,634	0	31,500
Inshore lizardfish	0	0	0	298,496	5,390	1,573	0	0	1,388	0	15,682	29,321
Lefteye flounder genus	0	0	2,637	47,910	0	6,291	56,803	0	97,374	2,180	58,390	24,690
Snake eel family	0	212,657	21,251	6,716	1,237	0	0	0	0	0	846	22,064
Kingfish genus	65,757	99,200	6,352	0	2,023	15,729	0	0	0	24,869	3,501	19,766
Spot	0	8,456	30,951	7,273	0	7,389	0	0	115,158	1,677	28,943	18,168
Stingray genus	0	0	0	126,669	4,805	3,435	0	0	0	0	13,255	13,469
Seatrout genus	1,436	0	0	0	19,787	0	0	0	0	16,677	103,426	12,846

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Smoothhound genus	0	15,284	0	0	0	0	0	0	0	0	0	1,389
Atlantic stingray	0	0	12,305	0	0	0	0	0	0	0	1,377	1,244
Oyster toadfish	0	0	0	12,190	0	0	0	0	0	0	0	1,108
Southern puffer	0	0	0	5,373	0	0	4,154	0	0	0	0	866
Burro grunt	0	0	0	0	0	9,437	0	0	0	0	0	858
Tricorn batfish	0	0	0	0	9,196	0	0	0	0	0	0	836
Dogfish shark family	0	0	7,017	0	1,786	0	0	0	0	0	0	800
Least puffer	8,787	0	0	0	0	0	0	0	0	0	0	799
Snakefish	0	0	0	4,955	0	0	2,616	0	0	1,134	0	791
Puffer genus	0	0	0	0	4,598	0	0	0	0	0	3,279	716
Unidentified eel	0	0	0	1,067	5,502	436	0	0	0	0	0	637
Toadfish genus	0	0	0	6,691	0	0	0	0	0	0	0	608
Longspine porgy	0	0	0	0	0	0	0	0	0	0	5,559	505
Sand diver	0	0	0	0	5,502	0	0	0	0	0	0	500
Clearnose skate	0	0	0	0	3,665	0	274	0	0	1,396	0	485
Burrfish genus	0	0	0	0	0	0	0	0	3,897	0	1,172	461
Northern kingfish	0	0	0	0	0	0	0	0	4,446	0	0	404
Atlantic guitarfish	0	0	3,587	0	0	0	0	0	0	0	0	326
Eelpout family	0	0	0	0	0	0	3,516	0	0	0	0	320
Stargazer family	0	0	0	0	0	0	0	3,427	0	0	0	312
Searobin genus	0	0	0	0	0	0	0	0	0	0	3,279	298
Cusk-eel family	0	0	0	0	0	0	1,308	0	1,591	0	0	264
Mullet family	0	0	0	2,502	0	0	0	0	0	0	0	227
Atlantic cutlassfish	0	0	0	0	0	0	0	0	1,700	0	779	225
Sole family	0	0	0	1,749	0	0	0	0	0	0	0	159
Spotfin mojarra	0	0	0	0	0	0	0	0	0	1,677	0	152
Spotted whiff	0	0	0	1,639	0	0	0	0	0	0	0	149

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Unidentified skate or ray	0	0	0	0	0	0	0	0	1,591	0	0	145
Batfish family	0	0	0	0	0	1,573	0	0	0	0	0	143
Southern hake	0	0	0	0	1,237	0	0	0	0	0	0	112
Yellow stingray	0	0	0	0	0	0	0	0	0	1,083	0	98
Conger eel	0	0	0	0	0	0	0	0	0	0	622	57
Bluntnose stingray	0	0	0	0	0	0	0	0	0	525	0	48
Black dogfish	0	0	0	510	0	0	0	0	0	0	0	46
Total Demersal Fishes	7,592,176	26,266,765	20,163,046	19,363,916	5,745,081	2,839,898	8,631,877	2,308,147	8,211,044	2,336,714	4,002,412	9,769,189
OTHER FISHES												
Unidentified fish	518,867	369,689	431,147	225,733	29,961	29,164	347,293	150,749	508,226	10,349	86,329	246,137
Bigeye cigarfish	632,642	156,841	0	0	0	0	0	0	0	0	0	71,771
Remora	0	10,694	3,257	12,139	3,163	1,573	98,929	33,027	443,486	1,974	0	55,295
Remora family	0	20,098	2,424	0	1,012	0	29,701	5,379	114,181	83,243	117,968	34,000
Unidentified (sharks)	0	0	30,378	38,091	4,561	15,873	38,226	66,757	45,462	0	27,484	24,257
Unidentified (surface fish)	0	0	0	0	0	3,146	0	0	0	0	206,990	19,103
Unidentified (bottom fish)	0	51,151	6,301	0	16,505	4,358	63,262	1,234	2,223	25,084	24,185	17,664
Needlefish family	30,065	5,242	8,269	19,818	0	0	44,466	0	11,334	12,197	18,644	13,640
Bluegill	0	49,600	0	0	0	0	0	0	0	0	0	4,509
Striped bass	0	0	13,030	0	0	0	0	0	1,388	8,812	935	2,197
Bullhead catfish family	0	0	0	0	0	0	0	0	15,561	0	0	1,415
Sharksucker	0	0	0	13,077	0	0	0	0	0	0	0	1,189
Channel catfish	0	0	0	0	0	0	0	0	0	10,664	0	969
Atlantic needlefish	0	0	1,724	7,661	0	0	0	0	0	0	0	853
White perch	0	0	0	0	0	0	0	0	0	0	9,328	848
American eel	0	0	3,509	0	0	0	0	0	0	0	3,588	645
Atlantic tarpon	0	0	0	1,777	5,058	0	0	0	0	0	0	621
Threadfin shad	0	0	0	0	0	0	0	0	0	0	6,767	615

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Sunfish family	0	0	0	1,777	0	0	0	0	0	0	0	162
Bulleye	0	0	0	0	0	1,700	0	0	0	0	0	155
Gar genus	0	0	1,687	0	0	0	0	0	0	0	0	153
Alligator gar	0	0	0	0	0	0	0	0	0	0	1,172	107
Total Other Fishes	1,181,574	663,314	501,725	320,074	60,260	55,813	621,875	257,146	1,141,862	152,322	503,389	496,305
OCEANIC PELAGIC FISHES												
Dolphin	4,266	99,928	3,474	282,829	6,584	84,370	73,067	23,794	18,388	1,367	27,713	56,889
Atlantic bonito	0	6,431	71,834	207,358	5,573	56,381	2,823	5,420	0	0	5,049	32,806
Rainbow runner	0	0	0	0	0	0	0	0	0	136,171	16,918	13,917
Pompano dolphin	0	0	0	0	0	0	0	117,984	0	0	0	10,726
Silky shark	0	0	85,870	4,955	0	0	0	0	0	0	0	8,257
Hammerhead shark genus	0	0	28,623	29,739	0	0	0	0	0	0	846	5,383
Shortfin mako	0	0	57,247	0	0	0	0	0	0	0	0	5,204
Manta family	0	0	0	19,015	1,237	0	0	0	3,897	0	0	2,195
Great hammerhead	3,817	0	0	1,777	1,201	0	0	1,928	0	0	0	793
Blackfin tuna	0	0	0	0	56	0	2,675	2,584	808	0	1,869	727
Blue shark	0	0	0	0	0	0	7,031	0	0	0	0	639
Tiger shark	0	0	0	2,995	0	0	1,822	0	0	0	0	438
Wahoo	0	0	0	0	0	0	0	1,239	0	1,948	669	350
Thresher shark	0	0	0	3,303	0	0	0	0	0	0	0	300
Ocean triggerfish	0	0	0	0	169	0	0	0	0	0	0	15
Total Oceanic Pelagic Fishes	8,083	106,358	247,048	551,970	14,821	140,751	87,418	152,948	23,093	139,487	53,064	138,640
REEF FISHES												
Black sea bass	0	36,672	298,814	612,063	578,166	568,259	1,243,403	286,789	147,226	88,259	127,559	362,474
Grunt family	40,087	486,985	676,213	493,629	165,440	45,613	157,771	84,508	47,914	8,365	69,776	206,936
Gray triggerfish	0	119,314	41,378	153,749	34,708	42,175	255,479	167,313	323,011	88,307	133,685	123,556
Vermilion snapper	0	0	0	139,934	87,093	126,326	118,555	107,542	486,696	55,799	107,556	111,773

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Bank sea bass	0	0	0	269,762	24,537	116,478	381,552	136,898	78,371	19,956	77,206	100,433
Greater amberjack	0	7,000	1,754	29,426	7,573	12,669	453,188	1,881	172,302	203,823	77,114	87,884
Bluestriped grunt	0	479,465	106,745	103,329	15,623	55,559	0	0	0	0	0	69,156
Gray snapper	43,933	0	79,910	88,442	43,185	6,291	181,577	23,138	28,139	36,448	161,233	62,936
Atlantic spadefish	29,382	83,126	6,301	169,705	3,573	15,729	147,247	0	70,072	21,038	108,355	59,502
Red snapper	0	9,646	3,257	140,586	1,463	5,645	54,247	40,701	153,441	102,117	123,783	57,717
Red porgy	0	19,253	0	177,133	12,271	117,284	26,417	85,497	87,020	4,303	43,147	52,030
Sailors choice	61,507	106,449	1,724	21,929	25,462	11,299	76,946	0	54,105	1,396	1,692	32,955
Grunt genus	0	20,966	0	40,872	4,046	6,291	71,146	3,978	149,738	10,358	53,244	32,785
Spanish grunt	0	0	0	87,424	69,281	78,673	56,704	56,534	0	0	0	31,692
White grunt	0	10,305	0	3,554	0	54,665	150,165	35,172	19,096	50,092	20,682	31,248
Spottail pinfish	55,167	0	21,200	0	0	0	2,039	0	54,766	0	194,257	29,766
Gag	0	0	0	11,342	9,221	1,717	8,397	18,730	82,217	24,105	164,959	29,153
Black grouper	0	5,242	17,297	127,608	30,466	22,020	60,519	0	0	0	4,704	24,351
Yellow jack	0	5,242	0	79,882	0	0	0	0	122,276	0	37,508	22,264
Black snapper	50,835	15,935	1,707	28,993	0	50,331	5,273	0	0	0	0	13,916
Red grouper	0	0	39,884	51,982	17,253	6,291	7,031	1,234	15,662	5,392	935	13,242
Margate	0	0	0	0	0	124,248	0	0	0	0	0	11,295
Tomtate	0	0	0	28,540	0	18,376	25,808	8,306	2,820	5,643	27,848	10,667
Squirrelfish	2,985	0	94,562	14,467	0	0	0	0	0	1,738	0	10,341
Unidentified grouper	0	0	0	0	0	0	34,394	9,034	9,257	5,729	48,452	9,715
Snapper family	58,814	28,517	0	0	0	0	1,880	0	1,347	6,060	0	8,783
Boxfish genus	0	82,666	0	0	0	0	0	0	0	1,396	0	7,642
Sea bass genus	0	0	0	0	0	0	0	52,854	0	17,395	12,525	7,525
Lesser amberjack	0	0	0	0	0	0	1,708	0	0	0	80,956	7,515
Whitebone porgy	0	0	0	0	1,786	0	74,036	0	0	0	0	6,893
Butterflyfish genus	0	73,020	0	0	0	0	0	0	0	0	0	6,638

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Painted wrasse	0	0	0	0	43,248	0	0	0	0	0	0	3,932
Lane snapper	0	0	0	395	1,012	1,573	10,867	0	16,988	1,748	5,258	3,440
Bar jack	0	0	13,030	10,640	10,263	0	2,616	0	0	0	885	3,403
Almaco jack	0	0	0	0	0	0	791	664	1,389	281	27,289	2,765
Warsaw grouper	0	11,234	16,480	0	0	0	0	0	1,199	0	0	2,628
Porgy family	0	0	8,218	5,730	7,249	0	1,308	5,076	0	1,083	0	2,606
Striped grunt	0	0	0	0	0	0	0	25,913	0	0	0	2,356
Scamp	0	0	0	5,635	0	0	4,368	3,433	3,422	5,749	941	2,141
Barred grunt	0	0	0	0	0	0	21,128	0	0	0	0	1,921
Nurse shark	0	0	11,260	0	0	0	0	0	0	0	0	1,024
Great barracuda	0	0	0	2,442	0	1,573	0	0	5,735	0	1,244	999
Longspine squirrelfish	0	9,607	0	0	0	0	0	0	0	0	0	873
Sea bass family	0	4,804	1,707	0	0	1,717	0	0	0	0	0	748
Tripletail	0	0	0	0	3,421	0	0	3,842	0	0	0	660
Slippery dick	0	0	0	0	0	0	0	0	0	0	7,033	639
Grouper genus (*Mycteroperca*)	0	0	0	0	5,180	0	0	1,321	0	0	0	591
Snapper genus	0	0	0	5,350	0	0	0	0	0	0	784	558
Wrasse family	0	0	0	5,373	0	0	0	0	0	0	0	488
Amberjack genus	0	0	0	1,186	0	0	0	0	0	0	3,728	447
Parrotfish family	0	0	0	395	0	1,573	2,344	0	0	0	0	392
Nassau grouper	0	0	0	0	0	0	0	0	0	4,203	0	382
Black jack	0	0	4,109	0	0	0	0	0	0	0	0	374
Squirrelfish family	0	0	0	3,573	0	0	0	0	0	0	0	325
Cherubfish	0	0	3,257	0	0	0	0	0	0	0	0	296
Moray family	0	0	2,424	648	0	0	0	0	0	0	0	279
Red hogfish	0	0	0	0	3,035	0	0	0	0	0	0	276
Comb grouper	0	0	2,637	0	0	0	0	0	0	0	0	240

Table B.1. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Soapfish genus	0	0	0	0	0	0	0	0	0	0	1,869	170
Jewfish	0	0	0	0	0	0	0	0	0	0	1,869	170
Greater soapfish	0	0	0	0	0	0	1,794	0	0	0	0	163
Spotted moray	0	0	1,754	0	0	0	0	0	0	0	0	159
Green moray	0	0	1,754	0	0	0	0	0	0	0	0	159
Bass genus	0	0	1,707	0	0	0	0	0	0	0	0	155
Balloonfish	0	0	1,707	0	0	0	0	0	0	0	0	155
Grouper genus (*Epinephelus*)	0	0	0	1,652	0	0	0	0	0	0	0	150
Guaguanche	0	0	0	0	0	1,533	0	0	0	0	0	139
Jolthead porgy	0	0	0	0	1,335	0	0	0	0	0	0	121
Hogfish	0	0	0	0	0	0	0	0	0	0	1,251	114
Speckled hind	0	0	0	0	0	0	0	1,234	0	0	0	112
Queen triggerfish	0	0	0	0	1,222	0	0	0	0	0	0	111
Snowy grouper	0	0	0	0	0	0	0	0	1,199	0	0	109
Mutton snapper	0	0	0	0	0	0	0	0	0	1,158	0	105
Dog snapper	0	0	0	0	0	0	0	0	0	1,051	0	96
Cubera snapper	0	0	0	0	0	0	0	221	0	0	820	95
Frogfish genus	0	0	0	0	1,012	0	0	0	0	0	0	92
Trunkfish	0	0	0	0	0	0	0	0	0	0	885	80
Yellowmouth grouper	0	0	0	0	0	0	0	0	269	0	0	24
Total Reef Fishes	342,710	1,615,445	1,460,792	2,917,370	1,208,120	1,493,908	3,640,699	1,161,813	2,135,675	772,993	1,731,032	1,680,051
Grand Total	13,037,143	32,892,867	23,787,785	30,164,292	8,166,641	6,679,749	21,422,268	6,244,202	28,914,352	8,339,638	15,654,664	17,754,873

Table B.2. Estimated number of fish (by species group) caught by recreational anglers fishing >16 km from shore off the Florida panhandle, 1985 to 1993.

Name	85	86	87	88	89	90	91	92	93	Average
BAITFISHES										
Round scad	0	247,532	0	0	6,825	19,919	16,152	0	57,680	38,679
Gulf menhaden	0	42,649	0	0	0	0	674	0	0	4,814
Total Baitfishes	0	290,182	0	0	6,825	19,919	16,825	0	57,680	43,492
COASTAL PELAGIC FISHES										
Spanish mackerel	37,610	88,929	25,822	19,701	8,518	36,638	2,210	13,896	22,434	28,418
Little tunny	10,526	33,893	7,761	23,777	35,094	15,084	46,431	9,907	22,665	22,793
Blue runner	29,823	0	5,573	37,679	39,428	0	2,351	703	88,936	22,722
King mackerel	15,034	3,490	12,580	0	30,637	19,949	51,553	23,568	40,996	21,978
Ladyfish	76,329	0	1,012	4,719	6,825	0	14,322	18,860	0	13,563
Bluefish	0	2,172	0	50,077	39,215	286	6,120	429	6,653	11,661
Cobia	9,541	11,748	6,069	3,146	5,394	8,785	5,608	1,468	4,870	6,292
Mackerel family	0	0	0	37,934	0	0	2,694	0	14,639	6,141
Jack family	0	395	0	0	7,031	0	932	0	30,753	4,346
Leatherjacket family	0	1,186	0	33,030	0	0	0	0	0	3,802
Blacktip shark	5,263	12,439	6,069	314	2,115	1,163	0	0	4,141	3,500
Banded rudderfish	0	0	0	0	0	143	2,642	0	27,652	3,382
Finetooth shark	0	19,548	0	0	0	0	0	0	0	2,172
Requiem shark genus	0	8,947	0	4,719	0	0	0	0	0	1,518
Pilotfish	0	0	1,012	3,146	2,616	0	0	0	3,916	1,188
Bonnethead	0	0	2,023	0	5,273	0	0	0	0	811
Requiem shark family	0	0	0	436	0	1,234	3,183	0	935	643
Crevalle jack	0	0	0	1,717	985	0	932	0	653	476
Cero	0	1,812	0	0	1,144	0	0	0	0	329
Blacknose shark	0	0	0	0	1,758	0	0	0	0	195
Sandbar shark	1,754	0	0	0	0	0	0	0	0	195
Bull shark	1,754	0	0	0	0	0	0	0	0	195

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
Scalloped hammerhead	0	0	55	1,480	0	0	0	0	0	171
Dusky shark	0	395	0	552	0	0	0	0	0	105
Atlantic sharpnose shark	0	0	0	0	0	0	0	0	631	70
Total Coastal Pelagic Fishes	187,635	184,956	67,975	222,427	186,033	83,282	138,977	68,831	269,873	156,665
DEMERSAL FISHES										
Rock sea bass	857,374	126,534	206,183	176,856	25,444	1,928	79,566	13,710	967	165,396
Pinfish	114,493	319,213	33,381	40,894	178,497	14,560	0	0	57,220	84,251
Sand perch	65,939	0	65,177	146,046	73,098	0	0	27,767	74,840	50,319
Dwarf sand perch	0	0	357	0	193,354	15,369	0	0	0	23,231
Spotted seatrout	32,574	1,343	0	0	3,711	3,856	23,870	18,583	17,354	11,255
Hardhead catfish	1,754	0	21,242	1,581	33,495	0	13,274	4,031	1,587	8,552
Gulf kingfish	0	30,892	0	0	43,944	0	0	0	0	8,315
Sea catfish family	0	52,329	0	0	0	0	9,548	0	0	6,875
Longspine porgy	51,442	0	0	0	0	0	0	0	3,746	6,132
Sand perch genus	0	0	0	10,274	0	38,421	0	0	0	5,411
Gafftopsail catfish	17,543	1,343	0	0	1,758	0	0	466	7,399	3,168
Dusky flounder	0	0	55	27,360	0	0	0	0	0	3,046
Stingray family	1,754	0	0	0	24,818	0	0	0	694	3,030
Sand seatrout	13,030	6,716	0	0	0	0	0	3,006	0	2,528
Gulf flounder	0	9,909	0	0	2,344	0	0	0	631	1,432
Pigfish	0	0	6,069	0	0	11,526	0	0	0	1,955
Puffer family	0	7,603	1,237	1,573	3,613	1,928	0	0	653	1,845
Toadfish family	0	257	11,131	1,573	1,758	0	0	1,156	0	1,764
Atlantic croaker	0	12,047	0	0	3,711	0	0	0	0	1,751
Gulf toadfish	0	0	0	11,766	0	0	0	0	669	1,382
Silver perch	0	0	0	4,719	0	0	0	7,596	0	1,368
Skate genus	0	0	0	11,338	0	0	0	578	0	1,324

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
Silver seatrout	0	0	0	4,441	0	0	0	5,827	0	1,141
Red drum	0	0	1,170	1,573	1,581	0	0	3,974	0	922
Lefteye flounder family	0	0	0	3,153	3,027	664	0	0	0	761
Unidentified eel	0	5,350	0	0	0	0	0	0	0	594
Lefteye flounder genus	0	1,163	0	3,153	0	0	0	0	586	545
Clearnose skate	0	0	0	0	0	0	0	0	4,353	484
Sheepshead	0	2,644	0	0	0	1,321	0	0	0	441
Seatrout genus	0	0	0	0	0	0	0	3,865	0	429
Southern flounder	0	1,277	1,207	0	0	1,281	0	0	0	418
Black dogfish	0	0	3,710	0	0	0	0	0	0	412
Unidentified flounder or sole	0	395	1,308	0	1,758	0	0	0	0	385
Florida pompano	3,257	0	0	0	0	0	0	0	0	362
Lizardfish genus	0	0	0	0	0	0	0	0	3,117	346
Atlantic cutlassfish	0	0	0	0	0	2,561	0	0	0	285
Southern puffer	0	0	0	0	0	0	0	0	1,866	207
Lizardfish family	0	0	0	0	1,855	0	0	0	0	206
Snakefish	0	1,777	0	0	0	0	0	0	0	197
Oyster toadfish	0	1,777	0	0	0	0	0	0	0	197
Searobin family	0	1,777	0	0	0	0	0	0	0	197
Spot	0	0	0	0	0	0	0	1,734	0	193
Snake eel family	0	186	1,237	0	0	0	0	234	0	184
Stingray genus	0	0	0	0	0	0	0	0	1,274	142
Dogfish shark family	0	0	1,012	0	0	0	0	0	0	112
Mullet genus	0	0	1,012	0	0	0	0	0	0	112
White mullet	0	0	0	0	0	0	0	865	0	96
Black drum	0	648	0	0	0	0	0	0	0	72
Bearded brotula	0	250	0	0	0	0	0	0	340	65

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
Puffer genus	0	0	0	0	0	0	0	469	0	52
Tonguefish genus	0	0	0	436	0	0	0	0	0	48
Sole family	0	395	0	0	0	0	0	0	0	44
Grass porgy	0	0	0	0	0	0	0	0	340	38
Eelpout family	0	0	0	0	0	332	0	0	0	37
Drum family	0	0	71	0	0	0	0	0	0	8
Ocellated flounder	0	0	55	0	0	0	0	0	0	6
Marbled puffer	0	0	0	0	0	0	0	0	0	0
Total Demersal Fishes	1,159,162	585,826	355,613	446,736	597,764	93,748	126,258	93,864	177,635	404,067
OTHER FISHES										
Identified fish	0	35,777	2,474	35,409	12,922	17,068	18,301	1,865	17,020	15,648
Unidentified (bottom fish)	0	0	2,956	1,573	18,332	0	2,114	0	4,099	3,230
Crappie genus	0	24,773	0	0	0	0	0	0	0	2,753
Remora	0	2,529	3,573	6,291	1,758	4,980	954	0	0	2,232
Unidentified (sharks)	0	3,554	0	3,146	2,930	664	0	2,456	0	1,417
Needlefish family	0	9,909	0	0	0	0	0	0	0	1,101
Remora family	0	0	0	0	0	0	425	1,445	5,436	812
Unidentified (surface fish)	0	0	0	0	0	0	0	0	2,928	325
Total Other Fishes	0	76,543	9,002	46,419	35,942	22,711	21,794	5,765	29,482	27,518
OCEANIC PELAGIC FISHES										
Dolphin	0	134,994	14,051	18,908	35,843	11,759	16,469	0	25,589	28,624
Atlantic bonito	0	2,277	8,092	105,844	0	0	0	520	0	12,970
Dolphin genus	0	0	0	0	17,578	0	0	0	0	1,953
Ocean triggerfish	0	0	4,523	1,255	0	0	0	0	0	642
Rainbow runner	0	2,331	0	0	0	1,285	0	0	0	402
Wahoo	0	257	0	0	0	143	0	173	1,995	285
Pompano dolphin	0	1,343	0	0	0	0	0	0	644	221

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
White marlin	0	0	0	0	0	0	0	0	1,873	208
Tiger shark	0	0	55	0	1,758	0	0	0	0	201
Blackfin tuna	0	895	0	0	0	0	0	0	177	119
Skipjack tuna	0	0	1,012	0	0	0	0	0	0	112
Flyingfish family	0	0	71	0	0	0	0	0	0	8
Total Oceanic Pelagic	0	142,097	27,805	126,007	55,178	13,187	16,469	693	30,278	45,746
REEF FISHES										
Black sea bass	2,056,788	523,267	273,071	321,995	1,500,416	141,736	50,281	78,148	228,614	574,924
Vermilion snapper	241,938	469,172	68,524	397,329	283,943	118,764	255,091	76,299	315,721	247,420
Gray triggerfish	30,335	330,562	171,775	115,992	309,450	246,679	287,572	154,544	214,779	206,854
Red porgy	733,378	368,865	81,015	221,935	78,528	45,945	57,305	23,322	49,421	184,412
Bluestriped grunt	960,655	367,101	124,581	189,041	0	0	0	0	0	182,375
Bank sea bass	19,544	175,956	25,097	194,738	881,081	49,418	102,116	2,891	134,756	176,177
Red snapper	87,836	290,158	12,109	235,394	170,631	35,494	72,425	201,833	302,195	156,453
White grunt	0	40,872	36,334	178,896	239,439	96,486	98,662	97,346	311,400	122,159
Black grouper	161,650	485,690	168,192	117,179	155,547	1,464	0	932	0	121,184
Greater amberjack	35,600	330,494	79,307	117,158	117,760	17,103	232,267	48,144	100,825	119,851
Red grouper	0	171,264	22,747	31,784	86,748	19,481	44,443	277	48,578	47,258
Warsaw grouper	300,735	11,874	0	5,307	3,711	22,844	0	0	0	38,275
Squirrelfish	156,262	58,586	67,713	0	0	0	0	23,725	0	34,032
Gag	0	19,539	1,398	19,641	30,718	31,415	27,134	30,371	122,274	31,388
Gray snapper	87,716	9,065	3,172	552	86,370	2,895	2,492	29,072	29,690	27,892
Grunt family	0	8,258	785	5,665	90,171	108,612	9,024	0	14,495	26,335
Tomtate	0	0	0	0	29,684	0	6,376	18,770	135,969	21,200
Spanish grunt	0	30,215	31,358	0	40,429	32,348	8,076	0	0	15,825
Grunt genus	0	15,123	5,058	0	49,407	0	24,958	21,970	8,431	13,883
Sailors choice	0	0	3,240	0	88,665	0	0	0	0	10,212

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
Scamp	19,082	33,658	1,807	5,737	6,956	1,520	3,400	797	14,926	9,765
Lane snapper	0	3,954	71	4,303	10,625	8,760	13,148	4,580	33,477	8,769
Unidentified grouper	0	0	0	0	48,441	22,602	3,454	0	2,271	8,530
Porgy family	42,096	0	0	2,452	21,434	0	3,449	0	0	7,714
Black snapper	0	12,314	8,932	33,186	0	0	0	0	0	6,048
Whitebone porgy	0	0	2,160	0	47,086	0	0	0	0	5,472
Spottail pinfish	0	0	0	0	40,816	0	0	4,047	630	5,055
Queen triggerfish	17,147	0	19,788	4,626	0	0	2,114	0	0	4,853
Atlantic spadefish	0	0	2,023	31,457	3,399	0	0	173	0	4,117
Silk snapper	0	0	0	0	0	34,883	0	0	0	3,876
Sea bass family	0	0	0	29,884	3,516	0	0	0	0	3,711
Sea bass genus	0	0	0	436	0	0	0	29,542	3,387	3,707
Black margate	0	0	0	31,457	1,467	0	0	0	0	3,658
Margate	0	0	0	24,948	0	0	0	92	0	2,782
Great barracuda	0	5,997	5,058	2,033	0	1,424	8,132	0	177	2,535
Snapper family	0	648	857	0	0	15,369	0	0	2,928	2,200
Almaco jack	0	2,166	55	552	7,723	286	2,351	173	2,997	1,811
Grouper genus (*Epinephelus*)	0	395	0	0	14,842	0	0	0	0	1,693
Hogfish	0	0	5,058	4,771	4,688	0	0	0	0	1,613
Mutton snapper	0	0	0	0	0	13,289	0	0	0	1,477
Squirrelfish family	0	2,686	2,499	0	0	0	0	0	0	576
Lesser amberjack	0	0	55	0	4,268	0	0	0	0	480
Nurse shark	1,754	0	0	0	0	0	0	0	2,499	473
Amberjack genus	0	3,622	0	0	0	0	0	0	0	402
Yellowtail snapper	0	3,559	0	0	0	0	0	0	0	395
Snowy grouper	0	395	55	0	0	2,071	0	578	177	364
Moray family	0	1,295	1,241	0	0	0	0	0	669	356

Table B.2. (Continued).

Name	85	86	87	88	89	90	91	92	93	Average
Graysby	0	0	0	3,053	0	0	0	0	0	339
Spotted moray	0	257	0	1,717	0	831	0	0	0	312
Speckled hind	0	354	0	1,480	0	0	0	0	749	287
Snapper genus	0	2,373	0	0	0	0	0	0	0	264
Yellowmouth grouper	0	0	0	2,209	0	0	0	0	0	245
Mahogany snapper	0	0	0	2,209	0	0	0	0	0	245
Jewfish	0	0	0	2,209	0	0	0	0	0	245
Rock hind	0	1,777	0	0	0	0	0	0	0	197
Marbled grouper	0	1,777	0	0	0	0	0	0	0	197
Trumpetfish	0	0	0	790	0	0	0	0	749	171
Blue angelfish	0	1,229	0	0	0	0	0	0	0	137
Cubera snapper	0	0	0	0	0	857	0	0	340	133
Schoolmaster	0	257	0	0	0	0	0	938	0	133
Blackedge moray	0	1,186	0	0	0	0	0	0	0	132
Tripletail	0	0	0	0	0	0	0	0	921	102
Queen snapper	0	791	0	0	0	0	0	0	0	88
Queen angelfish	0	395	0	0	0	0	0	0	0	44
Sheepshead porgy	0	0	0	0	357	0	0	0	0	40
Yellowedge grouper	0	0	0	0	0	0	0	0	340	38
Jolthead porgy	0	0	0	0	0	0	225	0	0	25
Longspine squirrelfish	0	186	0	0	0	0	0	0	0	21
Unicorn filefish	0	0	0	0	0	0	0	0	177	20
Red hind	0	0	0	0	0	0	0	0	177	20
Bluespotted cornetfish	0	0	55	0	0	0	0	0	0	6
Total Reef Fishes	4,952,517	3,787,333	1,225,187	2,342,117	4,458,314	1,072,575	1,314,496	848,562	2,084,736	2,453,982
Total	6,299,314	5,066,936	1,685,582	3,183,706	5,340,056	1,305,423	1,634,819	1,017,715	2,649,684	2,654,140

Table B.3. Estimated number of fish (by species group) caught by recreational anglers fishing in inland waters of the Florida panhandle, 1983 to 1993.

Name	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Scaled sardine	0	0	0	0	0	0	0	0	63,923	0	851,613	83,231
Gulf menhaden	0	0	0	0	0	0	18,996	0	24,455	0	221,291	24,068
Herring family	0	0	0	0	0	0	0	0	0	0	97,368	8,852
Atlantic thread herring	0	0	0	0	0	0	0	0	63,923	0	885	5,892
Round scad	0	0	0	0	0	0	0	0	0	0	42,488	3,863
Herring genus	12,147	0	0	0	0	0	0	0	0	0	0	1,104
Total Baitfishes	12,147	0	0	0	0	0	18,996	0	152,301	0	1,213,646	127,008
COASTAL PELAGIC FISHES												
Bluefish	0	0	0	233,582	64,966	21,427	32,086	0	15,502	92,164	2,185	41,992
Spanish mackerel	38,132	0	68,940	12,611	7,051	24,723	35,631	59,450	82,741	15,880	105,078	40,931
Blue runner	2,985	0	8,218	78,464	1,840	0	32,669	11,027	3,090	0	140,944	25,385
Banded rudderfish	0	0	0	0	0	0	0	0	0	0	110,625	10,057
Ladyfish	0	0	5,263	12,190	0	1,573	31,640	0	16,124	3,583	23,761	8,558
King mackerel	0	0	2,117	0	0	0	1,758	2,561	27,591	0	13,626	4,332
Bluntnose jack	13,782	0	0	5,026	0	0	23,715	0	0	0	0	3,866
Little tunny	0	0	0	0	1,012	0	19,618	8,965	4,774	6,706	885	3,815
Jack family	0	0	10,587	12,770	0	0	6,906	0	0	0	0	2,751
Blacktip shark	0	0	3,509	0	0	0	0	16,931	0	0	1,283	1,975
Butterfish	13,782	0	2,638	0	0	0	0	0	0	0	0	1,493
Ribbonfish family	14,757	0	0	0	0	0	0	0	0	0	0	1,342
Crevalle jack	0	0	0	0	1,769	0	0	0	4,274	3,502	3,517	1,187
Cobia	0	0	0	0	0	0	1,758	0	4,262	0	653	607
Cero	0	0	0	0	0	0	0	0	5,881	0	0	535
Requiem shark family	0	0	0	0	0	0	0	0	0	0	5,851	532
Dusky shark	2,985	0	0	0	0	0	0	0	0	0	0	271
Gulf butterfish	0	0	0	0	0	0	1,976	0	0	0	0	180

Table B.3. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Jack genus	0	0	0	0	1,786	0	0	0	0	0	0	162
Pilotfish	0	0	0	0	0	0	0	0	1,591	0	0	145
Atlantic sharpnose shark	0	0	0	0	0	0	0	0	0	0	1,283	117
Bonnethead	0	0	0	0	0	0	0	0	0	0	846	77
Total Coastal Pelagic Fishes	86,422	0	101,272	354,642	78,424	47,723	187,757	98,934	165,829	121,836	410,534	150,307
DEMERSAL FISHES												
Atlantic croaker	1,283,187	1,320,362	357,453	799,903	692,799	0	59,365	105,322	2,747,034	266,182	193,983	711,417
Pinfish	912,473	1,376,568	400,083	831,767	757,919	414,458	388,885	626,518	577,157	200,017	305,137	617,362
Spotted seatrout	1,945,922	1,452,745	27,307	538,703	968,733	249,537	266,188	97,853	750,876	113,136	153,425	596,766
Sand seatrout	65,373	371,331	54,137	183,212	259,670	98,870	18,019	16,931	1,846,196	713,027	296,840	356,691
Striped mullet	165,068	101,008	10,336	646,463	51,588	23,593	114,756	51,791	213,974	85,897	39,250	136,702
Hardhead catfish	95,135	63,883	141,410	3,831	39,117	49,527	134,931	55,730	158,000	163,422	118,792	93,071
Silver seatrout	59,503	0	16,112	14,774	9,197	522,965	99,755	53,353	40,597	13,469	0	75,429
Sheepshead	4,627	10,254	69,613	96,638	109,341	92,759	198,598	9,746	4,119	16,393	23,329	57,765
Pigfish	7,579	0	7,017	85,331	241,889	160,373	36,620	38,094	8,299	8,081	22,838	56,011
Seatrout genus	0	0	0	73,141	8,932	0	0	0	236,772	26,937	47,619	35,764
Red drum	0	608	76,675	40,714	65,842	8,612	66,004	4,233	36,555	59,256	7,089	33,235
Gafftopsail catfish	17,063	0	94,269	0	5,359	86,141	40,219	13,844	35,147	0	10,719	27,524
Gulf flounder	0	230,913	4,109	3,201	1,769	9,267	11,542	1,321	4,861	7,164	630	24,980
Black drum	5,411	17,950	4,081	13,870	47,176	6,886	119,056	0	0	9,638	0	20,370
Unidentified flounder or sole	0	0	0	188,413	30,068	0	0	0	0	0	0	19,862
Silver perch	0	0	19,544	0	0	0	126,482	0	14,584	1,338	52,166	19,465
Mullet genus	0	189,400	2,424	0	18,208	0	0	0	0	0	0	19,094
Sea catfish family	0	0	0	1,067	1,237	0	0	127,232	0	26,790	18,459	15,890
Southern flounder	0	35,460	28,584	4,820	27,589	4,846	11,242	19,492	0	0	10,838	12,988
Stingray family	0	15,783	3,478	0	20,071	3,452	23,797	13,979	8,152	12,474	15,136	10,575
Southern kingfish	33,103	0	3,509	1,652	13,378	9,089	3,953	4,233	7,751	0	885	7,050

Table B.3. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Lefteye flounder family	2,985	9,552	25,065	13,077	0	0	18,909	0	0	3,583	0	6,652
Lefteye flounder genus	0	0	0	8,044	47,219	0	1,794	0	0	5,171	8,663	6,445
Spot	0	0	0	0	0	6,530	0	0	40,759	2,675	1,760	4,702
Gulf kingfish	0	1,416	0	0	4,202	0	1,438	0	9,212	12,932	12,080	3,753
Inshore lizardfish	0	15,783	0	0	21,436	0	0	0	0	0	0	3,384
Sand perch	0	0	0	0	8,897	3,273	23,723	0	0	0	0	3,263
Rock sea bass	0	0	0	0	0	0	0	0	29,356	0	2,081	2,858
Puffer genus	0	0	0	23,453	3,573	0	0	0	0	0	1,731	2,614
Puffer family	18,376	0	0	0	0	0	0	0	0	0	3,423	1,982
Kingfish genus	0	0	0	0	0	0	0	0	0	17,687	0	1,608
Gulf toadfish	5,080	0	3,509	0	0	0	0	0	0	7,167	1,770	1,593
Striped burrfish	0	15,783	0	0	0	0	0	0	0	0	0	1,435
Florida pompano	8,787	0	5,275	0	0	0	0	0	0	0	846	1,355
Unidentified eel	0	0	0	0	8,932	5,816	0	0	0	0	0	1,341
Searobin family	0	11,820	0	0	1,786	0	0	0	0	0	0	1,237
Lizardfish family	4,594	0	606	0	0	0	7,880	0	0	0	0	1,189
Snake eel family	0	0	5,503	5,108	0	0	0	0	0	0	1,731	1,122
Toadfish family	0	0	0	0	0	1,573	0	4,233	0	3,583	2,577	1,088
Skate genus	0	0	0	2,134	5,359	0	1,976	0	0	0	653	920
Lizardfish genus	0	0	0	0	8,932	0	0	0	0	0	846	889
Blue croaker	0	0	9,772	0	0	0	0	0	0	0	0	888
Snakefish	0	0	0	0	8,932	0	0	0	0	0	0	812
Drum family	0	0	0	0	6,184	0	0	0	0	0	846	639
Gulf killifish	0	5,193	0	0	0	0	0	0	0	0	0	472
Southern hake	0	0	0	0	0	0	4,952	0	0	0	0	450
White mullet	4,627	0	0	0	0	0	0	0	0	0	0	421
Southern stingray	0	0	0	0	0	0	0	0	0	1,677	2,538	383

Table B.3. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Yellow stingray	0	0	0	0	0	0	0	0	0	3,583	0	326
Stingray genus	0	0	0	0	3,573	0	0	0	0	0	0	325
Silver jenny	0	0	0	0	0	0	0	0	0	0	3,384	308
Atlantic threadfin	0	0	2,117	0	0	0	0	0	0	0	0	192
Atlantic stingray	0	0	2,117	0	0	0	0	0	0	0	0	192
Searobin genus	0	0	0	0	0	0	0	0	0	0	1,731	157
Clearnose skate	0	0	0	0	0	0	0	0	0	1,677	0	152
Three-eye flounder	0	1,217	0	0	0	0	0	0	0	0	0	111
Total Demersal fishes	4,638,893	5,247,031	1,374,105	3,579,315	3,498,904	1,757,565	1,780,083	1,243,905	6,769,399	1,782,956	1,363,795	3,003,268
OTHER FISHES												
Unidentified fish	0	0	79,476	72,145	89,316	3,435	13,078	0	0	0	11,876	24,484
Unidentified (bottom fish)	0	111,858	0	0	0	0	3,953	0	0	0	2,018	10,712
American eel	17,815	0	0	0	0	3,265	0	0	40,759	0	3,384	5,929
Livebearer family	0	0	34,739	0	0	0	0	0	0	0	0	3,158
Striped bass	0	0	19,544	0	0	0	0	0	1,545	0	0	1,917
Needlefish family	0	0	0	0	4,598	0	0	8,465	3,090	1,517	2,018	1,790
Largemouth bass	0	0	0	0	0	0	13,078	0	2,746	0	0	1,439
Remora	0	15,783	0	0	0	0	0	0	0	0	0	1,435
Remora family	0	0	0	0	0	0	0	0	4,861	0	10,870	1,430
Unidentified (sharks)	0	0	0	0	0	0	0	4,233	0	1,036	0	479
Common carp	4,627	0	0	0	0	0	0	0	0	0	0	421
Atlantic needlefish	0	0	0	4,268	0	0	0	0	0	0	0	388
Hybrid striped bass	0	0	0	0	0	0	0	0	0	2,403	0	218
Gar genus	0	0	0	0	0	0	0	0	0	0	1,172	107
Channel catfish	0	0	0	1,067	0	0	0	0	0	0	0	97
Total Other Species	22,442	127,641	133,759	77,479	93,914	6,700	30,109	12,698	53,001	4,956	31,337	54,003

Table B.3. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES												
Atlantic bonito	0	0	0	0	1,170	308,243	0	0	0	0	885	28,209
Hammerhead shark genus	0	0	0	0	0	0	0	0	0	3,583	1,305	444
Dolphin	0	0	0	0	0	0	0	0	0	0	4,173	379
Flyingfish family	0	0	0	0	0	0	1,308	0	0	0	0	119
Total Oceanic Pelagic Fishes	0	0	0	0	1,170	308,243	1,308	0	0	3,583	6,363	29,152
REEF FISHES												
Bluestriped grunt	3,938	247,999	35,086	0	0	0	0	0	0	0	0	26,093
Grunt family	176,686	0	0	8,921	16,202	0	0	0	0	13,542	6,767	20,193
Gray snapper	0	0	0	0	39,550	0	14,436	0	39,562	102,123	8,812	18,589
Sailors choice	20,044	0	0	11,268	38,512	0	56,385	0	0	0	0	11,474
Black sea bass	0	0	0	10,745	30,105	0	15,270	0	0	37,396	4,476	8,908
Red snapper	0	0	0	0	0	0	0	0	56,942	567	3,263	5,525
White grunt	0	0	0	0	1,840	0	8,970	0	25,370	0	17,582	4,888
Spottail pinfish	0	0	0	4,268	1,840	0	985	0	7,972	33,531	0	4,418
Grouper genus (*Mycteroperca*)	0	0	0	0	0	0	47,431	0	0	0	0	4,312
Unidentified grouper	0	0	0	0	0	0	26,911	0	0	0	7,685	3,145
Barred grunt	0	0	0	0	8,914	0	13,415	0	0	12,146	0	3,134
Gag	0	0	0	0	9,321	0	13,867	0	1,545	3,353	2,740	2,802
Black grouper	28,172	0	0	0	1,012	0	0	0	0	0	0	2,653
Yellowtail snapper	0	0	28,412	0	0	0	0	0	0	0	0	2,583
Gray triggerfish	0	7,129	0	0	1,237	0	1,512	0	15,498	0	0	2,307
Grunt genus	0	0	0	0	17,863	0	0	0	0	0	2,610	1,861
Atlantic spadefish	0	0	0	0	5,502	0	0	8,465	0	3,583	1,731	1,753
Greater amberjack	0	0	2,638	0	0	0	3,320	0	1,591	0	6,196	1,250
Bank sea bass	0	0	0	1,343	0	0	8,308	0	2,746	0	0	1,127
Barracuda genus	11,940	0	0	0	0	0	0	0	0	0	0	1,085

Table B.3. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Squirrelfish	0	0	9,541	0	0	0	0	0	0	0	0	867
Porgy family	0	0	0	0	0	0	0	0	0	8,081	0	735
Black snapper	3,470	3,565	0	0	0	0	0	0	0	0	0	640
Vermilion snapper	0	0	606	0	0	0	0	5,167	0	0	0	525
Lane snapper	0	0	0	0	0	0	0	0	4,197	0	1,172	488
Grouper genus (*Epinephelus*)	0	0	0	0	0	0	0	0	0	0	1,770	161
Tomtate	0	0	0	0	0	0	0	0	0	1,347	0	122
Longspine squirrelfish	0	0	0	1,343	0	0	0	0	0	0	0	122
Scrawled cowfish	0	0	0	0	0	0	1,308	0	0	0	0	119
Porcupinefish	0	0	0	0	1,012	0	0	0	0	0	0	92
Clinid family	0	0	0	0	0	0	0	0	0	0	885	80
Unicorn filefish	0	0	0	0	0	0	0	0	0	0	784	71
Great barracuda	0	0	0	0	0	0	0	0	0	0	630	57
Total Reef Fishes	244,251	258,693	76,282	37,888	172,910	0	212,118	13,632	155,423	215,670	67,104	132,179
Grand Total	5,004,155	5,633,365	1,685,418	4,049,324	3,845,323	2,120,230	2,230,371	1,369,170	7,295,954	2,129,001	3,092,779	3,495,917

Table B.4. Estimated number of fish (by species group) caught by recreational anglers fishing from private vessels off the Florida panhandle, 1983 to 1993.

Name	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Gulf menhaden	0	0	19,082	42,649	0	0	2,368,905	0	0	0	32,630	223,933
Round scad	0	170,409	0	753,186	0	0	18,553	0	0	0	59,979	91,102
Herring family	0	0	0	0	0	37,749	3,711	0	0	0	93,467	12,266
Redtail scad	0	0	57,247	0	0	0	0	0	0	0	0	5,204
Menhaden genus	0	0	19,082	0	0	0	0	0	0	0	0	1,735
Herring genus	12,147	0	0	0	0	0	0	0	0	0	0	1,104
Rough scad	0	0	0	0	0	0	11,719	0	0	0	0	1,065
Skipjack herring	0	0	7,017	0	0	0	0	0	0	0	0	638
Silverside family	0	0	3,257	0	0	0	0	0	0	0	0	296
Total Baitfishes	12,147	170,409	105,686	795,835	0	37,749	2,402,887	0	0	0	186,075	337,344
COASTAL PELAGIC FISHES												
Spanish mackerel	28,580	9,110	130,638	2,760,611	219,818	673,910	299,328	213,712	208,137	251,509	67,391	442,068
Ladyfish	60,734	21,775	141,055	510,204	108,794	117,964	210,082	26,675	67,131	37,625	33,430	121,406
Bluefish	0	21,775	39,855	186,216	218,729	428,297	202,138	58,447	113,658	21,203	21,394	119,246
Blue runner	2,985	19,024	234,683	214,944	148,727	394,522	108,301	52,369	31,502	2,691	53,355	114,827
King mackerel	141,100	165,333	28,064	64,507	40,904	15,833	132,179	56,343	196,711	28,145	86,934	86,914
Gulf butterfish	0	888,226	0	11,151	2,023	0	1,976	0	0	0	0	82,125
Little tunny	13,454	36,282	18,309	155,181	28,679	15,567	74,952	43,019	85,563	8,215	25,789	45,910
Blacktip shark	0	0	28,768	193,423	70,994	53,356	26,367	15,294	31,826	0	12,971	39,364
Bluntnose jack	13,782	0	6,515	129,075	80,867	3,146	23,715	0	0	0	0	23,373
Jack family	0	0	6,515	30,541	6,184	171,731	20,602	0	0	0	4,523	21,827
Bonnethead	0	0	5,158	58,886	28,647	22,413	37,321	2,519	3,136	0	1,560	14,513
Mackerel family	0	0	3,438	5,080	3,710	141,557	1,172	0	0	0	0	14,087
Crevalle jack	28,424	0	0	9,981	38,325	25,270	15,234	14,703	6,037	1,825	4,376	13,107
Cobia	0	0	18,650	26,658	17,976	18,834	10,588	13,308	4,774	6,264	9,218	11,479
Requiem shark genus	0	13,757	5,275	39,778	57,414	6,436	0	0	0	0	0	11,151
Butterfish family	0	0	95,411	0	0	0	0	0	0	0	0	8,674

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Requiem shark family	0	21,775	0	6,674	0	12,583	15,820	14,315	8,840	0	9,025	8,094
Cero	0	0	0	46,346	0	0	1,144	0	5,881	0	0	4,852
Sandbar shark	0	0	1,754	32,094	12,333	0	3,516	1,281	0	0	0	4,634
Leatherjacket family	0	0	0	0	0	33,030	0	11,526	0	0	0	4,051
Scalloped hammerhead	0	0	28,854	1,777	0	1,480	1,758	0	0	0	625	3,136
Chub mackerel	0	0	29,753	0	0	0	0	0	0	0	0	2,705
Finetooth shark	0	0	0	19,548	0	0	0	0	0	0	0	1,777
Butterfish	13,782	0	2,638	0	0	0	0	0	0	0	0	1,493
Atlantic sharpnose shark	0	0	0	3,429	0	0	0	0	0	5,141	6,315	1,353
Pilotfish	0	0	0	0	1,012	3,146	2,616	0	1,591	1,083	4,537	1,271
Sand tiger	0	0	9,541	0	0	0	0	0	0	0	622	924
Banded rudderfish	0	0	0	0	0	0	0	0	0	0	9,381	853
Jack genus	0	0	0	6,691	1,786	0	0	0	0	0	0	771
Eagle ray family	0	0	0	0	0	0	0	0	7,957	0	0	723
Ribbonfish family	5,970	0	0	0	0	0	0	0	0	0	0	543
Bull shark	0	0	1,754	3,303	0	0	0	0	0	0	0	460
African pompano	0	0	0	0	0	3,146	1,308	0	0	0	0	405
Dusky shark	2,985	0	0	0	0	0	0	0	0	0	0	271
Blacknose shark	0	0	0	0	0	0	1,758	0	0	0	0	160
Cownose ray	0	0	0	1,343	0	0	0	0	0	0	0	122
Lemon shark	0	0	0	0	0	0	0	0	0	0	653	59
Total Coastal Pelagic Fishes	311,795	1,197,055	836,628	4,517,440	1,086,922	2,142,220	1,191,873	523,511	772,745	363,700	352,099	1,208,726
DEMERSAL FISHES												
Spotted seatrout	384,141	3,694,844	1,850,057	3,629,146	2,411,024	625,572	1,191,170	399,952	2,045,532	199,346	413,317	1,531,282
Striped mullet	1,273,752	3,358,170	3,577,074	1,689,557	958,646	34,603	539,944	59,885	32,528	6,371	50,472	1,052,818
Sand seatrout	7,875	4,391,681	3,445,139	2,028,494	655,327	88,433	225,103	90,541	28,860	3,585	45,191	1,000,930
Pinfish	57,414	1,735,271	1,159,450	1,964,072	954,295	334,415	1,117,809	238,365	314,805	239,330	266,802	762,003
Atlantic croaker	176,371	2,795,609	1,901,044	998,381	290,468	5,177	126,132	59,847	28,111	4,631	30,881	583,332

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Hardhead catfish	59,152	1,951,603	1,812,534	280,947	501,683	217,382	446,805	124,012	387,650	46,136	216,506	549,492
Silver seatrout	364,406	1,802,125	348,270	66,449	50,917	26,295	89,767	8,731	0	0	20,012	252,452
Rock sea bass	0	66,133	1,134,963	148,089	243,557	168,959	96,172	1,928	150,178	13,710	4,091	184,344
Gafftopsail catfish	17,063	413,332	426,684	159,179	216,709	19,417	226,492	43,166	95,962	8,879	56,974	153,078
Red drum	72,881	225,416	393,834	444,334	164,067	26,347	108,533	37,905	99,455	35,108	34,790	149,334
Sheepshead	12,147	66,730	447,276	154,004	134,654	340,715	211,292	6,391	12,590	27,571	18,563	130,176
Sand perch	0	330,665	195,248	2,995	70,095	151,364	284,438	87,845	0	63,508	196,891	125,732
Silver perch	607,343	0	19,544	20,835	34,209	200,491	126,482	0	37,232	4,912	1,388	95,676
Sea catfish family	0	31,450	9,541	815,088	2,474	3,065	111,912	15,369	19,096	4,047	12,599	93,149
Pigfish	7,579	556,166	44,911	105,787	84,358	33,030	121,147	20,035	0	9,039	3,175	89,566
Stingray family	0	584,836	100,978	16,350	17,976	16,621	69,329	12,789	20,687	7,505	19,226	78,754
Gulf flounder	0	583,899	14,856	135,420	28,332	5,024	31,507	16,742	11,103	17,373	7,494	77,432
Gulf kingfish	0	79,432	21,821	400,810	109,468	39,466	109,956	0	2,223	1,103	0	69,480
Black drum	12,147	35,468	104,199	40,013	90,624	42,660	139,093	1,321	1,388	0	694	42,510
Southern kingfish	15,751	99,200	27,511	54,623	15,057	70,055	63,022	31,160	0	2,758	11,179	35,483
Inshore lizardfish	0	0	0	298,496	26,826	1,573	0	0	1,388	0	4,353	30,240
Lefteye flounder family	63,719	43,550	69,803	0	0	25,310	30,070	76,710	0	3,374	0	28,412
Dwarf sand perch	0	0	0	14,750	11,131	0	228,509	15,369	0	0	8,412	25,288
Lizardfish family	4,594	0	156,355	0	0	0	41,955	64,054	0	1,083	0	24,367
Southern flounder	0	0	23,738	132,401	9,575	10,849	15,977	15,324	1,388	3,008	47,503	23,615
Snake eel family	0	198,399	19,544	11,824	2,474	0	0	0	0	0	0	21,113
Florida pompano	0	3,215	8,532	163,643	3,224	0	22,851	0	0	3,469	16,378	20,119
Lefteye flounder genus	0	0	2,637	39,052	1,237	7,864	42,189	0	44,107	2,180	43,713	16,635
Kingfish genus	0	99,200	0	0	2,023	15,729	0	0	0	0	0	10,632
Lizardfish genus	0	0	0	11,151	19,744	0	0	0	51,079	0	10,301	8,389
Stingray genus	0	0	0	61,283	8,378	3,435	0	0	0	0	12,472	7,779
Unidentified flounder or sole	0	0	0	24,208	48,338	8,587	3,516	0	0	0	0	7,695
Dusky flounder	0	0	0	0	0	74,917	0	0	0	0	0	6,811

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Searobin family	0	16,533	0	30,779	3,023	4,719	0	2,744	4,774	12,141	0	6,792
Puffer family	18,376	0	0	13,375	1,237	3,146	11,774	9,332	2,223	0	3,522	5,726
Killifish family	0	0	0	0	0	0	0	32,018	0	0	24,874	5,172
Longspine porgy	0	0	51,442	0	0	0	0	0	0	0	4,673	5,101
Skate genus	0	0	2,637	5,641	5,359	3,435	11,039	0	0	578	20,243	4,448
Seatrout genus	0	0	0	0	28,719	0	0	0	0	15,881	3,930	4,412
Sand perch genus	0	0	0	0	0	0	7,905	39,743	0	0	0	4,332
Goby family	0	0	0	39,637	0	0	0	0	0	0	0	3,603
Gulf toadfish	24,294	0	3,509	0	0	0	0	0	4,066	0	653	2,956
Toadfish family	0	0	7,910	0	11,131	3,146	3,971	0	0	1,156	0	2,483
Drum family	12,147	0	3,257	2,230	6,184	3,435	0	0	0	0	0	2,478
Spot	0	0	19,082	1,639	0	1,573	0	0	0	1,734	630	2,242
Smooth dogfish	0	23,579	0	0	0	0	0	0	0	0	0	2,144
Snakefish	0	0	0	6,732	8,932	0	2,616	0	0	1,134	0	1,765
Mullet genus	0	0	0	0	19,219	0	0	0	0	0	0	1,747
Striped burrfish	0	16,533	1,754	0	0	0	0	0	0	0	0	1,663
Blue croaker	0	0	15,035	0	0	0	0	0	0	0	0	1,367
Unidentified eel	0	0	0	6,021	8,932	0	0	0	0	0	0	1,359
Southern stingray	0	0	0	0	1,012	12,021	0	0	0	0	0	1,185
Dogfish shark family	0	0	7,017	0	2,798	0	0	0	0	0	0	892
Burro grunt	0	0	0	0	0	9,437	0	0	0	0	0	858
Clearnose skate	0	0	0	0	3,665	0	0	0	0	0	4,353	729
White mullet	0	0	3,257	0	0	3,065	0	0	0	865	630	711
Southern puffer	0	0	0	5,373	0	0	0	0	0	0	1,866	658
Toadfish genus	0	0	0	6,691	0	0	0	0	0	0	0	608
Puffer genus	0	0	0	0	3,573	0	0	0	0	0	935	410
Northern kingfish	0	0	0	0	0	0	0	0	4,446	0	0	404
Black dogfish	0	0	0	0	3,710	0	0	0	0	0	0	337

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Eelpout family	0	0	0	0	0	0	3,516	0	0	0	0	320
Cusk-eel family	0	0	0	0	0	0	1,308	0	1,591	0	0	264
Atlantic cutlassfish	0	0	0	0	0	0	0	2,561	0	0	0	233
Mullet family	0	0	0	2,502	0	0	0	0	0	0	0	227
Oyster toadfish	0	0	0	1,777	0	0	0	0	0	0	0	162
Spotted whiff	0	0	0	1,639	0	0	0	0	0	0	0	149
Unidentified skate or ray	0	0	0	0	0	0	0	0	1,591	0	0	145
Batfish family	0	0	0	0	0	1,573	0	0	0	0	0	143
Southern hake	0	0	0	0	1,237	0	0	0	0	0	0	112
Yellow stingray	0	0	0	0	0	0	0	0	0	1,083	0	98
Searobin genus	0	0	0	0	0	0	0	0	0	0	935	85
Conger eel	0	0	0	0	0	0	0	0	0	0	622	57
Atlantic stingray	0	0	0	0	0	0	0	0	0	0	622	57
Bluntnose stingray	0	0	0	0	0	0	0	0	0	525	0	48
Total Demersal Fishes	3,191,153	23,203,040	17,430,445	14,035,416	7,275,618	2,642,903	5,863,301	1,513,839	3,404,055	743,127	1,621,862	7,356,796
OTHER FISHES												
Unidentified fish	0	31,119	420,379	269,093	110,747	46,624	164,934	31,905	59,310	578	21,211	105,082
Unidentified (sharks)	0	0	30,378	41,645	4,561	19,019	40,035	64,173	33,345	2,734	9,980	22,352
Unidentified (bottom fish)	0	49,125	0	0	1,786	1,573	67,214	1,234	2,223	0	2,804	11,451
Needlefish family	0	5,242	8,269	29,727	0	0	44,466	0	6,273	0	1,587	8,688
Bluegill	0	49,600	0	0	0	0	0	0	0	0	0	4,509
Remora	0	0	3,257	13,483	6,736	7,864	11,460	3,707	0	578	0	4,280
Remora family	0	16,533	0	0	1,012	0	6,131	0	0	741	21,137	4,141
Striped bass	0	0	32,574	0	0	0	0	0	2,933	8,812	935	4,114
Crappie genus	0	0	0	24,773	0	0	0	0	0	0	0	2,252
Largemouth bass	0	0	0	0	0	0	13,078	0	2,746	0	0	1,439
Bullhead catfish family	0	0	0	0	0	0	0	0	15,561	0	0	1,415
Atlantic needlefish	0	0	0	11,929	0	0	0	0	0	0	0	1,084

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
White perch	0	0	0	0	0	0	0	0	0	0	9,328	848
Atlantic tarpon	0	0	0	1,777	5,058	0	0	0	0	0	0	621
American eel	0	0	3,509	0	0	0	0	0	0	0	2,804	574
Unidentified (surface fish)	0	0	0	0	0	3,146	0	0	0	0	1,587	430
Hybrid striped bass	0	0	0	0	0	0	0	0	0	2,403	0	218
Sunfish family	0	0	0	1,777	0	0	0	0	0	0	0	162
Bulleye	0	0	0	0	0	1,700	0	0	0	0	0	155
Channel catfish	0	0	0	1,067	0	0	0	0	0	0	0	97
Total Other Fishes	0	151,618	498,366	395,270	129,900	79,925	347,318	101,019	122,391	15,846	71,374	173,911
OCEANIC PELAGIC FISHES												
Dolphin	4,266	19,024	3,474	380,579	20,636	93,252	81,891	15,159	18,388	0	26,537	60,291
Atlantic bonito	0	9,646	59,714	132,122	13,665	162,225	1,758	0	0	0	0	34,466
Silky shark	0	0	85,870	4,955	0	0	0	0	0	0	0	8,257
Hammerhead shark genus	0	0	28,623	29,739	0	0	0	0	0	0	1,305	5,424
Shortfin mako	0	0	57,247	0	0	0	0	0	0	0	0	5,204
Pompano dolphin	0	0	0	1,343	0	0	0	47,386	0	0	0	4,430
Dolphin genus	0	0	0	0	0	0	17,578	0	0	0	0	1,598
Manta family	0	0	0	13,381	1,237	0	0	0	0	0	0	1,329
Blue shark	0	0	0	0	0	0	7,031	0	0	0	0	639
Tiger shark	0	0	0	2,995	0	0	3,580	0	0	0	0	598
Great hammerhead	0	0	0	1,777	1,201	0	0	1,928	0	0	0	446
Thresher shark	0	0	0	3,303	0	0	0	0	0	0	0	300
Wahoo	0	0	0	0	0	0	0	1,239	0	1,606	0	259
Ocean triggerfish	0	0	0	0	2,413	0	0	0	0	0	0	219
Blackfin tuna	0	0	0	0	0	0	0	0	0	0	1,869	170
Flyingfish family	0	0	0	0	0	0	1,308	0	0	0	0	119
Skipjack tuna	0	0	0	0	1,012	0	0	0	0	0	0	92
Total Oceanic Pelagic Fishes	4,266	28,669	234,928	570,194	40,164	255,477	113,145	65,712	18,388	1,606	29,711	123,842

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
REEF FISHES												
Black sea bass	0	33,237	2,351,046	1,021,083	875,492	847,978	2,730,759	428,524	192,118	191,098	348,381	819,974
Bluestriped grunt	3,938	727,463	1,102,487	470,430	140,204	217,702	0	0	0	0	0	242,020
Bank sea bass	0	0	19,544	278,699	33,824	166,498	1,232,019	99,741	45,061	17,850	25,886	174,466
Grunt family	0	400,879	548,560	411,612	65,748	45,613	159.938	193,121	14,322	8,365	12,406	169,142
White grunt	0	0	0	44,426	36,334	233,561	381,296	131,657	143,128	116,601	311,042	127,095
Red porgy	0	19,253	733,378	184,986	18,496	166,846	82,604	24,636	13,336	17,304	5,786	115,148
Gray triggerfish	0	115,749	71,713	92,048	142,756	97,328	365,284	86,510	31,587	82,907	91,507	107,035
Black grouper	11,940	5,242	176,685	481,693	190,902	93,070	215,227	1,321	0	0	0	106,916
Vermilion snapper	0	0	241,938	132,516	95,742	206,950	166,742	17,649	77,930	45,977	38,086	93,048
Gray snapper	0	0	165,545	1,652	63,846	6,291	257,976	24,372	43,771	8,341	32,539	54,939
Red snapper	0	9,646	91,093	22,897	5,211	43,762	77,948	20,995	110,984	102,419	75,760	50,974
Red grouper	0	0	39,884	204,493	39,943	34,048	91,934	20,715	53,370	0	47,610	48,363
Greater amberjack	0	0	39,992	89,754	34,221	34,874	235,508	1,281	5,657	4,788	25,557	42,876
Grunt genus	0	20,966	0	55,995	26,967	6,291	120,554	3,978	122,618	24,861	50,649	39,353
Squirrelfish	2,985	0	260,365	66,929	66,785	0	0	0	0	25,463	0	38,411
Spanish grunt	0	0	0	92,865	86,328	76,415	97,133	60,072	0	0	0	37,528
Gag	0	0	0	18,445	13,751	18,076	34,398	43,322	101,646	27,382	144,030	36,459
Sailors choice	0	106,449	0	21,929	3,455	11,299	165,612	0	54,105	0	0	32,986
Warsaw grouper	0	11,234	317,215	10,812	0	4,441	3,711	15,369	0	0	0	32,980
Atlantic spadefish	0	21,167	0	65,086	5,596	47,186	6,806	0	57,287	3,250	0	18,762
Spottail pinfish	0	0	0	4,268	0	0	42,671	0	0	4,047	112,024	14,819
Unidentified grouper	0	0	0	0	0	0	68,823	31,636	6,951	5,729	48,261	14,673
Margate	0	0	0	0	0	132,112	0	0	0	0	0	12,010
Tomtate	0	0	0	21,325	0	15,325	55,493	0	1,545	20,018	7,930	11,058
Black snapper	0	5,242	0	40,144	8,932	59,399	5,273	0	0	0	0	10,817
Yellow jack	0	5,242	0	79,882	0	0	0	0	0	0	0	7,738
Boxfish genus	0	82,666	0	0	0	0	0	0	0	0	0	7,515

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Porgy family	0	0	42,096	5,335	7,249	0	18,801	5,076	0	1,083	0	7,240
Sea bass genus	0	0	0	0	0	0	0	52,854	0	2,167	15,027	6,368
Grouper genus (*Mycteroperca*)	0	0	0	0	0	0	47,431	1,321	0	0	0	4,432
Whitebone porgy	0	0	0	0	1,786	0	43,651	0	0	0	0	4,131
Barred grunt	0	0	0	0	8,914	0	34,543	0	0	0	0	3,951
Painted wrasse	0	0	0	0	43,248	0	0	0	0	0	0	3,932
Queen triggerfish	0	0	17,147	0	21,010	4,626	0	0	0	0	0	3,889
Sea bass family	0	4,804	0	0	0	31,602	3,516	0	0	0	0	3,629
Scamp	0	0	19,082	12,956	1,531	1,573	1,213	1,234	2,223	0	0	3,619
Bar jack	0	0	13,030	10,640	10,263	0	2,616	0	0	0	0	3,323
Black margate	0	0	0	0	0	31,457	0	0	0	0	0	2,860
Lane snapper	0	0	0	0	1,012	4,534	7,711	0	8,263	3,196	4,109	2,620
Great barracuda	0	0	0	6,857	5,058	3,053	0	1,281	9,605	0	1,874	2,521
Almaco jack	0	0	0	0	0	0	0	0	0	0	27,289	2,481
Striped grunt	0	0	0	0	0	0	0	25,913	0	0	0	2,356
Grouper genus (*Epinephelus*)	0	0	0	1,652	0	0	14,842	0	0	0	0	1,499
Hogfish	0	0	0	0	5,058	4,771	4,688	0	0	0	1,251	1,433
Nurse shark	0	0	13,015	0	0	0	0	0	0	0	2,499	1,410
Snapper family	0	0	0	0	0	0	0	15,369	0	0	0	1,397
Barracuda genus	11,940	0	0	0	0	0	0	0	0	0	0	1,085
Longspine squirrelfish	0	9,607	0	1,343	0	0	0	0	0	0	0	995
Tripletail	0	0	0	0	3,421	0	0	3,842	0	0	631	718
Wrasse family	0	0	0	5,373	0	0	0	0	0	0	0	488
Snapper genus	0	0	0	4,955	0	0	0	0	0	0	0	450
Nassau grouper	0	0	0	0	0	0	0	0	0	4,203	0	382
Parrotfish family	0	0	0	0	0	1,573	2,344	0	0	0	0	356
Spotted moray	0	0	1,754	0	0	1,717	0	0	0	0	0	316
Cherubfish	0	0	3,257	0	0	0	0	0	0	0	0	296

Table B.4. (Continued).

Name	83	84	85	86	87	88	89	90	91	92	93	Average
Graysby	0	0	0	0	0	3,053	0	0	0	0	0	278
Red hogfish	0	0	0	0	3,035	0	0	0	0	0	0	276
Speckled hind	0	0	0	0	0	1,480	0	1,234	0	0	0	247
Squirrelfish family	0	0	0	2,686	0	0	0	0	0	0	0	244
Comb grouper	0	0	2,637	0	0	0	0	0	0	0	0	240
Snowy grouper	0	0	0	0	0	0	0	1,928	0	578	0	228
Amberjack genus	0	0	0	0	0	0	0	0	0	0	1,958	178
Soapfish genus	0	0	0	0	0	0	0	0	0	0	1,869	170
Jewfish	0	0	0	0	0	0	0	0	0	0	1,869	170
Rock hind	0	0	0	1,777	0	0	0	0	0	0	0	162
Marbled grouper	0	0	0	1,777	0	0	0	0	0	0	0	162
Green moray	0	0	1,754	0	0	0	0	0	0	0	0	159
Lesser amberjack	0	0	0	0	0	0	1,708	0	0	0	0	155
Guaguanche	0	0	0	0	0	1,533	0	0	0	0	0	139
Scrawled cowfish	0	0	0	0	0	0	1,308	0	0	0	0	119
Blue angelfish	0	0	0	1,229	0	0	0	0	0	0	0	112
Jolthead porgy	0	0	0	0	1,222	0	0	0	0	0	0	111
Mutton snapper	0	0	0	0	0	0	0	0	0	1,158	0	105
Dog snapper	0	0	0	0	0	0	0	0	0	1,051	0	96
Frogfish genus	0	0	0	0	1,012	0	0	0	0	0	0	92
Porcupinefish	0	0	0	0	1,012	0	0	0	0	0	0	92
Total Reef Fishes	30,803	1,578,846	6,273,218	3,970,545	2,069,360	2,656,036	6,782,080	1,314,951	1,095,506	719,835	1,435,831	2,538,819
TOTAL PRIVATE BOAT CATCH	3,550,164	26,329,638	25,379,270	24,284,701	10,601,963	7,814,309	16,700,602	3,519,032	5,413,085	1,844,115	3,696,952	11,739,439

Table B.5. Estimated number of fish (by species group) caught by recreational anglers fishing from charter vessels off the Florida panhandle, 1986 to 1993.

Name	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Round scad	0	0	0	6,825	19,919	17,209	0	57,680	12,704
Gulf menhaden	0	0	0	13,650	0	674	1,865	0	2,024
Total Baitfishes	0	0	0	20,475	19,919	17,882	1,865	57,680	14,728
COASTAL PELAGIC FISHES									
King mackerel	14,098	55	0	56,452	61,111	133,676	56,389	78,130	49,989
Little tunny	36,836	1,130	22,204	82,323	14,518	58,428	18,970	125,774	45,023
Spanish mackerel	18,166	20,616	10,206	98,019	12,785	17,519	24,729	54,892	32,117
Blue runner	0	0	32,741	29,406	0	12,475	703	88,796	20,515
Jack family	395	0	0	54,543	0	932	0	48,326	13,025
Bluefish	791	18,720	4,742	41,480	286	6,120	0	354	9,062
Mackerel family	0	0	40,305	1,138	0	2,694	0	14,639	7,347
Banded rudderfish	0	0	0	0	9,833	2,642	0	30,071	5,318
Cobia	1,839	56	0	4,831	4,041	8,608	1,374	3,128	2,985
Ladyfish	9,970	0	1,693	7,572	0	1,700	1,398	669	2,875
Cero	19,190	0	0	0	0	0	0	0	2,399
Crevalle jack	0	339	0	10,835	0	3,057	1,398	427	2,007
Blacktip shark	0	0	314	5,852	1,163	932	0	1,337	1,200
Bonnethead	0	0	0	5,706	0	0	0	0	713
Requiem shark genus	5,393	0	0	0	0	0	0	0	674
Dusky shark	395	1,170	552	0	0	0	0	0	265
Leatherjacket family	1,186	0	0	0	0	0	0	0	148
Requiem shark family	0	0	436	0	0	0	0	0	54
Butterfish family	0	0	0	0	0	0	342	0	43
Pilotfish	257	0	0	0	0	0	0	0	32
Scalloped hammerhead	0	55	0	0	0	0	0	0	7
Total Coastal Pelagic Fishes	108,516	42,142	113,194	398,158	103,737	248,783	105,304	446,542	195,797

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES									
Spotted seatrout	771	46,903	3,051	680,028	0	55,352	24,529	115,342	115,747
Sheepshead	186	11,201	0	337,315	0	381	6,565	2,167	44,727
Red drum	0	6,142	0	278,364	0	7,568	17,978	0	38,756
Hardhead catfish	0	10,443	5,939	163,478	0	20,292	9,560	2,006	26,465
Sand seatrout	0	39,203	0	127,468	0	14,026	17,805	7,583	25,761
Rock sea bass	16,111	2,784	58,244	0	66,445	21,139	0	967	20,711
Pinfish	791	0	2,179	31,566	13,279	44,194	469	50,053	17,816
Sea catfish family	63,227	0	0	51,222	0	0	12,661	0	15,889
Sand perch	0	51,299	30,659	31,260	6,921	0	1,172	0	15,164
Atlantic croaker	1,286	0	0	66,982	0	1,700	1,407	0	8,922
Silver seatrout	0	0	0	0	0	0	5,827	35,595	5,178
Gulf kingfish	0	0	0	26,909	0	0	7,672	0	4,323
Gafftopsail catfish	0	700	0	6,895	0	8,131	3,729	9,647	3,638
Black drum	648	2,100	0	7,668	0	381	6,307	0	2,138
Sand perch genus	0	0	10,274	0	0	0	6,360	0	2,079
Stingray family	0	0	436	12,381	0	0	1,888	0	1,838
Gulf toadfish	0	0	11,766	0	0	0	0	2,425	1,774
Lefteye flounder genus	1,163	0	1,581	1,970	0	6,206	234	1,840	1,624
Skate genus	0	0	7,903	985	0	0	0	0	1,111
Pigfish	0	0	0	2,377	0	6,342	0	0	1,090
Lizardfish family	0	0	436	7,880	0	0	0	0	1,040
Dwarf sand perch	0	357	0	5,479	0	0	0	0	730
Gulf flounder	0	1,170	1,307	1,369	0	425	342	582	649
Seatrout genus	0	0	0	0	0	0	4,661	0	583
Southern flounder	0	1,170	564	1,370	221	0	0	1,210	567
Lefteye flounder family	0	0	1,581	1,970	664	0	0	0	527

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Longspine porgy	0	0	0	0	0	0	0	3,746	468
Silver perch	0	0	0	0	0	0	3,263	0	408
Unidentified flounder or sole	2,234	71	0	0	0	0	0	0	288
Sole family	2,144	0	0	0	0	0	0	0	268
Dusky flounder	0	55	1,732	0	0	0	0	0	223
Atlantic cutlassfish	0	0	0	0	0	1,700	0	0	213
Lizardfish genus	0	0	0	0	0	1,585	0	0	198
Florida pompano	0	1,400	0	0	0	0	0	0	175
Searobin family	0	0	0	985	0	0	0	0	123
Unidentified eel	395	0	436	0	0	0	0	0	104
Bearded brotula	250	0	0	0	0	0	0	340	74
Black dogfish	510	0	0	0	0	0	0	0	64
Puffer genus	0	0	0	0	0	0	469	0	59
Tonguefish genus	0	0	436	0	0	0	0	0	54
Snake eel family	186	0	0	0	0	0	234	0	53
Grass porgy	0	0	0	0	0	0	0	340	42
Eelpout family	0	0	0	0	332	0	0	0	41
Striped mullet	0	0	0	274	0	0	0	0	34
Clearnose skate	0	0	0	274	0	0	0	0	34
Toadfish family	257	0	0	0	0	0	0	0	32
Drum family	0	71	0	0	0	0	0	0	9
Ocellated flounder	0	55	0	0	0	0	0	0	7
Total Demersal Fishes	90,161	175,125	138,522	1,846,471	87,863	189,424	133,132	233,843	361,818
OTHER FISHES									
Unidentified fish	8,224	0	21,383	14,635	332	25,711	1,865	669	9,102
Unidentified (bottom fish)	0	1,170	4,358	18,332	0	2,114	0	22,251	6,028
Remora family	0	0	0	12,805	0	2,799	938	1,757	2,287

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Remora	1,186	0	0	571	5,312	5,537	0	0	1,576
Unidentified (sharks)	0	0	0	1,121	664	425	758	586	444
Unidentified (surface fish)	0	0	0	0	0	0	0	2,928	366
Total Other Fishes	9,410	1,170	25,741	47,464	6,308	36,586	3,560	28,189	19,804
OCEANIC PELAGIC FISHES									
Dolphin	24,166	0	10,026	27,019	20,394	16,469	1,367	26,765	15,776
Pompano dolphin	0	0	0	0	70,597	0	0	644	8,905
Atlantic bonito	1,291	1,170	0	1,065	0	0	520	0	506
Rainbow runner	2,331	0	0	0	1,285	0	0	0	452
Wahoo	257	0	0	0	143	0	515	2,663	447
Ocean triggerfish	0	2,279	1,255	0	0	0	0	0	442
Blackfin tuna	895	56	0	571	0	808	0	177	313
White marlin	0	0	0	0	0	0	0	1,873	234
Flyingfish family	0	71	0	0	0	0	0	0	9
Tiger shark	0	55	0	0	0	0	0	0	7
Total Oceanic Pelagic Fishes	28,940	3,632	11,281	28,655	92,420	17,277	2,402	32,122	27,091
REEF FISHES									
Vermilion snapper	476,590	59,874	316,705	235,757	208,657	531,326	86,121	376,339	286,421
Gray triggerfish	392,263	64,964	60,839	196,878	299,997	557,100	158,596	252,532	247,896
Red snapper	407,846	8,361	197,276	146,930	55,199	167,090	202,098	350,080	191,860
Greater amberjack	270,165	52,658	94,953	136,047	17,704	375,305	61,487	142,956	143,909
Red porgy	361,012	74,790	172,373	22,341	101,639	92,526	10,321	81,183	114,523
Bank sea bass	168,362	15,810	144,717	30,614	83,992	130,020	4,998	184,018	95,316
Tomtate	1,582	0	3,051	0	8,306	7,651	3,048	155,888	22,441
Black grouper	119,415	8,767	46,129	838	143	0	932	0	22,028
Gag	12,436	2,210	3,283	18,584	6,823	9,251	6,535	46,035	13,144
Black sea bass	15,281	5,850	42,276	28,329	0	5,389	2,797	0	12,490

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Lane snapper	4,350	71	1,343	13,781	8,760	26,070	3,132	34,626	11,517
Gray snapper	9,065	2,160	552	13,816	1,661	5,845	28,116	18,786	10,000
Whitebone porgy	0	2,160	0	77,471	0	0	0	0	9,954
Grunt family	1,675	1,142	5,665	51,570	0	4,250	0	14,495	9,850
Spanish grunt	24,774	14,311	2,258	0	26,227	8,076	0	0	9,456
Scamp	26,338	276	4,164	10,111	3,718	4,599	6,546	15,867	8,952
Sea bass genus	0	0	436	0	0	0	43,375	0	5,476
Grunt genus	0	0	0	0	0	17,002	6,071	11,944	4,377
Silk snapper	0	0	0	0	34,883	0	0	0	4,360
Red grouper	18,753	56	4,028	1,845	0	6,736	277	1,902	4,200
Black snapper	1,163	0	24,119	0	0	0	0	0	3,160
White grunt	0	0	0	0	0	0	0	19,464	2,433
Almaco jack	2,166	55	552	8,514	950	3,739	455	2,997	2,429
Margate	0	0	17,084	0	0	0	92	0	2,147
Bluestriped grunt	0	0	13,806	0	0	0	0	0	1,726
Mutton snapper	0	0	0	0	13,289	0	0	0	1,661
Snapper family	648	857	0	0	0	1,347	6,060	2,928	1,480
Warsaw grouper	1,063	0	866	0	7,475	1,199	0	0	1,325
Porgy family	395	0	2,452	3,940	0	3,449	0	0	1,280
Squirrelfish	6,125	928	0	0	0	0	0	0	882
Squirrelfish family	3,573	2,499	0	0	0	0	0	0	759
Grouper genus (*Mycteroperca*)	0	5,180	0	0	0	0	0	0	647
Amberjack genus	4,808	0	0	0	0	0	0	0	601
Lesser amberjack	0	55	0	4,268	0	0	0	0	540
Moray family	1,943	1,241	0	0	0	0	0	669	482
Yellowtail snapper	3,559	0	0	0	0	0	0	0	445
Sailors choice	0	3,240	0	0	0	0	0	0	405

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Snapper genus	2,768	0	0	0	0	0	0	0	346
Yellowmouth grouper	0	0	2,209	0	0	269	0	0	310
Great barracuda	1,582	0	552	0	143	0	0	177	307
Unidentified grouper	0	0	0	0	0	1,863	0	375	280
Jewfish	0	0	2,209	0	0	0	0	0	276
Mahogany snapper	0	0	2,209	0	0	0	0	0	276
Queen triggerfish	0	0	0	0	0	2,114	0	0	264
Snowy grouper	395	55	0	0	143	1,199	0	177	246
Trumpetfish	0	0	790	0	0	0	0	749	192
Black margate	0	0	0	1,467	0	0	0	0	183
Cubera snapper	0	0	0	0	1,078	0	0	340	177
Schoolmaster	257	0	0	0	0	0	938	0	149
Blackedge moray	1,186	0	0	0	0	0	0	0	148
Spottail pinfish	0	0	0	1,168	0	0	0	0	146
Speckled hind	354	0	0	0	0	0	0	749	138
Spotted moray	257	0	0	0	831	0	0	0	136
Queen snapper	791	0	0	0	0	0	0	0	99
Atlantic spadefish	0	0	0	237	0	0	173	0	51
Grouper genus (*Epinephelus*)	395	0	0	0	0	0	0	0	49
Queen angelfish	395	0	0	0	0	0	0	0	49
Parrotfish family	395	0	0	0	0	0	0	0	49
Sheepshead porgy	0	0	0	357	0	0	0	0	45
Yellowedge grouper	0	0	0	0	0	0	0	340	42
Jolthead porgy	0	113	0	0	0	225	0	0	42
Tripletail	0	0	0	0	0	0	0	290	36
Longspine squirrelfish	186	0	0	0	0	0	0	0	23
Red hind	0	0	0	0	0	0	0	177	22

Table B.5. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Unicorn filefish	0	0	0	0	0	0	0	177	22
Bluespotted cornetfish	0	55	0	0	0	0	0	0	7
Total Reef Fishes	2,344,313	327,739	1,166,897	1,004,862	881,618	1,963,639	632,166	1,716,259	1,254,687
TOTAL CHARTER BOAT CATCH	2,581,340	549,808	1,455,635	3,346,086	1,191,864	2,473,592	878,430	2,514,636	1,873,924

Table B.6. Estimated number of fish (by species group) caught by recreational anglers fishing from shore in the Florida panhandle, 1986 to 1993.

Name	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Scad, round (cigarfish)	0	0	0	6,825	19,919	17,209	0	57,680	12,704
Gulf menhaden	0	0	0	13,650	0	674	1,865	0	2,024
Total Baitfishes	0	0	0	20,475	19,919	17,882	1,865	57,680	14,728
COASTAL PELAGIC FISHES									
King mackerel	14,098	55	0	56,452	61,111	133,676	56,389	78,130	49,989
Little tunny	36,836	1,130	22,204	82,323	14,518	58,428	18,970	125,774	45,023
Spanish mackerel	18,166	20,616	10,206	98,019	12,785	17,519	24,729	54,892	32,117
Blue runner	0	0	32,741	29,406	0	12,475	703	88,796	20,515
Jack family	395	0	0	54,543	0	932	0	48,326	13,025
Bluefish	791	18,720	4,742	41,480	286	6,120	0	354	9,062
Mackerel family	0	0	40,305	1,138	0	2,694	0	14,639	7,347
Banded rudderfish	0	0	0	0	9,833	2,642	0	30,071	5,318
Cobia	1,839	56	0	4,831	4,041	8,608	1,374	3,128	2,985
Ladyfish	9,970	0	1,693	7,572	0	1,700	1,398	669	2,875
Cero	19,190	0	0	0	0	0	0	0	2,399
Crevalle jack	0	339	0	10,835	0	3,057	1,398	427	2,007
Blacktip shark	0	0	314	5,852	1,163	932	0	1,337	1,200
Bonnethead	0	0	0	5,706	0	0	0	0	713
Requiem shark genus	5,393	0	0	0	0	0	0	0	674
Dusky shark	395	1,170	552	0	0	0	0	0	265
Leatherjacket family	1,186	0	0	0	0	0	0	0	148
Requiem shark family	0	0	436	0	0	0	0	0	54
Butterfish family	0	0	0	0	0	0	342	0	43
Pilotfish	257	0	0	0	0	0	0	0	32
Scalloped hammerhead	0	55	0	0	0	0	0	0	7
Total Coastal Pelagic Fishes	108,516	42,142	113,194	398,158	103,737	248,783	105,304	446,542	195,797

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES									
Spotted seatrout	771	46,903	3,051	680,028	0	55,352	24,529	115,342	115,747
Sheepshead	186	11,201	0	337,315	0	381	6,565	2,167	44,727
Red drum	0	6,142	0	278,364	0	7,568	17,978	0	38,756
Hardhead catfish	0	10,443	5,939	163,478	0	20,292	9,560	2,006	26,465
Sand seatrout	0	39,203	0	127,468	0	14,026	17,805	7,583	25,761
Rock sea bass	16,111	2,784	58,244	0	66,445	21,139	0	967	20,711
Pinfish	791	0	2,179	31,566	13,279	44,194	469	50,053	17,816
Sea catfish family	63,227	0	0	51,222	0	0	12,661	0	15,889
Sand perch	0	51,299	30,659	31,260	6,921	0	1,172	0	15,164
Atlantic croaker	1,286	0	0	66,982	0	1,700	1,407	0	8,922
Silver seatrout	0	0	0	0	0	0	5,827	35,595	5,178
Gulf kingfish	0	0	0	26,909	0	0	7,672	0	4,323
Gafftopsail catfish	0	700	0	6,895	0	8,131	3,729	9,647	3,638
Black drum	648	2,100	0	7,668	0	381	6,307	0	2,138
Sand perch genus	0	0	10,274	0	0	0	6,360	0	2,079
Stingray family	0	0	436	12,381	0	0	1,888	0	1,838
Gulf toadfish	0	0	11,766	0	0	0	0	2,425	1,774
Lefteye flounder genus	1,163	0	1,581	1,970	0	6,206	234	1,840	1,624
Skate genus	0	0	7,903	985	0	0	0	0	1,111
Pigfish	0	0	0	2,377	0	6,342	0	0	1,090
Lizardfish family	0	0	436	7,880	0	0	0	0	1,040
Dwarf sand perch	0	357	0	5,479	0	0	0	0	730
Gulf flounder	0	1,170	1,307	1,369	0	425	342	582	649
Seatrout genus	0	0	0	0	0	0	4,661	0	583
Southern flounder	0	1,170	564	1,370	221	0	0	1,210	567
Lefteye flounder family	0	0	1,581	1,970	664	0	0	0	527

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Longspine porgy	0	0	0	0	0	0	0	3,746	468
Silver perch	0	0	0	0	0	0	3,263	0	408
Unidentified flounder or sole	2,234	71	0	0	0	0	0	0	288
Sole family	2,144	0	0	0	0	0	0	0	268
Dusky flounder	0	55	1,732	0	0	0	0	0	223
Atlantic cutlassfish	0	0	0	0	0	1,700	0	0	213
Lizardfish genus	0	0	0	0	0	1,585	0	0	198
Florida pompano	0	1,400	0	0	0	0	0	0	175
Searobin family	0	0	0	985	0	0	0	0	123
Unidentified eel	395	0	436	0	0	0	0	0	104
Bearded brotula	250	0	0	0	0	0	0	340	74
Black dogfish	510	0	0	0	0	0	0	0	64
Puffer genus	0	0	0	0	0	0	469	0	59
Tonguefish genus	0	0	436	0	0	0	0	0	54
Snake eel family	186	0	0	0	0	0	234	0	53
Grass porgy	0	0	0	0	0	0	0	340	42
Eelpout family	0	0	0	0	332	0	0	0	41
Striped mullet	0	0	0	274	0	0	0	0	34
Clearnose skate	0	0	0	274	0	0	0	0	34
Toadfish family	257	0	0	0	0	0	0	0	32
Drum family	0	71	0	0	0	0	0	0	9
Ocellated flounder	0	55	0	0	0	0	0	0	7
Total Demersal Fishes	90,161	175,125	138,522	1,846,471	87,863	189,424	133,132	233,843	361,818
OTHER FISHES									
Unidentified fish	8,224	0	21,383	14,635	332	25,711	1,865	669	9,102
Unidentified (bottom fish)	0	1,170	4,358	18,332	0	2,114	0	22,251	6,028
Remora family	0	0	0	12,805	0	2,799	938	1,757	2,287

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Remora	1,186	0	0	571	5,312	5,537	0	0	1,576
Unidentified (sharks)	0	0	0	1,121	664	425	758	586	444
Unidentified (surface fish)	0	0	0	0	0	0	0	2,928	366
Total Other Fishes	9,410	1,170	25,741	47,464	6,308	36,586	3,560	28,189	19,804
OCEANIC PELAGIC FISHES									
Dolphin	24,166	0	10,026	27,019	20,394	16,469	1,367	26,765	15,776
Pompano dolphin	0	0	0	0	70,597	0	0	644	8,905
Atlantic bonito	1,291	1,170	0	1,065	0	0	520	0	506
Rainbow runner	2,331	0	0	0	1,285	0	0	0	452
Wahoo	257	0	0	0	143	0	515	2,663	447
Ocean triggerfish	0	2,279	1,255	0	0	0	0	0	442
Blackfin tuna	895	56	0	571	0	808	0	177	313
White marlin	0	0	0	0	0	0	0	1,873	234
Flyingfish family	0	71	0	0	0	0	0	0	9
Tiger shark	0	55	0	0	0	0	0	0	7
Total Oceanic Pelagic Fishes	28,940	3,632	11,281	28,655	92,420	17,277	2,402	32,122	27,091
REEF FISHES									
Vermilion snapper	476,590	59,874	316,705	235,757	208,657	531,326	86,121	376,339	286,421
Gray triggerfish	392,263	64,964	60,839	196,878	299,997	557,100	158,596	252,532	247,896
Red snapper	407,846	8,361	197,276	146,930	55,199	167,090	202,098	350,080	191,860
Greater amberjack	270,165	52,658	94,953	136,047	17,704	375,305	61,487	142,956	143,909
Red porgy	361,012	74,790	172,373	22,341	101,639	92,526	10,321	81,183	114,523
Bank sea bass	168,362	15,810	144,717	30,614	83,992	130,020	4,998	184,018	95,316
Tomtate	1,582	0	3,051	0	8,306	7,651	3,048	155,888	22,441
Black grouper	119,415	8,767	46,129	838	143	0	932	0	22,028
Gag	12,436	2,210	3,283	18,584	6,823	9,251	6,535	46,035	13,144
Black sea bass	15,281	5,850	42,276	28,329	0	5,389	2,797	0	12,490

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Lane snapper	4,350	71	1,343	13,781	8,760	26,070	3,132	34,626	11,517
Gray snapper	9,065	2,160	552	13,816	1,661	5,845	28,116	18,786	10,000
Whitebone porgy	0	2,160	0	77,471	0	0	0	0	9,954
Grunt family	1,675	1,142	5,665	51,570	0	4,250	0	14,495	9,850
Spanish grunt	24,774	14,311	2,258	0	26,227	8,076	0	0	9,456
Scamp	26,338	276	4,164	10,111	3,718	4,599	6,546	15,867	8,952
Sea bass genus	0	0	436	0	0	0	43,375	0	5,476
Grunt genus	0	0	0	0	0	17,002	6,071	11,944	4,377
Silk snapper	0	0	0	0	34,883	0	0	0	4,360
Red grouper	18,753	56	4,028	1,845	0	6,736	277	1,902	4,200
Black snapper	1,163	0	24,119	0	0	0	0	0	3,160
White grunt	0	0	0	0	0	0	0	19,464	2,433
Almaco jack	2,166	55	552	8,514	950	3,739	455	2,997	2,429
Margate	0	0	17,084	0	0	0	92	0	2,147
Bluestriped grunt	0	0	13,806	0	0	0	0	0	1,726
Mutton snapper	0	0	0	0	13,289	0	0	0	1,661
Snapper family	648	857	0	0	0	1,347	6,060	2,928	1,480
Warsaw grouper	1,063	0	866	0	7,475	1,199	0	0	1,325
Porgy family	395	0	2,452	3,940	0	3,449	0	0	1,280
Squirrelfish	6,125	928	0	0	0	0	0	0	882
Squirrelfish family	3,573	2,499	0	0	0	0	0	0	759
Grouper genus (*Mycteroperca*)	0	5,180	0	0	0	0	0	0	647
Amberjack genus	4,808	0	0	0	0	0	0	0	601
Lesser amberjack	0	55	0	4,268	0	0	0	0	540
Moray family	1,943	1,241	0	0	0	0	0	669	482
Yellowtail snapper	3,559	0	0	0	0	0	0	0	445
Sailors choice	0	3,240	0	0	0	0	0	0	405

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Snapper genus	2,768	0	0	0	0	0	0	0	346
Yellowmouth grouper	0	0	2,209	0	0	269	0	0	310
Great barracuda	1,582	0	552	0	143	0	0	177	307
Unidentified grouper	0	0	0	0	0	1,863	0	375	280
Jewfish	0	0	2,209	0	0	0	0	0	276
Mahogany snapper	0	0	2,209	0	0	0	0	0	276
Queen triggerfish	0	0	0	0	0	2,114	0	0	264
Snowy grouper	395	55	0	0	143	1,199	0	177	246
Trumpetfish	0	0	790	0	0	0	0	749	192
Black margate	0	0	0	1,467	0	0	0	0	183
Cubera snapper	0	0	0	0	1,078	0	0	340	177
Schoolmaster	257	0	0	0	0	0	938	0	149
Blackedge moray	1,186	0	0	0	0	0	0	0	148
Spottail pinfish	0	0	0	1,168	0	0	0	0	146
Speckled hind	354	0	0	0	0	0	0	749	138
Spotted moray	257	0	0	0	831	0	0	0	136
Queen snapper	791	0	0	0	0	0	0	0	99
Atlantic spadefish	0	0	0	237	0	0	173	0	51
Grouper genus (*Epinephelus*)	395	0	0	0	0	0	0	0	49
Queen angelfish	395	0	0	0	0	0	0	0	49
Parrotfish family	395	0	0	0	0	0	0	0	49
Sheepshead porgy	0	0	0	357	0	0	0	0	45
Yellowedge grouper	0	0	0	0	0	0	0	340	42
Jolthead porgy	0	113	0	0	0	225	0	0	42
Tripletail	0	0	0	0	0	0	0	290	36
Longspine squirrelfish	186	0	0	0	0	0	0	0	23
Red hind	0	0	0	0	0	0	0	177	22

Table B.6. (Continued).

Name	86	87	88	89	90	91	92	93	Average
Unicorn filefish	0	0	0	0	0	0	0	177	22
Bluespotted cornetfish	0	55	0	0	0	0	0	0	7
Total Reef Fishes	2,344,313	327,739	1,166,897	1,004,862	881,618	1,963,639	632,166	1,716,259	1,254,687
TOTAL CHARTER BOAT CATCH	2,581,340	549,808	1,455,635	3,346,086	1,191,864	2,473,592	878,430	2,514,636	1,873,924

Table B.7. Total number of fish (by species group) caught aboard headboats off the Florida panhandle, 1986 to 1993.

Common Name	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Mackerel scad	0	32	2	0	0	0	0	0	4
Bigeye scad	0	4	0	0	0	0	0	0	1
Total Baitfishes	0	36	2	0	0	0	0	0	5
COASTAL PELAGIC FISHES									
Little tunny	6,607	6,033	1,825	1,766	1,915	2,255	1,512	1,404	2,915
Banded rudderfish	0	23	106	1,792	1,612	2,446	4,092	4,808	1,860
Blue runner	86	221	300	1,925	1,265	2,276	372	284	841
King mackerel	243	574	182	294	335	2,071	1,168	1,660	816
Bluefish	167	77	58	5,088	155	64	111	433	769
Cobia	147	180	77	63	88	211	80	330	147
Shark, unidentified	11	26	102	68	139	221	13	25	76
Blacktip shark	1	0	1	28	127	57	83	95	49
Spanish mackerel	12	15	26	9	17	87	33	44	30
Crevalle jack	77	4	21	13	3	15	3	2	17
African pompano	0	6	1	18	8	35	8	4	10
Sandbar shark	3	8	0	40	11	1	0	0	8
Chub mackerel	0	0	14	34	1	0	4	0	7
Dusky shark	0	2	1	3	2	17	5	18	6
Atlantic mackerel	37	0	1	0	0	0	0	0	5
Cero	0	16	13	0	0	2	0	0	4
Bull shark	0	2	1	0	0	13	0	2	2
Lemon shark	0	0	0	0	0	2	7	0	1
Leopard shark	3	0	0	0	0	3	1	2	1
Sharpnose shark	0	0	5	2	0	0	0	1	1
Spinner shark	0	0	0	7	0	0	0	0	1
Total Coastal Pelagic Fishes	7,394	7,187	2,736	11,150	5,678	9,777	7,492	9,112	7,566

Table B.7. (Continued).

Common Name	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES									
Sand perch	48,231	51,837	52,719	27,825	14,120	11,482	36,346	30,828	34,174
Pigfish	22,155	5,269	22,187	13,854	4,199	1,873	1,361	2,567	9,183
Pinfish	1,279	337	6,585	2,006	1,663	2,172	1,259	2,202	2,188
Knobbed porgy	3,317	1,612	1,576	1,262	1,141	1,266	2,475	2,690	1,917
Flounder, unidentified	590	378	287	33	0	23	0	2	164
Blueline tilefish	5	40	201	166	610	154	1	20	150
Summer flounder	0	109	85	192	52	54	387	218	137
Sand tilefish	1,028	28	8	8	6	5	0	1	136
Dusky flounder	0	76	66	127	201	93	127	282	122
Grass porgy	286	555	12	22	0	1	0	2	110
Sand trout	0	4	0	0	0	573	164	0	93
Hardhead catfish	22	8	32	15	0	73	108	13	34
Gafftopsail catfish	0	0	75	0	3	59	129	4	34
Brotula	0	1	16	3	27	74	8	42	21
Toadfish, unidentified	133	0	3	0	0	2	1	14	19
Searobin, unidentified	5	6	6	2	1	0	103	27	19
Smooth dogfish shark	0	10	29	14	32	53	0	8	18
Inshore lizardfish	0	0	2	2	1	3	34	33	9
Smooth puffer	0	0	0	0	4	6	2	2	2
Puffer, unidentified	4	0	2	0	4	0	2	1	2
Goldface tilefish	0	4	8	0	0	0	0	0	2
Ocellated moray	0	0	0	0	0	0	11	0	1
Stingray, unidentified	9	0	0	0	0	0	0	0	1
Black drum	0	0	0	3	3	2	1	0	1
Southern hake	7	0	1	0	0	0	0	0	1
Silver seatrout	0	0	0	3	1	0	0	0	1

Table B.7. (Continued).

Common Name	86	87	88	89	90	91	92	93	Average
Scup	0	0	0	0	0	0	0	4	1
Goosefish, unidentified	2	2	0	0	0	0	0	0	1
Total Demersal Fishes	77,073	60,276	83,903	45,538	22,069	17,968	42,523	38,960	48,539
OCEANIC PELAGIC FISHES									
Dolphin	3,342	2,228	2,569	1,548	6,655	3,632	2,080	1,933	2,998
Atlantic bonito	46	110	127	59	0	12	52	7	52
Blackfin tuna	0	28	16	101	81	49	14	45	42
Rainbow runner	3	0	3	108	55	48	28	38	35
Wahoo	0	0	11	2	0	32	12	14	9
Ocean triggerfish	33	0	0	0	3	0	0	0	5
Tiger shark	0	6	5	5	4	3	1	6	4
Bullet mackerel	0	26	0	0	0	0	0	0	3
Silky shark	0	2	15	0	0	5	0	0	3
Mako shark	0	0	1	0	1	1	0	3	1
Sailfish	0	0	0	0	0	1	3	1	1
Pilotfish	5	0	0	0	0	0	0	0	1
Total Oceanic Pelagic Fishes	3,429	2,400	2,747	1,827	6,801	3,783	2,190	2,047	3,153
REEF FISHES									
Vermilion snapper	488,750	458,594	641,962	355,736	411,767	409,086	545,357	411,036	465,286
Red porgy	246,181	278,330	208,871	104,536	121,533	122,174	123,294	132,001	167,115
Tomtate	122,900	152,216	90,133	115,663	112,793	90,732	86,995	93,118	108,069
Bank sea bass	0	5,768	97,026	109,101	141,087	88,140	80,180	94,336	76,955
Gray triggerfish	23,209	16,602	22,609	39,033	93,659	53,014	62,408	53,022	45,445
Red snapper	14,903	9,256	12,881	10,357	15,393	15,349	33,832	36,735	18,588
Rock sea bass	21,587	58,792	7,019	963	455	218	454	1,379	11,358
Greater amberjack	20,760	20,623	4,845	25,693	621	1,489	1,525	761	9,540
Squirrelfish	33,313	3,069	3,419	232	512	381	616	1	5,193

Table B.7. (Continued).

Common Name	86	87	88	89	90	91	92	93	Average
Gag	13,206	6,355	1,869	1,305	817	739	829	2,106	3,403
Lane snapper	2,705	1,143	1,123	2,755	3,240	4,677	5,326	6,090	3,382
Whitebone porgy	8,757	280	1,746	888	800	1,132	1,883	2,969	2,307
Almaco jack	4,207	289	310	3,285	1,414	1,374	397	356	1,454
Gray snapper	1,221	1,124	731	2,286	674	1,518	1,581	2,373	1,439
Black sea bass	4	858	1,963	4,511	296	593	248	1,853	1,291
White grunt	296	2,112	803	756	66	26	352	5,439	1,231
Black grouper	4,622	4,345	24	104	72	52	16	80	1,164
Scamp	2,216	1,039	976	1,234	790	555	915	960	1,086
Red grouper	1,210	932	648	302	272	244	172	1,161	618
Spottail pinfish	668	1,485	740	55	47	85	63	17	395
Queen triggerfish	1,381	291	202	223	566	99	177	182	390
Saucereye porgy	0	298	45	116	61	215	871	966	322
Bigeye	187	379	480	180	330	245	182	202	273
Atlantic spadefish	0	109	858	178	514	12	19	5	212
Yellowtail snapper	53	619	37	0	213	4	97	266	161
Rock hind	232	261	68	89	132	141	33	69	128
Moray, unidentified	970	24	0	6	0	0	0	1	125
Silk snapper	408	174	39	10	251	3	0	0	111
Lesser amberjack	0	0	123	249	46	21	371	27	105
Short bigeye	0	61	226	91	25	5	112	116	80
Speckled hind	126	75	169	44	37	18	24	12	63
Porkfish	470	0	0	0	0	0	0	0	59
Creole fish	0	0	3	102	279	36	27	17	58
French grunt	22	307	3	5	50	40	1	0	54
Snowy grouper	23	46	105	37	32	18	9	75	43
Margate	0	10	84	226	0	0	1	0	40

Table B.7. (Continued).

Common Name	86	87	88	89	90	91	92	93	Average
Blackfin snapper	12	10	25	40	17	34	80	26	31
Cubera snapper	0	13	6	38	5	89	2	4	20
Nurse shark	20	0	0	0	105	8	3	0	17
Warsaw grouper	8	36	24	26	10	13	3	5	16
Hogfish	5	1	96	0	4	2	0	9	15
Unicorn fish	0	0	4	9	5	64	17	15	14
Great barracuda	0	15	8	8	14	25	15	17	13
Tattler	0	0	4	80	4	0	0	0	11
Graysby	0	10	2	2	7	6	60	1	11
Red hind	3	4	12	12	39	9	1	7	11
Sheepshead porgy	9	0	22	0	5	17	6	20	10
Wenchman	0	0	0	0	4	75	0	0	10
Bluestriped grunt	5	13	3	11	8	25	4	0	9
Yellowmouth grouper	0	0	21	0	34	0	0	3	7
Nassau grouper	17	22	0	0	0	0	0	0	5
Mutton snapper	0	4	1	9	5	2	2	10	4
Yellowedge grouper	0	2	0	1	3	3	3	20	4
Parrotfish, unidentified	22	0	0	1	5	2	0	0	4
Slippery dick	0	0	0	0	0	0	0	30	4
Scorpionfish, unidentified	0	0	20	4	0	0	1	4	4
Yellowfin grouper	0	0	5	22	0	0	0	0	3
Spanish hogfish	0	0	0	0	0	23	0	1	3
Dog snapper	6	6	8	3	0	0	0	0	3
Jolthead porgy	0	0	0	0	0	0	0	22	3
Palespotted eel	0	22	0	0	0	0	0	0	3
Sheepshead	0	0	0	0	19	1	0	0	3
Littlehead porgy	0	0	0	0	0	20	0	0	3

Table B.7. (Continued).

Common Name	86	87	88	89	90	91	92	93	Average
Coney	0	0	0	10	2	0	1	0	2
Spotfin hogfish	0	2	6	1	0	0	0	0	1
Tripletail	0	0	0	2	5	0	1	0	1
Spanish flag	6	0	0	0	0	0	0	0	1
Blackedge moray	0	6	0	0	0	0	0	0	1
Porcupinefish	0	0	0	0	0	5	0	0	1
Filefish, unidentified	0	0	2	0	1	1	1	0	1
Spotted soapfish	0	0	1	1	0	0	1	1	1
Total Reef Fishes	1,014,700	1,026,033	1,102,415	780,632	909,149	792,862	948,569	847,929	927,786
Total Catch	1,102,596	1,095,932	1,191,803	839,147	943,697	824,390	1,000,774	898,048	987,048

Table B.8. Total weight (kilograms) of fish by species group caught aboard headboats off the Florida panhandle, 1986 to 1993.

Common name	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Mackerel scad	0	22	0	0	0	0	0	0	3
Total Baitfishes	0	24	0	0	0	0	0	0	3
COASTAL PELAGIC FISHES									
Little tunny	53,637	54,561	16,411	16,609	15,583	17,282	11,032	11,859	24,622
King mackerel	2,053	5,343	1,831	2,994	2,794	13,048	9,214	16,789	6,758
Bluefish	498	201	141	42,532	341	185	295	1,019	5,651
Banded rudderfish	0	46	256	2,989	3,213	7,421	10,943	7,947	4,102
Cobia	3,089	1,947	1,381	1,121	2,115	4,598	1,795	7,204	2,906
Blue runner	159	478	712	3,426	1,796	4,190	668	509	1,492
Shark, unidentified	13	234	981	416	1,063	1,516	246	243	589
Blacktip shark	2	0	7	662	737	623	617	863	439
Crevalle jack	1,080	62	448	259	64	305	52	35	288
Dusky shark	0	22	196	44	35	169	50	155	84
Bull shark	0	194	113	0	0	86	0	268	83
Spanish mackerel	22	40	69	15	45	186	83	97	70
Sandbar shark	18	77	0	295	122	6	0	0	65
African pompano	0	24	10	61	15	63	70	70	39
Chub mackerel	0	0	6	238	1	0	2	0	31
Leopard shark	66	0	0	0	0	140	10	11	28
Lemon shark	0	0	0	0	0	24	118	0	18
Cero	0	37	91	0	0	1	0	0	16
Sharpnose shark	0	0	29	20	0	0	0	5	7
Atlantic mackerel	42	0	5	0	0	0	0	0	6
Spinner shark	0	0	0	40	0	0	0	0	5
Total Coastal Pelagic Fishes	60,679	63,266	22,689	71,720	27,922	49,845	35,196	47,076	47,299

Table B.8. (Continued).

Common name	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES									
Sand perch	18,372	19,931	21,244	11,190	5,616	4,576	14,179	13,382	13,561
Pigfish	7,748	1,874	8,314	4,596	1,272	663	598	1,014	3,260
Pinfish	816	179	3,909	1,150	928	3,485	759	1,761	1,623
Blueline tilefish	13	181	692	166	829	332	4	75	286
Summer flounder	0	146	157	342	126	98	902	324	262
Flounder, unidentified	459	752	406	57	0	34	0	7	214
Sand tilefish	1,629	22	17	11	15	5	0	1	213
Smooth dogfish shark	0	44	155	98	203	487	0	51	130
Gafftopsail catfish	0	0	103	0	4	289	450	14	107
Brotula	0	4	37	74	148	264	40	227	99
Sand trout	0	7	0	0	0	436	174	0	77
Grass porgy	130	395	7	11	0	1	0	1	68
Hardhead catfish	15	7	34	175	0	102	108	13	57
Dusky flounder	0	24	26	45	92	44	59	137	53
Black drum	0	0	0	231	15	18	3	0	33
Toadfish, unidentified	174	0	3	0	0	4	2	18	25
Searobin, unidentified	4	4	7	2	1	0	82	19	15
Inshore lizardfish	0	0	1	1	1	3	37	30	9
Palespotted eel	0	49	0	0	0	0	0	0	6
Smooth puffer	0	0	0	0	6	21	7	7	5
Goldface tilefish	0	11	19	0	0	0	0	0	4
Red drum	0	0	0	0	0	0	29	0	4
Southern hake	24	0	4	0	0	0	0	0	4
Puffer, unidentified	4	0	4	0	7	0	1	1	2
Stingray, unidentified	13	0	0	0	0	0	0	0	2
Ocellated moray	0	0	0	0	0	0	9	0	1

Table B.8. (Continued).

Common name	86	87	88	89	90	91	92	93	Average
Goosefish, unidentified	2	7	0	0	0	0	0	0	1
Skate, unidentified	0	0	0	0	3	0	4	0	1
Flying gurnard	0	0	5	0	0	0	0	0	1
Total Demersal Fishes	29,406	23,635	35,146	18,153	9,266	10,861	17,448	17,084	20,125
OCEANIC PELAGIC FISHES									
Dolphin	10,877	6,220	5,922	3,120	12,463	6,390	3,626	2,706	6,415
Blackfin tuna	0	730	277	1,964	1,468	1,105	215	756	815
Atlantic bonito	311	893	518	553	0	32	104	35	306
Wahoo	0	0	316	126	0	920	353	495	276
Remora	183	86	29	50	12	14	777	616	221
Tiger shark	0	121	102	438	67	108	49	220	138
Rainbow runner	18	0	12	293	145	159	92	183	113
Mako shark	0	0	125	0	142	36	0	161	58
Sailfish	0	0	0	0	0	32	141	42	27
Great hammerhead	0	0	0	215	0	0	0	0	27
Ocean triggerfish	170	0	0	0	6	0	0	0	22
Silky shark	0	15	91	0	0	28	0	0	17
Scalloped hammerhead	0	0	0	0	86	0	0	0	11
Yellowfin tuna	0	0	0	73	0	0	0	0	9
Bullet mackerel	0	29	0	0	0	0	0	0	4
Pilotfish	20	0	0	0	0	0	0	0	2
Total Oceanic Pelagic Fishes	11,395	8,009	7,363	6,782	14,378	8,811	4,580	4,599	8,240
REEF FISHES									
Vermilion snapper	241,556	240,257	291,397	152,154	194,469	208,236	278,874	213,454	227,550
Red porgy	155,847	170,978	136,406	64,636	76,303	74,260	85,579	83,502	105,939
Gray triggerfish	48,124	32,056	40,557	66,443	138,354	88,157	101,860	89,177	75,591
Greater amberjack	112,550	191,972	30,488	61,503	5,391	13,609	19,187	7,604	55,288

Table B.8. (Continued).

Common name	86	87	88	89	90	91	92	93	Average
Red snapper	34,211	25,027	30,610	22,828	35,337	34,591	77,073	82,802	42,810
Tomtate	43,736	52,267	31,197	34,673	36,095	30,598	30,045	33,934	36,568
Gag	107,368	65,171	22,699	16,128	10,677	10,439	9,246	16,061	32,224
Bank sea bass	0	2,152	44,042	39,445	56,327	32,931	32,054	42,150	31,138
Black grouper	5,687	79,779	248	10,980	683	813	303	1,018	12,439
Rock sea bass	13,186	29,946	4,798	548	257	124	158	508	6,190
Red grouper	8,450	8,101	7,058	3,205	2,847	3,886	1,494	12,471	5,939
Almaco jack	17,023	1,261	790	7,320	5,219	3,605	1,225	781	4,653
Lane snapper	4,919	1,813	1,523	3,436	3,942	5,599	6,334	7,361	4,366
Gray snapper	4,324	4,302	2,462	5,806	1,837	3,826	3,887	8,056	4,312
Squirrelfish	24,387	3,581	3,046	198	334	195	242	1	3,998
Scamp	6,430	4,055	3,405	3,411	2,714	2,062	2,878	2,037	3,374
Knobbed porgy	5,400	2,816	2,519	2,254	2,155	2,344	3,667	4,480	3,204
Whitebone porgy	12,710	395	2,393	1,270	919	1,380	2,452	3,899	3,177
Queen triggerfish	8,222	485	254	522	862	281	267	606	1,437
White grunt	185	1,341	1,294	862	36	18	238	4,979	1,119
Black sea bass	4	860	2,796	2,914	147	343	157	1,497	1,090
Atlantic spadefish	0	157	2,149	564	1,293	29	48	9	531
Saucereye porgy	0	423	73	179	98	318	1,329	1,503	490
Warsaw grouper	302	1,255	922	443	302	144	79	152	450
Bigeye	176	542	714	194	383	351	250	336	368
Lesser amberjack	0	0	303	277	171	52	950	129	235
Spottail pinfish	384	761	401	32	21	31	27	15	209
Rock hind	454	408	78	116	174	150	44	99	190
Yellowtail snapper	55	545	29	0	332	7	123	418	189
Speckled hind	267	179	651	70	80	60	76	21	176
Nurse shark	207	0	0	0	563	521	63	0	169

Table B.8. (Continued).

Common name	86	87	88	89	90	91	92	93	Average
Snowy grouper	112	119	157	249	166	107	37	314	158
Silk snapper	875	110	46	7	215	3	0	0	157
Cubera snapper	0	119	74	805	20	51	20	165	157
Margate	0	66	42	1,085	0	0	2	0	149
Great barracuda	0	104	50	89	264	246	93	196	130
Moray, unidentified	849	24	0	20	0	0	0	1	112
Blackfin snapper	9	11	152	17	114	121	334	66	103
Short bigeye	0	49	163	71	23	4	113	102	66
Porkfish	518	0	0	0	0	0	0	0	65
Creole fish	0	0	3	75	291	43	36	13	57
Unicorn fish	0	0	18	25	30	222	71	59	53
Yellowfin grouper	0	0	30	255	0	0	0	0	36
Nassau grouper	20	258	0	0	0	0	0	0	35
French grunt	11	170	1	6	20	35	1	0	31
Red hind	11	4	12	20	97	32	4	18	25
Mutton snapper	0	33	1	45	45	4	13	56	25
Yellowmouth grouper	0	0	52	0	118	0	0	15	23
Dog snapper	49	35	49	37	0	0	0	0	21
Sheepshead porgy	15	0	55	0	13	23	12	32	19
Yellowedge grouper	0	4	0	3	9	10	15	83	16
Hogfish	9	2	27	0	12	6	0	48	13
Graysby	0	9	2	2	7	5	47	1	9
Bluestriped grunt	4	7	2	6	11	36	5	0	9
Jolthead porgy	0	0	0	0	0	0	0	45	6
Sheepshead	0	0	0	0	39	3	0	0	5
Wenchman	0	0	0	0	4	37	0	0	5
Parrotfish, unidentified	22	0	0	2	6	3	0	0	4

Table B.8. (Continued).

Common name	86	87	88	89	90	91	92	93	Average
Coney	0	0	0	12	15	0	1	0	3
Porcupinefish	0	0	0	0	0	28	0	0	3
Scorpionfish, unidentified	0	0	14	4	0	0	2	4	3
Slippery dick	0	0	0	0	0	0	0	19	2
Spanish hogfish	0	0	0	0	0	17	0	1	2
Littlehead porgy	0	0	0	0	0	17	0	0	2
Tripletail	0	0	0	1	10	0	6	0	2
Tattler	0	0	1	13	1	0	0	0	2
Trumpet fish	0	0	4	0	5	0	0	5	2
Spotted soapfish	0	0	1	8	0	0	3	1	2
Filefish, unidentified	0	0	8	0	1	1	2	0	2
Spotfin hogfish	0	2	6	1	0	0	0	0	1
Leather jacket	0	0	7	0	0	0	0	0	1
Bluespotted cornetfish	0	0	0	5	0	2	0	0	1
Spanish flag	7	0	0	0	0	0	0	0	1
Red cornetfish	0	0	5	0	0	0	0	0	1
Total Reef Fishes	858,676	924,012	666,285	505,269	579,862	520,019	661,026	620,305	666,932
Grand Total	960,339	1,019,032	731,512	601,974	631,440	589,550	719,026	689,679	742,819

APPENDIX C

COMMERCIAL FISHERIES DATA FOR THE FLORIDA PANHANDLE, 1983-1993

List of Tables

List of Tables
(Continued)

Table C.1. Total commercial landings (kilograms) by species group for Bay County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Scad, round (cigarfish)	395,076	263,091	256,038	86,365	172,846	474,015	616,475	206,655	433,114	562,498	591,632	338,150
Sardines, Spanish	333,050	593,302	165,448	292,719	269,379	330,790	247,000	205,896	266,041	370,564	170,526	270,393
Menhaden (pogies)	29,963	144	307,473	143,023	206,651	279,233	342,330	256,192	122,587	510,980	228,623	202,267
Bait Fish	0	456	2,019	61,827	101,224	32,751	40,269	75,270	18,304	17,168	1,598	29,241
Herring, thread	5,003	456	1,209	4,011	6,408	17,214	42,649	14,578	28,824	111,532	53,932	23,818
Sardine, scaled	0	0	0	0	0	0	0	7,575	56,030	0	38,600	8,517
Ballyhoo	0	0	0	0	54	34	376	6,340	0	0	0	567
Scad, bigeye	0	0	0	0	0	0	1,630	16	0	0	87	144
Total Baitfishes	763,093	857,449	732,188	587,945	756,561	1,134,037	1,290,730	772,522	924,901	1,572,743	1,084,997	952,470
COASTAL PELAGIC FISHES												
Ladyfish	800,261	959,201	929,651	858,891	1,116,633	714,617	844,176	1,144,588	1,044,965	889,573	740,214	836,897
Blue Runner	361,610	301,649	185,674	85,478	167,853	347,417	44,414	225,120	232,760	264,882	267,034	206,991
Jack, crevalle	45,399	61,778	185,937	78,296	102,493	29,442	109,928	271,691	52,869	94,544	111,753	95,344
Mackerel, Spanish	96,878	44,134	60,199	118,529	91,664	89,740	45,133	115,139	84,561	79,597	98,468	77,003
Bluefish	62,117	60,309	62,498	37,262	53,631	97,630	66,936	58,751	37,780	16,241	25,726	48,240
Shark	0	0	0	18,531	13,676	29,944	35,585	114,330	42,795	49,976	7,096	25,994
Tunny, little (bonito)	8,421	4,466	798	0	0	0	0	0	55,136	95,276	47,290	17,616
Jacks, mixed	0	0	0	70,613	32,590	331	11,125	83,514	73	570	219	16,586
Bonito (little tunny)	0	0	0	342	18,623	15,227	19,876	43,241	0	0	0	8,109
Mackerel, king	14,250	11,212	3,097	641	1,395	1,634	2,418	2,688	13,011	10,872	19,973	6,766
Pompano	1,146	4,469	3,717	2,031	2,417	2,041	2,013	3,622	3,241	4,240	4,773	2,809
Shark fins	0	0	0	17	15	27	4,240	6,542	7,894	9,313	223	2,356
Jacks, other	0	0	0	23,934	0	0	73	0	16	2,474	505	2,250

Table C.1. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Cobia	3,177	850	1,107	1,289	1,044	1,649	3,435	2,358	2,065	2,055	3,591	1,885
Shark, mixed	1,408	2,416	17,656	0	0	0	0	0	0	0	0	1,790
Shad (common)	0	0	0	0	11,499	0	9,696	0	2	0	0	1,766
Atlantic bumper	0	0	0	0	0	0	2,795	12,092	3,331	0	0	1,518
Permit	0	0	0	2	0	0	0	0	21	2	1	2
Total Coastal Pelagic Fishes	1,394,665	1,450,482	1,450,334	1,295,855	1,613,533	1,329,698	1,201,843	2,083,675	1,580,521	1,519,616	1,326,866	1,477,008
DEMERSAL FISHES												
Mullet, black	681,077	601,477	404,266	187,060	206,973	241,980	169,291	167,719	128,357	147,296	166,593	258,507
Seatrout, spotted	34,919	41,184	34,290	27,900	38,263	42,738	26,315	19,751	28,570	17,774	22,358	27,839
Flounders	6,781	8,461	4,082	4,074	10,652	11,728	11,519	11,173	9,337	6,971	9,453	7,853
Mullet, silver	730	0	87	2,425	18,271	3,958	1,493	5,803	5,465	533	4,471	3,603
Croaker	8,244	5,429	3,383	18,577	246	221	326	206	170	1,083	1,444	3,277
Drum, black	1,797	3,791	867	674	2,842	2,088	2,066	4,430	3,631	2,760	4,686	2,469
Catfish	5,863	6,744	1,065	7,494	37	213	1,620	3,722	1,141	481	525	2,409
Drum, red	3,205	1,703	4,608	7,082	4,120	0	0	0	0	0	0	1,727
Seatrout, silver	1,290	4,650	3,849	488	43	8	10	121	127	309	99	916
Spot	1,226	1,065	1,042	943	822	588	433	359	585	103	512	640
Kingfish (whiting)	37	129	186	738	412	651	447	1,043	528	370	407	412
Seatrout, sand	0	0	0	577	64	258	1,509	1,137	402	249	259	371
Seatrout, weakfish	0	0	0	176	173	475	0	0	0	0	0	69
Sea bass, mixed	0	0	0	0	5	22	41	103	0	36	18	19
Mullet, black (roe)	0	0	0	0	0	0	0	0	9	0	139	12
Pinfish	0	0	0	0	0	0	0	0	0	0	17	1
Mojarra	0	0	0	0	16	0	0	0	0	0	0	1

Table C.1. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Sand perch	0	0	0	0	0	3	0	0	0	0	0	0
Total Demersal Fishes	745,171	674,633	457,724	258,207	282,939	304,931	215,070	215,568	178,323	177,966	210,981	338,319
REEF FISHES												
Snapper, red	927,320	443,583	230,646	130,801	50,722	76,662	91,813	118,431	71,009	69,642	30,297	186,744
Grouper, mixed	185,302	253,812	483,679	10,391	5,137	397	827	24	1,064	59	470	78,430
Amberjacks	27,693	54,502	81,535	58,712	65,652	81,992	156,846	47,981	33,368	57,771	57,899	60,329
Grouper, yellowedge	0	0	0	28,623	25,234	96,466	96,968	108,077	60,347	82,997	14,891	42,800
Snapper, vermilion	60,154	121,713	88,461	58,990	21,281	11,068	35,351	27,390	16,823	26,057	38,442	42,144
Grouper, red	0	0	0	43,681	42,728	43,781	46,266	51,780	48,941	18,442	92,867	32,374
Grouper, gag	0	0	0	38,641	5,510	9,388	11,867	22,251	36,379	106,565	156,155	32,230
Grouper, black	0	0	0	47,995	56,041	62,294	76,526	41,704	41,911	0	0	27,206
Porgies	8,889	11,781	22,403	12,962	15,144	6,659	58,552	21,302	30,936	32,626	58,895	23,346
Grouper, scamp	0	0	0	16,855	11,125	13,718	15,746	11,803	19,248	25,363	24,764	11,552
Triggerfish	9,580	5,239	8,891	5,247	4,279	4,495	12,042	14,489	18,201	15,309	25,851	10,302
Tilefish	1,524	12,453	6,407	1,738	6,234	9,359	11,576	22,763	4,965	9,842	2,066	7,411
Grouper, warsaw	8,047	14,005	10,383	8,286	2,567	4,908	8,641	13,484	6,270	3,984	1,530	6,842
Snapper, other	0	0	0	6,340	2,953	6,798	19,524	6,422	1,500	475	407	4,038
Snapper, gray (mangrove)	3,316	3,003	3,006	1,321	1,291	2,753	3,713	2,519	4,224	5,267	9,279	3,308
Grouper, snowy	0	0	0	63	122	2,727	4,910	12,062	11,255	5,205	523	3,072
Grouper, yellowfin	0	0	0	31,408	2,881	534	12	278	306	121	0	2,962
Sheepshead	2,887	1,433	2,705	961	1,677	963	1,827	2,614	2,731	1,901	2,290	1,833
Grouper, other	0	0	0	1,397	282	466	439	874	529	9,735	2,375	1,341
Snapper, silk	0	0	0	890	399	1,274	3,484	608	2,882	110	23	806
Snapper, mutton	0	0	0	287	1,055	250	698	3,894	1,279	283	65	651

Table C.1. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Tilefish, blueline	0	0	0	102	1,242	1,272	2,774	584	613	388	330	609
Snapper, lane	0	456	101	227	177	426	160	26	1,642	667	494	365
Jewfish	0	0	0	0	0	37	2,315	0	0	0	0	196
Grouper, Nassau	0	0	0	292	0	0	0	79	0	865	42	106
Grunts	0	0	31	0	0	25	61	4	197	0	111	36
Snapper, yellowtail	0	0	0	0	17	6	0	6	0	118	5	13
Angelfish	127	0	0	0	0	0	0	0	0	0	0	11
Tripletail	0	0	112	0	0	0	0	0	0	0	0	9
Hogfish	0	0	0	0	0	0	34	0	76	0	0	9
Total Reef Fishes	1,234,841	921,982	938,361	506,208	323,753	438,717	662,972	531,449	416,693	473,795	520,074	633,531
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	204	227,140	945,978	1,493,689	647,157	430,007	255,662	460,371	178,877	543,581	423,070	467,145
Swordfish	866	11,224	114,542	63,141	31,343	87,922	109,486	65,595	20,815	19,601	24,586	45,760
Dolphin	26	220	19,753	27,672	10,553	11,290	6,233	50,165	49,595	35,126	16,079	18,893
Tuna, bluefin	0	0	35,914	13,694	6,166	3,258	828	2,479	663	2,297	961	5,522
Wahoo	75	114	412	3,644	5,310	4,898	2,265	4,397	6,859	13,263	11,415	4,388
Marlin, white	0	3,181	5,574	16,479	2,660	175	0	0	0	0	0	2,339
Tuna, bigeye	0	0	1,465	891	525	817	8,645	4,051	1,005	3,103	6,748	2,271
Tuna, blackfin	0	394	1,232	1,251	696	1,564	3,173	3,335	3,858	4,132	6,356	2,166
Marlin, blue	0	543	1,708	4,028	1,444	373	0	0	0	0	0	675
Tuna, mixed	90	0	36	60	3,747	0	21	777	372	26	833	497
Marlin, unclassified	0	0	1,746	0	0	0	0	0	0	0	0	145
Tuna, skipjack	0	0	0	0	0	0	25	507	0	120	0	54
Total Oceanic Fishes	1,260	242,816	1,128,361	1,624,548	709,601	540,304	386,337	591,677	262,044	621,251	490,048	599,841

Table C.1. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
OTHER FISHES												
Misc. Industrial Fish	23,779	97,492	33,058	3,673	30,833	54,501	1,732	50,795	12,656	96,418	20,326	35,439
Misc. Food Fish	855	585	3,279	55,381	4,149	3,212	6,459	23,142	18,190	32,297	31,099	14,887
Eels	0	0	0	1,678	340	1,521	0	0	37	0	0	298
Tilapia	0	0	0	0	7	0	8	0	0	0	0	1
Total Other Fishes	24,634	98,077	36,337	60,732	35,329	59,235	8,199	73,937	30,883	128,715	51,425	55,228
TOTAL FISHES	8,327,326	8,490,880	9,486,608	8,666,992	7,443,431	7,613,844	7,530,302	8,537,658	6,786,732	8,988,172	7,368,783	8,112,794
INVERTEBRATES												
Crabs												
Crab, blue (hard)	107,144	101,978	154,759	133,750	194,268	234,973	154,147	286,605	144,416	138,639	212,933	155,301
Crab, blue (soft)	0	5	5	5	10	1,963	1,372	1,079	738	646	877	558
Crab, medium	0	0	0	38	1	241	739	76	69	9	47	102
Crab, stone, ungraded	87	46	32	0	0	0	359	66	16	0	117	60
Crab, large	0	0	0	5	0	0	141	141	7	1	15	26
Crab, small	0	0	0	0	114	73	0	107	0	1	2	25
Crab, jumbo	0	0	0	0	0	5	0	0	0	81	0	7
Total Crabs	107,231	102,029	154,796	133,799	194,393	237,255	156,757	288,073	145,246	139,377	213,991	170,268
Lobsters												
Lobster, Spanish	217	219	0	443	38	244	678	161	115	177	355	221
Lobster, spiny	0	0	0	0	5	25	20	14	194	63	18	28
Total Lobsters	217	219	0	443	44	269	698	175	309	240	373	272
Oysters												
Oysters	3,634	16,952	59,712	36,427	80,616	55,001	27,350	48,809	131,024	197,052	214,456	72,586
Total Oysters	3,634	16,952	59,712	36,427	80,616	55,001	27,350	48,809	131,024	197,052	214,456	72,586

Table C.1. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp												
Shrimp, saltwater	322,308	280,203	278,387	0	0	0	0	0	0	0	0	73,408
Shrimp, brown	0	0	0	48,287	77,032	63,019	57,904	89,656	54,451	67,899	90,888	45,761
Shrimp, rock	21,182	44,718	3,772	235	4,803	12,284	11,382	26,685	5,177	101,241	22,814	21,191
Shrimp, other	0	0	0	18,721	22,990	9,788	23,324	21,407	16,576	38,355	22,016	14,431
Shrimp, pink	0	0	0	61,878	5,681	24,424	18,030	12,225	6,814	9,073	4,055	11,848
Shrimp, white	0	0	0	20,758	7,320	20,378	6,044	16,964	9,899	14,209	20,752	9,694
Shrimp, bait	0	0	0	365	5,124	1,832	1,305	1,843	1,227	698	890	1,107
Shrimp, royal red	0	0	0	0	0	0	345	26	203	686	1,314	215
Total Shrimp	343,490	324,922	282,159	150,245	122,950	131,726	118,333	168,807	94,347	232,161	162,728	193,806
Other Invertebrates												
Squid	4,577	4,351	1,083	4,284	1,653	4,064	9,741	8,975	1,159	2,226	1,140	3,604
Scallops, bay	167	64	133	909	794	3,061	686	885	0	195	0	575
Octopus	0	0	0	0	0	320	388	0	0	39	6	63
Scallops, calico	0	0	0	0	0	0	0	0	0	20	80	8
Conch (helmet and whelks)	0	0	0	0	0	0	0	0	0	0	76	6
Clams, sunray venus	0	0	0	0	0	0	0	66	0	0	0	5
Misc. Invertebrates	0	0	0	0	0	0	0	29	6	0	0	3
Clams, hard, ungraded	0	0	0	0	0	0	8	0	0	0	0	1
Clams, hard, chowder	0	0	0	0	0	0	0	0	0	3	0	0
Total Other Invertebrates	4,744	4,416	1,216	5,193	2,447	7,445	10,823	9,954	1,165	2,482	1,303	4,653
TOTAL INVERTEBRATES	459,316	448,538	497,882	326,107	400,449	431,696	313,962	515,817	372,092	571,312	592,851	448,184
BAY COUNTY TOTAL	4,622,979	4,693,978	5,241,186	4,659,603	4,122,165	4,238,618	4,079,113	4,784,646	3,765,458	5,065,398	4,277,242	4,504,581

Table C.2. Total commercial landings (kilograms) by species group for Escambia County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAIT FISHES												
Menhaden (pogies)	260	0	15	15	1,902	14,211	5,679	593	1,325	53	792	2,070
Bait Fish	18,975	1,096	1,389	2,341	122	69	15	0	0	245	497	2,062
Scad, round (cigarfish)	6,774	0	141	27	10	176	165	742	213	12	0	688
Sardines, Spanish	0	37	0	0	6	0	1	0	299	14	1	30
Scad, bigeye	0	0	0	19	266	0	16	0	0	0	0	25
Ballyhoo	0	0	1	111	0	2	0	0	0	0	0	10
Total Baitfishes	26,009	1,133	1,545	2,513	2,307	14,457	5,876	1,335	1,837	324	1,290	5,330
COASTAL PELAGIC FISHES												
Mackerel, Spanish	82,264	21,618	49,884	28,820	26,182	74,412	11,635	23,449	20,323	56,557	53,717	37,405
Bluefish	12,871	6,098	5,811	4,004	6,729	6,893	7,419	4,221	2,948	5,607	4,502	5,592
Shark	0	0	0	2,416	4,592	6,308	24,444	11,493	9,044	1,574	335	5,017
Mackerel, king	165	788	1,514	4,439	6,911	5,822	1,286	2,812	1,802	1,611	556	2,309
Pompano	1,003	2,416	1,146	1,117	4,482	2,074	954	198	1,548	2,957	3,644	1,795
Blue Runner	9,684	3,020	167	18	799	200	99	350	762	2,364	1,974	1,620
Ladyfish	6,767	1,274	576	17	233	678	250	224	0	120	3,759	1,158
Cobia	983	337	167	141	456	956	1,369	831	1,250	1,593	1,557	803
Shark, mixed	1,004	2,198	2,943	0	0	0	0	0	0	0	0	512
Jacks, other	0	0	0	436	23	137	32	0	1,241	288	31	182
Shark fins	0	0	0	0	0	154	235	72	136	59	4	55
Shad (common)	0	0	0	0	3	44	46	0	111	34	357	50
Jack, crevalle	380	0	37	0	29	9	0	0	0	0	0	38
Tunny, little (bonito)	198	13	118	0	0	0	0	0	98	0	0	36
Bonito (little tunny)	0	0	0	0	0	68	38	0	0	0	0	9

Table C.2. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Jacks, mixed	0	0	0	14	0	7	49	0	0	0	26	8
Permit	0	0	0	0	0	0	18	0	20	16	0	5
Total Coastal Pelagic Fishes	115,318	37,762	62,363	41,422	50,438	97,761	47,875	43,651	39,285	72,780	70,463	61,738
DEMERSAL FISHES												
Mullet, black	523,178	441,690	291,032	287,074	304,996	322,082	300,604	317,687	266,493	378,066	311,662	312,047
Seatrout, spotted	30,244	19,700	15,264	10,442	13,613	18,741	18,076	10,885	10,596	6,961	14,275	14,067
Seatrout, sand	0	0	0	34,053	26,049	25,555	16,089	15,926	15,239	22,246	12,869	14,002
Mullet, silver	5,385	1,493	4,923	1,061	3,725	4,082	5,308	9,038	18,178	25,410	24,095	8,558
Seatrout, silver	26,117	26,770	32,581	1,395	155	2,219	720	906	875	1,952	2,211	7,992
Croaker	18,185	22,246	20,611	10,964	4,549	3,110	4,718	723	1,155	1,534	1,833	7,469
Flounders	8,373	8,356	10,002	12,530	7,393	4,268	5,089	7,360	8,785	7,276	8,271	7,309
Spot	5,143	3,671	5,273	3,847	3,874	4,423	5,230	3,187	2,418	4,777	2,279	3,677
Drum, black	811	3,534	157	1,945	5,811	2,258	563	1,048	1,201	1,885	3,524	1,895
Kingfish (whiting)	4,201	843	2,808	640	1,073	444	493	41	415	770	1,240	1,081
Catfish	450	253	793	388	2,259	2,047	1,634	1,259	1,371	1,051	778	1,024
Drum, red	1,531	1,411	1,453	627	453	33	0	0	0	0	0	459
Seatrout, weakfish	0	0	0	207	638	0	0	0	0	0	0	70
Mullet, black (roe)	0	0	0	0	0	0	0	0	0	505	0	42
Sturgeon	212	73	21	0	0	0	0	0	0	0	0	25
Pigfish	84	11	60	0	0	0	0	0	0	0	0	13
Sea bass, mixed	25	0	52	0	0	8	21	0	0	12	0	10
Mojarra	0	0	0	0	0	0	0	0	0	0	32	3
Total Demersal Fishes	623,939	530,052	385,029	365,173	374,586	389,269	358,545	368,062	326,728	452,446	383,069	414,263

Table C.2. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
REEF FISHES												
Snapper, vermilion	115,983	106,045	179,509	269,556	244,230	224,863	241,373	219,224	170,282	186,437	206,802	180,359
Snapper, red	138,911	170,912	110,987	85,377	95,083	145,843	122,606	110,879	92,678	81,211	47,791	100,190
Porgies	36,262	33,119	51,611	60,847	58,744	59,317	42,743	35,429	21,408	19,301	28,584	37,280
Amberjacks	25,299	36,074	38,129	48,241	50,383	73,232	58,117	20,806	23,151	24,388	32,210	35,836
Triggerfish	7,940	7,501	9,727	9,055	11,775	25,852	28,006	33,912	18,414	33,296	33,528	18,250
Grouper, mixed	37,472	39,065	55,919	0	0	49	209	154	40	0	127	11,086
Sheepshead	13,101	7,672	9,329	5,030	6,391	9,167	9,998	8,300	8,828	9,173	17,378	8,697
Grouper, yellowedge	0	0	0	1,014	8,687	20,589	19,314	10,626	23,181	8,792	2,938	7,929
Grouper, black	0	0	0	18,231	20,974	14,337	14,654	9,781	8,223	0	0	7,183
Grouper, warsaw	9,498	6,191	7,102	5,762	5,189	6,141	8,702	3,724	5,716	3,428	3,780	5,436
Grouper, scamp	0	0	0	8,406	8,071	6,975	14,853	6,881	6,378	6,124	2,525	5,018
Tilefish	1,134	5,193	2,683	12,667	216	7,391	2,340	2,605	3,221	2,089	439	3,332
Snapper, other	0	0	0	313	3,464	5,625	4,132	1,996	2,654	5,402	5,864	2,677
Grouper, gag	0	0	0	0	0	15	20	86	2,657	9,133	13,327	2,103
Grouper, snowy	0	0	0	271	1,745	2,511	2,218	2,341	2,475	3,229	867	1,305
Snapper, gray (mangrove)	273	72	6,023	311	324	84	2,109	123	73	176	491	838
Grouper, yellowfin	0	0	0	4,967	876	0	242	1,229	322	385	156	681
Grouper, red	0	0	0	115	389	21	77	4	2,369	56	960	333
Tilefish, blueline	0	0	0	307	208	717	127	1,159	183	454	170	277
Grouper, other	0	0	0	16	53	197	955	27	79	441	191	163
Snapper, lane	26	256	0	74	31	16	63	409	40	576	208	142
Snapper, mutton	0	0	88	250	67	68	394	0	23	273	379	129
Snapper, silk	0	0	0	9	75	472	195	146	77	178	324	123

Table C.2. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Angelfish	673	60	0	0	0	0	0	0	0	0	0	61
Grunts	0	0	0	2	5	4	67	36	2	150	172	37
Goatfishes	0	0	52	0	0	0	0	0	0	0	0	4
Snapper, yellowtail	0	0	0	17	19	0	0	0	0	8	0	4
Hogfish	0	0	0	0	0	12	22	0	0	0	0	3
Grouper, Nassau	0	0	0	11	0	14	0	0	0	0	0	2
Jewfish	0	0	0	12	0	0	0	0	0	0	0	1
Total Reef Fishes	386,574	412,158	471,159	530,863	517,001	603,513	573,537	469,878	392,476	394,702	399,210	468,279
OCEANIC SPECIES												
Tuna, yellowfin	41	9,595	63,986	106	413	443	1,474	374	1,592	2,136	6,541	7,225
Tuna, blackfin	0	386	109	164	238	519	849	1,750	655	1,344	1,369	615
Dolphin	281	85	2,046	258	341	595	615	713	475	523	340	523
Wahoo	25	584	107	16	325	150	172	51	303	428	94	188
Tuna, skipjack	0	0	0	253	0	242	10	863	150	7	0	127
Tuna, mixed	0	258	466	0	18	84	0	126	0	105	0	88
Swordfish	9	32	454	0	0	0	0	52	192	0	0	62
Marlin, unclassified	0	160	91	0	0	0	0	0	0	0	0	21
Tuna, bluefin	0	0	0	13	5	40	162	0	0	14	0	20
Tuna, bigeye	0	150	9	0	0	0	2	44	0	0	0	17
Marlin, white	0	0	0	0	59	0	0	0	0	0	0	5
Total Oceanic Pelagic Fishes	355	11,251	67,269	810	1,399	2,073	3,285	3,973	3,367	4,558	8,344	9,699
OTHER FISHES												
Misc. Food Fish	4,182	3,888	10,516	5,981	2,649	4,710	6,628	3,436	5,224	4,147	1,764	4,427
Misc. Industrial Fish	18,009	76	1,324	35	0	0	63	297	0	715	3	1,710

Table C.2. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Eels	0	0	217	478	375	1,433	1,765	967	52	8	0	441
Tilapia	0	0	0	0	0	0	0	0	0	0	8	1
Total Other Fishes	22,191	3,963	12,058	6,494	3,024	6,143	8,456	4,700	5,276	4,870	1,775	7,177
TOTAL FISHES	2,348,773	1,992,637	1,998,845	1,894,550	1,897,510	2,226,433	1,995,145	1,783,198	1,537,936	1,859,360	1,782,301	1,932,972
INVERTEBRATES												
Crabs												
Crab, blue (hard)	28,904	18,084	36,411	67,013	23,551	18,297	13,042	16,663	17,222	19,202	20,736	23,261
Crab, blue (soft)	0	0	0	4	0	0	21	0	0	0	4	2
Crab, large	0	0	0	14	0	0	0	0	0	0	0	1
Crab, stone, ungraded	4	0	0	0	0	7	0	0	0	0	0	1
Total Crabs	28,908	18,084	36,411	67,031	23,551	18,304	13,064	16,663	17,222	19,202	20,740	25,380
Lobsters												
Lobster, spiny	0	0	0	17	0	15	0	0	0	0	0	3
Lobster, Spanish	8	0	0	0	0	0	0	0	0	0	0	1
Total Lobsters	8	0	0	17	0	15	0	0	0	0	0	4
Oysters												
Oysters	35,684	34,634	13,426	4,000	723	134	21	0	0	3,018	5,101	8,062
Total Oysters	35,684	34,634	13,426	4,000	723	134	21	0	0	3,018	5,101	8,062
Shrimp												
Shrimp, brown	0	0	0	329,398	265,548	197,880	282,830	230,393	158,819	193,858	272,580	160,942
Shrimp, saltwater	286,402	261,199	444,386	0	0	0	0	0	0	0	0	82,666
Shrimp, pink	0	0	0	366	13	675	14,172	35,006	2,493	0	0	4,394
Shrimp, white	0	0	0	5,064	1,227	5,125	3,267	14,935	12,828	1,209	490	3,679
Shrimp, bait	0	0	0	23	152	412	591	287	1,852	12	44	281

Table C.2. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, rock	1	272	84	84	316	1,268	987	0	59	186	0	271
Shrimp, other	0	0	0	60	491	1,536	42	7	0	51	22	184
Shrimp, royal red	0	0	0	38	20	0	0	0	141	103	0	25
Total Shrimp	286,403	261,471	444,470	335,032	267,768	206,896	301,889	280,629	176,191	195,418	273,136	31,555
Other Invertebrates												
Squid	10,814	13,577	16,947	17,111	16,707	10,988	7,498	11,389	9,847	14,744	10,021	11,637
Scallops, calico	11,630	0	0	0	0	0	0	0	0	0	0	969
Octopus	1	8	0	23	0	4	159	203	0	300	47	62
Misc. Invertebrates	0	0	0	0	0	12	224	152	145	6	73	51
Scallops, bay	0	22	0	0	0	0	0	0	0	0	0	2
Total Other Invertebrates												
TOTAL INVERTEBRATES	373,448	327,796	511,254	423,214	308,750	236,353	322,856	309,036	203,406	232,689	309,117	323,447
ESCAMBIA COUNTY TOTAL	1,547,835	1,324,115	1,510,676	1,370,489	1,257,505	1,349,570	1,320,428	1,200,635	972,374	1,162,369	1,173,268	1,182,439

Table C.3. Total commercial landings (kilograms) by species group for Franklin County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	6,838	4,458	18,402	0	0	0	0	45	26	0	0	2,481
Bait Fish	0	0	0	0	0	31	64	2,308	2,791	232	10,434	1,322
Scad, round (cigarfish)	360	0	57	0	0	0	0	40	0	39	0	41
Herring, thread	0	0	0	0	0	0	398	0	0	0	0	33
Sardines, Spanish	0	0	0	0	0	0	0	0	0	84	0	7
Scad, bigeye	0	0	0	0	3	0	47	0	0	0	0	4
Total Baitfishes	7,199	4,458	18,460	0	3	31	509	2,393	2,816	355	10,434	4,242
COASTAL PELAGIC FISHES												
Shark	0	0	0	145	2,818	1,730	29,063	33,046	39,838	49,587	3,554	13,315
Mackerel, Spanish	876	859	334	31	1,491	432	6,291	15,747	10,667	26,332	44,992	9,004
Pompano	182	702	3	0	1,885	5,006	3,159	8,591	13,193	9,428	6,448	4,050
Mackerel, king	861	88	0	26	37	27	323	5,236	15,215	4,680	2,381	2,406
Bluefish	1,088	813	129	32	150	77	2,018	1,846	923	2,788	4,882	1,229
Jack, crevalle	0	0	0	0	31	1,159	490	331	2,160	817	3,237	685
Shark, mixed	4,904	968	2,177	0	0	0	0	0	0	0	0	671
Cobia	209	285	98	16	456	158	574	554	776	1,065	2,480	556
Blue Runner	0	47	0	0	0	0	14	34	138	2,411	1,506	346
Jacks, other	0	0	0	0	0	0	0	0	1,936	1,413	307	305
Jacks, mixed	0	0	0	0	0	0	0	0	0	0	2,026	169
Ladyfish	24	357	1	0	0	0	0	208	832	116	463	167
Shark fins	0	0	0	0	0	0	0	350	304	69	312	86
Shad (common)	0	0	0	0	16	1	0	1	141	125	11	25
Bonito (little tunny)	0	0	0	0	32	0	0	156	0	0	0	16

Table C.3. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Tunny, little (bonito)	0	11	0	0	0	0	0	0	0	0	11	2
Atlantic bumper	0	0	0	0	0	0	0	21	0	0	0	2
Permit	0	0	0	0	0	1	3	0	2	0	0	0
Total Coastal Pelagic Fishes	8,143	4,131	2,742	249	6,917	8,590	41,936	66,121	86,125	98,830	72,611	36,036
DEMERSAL FISHES												
Mullet, black	419,674	408,744	219,748	104,334	59,780	73,498	111,057	194,648	96,194	117,991	292,708	174,865
Flounders	40,131	39,218	35,418	5,894	7,205	9,303	8,931	6,903	14,500	10,496	10,258	15,688
Seatrout, spotted	25,208	23,104	21,305	2,190	3,727	3,825	14,340	10,091	5,212	6,582	11,897	10,623
Kingfish (whiting)	21,232	21,025	15,338	62	453	730	1,027	552	693	2,822	397	5,361
Mullet, silver	0	0	0	64	0	542	1,915	7,520	3,723	12,855	10,791	3,118
Spot	6,141	7,579	1,837	16	11	616	1,017	1,167	848	1,431	5,299	2,164
Drum, red	6,607	4,052	3,668	1,303	0	0	0	0	0	0	0	1,302
Seatrout, silver	2,282	3,449	1,466	7	3	227	635	1,248	78	20	1,475	908
Sea bass, mixed	558	1,423	1,507	0	26	106	649	1,796	994	937	481	707
Croaker	1,379	469	1,308	0	0	0	977	200	75	137	3,828	698
Catfish	118	27	768	0	0	0	141	9	70	16	6,962	676
Drum, black	426	357	1,969	0	25	227	211	694	418	558	2,753	637
Rays	0	0	0	0	0	0	0	0	9	150	6,067	519
Seatrout, sand	0	0	0	0	0	35	199	523	1,631	567	285	270
Sturgeon	173	13	17	0	0	0	0	0	0	0	0	17
Mojarra	0	0	0	0	0	0	0	182	0	4	0	15
Pinfish	0	0	0	0	0	0	0	0	0	78	4	7
Seatrout, weakfish	0	0	0	0	13	1	0	0	42	0	0	5
Mullet, black (roe)	0	0	0	0	0	0	0	0	0	0	11	1

Table C.3. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Total Demersal Fishes	523,931	509,460	304,348	113,871	71,244	89,110	141,099	225,534	124,486	154,643	353,217	237,358
REEF FISHES												
Grouper, red	0	0	0	22,423	54,056	19,985	149,452	127,500	139,709	63,492	290,421	72,253
Grouper, mixed	339,574	167,068	141,612	501	0	0	855	0	0	0	0	54,134
Grouper, black	0	0	0	15,304	36,780	28,685	90,549	100,170	63,543	0	0	27,919
Amberjacks	5,547	4,475	4,401	3,070	29,122	23,509	59,256	18,731	44,618	23,282	45,442	21,788
Grouper, gag	0	0	0	1,133	0	311	41,742	4,033	16,726	71,972	118,531	21,204
Snapper, red	31,477	23,291	9,613	889	3,894	2,559	7,806	9,906	7,562	25,640	5,278	10,660
Grouper, yellowedge	0	0	0	0	3	955	2,811	200	10,409	44,712	66,889	10,498
Porgies	8,739	3,013	2,982	738	4,245	8,548	17,795	13,828	6,542	10,524	12,861	7,485
Tilefish	11,250	497	29	0	0	57	178	42	10,089	10,702	15,760	4,050
Grouper, scamp	0	0	0	4,934	3,834	1,759	4,285	4,276	6,188	6,539	9,299	3,426
Triggerfish	3,266	754	708	630	2,288	1,482	2,908	4,968	7,991	6,582	6,192	3,147
Snapper, gray (mangrove)	3,800	2,107	2,279	454	1,702	643	1,556	2,310	5,007	3,757	5,723	2,445
Snapper, vermilion	472	971	329	38	538	1,784	3,630	4,018	3,649	4,628	6,642	2,225
Grouper, warsaw	1,984	1,093	845	773	482	156	1,111	405	663	3,296	3,504	1,193
Grouper, other	0	0	0	0	15	0	42	4	1,821	2,853	5,070	817
Sheepshead	1,969	496	587	0	194	333	1,179	1,809	1,062	736	1,304	806
Tilefish, blueline	0	0	0	5	157	49	20	45	357	2,394	6,094	760
Grouper, snowy	0	0	0	0	54	16	0	0	91	3,902	2,752	568
Grunts	158	51	47	0	7	10	289	908	1,519	1,427	908	444
Snapper, other	0	0	0	4	1,045	15	370	882	673	93	720	346
Goatfishes	2,138	0	0	0	0	0	0	0	0	0	0	178
Snapper, mutton	0	0	0	0	0	9	371	41	867	36	206	127

Table C.3. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, yellowfin	0	0	0	0	0	12	0	0	1,352	67	18	121
Grouper, Nassau	0	0	0	0	973	0	0	0	0	54	132	97
Hogfish	0	0	0	0	0	0	38	61	0	231	794	94
Jewfish	151	269	46	0	3	12	549	0	0	0	0	86
Snapper, silk	0	0	0	0	0	0	0	0	71	400	149	52
Snapper, lane	0	19	0	0	5	51	0	3	153	243	118	49
Snapper, yellowtail	0	0	0	0	0	0	0	4	0	0	2	0
Total Reef Fishes	410,524	204,105	163,479	50,895	139,397	90,940	386,792	294,143	330,663	287,560	604,811	269,392
OCEANIC PELAGIC FISHES												
Swordfish	14,247	19	1,036	0	20	0	79	0	3,555	0	9,907	2,405
Tuna, yellowfin	1,437	0	11,926	0	885	0	0	0	3,676	107	6,461	2,041
Dolphin	45	8	474	8	81	129	1,325	419	7,687	474	788	953
Tuna, blackfin	0	0	0	0	80	43	73	140	613	102	1,756	234
Wahoo	12	13	0	35	69	17	36	85	472	186	142	89
Tuna, bluefin	607	0	0	0	0	70	0	0	0	0	0	56
Marlin, blue	245	0	0	0	0	0	0	0	0	0	0	20
Tuna, skipjack	0	0	0	27	0	0	0	110	60	0	0	16
Tuna, mixed	69	0	13	0	0	0	9	0	0	0	0	8
Total Oceanic Pelagic Fishes	16,662	40	13,449	69	1,134	259	1,520	754	16,064	868	19,054	6,352
OTHER FISHES												
Misc. Food Fish	21	220	7	587	0	70	193	826	1,858	6,595	7,812	1,516
Eels	595	0	353	3	0	0	115	9	1,896	0	0	248
Misc. Industrial Fish	169	641	486	0	0	0	170	24	49	42	10	132
Total Other Fishes	784	861	846	590	0	70	478	859	3,803	6,636	7,821	2,068

Table C.3. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
TOTAL FISHES	1,934,485	1,446,110	1,006,648	331,349	437,390	378,002	1,144,670	1,179,606	1,127,915	1,097,787	2,135,896	1,110,896
INVERTEBRATES												
Crabs												
Crab, blue (hard)	434,967	577,043	647,237	362,026	282,811	258,163	150,736	93,883	83,672	101,200	216,091	267,319
Crab, blue (soft)	13,892	10,054	6,648	606	281	943	13,094	9,069	3,597	4,526	2,868	5,465
Crab, stone, ungraded	3,639	3,505	3,817	0	11	16	0	0	0	0	634	969
Crab, medium	0	0	0	0	10	0	0	0	0	0	752	64
Crab, small	0	0	0	0	0	172	0	0	0	0	0	14
Crab, jumbo	0	0	0	0	0	0	0	0	0	61	0	5
Crab, large	0	0	0	0	0	0	0	0	0	0	5	0
Total Crabs	452,498	590,602	657,703	362,632	283,113	259,295	163,830	102,952	87,269	105,787	220,350	298,730
Lobsters												
Lobster, Spanish	20,123	10,640	16,474	0	0	27	251	496	1,608	5,753	4,024	4,950
Lobster, spiny	0	0	0	0	88	88	87	0	0	42	0	25
Total Lobsters	20,123	10,640	16,474	0	88	115	338	496	1,608	5,794	4,024	5,427
Oysters												
Oysters	1,796,029	2,828,541	1,741,314	215,585	1,268,581	578,659	375,474	683,035	576,338	848,880	922,002	986,203
Total Oysters	1,796,029	2,828,541	1,741,314	215,585	1,268,581	578,659	375,474	683,035	576,338	848,880	922,002	986,203
Shrimps												
Shrimp, saltwater	1,652,264	1,899,819	1,767,302	0	0	0	0	0	0	0	0	443,282
Shrimp, white	0	0	0	300,748	322,436	786,658	610,357	337,698	162,443	252,408	85,439	238,182
Shrimp, brown	0	0	0	333,809	249,166	391,261	449,680	174,066	398,553	186,305	220,757	200,300
Shrimp, rock	23,034	101,712	32,728	196,035	73,471	230,993	57,575	87,459	5,769	498,218	205,762	126,063
Shrimp, pink	0	0	0	52,008	78,896	153,374	230,930	199,304	178,412	70,679	98,036	88,470

Table C.3. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, other	0	0	0	702	3,800	22,514	12,265	391	16,394	3,851	1,322	5,103
Shrimp, bait	0	0	0	0	89	0	682	13	532	975	4	191
Shrimp, royal red	0	0	0	0	99	0	0	491	0	747	0	111
Total Shrimps	1,675,298	2,001,532	1,800,030	883,301	727,956	1,584,801	1,361,489	799,421	762,103	1,013,183	611,318	1,201,857
Other Invertebrates												
Scallops, calico	0	0	0	0	0	0	4,621	0	0	0	1,914,741	159,947
Clams, hard, ungraded	153	0	0	0	1,716	7,815	8,256	6,095	2	2	3,734	2,314
Squid	4,901	6,912	3,206	966	153	1,519	2,759	977	222	108	925	1,887
Scallops, bay	453	0	0	7,949	65	906	2,572	1,036	0	974	4,176	1,511
Clams, hard, topneck	0	0	0	0	3,452	4,532	0	0	0	0	444	702
Octopus	7	912	30	0	50	1,236	89	0	0	20	0	195
Clams, hard, chowder	0	0	0	0	0	214	0	0	0	0	276	41
Clams, hard, middleneck	0	0	0	0	169	142	0	0	0	0	10	27
Clams, hard, littleneck	0	0	0	0	49	215	0	0	0	0	10	23
Misc. Invertebrates	0	0	0	0	0	0	0	0	27	0	34	5
Total Other Invertebrates	5,513	7,824	3,236	8,916	5,654	16,578	18,297	8,108	252	1,104	1,924,349	181,803
TOTAL INVERTEBRATES	3,949,461	5,439,139	4,218,757	1,470,434	2,285,392	2,439,447	1,919,428	1,594,012	1,427,570	1,974,748	3,682,043	2,763,676
FRANKLIN COUNTY TOTAL	4,916,705	6,162,194	4,722,081	1,636,108	2,504,087	2,628,448	2,491,763	2,183,815	1,991,527	2,523,641	4,749,991	3,042,530

Table C.4. Total commercial landings (kilograms) by species group for Gulf County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	1,696,574	2,271,742	1,919,355	5,591,266	5,204,561	5,088,328	4,821,364	3,235,548	1,969,902	2,330,486	2,155,294	3,023,702
Sardines, Spanish	95,091	168,266	6,010	88,942	99,445	272,706	585,138	463,048	314,043	412,836	508,767	251,191
Herring, thread	55,776	61,197	0	26,905	25,411	118,301	1,660,659	9,446	179,108	47,084	341,043	210,411
Scad, round (cigarfish)	177,104	75,457	74,454	8,476	33,482	104,743	155,891	54,731	187,309	334,003	435,401	136,754
Scad, bigeye	0	0	0	0	0	0	0	97,098	88,218	35,193	104,349	27,071
Bait Fish	0	0	0	16,534	735	17	0	63	125	2,164	51,667	5,942
Ballyhoo	0	0	0	0	22,254	0	408	0	1,893	0	0	2,046
Total Baitfishes	2,024,546	2,576,662	1,999,819	5,732,123	5,385,888	5,584,095	7,223,459	3,859,934	2,740,599	3,161,765	3,596,521	3,989,583
COASTAL PELAGIC FISHES												
Ladyfish	701,634	258,732	153,640	966,184	906,755	822,273	591,836	862,040	374,670	574,682	477,141	557,466
Jack, crevalle	95,559	178,855	5,307	83,154	224,436	172,516	197,043	261,359	142,654	55,234	34,325	120,870
Blue Runner	256,973	105,300	67,021	53,200	65,993	311,616	19,670	42,922	130,737	79,017	67,143	99,966
Tunny, little (bonito)	127,061	27,807	8,436	0	0	0	0	0	197,184	222,583	145,901	60,748
Mackerel, Spanish	46,562	20,199	60,542	50,235	70,050	23,124	42,469	53,765	46,906	114,532	49,946	48,194
Jacks, mixed	0	0	0	19,320	22,343	16,315	23,584	290,995	826	12,293	567	32,187
Bonito (little tunny)	0	0	0	1,102	76,323	53,340	107,202	61,848	0	0	0	24,985
Bluefish	71,819	24,716	5,624	33,629	30,041	28,191	32,627	7,790	3,091	1,635	3,809	20,248
Shark	0	0	0	11	54,702	60,811	83,437	11,694	1,952	0	5	17,718
Shad (common)	0	0	0	0	16,330	1,361	12,245	3,788	0	40,216	6	6,162
Pompano	174	83	139	755	6,991	18,129	41	927	408	452	244	2,362
Mackerel, king	213	37	0	16,558	0	0	356	0	262	2,642	10	1,673
Shark, mixed	1,041	2,787	9,313	0	0	0	0	0	0	0	0	1,095
Jacks, other	0	0	0	0	0	0	5,715	0	0	4,230	0	829

Table C.4. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Atlantic bumper	0	0	0	0	0	0	1,722	1,089	0	0	0	234
Shark fins	0	0	0	0	1,750	244	383	0	22	0	4	200
Cobia	0	0	91	0	0	105	0	0	0	0	59	21
Total Coastal Pelagic Fishes	1,301,038	618,517	310,113	1,224,149	1,475,715	1,508,025	1,118,331	1,598,216	898,712	1,107,515	779,161	1,085,408
DEMERSAL FISHES												
Mullet, black	312,647	247,973	355,375	285,499	205,288	228,749	188,260	133,248	80,438	242,165	142,289	201,827
Drum, black	155,007	7	127,713	237,387	82,293	7,725	348	45	0	0	0	50,877
Drum, red	39,847	118,409	70,201	230,989	83	0	0	0	0	0	0	38,294
Flounders	3,380	4,247	3,160	11,235	13,535	8,993	9,164	12,798	7,143	2,868	2,592	6,593
Spot	4,544	5,999	5	0	17	11	0	624	29,443	86	2,887	3,635
Seatrout, spotted	11,830	6,638	2,835	155	1,406	3,508	2,533	156	1,064	1,121	1,224	2,706
Croaker	379	680	138	11	11	11	0	851	7,840	0	3,156	1,090
Mullet, silver	0	0	0	0	2,597	0	0	2,843	5,472	190	126	936
Catfish	8,638	0	110	0	0	0	0	0	0	0	103	738
Seatrout, silver	5	88	0	0	0	0	0	0	6,441	0	8	545
Kingfish (whiting)	1,921	574	760	118	225	14	0	229	494	0	95	369
Pinfish	0	0	0	0	0	0	0	4,236	0	58	0	358
Rays	0	0	0	0	1,315	0	0	0	973	0	0	191
Seatrout, sand	0	0	0	0	4	149	0	0	52	144	20	31
Sea bass, mixed	0	0	0	0	0	0	0	34	0	0	0	3
Total Demersal Fishes	538,199	384,615	560,297	765,396	306,775	249,160	200,305	155,063	139,359	246,631	152,500	336,209
REEF FISHES												
Goatfishes	0	0	0	0	0	0	0	12,361	10,603	12,542	12,692	4,016
Snapper, red	14,134	125	102	69	99	0	6	13	205	10	27,540	3,525

Table C.4. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Porgies	775	0	0	0	5	0	24	3,928	482	689	703	551
Sheepshead	67	68	45	764	55	2,463	583	330	1,287	447	14	510
Grouper, mixed	2,415	267	551	183	0	0	0	0	0	0	0	285
Snapper, vermilion	36	0	0	0	0	12	3	127	549	138	2,370	270
Grouper, black	0	0	0	0	0	0	0	105	2,869	0	0	248
Grouper, red	0	0	0	0	0	0	26	99	107	21	1,771	169
Amberjacks	41	0	0	39	0	0	0	0	860	76	808	152
Snapper, silk	0	0	0	0	0	0	0	0	0	76	1,604	140
Grunts	0	0	0	0	0	0	0	1,547	0	0	0	129
Grouper, yellowedge	0	0	0	0	0	0	0	0	0	0	1,131	94
Triggerfish	102	0	0	0	0	0	3	2	414	305	252	90
Snapper, other	0	0	0	0	0	795	0	64	31	67	0	87
Grouper, other	0	0	0	50	161	466	178	0	0	0	17	73
Grouper, gag	0	0	0	0	0	0	0	0	200	64	580	70
Grouper, scamp	0	0	0	0	0	0	0	0	119	0	152	23
Grouper, warsaw	20	0	0	0	0	0	4	0	0	0	240	22
Snapper, gray (mangrove)	3	160	0	0	0	0	0	0	10	0	50	19
Snapper, lane	0	0	0	0	0	0	0	0	213	0	0	18
Tilefish	42	0	0	0	0	0	0	0	0	0	78	10
Tilefish, blueline	0	0	0	0	0	0	0	0	113	0	0	9
Grouper, snowy	0	0	0	0	0	0	0	0	0	0	104	9
Total Reef Fishes	17,635	620	698	1,105	320	3,736	827	18,576	18,061	14,436	50,103	11,465
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	0	1,021	30,647	51,227	99	1,144	383	0	7,044

Table C.4. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Tuna, mixed	40	0	0	0	0	0	2,721	0	0	0	0	230
Swordfish	91	0	0	0	0	1,631	0	0	249	0	0	164
Dolphin	5	0	0	0	0	117	0	0	0	5	14	12
Wahoo	0	0	0	0	0	0	44	0	0	0	0	4
Total Oceanic Pelagic Fishes	136	0	0	0	1,021	32,396	53,993	99	1,393	389	14	8,131
OTHER FISHES												
Misc. Industrial Fish	103,681	588,981	0	165,823	807,491	672,724	1,250,281	1,430,870	1,844,102	2,898,701	1,026,865	899,126
Misc. Food Fish	1,065	3,553	863	5,999	2,253	79,601	41,908	309,236	107,508	117,910	230,111	75,000
Eels	0	0	0	0	0	285	0	0	0	17	0	25
Total Other Fishes	104,745	592,534	863	171,821	809,744	752,610	1,292,188	1,740,106	1,951,610	3,016,627	1,256,976	1,062,711
TOTAL FISHES	7,972,598	8,345,893	5,743,581	15,789,186	15,958,924	16,260,045	19,778,207	14,743,988	11,499,467	15,094,727	11,670,550	12,987,015
INVERTEBRATES												
Crabs												
Crab, blue (hard)	118	303	106	13	62	138	68	8	0	80	627	127
Crab, blue (soft)	0	0	0	271	0	0	0	0	0	0	0	23
Crab, small	0	0	0	0	0	0	45	0	0	0	0	4
Total Crabs	118	303	106	284	62	138	113	8	0	80	627	167
Lobsters												
Lobster, Spanish	174	1,729	8,035	0	0	0	885	0	91	245	0	930
Lobster, spiny	0	0	0	0	71	0	0	0	0	0	0	6
Total Lobsters	174	1,729	8,035	0	71	0	885	0	91	245	0	1,021
Oysters												
Oysters	36,011	32,387	12,137	5,602	13,159	11,714	3,066	12,821	3,498	2,444	1,249	11,174
Total Oysters	36,011	32,387	12,137	5,602	13,159	11,714	3,066	12,821	3,498	2,444	1,249	11,174

Table C.4. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimps												
Shrimp, saltwater	207,271	270,084	222,015	0	0	0	0	0	0	0	0	58,281
Shrimp, pink	0	0	0	108,258	17,344	63,061	1,379	27,712	54,412	24,001	25,220	26,782
Shrimp, rock	2,581	25,703	3,682	1,292	2,412	13,651	855	46,218	2,577	175,242	19,547	24,480
Shrimp, brown	0	0	0	51,342	97,203	25,476	63,038	40,206	2,608	5,651	6,411	24,328
Shrimp, white	0	0	0	63,676	31,818	37,969	17,004	19,001	6,784	11,512	2,670	15,870
Shrimp, other	0	0	0	439	168	0	0	101	0	20,513	43,957	5,432
Shrimp, bait	0	0	0	0	29	0	125	27	226	1,049	1,009	206
Total Shrimps	209,852	295,787	225,697	225,007	148,974	140,157	82,401	133,265	66,607	237,969	98,815	169,503
Other Invertebrates												
Scallops, calico	0	0	0	0	0	168,634	1,301,291	0	0	0	277,248	145,598
Clams, hard, ungraded	6,365	39,007	52,590	0	635	1,889	0	3,174	18,268	31,185	10,629	13,645
Squid	844	1,335	423	1,271	227	2,141	609	4,028	1,572	3,848	8,018	2,026
Clams, hard, topneck	0	0	0	0	852	1,900	0	1,839	6,133	6,968	2,477	1,681
Scallops, bay	6,835	3,424	0	0	0	0	47	58	0	70	0	870
Clams, hard, chowder	0	0	0	0	0	5	0	329	666	276	120	116
Clams, hard, middleneck	0	0	0	0	0	3	0	13	73	57	20	14
Clams, hard, littleneck	0	0	0	0	42	86	0	11	5	1	1	12
Total Other Invertebrates	14,044	43,767	53,013	1,271	1,757	174,657	1,301,948	9,453	26,716	42,406	298,512	178,868
TOTAL INVERTEBRATES	260,200	373,972	298,987	232,164	164,023	326,666	1,388,413	155,547	96,911	283,145	399,203	361,748
GULF COUNTY TOTAL	4,246,500	4,546,919	3,170,778	8,126,757	8,143,485	8,456,689	11,277,517	7,527,541	5,846,645	7,830,508	6,234,478	6,283,985

Table C.5. Total commercial landings (kilograms) by species group for Okaloosa County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Scad, round (cigarfish)	171,690	103,649	68,525	45,813	198,946	245,649	364,011	112,505	271,223	213,409	229,101	168,710
Sardines, Spanish	30,642	0	8,693	104,342	146,424	120,099	102,611	136,889	164,253	65,100	68,986	79,003
Menhaden (pogies)	0	0	128,465	96,713	40,678	150,444	60,844	19,087	1,041	27,766	2,177	43,935
Bait Fish	85,925	159,705	36,718	0	2,237	10,634	3,333	1,252	178	866	1,411	25,188
Herring, thread	3,737	134,285	68	0	9	31	5,476	2,927	8,373	585	0	12,958
Scad, bigeye	0	0	0	0	1,894	9	6	0	0	0	0	159
Ballyhoo	0	0	0	11	0	0	0	0	0	0	0	1
Total Baitfishes	291,994	397,638	242,470	246,878	390,189	526,865	536,281	272,661	445,069	307,726	301,675	359,950
COASTAL PELAGIC FISHES												
Ladyfish	384,316	340,582	249,754	168,818	234,767	260,112	342,621	539,043	482,836	501,981	463,045	330,656
Blue Runner	107,824	88,215	176,618	23,407	128,089	157,913	129,589	89,039	78,095	78,718	188,825	103,861
Jack, crevalle	87,130	1,437	50,273	140,869	63,343	28,771	163,663	175,757	43,351	25,308	35,329	67,936
Shark	0	0	0	20,393	42,694	34,385	61,246	141,386	55,967	82,942	57,758	41,398
Bluefish	24,944	15,060	38,027	14,475	23,931	26,037	13,153	14,213	20,231	13,470	6,186	17,477
Mackerel, Spanish	35,288	28,995	22,905	15,428	13,713	14,950	374	1,428	29,341	12,158	32,689	17,272
Tunny, little (bonito)	1,718	178	27,701	0	0	0	0	0	26,794	81,021	4,455	11,822
Cobia	4,831	4,464	6,876	5,683	4,197	6,152	7,963	7,593	4,183	8,852	12,778	6,131
Bonito (little tunny)	0	0	0	1,441	8,649	17,531	19,187	15,142	0	0	0	5,163
Shark, mixed	14,874	15,925	23,985	0	0	0	0	0	0	0	0	4,565
Mackerel, king	1,138	2,439	1,067	553	1,146	2,516	429	3,144	7,787	10,021	23,464	4,475
Pompano	1,111	1,085	1,476	335	2,552	2,780	616	1,696	3,149	2,757	2,045	1,634
Atlantic bumper	0	0	0	0	0	2,133	12,035	0	0	0	0	1,181
Jacks, other	0	0	0	0	52	0	1,825	75	57	410	1,195	301

Table C.5. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shark fins	0	0	0	0	3	0	40	134	156	1,008	1,349	224
Jacks, mixed	0	0	0	0	0	0	42	0	59	88	35	19
Permit	0	0	0	0	0	38	0	0	0	12	0	4
Shad (common)	0	0	0	0	0	0	0	0	0	0	3	0
Total Coastal Pelagic Fishes	663,175	498,379	598,682	391,402	523,135	553,318	752,785	988,651	752,008	818,743	829,156	669,949
DEMERSAL FISHES												
Mullet, black	72,960	63,984	64,684	75,868	40,571	52,801	45,499	70,687	58,408	46,425	57,602	54,124
Flounders	14,044	6,677	4,234	4,804	7,994	4,755	4,498	5,519	7,331	5,883	4,781	5,877
Seatrout, spotted	3,185	6,218	6,475	6,803	7,582	10,144	9,620	5,884	5,439	2,069	4,377	5,650
Mullet, silver	74	0	752	17,838	12,509	3,948	5,846	3,274	2,231	1,845	287	4,050
Drum, black	13,934	14,826	120	541	568	543	119	657	1,458	1,010	877	2,888
Croaker	21,434	7,845	2,366	435	222	97	106	678	334	228	27	2,814
Kingfish (whiting)	14,187	4,939	104	150	97	48	1,074	91	681	1,329	218	1,910
Drum, red	9,206	4,088	7,888	894	300	0	0	0	0	0	0	1,865
Seatrout, silver	8,338	7,563	4,825	109	52	10	4	4	463	679	74	1,844
Catfish	372	178	1,308	2,255	6,560	4,082	1,656	0	21	0	3,390	1,652
Seatrout, sand	0	0	0	536	537	718	1,060	428	341	653	523	400
Spot	58	299	111	459	760	221	466	292	121	137	271	266
Mojarra	0	0	634	0	0	0	0	0	0	0	0	53
Seatrout, weakfish	0	0	0	49	145	263	0	0	0	5	0	38
Sand perch	0	0	0	0	228	0	0	0	0	0	0	19
Sea bass, mixed	0	24	0	0	0	2	0	0	10	10	8	5
Mullet, black (roe)	0	0	0	0	0	0	0	0	11	0	36	4
Total Demersal Fishes	157,793	116,641	93,501	110,742	78,124	77,632	69,948	87,513	76,849	60,273	72,471	91,044

Table C.5. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
REEF FISHES												
Snapper, red	312,625	250,971	197,056	163,111	109,040	132,823	92,268	86,315	66,202	94,467	54,969	129,987
Snapper, vermilion	36,639	49,124	62,883	62,557	36,932	47,157	98,084	162,779	212,041	352,093	428,224	129,043
Amberjacks	50,837	93,541	103,741	93,809	153,537	215,574	189,167	61,238	27,601	44,281	44,753	89,840
Grouper, mixed	162,703	231,026	286,354	4,437	5,445	5,205	7,747	1,984	903	500	1,232	58,961
Tilefish	84,419	67,473	53,052	63,435	49,349	78,359	25,099	10,024	1,425	5,973	4,180	36,899
Porgies	10,441	26,178	22,658	13,144	25,817	50,077	37,987	46,451	42,765	39,984	78,091	32,799
Grouper, yellowedge	0	0	0	69,312	76,440	80,153	49,002	27,299	14,702	23,610	15,402	29,660
Triggerfish	5,466	6,462	7,092	6,578	6,246	16,951	24,884	34,922	40,742	45,276	43,888	19,876
Snapper, other	0	0	0	32,198	70,826	79,125	8,846	2,549	2,969	1,959	914	18,126
Grouper, gag	0	0	0	21,129	8,655	7,247	8,368	5,657	14,341	15,338	17,424	8,180
Grouper, warsaw	14,933	16,821	17,317	10,439	7,865	9,340	6,657	2,445	2,427	2,330	1,313	7,657
Grouper, scamp	0	0	0	12,875	11,303	9,468	14,896	8,754	9,699	8,445	10,877	7,193
Grouper, black	0	0	0	4,876	11,009	18,526	9,827	10,389	7,248	0	0	5,156
Sheepshead	26,156	16,745	4,645	1,351	1,364	2,201	1,091	2,317	1,502	2,669	1,794	5,153
Grouper, yellowfin	0	0	0	35,241	8,266	322	0	219	283	90	124	3,712
Grouper, snowy	0	0	0	68	3,362	5,624	2,877	1,183	2,824	6,201	6,850	2,416
Snapper, gray (mangrove)	768	401	9,184	892	967	2,940	852	1,381	5,397	799	1,027	2,051
Grouper, red	0	0	0	789	210	442	616	739	2,922	1,776	5,646	1,095
Grouper, other	0	0	0	2,274	305	1,933	4,609	651	1,040	345	124	940
Tilefish, blueline	0	0	0	678	778	1,096	942	835	1,435	1,720	1,091	715
Snapper, lane	48	113	3,356	1,591	132	489	146	155	296	1,408	793	710
Snapper, silk	0	0	0	2,933	1,506	461	99	227	48	503	855	553
Snapper, mutton	0	0	411	97	1,189	101	65	21	1,781	22	89	315

Table C.5. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Jewfish	14	0	0	42	293	107	0	34	0	0	0	41
Angelfish	8	0	205	0	0	0	0	0	0	0	0	18
Grouper, Nassau	0	0	0	97	63	22	0	0	0	10	4	16
Snapper, yellowtail	0	0	0	104	0	7	0	0	0	29	6	12
Tripletail	0	33	0	0	0	0	0	0	0	0	0	3
Hogfish	0	0	0	0	0	0	13	0	0	0	0	1
Grunts	0	0	0	0	1	3	0	0	0	0	0	0
Total Reef Fishes	705,057	758,889	767,954	604,052	590,901	765,754	584,141	468,567	460,591	649,828	719,670	643,218
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	1,380	3,056	201,983	214,621	52,761	26,161	21,970	37,323	7,029	28,724	32,839	52,321
Swordfish	7,407	2,674	62,377	40,097	75,391	79,375	117,860	93,565	35,804	951	22,478	44,832
Dolphin	1,369	2,125	9,177	7,053	4,095	5,384	5,289	40,047	9,834	8,749	3,494	8,051
Tuna, blackfin	867	1,068	2,664	1,948	1,805	2,814	3,042	2,918	1,136	1,999	5,316	2,131
Wahoo	626	762	1,797	1,185	2,238	1,719	1,375	3,495	2,296	2,143	1,296	1,578
Tuna, bluefin	0	1,093	5,026	8,898	932	0	430	107	54	30	0	1,381
Marlin, white	0	925	2,344	5,412	4,529	0	0	0	0	0	0	1,101
Marlin, blue	0	0	866	2,362	2,624	0	0	0	0	0	0	488
Tuna, bigeye	0	0	491	427	138	269	2,600	247	358	38	237	400
Tuna, mixed	167	157	3,125	38	0	49	188	2	185	0	329	353
Marlin, unclassified	29	438	1,467	0	0	0	0	0	0	0	0	161
Tuna, skipjack	0	0	0	0	34	27	51	294	0	0	5	34
Total Oceanic Pelagic Fishes	11,846	12,298	291,317	282,041	144,547	115,798	152,805	177,998	56,696	42,633	65,995	123,089
OTHER FISHES												
Misc. Industrial Fish	8,033	29,190	19,272	9	0	29,374	26,214	98,682	11,175	128,186	37,537	32,306

Table C.5. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Misc. Food Fish	3,018	4,609	15,046	1,430	1,659	4,551	3,367	9,323	11,741	5,021	3,374	5,262
Eels	278	595	359	996	2,761	1,774	1,185	537	239	529	334	799
Tilapia	0	0	0	0	0	0	0	4	0	0	0	0
Total Other Fishes	11,330	34,393	34,677	2,435	4,420	35,699	30,767	108,545	23,154	133,736	41,245	41,855
TOTAL FISHES	3,682,388	3,636,476	4,057,201	3,275,102	3,462,631	4,150,134	4,253,452	4,207,870	3,628,731	4,025,879	4,060,424	3,858,208
INVERTEBRATES												
Crabs												
Crab, blue (hard)	6,478	13,875	11,243	7,926	5,635	12,299	9,916	12,697	16,701	5,928	18,980	10,140
Crab, small	0	0	0	1,398	36	0	0	0	0	0	0	119
Crab, blue (soft)	0	0	0	6	4	0	19	5	17	0	0	4
Crab, jumbo	0	0	0	0	0	0	37	0	0	0	0	3
Crab, medium	0	0	0	0	0	27	0	0	0	0	0	2
Total Crabs	6,478	13,875	11,243	9,331	5,675	12,326	9,971	12,702	16,718	5,928	18,980	11,202
Lobsters												
Lobster, Spanish	0	175	14	126	179	6	861	0	96	346	627	203
Lobster, spiny	0	0	230	1,977	32	25	0	0	0	0	41	192
Total Lobsters	0	175	244	2,104	211	31	861	0	96	346	668	197
Oysters												
Oysters	20	744	107	54	18	625	9	0	16	0	0	133
Total Oysters	20	744	107	54	18	625	9	0	16	0	0	133
Shrimps												
Shrimp, saltwater	447,001	306,932	241,340	0	0	0	0	0	0	0	0	82,939
Shrimp, brown	0	0	0	177,416	125,430	146,447	138,800	107,503	104,608	98,476	74,521	81,100
Shrimp, white	0	0	0	47,069	41,828	27,735	24,697	25,973	22,989	17,884	12,040	18,351

Table C.5. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, rock	1,499	385	92	837	4,019	10,511	3,509	5,283	2,300	4,853	643	2,828
Shrimp, other	0	0	0	3,956	529	16	899	7,071	4,396	4,996	2,610	2,039
Shrimp, pink	0	0	0	1,082	258	64	1,795	1,496	1,175	0	0	489
Shrimp, bait	0	0	0	463	526	739	625	355	99	19	0	235
Total Shrimps	448,500	307,317	241,432	230,824	172,589	185,512	170,324	147,681	135,567	126,228	89,815	205,072
Other Invertebrates												
Squid	322	227	411	695	668	889	212	638	602	1,896	1,395	663
Scallops, bay	53	44	250	0	0	643	99	0	0	0	0	91
Octopus	0	0	2	16	0	52	264	63	30	223	67	60
Misc. Invertebrates	0	0	0	0	0	5	0	45	0	0	331	32
Total Other Invertebrates	375	271	663	711	668	1,589	574	746	632	2,119	1,793	922
TOTAL INVERTEBRATES	455,373	322,382	253,689	243,023	179,160	200,083	181,739	161,128	153,028	134,621	111,257	217,771
OKALOOSA COUNTY TOTAL	2,296,567	2,140,620	2,282,290	1,880,574	1,910,476	2,275,150	2,308,466	2,265,063	1,967,394	2,147,560	2,141,469	1,967,969

Table C.6. Total commercial landings (kilograms) by species group for Santa Rosa County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	0	0	0	46,475	237,039	546,636	978,340	608,455	1,073,974	480,384	275,211	353,876
Scad, round (cigarfish)	0	0	0	30,641	25,371	30,043	3,734	52,842	56,995	130,593	160,313	40,878
Bait Fish	454	0	3,743	28,532	7,205	9,465	4,614	6,865	3,174	127	143	5,360
Sardines, Spanish	0	0	0	12,857	7,641	7,919	264	3,842	10,588	1,639	3,390	4,012
Herring, thread	0	0	0	1,871	0	0	171	0	3,274	2,042	787	679
Ballyhoo	0	0	0	242	23	0	33	91	0	0	148	45
Scad, bigeye	0	0	0	1	3	0	0	0	0	0	41	4
Total Baitfishes	454	0	3,743	120,618	277,281	594,062	987,155	672,095	1,148,005	614,785	440,034	441,658
COASTAL PELAGIC FISHES												
Blue Runner	5	0	0	0	763	210	806	37,294	27,325	13,271	37,828	9,792
Ladyfish	0	0	0	19,028	2,300	0	776	3,012	18,665	14,256	45,208	8,604
Mackerel, Spanish	2,015	797	2,964	1,098	8,766	8,027	4,606	10,778	1,857	10,501	856	4,355
Shark	0	0	0	373	464	974	1,668	16,046	20,121	7,591	492	3,977
Tunny, little (bonito)	0	8	6	0	0	0	0	0	5,953	4,919	30,454	3,445
Bluefish	191	1,020	42	6,668	6,054	781	3,450	2,548	1,625	1,466	454	2,025
Jack, crevalle	0	0	0	0	0	5	73	3,537	267	8,228	60	1,014
Mackerel, king	21	94	222	165	109	274	91	564	1,830	2,935	3,270	798
Cobia	4	23	248	97	127	652	768	1,119	501	1,321	2,112	581
Pompano	78	83	264	333	540	269	334	534	1,281	1,280	744	478
Bonito (little tunny)	0	0	0	14	1,098	151	87	1,697	0	0	0	254
Jacks, other	0	0	0	0	42	0	692	308	241	222	45	129
Shark fins	0	0	0	0	67	0	3	73	660	51	0	71
Shark, mixed	193	100	273	0	0	0	0	0	0	0	0	47

Table C.6. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Jacks, mixed	0	0	0	0	27	0	0	0	48	0	11	7
Shad (common)	0	0	0	0	1	0	0	0	1	0	0	0
Total Coastal Pelagic Fishes	2,507	2,124	4,019	27,775	20,358	11,342	13,355	77,508	80,377	66,041	121,536	38,813
DEMERSAL FISHES												
Mullet, black	203,423	197,002	153,258	276,462	207,769	149,358	161,833	142,389	103,305	122,454	86,445	150,308
Croaker	32,554	37,801	33,152	28,010	19,652	3,900	3,714	693	1,252	943	753	13,535
Seatrout, spotted	17,458	21,022	13,051	21,680	28,291	17,519	19,174	4,662	3,926	3,621	3,937	12,862
Spot	7,490	5,999	8,057	16,030	18,720	10,109	5,672	3,090	1,934	2,410	1,893	6,784
Seatrout, silver	16,216	13,528	10,247	24	10	3	1	118	45	361	42	3,383
Mullet, silver	7,237	7,340	669	520	1,059	3,029	3,091	4,909	2,913	4,095	3,221	3,174
Seatrout, sand	0	0	0	12,690	10,867	3,018	511	1,591	607	621	1,216	2,593
Flounders	1,431	1,994	2,165	2,447	1,124	709	811	631	3,790	2,753	576	1,536
Drum, black	79	338	1,089	219	2,515	2,568	1,655	294	580	733	289	863
Drum, red	824	1,901	1,177	1,114	49	0	0	0	0	0	0	422
Catfish	21	449	10	1,420	850	57	51	16	9	85	397	280
Seatrout, weakfish	0	0	0	190	2,247	18	0	0	0	0	0	205
Kingfish (whiting)	129	411	0	16	6	2	175	146	44	38	10	81
Mullet, black (roe)	0	0	0	0	0	0	0	0	38	250	0	24
Sea bass, mixed	12	0	0	102	0	0	0	0	43	0	3	13
Sturgeon	1	117	37	0	0	0	0	0	0	0	0	13
Rays	0	0	0	1	10	21	0	50	0	0	0	7
Pinfish	0	0	0	0	0	0	0	0	16	45	1	5
Mojarra	0	0	0	37	0	0	0	0	0	0	0	3
Total Demersal Fishes	286,875	287,901	222,912	360,961	293,168	190,313	196,687	158,590	118,502	138,408	98,781	213,918

Table C.6. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
REEF FISHES												
Triggerfish	1,366	898	1,231	794	665	4,568	10,755	28,573	19,841	13,880	14,767	8,112
Snapper, vermilion	3,941	1,465	1,444	4,298	2,610	3,268	7,109	8,718	13,131	16,769	21,386	7,012
Amberjacks	1,116	583	2,944	2,721	6,290	13,826	27,866	7,333	5,061	5,764	9,302	6,900
Snapper, red	3,279	2,235	2,694	2,557	2,278	4,568	7,234	16,486	7,839	15,338	10,662	6,264
Grouper, yellowedge	0	0	0	12	21	1,623	3,816	23,224	20,510	15,202	6,259	5,889
Tilefish	25	81	97	19	6	1,751	644	4,580	2,131	7,493	14,004	2,569
Porgies	1,530	2,565	1,482	657	268	1,791	1,617	4,404	2,661	2,107	6,754	2,153
Sheepshead	2,651	546	340	1,497	1,092	1,592	5,626	3,644	3,049	1,295	1,664	1,916
Grouper, mixed	992	556	14,315	157	848	88	0	809	0	68	584	1,535
Grouper, gag	0	0	0	42	19	454	1,249	1,285	577	696	2,571	575
Grouper, snowy	0	0	0	4	0	12	321	3,860	214	795	903	509
Snapper, other	0	0	0	2,467	1,639	2,117	1,829	136	67	37	25	756
Snapper, gray (mangrove)	352	89	482	86	1,249	603	661	372	497	257	165	401
Grouper, scamp	0	0	0	192	73	154	383	463	540	459	1,225	291
Grouper, black	0	0	0	1,438	381	473	245	15	32	0	0	215
Grouper, warsaw	88	0	129	2	0	29	133	1,039	710	246	116	208
Grouper, red	0	0	0	5	12	5	130	770	0	0	1,143	172
Snapper, silk	0	0	0	1,016	372	0	1	1	3	286	0	140
Snapper, lane	0	0	5	8	6	0	94	90	143	260	276	74
Snapper, mutton	0	0	0	12	16	27	550	145	3	21	1	65
Hogfish	0	0	0	0	0	0	0	0	0	565	91	55
Grouper, other	0	0	0	3	5	3	260	10	138	0	2	35
Tilefish, blueline	0	0	0	28	22	20	30	25	40	33	68	22

Table C.6. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, Nassau	0	0	0	170	0	0	0	74	0	0	0	20
Grunts	0	3	0	1	2	158	0	0	14	15	0	16
Snapper, yellowtail	12	0	0	18	0	0	4	0	0	44	0	7
Grouper, yellowfin	0	0	0	23	0	0	0	14	0	0	0	3
Jewfish	0	0	0	0	0	0	0	11	0	0	0	1
Tripletail	5	2	0	0	0	0	0	0	0	0	0	1
Total Reef Fishes	15,357	9,022	25,162	18,228	17,874	37,130	70,556	106,081	77,200	81,632	91,968	50,019
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	52	0	161	2,049	2,179	1,646	2,542	3,038	972
Dolphin	6	141	57	102	74	193	616	7,437	527	724	683	880
Wahoo	9	0	32	0	59	126	64	756	621	628	280	215
Tuna, blackfin	0	10	81	42	28	205	166	515	184	985	172	199
Swordfish	0	0	630	0	0	16	211	402	316	21	0	133
Tuna, skipjack	0	0	0	0	898	0	0	0	29	0	0	77
Tuna, bigeye	0	0	0	11	0	0	0	46	0	0	0	5
Tuna, bluefin	0	0	0	0	0	0	42	0	13	0	0	5
Total Oceanic Pelagic Fishes	15	151	800	206	1,060	700	3,148	11,334	3,337	4,899	4,173	2,711
OTHER FISHES												
Misc. Industrial Fish	0	0	0	17,346	0	456	0	11,338	303	22,630	3,477	4,629
Misc. Food Fish	1,066	239	150	2,113	283	188	788	3,410	3,400	1,881	6,391	1,659
Eels	0	0	7	183	0	2	180	4	126	0	0	42
Total Other Fishes	1,066	239	157	19,641	283	646	968	14,752	3,830	24,511	9,868	6,906
TOTAL FISHES	612,548	598,875	513,585	1,094,860	1,220,050	1,668,385	2,543,738	2,080,721	2,862,502	1,860,553	1,532,721	1,445,214

Table C.6. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
INVERTEBRATES												
Crabs												
Crab, blue (hard)	6,539	7,202	23,530	67,779	108,244	78,994	50,125	33,232	121,466	43,512	133,170	56,150
Crab, medium	0	0	0	0	0	0	0	234	0	0	0	19
Crab, blue (soft)	0	0	0	0	18	0	3	41	9	63	12	12
Crab, large	0	0	0	141	0	0	0	0	0	0	0	12
Crab, small	0	0	0	0	50	0	0	0	0	0	0	4
Crab, stone, ungraded	2	2	0	29	0	0	0	0	0	0	0	3
Crab, jumbo	0	0	0	27	0	0	0	0	0	0	0	2
Total Crabs	6,541	7,204	23,530	67,977	108,312	78,994	50,129	33,507	121,475	43,574	133,182	61,311
Lobsters												
Lobster, Spanish	0	125	4	32	0	0	0	0	0	0	0	13
Lobster, spiny	0	0	0	156	0	0	0	0	0	0	0	13
Total Lobsters	0	125	4	188	0	0	0	0	0	0	0	29
Oysters												
Oysters	18,607	15,859	42,828	111,303	28,060	26,018	9,189	0	4,108	35,963	34,029	27,164
Total Oysters	18,607	15,859	42,828	111,303	28,060	26,018	9,189	0	4,108	35,963	34,029	27,164
Shrimps												
Shrimp, brown	0	0	0	4,986	910	5,396	12,086	4,655	4,296	12,453	14,441	4,935
Shrimp, saltwater	3,902	5,753	5,362	0	0	0	0	0	0	0	0	1,251
Shrimp, other	0	0	0	0	0	291	250	2,429	5,597	1,101	2,654	1,027
Shrimp, white	0	0	0	1,595	1,238	36	1,666	1,881	209	1,018	1,101	729
Shrimp, rock	0	21	0	0	0	9	0	0	0	341	0	31
Shrimp, pink	0	0	0	42	0	0	49	0	0	0	0	8

Table C.6. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Total Shrimps	3,902	5,774	5,362	6,623	2,148	5,732	14,051	8,965	10,101	14,913	18,197	8,706
Other Invertebrates												
Squid	31	6	0	772	5	31	123	52	335	728	241	194
Octopus	0	0	0	0	59	63	0	0	0	0	0	10
Misc. Invertebrates	0	0	0	78	0	0	0	20	0	0	0	8
Clams, hard, ungraded	0	0	0	56	0	0	0	0	0	0	0	5
Total Other Invertebrates	31	6	0	906	65	93	123	72	335	728	241	236
TOTAL INVERTEBRATES	29,081	28,968	71,725	186,997	138,585	110,837	73,492	42,544	136,019	95,179	185,649	99,916
SANTA ROSA COUNTY TOTAL	335,355	328,405	328,517	734,427	748,612	945,031	1,345,361	1,082,904	1,567,270	1,025,455	952,009	782,779

Table C.7. Total commercial landings (kilograms) by species group for Wakulla County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Bait Fish	0	13,608	0	39,803	532	2,233	23,064	52,410	69,638	20,542	26,375	20,684
Menhaden (pogies)	0	0	0	343	247	25,288	5,593	7,413	6,943	1,547	1,098	4,039
Sardines, Spanish	0	0	0	0	0	0	0	0	0	3,070	0	256
Scad, bigeye	0	0	0	9	0	0	12	5	0	0	0	2
Total Baitfishes	0	13,608	0	40,155	779	27,521	28,669	59,828	76,582	25,159	27,473	27,252
COASTAL PELAGIC FISHES												
Mackerel, Spanish	408	14	0	62	2,869	761	6,837	25,129	18,266	20,200	1,004	6,296
Jack, crevalle	0	0	0	93	24,028	6,713	2,615	2,645	7,738	5,261	11,801	5,074
Shark	0	0	0	388	2,997	1,431	3,862	17,183	9,545	179	24	2,967
Jacks, mixed	0	0	0	29	5,558	4,994	138	1,286	0	1,002	12	1,085
Bluefish	0	0	0	270	234	315	1,666	3,874	1,996	3,593	153	1,008
Blue Runner	0	0	0	4	4	38	1,139	592	740	3,891	327	561
Pompano	0	227	0	5	338	1,352	1,128	1,989	347	1,085	96	547
Jacks, other	0	0	0	0	0	0	0	10	1,347	147	0	125
Cobia	0	0	0	0	4	0	342	152	215	204	189	92
Shad (common)	0	0	0	0	41	0	833	0	0	0	0	73
Shark, mixed	0	798	0	0	0	0	0	0	0	0	0	67
Mackerel, king	0	0	0	0	1	17	4	110	0	39	342	43
Permit	0	0	0	0	12	0	0	0	228	18	51	26
Bonito (little tunny)	0	0	0	0	0	0	86	0	0	0	0	7
Ladyfish	0	0	0	0	0	8	0	62	0	0	0	6
Shark fins	0	0	0	0	1	0	0	0	0	0	1	0
Total Coastal Pelagic Fishes	408	1,039	0	850	36,087	15,628	18,649	53,033	40,421	35,619	13,999	19,612

Table C.7. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	74,018	39,797	49,167	188,465	283,527	243,985	343,217	439,846	220,237	499,531	586,714	247,375
Sea bass, mixed	227	896	273	173	1,030	5,811	16,834	30,989	45,664	18,750	14,471	11,260
Seatrout, spotted	5,899	1,523	2,422	8,881	13,100	15,553	7,952	7,851	8,330	6,946	8,119	7,214
Spot	603	1,497	987	1,471	3,280	2,321	7,298	13,487	7,914	25,467	14,107	6,536
Drum, black	0	45,360	0	8	86	212	43	23	227	408	10	3,865
Flounders	639	590	343	180	1,192	3,755	3,826	4,189	3,338	5,851	2,700	2,217
Drum, red	1,601	16,211	653	961	2,468	0	0	0	0	0	0	1,825
Croaker	635	2,495	1,270	1,201	1,988	851	651	4,278	1,618	2,246	2,053	1,607
Kingfish (whiting)	0	57	0	376	884	74	333	2,249	544	8,323	865	1,142
Mullet, silver	628	0	2,522	0	181	0	826	699	1,732	2,386	579	796
Seatrout, sand	0	0	0	18	122	68	442	459	1,079	1,453	906	379
Catfish	0	771	0	0	0	62	716	0	23	11	0	132
Seatrout, silver	0	0	0	24	0	0	4	1	36	88	6	13
Seatrout, weakfish	0	0	0	36	5	51	0	0	0	0	0	8
Sand perch	0	0	0	19	0	0	0	53	0	5	0	6
Mojarra	0	0	0	0	0	0	0	0	0	31	0	3
Rays	0	0	0	0	0	0	24	0	7	0	0	3
Mullet, black (roe)	0	0	0	0	0	0	4	0	0	0	0	0
Total Demersal Fishes	84,250	109,196	57,637	201,812	307,863	272,743	382,170	504,124	290,748	571,497	630,528	310,233
REEF FISHES												
Grunts	590	851	1,066	215	1,042	7,244	17,530	55,990	88,575	61,040	32,630	22,231
Grouper, red	0	0	0	24	240	582	15,604	29,117	26,347	37,984	64,406	14,525
Grouper, gag	0	0	0	0	30	1,321	7,751	18,049	13,137	30,110	39,488	9,157

Table C.7. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, black	0	0	0	2,016	904	1,382	21,376	24,778	9,333	0	0	4,982
Amberjacks	0	0	0	92	427	1,687	7,022	3,148	5,569	2,047	4,099	2,008
Snapper, vermilion	0	0	0	0	0	45	29	0	1,868	9,255	8,813	1,668
Porgies	0	340	0	0	0	50	60	322	1,934	8,049	7,061	1,485
Triggerfish	0	0	11	0	63	0	816	1,046	3,835	4,248	4,091	1,176
Grouper, mixed	1,089	2,234	590	15	199	649	3,796	2,429	775	219	652	1,054
Sheepshead	478	89	0	144	215	588	1,542	449	1,096	4,741	702	837
Snapper, gray (mangrove)	0	68	0	21	68	54	259	767	883	1,403	1,094	385
Snapper, red	381	352	0	0	2	0	357	1,122	867	281	805	347
Grouper, scamp	0	0	0	176	0	0	6	507	353	164	1,626	236
Hogfish	0	0	0	0	0	0	291	784	281	636	447	203
Snapper, other	0	0	0	0	5	151	518	136	244	260	282	145
Snapper, lane	0	0	0	0	0	0	7	4	301	127	473	76
Grouper, other	0	0	0	0	0	0	97	0	245	2	24	31
Snapper, mutton	0	0	0	0	0	4	4	64	0	1	156	19
Snapper, silk	0	0	0	0	0	2	0	0	0	0	76	7
Jewfish	56	0	0	0	0	0	0	0	0	0	0	5
Tilefish	0	0	0	0	0	0	4	9	16	0	0	2
Tilefish, blueline	0	0	0	0	0	0	0	0	0	0	16	1
Total Reef Fishes	2,593	3,933	1,667	2,703	3,195	13,757	77,070	138,720	155,660	160,567	166,940	66,073
OCEANIC PELAGIC FISHES												
Dolphin	0	0	0	0	0	0	165	95	149	61	99	47
Tuna, blackfin	0	0	0	0	0	0	0	23	8	15	0	4
Tuna, yellowfin	0	0	0	0	0	0	0	41	0	0	0	3

Table C.7. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Wahoo	0	0	0	0	0	0	0	5	0	9	20	3
Tuna, bigeye	0	0	0	0	0	0	0	0	0	0	20	2
Total Oceanic Pelagic Fishes	0	0	0	0	0	0	165	164	156	85	139	64
OTHER FISHES												
Misc. Food Fish	3,198	4,400	862	18	202	59	1,754	754	1,762	984	2,835	1,402
Misc. Industrial Fish	1,315	181	313	0	0	75	313	0	0	111	953	272
Tilapia	0	0	0	0	0	0	0	0	0	0	511	43
Eels	0	0	0	0	104	0	0	0	0	0	7	9
Total Other Fishes	4,513	4,581	1,175	18	306	134	2,067	754	1,762	1,095	4,305	1,883
TOTAL FISHES	183,529	264,715	120,957	491,076	696,458	659,567	1,017,580	1,513,247	1,130,656	1,588,043	1,686,771	814,810
INVERTEBRATES												
Crabs												
Crab, blue (hard)	688,596	764,873	1,131,650	614,196	800,423	546,795	464,438	367,939	313,274	700,211	572,615	580,418
Crab, stone, ungraded	46,493	20,768	24,120	257	21,563	26,072	8,133	11,912	16,252	12,131	12,446	16,679
Crab, large	0	0	0	16,940	18,926	17,289	12,520	22,822	18,647	10,342	17,460	11,245
Crab, medium	0	0	0	23,338	21,649	20,744	18,356	13,771	13,089	7,302	13,138	10,949
Crab, jumbo	0	0	0	0	572	0	64	0	0	49	0	57
Crab, small	0	0	0	0	0	0	0	4	5	237	0	20
Crab, blue (soft)	0	0	0	0	11	1	1	39	1	11	28	8
Total Crabs	735,089	785,641	1,155,770	654,731	863,143	610,901	503,512	416,486	361,268	730,283	615,687	675,683
Lobsters												
Lobster, Spanish	113	465	9,419	0	0	0	0	30	1	0	0	836
Total Lobsters	113	465	9,419	0	0	0	0	30	1	0	0	836

Table C.7. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Oysters												
Oysters	7,785	18,138	34,487	61,489	49,095	20,592	24,141	17,664	28,146	16,692	21,084	24,943
Total Oysters	7,785	18,138	34,487	61,489	49,095	20,592	24,141	17,664	28,146	16,692	21,084	24,943
Shrimps												
Shrimp, saltwater	31,921	22,623	2,244	0	0	0	0	0	0	0	0	4,732
Shrimp, brown	0	0	0	151	785	517	8,086	8,891	21,707	9,370	5,466	4,581
Shrimp, white	0	0	0	18	0	1,375	4,914	8,688	3,571	4,386	198	1,929
Shrimp, other	0	0	0	12	0	253	81	1,592	3,646	841	161	549
Shrimp, pink	0	0	0	1,340	58	41	1,400	1,262	276	448	714	462
Shrimp, bait	0	0	0	0	0	0	138	1,434	186	73	30	155
Shrimp, rock	0	0	0	0	0	113	283	222	266	323	300	126
Total Shrimps	31,921	22,623	2,244	1,520	843	2,299	14,901	22,090	29,653	15,441	6,870	13,673
Other Invertebrates												
Octopus	0	0	0	0	0	68	464	528	2,208	934	2,150	529
Scallops, bay	0	289	272	0	0	4,100	1,357	15	0	0	0	503
Squid	34	136	0	0	0	0	143	0	96	128	31	47
Misc. Invertebrates	0	0	0	0	0	0	0	2	0	0	55	5
Clams, hard, littleneck	0	0	0	0	0	0	0	0	0	0	36	3
Total Other Invertebrates	34	425	272	0	0	4,168	1,964	545	2,304	1,062	2,272	1,186
TOTAL INVERTEBRATES	774,942	827,293	1,202,192	717,740	913,082	637,960	544,519	456,815	421,372	763,478	645,913	718,664
WAKULLA COUNTY TOTAL	866,707	959,650	1,262,670	963,278	1,261,311	967,743	1,053,309	1,213,441	986,700	1,557,499	1,489,299	1,048,467

Table C.8. Total commercial landings (kilograms) by species group for Walton County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	0	0	0	0	0	20	0	0	10	0	0	2
Total Baitfishes	0	0	0	0	0	20	0	0	10	0	0	2
COASTAL PLEAGIC FISHES												
Shark	0	0	0	0	0	0	15	35	431	0	0	40
Cobia	0	0	184	0	0	0	0	51	0	0	0	20
Ladyfish	0	0	0	0	0	0	0	0	0	0	57	5
Bluefish	0	0	0	0	0	0	20	0	8	0	0	2
Mackerel, king	0	0	0	0	0	0	0	26	0	0	0	2
Pompano	0	0	0	0	0	0	0	10	0	0	0	1
Jacks, mixed	0	0	0	0	0	0	0	1	8	0	0	1
Total Coastal Pelagic Fishes	0	0	184	0	0	0	35	123	447	0	57	77
DEMERSAL FISHES												
Mullet, black	1,932	1,956	4,585	5,390	5,164	4,579	5,650	17,500	7,002	5,619	6,618	5,500
Flounders	32	12	451	90	77	728	964	360	417	123	784	337
Seatrout, spotted	276	127	553	132	254	196	526	943	582	123	222	328
Mullet, silver	191	0	236	834	112	0	784	231	1,310	59	13	314
Spot	0	0	92	0	2	30	67	40	7	0	0	20
Catfish	0	0	49	0	141	0	0	0	0	0	0	16
Seatrout, silver	0	0	0	0	0	15	0	0	112	0	6	11
Seatrout, sand	0	0	0	0	0	36	0	57	1	1	0	8
Drum, black	0	0	0	0	0	0	0	2	9	0	82	8
Croaker	0	0	81	0	0	2	0	0	0	0	0	7
Drum, red	0	0	43	0	0	0	0	0	0	0	0	4

Table C.8. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Pinfish	0	0	0	0	0	0	0	0	0	0	0	0
Rays	0	0	0	0	0	0	0	0	0	0	0	0
Total Demersal Fishes	2,430	2,096	6,089	6,447	5,749	5,586	7,992	19,133	9,439	5,926	7,725	7,146
REEF FISHES												
Amberjacks	45	0	2,774	8	0	0	0	14	208	0	0	254
Grouper, mixed	0	0	1,505	0	0	0	0	344	5	0	0	155
Snapper, red	0	43	308	0	6	0	0	188	763	0	5	109
Snapper, other	0	0	0	0	732	0	0	187	1	0	0	84
Triggerfish	0	0	206	0	5	0	0	192	49	0	0	38
Porgies	0	0	145	0	0	0	0	82	9	0	0	20
Sheepshead	0	0	69	22	0	0	24	16	14	0	8	13
Snapper, vermilion	0	0	58	0	0	0	0	6	71	0	0	11
Grouper, gag	0	0	0	0	0	0	3	0	128	0	0	11
Grouper, scamp	0	0	0	0	0	18	0	46	0	0	0	5
Grouper, black	0	0	0	0	0	0	0	2	28	0	0	3
Grouper, red	0	0	0	0	0	0	0	21	0	0	0	2
Snapper, gray (mangrove)	0	0	0	0	0	0	0	15	0	0	0	1
Tilefish	0	0	7	0	0	0	0	0	0	0	0	1
Grunts	2	0	0	0	0	0	0	0	2	0	0	0
Snapper, mutton	0	0	0	0	0	0	0	4	0	0	0	0
Total Reef Fishes	48	43	5,071	30	743	18	27	1,117	1,278	0	13	763
OCEANIC PELAGIC FISHES												
Swordfish	0	0	91	0	0	0	0	0	0	0	0	8
Dolphin	0	0	18	0	0	11	0	33	9	0	6	6

Table C.8. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Wahoo	0	0	20	0	0	0	0	0	0	0	0	2
Total Oceanic Pelagic Species	0	0	129	0	0	11	0	33	9	0	6	17
OTHER FISHES												
Misc. Food Fish	0	0	0	337	4	0	0	0	0	3	0	29
Eels	0	0	0	0	0	0	0	7	0	0	0	1
Misc. Industrial Fish	0	0	0	0	0	0	0	0	0	0	0	0
Total Other Fishes	0	0	0	337	4	0	0	7	0	3	0	32
TOTAL FISHES	4,956	4,277	22,945	13,627	12,992	11,268	16,107	40,826	22,366	11,859	15,601	15,405
INVERTEBRATES												
Crabs												
Crab, blue (hard)	15,099	65,429	70,562	324	310	555	579	194	2,327	5,699	12,841	14,493
Crab, blue (soft)	0	0	0	0	0	1	0	0	0	1	4	1
Total Crabs	15,099	65,429	70,562	324	310	556	579	194	2,327	5,701	12,845	15,811
Lobsters												
Lobster, Spanish	0	0	0	0	0	0	0	55	4	0	0	5
Total Lobsters	0	0	0	0	0	0	0	55	4	0	0	5
Oysters												
Oysters	8,142	5,721	1,521	1,906	337	1,740	969	2,882	3,336	2,841	2,279	2,639
Total Oysters	8,142	5,721	1,521	1,906	337	1,740	969	2,882	3,336	2,841	2,279	2,639
Shrimps												
Shrimp, brown	0	0	0	1,773	767	370	1,927	3,544	6,189	9,455	12,937	3,080
Shrimp, white	0	0	0	176	31	23	456	34	347	1,163	160	199
Shrimp, other	0	0	0	0	14	0	105	249	45	122	53	49
Shrimp, pink	0	0	0	0	44	63	0	0	53	0	0	13

Table C.8. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, bait	0	0	0	0	68	0	0	0	17	0	0	7
Shrimp, rock	0	0	0	0	0	0	0	45	0	0	0	4
Total shrimps	0	0	0	1,948	923	456	2,488	3,873	6,652	10,741	13,150	3,657
Squid	0	0	16	7	0	0	0	0	0	0	22	4
Octopus	0	0	0	0	0	0	0	0	5	0	0	0
Total Other Invertebrates	0	0	16	3,903	1,846	912	4,975	7,746	13,308	21,482	26,322	7,319
TOTAL INVERTEBRATES	23,241	71,150	72,099	4,184	1,571	2,752	4,035	7,004	12,324	19,283	28,295	22,358
WALTON COUNTY TOTAL	25,719	73,289	83,571	10,998	8,067	8,387	12,089	27,420	23,507	25,212	36,096	27,863

Table C.9. Total commercial fishing trips by species group for Bay County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Scad, round (cigarfish)	193	288	325	379	369	483	447	333	352
Sardines, Spanish	153	221	234	292	185	257	297	198	230
Baitfish	35	49	59	97	167	107	47	69	79
Menhaden (pogies)	32	26	37	41	26	26	30	20	30
Herring, thread	3	7	10	40	29	21	40	37	23
Sardine, scaled	0	0	0	0	17	65	0	22	13
Ballyhoo	0	2	1	2	7	0	0	0	2
Scad, bigeye	1	0	0	7	1	0	0	1	1
Total Baitfishes	417	593	666	858	801	959	861	680	729
COASTAL PELAGIC FISHES									
Mackerel, Spanish	312	228	277	234	447	431	367	387	335
Ladyfish	270	328	214	165	392	375	379	480	325
Bluefish	213	273	361	312	319	293	212	256	280
Blue runner	94	232	210	107	321	352	272	296	236
Pompano	189	180	154	148	310	250	264	305	225
Shark	178	121	147	146	241	140	126	44	143
Mackerel, king	28	69	58	97	86	180	186	169	109
Jack, crevalle	56	91	63	89	146	90	94	91	90
Shark fins	1	2	2	129	244	124	163	40	88
Cobia	35	34	44	113	62	65	87	172	77
Tunny, little (bonito)	0	0	0	0	0	125	155	61	43
Bonito (little tunny)	10	73	60	32	67	0	0	0	30
Jacks, mixed	49	40	1	9	29	3	1	3	17
Jacks, other	7	0	0	1	0	1	8	5	3
Atlantic bumper	0	0	0	4	10	3	0	0	2
Shad (common)	0	1	0	4	0	1	0	0	1

Table C.9. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Permit	1	0	0	0	0	1	1	1	1
Total Coastal Pelagic Fishes	1,443	1,672	1,591	1,590	2,674	2,434	2,315	2,310	2,004
DEMERSAL FISHES									
Mullet, black	744	1,005	1,384	1,159	1,143	929	1,129	1,214	1,088
Seatrout, spotted	731	1,181	1,460	1,168	913	800	419	968	955
Flounders	262	557	619	728	554	482	449	600	531
Drum, black	46	98	106	65	100	103	112	170	100
Mullet, silver	10	48	45	14	48	73	12	52	38
Spot	23	59	26	21	23	32	14	30	29
Drum, red	156	84	0	0	0	0	0	0	30
Seatrout, sand	10	3	25	64	39	17	12	11	23
Croaker	40	22	14	27	10	11	15	20	20
Kingfish (whiting)	23	11	19	17	11	17	11	18	16
Seatrout, silver	13	7	2	2	6	3	14	9	7
Seatrout, weakfish	16	17	14	0	0	0	0	0	6
Catfish	2	3	4	7	9	3	2	2	4
Sea bass, mixed	0	2	2	4	3	0	6	6	3
Mullet, black (roe)	0	0	0	0	0	1	0	3	1
Total Demersal Fishes	2,076	3,097	3,720	3,276	2,859	2,471	2,195	3,103	2,850
REEF FISHES									
Snapper, red	618	527	654	790	644	469	323	287	539
Amberjacks	444	409	508	717	329	287	416	440	444
Triggerfish	236	190	245	489	492	452	468	626	400
Grouper, scamp	428	321	291	397	249	294	363	460	350
Grouper, gag	269	113	108	173	145	292	589	792	310
Porgies	160	242	200	390	355	318	372	468	313
Snapper, vermilion	241	197	249	370	345	281	349	376	301

Table C.9. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Grouper, black	331	427	566	682	285	249	0	0	318
Grouper, red	125	198	214	367	215	196	146	366	228
Snapper, gray (mangrove)	110	116	200	272	203	208	263	387	220
Sheepshead	92	94	52	125	155	150	88	131	111
Grouper, yellowedge	49	44	204	182	128	66	65	65	100
Snapper, other	129	88	90	52	60	62	16	15	64
Grouper, warsaw	93	38	59	89	89	57	49	37	64
Tilefish	26	31	62	83	104	40	49	22	52
Snapper, lane	23	15	32	29	9	70	47	62	36
Grouper, mixed	144	55	11	11	1	3	2	2	29
Grouper, snowy	3	4	7	45	53	38	39	13	25
Snapper, mutton	14	44	10	23	69	31	9	4	26
Tilefish, blueline	5	9	22	30	22	20	29	23	20
Snapper, silk	13	9	27	28	27	19	7	1	16
Grouper, other	12	7	12	12	9	12	26	16	13
Grouper, yellowfin	31	14	1	1	7	7	3	0	8
Grunts	0	0	1	4	1	2	0	3	1
Grouper, Nassau	2	0	0	0	1	0	2	1	1
Snapper, yellowtail	0	1	1	0	1	0	1	1	1
Jewfish	0	0	2	2	0	0	0	0	1
Total Reef Fishes	3,598	3,193	3,828	5,365	3,998	3,624	3,721	4,598	3,991
OCEANIC PELAGIC FISHES									
Tuna, yellowfin	464	283	238	172	256	108	193	188	238
Dolphin	270	170	160	149	229	123	184	148	179
Swordfish	304	195	179	122	197	70	129	134	166
Wahoo	115	135	133	50	113	92	176	145	120
Tuna, blackfin	27	15	35	54	54	64	36	47	42

Table C.9. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Marlin, white	165	37	3	0	0	0	0	0	26
Tuna, bigeye	10	7	4	24	28	16	27	37	19
Tuna, bluefin	23	17	15	2	10	3	10	4	11
Marlin, blue	31	16	2	0	0	0	0	0	6
Tuna, mixed	1	12	0	2	2	4	1	10	4
Tuna, skipjack	0	0	0	1	3	0	2	0	1
Total Oceanic Pelagic Fishes	1,410	887	769	576	892	480	758	713	811
OTHER FISHES									
Misc. Food Fish	82	96	193	173	347	197	275	304	208
Misc. Industrial Fish	2	36	122	3	41	72	170	84	66
Eels	14	13	10	0	0	2	0	0	5
Total Other Fishes	98	146	325	177	388	271	445	389	280
TOTAL FISHES	8,944	9,442	10,574	11,665	11,224	9,968	9,850	11,404	10,384
INVERTEBRATES									
Crabs									
Crab, blue (hard)	1,119	1,569	1,747	1,664	1,485	922	764	1,011	1,285
Crab, blue (soft)	1	1	328	308	245	217	163	179	180
Crab, medium	4	1	5	15	5	3	1	8	5
Crab, large	1	0	0	4	7	1	1	4	2
Crab, stone, ungraded	0	0	0	6	3	1	0	3	2
Crab, small	0	5	1	0	2	0	1	1	1
Total Crabs	1,125	1,576	2,081	1,997	1,747	1,144	930	1,206	1,476
Lobsters									
Lobster, Spanish	11	1	4	29	18	14	23	30	16
Lobster, spiny	0	1	2	1	1	1	2	2	1
Total Lobsters	11	2	6	30	19	15	25	32	18

Table C.9. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Oysters									
Oysters	1,391	2,488	2,575	1,525	1,765	4,758	5,708	4,647	3,107
Total Oysters	1,391	2,488	2,575	1,525	1,765	4,758	5,708	4,647	3,107
Other Invertebrates									
Squid	133	95	101	128	168	44	105	63	105
Scallops, bay	50	56	171	161	33	0	14	0	61
Octopus	0	0	5	11	0	0	5	4	3
Scallops, calico	0	0	0	0	0	0	1	8	1
Clams, hard, ungraded	0	0	1	9	0	0	0	0	1
Misc. Invertebrates	0	1	0	0	3	1	0	0	1
Total Other Invertebrates	183	152	278	309	204	45	125	75	171
Shrimp									
Shrimp, brown	725	1,239	1,156	808	1,180	815	980	1,086	999
Shrimp, pink	619	47	59	189	235	164	225	94	204
Shrimp, white	71	43	166	113	209	84	114	125	116
Shrimp, rock	8	115	78	80	146	80	272	82	108
Shrimp, other	23	51	18	51	190	113	250	161	107
Shrimp, bait	12	79	134	89	96	86	46	55	75
Shrimp, royal red	0	0	0	1	2	2	2	2	1
Total Shrimps	1,458	1,574	1,611	1,331	2,058	1,344	1,889	1,605	1,609
TOTAL INVERTEBRATES	4,168	5,792	6,551	5,192	5,793	7,306	8,677	7,565	6,381
TOTAL BAY COUNTY	13,112	15,234	17,125	16,857	17,017	17,274	18,527	18,969	16,764

Table C.10. Total commercial fishing trips by species group for Escambia County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Menhaden (pogies)	2	21	59	55	3	11	3	6	20
Baitfish	33	4	4	3	0	0	14	23	10
Scad, round (cigarfish)	3	2	7	2	2	4	2	0	3
Sardines, Spanish	0	1	0	1	0	2	2	1	1
Ballyhoo	6	0	1	0	0	0	0	0	1
Total Baitfishes	45	29	71	62	5	17	21	30	35
COASTAL PELAGIC FISHES									
Mackerel, Spanish	267	169	214	143	102	177	347	260	210
Bluefish	133	182	177	230	77	91	121	85	137
Pompano	142	187	137	92	28	84	123	144	117
Shark	52	134	175	124	74	78	55	24	90
Mackerel, king	44	113	92	37	55	79	56	30	63
Cobia	5	34	43	65	47	58	59	51	45
Blue runner	4	3	5	5	5	6	34	38	13
Ladyfish	1	2	1	4	4	0	4	24	5
Shad (common)	0	1	2	1	0	9	2	10	3
Shark fins	0	0	1	5	2	5	3	2	2
Jacks, other	1	1	1	2	0	1	2	3	1
Jacks, mixed	1	0	3	1	0	0	0	2	1
Permit	0	0	0	1	0	3	1	0	1
Total Coastal Pelagic Fishes	650	827	853	711	394	593	807	673	689
DEMERSAL FISHES									
Mullet, black	1,454	1,430	1,447	1,464	1,347	1,137	1,338	1,174	1,349
Seatrout, sand	1,636	1,556	1,599	995	775	629	734	425	1,044
Seatrout, spotted	989	1,235	1,386	1,037	790	517	208	639	850

Table C.10. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Flounders	905	852	600	748	527	708	624	480	681
Spot	314	273	263	282	265	175	236	186	249
Croaker	551	303	250	208	89	104	118	137	220
Drum, black	72	190	104	35	35	66	78	102	85
Seatrout, silver	51	12	180	63	50	49	70	107	73
Catfish	18	85	96	78	79	95	76	42	71
Mullet, silver	7	22	21	65	85	71	94	109	59
Drum, red	82	27	2	0	0	0	0	0	14
Kingfish (whiting)	18	18	10	8	5	9	19	19	13
Seatrout, weakfish	23	31	0	0	0	0	0	0	7
Mullet, black (roe)	0	0	0	0	0	0	6	0	1
Sea bass, mixed	0	0	3	2	0	0	1	0	1
Total Demersal Fishes	6,120	6,034	5,961	4,986	4,048	3,560	3,602	3,421	4,717
REEF FISHES									
Snapper, vermilion	994	1,135	1,319	1,437	1,112	705	756	591	1,006
Snapper, red	1,094	1,319	1,600	1,479	1,132	595	478	254	994
Porgies	844	1,048	1,236	964	798	510	480	428	789
Amberjacks	744	920	1,103	1,059	464	384	390	340	676
Triggerfish	387	427	772	928	909	497	628	559	638
Grouper, black	733	669	620	475	318	251	0	0	383
Grouper, scamp	514	504	435	563	333	193	194	119	357
Sheepshead	303	385	398	346	328	223	188	267	305
Snapper, other	16	145	274	159	68	84	138	114	125
Grouper, warsaw	174	150	151	197	76	78	70	60	120
Grouper, yellowedge	15	42	135	197	52	57	58	23	72
Grouper, gag	0	0	2	2	3	34	204	265	64

Table C.10. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Tilefish	34	15	36	96	56	38	25	21	40
Grouper, yellowfin	42	4	0	3	60	18	16	13	20
Tilefish, blueline	6	26	29	20	39	9	17	5	19
Snapper, gray (mangrove)	19	20	6	33	6	11	14	25	17
Grouper, snowy	2	10	15	19	17	12	27	9	14
Snapper, lane	10	6	11	12	13	7	38	16	14
Snapper, silk	2	3	15	13	12	7	10	7	9
Grouper, other	1	3	8	9	3	6	10	11	6
Snapper, mutton	3	8	2	10	0	3	12	3	5
Grunts	2	1	1	6	4	1	2	12	4
Grouper, mixed	0	0	2	9	9	2	0	2	3
Grouper, red	2	2	2	5	1	2	1	4	2
Total Reef Fishes	5,944	6,843	8,175	8,042	5,815	3,727	3,757	3,148	5,681
OCEANIC PELAGIC FISHES									
Dolphin	18	24	52	42	55	35	24	17	33
Tuna, yellowfin	4	7	17	26	3	19	26	15	15
Tuna, blackfin	5	9	12	6	27	26	12	16	14
Wahoo	2	15	9	6	4	10	10	4	8
Tuna, bluefin	1	1	4	6	0	0	1	0	2
Tuna, skipjack	1	1	2	1	4	3	1	0	2
Tuna, bigeye	0	0	0	1	3	0	0	0	1
Tuna, mixed	0	2	5	0	2	0	1	0	1
Swordfish	0	0	0	0	1	4	0	0	1
Total Oceanic Pelagic	31	61	101	88	99	97	75	52	76

Table C.10. (Continued).

Species	86	87	88	89	90	91	92	93	Average
OTHER FISHES									
Misc. Food Fish	264	120	349	383	190	277	226	124	242
Eels	9	31	61	74	33	3	2	0	27
Misc. Industrial Fish	1	0	0	3	1	0	2	2	1
Total Other Fishes	274	151	410	460	224	280	230	128	270
TOTAL FISHES	13,064	13,945	15,571	14,349	10,585	8,274	8,492	7,452	11,467
INVERTEBRATES									
Crabs									
Crab, blue (hard)	1,262	1,141	1,158	932	856	688	778	848	958
Crab, blue (soft)	1	0	0	6	0	0	0	4	1
Total Crabs	1,264	1,141	1,159	938	856	688	778	852	960
Oysters									
Oysters	13	21	6	1	0	0	57	95	24
Total Oysters	13	21	6	1	0	0	57	95	24
Other Invertebrates									
Squid	837	987	910	508	670	401	570	418	663
Misc. Invertebrates	0	0	1	11	19	13	1	8	7
Octopus	2	0	1	1	2	0	3	2	1
Total Other Invertebrates	839	987	912	520	691	414	574	428	671
Shrimps									
Shrimp, brown	2,437	2,523	2,519	2,079	1,877	1,114	1,261	1,492	1,913
Shrimp, white	17	21	76	26	161	5	27	5	42
Shrimp, bait	16	10	25	55	29	67	1	4	26
Shrimp, other	1	38	93	3	1	0	1	1	17
Shrimp, rock	4	12	45	7	0	3	11	0	10
Shrimp, pink	1	1	8	2	6	4	0	0	3

Table C.10. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Shrimp, royal red	3	1	0	0	0	3	2	0	1
Total Shrimps	2,479	2,606	2,766	2,172	2,074	1,196	1,303	1,502	2,012
TOTAL INVERTEBRATES	4,596	4,755	4,844	3,631	3,621	2,298	2,712	2,877	3,667
ESCAMBIA COUNTY TOTAL	17,660	18,700	20,415	17,980	14,206	10,572	11,204	10,329	15,133

Table C.11. Total commercial fishing trips by species group for Franklin County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Baitfish	0	0	3	1	14	41	2	210	34
Menhaden (pogies)	0	0	0	0	4	3	0	1	1
Total Baitfishes	0	1	3	4	19	44	4	211	36
COASTAL PELAGIC FISHES									
Mackerel, Spanish	1	18	31	132	178	202	213	510	161
Shark	6	71	54	129	213	159	167	88	111
Pompano	0	13	39	82	143	141	178	165	95
Bluefish	3	11	10	107	93	81	131	250	86
Mackerel, king	3	2	5	28	48	84	62	63	37
Cobia	1	23	14	39	31	50	49	88	37
Jack, crevalle	0	1	11	4	12	32	14	114	24
Blue runner	0	0	0	3	5	11	17	82	15
Ladyfish	0	0	0	0	6	13	6	21	6
Jacks, other	0	0	1	0	0	17	10	7	4
Shark fins	0	0	0	1	6	4	5	7	3
Shad (common)	0	2	1	0	1	3	1	2	1
Jacks, mixed	0	0	0	0	0	0	0	5	1
Total Coastal Pelagic Fishes	14	142	167	526	739	798	853	1,403	580
DEMERSAL FISHES									
Mullet, black	624	536	493	699	916	530	559	1,332	711
Flounders	136	368	530	589	525	765	656	841	551
Seatrout, spotted	170	206	188	515	473	242	226	852	359
Kingfish (whiting)	3	128	206	199	102	176	193	92	137
Spot	1	1	41	64	37	22	50	321	67
Sea bass, mixed	1	10	11	54	109	45	39	36	38
Mullet, silver	1	0	6	64	49	49	59	51	35

Table C.11. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Croaker	0	0	0	27	16	14	14	203	34
Seatrout, silver	1	1	8	69	40	11	5	82	27
Drum, black	0	1	9	15	16	20	41	92	24
Seatrout, sand	0	0	16	46	16	48	42	10	22
Catfish	0	0	0	2	1	3	2	72	10
Drum, red	75	0	0	0	0	0	0	0	9
Rays	0	0	0	0	0	1	2	18	3
Seatrout, weakfish	0	4	1	0	0	1	0	0	1
Pinfish	0	0	0	0	0	0	4	1	1
Total Demersal Fishes	1,012	1,255	1,509	2,343	2,302	1,927	1,893	4,004	2,031
REEF FISHES									
Grouper, red	52	254	185	558	592	513	312	507	372
Grouper, black	55	305	216	420	621	347	0	0	246
Snapper, red	49	220	146	377	452	307	88	120	220
Triggerfish	26	132	90	238	335	343	240	308	214
Snapper, gray (mangrove)	29	138	76	182	237	285	211	314	184
Porgies	23	130	121	235	258	254	192	257	184
Grouper, scamp	36	133	93	194	188	188	212	315	170
Grouper, gag	2	0	4	148	15	128	442	566	163
Amberjacks	27	181	121	195	117	187	156	208	149
Snapper, vermilion	3	58	67	166	175	180	176	247	134
Sheepshead	0	4	13	71	89	61	82	185	63
Grunts	0	1	1	23	95	93	40	46	37
Grouper, warsaw	4	11	7	21	10	21	44	43	20
Snapper, other	1	25	2	5	20	41	9	37	18
Snapper, lane	0	4	4	4	8	42	33	51	18
Grouper, yellowedge	0	1	8	5	3	22	36	41	15

Table C.11. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Tilefish	0	0	3	6	3	16	31	29	11
Grouper, other	0	2	0	1	2	21	30	27	10
Tilefish, blueline	1	6	11	4	4	11	18	19	9
Hogfish	0	0	0	4	6	0	16	20	6
Grouper, snowy	0	1	2	0	0	7	11	10	4
Snapper, silk	0	0	0	0	0	4	13	9	3
Snapper, mutton	0	0	1	4	4	3	2	3	2
Grouper, Nassau	0	9	0	0	0	0	2	1	2
Grouper, yellowfin	0	0	1	0	0	5	2	2	1
Grouper, mixed	1	0	0	5	0	0	0	0	1
Jewfish	0	1	1	2	0	0	0	0	1
Total Reef Fishes	309	1,616	1,173	2,868	3,234	3,079	2,398	3,365	2,255
OCEANIC PELAGIC FISHES									
Dolphin	2	11	18	64	40	56	22	31	31
Tuna, blackfin	0	3	2	5	11	11	7	11	6
Wahoo	1	2	2	3	4	4	8	8	4
Tuna, skipjack	2	0	0	0	1	1	0	0	1
Tuna, yellowfin	0	2	0	0	0	2	1	6	1
Swordfish	0	2	0	1	0	1	0	5	1
Total Oceanic Pelagic Fishes	5	20	24	74	56	75	38	61	44
OTHER FISHES									
Misc. Food Fish	22	0	11	27	70	118	157	129	67
Misc. Industrial Fish	0	0	0	11	2	2	2	1	2
Eels	1	0	0	1	3	2	0	0	1
Total Other Fishes	23	0	11	39	75	122	159	130	70
TOTAL FISHES	1,363	3,034	2,887	5,854	6,425	6,045	5,345	9,174	5,016

Table C.11. (Continued).

Species	86	87	88	89	90	91	92	93	Average
INVERTEBRATES									
Crabs									
Crab, blue (hard)	860	1,122	1,176	969	289	423	381	835	757
Crab, blue (soft)	5	6	11	158	177	126	171	119	97
Crab, medium	0	1	0	0	0	0	0	17	2
Total Crabs	865	1,130	1,190	1,127	466	549	553	974	857
Lobsters									
Lobster, Spanish	0	0	6	20	14	11	24	10	11
Lobster, spiny	0	3	5	2	0	0	1	0	1
Total Lobsters	0	3	11	22	14	11	25	10	12
Oysters									
Oysters	6,155	37,721	29,873	21,405	26,838	23,824	27,100	24,808	24,716
Total Oysters	6,155	37,721	29,873	21,405	26,838	23,824	27,100	24,808	24,716
Other Invertebrates									
Scallops, calico	0	0	0	8	0	0	0	1,022	129
Scallops, bay	9	33	112	145	35	0	41	7	48
Clams, hard, ungraded	0	50	126	74	54	1	2	7	39
Clams, hard, topneck	0	64	71	0	0	0	0	5	18
Squid	4	3	14	34	24	5	11	34	16
Clams, hard, littleneck	0	26	46	0	0	0	0	5	10
Clams, hard, middleneck	0	5	18	0	0	0	0	5	4
Octopus	0	2	10	4	0	0	2	0	2
Clams, hard, chowder	0	0	9	0	0	0	0	3	2
Misc. Invertebrates	0	0	0	0	0	1	0	3	1
Total Other Invertebrates	13	183	406	265	113	7	56	1,091	267

Table C.11. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Shrimps									
Shrimp, white	376	1,028	1,619	2,117	1,286	1,299	1,049	449	1,153
Shrimp, brown	312	759	1,654	1,724	597	1,014	1,509	804	1,047
Shrimp, pink	67	211	210	336	457	486	230	89	261
Shrimp, rock	94	135	282	139	100	31	191	111	135
Shrimp, other	12	16	78	42	1	50	14	13	28
Shrimp, bait	0	1	0	18	2	7	8	1	5
Shrimp, royal red	0	1	0	0	1	0	2	0	1
Total Shrimps	861	2,151	3,843	4,376	2,444	2,887	3,003	1,467	2,629
TOTAL INVERTEBRATES	7,894	41,188	35,323	27,195	29,875	27,278	30,737	28,350	28,480
FRANKLIN COUNTY TOTAL	9,257	44,222	38,210	33,049	36,300	33,323	36,082	37,524	33,496

Table C.12. Total commercial fishing trips by species group for Gulf County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Menhaden (pogies)	213	225	223	214	133	103	113	129	169
Scad, round (cigarfish)	16	25	50	40	41	81	80	111	56
Sardines, Spanish	19	17	42	34	54	55	87	101	51
Herring, thread	8	5	16	100	13	30	5	44	28
Scad, bigeye	0	0	0	0	38	26	15	37	15
Baitfish	1	1	1	0	2	2	19	8	4
Ballyhoo	0	4	0	7	0	4	0	0	2
Total Baitfishes	257	277	332	395	281	301	319	430	324
COASTAL PELAGIC FISHES									
Ladyfish	113	93	93	85	84	81	87	99	92
Mackerel, Spanish	90	71	90	102	106	112	61	49	85
Blue runner	53	44	73	27	56	83	48	63	56
Bluefish	46	67	68	73	59	29	16	18	47
Pompano	16	13	37	3	27	30	26	9	20
Tunny, little (bonito)	0	0	0	0	0	50	26	19	12
Shark	1	34	44	45	9	6	0	1	18
Jack, crevalle	15	27	12	25	18	17	13	4	16
Jacks, mixed	11	16	17	25	49	1	5	2	16
Bonito (little tunny)	3	14	9	21	18	0	0	0	8
Shark fins	0	26	2	5	0	1	0	1	4
Shad (common)	0	1	1	3	3	0	2	1	1
Mackerel, king	1	0	0	2	0	8	1	1	2
Cobia	0	0	1	0	0	0	0	3	1
Atlantic bumper	0	0	0	3	3	0	0	0	1
Total Coastal Pelagic Fishes	349	406	447	420	432	418	286	270	379

Table C.12. (Continued).

Species	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES									
Mullet, black	73	338	650	654	554	280	458	525	442
Flounders	293	315	184	202	353	257	139	108	231
Seatrout, spotted	6	97	184	187	16	38	25	64	77
Mullet, silver	0	1	0	0	37	69	1	1	14
Spot	0	1	1	0	1	3	15	18	5
Drum, black	14	4	3	2	1	0	0	0	3
Seatrout, sand	0	1	2	0	0	3	10	3	2
Kingfish (whiting)	1	4	1	0	5	4	0	3	2
Croaker	1	1	1	0	3	5	0	4	2
Pinfish	0	0	0	0	6	0	7	0	2
Drum, red	6	5	0	0	0	0	0	0	1
Total Demersal Fishes	394	768	1,026	1,045	977	661	655	729	782
REEF FISHES									
Goatfishes	0	0	0	0	26	29	27	25	13
Snapper, red	2	3	0	1	2	7	2	29	6
Porgies	0	1	0	1	6	9	20	19	7
Sheepshead	3	4	7	2	6	4	3	4	4
Triggerfish	0	0	0	1	1	9	11	7	4
Snapper, vermilion	0	0	1	1	3	6	1	14	3
Amberjacks	1	0	0	0	0	5	1	5	2
Grouper, gag	0	0	0	0	0	3	3	6	2
Grouper, black	0	0	0	0	1	8	0	0	1
Grouper, other	1	1	1	1	0	0	0	2	1
Grouper, red	0	0	0	1	1	1	1	4	1
Grouper, scamp	0	0	0	0	0	3	0	2	1
Grouper, yellowedge	0	0	0	0	0	0	0	5	1

Table C.12. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Snapper, other	1	0	2	0	1	2	3	0	1
Tilefish, blueline	0	0	0	0	0	6	0	0	1
Total Reef Fishes	9	9	11	9	51	95	74	132	49
OCEANIC PELAGIC									
Tuna, yellowfin	0	1	10	14	1	4	5	0	4
Total Oceanic Pelagic Fishes	0	1	12	16	1	6	6	1	5
OTHER FISHES									
Misc. Industrial Fish	21	76	56	86	146	206	245	135	121
Misc. Food Fish	2	11	19	30	55	76	35	41	34
Total Other Fishes	23	87	76	116	201	282	281	176	155
TOTAL FISHES	1,041	1,557	1,915	2,010	1,994	1,858	1,695	1,870	1,419
INVERTEBRATES									
Crabs									
Crab, blue (hard)	1	4	8	3	1	0	6	37	8
Crab, blue (soft)	4	0	0	0	0	0	0	0	1
Total Crabs	5	4	8	5	1	0	6	37	8
Lobsters									
Lobster, Spanish	0	0	0	47	0	1	9	0	7
Total Lobsters	0	1	0	47	0	1	9	0	7
Oysters									
Oysters	286	594	726	295	247	245	141	65	325
Total Oysters	286	594	726	295	247	245	141	65	325
Other Invertebrates									
Clams, hard, ungraded	0	15	22	0	40	280	339	113	101
Scallops, calico	0	0	44	524	0	0	0	188	95
Clams, hard, topneck	0	15	23	0	41	255	272	101	88
Squid	33	9	31	28	65	32	32	40	34

Table C.12. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Clams, hard, littleneck	0	15	21	0	7	5	2	1	6
Clams, hard, middleneck	0	0	1	0	2	26	14	7	6
Clams, hard, chowder	0	0	1	0	11	21	11	5	6
Scallops, bay	0	0	0	2	3	0	2	0	1
Total Other Invertebrates	33	54	143	554	169	619	672	455	337
Shrimp									
Shrimp, brown	258	576	57	387	245	16	80	69	211
Shrimp, pink	445	6	303	12	163	257	148	24	170
Shrimp, white	88	51	42	29	46	8	38	26	41
Shrimp, other	2	1	0	0	3	0	2	239	31
Shrimp, rock	7	18	33	12	27	13	59	6	22
Shrimp, bait	0	3	0	13	1	9	99	21	18
Total Shrimp	800	655	435	453	485	303	426	385	493
TOTAL INVERTEBRATES	1,124	1,308	1,312	1,354	902	1,168	1,254	942	775
GULF COUNTY TOTAL	2,165	2,865	3,227	3,364	2,896	3,026	2,949	2,812	2,193

Table C.13. Total commercial fishing trips by species group for Okaloosa County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Scad, round (cigarfish)	57	89	89	102	66	83	69	73	79
Sardines, Spanish	47	67	59	43	55	63	36	46	52
Baitfish	0	4	6	7	9	4	90	133	32
Menhaden (pogies)	13	22	18	8	12	13	4	2	12
Herring, thread	0	1	2	1	4	6	2	0	2
Total Baitfishes	118	184	175	162	146	169	201	254	176
COASTAL PELAGIC FISHES									
Cobia	141	132	199	221	243	192	361	516	251
Mackerel, king	36	89	177	35	152	273	344	320	178
Shark	149	220	178	208	232	128	127	83	166
Pompano	48	118	161	90	159	168	110	110	121
Bluefish	55	97	65	76	35	68	51	40	61
Ladyfish	31	53	37	57	61	60	66	92	57
Mackerel, Spanish	31	71	70	23	37	66	76	55	54
Blue runner	13	56	42	49	42	49	40	55	43
Jack, crevalle	23	22	12	28	29	15	11	11	19
Jacks, other	0	1	0	1	7	7	27	68	14
Tunny, little (bonito)	0	0	0	0	0	51	28	11	11
Shark fins	0	1	0	2	7	9	19	22	8
Bonito (little tunny)	4	14	11	3	9	0	0	0	5
Jacks, mixed	0	0	0	1	0	1	3	2	1
Atlantic bumper	0	0	1	5	0	0	0	0	1
Total Coastal Pelagic	531	874	954	799	1,013	1,087	1,265	1,387	989
DEMERSAL FISHES									
Mullet, black	383	351	332	467	593	596	459	506	461
Seatrout, spotted	377	365	375	372	353	337	125	237	318

Table C.13. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Flounders	204	208	298	225	333	345	281	273	271
Mullet, silver	161	139	79	63	48	36	30	11	71
Spot	38	66	28	41	70	33	41	59	47
Drum, black	34	47	32	7	19	29	44	47	32
Seatrout, sand	23	34	33	52	22	28	11	32	29
Croaker	35	32	17	15	23	57	16	5	25
Kingfish (whiting)	5	7	8	12	6	13	12	4	8
Seatrout, silver	3	3	4	3	1	15	17	6	7
Drum, red	42	12	0	0	0	0	0	0	7
Catfish	11	12	12	4	0	4	0	10	7
Seatrout, weakfish	6	11	10	0	0	0	1	0	4
Sea bass, mixed	0	0	1	0	0	2	1	3	1
Mullet, black (roe)	0	0	0	0	0	1	0	6	1
Total Demersal Fishes	1,322	1,288	1,229	1,261	1,468	1,496	1,038	1,199	1,288
REEF FISHES									
Snapper, red	751	826	1,027	959	747	733	961	1,033	880
Porgies	360	490	639	662	693	671	792	1,019	666
Snapper, vermilion	284	206	329	582	754	767	966	1,051	617
Amberjacks	583	800	775	696	462	432	497	584	604
Triggerfish	309	321	500	611	703	675	743	896	595
Grouper, scamp	316	385	390	418	361	380	383	469	388
Grouper, gag	308	205	190	223	144	181	368	488	263
Snapper, other	333	481	558	197	105	65	56	85	235
Grouper, black	121	303	462	229	244	179	0	0	192
Grouper, yellowedge	119	152	200	196	117	71	119	93	133
Tilefish, blueline	24	91	133	110	127	115	77	102	97
Grouper, warsaw	128	131	145	95	54	48	57	35	87

Table C.13. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Snapper, gray (mangrove)	57	41	34	68	66	119	88	105	72
Snapper, lane	52	22	40	100	16	74	125	147	72
Sheepshead	52	61	43	59	108	88	75	75	70
Grouper, snowy	3	31	30	39	38	94	159	162	70
Tilefish	104	107	105	87	46	20	44	22	67
Grouper, mixed	98	54	89	100	36	22	15	27	55
Grouper, red	17	23	22	19	16	37	49	69	32
Grouper, other	15	17	53	72	34	20	14	16	30
Snapper, silk	18	16	7	7	25	9	42	78	25
Grouper, yellowfin	111	48	2	0	14	9	2	6	24
Snapper, mutton	5	9	7	9	4	13	5	11	8
Grouper, Nassau	8	1	1	0	0	0	1	1	2
Snapper, yellowtail	2	0	3	0	0	0	1	2	1
Jewfish	1	2	1	0	1	0	0	0	1
Grunts	0	1	2	1	0	0	0	0	1
Total Reef Fishes	4,179	4,824	5,787	5,540	4,915	4,822	5,639	6,576	5,285
OCEANIC PELAGIC FISHES									
Dolphin	135	136	141	137	232	121	91	111	138
Swordfish	155	139	107	132	110	50	11	31	92
Tuna, yellowfin	170	82	81	74	71	34	46	45	75
Wahoo	50	101	82	49	80	82	85	55	73
Tuna, blackfin	55	55	62	61	60	40	45	56	54
Marlin, white	81	86	0	0	0	0	0	0	21
Marlin, blue	25	16	0	0	0	0	0	0	5
Tuna, bluefin	20	4	0	7	4	3	1	0	5
Tuna, bigeye	7	4	2	11	2	2	1	2	4
Tuna, skipjack	0	3	1	1	3	0	0	2	1

Table C.13. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Tuna, mixed	1	0	1	1	1	2	0	2	1
Total Oceanic Pelagic Fishes	699	626	477	473	563	334	280	304	470
OTHER FISHES									
Misc. Food Fish	66	77	82	137	178	265	219	194	152
Eels	54	100	121	75	34	31	46	48	64
Misc. Industrial Fish	1	0	29	12	46	8	53	31	23
Total Other Fishes	121	177	232	224	259	304	318	273	239
TOTAL FISHES	6,970	7,973	8,854	8,459	8,364	8,212	8,741	9,993	8,446
INVERTEBRATES									
Crabs									
Crab, blue (hard)	207	120	240	157	169	351	223	227	212
Crab, blue (soft)	3	1	0	7	2	5	0	0	2
Total Crab	211	122	241	166	171	356	223	227	215
Lobsters									
Lobster, Spanish	2	10	3	6	0	16	41	69	18
Lobster, spiny	9	2	1	0	0	0	0	6	2
Total Lobsters	11	12	4	6	0	16	41	75	21
Oysters									
Oysters	1	2	29	1	0	2	0	0	4
Total Oysters	1	2	29	1	0	2	0	0	4
Other Invertebrates									
Squid	40	43	41	18	19	42	58	58	40
Octopus	1	0	5	5	5	1	12	6	4
Scallops, bay	0	0	18	4	0	0	0	0	3
Misc. Invertebrates	0	0	1	0	2	0	0	3	1
Total Other Invertebrates	41	43	65	27	26	43	70	67	48

Table C.13. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Shrimps									
Shrimp, brown	514	435	596	400	335	280	451	354	421
Shrimp, other	20	12	1	19	113	64	71	48	44
Shrimp, white	83	57	45	45	36	28	22	10	41
Shrimp, bait	48	28	67	43	16	15	2	0	27
Shrimp, rock	2	20	36	21	17	16	15	4	16
Shrimp, pink	18	8	1	13	17	14	0	0	9
Total Shrimps	685	560	746	541	534	417	561	416	558
TOTAL INVERTEBRATES	949	739	1,085	741	731	834	895	785	841
OKALOOSA COUNTY TOTAL	7,919	8,712	9,939	9,200	9,095	9,046	9,636	10,778	9,286

Table C.14. Total commercial fishing trips by species group for Santa Rosa County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Menhaden (pogies)	31	74	103	138	99	173	120	224	120
Baitfish	216	92	110	71	37	55	7	13	75
Scad, round (cigarfish)	18	17	26	6	54	57	45	95	40
Sardines, Spanish	90	14	18	3	15	39	15	18	27
Herring, thread	1	0	0	2	0	3	1	2	1
Ballyhoo	2	2	0	1	1	0	0	1	1
Scad, bigeye	1	2	0	0	0	0	0	1	1
Total Baitfishes	359	201	257	221	206	327	188	354	264
COASTAL PELAGIC FISHES									
Mackerel, Spanish	171	119	77	109	101	94	112	37	103
Pompano	34	17	62	79	99	83	133	98	76
Shark	20	20	43	45	81	74	62	15	45
Bluefish	24	38	35	91	43	52	29	19	41
Cobia	7	7	38	57	50	30	42	68	37
Mackerel, king	13	11	32	9	27	81	44	46	33
Blue runner	0	4	3	13	21	35	32	53	20
Jacks, other	0	1	0	31	41	22	21	14	16
Tunny, little (bonito)	0	0	0	0	0	37	24	43	13
Ladyfish	4	1	0	1	7	18	10	27	9
Bonito (little tunny)	3	7	12	10	21	0	0	0	7
Jack, crevalle	0	0	2	8	7	7	2	2	4
Shark fins	0	1	0	2	2	8	1	0	2
Jacks, mixed	0	1	0	0	0	3	0	2	1
Total Coastal Pelagic Fishes	276	228	304	455	500	545	512	424	406
DEMERSAL FISHES									
Mullet, black	2,103	2,136	1,522	1,205	891	909	825	603	1,274
Seatrout, spotted	1,730	2,102	1,578	1,190	467	429	138	248	985

Table C.14. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Croaker	1,528	1,428	640	472	169	237	194	120	599
Spot	1,145	1,236	804	554	289	289	256	176	594
Seatrout, sand	624	483	255	67	95	23	62	61	209
Flounders	213	157	121	175	127	316	212	102	178
Drum, black	59	382	139	65	28	38	51	37	100
Mullet, silver	13	9	35	23	37	49	30	34	29
Drum, red	109	10	0	0	0	0	0	0	15
Seatrout, silver	3	4	2	1	13	13	30	10	10
Catfish	9	12	2	3	1	2	5	24	7
Seatrout, weakfish	26	24	4	0	0	0	0	0	7
Kingfish (whiting)	7	1	4	3	6	11	10	3	6
Mullet, black (roe)	0	0	0	0	0	2	14	0	2
Pinfish	0	0	0	0	0	5	12	1	2
Rays	1	2	2	0	1	0	0	0	1
Sea bass, mixed	1	0	0	0	0	2	0	1	1
Total Demersal Fishes	7,572	7,987	5,108	3,758	2,124	2,325	1,839	1,420	4,017
REEF FISHES									
Triggerfish	66	61	178	349	498	394	333	351	279
Snapper, red	174	149	282	373	335	290	272	326	275
Snapper, vermilion	133	67	154	327	375	354	336	361	263
Sheepshead	222	193	194	400	303	190	121	117	218
Amberjacks	84	127	307	458	127	173	179	173	204
Porgies	55	25	93	171	301	255	221	284	176
Snapper, lane	88	47	48	80	29	59	99	88	67
Snapper, gray (mangrove)	15	16	60	103	70	79	58	57	57
Grouper, gag	2	2	42	83	62	35	36	88	44
Grouper, scamp	12	13	13	52	47	49	43	84	39
Grouper, yellowedge	1	2	5	11	70	67	55	46	32

Table C.14. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Snapper, other	43	44	62	33	6	9	7	1	26
Grouper, black	85	48	51	6	2	3	0	0	24
Tilefish	3	2	5	8	47	40	39	30	22
Tilefish, blueline	7	3	6	6	9	16	8	20	9
Grouper, snowy	1	0	1	10	12	9	17	23	9
Snapper, mutton	2	1	5	29	11	1	2	1	7
Grouper, mixed	11	25	2	1	1	0	2	3	6
Grouper, warsaw	1	0	3	3	13	13	5	4	5
Snapper, silk	14	15	0	1	1	1	3	0	4
Grouper, red	3	1	1	2	2	0	0	9	2
Grouper, other	1	1	1	7	1	4	0	1	2
Hogfish	0	0	0	0	0	0	4	10	2
Grouper, yellowfin	7	0	0	0	1	0	0	1	1
Grunts	1	1	2	0	0	2	2	0	1
Grouper, Nassau	3	0	0	0	4	0	0	0	1
Snapper, yellowtail	2	0	0	1	0	0	2	0	1
Total Reef Fishes	1,036	843	1,515	2,514	2,328	2,043	1,844	2,078	1,775
OCEANIC PELAGIC FISHES									
Dolphin	21	14	28	43	92	35	20	31	36
Wahoo	0	3	10	4	26	27	30	12	14
Tuna, yellowfin	1	0	4	7	9	18	24	12	9
Tuna, blackfin	3	2	11	11	15	13	13	6	9
Swordfish	0	0	2	4	6	4	1	0	2
Tuna, bluefin	0	0	0	3	0	1	0	0	1
Total Oceanic Pelagic Fishes	26	20	55	72	149	99	88	61	71
OTHER FISHES									
Misc. Food Fish	81	19	30	31	93	126	116	82	72
Misc. Industrial Fish	14	0	2	0	27	6	18	20	11

Table C.14. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Eels	1	1	1	5	2	1	0	0	1
Total Other Fishes	96	20	33	36	122	133	134	102	85
TOTAL FISHES	9,365	9,299	7,272	7,056	5,429	5,472	4,605	4,439	6,617
INVERTEBRATES									
Crabs									
Crab, blue (hard)	454	731	449	427	519	625	407	936	569
Crab, blue (soft)	0	1	0	5	1	12	4	11	4
Crab, large	6	0	0	0	0	0	0	0	1
Total Crabs	462	733	449	432	521	637	411	947	574
Oysters									
Oysters	1,574	1,320	1,184	417	0	103	867	724	774
Total Oysters	1,574	1,320	1,184	417	0	103	867	724	774
Other Invertebrates									
Scallops, bay	38	3	2	13	33	74	87	46	37
Misc. Invertebrates	3	0	0	0	1	0	0	0	1
Octopus	0	1	3	0	0	0	0	0	1
Total Other Invertebrates	42	4	5	13	34	74	87	46	38
Shrimps									
Shrimp, brown	104	34	146	191	106	98	253	292	153
Shrimp, other	0	0	7	17	91	91	13	53	34
Shrimp, white	49	30	3	59	51	16	23	34	33
Total Shrimp	154	64	158	268	248	205	291	379	221
TOTAL INVERTEBRATES	2,232	2,121	1,796	1,130	803	1,019	1,656	2,096	1,607
SANTA ROSA COUNTY TOTAL	11,597	11,420	9,068	8,186	6,232	6,491	6,261	6,535	8,224

Table C.15. Total commercial fishing trips by species group for Wakulla County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
BAITFISHES									
Baitfish	3	14	64	115	93	101	58	72	65
Menhaden (pogies)	4	8	13	14	34	19	6	9	13
Scad, bigeye	1	0	0	3	2	0	0	0	1
Total Baitfishes	8	22	77	132	130	120	66	81	80
COASTAL PELAGIC FISHES									
Mackerel, Spanish	8	64	44	130	242	194	137	43	108
Shark	19	55	32	84	223	95	17	3	66
Bluefish	16	16	17	61	107	60	88	15	48
Pompano	3	19	46	75	93	35	54	14	42
Jack, crevalle	2	22	19	17	21	34	29	51	24
Blue runner	1	1	1	14	20	28	54	10	16
Cobia	0	1	0	20	13	15	11	10	9
Jacks, mixed	1	20	35	3	3	0	8	1	9
Mackerel, king	0	1	1	2	3	0	5	20	4
Jacks, other	0	0	0	0	1	8	3	0	2
Permit	0	2	0	1	0	1	1	1	1
Shad (common)	0	2	0	4	0	0	0	0	1
Ladyfish	0	0	1	0	3	0	0	0	1
Total Coastal Pelagic Fishes	50	204	196	412	729	470	407	169	330
DEMERSAL FISHES									
Mullet, black	921	1,527	1,404	1,963	2,061	1,358	2,110	2,613	1,745
Seatrout, spotted	361	725	628	839	878	557	428	768	648
Flounders	59	192	312	479	451	412	509	286	338
Spot	69	178	168	228	350	246	416	260	239
Sea bass, mixed	8	23	73	396	433	396	252	181	220
Croaker	105	180	60	73	151	42	48	62	90
Kingfish (whiting)	19	26	7	15	71	36	95	29	37

Table C.15. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Seatrout, sand	6	7	6	39	51	43	68	35	32
Drum, red	86	47	0	0	0	0	0	0	17
Mullet, silver	0	2	0	17	11	24	12	17	10
Drum, black	2	7	18	6	3	6	22	5	9
Seatrout, silver	2	0	1	1	2	6	5	1	2
Catfish	0	0	3	5	0	1	1	0	1
Seatrout, weakfish	2	2	4	0	0	0	0	0	1
Sand perch	1	0	0	0	4	0	1	0	1
Total Demersal Fishes	1,641	2,916	2,684	4,064	4,466	3,128	3,968	4,257	3,391
REEF FISHES									
Grunts	4	26	114	467	471	407	256	166	239
Grouper, red	1	20	38	383	368	297	333	336	222
Grouper, gag	0	2	15	142	211	190	400	439	175
Grouper, black	20	12	55	365	267	141	0	0	108
Triggerfish	0	3	0	174	137	198	103	108	90
Sheepshead	25	42	73	131	94	102	152	83	88
Porgies	0	0	1	18	24	38	109	106	37
Amberjacks	1	10	20	74	29	72	33	55	37
Snapper, gray (mangrove)	1	4	7	26	54	48	53	58	31
Hogfish	0	0	0	23	54	18	35	22	19
Grouper, mixed	1	6	18	62	22	11	6	18	18
Snapper, vermilion	0	0	1	3	0	24	52	63	18
Snapper, red	0	1	0	22	47	53	8	11	18
Snapper, lane	0	0	3	6	12	27	29	39	15
Grouper, scamp	1	0	0	2	7	7	16	22	7
Snapper, other	0	1	0	20	6	13	6	5	6
Snapper, mutton	0	0	1	1	1	0	1	5	1
Grouper, other	0	0	0	1	0	4	1	3	1

Table C.15. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Tilefish	0	0	0	1	1	3	0	0	1
Snapper, silk	0	0	3	0	0	0	0	1	1
Total Reef Fishes	54	127	349	1,921	1,805	1,653	1,593	1,541	1,130
OCEANIC PELAGIC FISHES									
Dolphin	0	0	0	10	4	7	3	4	4
Wahoo	0	0	0	0	3	0	1	1	1
Tuna, blackfin	0	0	0	0	1	3	1	0	1
Total Oceanic Pelagic Fishes	0	0	0	10	11	10	5	7	5
OTHER FISHES									
Misc. Food Fish	3	3	4	121	73	158	83	80	66
Misc. Industrial Fish	0	0	1	2	0	0	1	3	1
Eels	0	1	0	0	0	0	0	5	1
Total Other Fishes	3	4	5	123	73	158	84	89	67
TOTAL FISHES	1,756	3,273	3,311	6,662	7,214	5,539	6,123	6,144	5,003
INVERTEBRATES									
Crabs									
Crab, blue (hard)	1,260	1,945	1,708	1,563	1,113	1,029	1,753	2,317	1,586
Crab, medium	278	226	310	201	153	160	115	271	214
Crab, stone, ungraded	17	152	261	198	260	237	208	212	193
Crab, large	218	208	250	181	150	161	117	227	189
Crab, blue (soft)	0	2	3	4	2	1	1	31	6
Crab, small	0	0	0	0	1	1	2	0	1
Crab, jumbo	0	1	0	1	0	0	2	0	1
Total Crabs	1,773	2,534	2,532	2,148	1,679	1,589	2,198	3,058	2,189
Oysters									
Oysters	736	1,504	980	890	622	833	428	368	795
Total Oysters	736	1,504	980	890	622	833	428	368	795

Table C.15. (Continued).

Species	86	87	88	89	90	91	92	93	Average
Other Invertebrates									
Octopus	0	0	6	51	44	77	29	39	31
Scallops, bay	0	0	171	12	1	0	0	0	23
Squid	0	0	0	8	0	6	7	2	3
Clams, hard, littleneck	0	0	0	0	0	0	0	5	1
Total Other Invertebrates	0	0	171	20	1	6	7	7	27
Shrimp									
Shrimp, brown	1	12	19	115	110	252	132	34	84
Shrimp, white	1	0	27	91	117	61	38	5	43
Shrimp, other	1	0	14	2	45	42	19	1	16
Shrimp, pink	10	4	1	6	10	10	8	14	8
Shrimp, rock	0	0	3	2	6	9	5	7	4
Shrimp, bait	0	0	0	9	5	6	2	2	3
Total Shrimps	13	16	64	225	293	380	204	63	157
TOTAL INVERTEBRATES	2,522	4,054	3,747	3,283	2,595	2,808	2,837	3,496	3,168
WAKULLA COUNTY TOTAL	4,278	7,327	7,058	9,945	9,809	8,347	8,960	9,640	8,171

Table C.16. Total commercial fishing trips by species group for Walton County from 1986 to 1993.

Species	86	87	88	89	90	91	92	93	Average
COASTAL PELAGIC FISHES									
Shark	0	0	0	3	7	3	0	0	2
Mackerel, king	0	0	0	0	4	0	0	0	1
Total Coastal Pelagic Fishes	0	0	1	4	16	5	0	1	3
DEMERSAL FISHES									
Mullet, Black	94	124	66	83	171	119	117	132	113
Seatrout, spotted	26	37	14	39	84	52	17	31	38
Flounders	13	16	63	55	34	40	23	38	35
Mullet, silver	21	3	0	15	4	17	1	1	8
Spot	0	1	2	13	9	1	0	0	3
Seatrout, sand	0	0	1	0	3	1	1	0	1
Drum, black	0	0	0	0	1	2	0	4	1
Seatrout, silver	0	0	1	0	0	3	0	1	1
Total Demersal Fishes	154	182	148	205	306	235	159	207	200
REEF FISHES									
Snapper, red	0	1	0	0	27	9	0	2	5
Porgies	0	0	0	0	23	3	0	0	3
Triggerfish	0	2	0	0	20	4	0	0	3
Snapper, lane	0	3	0	0	21	0	0	0	3
Grouper, mixed	0	0	0	0	17	1	0	0	2
Snapper, other	0	6	0	0	8	1	0	0	2
Sheepshead	1	0	0	5	4	3	0	1	2
Amberjacks	1	0	0	0	2	3	0	0	1
Grouper, scamp	0	0	1	0	5	0	0	0	1
Snapper, gray (mangrove)	0	0	0	0	6	0	0	0	1
Grouper, gag	0	0	0	1	0	4	0	0	1
Snapper, vermilion	0	0	0	0	3	1	0	0	1
Total Reef Fishes	2	12	1	6	140	32	0	3	25

Table C.16. (Continued).

Species	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES									
Dolphin	0	0	1	0	6	1	0	1	1
Total Oceanic Pelagic Fishes	0	0	1	0	6	1	0	1	1
OTHER FISHES									
Misc. Food Fish	4	1	0	0	0	0	1	0	1
Total Other Fishes	4	1	0	0	1	0	1	0	1
TOTAL FISHES	160	195	152	215	469	275	160	212	230
INVERTEBRATES									
Crabs									
Crab, blue (hard)	8	7	16	37	6	46	161	198	60
Crab, blue (soft)	0	0	1	0	0	1	1	1	1
Total Crabs	8	7	17	37	6	47	162	199	60
Lobsters									
Lobster, Spanish	0	0	0	0	11	2	0	0	2
Oysters									
Oysters	124	31	90	66	104	125	120	74	92
Total Oysters	124	31	90	66	104	125	120	74	92
Shrimps									
Shrimp, brown	52	31	9	33	36	81	114	141	62
Shrimp, white	8	1	1	7	1	5	10	5	5
Shrimp, other	0	1	0	5	6	1	3	1	2
Shrimp, pink	0	4	1	0	0	1	0	0	1
Total Shrimps	60	39	11	45	44	89	127	147	70
TOTAL INVERTEBRATES	193	77	118	148	165	264	409	422	78
WALTON COUNTY TOTAL	353	272	270	363	634	539	569	634	454

Table C.17. Total dollar value of commercial landings by species group for Bay County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Scad, round (cigarfish)	147,190	80,705	83,456	37,854	90,912	155,823	270,206	86,050	265,773	320,512	363,044	172,866
Sardines, Spanish	79,804	114,941	30,028	76,981	70,842	72,494	81,197	67,685	75,795	138,058	44,846	77,516
Menhaden (pogies)	3,314	16	27,975	34,478	54,346	67,315	112,535	56,146	34,925	100,785	50,104	49,267
Baitfish	0	0	0	13,550	22,184	7,178	8,825	16,496	4,413	4,515	385	7,050
Herring, thread	719	62	215	879	1,404	3,773	7,477	3,195	10,107	17,110	8,274	4,838
Sardine, scaled	0	0	0	0	0	0	0	0	24,558	0	23,686	4,386
Ballyhoo	0	0	0	0	31	20	215	4,029	0	0	0	390
Scad, bigeye	0	0	0	0	0	0	1,536	13	0	0	99	150
Total Baitfishes	231,028	195,724	141,674	163,743	239,719	306,601	481,990	233,612	415,571	580,980	490,437	316,462
COASTAL PELAGIC FISHES												
Ladyfish	150,349	156,327	166,463	150,584	293,658	281,900	259,006	351,178	251,909	448,393	502,885	273,877
Blue runner	155,865	131,533	79,555	43,086	95,643	190,345	25,307	167,742	153,031	185,760	257,495	135,033
Shark fins	0	0	0	309	206	414	80,562	134,472	140,484	372,278	8,078	66,982
Mackerel, Spanish	62,655	27,969	39,705	80,526	72,319	90,467	41,543	103,456	79,687	57,566	75,529	66,493
Jack, crevalle	16,772	17,512	64,704	25,738	49,416	12,905	38,546	220,306	34,760	60,087	85,719	56,951
Bluefish	26,409	23,075	28,090	15,516	24,682	49,211	36,673	37,339	19,043	8,898	20,860	26,345
Shark	0	0	0	13,402	10,190	20,343	30,414	92,707	45,018	37,238	5,754	23,188
Pompano	7,020	28,692	26,781	12,861	15,841	12,438	12,880	20,798	19,462	28,065	33,371	19,837
Mackerel, king	30,611	19,715	7,172	1,418	3,363	3,687	6,095	6,008	30,225	28,353	42,021	16,243
Tunny, little (bonito)	1,586	780	197	128	4,898	6,340	9,583	24,639	21,750	31,320	23,837	11,369
Jacks, mixed	0	0	0	34,045	15,713	181	6,826	54,907	50	375	163	10,206
Cobia	4,432	1,345	2,139	2,598	2,333	4,337	10,541	7,802	6,970	7,342	13,141	5,725
Shark, mixed	1,419	1,959	18,573	0	0	0	0	0	0	0	0	1,996
Jacks, other	0	0	0	8,917	0	0	32	0	10	1,789	598	1,031
Atlantic bumper	0	0	0	0	0	0	0	5,300	1,460	0	0	615
Shad (common)	0	0	0	0	2,268	0	2,125	0	1	0	0	399

Table C.17. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Permit	0	0	0	3	0	0	0	0	46	5	3	5
Total Coastal Pelagic Fishes	457,119	408,906	433,380	389,130	590,529	672,568	560,133	1,226,653	803,905	1,267,469	1,069,453	716,295
DEMERSAL FISHES												
Mullet, black	368,891	340,254	240,980	135,283	163,292	238,639	189,215	113,945	151,901	203,367	226,359	215,648
Seatrout, spotted	69,104	82,479	69,797	59,920	88,047	98,346	64,014	58,436	90,789	46,742	61,739	71,765
Flounders	10,076	13,004	6,910	10,178	24,745	33,670	26,002	24,242	28,238	19,709	34,389	21,015
Croaker	8,111	5,125	4,955	17,099	221	218	215	253	167	1,448	2,437	3,659
Mullet, silver	414	0	55	1,648	11,612	2,863	949	3,943	4,192	397	3,135	2,655
Drum, red	4,406	2,105	6,085	7,761	4,515	0	0	0	0	0	0	2,261
Drum, black	554	1,413	307	561	2,180	1,922	1,222	3,301	3,899	3,025	5,238	2,147
Seatrout, silver	953	4,129	3,860	577	98	18	23	205	282	556	152	987
Spot	821	808	828	806	541	348	313	268	488	86	482	526
Kingfish (whiting)	36	120	226	744	352	699	480	1,189	625	487	668	511
Catfish	0	0	0	1,971	10	56	462	816	250	179	253	363
Seatrout, sand	0	0	0	493	46	243	1,091	947	415	360	323	356
Mullet, black (roe)	0	0	0	0	0	0	0	0	224	0	3,181	310
Seatrout, weakfish	0	0	0	150	217	469	0	0	0	0	0	76
Sea bass, mixed	0	0	0	0	6	24	42	146	0	31	15	24
Mojarra	0	0	0	0	14	0	0	0	0	0	0	1
Pinfish	0	0	0	0	0	0	0	0	0	0	6	1
Total Demersal Fishes	463,366	449,435	334,005	237,191	295,895	377,515	284,027	207,689	281,469	276,386	338,378	322,305
REEF FISHES												
Snapper, red	4,042,065	2,085,703	1,185,791	644,974	261,224	388,098	492,969	648,865	384,379	328,142	154,041	965,114
Grouper, mixed	491,621	770,287	1,645,438	28,466	15,537	1,304	2,410	91	3,543	222	1,897	269,165
Grouper, yellowedge	0	0	0	109,776	91,801	338,254	340,014	409,759	211,605	336,500	62,657	172,761
Grouper, gag	0	0	0	141,422	22,218	41,356	46,814	93,139	153,074	481,094	711,816	153,721
Snapper, vermilion	168,290	358,788	302,376	169,357	56,900	29,350	109,238	90,039	53,459	87,940	125,530	141,024

Table C.17. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, black	0	0	0	170,396	217,386	262,118	305,230	168,167	168,086	0	0	117,399
Grouper, red	0	0	0	124,446	130,161	133,368	133,839	172,488	154,450	64,667	323,598	112,456
Amberjacks	20,594	54,236	342,610	57,902	69,062	93,438	195,929	68,349	42,414	93,689	105,317	103,958
Grouper, scamp	0	0	0	64,643	45,834	61,930	62,803	49,147	81,413	112,282	108,001	53,278
Porgies	0	0	0	19,600	25,556	11,966	121,902	42,949	58,983	70,072	116,163	42,472
Tilefish	3,263	29,132	16,446	4,684	17,215	24,202	38,815	73,334	13,274	30,844	5,977	23,380
Triggerfish	8,313	5,283	10,424	6,324	4,220	5,320	15,571	21,593	25,927	25,499	47,022	15,954
Snapper, gray (mangrove)	7,649	8,504	8,922	3,560	4,075	8,386	11,392	8,666	12,960	18,698	33,349	11,469
Grouper, yellowfin	0	0	0	107,378	11,363	2,061	39	1,074	1,159	503	0	11,234
Grouper, snowy	0	0	0	193	421	9,205	16,034	42,296	34,778	18,481	1,961	11,215
Grouper, warsaw	0	0	0	17,433	5,400	9,464	18,180	30,732	15,253	9,866	4,125	10,041
Snapper, other	0	0	0	14,694	8,229	22,727	19,314	22,986	4,398	1,477	1,298	8,647
Grouper, other	0	0	0	4,469	933	1,511	1,300	2,893	1,669	31,361	8,068	4,746
Snapper, mixed	0	0	0	3,813	818	864	38,898	328	997	34	54	4,164
Snapper, silk	0	0	0	3,044	1,224	4,636	14,127	2,559	11,811	472	97	3,452
Snapper, mutton	0	0	0	911	3,516	859	2,263	13,825	4,399	987	237	2,454
Sheepshead	1,842	936	1,928	1,116	1,691	633	1,722	2,120	3,052	1,875	2,459	1,761
Tilefish, blueline	0	0	0	149	2,042	2,063	5,471	1,049	940	647	615	1,180
Snapper, lane	0	889	215	358	330	840	322	55	3,670	1,739	1,224	876
Grouper, Nassau	0	0	0	709	0	0	0	218	0	3,354	205	408
Jewfish	0	0	0	0	0	62	4,110	0	0	0	0	379
Snapper, yellowtail	0	0	0	0	69	24	0	25	0	515	23	60
Grunts	0	0	19	0	0	20	62	4	172	0	105	35
Hogfish	0	0	0	0	0	0	93	0	239	0	0	30
Tripletail	0	0	94	0	0	0	0	0	0	0	0	9
Angelfish	56	0	0	0	0	0	0	0	0	0	0	5
Total Reef Fishes	4,743,693	3,313,757	3,514,264	1,699,817	997,224	1,454,057	1,998,860	1,966,751	1,446,102	1,720,960	1,815,841	2,242,848

Table C.17. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	6,383,286	3,375,483	2,355,945	974,910	2,088,469	787,954	2,096,651	2,021,242	1,825,813
Swordfish	5,188	68,753	378,136	392,985	230,112	674,398	695,838	439,890	131,380	139,177	160,030	301,444
Dolphin	45	432	45,709	42,452	18,502	24,248	11,610	92,349	97,820	92,376	48,276	43,074
Tuna, bluefin	0	0	0	165,966	74,732	39,479	10,031	30,044	16,814	81,819	4,572	38,496
Wahoo	132	222	899	7,506	11,404	10,306	6,404	15,708	22,849	44,473	40,026	14,539
Tuna, bigeye	0	0	0	4,568	2,737	6,068	42,437	18,642	4,560	12,650	32,534	11,290
Tuna, blackfin	0	0	0	1,946	717	1,885	4,311	4,385	5,495	5,524	10,029	3,118
Marlin, white	0	0	0	15,529	4,663	157	0	0	0	0	0	1,850
Tuna, mixed	322	0	102	123	10,347	0	46	2,536	1,297	52	3,358	1,653
Marlin, blue	0	0	0	6,267	2,943	956	0	0	0	0	0	924
Tuna, skipjack	0	0	0	0	0	0	17	144	0	169	0	30
Total Oceanic Pelagic Fishes	5,687	69,407	424,846	7,020,628	3,731,640	3,113,441	1,745,604	2,692,167	1,068,170	2,472,891	2,320,065	2,242,232
OTHER FISHES												
Misc. Food Fish	439	333	2,406	35,197	3,092	4,294	7,078	31,952	18,737	32,559	54,524	17,328
Misc. Industrial Fish	3,709	13,151	4,789	3,623	25,677	31,055	1,215	27,830	4,160	33,809	8,018	14,276
Eels	0	0	0	2,060	261	1,800	0	0	66	0	0	381
Tilapia	0	0	0	0	3	0	4	0	0	0	0	1
Total Other Fishes	4,147	13,484	7,195	40,879	29,032	37,149	8,297	59,782	22,963	66,367	62,543	31,985
TOTAL FISHES	5,905,040	4,450,714	4,855,365	9,551,388	5,884,040	5,961,333	5,078,911	6,386,654	4,038,180	6,385,054	6,096,717	5,872,127
INVERTEBRATES												
Crabs												
Crab, blue (hard)	64,010	59,934	92,868	114,316	136,239	190,533	131,749	314,053	151,917	130,649	256,659	149,357
Crab, blue (soft)	0	26	26	40	70	14,326	10,134	9,413	4,010	6,311	6,689	4,640
Crab, medium	0	0	0	311	9	2,746	6,691	692	477	81	473	1,044
Crab, stone, ungraded	290	186	142	0	0	0	4,119	763	146	0	1,083	612
Crab, large	0	0	0	46	0	0	1,811	1,888	79	11	199	367

Table C.17. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Crab, small	0	0	0	0	1,125	819	0	1,020	0	4	9	271
Crab, jumbo	0	0	0	0	0	65	0	0	0	1,248	0	119
Total Crabs	64,300	60,146	93,036	114,713	137,443	208,488	154,503	327,829	156,629	138,304	265,112	156,409
Lobsters												
Lobster, Spanish	772	1,114	0	2,224	192	1,626	2,749	715	554	923	1,496	1,124
Lobster, spiny	0	0	0	0	42	149	134	125	1,857	530	129	270
Total Lobsters	772	1,114	0	2,224	235	1,775	2,883	839	2,412	1,454	1,625	1,394
Oysters												
Oysters	8,513	41,447	149,395	221,933	330,379	238,665	137,260	298,438	921,732	639,135	554,587	321,953
Total Oysters	8,513	41,447	149,395	221,933	330,379	238,665	137,260	298,438	921,732	639,135	554,587	321,953
Other Invertebrates												
Scallops, bay	1,118	369	822	7,570	6,612	25,490	6,016	9,118	0	1,776	0	5,354
Squid	2,938	2,886	711	3,380	1,050	2,761	8,966	12,391	584	1,317	900	3,444
Octopus	0	0	0	0	0	393	383	0	0	60	11	77
Scallops, calico	0	0	0	0	0	0	0	0	0	161	269	39
Conch (helmet and whelks)	0	0	0	0	0	0	0	0	0	0	334	30
Clams, hard, ungraded	0	0	0	0	0	0	159	0	0	0	0	14
Misc. Invertebrates	0	0	0	0	0	0	0	0	28	0	0	3
Clams, hard, chowder	0	0	0	0	0	0	0	0	0	14	0	1
Other Invertebrates	4,057	3,255	1,534	10,950	7,662	28,645	15,524	21,509	612	3,329	1,514	8,963
Shrimps												
Shrimp, saltwater	1,596,353	1,148,324	1,140,880	0	0	0	0	0	0	0	0	353,232
Shrimp, brown	0	0	0	204,238	335,948	328,697	184,002	353,671	227,924	328,855	378,450	212,890
Shrimp, pink	0	0	0	332,240	29,382	160,581	103,919	69,123	45,247	42,353	20,351	73,018
Shrimp, other	0	0	0	87,388	42,323	18,019	80,251	95,235	60,668	263,098	152,946	72,721
Shrimp, white	0	0	0	140,118	51,655	147,378	30,464	96,288	49,682	94,974	120,971	66,503
Shrimp, rock	27,873	56,581	4,611	335	3,579	16,960	13,969	34,504	10,098	146,437	40,498	32,313

Table C.17. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, bait	0	0	0	1,754	52,889	15,578	9,692	14,019	13,359	4,679	4,680	10,605
Shrimp, royal red	0	0	0	0	0	0	1,476	77	591	1,324	5,645	828
Total Shrimps	1,624,227	1,204,905	1,145,491	766,073	515,775	687,213	423,772	662,919	407,568	881,719	723,541	822,109
TOTAL INVERTEBRATES	1,701,868	1,310,867	1,389,456	1,115,893	991,493	1,164,786	733,943	1,311,534	1,488,953	1,663,941	1,546,378	1,310,828
BAY COUNTY TOTAL	7,606,909	5,761,580	6,244,820	10,667,280	6,875,533	7,126,119	5,812,854	7,698,188	5,527,134	8,048,995	7,643,095	7,182,955

Table C.18. Total dollar value of commercial landings by species group for Escambia County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	29	0	1	4	500	3,426	1,867	130	378	10	174	593
Scad, round (cigarfish)	2,524	0	46	12	6	58	72	309	130	7	0	288
Baitfish	0	0	0	513	27	15	3	0	0	65	120	68
Scad, bigeye	0	0	0	15	216	0	15	0	0	0	0	22
Sardines, Spanish	0	7	0	0	2	0	0	0	85	5	0	9
Ballyhoo	0	0	1	93	0	1	0	0	0	0	0	9
Total Baitfishes	2,553	7	48	636	750	3,500	1,957	439	593	87	294	988
COASTAL PELAGIC FISHES												
Mackerel, Spanish	53,203	13,700	32,902	19,580	20,657	75,015	10,709	21,070	19,151	40,902	41,203	31,645
Pompano	6,145	15,511	8,259	7,075	29,368	12,635	6,106	1,137	9,297	19,573	25,479	12,780
Mackerel, king	354	1,386	3,507	9,825	16,661	13,143	3,242	6,285	4,187	4,202	1,169	5,815
Shark	0	0	0	1,747	3,421	4,285	20,893	9,319	9,514	1,173	272	4,602
Bluefish	5,472	2,333	2,612	1,667	3,097	3,474	4,065	2,683	1,486	3,072	3,650	3,056
Cobia	1,371	533	322	285	1,019	2,515	4,201	2,750	4,220	5,692	5,698	2,601
Shark fins	0	0	0	0	0	2,325	4,474	1,482	2,420	2,371	149	1,202
Blue runner	4,174	1,317	72	9	455	110	56	261	501	1,658	1,903	956
Shark, mixed	1,012	1,782	3,096	0	0	0	0	0	0	0	0	535
Ladyfish	1,271	208	103	3	61	267	77	69	0	60	2,554	425
Jacks, other	0	0	0	162	11	69	14	0	761	208	37	115
Shad (common)	0	0	0	0	1	9	10	0	37	9	180	22
Jack, crevalle	140	0	13	0	14	4	0	0	0	0	0	16
Tunny, little (bonito)	37	2	29	0	0	28	18	0	39	0	0	14
Permit	0	0	0	0	0	0	37	0	43	38	0	11
Jacks, mixed	0	0	0	7	0	4	30	0	0	0	19	5
Total Coastal Pelagic Fishes	73,180	36,771	50,913	40,360	74,764	113,884	53,932	45,056	51,656	78,958	82,313	63,799

Table C.18. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	283,368	249,863	173,482	207,615	240,628	317,635	335,980	215,830	315,377	521,985	423,472	298,658
Seatrout, spotted	59,853	39,454	31,070	22,426	31,325	43,126	43,972	32,206	33,672	18,307	39,419	35,893
Flounders	12,442	12,842	16,932	31,306	17,173	12,252	11,488	15,969	26,569	20,569	30,089	18,875
Seatrout, sand	0	0	0	29,105	18,839	24,082	11,636	13,263	15,696	32,178	16,076	14,625
Croaker	17,892	20,999	30,193	10,091	4,087	3,067	3,102	887	1,139	2,050	3,094	8,782
Seatrout, silver	19,298	23,770	32,672	1,651	349	4,863	1,546	1,529	1,937	3,507	3,392	8,592
Mullet, silver	3,054	1,080	3,130	721	2,367	2,952	3,374	6,140	13,943	18,934	16,898	6,599
Spot	3,445	2,787	4,190	3,288	2,547	2,617	3,782	2,375	2,014	3,978	2,148	3,016
Drum, black	250	1,317	56	1,620	4,457	2,078	333	781	1,290	2,066	3,938	1,653
Kingfish (whiting)	4,021	782	3,423	645	917	476	529	47	491	1,012	2,038	1,307
Mullet, black (roe)	0	0	0	0	0	0	0	0	0	12,288	0	1,117
Drum, red	2,105	1,744	1,919	687	496	43	0	0	0	0	0	636
Catfish	0	0	0	102	594	538	466	276	300	392	375	277
Seatrout, weakfish	0	0	0	177	797	0	0	0	0	0	0	89
Pigfish	41	9	347	0	0	0	0	0	0	0	0	36
Sturgeon	151	41	0	0	0	0	0	0	0	0	0	17
Sea bass, mixed	32	0	7	0	0	8	21	0	0	11	0	7
Mojarra	0	0	0	0	0	0	0	0	0	0	45	4
Total Demersal Fishes	405,952	354,686	297,419	309,433	324,577	413,738	416,229	289,302	412,430	637,276	540,984	400,184
REEF FISHES												
Snapper, vermilion	324,479	312,600	613,597	773,872	652,992	596,283	745,860	720,657	541,111	629,221	675,289	598,724
Snapper, red	605,494	803,619	570,605	420,991	489,688	738,322	658,308	607,490	501,677	382,653	242,988	547,439
Amberjacks	18,813	35,898	160,219	47,575	53,000	83,456	72,599	29,639	29,427	39,551	58,589	57,160
Porgies	0	0	0	92,011	99,130	106,597	88,988	71,433	40,817	41,453	56,378	54,255
Grouper, mixed	99,416	118,556	190,232	0	0	162	610	581	134	0	513	37,291
Grouper, yellowedge	0	0	0	3,890	31,603	72,195	67,723	40,288	81,285	35,648	12,363	31,363

Table C.18. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, black	0	0	0	64,727	81,360	60,326	58,449	39,440	32,977	0	0	30,662
Triggerfish	6,890	7,564	11,404	10,915	11,612	30,594	36,212	50,537	26,230	55,456	60,988	28,037
Grouper, scamp	0	0	0	32,240	33,252	31,491	59,241	28,650	26,978	27,112	11,011	22,725
Grouper, gag	0	0	0	0	0	66	79	361	11,182	41,233	60,751	10,334
Tilefish	2,429	12,147	6,886	34,145	597	19,112	7,847	8,392	8,613	6,547	1,270	9,817
Snapper, other	0	0	0	636	10,771	19,214	12,924	7,236	9,073	17,479	18,351	8,699
Grouper, warsaw	0	0	0	12,123	10,918	11,844	18,308	8,488	13,905	8,490	10,188	8,569
Sheepshead	8,358	5,011	6,649	5,842	6,443	6,027	9,421	6,730	9,867	9,047	18,661	8,369
Grouper, snowy	0	0	0	839	6,005	8,473	7,241	8,210	7,648	11,465	3,251	4,830
Snapper, gray (mangrove)	630	203	17,877	838	1,022	256	6,472	422	225	624	1,766	2,758
Grouper, yellowfin	0	0	0	16,981	3,456	0	802	4,740	1,221	1,595	648	2,677
Grouper, red	0	0	0	329	1,186	65	223	14	7,476	195	3,344	1,167
Grouper, other	0	0	0	50	177	639	2,826	91	249	1,420	649	555
Snapper, silk	0	0	0	31	230	1,718	790	612	316	761	1,356	529
Tilefish, blueline	0	0	0	451	342	1,163	250	2,083	281	756	316	513
Snapper, mutton	0	0	304	795	223	234	1,279	0	80	952	1,378	477
Snapper, lane	49	498	0	117	59	32	128	869	90	1,502	514	351
Snapper, mixed	0	0	0	282	8	281	189	23	0	23	1,185	181
Grunts	0	0	0	2	3	3	67	41	2	148	163	39
Angelfish	295	30	0	0	0	0	0	0	0	0	0	30
Snapper, yellowtail	0	0	0	59	76	0	0	0	0	36	0	16
Goatfishes	0	0	122	0	0	0	0	0	0	0	0	11
Hogfish	0	0	0	0	0	33	60	0	0	0	0	8
Grouper, Nassau	0	0	0	27	0	47	0	0	0	0	0	7
Jewfish	0	0	0	26	0	0	0	0	0	0	0	2
Total Reef Fishes	1,066,854	1,296,126	1,577,894	1,519,791	1,494,153	1,788,634	1,856,898	1,637,029	1,350,863	1,313,365	1,241,908	1,467,592

Table C.18. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	452	2,154	2,425	5,622	1,697	7,013	8,239	31,248	5,350
Dolphin	489	167	4,735	396	598	1,277	1,146	1,312	936	1,376	1,022	1,223
Tuna, blackfin	0	0	0	255	245	626	1,153	2,301	933	1,797	2,160	861
Wahoo	43	1,138	234	34	698	316	485	181	1,011	1,437	330	537
Swordfish	55	196	1,499	0	0	0	0	349	1,212	0	0	301
Tuna, bluefin	0	0	0	155	61	487	1,969	0	0	504	0	289
Tuna, mixed	0	726	1,336	0	49	191	0	413	0	208	0	266
Tuna, skipjack	0	0	0	94	0	133	7	246	148	10	0	58
Tuna, bigeye	0	0	0	0	0	0	11	204	0	0	0	20
Marlin, white	0	0	0	0	103	0	0	0	0	0	0	9
Total Oceanic Pelagic Fishes	587	2,227	7,804	1,386	3,909	5,454	10,393	6,703	11,253	13,570	34,760	8,913
OTHER FISHES												
Misc. Food Fish	2,145	2,215	7,719	3,801	1,974	6,297	7,263	4,745	5,381	4,180	3,093	4,438
Eels	0	0	351	587	288	1,696	1,083	1,144	95	5	0	477
Misc. Industrial Fish	2,809	10	192	34	0	0	44	163	0	251	1	318
Tilapia	0	0	0	0	0	0	0	0	0	0	7	1
Total Other Fishes	4,954	2,225	8,262	4,422	2,261	7,993	8,390	6,051	5,476	4,436	3,101	5,234
TOTAL FISHES	1,554,080	1,692,042	1,942,340	1,876,030	1,900,413	2,333,203	2,347,799	1,984,580	1,832,271	2,047,692	1,903,359	1,946,710
INVERTEBRATES												
Crabs												
Crab, blue (hard)	17,268	10,628	21,850	57,276	16,516	14,836	11,147	18,259	18,117	18,096	24,994	20,817
Crab, blue (soft)	0	0	0	30	0	0	158	0	0	0	31	20
Crab, large	0	0	0	139	0	0	0	0	0	0	0	13
Crab, stone, ungraded	12	0	0	0	0	88	0	0	0	0	0	9
Total Crabs	17,280	10,628	21,850	57,445	16,516	14,924	11,306	18,259	18,117	18,096	25,025	20,859

Table C.18. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Lobsters												
Lobster, spiny	0	0	0	98	0	88	0	0	0	0	0	17
Lobster, Spanish	29	0	0	0	0	0	0	0	0	0	0	3
Total Lobsters	29	0	0	98	0	88	0	0	0	0	0	20
Oysters												
Oysters	83,592	84,675	33,590	24,369	2,964	582	105	0	0	9,787	13,190	22,987
Total Oysters	83,592	84,675	33,590	24,369	2,964	582	105	0	0	9,787	13,190	22,987
Other Invertebrates												
Squid	6,943	9,006	11,131	13,500	10,618	7,465	6,902	15,724	4,964	8,725	7,906	9,353
Scallops, calico	31,494	0	0	0	0	0	0	0	0	0	0	2,863
Misc. Invertebrates	0	0	0	0	0	0	1,486	0	630	8	14	194
Octopus	3	9	0	23	0	5	157	267	0	467	85	92
Scallops, bay	0	126	0	0	0	0	0	0	0	0	0	11
Total Other Invertebrates	38,440	9,141	11,131	13,523	10,618	7,470	8,545	15,991	5,593	9,200	8,006	12,514
Shrimps												
Shrimp, brown	0	0	0	1,393,246	1,158,100	1,032,116	898,758	908,849	664,793	938,914	1,135,003	739,071
Shrimp, saltwater	1,418,514	1,070,442	1,821,172	0	0	0	0	0	0	0	0	391,830
Shrimp, pink	0	0	0	1,965	68	4,437	81,683	197,932	16,553	0	0	27,513
Shrimp, white	0	0	0	34,182	8,659	37,066	16,468	84,773	64,379	8,079	2,857	23,315
Shrimp, bait	0	0	0	112	1,573	3,508	4,393	2,179	20,168	80	230	2,931
Shrimp, other	0	0	0	279	904	2,828	143	32	0	347	152	426
Shrimp, rock	2	344	103	119	236	1,750	1,211	0	115	269	0	377
Shrimp, royal red	0	0	0	0	0	0	0	0	410	199	0	55
Total Shrimps	1,418,516	1,070,786	1,821,276	1,429,902	1,169,540	1,081,704	1,002,656	1,193,766	766,417	947,888	1,138,242	1,185,518
TOTAL INVERTEBRATES	1,557,857	1,175,231	1,887,847	1,525,338	1,199,639	1,104,768	1,022,612	1,228,016	790,127	984,971	1,184,463	1,241,897
ESCAMBIA COUNTY TOTAL	3,111,937	2,867,273	3,830,187	3,401,368	3,100,052	3,437,972	3,370,411	3,212,596	2,622,397	3,032,663	3,087,823	3,188,607

Table C.19. Total dollar value of commercial landings by species group for Franklin County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Baitfish	0	0	0	0	0	7	14	506	673	61	2,515	343
Menhaden (pogies)	756	499	1,674	0	0	0	0	10	7	0	0	268
Scad, round (cigarfish)	134	0	19	0	0	0	0	17	0	22	0	17
Herring, thread	0	0	0	0	0	0	70	0	0	0	0	6
Scad, bigeye	0	0	0	0	2	0	44	0	0	0	0	4
Sardines, Spanish	0	0	0	0	0	0	0	0	0	31	0	3
Total Baitfishes	891	499	1,693	0	2	7	128	532	680	115	2,515	642
COASTAL PELAGIC FISHES												
Pompano	1,115	4,509	23	0	12,355	30,497	20,218	49,327	79,224	62,396	45,081	27,704
Shark	0	0	0	105	2,100	1,176	24,840	26,796	41,907	36,948	2,882	12,432
Mackerel, Spanish	566	544	220	21	1,176	435	5,790	14,150	10,052	19,044	34,511	7,864
Mackerel, king	1,849	154	0	58	90	61	814	11,706	35,345	12,206	5,009	6,117
Shark fins	0	0	0	0	0	0	9	7,194	5,416	2,772	11,283	2,425
Cobia	291	451	190	31	1,020	416	1,763	1,833	2,618	3,804	9,078	1,954
Bluefish	463	311	58	13	69	39	1,106	1,173	465	1,527	3,959	835
Shark, mixed	4,944	785	2,290	0	0	0	0	0	0	0	0	729
Jack, crevalle	0	0	0	0	15	508	172	269	1,420	519	2,483	490
Blue runner	0	21	0	0	0	0	8	25	91	1,691	1,452	299
Jacks, other	0	0	0	0	0	0	0	0	1,188	1,022	363	234
Jacks, mixed	0	0	0	0	0	0	0	0	0	0	1,510	137
Ladyfish	4	58	0	0	0	0	0	64	201	58	315	64
Tunny, little (bonito)	0	2	0	0	8	0	0	89	0	0	6	10
Shad (common)	0	0	0	0	3	0	0	0	47	33	6	8
Permit	0	0	0	0	0	1	7	0	4	0	0	1
Atlantic bumper	0	0	0	0	0	0	0	9	0	0	0	1
Total Coastal Pelagic Fishes	9,232	6,835	2,781	228	16,837	33,133	54,726	112,634	177,977	142,021	117,937	61,304

Table C.19. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	227,308	231,225	130,990	75,455	47,164	72,483	124,127	132,239	113,838	162,906	397,718	155,950
Flounders	59,637	60,274	59,955	14,727	16,737	26,708	20,160	14,978	43,852	29,674	37,318	34,911
Seatrout, spotted	49,885	46,270	43,366	4,703	8,576	8,802	34,884	29,854	16,563	17,309	32,852	26,642
Kingfish (whiting)	20,322	19,512	18,697	63	387	784	1,103	629	820	3,710	653	6,062
Mullet, silver	0	0	0	43	0	392	1,217	5,109	2,856	9,579	7,568	2,433
Drum, red	9,083	5,008	4,844	1,428	0	0	0	0	0	0	0	1,851
Spot	4,113	5,754	1,460	14	8	365	736	869	706	1,192	4,994	1,837
Seatrout, silver	1,686	3,062	1,470	9	7	498	1,363	2,107	172	35	2,263	1,152
Croaker	1,357	443	1,916	0	0	0	642	246	74	183	6,460	1,029
Sea bass, mixed	731	1,940	203	1	32	114	669	2,559	1,504	801	401	814
Drum, black	131	133	698	0	19	209	125	517	448	612	3,077	543
Seatrout, sand	0	0	0	0	0	33	144	436	1,680	820	356	315
Catfish	0	0	0	0	0	0	40	2	15	6	3,357	311
Rays	0	0	0	0	0	0	0	0	1	26	2,393	220
Mullet, black (roe)	0	0	0	0	0	0	0	0	0	0	250	23
Mojarra	0	0	0	0	0	0	0	235	0	4	0	22
Sturgeon	124	7	0	0	0	0	0	0	0	0	0	12
Pinfish	0	0	0	0	0	0	0	0	0	84	1	8
Seatrout, weakfish	0	0	0	0	16	1	0	0	51	0	0	6
Total Demersal Fishes	374,378	373,628	263,598	96,441	72,946	110,389	185,210	189,780	182,581	226,941	499,661	234,141
REEF FISHES												
Grouper, red	0	0	0	63,883	164,669	60,878	432,340	424,721	440,898	222,632	1,011,987	256,546
Grouper, mixed	900,916	507,030	481,754	1,371	0	0	2,492	0	0	0	0	172,142
Grouper, black	0	0	0	54,335	142,669	120,701	361,164	403,928	254,840	0	0	121,603
Grouper, gag	0	0	0	4,147	0	1,371	164,664	16,882	70,378	324,922	540,313	102,062
Snapper, red	137,204	109,515	49,424	4,383	20,055	12,957	41,915	54,275	40,935	120,811	26,833	56,210

Table C.19. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Grouper, yellowedge	0	0	0	0	10	3,347	9,856	759	36,499	181,278	281,453	46,655
Amberjacks	4,125	4,454	18,495	3,027	30,634	26,790	74,021	26,683	56,714	37,757	82,658	33,214
Grouper, scamp	0	0	0	18,925	15,796	7,939	17,092	17,803	26,173	28,947	40,556	15,748
Porgies	0	0	0	1,116	7,163	15,362	37,048	27,881	12,474	22,602	25,367	13,547
Tilefish	24,087	1,162	74	0	0	148	595	134	26,974	33,538	45,590	12,027
Snapper, gray (mangrove)	8,765	5,965	6,765	1,223	5,371	1,960	4,773	7,947	15,364	13,337	20,569	8,367
Snapper, vermilion	1,320	2,862	1,125	110	1,437	4,731	11,218	13,208	11,596	15,619	21,690	7,720
Triggerfish	2,834	761	830	759	2,256	1,753	3,761	7,403	11,383	10,962	11,263	4,906
Grouper, other	0	0	0	0	50	0	123	12	5,746	9,190	17,224	2,940
Grouper, warsaw	0	0	0	1,626	1,015	301	2,338	922	1,613	8,163	9,446	2,311
Grouper, snowy	0	0	0	0	185	54	0	0	281	13,853	10,315	2,244
Tilefish, blueline	0	0	0	7	259	79	39	81	548	3,988	11,352	1,487
Snapper, other	0	0	0	12	3,177	52	663	2,888	2,250	138	2,234	1,037
Sheepshead	1,256	324	419	0	196	219	1,111	1,467	1,187	726	1,400	755
Grouper, yellowfin	0	0	0	0	0	48	0	0	5,126	276	76	502
Snapper, mutton	0	0	0	0	0	30	1,203	144	2,985	126	750	476
Grunts	83	32	29	0	5	9	292	1,035	1,332	1,408	855	462
Grouper, Nassau	0	0	0	0	2,922	0	0	0	0	209	644	343
Goatfishes	3,612	0	0	0	0	0	0	0	0	0	0	328
Hogfish	0	0	0	0	0	0	104	174	0	745	2,558	326
Snapper, silk	0	0	0	0	0	0	0	0	290	1,710	625	239
Jewfish	156	365	67	0	4	20	975	0	0	0	0	144
Snapper, lane	0	37	0	0	10	101	0	7	343	634	292	129
Snapper, mixed	0	0	0	0	64	0	466	281	70	88	173	104
Snapper, yellowtail	0	0	0	0	0	0	0	14	0	0	8	2
Total Reef Fishes	1,084,358	632,507	558,980	154,923	397,946	258,848	1,168,251	1,008,651	1,025,996	1,053,657	2,166,231	864,577

Table C.19. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES												
Swordfish	85,344	115	3,419	0	147	0	502	0	22,441	0	64,482	16,041
Tuna, yellowfin	0	0	0	0	4,615	0	0	0	16,195	412	30,869	4,735
Dolphin	78	16	1,097	12	142	276	2,468	771	15,161	1,247	2,365	2,148
Tuna, blackfin	0	0	0	0	82	52	99	184	874	136	2,771	382
Wahoo	21	25	0	71	148	36	101	303	1,573	623	498	309
Tuna, bluefin	0	0	0	0	0	852	0	0	0	0	0	77
Tuna, mixed	249	0	38	0	0	0	19	0	0	0	0	28
Tuna, skipjack	0	0	0	10	0	0	0	31	59	0	0	9
Total Oceanic Pelagic Fishes	85,692	156	4,554	93	5,134	1,216	3,188	1,290	56,303	2,417	100,984	23,730
OTHER FISHES												
Misc. Food Fish	11	126	5	373	0	94	211	1,141	1,914	6,648	13,696	2,202
Eels	588	0	571	3	0	0	71	10	3,449	0	0	427
Misc. Industrial Fish	26	86	70	0	0	0	119	13	16	15	4	32
Total Other Fishes	625	212	647	377	0	94	401	1,164	5,379	6,663	13,700	2,660
TOTAL FISHES	1,555,175	1,013,837	832,254	252,062	492,866	403,686	1,411,904	1,314,052	1,448,915	1,431,813	2,901,028	1,187,054
INVERTEBRATES												
Crabs												
Crab, blue (hard)	259,859	339,134	388,396	309,424	198,333	209,337	128,835	102,874	88,018	95,367	260,465	216,367
Crab, blue (soft)	67,723	57,007	38,182	4,426	2,048	6,880	96,706	79,103	19,547	44,243	21,872	39,794
Crab, stone, ungraded	12,158	14,300	16,917	0	124	198	0	0	0	0	5,880	4,507
Crab, medium	0	0	0	0	97	0	0	0	0	0	7,498	690
Crab, small	0	0	0	0	0	1,935	0	0	0	0	0	176
Crab, jumbo	0	0	0	0	0	0	0	0	0	939	0	85
Crab, large	0	0	0	0	0	0	0	0	0	0	62	6
Total Crabs	339,741	410,441	443,496	313,849	200,603	218,350	225,540	181,977	107,565	140,549	295,777	261,626

Table C.19. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Lobsters												
Lobster, Spanish	71,529	54,003	87,617	0	0	182	1,019	2,209	7,755	30,005	16,931	24,659
Lobster, spiny	0	0	0	0	681	528	580	0	0	352	0	195
Total Lobsters	71,529	54,003	87,617	0	681	710	1,599	2,209	7,755	30,357	16,931	24,854
Oysters												
Oysters	4,207,348	6,915,458	4,356,612	1,313,447	5,198,875	2,510,945	1,884,363	4,176,345	4,054,448	2,753,324	2,384,314	3,614,135
Total Oysters	4,207,348	6,915,458	4,356,612	1,313,447	5,198,875	2,510,945	1,884,363	4,176,345	4,054,448	2,753,324	2,384,314	3,614,135
Other Invertebrates												
Scallops, calico	0	0	0	0	0	0	18,230	0	0	0	6,420,235	585,315
Clams, hard, ungraded	1,115	0	0	0	34,404	173,658	160,304	131,042	65	32	63,909	51,321
Clams, hard, topneck	0	0	0	0	65,513	66,438	0	0	0	0	4,593	12,413
Scallops, bay	3,031	0	0	66,200	543	7,543	22,548	10,669	0	8,882	5,674	11,372
Squid	3,146	4,585	2,106	762	97	1,032	2,539	1,349	112	64	730	1,502
Clams, hard, middleneck	0	0	0	0	3,699	3,063	0	0	0	0	135	627
Clams, hard, littleneck	0	0	0	0	920	4,051	0	0	0	0	116	462
Octopus	16	1,006	32	0	54	1,517	88	0	0	31	0	249
Clams, hard, chowder	0	0	0	0	0	437	0	0	0	0	647	99
Misc. Invertebrates	0	0	0	0	0	0	0	0	119	0	7	11
Total Other Invertebrates	7,308	5,590	2,138	66,962	105,231	257,739	203,709	143,060	296	9,009	6,496,046	663,372
Shrimps												
Shrimp, saltwater	8,183,469	7,785,803	7,242,725	0	0	0	0	0	0	0	0	2,110,182
Shrimp, white	0	0	0	2,030,031	2,275,355	5,689,180	3,076,533	1,916,805	815,240	1,687,147	498,066	1,635,305
Shrimp, brown	0	0	0	1,411,901	1,086,653	2,040,767	1,428,965	686,650	1,668,282	902,332	919,214	922,251
Shrimp, pink	0	0	0	279,246	408,051	1,008,378	1,331,022	1,126,900	1,184,721	329,926	492,004	560,023
Shrimp, rock	30,309	128,694	40,014	279,252	54,745	318,925	70,659	113,085	11,251	720,632	365,257	193,893
Shrimp, other	0	0	0	3,278	6,995	41,446	42,200	1,738	60,001	26,414	9,183	17,387
Shrimp, bait	0	0	0	0	918	0	5,065	101	5,790	6,536	19	1,675

Table C.19. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimp, royal red	0	0	0	0	0	0	0	1,431	0	1,441	0	261
Total Shrimps	8,213,778	7,914,497	7,282,739	4,003,708	3,832,717	9,098,696	5,954,444	3,846,708	3,745,286	3,674,428	2,283,745	5,440,977
TOTAL INVERTEBRATES	12,768,175	15,245,986	12,084,985	5,697,967	9,337,426	12,085,730	8,268,056	8,348,091	7,907,595	6,577,310	11,459,881	9,980,109
FRANKLIN COUNTY TOTAL	14,323,351	16,259,823	12,917,238	5,950,029	9,830,291	12,489,416	9,679,960	9,662,142	9,356,510	8,009,123	14,360,910	11,167,163

Table C.20. Total dollar value of commercial landings by species group for Gulf County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	188,786	255,788	175,670	1,355,907	1,376,868	1,233,942	1,594,366	713,304	564,566	462,398	475,153	763,341
Sardines, Spanish	22,921	32,792	1,097	23,530	26,308	60,120	193,498	153,124	90,004	154,722	134,594	81,156
Scad, round (cigarfish)	66,375	23,285	24,413	3,737	17,716	34,637	68,735	22,925	115,623	191,448	268,766	76,151
Herring, thread	8,065	8,375	0	5,932	5,602	26,081	292,885	2,083	63,177	7,266	52,630	42,918
Scad, bigeye	0	0	0	0	0	0	0	77,062	97,243	38,793	119,624	30,247
Baitfish	0	0	0	3,645	162	4	0	14	30	572	12,530	1,542
Ballyhoo	0	0	0	0	12,756	0	234	0	626	0	0	1,238
Total Baitfishes	286,147	320,240	201,180	1,392,750	1,439,412	1,354,784	2,149,718	968,512	931,269	855,200	1,063,297	996,592
COASTAL PELAGIC FISHES												
Ladyfish	132,604	42,418	27,675	170,403	239,882	326,299	182,665	266,062	90,859	291,395	326,088	190,577
Jack, crevalle	35,514	51,001	1,858	27,498	108,854	76,065	69,504	213,190	94,348	35,313	26,485	67,239
Blue runner	111,423	46,189	28,887	26,976	37,827	171,746	11,275	32,173	86,467	55,744	65,130	61,258
Mackerel, Spanish	30,293	12,877	40,170	34,332	55,596	23,450	39,323	48,597	44,466	83,323	38,539	40,997
Tunny, little (bonito)	24,071	4,886	2,096	413	20,191	22,342	51,994	35,451	78,247	73,605	73,980	35,207
Jacks, mixed	0	0	0	9,370	10,837	8,992	14,558	192,457	565	8,130	425	22,303
Pompano	1,074	533	1,009	4,809	46,082	111,108	266	5,355	2,463	3,008	1,719	16,130
Shark	0	0	0	8	41,002	41,560	71,738	9,539	2,065	0	4	15,083
Bluefish	30,716	9,513	2,543	14,086	13,908	14,295	17,982	4,980	1,567	901	3,107	10,327
Mackerel, king	461	66	0	36,869	0	0	903	0	612	6,931	22	4,169
Shark fins	0	0	0	0	24,891	3,719	7,326	0	390	0	132	3,314
Shad (common)	0	0	0	0	3,240	270	2,700	919	0	10,639	3	1,615
Shark, mixed	1,056	2,274	9,855	0	0	0	0	0	0	0	0	1,199
Jacks, other	0	0	0	0	0	0	2,520	0	0	3,077	0	509
Cobia	0	0	176	0	0	277	0	0	0	0	219	61
Atlantic bumper	0	0	0	0	0	0	0	480	0	0	0	44
Total Coastal Pelagic Fishes	367,212	169,756	114,269	324,764	602,308	800,123	472,753	809,201	402,049	572,067	535,854	470,032

Table C.20. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	170,346	141,113	213,097	207,704	162,927	226,933	211,668	91,065	95,759	336,340	194,487	186,495
Drum, red	55,103	147,224	93,258	254,618	91	0	0	0	0	0	0	50,027
Drum, black	48,043	3	45,539	198,870	63,498	7,153	207	34	0	0	0	33,031
Flounders	5,052	6,565	5,381	28,237	31,629	25,971	20,809	27,933	21,732	8,157	9,487	17,359
Seatrout, spotted	23,551	13,372	5,806	335	3,255	8,121	6,198	463	3,402	2,965	3,399	6,443
Spot	3,062	4,581	4	0	11	7	0	468	24,665	72	2,737	3,237
Croaker	375	646	204	11	10	11	0	1,050	7,777	0	5,358	1,404
Seatrout, silver	4	79	0	0	0	0	0	0	14,342	0	13	1,312
Mullet, silver	0	0	0	0	1,660	0	0	1,943	4,222	142	89	732
Kingfish (whiting)	1,849	536	932	120	194	15	0	263	588	0	158	423
Seatrout, sand	0	0	0	0	3	141	0	0	54	209	25	39
Rays	0	0	0	0	203	0	0	0	150	0	0	32
Pinfish	0	0	0	0	0	0	0	0	0	62	0	6
Catfish	0	0	0	0	0	0	0	0	0	0	50	5
Sea bass, mixed	0	0	0	0	0	0	0	48	0	0	0	4
Total Demersal Fishes	307,385	314,118	364,221	689,894	263,481	268,352	238,882	123,266	172,692	347,948	215,802	300,549
REEF FISHES												
Snapper, red	61,976	592	525	342	512	0	32	73	1,114	49	140,856	18,734
Goatfishes	0	0	0	0	0	0	0	28,340	29,453	34,563	33,296	11,423
Grouper, black	0	0	0	0	0	0	0	427	11,573	0	0	1,091
Porgies	0	0	0	0	9	0	51	7,966	924	1,489	1,394	1,076
Snapper, vermilion	101	0	0	0	0	33	8	420	1,756	470	7,784	961
Grouper, mixed	6,446	814	1,884	505	0	0	0	0	0	0	0	877
Snapper, silk	0	0	0	0	0	0	0	0	0	326	6,756	644
Grouper, red	0	0	0	0	0	0	75	333	340	75	6,207	639

Table C.20. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Sheepshead	43	44	33	893	56	1,629	553	269	1,447	444	15	493
Grouper, yellowedge	0	0	0	0	0	0	0	0	0	0	4,787	435
Grouper, gag	0	0	0	0	0	0	0	0	847	290	2,658	345
Snapper, other	0	0	0	0	0	2,768	0	231	108	172	0	298
Grouper, other	0	0	0	161	535	1,520	529	0	0	0	57	255
Amberjacks	31	0	0	38	0	0	0	0	1,099	124	1,478	252
Grunts	0	0	0	0	0	0	0	1,773	0	0	0	161
Triggerfish	89	0	0	0	0	0	4	3	593	511	461	151
Grouper, scamp	0	0	0	0	0	0	0	0	506	0	667	107
Snapper, gray (mangrove)	7	456	0	0	0	0	0	0	31	0	182	61
Grouper, warsaw	0	0	0	0	0	0	9	0	0	0	651	60
Snapper, lane	0	0	0	0	0	0	0	0	478	0	0	43
Grouper, snowy	0	0	0	0	0	0	0	0	0	0	392	36
Tilefish	90	0	0	0	0	0	0	0	0	0	226	29
Tilefish, blueline	0	0	0	0	0	0	0	0	174	0	0	16
Snapper, mixed	0	0	0	0	0	0	0	4	0	24	0	3
Total Reef Fishes	68,783	1,907	2,442	1,938	1,112	5,950	1,261	39,839	50,442	38,536	207,866	38,189
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	0	5,355	168,913	196,507	453	5,069	1,487	0	34,344
Swordfish	547	0	0	0	0	12,586	0	0	1,584	0	0	1,338
Tuna, mixed	146	0	0	0	0	0	6,059	0	0	0	0	564
Dolphin	9	0	0	0	0	254	0	0	0	14	41	29
Wahoo	0	0	0	0	0	0	126	0	0	0	0	11
Total Oceanic Pelagic Fishes	701	0	0	0	5,355	181,752	202,692	453	6,653	1,502	41	36,286
OTHER FISHES												
Misc. Industrial Fish	16,266	79,920	0	164,507	676,469	385,600	882,032	788,619	609,822	1,022,469	407,486	457,563
Misc. Food Fish	549	2,036	637	3,835	1,689	107,048	46,195	429,495	111,395	119,573	405,839	111,663

Table C.20. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Eels	0	0	0	0	0	340	0	0	0	10	0	32
Total Other Fishes	16,816	81,956	637	168,342	678,158	492,987	928,227	1,218,114	721,217	1,142,053	813,325	569,257
TOTAL FISHES	1,047,045	887,977	682,750	2,577,688	2,989,827	3,103,948	3,993,534	3,159,385	2,284,322	2,957,306	2,836,185	2,410,906
INVERTEBRATES												
Crabs												
Crab, blue (soft)	0	0	0	1,988	0	0	0	0	0	0	0	181
Crab, blue (hard)	71	179	64	11	44	113	59	9	0	76	761	126
Crab, small	0	0	0	0	0	0	401	0	0	0	0	36
Total Crabs	71	179	64	1,999	44	113	460	9	0	76	761	343
Lobsters												
Lobster, Spanish	623	8,828	42,989	0	0	0	3,609	0	440	1,288	0	5,252
Lobster, spiny	0	0	0	0	551	0	0	0	0	0	0	50
Total Lobsters	623	8,828	42,989	0	551	0	3,609	0	440	1,288	0	5,303
Oysters												
Oysters	84,861	79,655	30,546	34,333	54,249	51,132	15,478	78,857	24,752	7,974	3,249	42,280
Total Oysters	84,861	79,655	30,546	34,333	54,249	51,132	15,478	78,857	24,752	7,974	3,249	42,280
Other Invertebrates												
Scallops, calico	0	0	0	0	0	669,182	5,163,854	0	0	0	935,160	615,291
Clams, hard, ungraded	46,569	398,080	242,758	0	12,819	42,223	0	68,641	525,160	441,375	183,004	178,239
Clams, hard, topneck	0	0	0	0	16,272	28,024	0	33,891	111,134	66,057	25,771	25,559
Scallops, bay	46,049	19,757	0	0	0	0	416	602	0	645	0	6,133
Squid	545	891	279	1,009	145	1,463	564	5,595	797	2,290	6,363	1,813
Clams, hard, chowder	0	0	0	0	0	9	0	661	2,481	1,417	284	441
Clams, hard, littleneck	0	0	0	0	800	1,634	0	281	92	12	10	257
Clams, hard, middleneck	0	0	0	0	0	59	0	278	1,256	591	289	225
Total Other Invertebrates	93,163	418,728	243,037	1,009	30,036	742,595	5,164,834	109,949	640,920	512,387	1,150,882	827,958

Table C.20. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimps												
Shrimp, saltwater	1,032,700	1,113,441	915,272	0	0	0	0	0	0	0	0	278,310
Shrimp, pink	0	0	0	584,729	90,239	417,069	7,995	157,623	363,467	112,705	127,324	169,196
Shrimp, white	0	0	0	432,370	225,867	276,233	86,220	108,493	34,249	77,406	15,659	114,227
Shrimp, brown	0	0	0	218,451	426,441	133,673	201,511	159,547	10,981	27,534	26,853	109,545
Shrimp, other	0	0	0	2,060	312	0	0	453	0	141,548	307,198	41,052
Shrimp, rock	3,416	32,715	4,529	1,852	1,808	18,959	1,056	60,116	5,056	254,982	34,905	38,127
Shrimp, bait	0	0	0	0	301	0	936	208	2,480	7,078	5,340	1,486
Total Shrimps	1,036,117	1,146,156	919,800	1,239,462	744,969	845,934	297,717	486,439	416,233	621,253	517,280	751,942
TOTAL INVERTEBRATES	1,214,834	1,653,545	1,236,437	1,276,803	829,848	1,639,773	5,482,099	675,253	1,082,345	1,142,978	1,672,171	1,627,826
GULF COUNTY TOTAL	2,261,878	2,541,522	1,919,187	3,854,490	3,819,674	4,743,722	9,475,633	3,834,638	3,366,667	4,100,283	4,508,356	4,038,732

Table C.21. Total dollar value of commercial landings by species group for Okaloosa County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Scad, round (cigarfish)	63,965	31,795	22,336	20,080	104,640	80,752	159,549	46,846	166,431	121,601	140,584	87,144
Sardines, Spanish	7,342	0	1,578	27,440	38,507	26,320	33,732	45,000	46,796	24,254	18,142	24,465
Menhaden (pogies)	0	0	11,688	23,315	10,698	36,268	20,001	4,183	297	5,477	477	10,218
Herring, thread	537	18,269	12	0	2	7	960	642	2,936	90	0	2,132
Baitfish	0	0	0	0	490	2,331	731	274	43	228	340	403
Scad, bigeye	0	0	0	0	1,536	4	6	0	0	0	0	140
Ballyhoo	0	0	0	9	0	0	0	0	0	0	0	1
Total Baitfishes	71,845	50,064	35,614	70,844	155,872	145,681	214,978	96,945	216,502	151,649	159,543	124,503
COASTAL PELAGIC FISHES												
Ladyfish	72,203	55,507	44,721	29,598	61,740	102,608	105,121	165,387	116,397	253,026	314,583	120,081
Blue Runner	46,475	38,466	75,674	11,799	72,985	86,518	73,840	66,345	51,344	55,204	182,079	69,157
Jack, crevalle	32,190	407	17,494	46,308	30,540	12,610	57,388	142,516	28,502	16,084	27,099	37,376
Shark	0	0	0	14,748	31,812	23,361	52,347	114,646	58,874	61,802	46,835	36,766
Cobia	6,739	7,065	13,286	11,458	9,381	16,178	24,433	25,128	14,119	31,620	46,765	18,743
Mackerel, Spanish	22,822	18,375	15,107	10,481	10,819	15,071	344	1,283	27,650	8,793	25,074	14,165
Pompano	6,807	6,964	10,635	2,124	16,720	16,939	3,939	9,739	18,909	18,250	14,298	11,393
Mackerel, king	2,445	4,288	2,470	1,224	2,763	5,679	1,082	7,028	18,090	26,134	49,366	10,961
Bluefish	10,605	5,762	17,092	6,027	11,013	13,124	7,207	9,033	10,198	7,380	5,016	9,314
Shark fins	0	0	0	0	39	0	754	2,758	2,777	40,274	48,850	8,677
Tunny, little (bonito)	324	31	6,843	537	2,275	7,300	9,251	8,628	10,570	26,634	2,246	6,785
Shark, mixed	14,995	12,913	25,231	0	0	0	0	0	0	0	0	4,831
Jacks, other	0	0	0	0	24	0	800	71	35	296	1,414	240
Jacks, mixed	0	0	0	0	0	0	26	0	40	58	26	14
Permit	0	0	0	0	0	60	0	0	0	29	0	8
Total Coastal Pelagic Fishes	215,605	149,778	228,555	134,304	250,111	299,449	336,533	552,561	357,504	545,583	763,650	348,512

Table C.21. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	39,517	36,196	38,558	54,868	32,009	52,072	50,854	48,023	69,122	64,098	78,267	51,235
Seatrout, spotted	6,304	12,454	13,179	14,612	17,448	23,343	23,402	17,407	17,283	5,442	12,087	14,815
Flounders	20,871	10,261	7,167	12,003	18,570	13,650	10,153	11,975	22,171	16,631	17,393	14,622
Croaker	21,089	7,405	3,466	401	199	95	70	832	329	305	46	3,112
Mullet, silver	42	0	478	12,119	7,950	2,855	3,715	2,224	1,712	1,375	202	2,970
Drum, red	12,655	5,052	10,416	980	329	0	0	0	0	0	0	2,676
Kingfish (whiting)	13,579	4,584	127	151	83	52	1,153	104	806	1,748	359	2,068
Seatrout, silver	6,161	6,716	4,839	129	117	23	9	7	1,024	1,221	113	1,851
Drum, black	4,293	5,524	43	451	435	500	70	490	1,566	1,107	980	1,405
Catfish	0	0	0	593	1,725	1,074	472	0	5	0	1,634	500
Seatrout, sand	0	0	0	458	388	677	767	356	352	944	653	418
Spot	39	227	88	392	500	131	337	217	101	114	255	218
Mullet, black (roe)	0	0	0	0	0	0	0	0	269	0	814	98
Seatrout, weakfish	0	0	0	42	181	259	0	0	0	7	0	44
Mojarra	0	0	436	0	0	0	0	0	0	0	0	40
Sand perch	0	0	0	0	200	0	0	0	0	0	0	18
Sea bass, mixed	0	33	0	0	0	2	0	0	16	9	6	6
Total Demersal Fishes	124,550	88,450	78,797	97,198	80,134	94,732	91,001	81,635	114,753	92,999	112,811	96,096
REEF FISHES												
Snapper, red	1,362,690	1,180,053	1,013,101	804,294	561,570	672,413	495,410	472,905	358,357	445,110	279,481	695,035
Snapper, vermilion	102,503	144,808	214,945	179,596	98,743	125,050	303,085	535,104	673,809	1,188,304	1,398,320	451,297
Grouper, mixed	431,663	701,134	974,153	12,154	16,469	17,109	22,581	7,480	3,007	1,872	4,970	199,327
Amberjacks	37,805	93,084	435,916	92,514	161,512	245,668	236,304	87,233	35,084	71,812	81,406	143,485
Grouper, yellowedge	0	0	0	265,823	278,087	281,053	171,824	103,501	51,554	95,725	64,808	119,307
Tilefish	180,748	157,840	136,184	170,995	136,270	202,637	84,158	32,293	3,809	18,720	12,093	103,250
Porgies	0	0	0	19,875	43,565	89,991	79,088	93,655	81,537	85,874	154,025	58,874

Table C.21. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Snapper, other	0	0	0	88,590	219,907	270,877	16,186	8,780	6,501	3,445	2,625	56,083
Grouper, gag	0	0	0	77,331	34,901	31,925	33,008	23,678	60,342	69,245	79,427	37,260
Grouper, scamp	0	0	0	49,376	46,568	42,745	59,414	36,450	41,024	37,384	47,436	32,763
Triggerfish	4,743	6,516	8,314	7,928	6,160	20,060	32,175	52,042	58,037	75,410	79,832	31,929
Grouper, black	0	0	0	17,311	42,703	77,952	39,197	41,895	29,068	0	0	22,557
Grouper, yellowfin	0	0	0	120,482	32,607	1,243	0	843	1,074	372	515	14,285
Grouper, snowy	0	0	0	210	11,568	18,982	9,393	4,149	8,725	22,016	25,671	9,156
Grouper, warsaw	0	0	0	21,962	16,548	18,014	14,005	5,573	5,904	5,771	3,539	8,301
Snapper, gray (mangrove)	1,771	1,136	27,260	2,403	3,051	8,957	2,614	4,751	16,558	2,837	3,690	6,821
Sheepshead	16,687	10,936	3,311	1,569	1,375	1,447	1,028	1,878	1,678	2,633	1,927	4,043
Grouper, red	0	0	0	2,248	641	1,347	1,783	2,462	9,220	6,229	19,673	3,964
Grouper, other	0	0	0	7,275	1,010	6,271	13,635	2,153	3,282	1,110	420	3,196
Snapper, mixed	0	0	0	4,760	427	3,300	10,854	431	4,982	1,552	488	2,436
Snapper, silk	0	0	0	10,028	4,620	1,678	401	954	198	2,149	3,577	2,146
Snapper, lane	90	220	7,125	2,510	246	964	294	329	662	3,671	1,963	1,643
Tilefish, blueline	0	0	0	995	1,280	1,778	1,858	1,501	2,202	2,865	2,032	1,319
Snapper, mutton	0	0	1,421	309	3,961	347	210	76	6,128	76	325	1,168
Jewfish	14	0	0	86	386	176	0	58	0	0	0	65
Grouper, Nassau	0	0	0	235	190	75	0	0	0	37	18	51
Snapper, yellowtail	0	0	0	354	0	27	0	0	0	127	27	49
Angelfish	3	0	141	0	0	0	0	0	0	0	0	13
Hogfish	0	0	0	0	0	0	36	0	0	0	0	3
Tripletail	0	28	0	0	0	0	0	0	0	0	0	3
Total Reef Fishes	2,138,718	2,295,754	2,821,872	1,961,214	1,724,364	2,142,087	1,628,543	1,520,176	1,462,740	2,144,348	2,268,286	2,009,828
OCEANIC PELAGIC FISHES												
Swordfish	44,369	16,383	205,923	249,562	553,497	608,839	749,056	627,459	225,985	6,752	146,308	312,194
Tuna, yellowfin	0	0	0	917,183	275,195	143,333	83,779	169,316	30,964	110,790	156,892	171,586

Table C.21. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Dolphin	2,388	4,167	21,235	10,820	7,180	11,563	9,852	73,722	19,396	23,009	10,490	17,620
Tuna, bluefin	0	0	0	107,841	11,292	0	5,215	1,300	1,378	1,073	0	11,645
Wahoo	1,102	1,485	3,925	2,440	4,807	3,617	3,887	12,484	7,647	7,185	4,544	4,829
Tuna, blackfin	0	0	0	3,031	1,859	3,391	4,133	3,836	1,618	2,672	8,389	2,630
Tuna, bigeye	0	0	0	2,190	719	1,997	12,766	1,138	1,623	156	1,144	1,976
Marlin, white	0	0	0	5,100	7,940	0	0	0	0	0	0	1,185
Tuna, mixed	599	440	8,963	79	0	112	417	7	644	0	1,327	1,144
Marlin, blue	0	0	0	3,676	5,348	0	0	0	0	0	0	820
Tuna, skipjack	0	0	0	0	19	15	33	84	0	0	14	15
Total Oceanic Pelagic Fishes	48,458	22,474	240,046	1,301,921	867,856	772,867	869,137	889,346	289,255	151,637	329,108	525,646
OTHER FISHES												
Misc. Industrial Fish	1,253	3,937	2,792	9	0	16,738	18,384	54,066	3,674	44,948	14,807	14,601
Misc. Food Fish	1,548	2,625	11,043	909	1,236	6,084	3,690	12,872	12,093	5,061	5,916	5,734
Eels	275	1,231	581	1,222	2,118	2,099	727	635	434	325	278	902
Total Other Fishes	3,076	7,794	14,416	2,140	3,354	24,921	22,801	67,577	16,201	50,334	21,001	21,238
TOTAL FISHES	2,602,252	2,614,314	3,419,299	3,567,622	3,081,691	3,479,737	3,162,993	3,208,240	2,456,956	3,136,549	3,654,399	3,125,823
INVERTEBRATES												
Crabs												
Crab, blue (hard)	3,870	8,154	6,747	6,775	3,952	9,973	8,475	13,913	17,568	5,587	22,877	9,808
Crab, small	0	0	0	10,816	351	0	0	0	0	0	0	1,015
Crab, jumbo	0	0	0	0	0	0	580	0	0	0	0	53
Crab, blue (soft)	0	0	0	47	27	0	138	40	94	0	0	31
Crab, medium	0	0	0	0	0	312	0	0	0	0	0	28
Total Crabs	3,870	8,154	6,747	17,637	4,330	10,285	9,193	13,953	17,663	5,587	22,877	10,936

Table C.21. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Lobsters												
Lobster, spiny	0	0	1,186	11,526	247	149	0	0	0	0	299	1,219
Lobster, Spanish	0	889	75	634	898	40	3,491	0	462	1,806	2,640	994
Total Lobsters	0	889	1,261	12,160	1,145	188	3,491	0	462	1,806	2,939	2,213
Oysters												
Oysters	47	1,818	267	328	75	2,713	46	0	109	0	0	491
Total Oysters	47	1,818	267	328	75	2,713	46	0	109	0	0	491
Other Invertebrates												
Scallops, bay	354	251	1,549	0	0	5,354	864	0	0	0	0	761
Squid	207	151	270	548	425	604	195	881	304	1,122	1,101	528
Octopus	0	0	2	16	0	64	260	82	54	346	122	86
Misc. Invertebrates	0	0	0	0	0	0	0	0	0	0	65	6
Total Other Invertebrates	561	402	1,821	564	425	6,022	1,319	963	358	1,468	1,288	1,381
Shrimps												
Shrimp, saltwater	2,213,943	1,257,863	989,056	0	0	0	0	0	0	0	0	405,533
Shrimp, brown	0	0	0	750,413	547,019	763,849	441,068	424,076	437,871	476,949	310,300	377,413
Shrimp, white	0	0	0	317,714	295,168	200,584	124,485	147,423	115,372	119,542	70,189	126,407
Shrimp, other	0	0	0	18,467	974	29	3,093	31,459	16,089	34,267	18,136	11,138
Shrimp, rock	1,972	487	112	1,193	2,994	14,513	4,306	6,831	4,486	7,020	1,142	4,096
Shrimp, pink	0	0	0	5,811	1,333	420	10,344	8,457	7,802	0	0	3,106
Shrimp, bait	0	0	0	2,221	5,431	6,286	4,644	2,700	1,078	125	0	2,044
Total Shrimps	2,215,916	1,258,350	989,168	1,095,819	852,919	985,680	587,941	620,946	582,700	637,903	399,767	929,737
TOTAL INVERTEBRATES	2,220,394	1,269,614	999,264	1,126,509	858,893	1,004,887	601,990	635,862	601,291	646,764	426,872	944,758
OKALOOSA COUNTY TOTAL	4,822,647	3,883,929	4,418,563	4,694,131	3,940,584	4,484,624	3,764,983	3,844,101	3,058,247	3,783,313	4,081,270	4,070,581

Table C.22. Total dollar value of commercial landings by species group for Santa Rosa County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Menhaden (pogies)	0	0	0	11,204	62,338	131,777	321,611	133,345	305,976	94,750	60,314	101,938
Scad, round (cigarfish)	0	0	0	13,430	13,344	9,876	1,637	22,003	34,974	74,412	98,373	24,368
Baitfish	0	0	0	6,253	1,579	2,074	1,011	1,505	765	33	34	1,205
Sardines, Spanish	0	0	0	3,381	2,010	1,736	87	1,263	3,017	611	892	1,181
Herring, thread	0	0	0	410	0	0	30	0	1,148	313	121	184
Ballyhoo	0	0	0	202	13	0	19	58	0	0	156	41
Scad, bigeye	0	0	0	1	2	0	0	0	0	0	47	5
Total Baitfishes	0	0	0	34,881	79,286	145,463	324,394	158,174	345,879	170,120	159,936	128,921
COASTAL PELAGIC FISHES												
Blue runner	2	0	0	0	435	115	459	27,789	17,965	9,307	36,477	8,414
Ladyfish	0	0	0	3,336	605	0	238	924	4,500	7,186	30,713	4,318
Mackerel, Spanish	1,303	505	1,955	746	6,916	8,092	4,239	9,685	1,750	7,594	657	3,949
Shark	0	0	0	270	346	662	1,426	13,011	21,166	5,657	399	3,903
Pompano	481	530	1,904	2,110	3,537	1,640	2,140	3,065	7,691	8,471	5,203	3,343
Cobia	5	37	480	195	285	1,714	2,358	3,703	1,691	4,717	7,730	2,083
Mackerel, king	46	164	514	365	263	618	230	1,260	4,252	7,655	6,879	2,022
Tunny, little (bonito)	0	1	1	5	289	63	42	967	2,348	1,617	15,351	1,880
Shark fins	0	0	0	0	942	0	61	1,510	11,742	2,043	0	1,482
Bluefish	81	390	19	2,777	2,786	394	1,890	1,619	819	803	369	1,086
Jack, crevalle	0	0	0	0	0	2	25	2,868	176	5,229	46	759
Jacks, other	0	0	0	0	20	0	303	290	148	161	53	89
Shark, mixed	195	81	288	0	0	0	0	0	0	0	0	51
Jacks, mixed	0	0	0	0	13	0	0	0	33	0	9	5
Total Coastal Pelagic	2,113	1,709	5,159	9,803	16,435	13,299	13,412	66,690	74,280	60,440	103,886	33,384

Table C.22. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	110,180	111,443	91,356	199,939	163,920	147,296	180,878	96,736	122,255	169,068	117,457	137,321
Seatrout, spotted	34,549	42,100	26,564	46,563	65,101	40,314	46,643	13,794	12,477	9,522	10,873	31,682
Croaker	32,030	35,681	48,564	25,781	17,658	3,847	2,442	851	1,234	1,261	1,271	15,511
Spot	5,017	4,554	6,404	13,701	12,308	5,982	4,102	2,302	1,610	2,007	1,784	5,434
Flounders	2,127	3,065	3,664	6,113	2,612	2,034	1,831	1,369	11,464	7,783	2,095	4,014
Seatrout, silver	11,982	12,012	10,275	29	23	7	2	199	99	649	64	3,213
Seatrout, sand	0	0	0	10,846	7,859	2,844	370	1,325	625	898	1,518	2,390
Mullet, silver	4,103	5,308	426	353	673	2,191	1,964	3,335	2,235	3,052	2,259	2,354
Drum, black	24	126	386	182	1,929	2,363	979	219	623	803	323	724
Mullet, black (roe)	0	0	0	0	0	0	0	0	929	6,072	0	636
Drum, red	1,133	2,350	1,554	1,221	54	0	0	0	0	0	0	574
Seatrout, weakfish	0	0	0	162	2,807	18	0	0	0	0	0	272
Kingfish (whiting)	123	381	0	17	5	2	188	166	52	50	17	91
Catfish	0	0	0	373	224	15	14	4	2	32	191	78
Sea bass, mixed	16	0	0	125	0	0	0	0	65	0	2	19
Sturgeon	1	66	0	0	0	0	0	0	0	0	0	6
Pinfish	0	0	0	0	0	0	0	0	3	49	0	5
Mojarra	0	0	0	29	0	0	0	0	0	0	0	3
Rays	0	0	0	0	1	3	0	9	0	0	0	1
Total Demersal Fishes	201,285	217,085	189,193	305,434	275,175	206,917	239,414	120,309	153,674	201,243	137,853	204,326
REEF FISHES												
Snapper, red	14,291	10,506	13,850	12,607	11,734	23,125	38,840	90,325	42,432	72,270	54,209	34,926
Grouper, yellowedge	0	0	0	47	75	5,690	13,381	88,050	71,918	61,633	26,335	24,284
Snapper, vermilion	11,026	4,318	4,935	12,339	6,977	8,666	21,968	28,659	41,728	56,597	69,835	24,277
Triggerfish	1,185	906	1,443	958	656	5,406	13,906	42,581	28,264	23,118	26,861	13,208
Amberjacks	830	580	12,371	2,684	6,616	15,756	34,810	10,446	6,433	9,348	16,920	10,618

Table C.22. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Tilefish	54	190	249	52	18	4,528	2,159	14,754	5,699	23,482	40,511	8,336
Grouper, mixed	2,633	1,687	48,697	431	2,565	290	1	3,048	0	255	2,353	5,633
Porgies	0	0	0	993	453	3,219	3,366	8,880	5,074	4,525	13,322	3,621
Grouper, gag	0	0	0	155	75	2,002	4,928	5,380	2,427	3,144	11,721	2,712
Grouper, snowy	0	0	0	13	0	40	1,047	13,534	660	2,824	3,382	1,955
Sheepshead	1,691	356	243	1,739	1,101	1,047	5,301	2,954	3,407	1,277	1,787	1,900
Snapper, other	0	0	0	4,945	2,555	4,105	3,682	262	228	121	72	1,452
Snapper, gray (mangrove)	812	251	1,430	231	3,941	1,836	2,029	1,280	1,526	914	594	1,349
Grouper, scamp	0	0	0	735	299	696	1,527	1,927	2,283	2,032	5,341	1,349
Snapper, mixed	0	0	0	2,291	2,168	3,431	1,940	204	0	0	13	913
Grouper, black	0	0	0	5,105	1,478	1,989	977	61	128	0	0	885
Grouper, red	0	0	0	14	38	15	375	2,566	0	0	3,983	636
Snapper, silk	0	0	0	3,473	1,141	0	4	4	11	1,223	0	532
Grouper, warsaw	0	0	0	4	0	55	280	2,369	1,727	609	314	487
Snapper, mutton	0	0	0	39	52	94	1,783	515	11	75	5	234
Hogfish	0	0	0	0	0	0	0	0	0	1,820	294	192
Snapper, lane	0	0	10	13	12	0	190	191	319	678	684	191
Grouper, other	0	0	0	9	18	9	768	32	435	0	6	116
Grouper, Nassau	0	0	0	413	0	0	0	205	0	0	0	56
Tilefish, blueline	0	0	0	41	37	32	59	45	62	55	126	41
Snapper, yellowtail	38	0	0	62	0	0	15	0	0	193	0	28
Grunts	0	2	0	1	1	128	0	0	12	14	0	14
Grouper, yellowfin	0	0	0	80	0	0	0	53	0	0	2	12
Jewfish	0	0	0	0	0	0	0	19	0	0	0	2
Total Reef Fishes	32,564	18,797	83,228	49,472	42,010	82,159	153,337	318,344	214,785	266,206	278,669	139,961

Table C.22. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
OCEANIC PELAGIC FISHES												
Tuna, yellowfin	0	0	0	220	0	880	7,813	9,884	7,250	9,803	14,514	4,579
Dolphin	10	277	133	156	130	414	1,147	13,691	1,040	1,903	2,051	1,905
Wahoo	16	0	70	0	127	265	182	2,699	2,069	2,107	982	774
Swordfish	0	0	2,080	0	0	123	1,343	2,693	1,996	146	0	762
Tuna, blackfin	0	0	0	65	29	248	226	677	263	1,317	271	281
Tuna, bluefin	0	0	0	0	0	0	503	0	336	0	0	76
Tuna, skipjack	0	0	0	0	492	0	0	0	28	0	0	47
Tuna, bigeye	0	0	0	59	0	0	0	210	0	0	0	24
Total Oceanic Pelagic	26	277	2,283	500	778	1,929	11,213	29,855	12,982	15,276	17,819	8,449
OTHER FISHES												
Misc. Industrial Fish	0	0	0	17,107	0	260	0	6,212	100	7,935	1,372	2,999
Misc. Food Fish	547	136	110	1,343	211	251	864	4,709	3,502	1,896	11,205	2,252
Eels	0	0	12	224	0	2	110	4	229	0	0	53
Total Other Fishes	547	136	122	18,673	211	513	974	10,925	3,831	9,831	12,576	5,304
TOTAL FISHES	236,535	238,005	279,986	418,762	413,895	450,278	742,744	704,297	805,431	723,116	710,740	520,344
INVERTEBRATES												
Crabs												
Crab, blue (hard)	3,907	4,233	14,120	57,931	75,911	64,054	42,842	36,415	127,775	41,004	160,516	57,155
Crab, medium	0	0	0	0	0	0	0	2,135	0	0	0	194
Crab, large	0	0	0	1,435	0	0	0	0	0	0	0	130
Crab, blue (soft)	0	0	0	0	130	0	24	358	50	611	90	115
Crab, small	0	0	0	0	495	0	0	0	0	0	0	45
Crab, jumbo	0	0	0	342	0	0	0	0	0	0	0	31
Crab, stone, ungraded	6	7	0	276	0	0	0	0	0	0	0	26
Total Crabs	3,913	4,240	14,120	59,985	76,536	64,054	42,866	38,908	127,825	41,615	160,606	57,697

Table C.22. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Lobsters												
Lobster, spiny	0	0	0	910	0	0	0	0	0	0	0	83
Lobster, Spanish	0	635	19	160	0	0	0	0	0	0	0	74
Total Lobsters	0	635	19	1,070	0	0	0	0	0	0	0	157
Oysters												
Oysters	43,587	38,773	107,153	678,114	114,994	112,898	46,118	0	28,896	116,646	88,001	125,016
Total Oysters	43,587	38,773	107,153	678,114	114,994	112,898	46,118	0	28,896	116,646	88,001	125,016
Other Invertebrates												
Clams, hard, ungraded	0	0	0	2,370	0	0	0	0	0	0	0	215
Squid	20	4	0	609	3	21	113	71	169	431	190	148
Octopus	0	0	0	0	64	77	0	0	0	0	0	13
Total Other Invertebrates	20	4	0	2,979	67	97	113	71	169	431	190	377
Shrimps												
Shrimp, brown	0	0	0	21,089	3,970	28,146	38,405	18,364	17,981	60,313	60,133	22,582
Shrimp, saltwater	19,325	23,579	21,976	0	0	0	0	0	0	0	0	5,898
Shrimp, other	0	0	0	0	0	536	860	10,808	20,483	7,553	18,440	5,334
Shrimp, white	0	0	0	10,765	8,736	261	8,397	10,676	1,049	6,805	6,419	4,828
Shrimp, rock	0	26	0	0	0	13	0	0	0	494	0	48
Shrimp, pink	0	0	0	225	0	0	284	0	0	0	0	46
Total Shrimps	19,325	23,605	21,976	32,079	12,706	28,958	47,946	39,847	39,512	75,164	84,992	38,737
TOTAL INVERTEBRATES	66,846	67,256	143,269	774,228	204,302	206,007	137,044	78,827	196,402	233,856	333,789	221,984
SANTA ROSA COUNTY TOTAL	303,381	305,262	423,254	1,192,990	618,197	656,286	879,788	783,124	1,001,833	956,972	1,044,529	742,329

Table C.23. Total dollar value of commercial landings by species group for Wakulla County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
BAITFISHES												
Baitfish	0	0	0	8,775	117	492	5,085	11,554	16,888	5,434	6,396	4,977
Menhaden (pogies)	0	0	0	83	65	6,133	1,850	1,634	1,990	307	242	1,119
Sardines, Spanish	0	0	0	0	0	0	0	0	0	1,151	0	105
Scad, bigeye	0	0	0	7	0	0	12	4	0	0	0	2
Total Baitfishes	0	0	0	8,865	183	6,625	6,946	13,194	18,878	6,892	6,638	6,202
COASTAL PELAGIC FISHES												
Mackerel, Spanish	266	9	0	42	2,277	771	6,330	22,714	17,316	14,696	775	5,927
Pompano	0	1,465	0	29	2,228	8,284	7,259	11,489	2,093	7,221	673	3,704
Jack, crevalle	0	0	0	31	11,654	2,960	922	2,158	5,118	3,363	9,106	3,210
Shark	0	0	0	282	2,247	978	3,320	14,016	10,100	134	20	2,827
Jacks, mixed	0	0	0	14	2,696	2,753	85	850	0	662	9	643
Bluefish	0	0	0	113	108	160	918	2,477	1,012	1,980	125	627
Blue runner	0	0	0	2	2	21	653	444	490	2,745	317	425
Cobia	0	0	0	0	9	0	1,057	506	728	734	695	339
Mackerel, king	0	0	0	0	2	39	10	247	0	104	723	102
Jacks, other	0	0	0	0	0	0	0	9	831	107	0	86
Permit	0	0	0	0	19	0	1	0	492	42	121	61
Shark, mixed	0	651	0	0	0	0	0	0	0	0	0	59
Shad (common)	0	0	0	0	8	0	184	0	0	0	0	17
Shark fins	0	0	0	0	19	0	0	0	0	0	50	6
Tunny, little (bonito)	0	0	0	0	0	0	42	0	0	0	0	4
Ladyfish	0	0	0	0	0	3	0	19	0	0	0	2
Total Coastal Pelagic Fishes	266	2,125	0	513	21,269	15,969	20,782	54,929	38,180	31,788	12,612	18,039
DEMERSAL FISHES												
Mullet, black	40,329	22,647	29,483	137,111	225,021	242,049	385,892	300,600	262,187	693,793	801,946	285,551
Seatrout, spotted	11,743	3,069	4,959	19,187	30,323	36,001	19,458	23,366	26,628	18,374	22,551	19,605

Table C.23. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Sea bass, mixed	299	1,229	37	213	1,249	6,277	17,443	44,406	69,462	16,121	12,123	15,351
Flounders	955	912	584	453	2,785	10,844	8,688	9,142	10,154	16,641	9,880	6,458
Spot	406	1,143	789	1,264	2,169	1,382	5,310	10,110	6,630	21,335	13,373	5,810
Drum, red	2,214	20,156	868	1,059	2,721	0	0	0	0	0	0	2,456
Croaker	629	2,369	1,872	1,112	1,797	844	431	5,282	1,605	3,020	3,484	2,040
Drum, black	0	17,001	0	7	66	197	25	17	245	450	11	1,638
Kingfish (whiting)	0	53	0	381	760	80	360	2,578	647	11,009	1,430	1,573
Mullet, silver	358	0	1,613	0	116	0	528	478	1,337	1,789	408	602
Seatrout, sand	0	0	0	15	89	64	321	385	1,118	2,115	1,138	477
Seatrout, silver	0	0	0	29	0	1	9	2	80	158	10	26
Catfish	0	0	0	0	0	16	205	0	5	4	0	21
Seatrout, weakfish	0	0	0	31	7	50	0	0	0	0	0	8
Mullet, black (roe)	0	0	0	0	0	0	72	0	0	0	0	7
Sand perch	0	0	0	15	0	0	0	49	0	4	0	6
Mojarra	0	0	0	0	0	0	0	0	0	38	0	3
Total Demersal Fishes	56,933	68,578	40,203	160,877	267,103	297,806	438,746	396,414	380,099	784,851	866,356	341,633
REEF FISHES												
Grouper, red	0	0	0	70	734	1,782	45,408	97,570	83,642	133,981	225,763	53,541
Grouper, gag	0	0	0	0	121	5,853	30,758	75,999	55,607	136,741	181,074	44,196
Grunts	311	549	660	180	735	5,909	17,777	64,186	78,109	60,556	30,932	23,627
Grouper, black	0	0	0	7,199	3,528	5,850	85,768	100,512	37,654	0	0	21,865
Snapper, vermilion	0	0	0	0	0	121	92	0	5,971	31,422	28,948	6,050
Grouper, mixed	2,905	6,820	2,018	43	606	2,147	11,131	9,212	2,596	826	2,646	3,723
Porgies	0	0	0	0	0	90	125	652	3,709	17,389	14,010	3,271
Amberjacks	0	0	0	91	452	1,934	8,824	4,512	7,121	3,339	7,500	3,070
Triggerfish	0	0	13	0	62	0	1,062	1,568	5,496	7,117	7,485	2,073
Snapper, red	1,671	1,663	0	0	9	0	1,931	6,183	4,720	1,333	4,116	1,966

Table C.23. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Snapper, gray (mangrove)	0	194	0	57	215	164	799	2,655	2,726	5,012	3,954	1,434
Grouper, scamp	0	0	0	679	0	0	25	2,122	1,502	731	7,132	1,108
Sheepshead	307	58	0	168	219	389	1,462	366	1,233	4,703	759	879
Hogfish	0	0	0	0	0	0	801	2,264	885	2,062	1,449	678
Snapper, other	0	0	0	0	17	0	1,594	246	532	589	134	283
Snapper, mixed	0	0	0	0	0	558	57	220	420	138	1,023	220
Snapper, lane	0	0	0	0	0	0	15	8	676	332	1,177	201
Grouper, other	0	0	0	0	0	0	289	0	779	7	82	105
Snapper, mutton	0	0	0	0	0	13	12	228	0	3	573	75
Snapper, silk	0	0	0	0	0	7	0	0	0	0	321	30
Tilefish	0	0	0	0	0	0	14	28	43	0	0	8
Jewfish	58	0	0	0	0	0	0	0	0	0	0	5
Tilefish, blueline	0	0	0	0	0	0	0	0	0	0	30	3
Total Reef Fishes	5,251	9,284	2,691	8,487	6,697	24,816	207,943	368,531	293,420	406,283	519,107	168,410
OCEANIC PELAGIC FISHES												
Dolphin	0	0	0	0	0	0	309	176	295	161	300	113
Tuna, yellowfin	0	0	0	0	0	0	0	186	0	0	0	17
Wahoo	0	0	0	0	0	0	0	20	0	31	72	11
Tuna, bigeye	0	0	0	0	0	0	0	0	0	0	95	9
Tuna, blackfin	0	0	0	0	0	0	0	30	11	20	0	6
Total Oceanic Pelagic Fishes	0	0	0	0	0	0	309	411	306	212	467	155
OTHER FISHES												
Misc. Food Fish	1,650	2,522	636	11	151	79	1,933	1,048	1,825	998	4,999	1,441
Misc. Industrial Fish	206	25	46	0	0	43	221	0	0	39	378	87
Tilapia	0	0	0	0	0	0	0	0	0	0	451	41

Table C.23. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Eels	0	0	0	0	80	0	0	0	0	0	6	8
Total Other Fishes	1,857	2,546	682	11	231	122	2,154	1,048	1,825	1,037	5,834	1,577
TOTAL FISHES	64,306	82,532	43,577	178,754	295,483	345,337	676,878	834,527	732,708	1,231,063	1,411,014	536,016
INVERTEBRATES												
Crabs												
Crab, blue (hard)	413,831	452,200	683,127	528,079	564,672	446,019	399,318	405,577	331,507	663,780	694,308	507,493
Crab, large	0	0	0	172,912	220,720	228,684	162,300	308,413	202,662	130,416	239,420	151,412
Crab, stone, ungraded	156,243	85,225	107,527	2,445	246,247	316,129	93,953	139,178	153,711	113,929	116,063	139,150
Crab, medium	0	0	0	190,365	209,994	237,806	167,133	126,601	90,608	65,358	131,786	110,877
Crab, jumbo	0	0	0	0	7,547	0	1,015	0	0	757	0	847
Crab, small	0	0	0	0	0	0	0	35	34	1,112	0	107
Crab, blue (soft)	0	0	0	0	80	10	10	338	5	107	216	70
Total Crabs	570,075	537,426	790,653	893,801	1,249,261	1,228,648	823,729	980,142	778,527	975,460	1,181,793	909,956
Lobsters												
Lobster, Spanish	405	2,374	50,391	0	0	0	0	136	4	0	0	4,846
Total Lobsters	405	2,374	50,391	0	0	0	0	136	4	0	0	4,846
Oysters												
Oysters	18,345	44,610	86,796	376,848	202,399	89,886	121,878	108,648	199,184	54,461	54,849	123,446
Total Oysters	18,345	44,610	86,796	376,848	202,399	89,886	121,878	108,648	199,184	54,461	54,849	123,446
Other Invertebrates												
Scallops, bay	0	1,670	1,696	0	0	34,344	11,968	150	0	0	0	4,530
Octopus	0	0	0	0	0	85	460	698	4,040	1,463	3,934	971
Clams, hard, littleneck	0	0	0	0	0	0	0	0	0	0	398	36
Squid	22	91	0	0	0	0	132	0	49	76	24	36
Misc. Invertebrates	0	0	0	0	0	0	0	0	0	0	11	1
Total Other Invertebrates	22	1,761	1,696	0	0	34,429	12,560	849	4,088	1,539	4,368	5,574

Table C.23. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Shrimps												
Shrimp, saltwater	159,043	93,266	9,251	0	0	0	0	0	0	0	0	23,778
Shrimp, brown	0	0	0	641	3,445	2,711.	25,849	35,282	91,403	45,650	22,897	20,716
Shrimp, white	0	0	0	120	0	10,006	24,916	49,609	18,029	29,494	1,162	12,121
Shrimp, pink	0	0	0	7,237	302	270	8,116	7,180	1,845	2,104	3,607	2,787
Shrimp, other	0	0	0	58	0	469	279	7,125	13,423	5,803	1,122	2,571
Shrimp, bait	0	0	0	0	0	0	1,031	10,972	2,043	490	161	1,336
Shrimp, rock	0	0	0	0	0	157	349	289	522	471	536	211
Total Shrimps	159,043	93,266	9,251	8,056	3,747	13,612	60,540	110,457	127,266	84,011	29,485	63,521
TOTAL INVERTEBRATES	747,890	679,436	938,787	1,278,705	1,455,407	1,366,575	1,018,708	1,200,232	1,109,070	1,115,470	1,270,495	1,107,343
WAKULLA COUNTY TOTAL	812,196	761,968	982,364	1,457,459	1,750,890	1,711,912	1,695,586	2,034,759	1,841,778	2,346,533	2,681,509	1,643,359

Table C.24. Total dollar value of commercial landings by species group for Walton County from 1983 to 1993.

Species	83	84	85	86	87	88	89	90	91	92	93	Average
DEMERSAL FISHES												
Mullet, black	1,053	1,113	2,750	3,921	4,098	4,542	6,353	11,960	8,335	7,804	9,046	5,543
Flounders	47	19	768	227	179	2,104	2,189	786	1,270	351	2,868	983
Seatrout, spotted	550	256	1,132	286	587	453	1,288	2,807	1,859	326	616	924
Mullet, silver	109	0	151	570	72	0	501	158	1,011	44	9	239
Seatrout, silver	0	0	0	0	0	32	0	0	248	0	10	26
Spot	0	0	73	0	2	18	49	30	6	0	0	16
Croaker	0	0	119	0	0	2	0	0	0	0	0	11
Drum, black	0	0	0	0	0	0	0	1	9	0	92	9
Seatrout, sand	0	0	0	0	0	34	0	48	1	2	0	8
Drum, red	0	0	57	0	0	0	0	0	0	0	0	5
Catfish	0	0	0	0	37	0	0	0	0	0	0	3
Total Demersal Fishes	1,759	1,388	5,049	5,004	4,975	7,185	10,379	15,789	12,740	8,528	12,641	7,767
REEF FISHES												
Amberjacks	34	0	11,725	8	0	0	0	20	266	0	0	1,096
Snapper, red	0	204	1,591	0	33	0	0	1,035	4,157	0	28	641
Grouper, mixed	0	0	5,152	0	0	0	0	1,305	18	0	0	589
Snapper, mixed	0	0	0	0	1,879	0	0	552	0	0	0	221
Triggerfish	0	0	243	0	5	0	0	288	70	0	0	55
Grouper, gag	0	0	0	0	0	0	13	0	541	0	0	50
Snapper, vermilion	0	0	198	0	0	0	0	20	228	0	0	40
Grouper, scamp	0	0	0	0	0	80	0	194	0	0	0	25
Porgies	0	0	0	0	0	0	0	167	17	0	0	17
Snapper, other	0	0	0	0	85	0	0	51	5	0	0	13
Sheepshead	0	0	49	26	0	0	22	13	15	0	8	12
Grouper, black	0	0	0	0	0	0	0	9	113	0	0	11
Grouper, red	0	0	0	0	0	0	0	70	0	0	0	6

Table C.24. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Snapper, gray (mangrove)	0	0	0	0	0	0	0	50	0	0	0	5
Tilefish	0	0	18	0	0	0	0	0	0	0	0	2
Snapper, mutton	0	0	0	0	0	0	0	15	0	0	0	1
Total Reef Fishes	35	204	18,975	34	2,002	80	35	3,794	5,432	0	36	2,784
OCEANIC PELAGIC FISHES												
Swordfish	0	0	303	0	0	0	0	0	0	0	0	28
Dolphin	0	0	42	0	0	24	0	60	18	0	18	15
Wahoo	0	0	43	0	0	0	0	0	0	0	0	4
Total Oceanic Pelagic Fishes	0	0	388	0	0	24	0	60	18	0	18	46
OTHER FISHES												
Misc. Food Fish	0	0	0	215	3	0	0	0	0	3	0	20
Eels	0	0	0	0	0	0	0	9	0	0	0	1
Total Other Fish	0	0	0	215	3	0	0	9	0	3	0	21
TOTAL FISHES	1,794	1,592	24,769	5,253	6,980	7,295	10,438	19,965	18,658	8,531	12,734	10,728
INVERTEBRATES												
Crabs												
Crab, blue (hard)	9,074	38,682	42,595	278	219	453	498	214	2,462	5,403	15,569	10,495
Crab, blue (soft)	0	0	0	0	0	10	0	0	2	13	31	5
Total Crab	9,074	38,682	42,595	278	219	463	498	214	2,465	5,416	15,601	10,500
Lobsters												
Lobster, Spanish	0	0	0	0	0	0	0	248	20	0	0	24
Total Lobsters	0	0	0	0	0	0	0	248	20	0	0	24
Oysters												
Oysters	19,186	14,071	3,828	11,679	1,391	7,593	4,891	17,728	23,610	9,269	5,928	10,834
Total Oysters	19,186	14,071	3,828	11,679	1,391	7,593	4,891	17,728	23,610	9,269	5,928	10,834

Table C.24. (Continued).

Species	83	84	85	86	87	88	89	90	91	92	93	Average
Other Invertebrates												
Squid	0	0	10	5	0	0	0	0	0	0	17	3
Octopus	0	0	0	0	0	0	0	0	9	0	0	1
Total Other Invertebrates	0	0	10	5	0	0	0	0	9	0	17	4
Shrimps												
Shrimp, brown	0	0	0	7,542	3,363	1,942	6,160	14,065	26,062	46,067	54,190	14,490
Shrimp, white	0	0	0	1,192	222	165	2,312	194	1,752	7,823	936	1,327
Shrimp, other	0	0	0	0	25	0	363	1,114	167	845	371	262
Shrimp, pink	0	0	0	0	227	417	0	0	355	0	0	91
Shrimp, bait	0	0	0	0	707	0	0	0	184	0	0	81
Shrimp, rock	0	0	0	0	0	0	0	59	0	0	0	5
Total Shrimp	0	0	0	8,734	4,544	2,524	8,834	15,433	28,519	54,736	55,497	16,256
TOTAL INVERTEBRATES	28,260	52,753	46,433	20,697	6,154	10,580	14,223	33,622	54,623	69,421	77,043	37,619
WALTON COUNTY TOTAL	30,054	54,345	71,203	25,950	13,134	17,875	24,661	53,588	73,281	77,952	89,778	48,347

APPENDIX D

RESULTS OF REGRESSION ANALYSES OF TIME TRENDS IN RECREATIONAL AND COMMERCIAL FISHERIES FOR THE FLORIDA PANHANDLE

List of Tables

List of Tables
(Continued)

List of Tables
(Continued)

List of Tables
(Continued)

List of Tables
(Continued)

List of Tables
(Continued)

List of Tables
(Continued)

Table D.1. Regression analyses of selected variables related to marine recreational headboat fishing in the Florida panhandle (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	1,142,616	-34,550		.30	
Pr > |t|	(.0001)	(.0926)			
Log-linear	13.9486	-.034232		.28	-3.5%
Pr > |t|	(.0001)	(.1012)			
Parabolic	1,244,482	-95,670	6,791	.25	
Pr > |t|	(.0006)	(.2995)	(.4830)		
Weight of Fish (kg)					
Linear	428,985	-20,468		.38	
Pr > |t|	(.0001)	(.0614)			
Log-linear	12.9580	-055482		.35	-5.7%
Pr > |t|	(.0001)	(.0729)			
Parabolic	556,857	-97,191	8,524	.709	
Pr > |t|	(.0002)	(.0181)	(.0381)		
Number of Trips					
Linear	84,349	-3,040		.17	
Pr > |t|	(.0001)	(.1718)			
Log-linear	11.31751	-.037034		.13	-3.8%
Pr > |t|	(.0001)	(.2001)			
Parabolic	118,945	-23,798	2,306	.92	
Pr > |t|	(.0001)	(.0003)	(.0006)		
Number of Fish/Trip					
Linear	14.1788	.005313		.00	
Pr > |t|	(.0002)	(.9883)			
Log-linear	2.63108	.002802		.00	.28%
Pr > |t|	(.0001)	(.9146)			
Parabolic	9.4957	2.81517	-.3122	.35	
Pr > |t|	(.0100)	(.0659)	(.0617)		

Table D.1. (Continued).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Weight of Fish/Trip					
Linear	5.206	-.0954		.01	
Pr > |t|	(.0001)	(.3355)			
Log-linear	1.6405	-.01844			
Pr > |t|	(.0001)	(.3452)			
Parabolic	4.8316	.1292	-.02496	.00	
Pr > |t|	(.0027)	(.7848)	(.6298)		
Number of Fish/Trip			**FE**		
Linear (Schaefer)	21.1106		-.000097749	.33	
Pr > |t|	(.0007)		(.0806)		
Weight of Fish/Trip			**FE**		
Linear (Schaefer)	5.0648		-.000004077	.00	
Pr > |t|	(.0067)		(.8222)		

Table D.2. Regression analyses of selected variables related to marine recreational fishing from private vessels (inland waters) in the Florida panhandle (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	1,914,033	-147,442		.13	
Pr > |t|	(.0153)	(.1532)			
Log-linear	14.4908	-.20168		.22	-22.3%
Pr > |t|	(.0001)	(.0829)			
Parabolic	1,485,882	50,166	-16,467	.04	
Pr > |t|	(.2285)	(.9113)	(.6544)		
Number of Trips					
Linear	237,021	-15,945		.23	
Pr > |t|	(.0018)	(.0780)			
Log-linear	12.6556	-.180621		.41	-20%
Pr > |t|	(.0001)	(.0205)			
Parabolic	135,898	30,727	-3,889	.31	
Pr > |t|	(.1586)	(.3855)	(.1901)		
Catch Per Unit of Effort					
Linear	7.52555	-.12772		.00	
Pr > |t|	(.0531)	(.8036)			
Log-linear	1.83519	-.021059		.00	-2.0%
Pr > |t|	(.0021)	(.7473)			
Parabolic	7.731548	-.222794	.007923	.00	
Pr > |t|	(.2399)	(.9263)	(.9676)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	5.50406		.00000888	.00	
Pr > |t|	(.0878)		(.6158)		

Table D.3. Regression analyses of selected variables related to marine recreational fishing from shore (inland waters) in the Florida panhandle (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	2,310,665	18,984		.00	
Pr > |t|	(.0739)	(.9128)			
Log-linear	14.50756	-.000335		.00	0%
Pr > |t|	(.0001)	(.9960)			
Parabolic	4,361,080	-927,361	-78,862	.00	
Pr > |t|	(.0464)	(.2276)	(.2081)		
Number of Trips					
Linear	558,818	-8474		.00	
Pr > |t|	(.0037)	(.6991)			
Log-linear	13.1445	-.016589		.00	-2.0%
Pr > |t|	(.0001)	(.7348)			
Parabolic	664,250	-57,135	4,055	.00	
Pr > |t|	(.0315)	(.5751)	(.6231)		
Catch Per Unit of Effort					
Linear	4.74813	.0408		.00	
Pr > |t|	(.0283)	(.8823)			
Log-linear	1.3606	.016255		.00	1.6%
Pr > |t|	(.0080)	(.7900)			
Parabolic	8.2116	-1.5577	.13321	.02	
Pr > |t|	(.0224)	(.1995)	(.1788)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	6.36963		.000002709	.00	
Pr > |t|	(.0190)		(.5236)		

Table D.4. Regression analyses of selected variables related to marine recreational fishing from inshore private vessels in the Florida panhandle (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	17,808,782	-1,488,098		.32	
Pr > |t|	(.0022)	(.0400)			
Log-linear	16.745335	-.191193		.36	-21%
Pr > |t|	(.0001)	(.0299)			
Parabolic	13,333,913	577,226	-172.110	.29	
Pr > |t|	(.1062)	(.8421)	(.4714)		
Number of Trips					
Linear	1,359,791	-91,145		.17	
Pr > |t|	(.0041)	(.1165)			
Log-linear	13.9126	-.09777		.06	
Pr > |t|	(.0001)	(.2269)			
Parabolic	701,922	212,486	-25,303	.26	
Pr > |t|	(.2554)	(.3613)	(.1933)		
Catch Per Unit of Effort					
Linear	16.0938	-.964022		.71	
Pr > |t|	(.0001)	(.0007)			
Log-linear	3.035727	-.093421		.66	-9.8%
Pr > |t|	(.0002)	(.0016)			
Parabolic	20.2041	-2.86105	.158086	.86	
Pr > |t|	(.0001)	(.0012)	(.0104)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	9.08374		.000001508	.00	
Pr > |t|	(.0014)		(.4697)		

Table D.5. Regression analyses of selected variables related to marine recreational fishing from inshore vessels in the Florida panhandle (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	496,573	44.041		.00	
Pr > |t|	(.6421)	(.7453)			
Log-linear	12.41946	.111867		.00	11.8%
Pr > |t|	(.0001)	(.4791)			
Parabolic	-2,073,119	799,833	-50,386	.00	
Pr > |t|	(.5884)	(.4674)	(.4873)		
Number of Trips					
Linear	1,234	7.398		.07	
Pr > |t|	(.9799)	(.2642)			
Log-linear	9.2399	.18921		.16	20.8%
Pr > |t|	(.0001)	(.1814)			
Parabolic	-102,573	37,929	-2,035	.00	
Pr > |t|	(.5697)	(.4638)	(.5481)		
Catch Per Unit of Effort					
Linear	21.6765	-1.030		.27	
Pr > |t|	(.0023)	(.1072)			
Log-linear	3.179511	-.077348		.36	-8.0%
Pr > |t|	(.0001)	(.0710)			
Parabolic	15.62969	.748373	-.118564	.15	
Pr > |t|	(.3638)	(.8727)	(.7028)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	12.5315		.000025023	.00	
Pr > |t|	(.0039)		(.5593)		

Table D.6. Regression analyses of selected variables related to marine recreational fishing from shore (Gulf of Mexico) in the Florida panhandle (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	5,938,660	115,698		.00	
Pr > |t|	(.0929)	(.8094)			
Log-linear	15.3706	.004594		.00	.4%
Pr > |t|	(.0001)	(.962)			
Parabolic	12,605,042	-2,961,093	256,399	.09	
Pr > |t|	(.0327)	(.1523)	(.1299)		
Number of Trips					
Linear	1,527,845	-47,547		.01	
Pr > |t|	(.0033)	(.4244)			
Log-linear	14.005569	-.024681		.00	-2.5%
Pr > |t|	(.0001)	(.7401)			
Parabolic	2,500,525	-496.476	37,411	.28	
Pr > |t|	(.0019)	(.0457)	(.0595)		
Catch Per Unit of Effort					
Linear	3.800657	.20818		.01	
Pr > |t|	(.0232)	(.3370)			
Log-linear	1.365117	.029275		.00	
Pr > |t|	(.0007)	(.4861)			
Parabolic	5.9722	-.79408	.08352	.04	
Pr > |t|	(.0330)	(.3978)	(.2804)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	3.6283		.000001144	.00	
Pr > |t|	(.0479)		(.3512)		

Table D.7. Regression analyses of selected variables related to marine recreational fishing from offshore private craft in the Florida panhandle (1984 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	3,801,137	-275,161		.07	
Pr > |t|	(.0392)	(.2410)			
Log-linear	14.49467	-.0752		.00	-7.8%
Pr > |t|	(.0001)	(.5753)			
Parabolic	1,930,482	440,089	-55,019	.00	
Pr > |t|	(.5921)	(.7212)	(.5578)		
Number of Trips					
Linear	286,603	-20,443		.10	
Pr > |t|	(.0257)	(.2032)			
Log-linear	12.0381	-.07712		.00	-8.0%
Pr > |t|	(.0001)	(.5145)			
Parabolic	169,245	24,429	-3,452	.00	
Pr > |t|	(.4938)	(.7710)	(.5889)		
Catch Per Unit of Effort					
Linear	11.8948	.0080		.00	
Pr > |t|	(.0001)	(.9727)			
Log-linear	2.4565	.001897		.00	
Pr > |t|	(.0001)	(.9213)			
Parabolic	7.9326	1.5229	-.1165	.00	
Pr > |t|	(.0462)	(.2196)	(.2142)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	10.4271		.000009887	.50	
Pr > |t|	(.0001)		(.0202)		

Table D.8. Regression analyses of selected variables related to marine recreational fishing from offshore charter vessels in the Florida panhandle (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Number of Fish					
Linear	1,201,331	-22,941		.00	
Pr > |t|	(.1610)	(.8187)			
Log-linear	13.65033	.004216		.00	4.3%
Pr > |t|	(.0001)	(.9697)			
Parabolic	4,568,646	-1,013,328	66,026	.05	
Pr > |t|	(.1054)	(.1834)	(.1885)		
Number of Trips					
Linear	51,371	1,371		.00	
Pr > |t|	(.1907)	(.7680)			
Log-linear	10.6146	.041061		.00	4.2%
Pr > |t|	(.0001)	(.6521)			
Parabolic	206,539	-44,266	3,042	.05	
Pr > |t|	(.1130)	(.2066)	(.1918)		
Catch Per Unit of Effort					
Linear	20.396828	-.5375		.00	
Pr > |t|	(.0097)	(.4700)			
Log-linear	3.035727	-.036845		.00	
Pr > |t|	(.0002)	(.4622)			
Parabolic	23.15625	-1.349176	.054106	.00	
Pr > |t|	(.3065)	(.8244)	(.8927)		
Catch Per Unit of Effort			**FE**		
Linear (Schaefer)	14.383537		.000032138	.00	
Pr > |t|	(.0163)		(.6404)		

Table D.9. Results of regression analyses for baitfish landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	4,189,853	258,482		.07	
Pr > |t|	(.0115)	(.2183)			
Log-linear	15.17222	.059369		.18	6.1%
Pr > |t|	(.0001)	(.1095)			
Parabolic	250,607	2,076,597	-151,519	.50	
Pr > |t|	(.8830)	(.0111)	(.0183)		

Table D.10. Results of regression analyses for baitfish landings (dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	660,304	152,335		.32	
Pr > |t|	(.1589)	(.0397)			
Log-linear	13.261869	.140462		.44	15%
Pr > |t|	(.0001)	(.0159)			
Parabolic	-416,570	649,353	-41,418	.52	
Pr > |t|	(.5169)	(.0247)	(.0620)		

Table D.11. Results of regression analyses for baitfish landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	743,982	142,451		.30	
Pr > |t|	(.1127)	(.0484)			
Log-linear	13.361811	.12884		.40	13.7%
Pr > |t|	(.0001)	(.0218)			
Parabolic	-306,357	627,223	-40,398	.50	
Pr > |t|	(.6283)	(.0275)	(.0653)		

Table D.12. Results of regression analyses for baitfish landings (dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.065144	.008777		.70	
Pr > |t|	(.0004)	(.0008)			
Log-linear	2.670370	.081094		.63	8.4%
Pr > |t|	(.0001)	(.0022)			
Parabolic	.058414	.011883	.000259	.67	
Pr > |t|	(.0269)	(.1890)	(.7100)		

Table D.13. Results of regression analyses for baitfish landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.074080	.007732		.62	
Pr > |t|	(.0003)	(.0026)			
Log-linear	-2.570428	.069471		.55	7.2%
Pr > |t|	(.0001)	(.0056)			
Parabolic	.071784	.008791	-.000088316	.57	
Pr > |t|	(.0139)	(.3453)	(.9043)		

Table D.14. Results of regression analyses for baitfish fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,036	117		.68	
Pr > |t|	(.0042)	(.0075)			
Log-linear	7.0655	.063494		.69	6.7%
Pr > |t|	(.0001)	(.0067)			
Parabolic	228.8	354.3	-15.8	.69	
Pr > |t|	(.7799)	(.1683)	(.3256)		

Table D.15. Results of regression analyses for baitfish catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	6,545	-388		.72	
Pr > |t|	(.0001)	(.0047)			
Log-linear	9.7871	-.111905		.72	-11.8%
Pr > |t|	(.0001)	(.0051)			
Linear (Schaefer)	8,143		-2.3557	.45	
Pr > |t|	(.0035)		(.0405)		

Table D.16. Results of regression analyses for reef fish landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,145,789	-7,866		.00	
Pr > |t|	(.0001)	(.8187)			
Log-linear	14.60648	-.002793		.00	-.2%
Pr > |t|	(.0001)	(.8654)			
Parabolic	2,817,697	-317,978	25,843	.41	
Pr > |t|	(.0001)	(.0185)	(.0184)		

Table D.17. Results of regression analyses for reef fish landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	7,404,301	-78,352		.00	
Pr > |t|	(.0001)	(.5934)			
Log-linear	15.7847	-.008812		.00	-.9%
Pr > |t|	(.0001)	(.6863)			
Parabolic	10,463,945	-1,490,495	117,679	.52	
Pr > |t|	(.0001)	(.0075)	(.0086)		

Table D.18. Results of regression analyses for reef fish landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,548,472	-.009644		.00	
Pr > |t|	(.0001)	(.4426)			
Log-linear	.432229	-.006019		.00	-.6%
Pr > |t|	(.0001)	(.4697)			
Parabolic	1.732571	-.094612	.007081	.19	
Pr > |t|	(.0001)	(.0787)	(.1003)		

Table D.19. Results of regression analyses for reef fish landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1.712311	-.028488		.19	
Pr > |t|	(.0001)	(.1124)			
Log-linear	.532171	-.017642		.17	-2%
Pr > |t|	(.0001)	(.1171)			
Parabolic	1.972822	-.148724	.01002	.38	
Pr > |t|	(.0001)	(.0431)	(.0814)		

Table D.20. Results of regression analyses for reef fish landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	8,219,909	-174,072		.02	
Pr > |t|	(.0001)	(.3009)			
Log-linear	15.884734	-.020435		.00	-2%
Pr > |t|	(.0001)	(.3753)			
Parabolic	11,790,622	-1,822,093	137,335	.62	
Pr > |t|	(.0002)	(.0032)	(.0049)		

Table D.21. Results of regression analyses for reef fish fishing effort (trips) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	16,379	508		.00	
Pr > |t|	(.0070)	(.3658)			
Log-linear	9.6832	.02902		.05	2.9%
Pr > |t|	(.0001)	(.2905)			
Parabolic	-4,872	-6,759	-417	.31	
Pr > |t|	(.6889)	(.0925)	(.1105)		

Table D.22. Results of regression analyses for reef fish catch per unit of effort in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	193	3.618			
Pr > |t|	(.0008)	(.3918)			
Log-linear	5.269	.0159			
Pr > |t|	(.0001)	(.3939)			
Parabolic	283		-.003093		
Pr > |t|	(.0025)		(.3093)		

Table D.23. Results of regression analyses for coastal pelagic landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,757,082	98,416		.15	
Pr > |t|	(.0001)	(.1333)			
Log-linear	14.85574	.030658		.18	3.1%
Pr > |t|	(.0001)	(.1065)			
Parabolic	2,302,540	308,082	-17,482	.11	
Pr > |t|	(.0110)	(.2836)	(.4449)		

Table D.24. Results of regression analyses for coastal pelagic landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	436,019	210,390		.75	
Pr > |t|	(.1244)	(.0004)			
Log-linear	13.4334	.133752		.75	14.3%
Pr > |t|	(.0001)	(.0003)			
Parabolic	574,803	146,336	5337.819	.72	
Pr > |t|	(.2463)	(.4298)	(.7183)		

Table D.25. Results of regression analyses for coastal pelagic landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	533,423	199,005		.72	
Pr > |t|	(.0705)	(.0006)			
Log-linear	13.5333	.122129		.71	13%
Pr > |t|	(.0001)	(.0007)			
Parabolic	750,667	98,738	8355.55	.70	
Pr > |t|	(.1403)	(.5895)	(.5740)		

Table D.26. Results of regression analyses for coastal pelagic landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.084820	.023046		.85	
Pr > |t|	(.0023)	(.0001)			
Log-linear	-2.1787	.103094		.88	10.8%
Pr > |t|	(.0001)	(.0001)			
Parabolic	.136396	-.000758	.001984	.90	
Pr > |t|	(.0014)	(.9466)	(.0566)		

Table D.27. Results of regression analyses for coastal pelagic landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.099746	.021393		.77	
Pr > |t|	(.0029)	(.0002)			
Log-linear	-2.0787	.091471		.81	9.6%
Pr > |t|	(.0001)	(.0001)			
Parabolic	.160510	-.006651	.002337	.83	
Pr > |t|	(.0020)	(.6398)	(.0684)		

Table D.28. Results of regression analyses for coastal pelagic fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,734	486		.87	
Pr > |t|	(.021)	(.0005)			
Log-linear	7.837	.096773		.85	10.2%
Pr > |t|	(.0001)	(.0007)			
Parabolic	-1,062	-1,306	-55	.90	
Pr > |t|	(.5406)	(.0359)	(.1306)		

Table D.29. Results of regression analyses for coastal pelagic catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	1,127	-58		.87	
Pr > |t|	(.0001)	(.0005)			
Log-linear	7.9534	-.08614		.86	-9.0%
Pr > |t|	(.0001)	(.0006)			
Linear (Schaefer)	1,222		-.09879	.63	
Pr > |t|	(.0002)		(.0116)		

Table D.30. Results of regression analyses for oceanic pelagic landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	426,790	29,962		.00	
Pr > |t|	(.2485)	(.5713)			
Log-linear	12.51647	.266808		.30	30.5%
Pr > |t|	(.0001)	(.0497)			
Parabolic	278,866	355,649	-27,141	.09%	
Pr > |t|	(.6203)	(.1246)	(.1454)		

Table D.31. Results of regression analyses for oceanic pelagic landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,044,902	133,426		.00	
Pr > |t|	(.2323)	(.5848)			
Log-linear	12.72633	.258178		.28	29.4%
Pr > |t|	(.0001)	(.0550)			
Parabolic	-1,621,673	1,825,691	-141,022	.17	
Pr > |t|	(.5162)	(.0810)	(.0940)		

Table D.32. Results of regression analyses for oceanic pelagic landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,254,551	113,709		.00	
Pr > |t|	(.2251)	(.6664)			
Log-linear	12.826276	.246555		.25	28%
Pr > |t|	(.0001)	(.0663)			
Parabolic	-1,558,030	1,873,361	-146,638	.13	
Pr > |t|	(.5705)	(.1004)	(.1111)		

Table D.33. Results of regression analyses for oceanic pelagic landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.283619	-.023194		.00	
Pr > |t|	(.0001)	(.5260)			
Log-linear	.800976	-.008630		.00	-.8%
Pr > |t|	(.0001)	(.6355)			
Parabolic	2.257765	-.011261	-.000994	.00	
Pr > |t|	(.0008)	(.9471)	(.9424)		

Table D.34. Results of regression analyses for oceanic pelagic landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.510231	-.049478		.07	
Pr > |t|	(.0001)	(.2151)			
Log-linear	.900917	-.020253		.04	-2%
Pr > |t|	(.0001)	(.2654)			
Parabolic	2.591278	-.086884	.003117	-.0373	
Pr > |t|	(.0004)	(.6291)	(.8299)		

Table D.35. Results of regression analyses for oceanic pelagic fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,301	-109		.49	
Pr > |t|	(.0003)	(.0321)			
Log-linear	7.8075	-.070546		.51	-7.3%
Pr > |t|	(.0001)	(.0278)			
Parabolic	3,336	-413	20	.50	
Pr > |t|	(.0239)	(.2203)	(.3460)		

Table D.36. Results of regression analyses for oceanic pelagic catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	798	-37.96		.22	
Pr > |t|	(.0036)	(.1354)			
Log-linear	7.4727	-.0637		.18	-6.6%
Pr > |t|	(.0001)	(.1627)			
Linear (Schaefer)	-18.94		.7918	.57	
Pr > |t|	(.9157)		(.0190)		

Table D.37. Results of regression analyses for demersal landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,582,466	-107,363		.49	
Pr > |t|	(.0001)	(.0099)			
Log-linear	14.76327	-.051546		.45	-5.3%
Pr > |t|	(.0001)	(.0139)			
Parabolic	3,398,159	-483,837	31,373	.88	
Pr > |t|	(.0001)	(.0001)	(.0006)		

Table D.38. Results of regression analyses for demersal landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,549,271	59,622		.16	
Pr > |t|	(.0001)	(.1253)			
Log-linear	14.286904	.025949		.10	2.6%
Pr > |t|	(.0001)	(.1792)			
Parabolic	2,281,568	-278,361	28,165	.58	
Pr > |t|	(.0001)	(.0358)	(.0138)		

Table D.39. Results of regression analyses for demersal landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,729,768	40,183		.00	
Pr > |t|	(.0002)	(.3598)			
Log-linear	14.386846	.014326		.00	1.4%
Pr > |t|	(.0001)	(.5120)			
Parabolic	2,560,582	-343,269	31,954	.45	
Pr > |t|	(.0001)	(.0359)	(.0203)		

Table D.40. Results of regression analyses for demersal landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.251992	.035840		.78	
Pr > |t|	(.0002)	(.0002)			
Log-linear	-1.263489	.077494		.79	8%
Pr > |t|	(.0001)	(.0002)			
Parabolic	.271352	.026905	.000745	.76	
Pr > |t|	(.0057)	(.3605)	(.7493)		

Table D.41. Results of regression analyses for demersal landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.286278	.032103		.67	
Pr > |t|	(.0002)	(.0014)			
Log-linear	-1.163547	.065871		.65	6.8%
Pr > |t|	(.0001)	(.0018)			
Parabolic	.321232	.015970	.001344	.63	
Pr > |t|	(.0053)	(.6357)	(.6234)		

Table D.42. Results of regression analyses for demersal fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	25,706	-893		.52	
Pr > |t|	(.0001)	(.0264)			
Log-linear	10.1994	-.0476		.51	4.9%
Pr > |t|	(.0001)	(.0283)			
Parabolic	25,996	-979	5.7	.42	
Pr > |t|	(.0332)	(.7147)	(.9741)		

Table D.43. Results of regression analyses for demersal catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	69.29	2.978		.03	
Pr > |t|	(.0174)	(.3149)			
Log-linear	5.0470	.03264		.04	3.3%
Pr > |t|	(.0001)	(.3055)			
Linear (Schaefer)	162.783		-.00825	.25	
Pr > |t|	(.0061)		(.1173)		

Table D.44. Results of regression analyses for all crab landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,702,260	-74,510		.35	
Pr > |t|	(.0001)	(.0319)			
Log-linear	15.1463	-.058919		.37	-6%
Pr > |t|	(.0001)	(.028)			
Parabolic	1,859,457	-155,227	6,046	.30	
Pr > |t|	(.0007)	(.3075)	(.5960)		

Table D.45. Results of regression analyses for all crab landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,156,037	45,382		.18	
Pr > |t|	(.0001)	(.1077)			
Log-linear	13.957363	.032556		.19	3.3%
Pr > |t|	(.0001)	(.0991)			
Parabolic	981,191	126,080	-6,724	.13	
Pr > |t|	(.0115)	(.3056)	(.4925)		

Table D.46. Results of regression analyses for all crab landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,289,003	30,551		.01	
Pr > |t|	(.0001)	(.3163)			
Log-linear	14.0573	.020934		.01	2.1%
Pr > |t|	(.0001)	(.3135)			
Parabolic	1,144,342	97,318	-5563.885	.00	
Pr > |t|	(.0107)	(.4838)	(.6190)		

Table D.47. Results of regression analyses for all crab landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.283636	.045471		.68	
Pr > |t|	(.0019)	(.0011)			
Log-linear	-1.188982	.091475		.69	9.5%
Pr > |t|	(.0001)	(.0010)			
Parabolic	.140055	.111739	-.005522	.74	
Pr > |t|	(.1965)	(.0188)	(.1117)		

Table D.48. Results of regression analyses for all crab landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	.323146	.040524		.7	
Pr > |t|	(.0003)	(.0008)			
Log-linear	-1.089040	.079852		.68	8.3%
Pr > |t|	(.0001)	(.0011)			
Parabolic	.197947	.098308	-.004815	.76	
Pr > |t|	(.0461)	(.0156)	(.1022)		

Table D.49. Results of regression analyses for all crab fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	6,947	-81.22		.00	
Pr > |t|	(.0026)	(.6657)			
Log-linear	8.8488	-.01434		.00	-1.4%
Pr > |t|	(.6310)	(.6310)			
Parabolic	8,602	-568	-32	.00	
Pr > |t|	(.1570)	(.387)	(.7513)		

Table D.50. Results of regression analyses for all crab catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	472.25	-11.855		.03	
Pr > |t|	(.0014)	(.3143)			
Log-linear	6.1406	-.02753		.00	-2.8%
Pr > |t|	(.0001)	(.3691)			
Linear (Schaefer)	454		-.01108	.00	
Pr > |t|	(.0356)		(.6866)		

Table D.51. Results of regression analyses for lobster landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	19,068	-1,834		.25	
Pr > |t|	(.0108)	(.0662)			
Log-linear	9.9437	-.171512		.05	-18.7%
Pr > |t|	(.0001)	(.2484)			
Parabolic	31,568	-7,603	480.8	.38	
Pr > |t|	(.0091)	(.0636)	(.1321)		

Table D.52. Results of regression analyses for lobster landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	88,986	-8,362.66		.19	
Pr > |t|	(.0195)	(.1039)			
Log-linear	10.7607	-.017023		.07	-1.7%
Pr > |t|	(.0001)	(.2234)			
Parabolic	136,763	-30,414	1,837.576	.21	
Pr > |t|	(.0313)	(.1686)	(.2925)		

Table D.53. Results of regression analyses for lobster landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	97,924	-9,345.2987		.19	
Pr > |t|	(.0205)	(.1026)			
Log-linear	10.8606	-.181857		.08	-20%
Pr > |t|	(.0001)	(.2015)			
Parabolic	149,597	-33,194	1,987.4004	.20	
Pr > |t|	(.0341)	(.1776)	(.3073)		

Table D.54. Results of regression analyses for lobster landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.32382	-.001506		.00	
Pr > |t|	(.0001)	(.9715)			
Log-linear	.816995	.001279		.00	.12%
Pr > |t|	(.0001)	(.9457)			
Parabolic	1.615524	.325401	-.02724	.23	
Pr > |t|	(.0034)	(.0628)	(.0565)		

Table D.55. Results of regression analyses for lobster landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.551908	-.026137		.00	
Pr > |t|	(.0001)	(.5952)			
Log-linear	.916936	-.010344		.00	1%
Pr > |t|	(.0001)	(.6191)			
Parabolic	1.882546	.282799	-.025745	.10	
Pr > |t|	(.0055)	(.1782)	(.1365)		

Table D.56. Results of regression analyses for lobster catch per unit of effort in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	53.7	-3.249		.00	
Pr > |t|	(.2023)	(.7685)			
Log-linear	4.235	.0168		.00	1.7%
Pr > |t|	(.0021)	(.8782)			
Linear (Schaefer)	40.84		.0659	.00	
Pr > |t|	(.0947)		(.9211)		

Table D.57. Results of regression analyses for lobster fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	-33.923	12.52		.50	
Pr > |t|	(.3691)	(.0307)			
Log-linear	2.0628	.24052		.57	27%
Pr > |t|	(.0128)	(.0186)			
Parabolic	18.2857	-2.833	1.0238	.42	
Pr > |t|	(.8919)	(.9408)	(.6871)		

Table D.58. Results of regression analyses for oyster landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2,027,818	-133,164		.26	
Pr > |t|	(.0010)	(.0632)			
Log-linear	15.138081	-.082838		.11	-9%
Pr > |t|	(.0001)	(.1702)			
Parabolic	3,148,898	-650,586	43,118	.51	
Pr > |t|	(.0007)	(.0207)	(.0469)		

Table D.59. Results of regression analyses for oyster landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	5,326,419	-177,546		.06	
Pr > |t|	(.0003)	(.2383)			
Log-linear	15.434	-.037963		.03	-4%
Pr > |t|	(.0001)	(.2957)			
Parabolic	5,967,629	-473,489	24,662	.00	
Pr > |t|	(.0078)	(.4864)	(.6521)		

Table D.60. Results of regression analyses for oyster landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	5,816,904	-235,224		.16	
Pr > |t|	(.0002)	(.1268)			
Log-linear	15.5340	-.049586		.10	-5%
Pr > |t|	(.0001)	(.1767)			
Parabolic	6,659,876	-624,289	32,422	.09	
Pr > |t|	(.0040)	(.3570)	(.5491)		

Table D.61. Results of regression analyses for oyster landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1,428,297	.078710		.02	
Pr > |t|	(.0185)	(.3116)			
Log-linear	.296063	.044874		.03	-4.5%
Pr > |t|	(.2883)	(.2759)			
Parabolic	.043322	.717929	-.053268	.40	
Pr > |t|	(.9494)	(.0220)	(.0321)		

Table D.62. Results of regression analyses for oyster landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	1.585924	.058361		.00	
Pr > |t|	(.0090)	(.4295)			
Log-linear	.396005	.033251		.00	3.3%
Pr > |t|	(.1447)	(.3867)			
Parabolic	.241179	.679012	-.051721	.38	
Pr > |t|	(.7118)	(.0227)	(.0297)		

Table D.63. Results of regression analyses for oyster fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	22,194	1,019		.00	
Pr > |t|	(.1190)	(.5372)			
Log-linear	9.6863	.07332		.03	7.6%
Pr > |t|	(.0001)	(.3109)			
Parabolic	-8,598	10,075	-604	.00	
Pr > |t|	(.8500)	(.4480)	(.4891)		

Table D.64. Results of regression analyses for oyster catch per unit of effort in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	29.60	-.05321		.00	
Pr > |t|	(.0416)	(.9721)			
Log-linear	4.0906	.00438		.00	.4%
Pr > |t|	(.0001)	(.9353)			
Linear (Schaefer)	37.298		-.000598	.00	
Pr > |t|	(.0147)		(.4713)		

Table D.65. Results of regression analyses for shrimp landings (kilograms) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	3,101,959	-173,574		.62	
Pr > |t|	(.0001)	(.0025)			
Log-linear	15.7681	-.081988		.61	-8.5%
Pr > |t|	(.0001)	(.0030)			
Parabolic	3,573,847	-391,369	18,149	.64	
Pr > |t|	(.0001)	(.0599)	(.2461)		

Table D.66. Results of regression analyses for shrimp landings (nominal dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	13,284,864	-710,694		.63	
Pr > |t|	(.0001)	(.0021)			
Log-linear	16.45756	-.081561		.67	-8.4%
Pr > |t|	(.0001)	(.0012)			
Parabolic	13,375,018	-752,304	3,467.444	.59	
Pr > |t|	(.0002)	(.3615)	(.9575)		

Table D.67. Results of regression analyses for shrimp landings (real dockside value) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	14,479,454	-846,164		.68	
Pr > |t|	(.0001)	(.0011)			
Log-linear	16.5575	-.093184		.71	-9.7%
Pr > |t|	(.0001)	(.0007)			
Parabolic	15,099,309	-1,132,251	23,841	.65	
Pr > |t|	(.0001)	(.2118)	(.7339)		

Table D.68. Results of regression analyses for shrimp landings (nominal dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.0047	.001081		.00	
Pr > |t|	(.0001)	(.9671)			
Log-linear	.689373	.000427		.00	0%
Pr > |t|	(.0001)	(.9727)			
Parabolic	1.570368	.201544	-.016705	.22	
Pr > |t|	(.0002)	(.0653)	(.0608)		

Table D.69. Results of regression analyses for shrimp landings (real dockside price) in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	2.211842	-.022724		.00	
Pr > |t|	(.0001)	(.4323)			
Log-linear	.789315	-.011196		.00	-1.1%
Pr > |t|	(.0001)	(.3990)			
Parabolic	1.843371	.147339	-.014172	.10	
Pr > |t|	(.0003)	(.2310)	(.1630)		

Table D.70. Results of regression analyses for shrimp fishing effort (number of trips) in Florida panhandle commercial fisheries (1986 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	T^2	$\bar{R}^2$	Growth Rate/Year
Linear	8,891	-152		.00	
Pr > |t|	(.0017)	(.4956)			
Log-linear	9.0944	-.02023		.01	-2.0%
Pr > |t|	(.0001)	(.4834)			
Parabolic	-1,592	2,930	-206	.54	
Pr > |t|	(.6842)	(.0380)	(.0311)		

Table D.71. Results of regression analyses for shrimp catch per unit of effort in Florida panhandle commercial fisheries (1983 to 1993).

Regression Model	Parameter Estimates				
	Constant	T	FE	$\bar{R}^2$	Growth Rate/Year
Linear	253.889	-4.7854		.00	
Pr > |t|	(.0006)	(.3704)			
Log-linear	6.309	-.0191		.00	-1.9%
Pr > |t|	(.0001)	(.4221)			
Linear (Schaefer)	229.52		-.00329	.00	
Pr > |t|	(.0253)		(.885)		

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