9.0 COMMUNITY PROFILES OF ATLANTIC AND GULF PELAGIC LONGLINE FISHERIES

9.1 INTRODUCTION

The Magnuson-Stevens Act requires all fishery management plans (FMPs) to include a fishery impact statement which shall assess, specify and describe the likely effects of the measures on fishermen and fishing communities (§303(a)). Similarly, the National Environmental Policy Act (NEPA) requires federal agencies to consider the interactions of natural and human environments by using "a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences ... in planning and decision-making" (NEPA §102(2)(a)). Federal agencies should address the aesthetic, historic, cultural, economic, social, or health effects which may be direct, indirect, or cumulative. Consideration of the social impacts associated with fishery management measures is a growing concern as fisheries experience variable participation and/or declines in stocks.

Social impacts are the consequences to human populations that follow from some type of public or private action. Those consequences may include changes in "the ways in which people live, work or play, relate to one another, organize to meet their needs and generally cope as members of a society ... " (Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 2003:1). In addition, cultural impacts may involve changes in the values and beliefs that affect the way that people identify themselves within their occupation, their communities, and society in general. Social impact analyses help determine the consequences of policy action in advance by comparing the status quo with the projected impacts. Public hearings, scoping meetings, and Advisory Panel meetings provide input from those concerned with the impacts of a proposed management action.

The Magnuson-Stevens Act outlines a set of National Standards (NS) that apply to all fishery management plans and the implementation of regulations. Specifically, NS 8 notes that:

> "Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (1) provide for the sustained participation of such communities; and, (2) to the extent practicable, minimize adverse economic impacts on such communities." (§301(a)(8))

"Sustained participation" is defined to mean continued access to the fishery within the constraints of the condition of the resource (50 CFR §600.345(b)(4)). It should be clearly noted that NS 8 "does not constitute a basis for allocation of resources to a specific fishing community nor for providing preferential treatment based on residence in a fishing community" (50 CFR §600.345(b)(2). The Magnuson-Stevens Act further defines a "fishing community" as:

> " ... a community that is substantially dependent upon or substantially engaged in the

harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, crew, and fish processors that are based in such communities." (§3(16))

While geographic location is an important component of a fishing community, management measures often have the most identifiable impacts on fishing fleets that use specific gear types. In addition, since the species (swordfish/tuna) in this FMP are highly migratory, fisheries and the people involved may shift among geographic locations to follow the fish. The geographic concentrations of pelagic longline fisheries can vary from year to year as the behavior of their migratory prey is somewhat unpredictable. Thus, the relationship between these fleets and geographic fishing communities is not always a direct one; however, it is an important variable for understanding social and cultural impacts. Therefore, the definition of community takes into account both geographic factors and the use of pelagic longline gear in domestic swordfish and tuna fisheries.

NOAA Fisheries (1994, 2001) guidelines for social impact assessments specify that the following elements are required in the development of FMPs and FMP amendments:

1) information on distributional impacts, non-quantifiable considerations such as expectations and perceptions of the alternative actions, and the potential impacts of the alternatives on both small economic entities and broader communities;

2) descriptions of the ethnic character, family structure, and community organization of affected communities;

3) descriptions of the demographic characteristics of the fisheries;

4) descriptions of important organizations and businesses associated with the fisheries; and,

5) identification of possible mitigating measures to reduce negative impacts of management actions on communities.

9.2 METHODOLOGY

For the principal states involved in the fishery, a profile of basic sociological information was compiled. Towns were selected, from the 148 communities identified as involved in the 2002 commercial fishery, based on swordfish and tuna landings data, information on the pelagic longline fishing fleet, the relationship between the geographic communities and the fishing fleet, and the existence of other community studies. This work incorporates by reference the studies by Douglas Wilson *et al.* (1998), as incorporated in the HMS Fishery Management Plan; McCay and Cieri (2000) "The Fishing Ports of the Mid-Atlantic" for the Mid-Atlantic Fishery Management Council; and Porter *et al.* (2001) "Cost-Earnings Study of the Atlantic-Based U.S. Pelagic Longline Fleet".

9.3 OVERVIEW OF THE SWORDFISH/TUNA PELAGIC LONGLINE FISHERY

The pelagic longline fisheries for swordfish and tunas of the Atlantic and Gulf coasts extend from Maine to Texas, the Caribbean and distant water areas of the North Atlantic. The geographic extent of the commercial fishery is large, but in 2002, landings were reported in only twelve states. Landings by weight were concentrated in three states; Louisiana (50.8 percent), Massachusetts (16.2 percent) and New Jersey (13.3 percent) (Table 9.1). Three states, North Carolina, New York and Rhode Island jointly contributed a further 16.6 percent of the 2002 pelagic longline landings by weight. The remaining six states, including Florida, contributed 3.1 percent of the landings.

The fishery is notable for the degree of flexibility of the commercial fishing fleet. Fishery permits for HMS pelagic longlining were held by 234 vessels in 2002. Depending on season, size and region, vessels fished in a variety of fisheries to supplement earnings from pelagic longline operations. Some smaller longline vessels switched to bottom longlining or to charter boat fisheries in the South Atlantic and Gulf regions.

The mobility of the vessels is also noteworthy. Many of the New England and North Carolina vessels were reported to fish from the Grand Banks to the Caribbean, and Texas vessels fished across the Gulf of Mexico east to Florida. Other commercial vessels had transferred to Florida and were based in Floridian ports year-round. Of these "commuter"vessels, one Californian community and one community in Indiana were home to permit holders.

The dealers are also highly mobile. Table 9.1 shows the number of dealers who handled swordfish and tuna from the pelagic longline fleet in each state in 2002. Many of the dealers are licensed to trade in two or more states, and thus the actual number of buyers is estimated to be significantly less than the 94 dealer locations would suggest.

Table 9.1 **2002: Commercial Landings, Dealers and Vessel Permits in the Swordfish and Tuna Pelagic Longline Fishery, by State.** Source: NOAA Fisheries Permit Files; December 1, 2003.

State	Pounds Landed	$ Value Landed	Dealer Locations	Vessel N
Alabama	na	na	na	1
California	0	0	0	1
Connecticut	na	na	na	1
Delaware	0	0	0	3
Florida - East	102,976	230,117	7	38
Florida - West	2,433	6,994	7	39
Georgia	0	0	na	1
Indiana	0	0	0	1
Louisiana	2,733,042	8,688,323	11	47
Maine	na	na	na	1
Maryland	6,692	22,848	3	4
Massachusetts	870,348	2,685,952	13	25
Mississippi	0	0	0	1
New Jersey	716,180	1,899,148	17	30

New York	332,720	904,652	15	16
North Carolina	360,839	547,409	7	9
Rhode Island	200,589	596,752	12	6
South Carolina	51,253	89,994	6	2
Texas	0	0	0	11
Virginia	0	0	0	7
Virgin Islands				
Total	**5,378,943**	**15,368,777**	**94**	**234**

na = Data is confidential; there are less than 3 licensed dealers in the state

Characteristics of the Fleet

Regional patterns of activity have changed since the studies by Wilson *et al.* (1998) and Porter *et al.* (2001). Fieldwork for both studies was conducted in 1997 and 1998. In 1997 there were 240 pelagic longline vessels active, but this declined to 200 vessels in 1998. The sample for the cost earnings study was 102 vessels drawn from throughout the fishery, and of those it was determined that 87 vessels were engaged in fishing activities full-time while 15 vessels fished commercially on a part-time basis (Porter *et al.*, 2001). Both studies noted that the longest pelagic longline fishing trips were those for vessels fishing in the North Atlantic distant water fishery and in the Caribbean. Typical trip-lengths were 36 days and 28 days respectively. During the North Atlantic distant water trips typically two-fifths of the trip was spent on the fishing grounds and three-fifths of the trip was travel time. On the Caribbean trips some 11 of the 28 days were spent fishing. Vessels in the North Atlantic fishery typically made seven trips/year in 1997-1998, while those in the Caribbean fishery made nine trips/year (Porter *et al.*, 2001). The vessels from Mid-Atlantic states were usually smaller than those used in the Northeast and Caribbean. Their pelagic longline trips typically lasted 12 days, with seven days of fishing and five days of travel to and from the fishing grounds. The Mid-Atlantic vessels spent about 120 days a year longlining in 1997 and 1998, and their income from other fisheries was approximately $10,000/year (Porter *et al.*, 2001). Vessels based in the Gulf states were similar in size and trip length to the Mid-Atlantic vessels. Porter *et al.* (2001) report that the Gulf vessels in their sample spent some 180 days pelagic longlining each year, or approximately one-third more trips per year, than the Mid-Atlantic vessels, and thus their activity in other fisheries was less. The South Atlantic longliners made the shortest trips (7 days on average) and fished with pelagic gear for some 60 days in 1997 (Porter *et al.*, 2001). Crew size on the trips varied by both size of vessel and by the species targeted. The average crew size for all full-time commercial fishing vessels sampled was 3.92 fishermen/trip including the captain. Porter *et al.* found that for part-time commercial fishing vessels, the average crew size was 3.27 fishermen per trip including the captain. Average crew sizes in the pelagic longline fishery can be seen by target species and by vessel size in Table 9.2.

Table 9.2 **Average Crew Size* on Pelagic Longline Vessels by Species Targeted (1997-8).** Source: Porter *et al.*, 2001.

Target Species	Small Vessels	Medium Vessels	Large Vessels
Swordfish	3.13	3.91	5.20
Mixed tuna/ swordfish	3.35	4.00	4.69
Tuna	3.11	4.20	na

Small vessels, < 50 grt; medium vessels, >50 - <96 grt; large vessels, >96 grt
na = data not available. *Crew size includes captains.

Permit data for 2002 shows that there are 234 pelagic longline vessels in the fleet. If crew sizes have remained constant since 1997, there were at least some 900 fishermen actively fishing as captain or crew on HMS pelagic longline boats during the 2002 season. There may be fewer fishermen in fact. Interviews with fishermen, vessel owners and others in the Fall of 2003 suggest that the narrowing, often non-existent, profit margins of the pelagic longline boats have also reduced the attractiveness of longlining as a fishing strategy to crew and hired captains. The real value of crew shares (wages) in trip profits have declined over the past 15 years. Experienced and reliable crew are said to be difficult to recruit, and owners of vessels have said that they have reduced crew sizes to reduce the insurance costs of the vessel and to provide a larger portion of the crew share to the remaining individuals (Fricke, 2003).

Information Used in this Assessment

As indicated earlier, the commercial fishery involves some 148 communities. This number is based on places for which commercial landings data is available, places in which licensed swordfish and tuna dealers operate, and places declared on HMS pelagic longline fishing permit application forms as the address of the permit holder. From this list of 148 communities, eight are profiled in this study as being representative of the fishery. They were selected on the basis of involvement with HMS pelagic longline fisheries.

To ensure continuity with the 1999 HMS FMP assessment, where a community, selected for study in 1998, had a pelagic longline fishery it was generally selected for this assessment. Because of their relatively minimal involvement in the pelagic longline fisheries, this study does not include places in Maine, New Hampshire, New York, Delaware, Maryland, Virginia, South Carolina, Georgia, Alabama, Mississippi, and Texas. One port each in New Jersey and Florida (Brielle and Islamorada, respectively) which was in the 1998 study has been dropped from this one. One community in Florida, Fort Pierce, has been added to the communities profiled. Ports selected for detailed study are New Bedford, Barnegat Light, Wanchese, Pompano Beach, Fort Pierce, Madeira Beach, Panama City, Dulac, and Venice.

The Southeast Fisheries Science Center does not report fisheries data by port of landing. For this reason, communities involved in the fisheries from North Carolina to Texas are identified by the commercial permit data. Other corroborating data have been developed from use of secondary data and from published reports. Unlike the 1999 HMS FMP, it has not been possible to undertake

comprehensive field research for this assessment. Some fieldwork was conducted in North Carolina and South Carolina to verify existing conditions in the HMS pelagic longline fishery in those states (Fricke, 2003).

9.4 SWORDFISH AND TUNA PELAGIC LONGLINE FISHERY PROFILES BY STATE

9.4.1 Maine

Demographic Profile of State of Maine (source: U.S. Census, 2000)

Population:	1,274,923	100%
Education:		
High school graduates (25 years or older)	742,605	85.4%
Employment:		
Labor force (16 years and over)	659,360	51.7%
Unemployed	31,165	3.1%
Employment in some industry sectors:		
Retail	84,412	13.5%
Manufacturing	88,885	14.2%
Education, health & social services	144,918	23.2%
Arts, recreation, lodging & food services	44,606	7.1%
Farming, fishing, forestry & mining	16,087	2.6%

Maine has one pelagic longline vessel and one permit-holder active in the swordfish and tuna fishery. Because of the small numbers of fishermen and dealers/processors in the state, community profiles were not developed.

9.4.2 Massachusetts

Characteristics of Fisheries in Massachusetts

Commercial fisheries in Massachusetts are diverse, and range from small-scale inshore small-boat fisheries for lobster and clams, to off-shore scallops, groundfish dragging, and pelagic longline fishing for HMS species. In 2002, New Bedford ranked 9th in the United States for the weight of fish landed, and 1st for value with ex-vessel sales bringing in $151,400,000.

Demographic profile of Massachusetts (source: U.S. Census 1990, 2000)

	1990	2000
Population:	6,016,425	6,349, 097
Education:		
High school graduates, 25 years or older:	80.0%	84.8%
Employment:		
Percent of civilian workforce unemployed:	6.7%	3.0%
Main sources of employment:		
Retail	16.0%	11.0%
Manufacturing durable goods	12.0%	12.8%
Health, education and social services	21.2%	23.7%
Arts, recreation, lodging & food services	5.1%	6.8%
Farming, forestry, and fisheries	1.0%	0.4%

In 2002, places and ports involved in the HMS pelagic longline fishery included Boston, Chilmark, Gloucester, Hamilton, Menemsha, New Bedford, and South Hamilton. Seven vessels had hail ports in Massachusetts. Also in 2002, the Massachusetts pelagic longline landings of swordfish and tunas occurred in Boston, Chilmark, New Bedford, and Westport. Licensed dealers were active in 13 locations in the Commonwealth. The landings and value of tunas and swordfish in relation to other species landed in Massachusetts commercial fisheries can be seen in Table 9.3.

Table 9.3 Commercial Fishery Landings in Massachusetts, 2002. Source: NOAA Fisheries.

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	243,824,000	297,312,000	100	100
Tuna/ Swordfish*	870,348	2,685,952	0.36	0.9

* Fish caught on pelagic longlines. Percentages are rounded

9.4.3 Rhode Island

Demographic Profile of Rhode Island (source: U.S. Census, 2000)

Population:	1,048,319	
Education:		
High school graduates (25 years or older)	541,487	78.0%
Employment:		
Labor force (16 years and over)	534,353	64.6%
Unemployed	29,859	3.6%
Employment by industry:		
Retail	60,426	12.1%
Manufacturing	82,260	16.4%
Education, health & social services	115,236	23.0%
Arts, recreation, lodging & food services	43,230	8.6%
Farming, fishing, forestry, & mining	2,396	0.5%

The pelagic longline fisheries are incidental to other fisheries in Rhode Island. There were six pelagic longline vessels with hail ports in the state. Dealers licensed to handle swordfish and tuna operated in 12 locations in the state, and the total pelagic longline landings in the state were 200,589 pounds in 2002. Communities involved with the pelagic longline fishery included Block Island, Jamestown, Narragansett, New Shoreham, Point Judith, Wakefield, Warwick, and West Kingstown. Because of the small-scale of the pelagic longline fishery in the communities listed, no community profiles have been developed**.** The landings and value of tunas and swordfish in relation to other species landed in Rhode Island can be seen in Table 9.4.

Table 9.4 Commercial Fishery Landings in Rhode Island, 2002. Source: NOAA Fisheries

Species	Landings (weight, lbs.)	Landings (value, $)	Percent Weight	Percent Value
All Species	103,656,000	64,250,000	100	100
Tuna/ Swordfish*	200,589	596,752	0.19	0.93

* Fish caught on pelagic longlines. Percentages are rounded.

9.4.4 Connecticut

Connecticut's tuna and swordfish fishery is very small relative to all other commercial fisheries in the state; swordfish predominate in the landings, but the combined tuna total is less than 0.0001 percent. No pelagic longline permit owners reside in Connecticut, and one vessel made occasional landings in New London in 2002**.**

Demographic Profile of Connecticut (source: U.S. Census, 2000)

Population:	3,405,565	
Education:		
High school graduates (25 years or older)	1,927,961	84.0%
Employment:		
Labor force (16 years and over)	1,765,319	66.6%
Unemployed	92,668	3.2%
Employment by industry:		
Retail	185,633	11.2%
Manufacturing	246,607	14.8%
Education, health & social services	366,568	22.0%
Arts, recreation, lodging & food services	111,424	6.7%
Farming, fishing, forestry, & mining	7,445	0.4%

9.4.5 New York

Demographic Profile of New York State (source: U.S. Census, 2000)

Population:	18,976,457	
Education:		
High school graduates (25 years or older)	9,916,212	79.1%
Employment:		
Labor force (16 years and over)	9,046,805	61.1%
Unemployed	640,108	4.3%
Employment by industry:		
Retail	877,430	10.5%
Manufacturing	839,425	10.0%
Education, health & social services	2,039,182	24.3%
Arts, recreation, lodging & food services	611,280	7.3%
Farming, fishing, forestry, & mining	54,372	0.6%

There are 16 vessels with permits in the pelagic longline fishery. Dealers holding swordfish and tuna licenses operate in 37 locations in New York state. The communities involved in the pelagic longline fisheries include Lawrence, Brightwaters, Brooklyn, East Hampton, East Islip, Hampton

Bays, Hauppauge, Islip, Montauk, and Staten Island. Since the pelagic longline fisheries are a small and geographically dispersed sector of New York's fisheries, individual community profiles have not been developed. The landings and value of tunas and swordfish in relation to other species landed in New York can be seen in Table 9.5.

Table 9.5 Commercial Fishery Landings in New York State, 2002. Source: NOAA Fisheries.

Species	Landings Pounds	Landings Value $	Percent Weight	Percent Value
All Species	38,665,000	51,334,000	100	100
Tuna/ Swordfish*	332,720	904,652	0.9	1.8

* Caught on pelagic longlines. Percentages are rounded.

9.4.6 New Jersey

Demographic Profile of New Jersey (source: U.S. Census, 1990 and 2000)

	1990	2000
Population:	7,730,188	8,414,350
Education:		
High school graduates (25 years or older)	76.9%	82.1%
Employment:		
Labor force (16 years and over)	64.2%	64.1%
Unemployed	5.7%	5.8%
Employment by industry:		
Retail	5.0%	11.3%
Manufacturing	17.0%	12.0%
Education, health & social services	19.1%	19.8%
Arts, recreation, lodging & food services	6.5%	6.9%
Farming, fishing, forestry, & mining	1.0%	0.3%

New Jersey communities involved with the swordfish and tuna pelagic longline fishery include Erma, Cape May, Cape May Courthouse, Ocean City, Sea Isle City, Seaville and Wildwood, Jersey City, Brielle, Shark River, Brick, Forked River, Barnegat Light, Manahawkin, Point Pleasant, Tom's River, West Creek, and Pompton Plains. Of these communities, Barnegat Light and Sea Isle City had the greatest involvement in the fishery, with 74.2 percent and 20.3 percent of pelagic longline landings of swordfish and tuna respectively in 2001. Of the 30 active pelagic longline vessels with permits and registered in New Jersey, 26 make landings in the state. In 2002, Barnegat Light had 14 vessels making tuna and swordfish landings and was the location of three dealers. In all there were seven places in New Jersey which had at least one dealer, and 12 dealers

buying pelagic longline caught swordfish and tuna. The landings and value of tunas and swordfish in relation to other species landed in New Jersey can be seen in Table 9.6.

Table 9.6 Commercial Fishery Landings in New Jersey, 2002. Source: NOAA Fisheries.

Species	Landings Pounds	Landings Value $	Percent Weight	Percent Value
All Species	162,175,000	112,733,000	100	100
Tuna/ Swordfish*	716,180	1,899,148	0.44	1.7

* Fish caught on pelagic longlines. Percentages are rounded.

9.4.6.1 Barnegat Light

Barnegat Light has grown and changed in the decade between the 1990 and 2000 Censuses. The changes are reflected in two demographic dimensions. The first is a shift to higher education/higher qualification occupations and the second is a continued shift to an older, retired population. The change in age structure also signifies a change in the workforce and the source of household earnings. In 2000, there were 371 households with an average size of 2.06 persons/household. Of these households, 233 (62.8 percent) received income in the form of earnings, while 202 households (54.4 percent) received income from Social Security. Retirement income was received by 130 households (35.0 percent). For households receiving income from earnings, the average income was $63,373 in 2000. The average Barnegat Light household with

Demographic Profile of Barnegat Light (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	681	764
Education:		
High school graduates (25 years or older)	84.9%	92.1%
Employment:		
Labor force (16 years and over)	51.0%	46.9%
Unemployed	1.0%	2.7%
Employment by Occupation		
Managerial/professional	32.0%	40.8%
Technical/administrative	31.0%	36.3%
Precision production, craft & repair	14.0%	11.3%
Farming, fishing, forestry, & mining	10.2%	6.5%

retirement income received $22,168. In comparison with New Jersey as a whole, employment earnings were less than the state average, while retirement income was above the state average. However, the median household income in Barnegat Light ($52,361) in 2000 was some $2,800 lower than the state-wide median household income.

Barnegat Light is a vacation and retirement destination. Of the 1,207 housing units available in 2000, 64.3 percent (781 units) were vacation homes, and 371 homes were occupied year-round. Some 55 homes were unoccupied at the time of the 2000 census. About one-quarter of the resident population had lived in Barnegat Light for less than five years in 2000, and most of the new residents moved to the town from other parts of New Jersey. Of the population of Barnegat Light in 2000, 55 percent (430 persons) had been born in New Jersey, while 41 percent were born elsewhere in the United States. There is a "community stickiness" factor among

Age structure of the Population of Barnegat Light (source: Census, 1990 & 2000)

Population by Age	1990		2000	
Total population	681	100%	764	100%
Under 15 years	68	10%	92	12.1%
15 - 44 years	225	33%	185	24.2%
Over 44 years	388	57%	487	63.7%

persons resident in Barnegat Light, since 70 percent had lived there prior to 1995, but there is also evidence of change which could affect life-style and the culture of the community. One of the elements of "community stickiness" is that many of the "new" residents are retirees who have converted their former vacation homes to year-round residences.

The Community and Fishing

Prior to 1820, fishing operations and maritime trade were conducted in the small settlements on the mainland inside the chain of islands and sand bars fringing the New Jersey Coast. Barnegat Inlet was one of the important channels to the open ocean, with a sheltered anchorage immediately inside the inlet, and ample resource for a fishing community. A lighthouse was built in 1824 to mark the entrance to the inlet. This lighthouse was replaced in 1855 with the second-tallest lighthouse in the United States which operated until 1927. The building continues as both a community landmark and a navigation mark.

In 1881 the Barnegat City Improvement Company was formed and developed the present-day town as a resort and recreation area, with the town owning all the beaches and dunes. The mix of tourism and fishing has continued to the present. Fishing operations are now linked to their markets by road and there is a tight mesh between the winter and summer economies. Local shops and services are sustained by the fishing activities in the winter months, and it is estimated that the direct employment in fisheries and fishing services was of the order of 52 percent of the civilian workforce of 300 persons in 2000.

Fishery-related organizations in Barnegat Light include: Blue Water Fishermen's Association; Forked River Tuna Club; Jersey Devils Fishing Club; Beach Haven Marlin and Tuna Club; Long Beach Island Fishing Club; and United National Fishermen's Association.

There are four full service marinas in Barnegat Light in addition to 44 municipal boat slips and a municipal ramp. The marinas and slips are on the bayside of Long Beach Island and extend southwards some 18 blocks from the inlet. Commercial fishing docks and fishhouses also line Bayview Avenue, but are clustered towards the southern end of the street. Five bait and tackle shops, three of which also provide boat rentals, provide services to local and visiting fishermen. The charter fleet working from Barnegat Light is estimated to be 20 boats, including 11 vessels with HMS permits. In addition there are six headboats, three of which have HMS permits, working from the port. About half this fleet is active year-round in Barnegat Light, while another four vessels at least fish elsewhere in the winter months. One charter boat fishes for tuna off North Carolina in the winter and spring, while three other vessels fish from November through April from ports in Florida.

The commercial fishing fleet is diverse and targets different species as they move through local waters. In 2001, some 40 inshore and offshore boats were based in Barnegat Light, including boats used in the shellfish fishery. Barnegat Light is known for its pelagic longline fishery. The fleet targets yellowfin and bigeye tunas for most of the year and swordfish for part of the year. Pelagic and large coastal sharks are important incidental catches and some species like mako, porbeagle, and sandbar sharks are usually kept and sold. A few vessels continue to bottom longline for tilefish in the deep waters of the outer continental shelf and canyons. Some captains from this port have begun to fish off the coasts of other countries. Pelagic longline crews are increasingly from other regions, such as Nova Scotia and some of the southern states. Some of the pelagic longline fishermen from Barnegat Light have become distant-water operators, going to the Grand Banks off Newfoundland, the waters off Greenland, as well as the Caribbean, Brazil, and other distant fishing grounds. The owner of one major fleet (six longline vessels) left Barnegat Light in 1999 to fish for HMS in the Pacific Ocean.

Other captains of pelagic longline vessels strongly prefer to work closer to home or to take shorter trips. The options of those who resist going to other ports are far more restricted now than they were three decades ago. Distant water fishing is very disruptive to families and the community. Some local vessels are now converting from pelagic longline fishing to monkfishing, although many who have tried to convert to other fisheries have failed to meet deadlines for limited entry. Another concern of local residents is that the demise of commercial fisheries is likely to transform the use of the waterfront, bringing in condominium development where marinas are now located, an outcome which many long-term residents find undesirable.

9.4.7 Pennsylvania

There are no reported landings of pelagic longline-caught tuna or swordfish in Pennsylvania. Philadelphia is, however, the hail port of nine pelagic longline vessels active in the fishery in

2002. No HMS pelagic longline permit holders reside in the state. Because of the tenuous links with the fishery, no social assessment was carried out for the state or Philadelphia.

9.4.8 Delaware

Demographic Profile of Delaware (source: U.S. Census, 2000)

Population:	783,600	
Education:		
High school graduates (25 years or older)	425,122	82.6%
Employment:		
Labor force (16 years and over)	397,360	65.1%
Unemployed	20,549	3.4%
Employment by industry:		
Retail	43,578	11.6%
Manufacturing	49,720	13.2%
Education, health & social services	73,056	19.4%
Arts, recreation, lodging & food services	28,979	7.7%
Farming, fishing, forestry, & mining	4,042	1.1%

The HMS pelagic longline fishery has a minimal impact in Delaware. There are three permitted vessels in the State, with hail-ports of Dover, Laurel, and Lewes. There were no reported pelagic longline landings of swordfish or tuna in the state in 2002. Two permit holders reside in Delaware. No social assessment was made because of the low level of involvement in the fishery.

9.4.9 Maryland

The pelagic longline fishery for tunas and swordfish in Maryland is small scale. There are

Demographic Profile of Maryland (source: U.S. Census, 2000)

Population:	5,296,486	
Education:		
High school graduates (25 years or older)	2,930,509	83.8%
Employment:		
Labor force (16 years and over)	2,737,359	67.0%
Unemployed	128,902	3.2%
Employment by industry:		
Retail	273,339	10.5%
Manufacturing	189,327	7.7%
Education, health & social services	538,350	20.6%
Arts, recreation, lodging & food services	177,341	6.8%
Farming, fishing, forestry, & mining	16,178	0.6%

licensed dealers operating in three locations, and 4 vessels involved in the fishery. Places involved with the fishery include Berlin, Ocean City, Pasadena, West Ocean City, and Willards. Because of the low level of activity in the fishery, no social assessment was made of impacts on these places. The landings and value of tunas and swordfish in relation to other species landed in Maryland can be seen in Table 9.7.

Table 9.7 Commercial Fishery Landings in Maryland, 2002. NOAA Fisheries, 2003**.**

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	53,185,000	49,013,000	100	100
Tuna/ Swordfish*	6,692	22,848	0.013	0.05

* Tuna/swordfish caught on pelagic longlines**.**

9.4.10 Virginia

Demographic Profile of Virginia (source: U.S. Census, 2000)

Population:	7,078,515	
Education:		
High school graduates (25 years or older)	3,801,964	81.5%
Employment:		
Labor force (16 years and over)	3,563,762	64.4%
Unemployed	151,125	2.7%
Employment by industry:		
Retail	389,473	11.4%
Manufacturing	387,104	11.3%
Education, health & social services	626,156	18.3%
Arts, recreation, lodging & food services	245,967	7.2%
Farming, fishing, forestry, & mining	43,425	1.3%

There were no landings in Virginia of swordfish or tuna taken with pelagic longline gear in 2002. Seven pelagic longline vessels with HMS permits have hail ports in Virgina and three permit holders reside in the state. Places involved in the fishery include Bloxom, Norfolk, Sanford, and Tangier. Because of the low level of involvement with the fishery, no social assessment of impacts on these places was undertaken.

9.4.11 North Carolina

The pelagic longline fishery has a distinctive split north/south of Cape Hatteras, reflecting the local oceanographic conditions. The Gulf Stream, as it skirts the Cape Hatteras shoals, is twenty

Demographic Profile of North Carolina (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	6,628,637	8,049,313
Education:		
High school graduates (25 years or older)	70.0%	78.2%
Employment:		
Labor force (16 years and over)	72.4%	65.7%
Unemployed	4.9%	3.4%
Employment by industry:		
Retail	18.9%	11.5%
Manufacturing	31.5%	19.7%
Education, health & social services	23.8%	19.2%
Arts, recreation, lodging & food services	4.4%	6.9%
Farming, fishing, forestry, & mining	3.2%	1.6%

miles offshore. This is the closest it approaches land after leaving the Cape Canaveral area. The waters north of Cape Hatteras are influenced by the cold Labrador Current. The area off Dare and Hyde Counties, NC is where these two water bodies mix and provides very rich fishing grounds. South and west of Cape Hatteras, the coast curves away to the west forming the relatively shoal Carolina Bight. Vessels operating in this area have further to travel from shore to the Gulf Stream and do not enjoy the diversity and richness of the fisheries immediately to the north of Cape Hatteras.

North of Cape Hatteras, the 2001 pelagic longline landings of swordfish and tuna in Dare and Hyde Counties were 76 percent of the state catch by weight and 79 percent by value. Licensed dealers operate in seven locations in North Carolina, and nine pelagic longline fishing vessels have hail ports in the state. Of the nine vessels, eight are vessels fishing from Dare County, north of Cape Hatteras, and one vessel is from the Beaufort, NC area.

Places involved in the pelagic longline fishery in Dare and Hyde counties include Englehard, Hatteras, Kill Devil Hills, Kitty Hawk, Manteo, and Wanchese. The landings and value of tunas and swordfish in relation to other species landed in North Carolina can be seen in Table 9.8.

Table 9.8 Commercial Fishery Landings in North Carolina, 2001. Source: NOAA Fisheries, 2002.

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	159,557,000	98,723,000	100	100
Tuna/ Swordfish*	360,839	547,409	0.22	0.55

* Tuna/swordfish caught on pelagic longline gear. Percentages are rounded.

9.4.11.1 Wanchese

Wanchese is located on the southern part of Roanoke Island, in the northern Outer Banks. This small fishing village is said to have "changed as little as those who have lived here for generations" (Cutchin, 1997). Wanchese's first seafood dealer was opened in 1936 by a family that still operates two dealers in the community. The village continues to revolve around fishing and fish processing, although boat building has increased in importance in recent years. The Wanchese Seafood Industrial Park was constructed in 1980 by the state; it has 30 acres of leasable land, a 15-acre deep water harbor, 1,500 feet of commercial-style concrete docks, and seven seafood-related businesses (CNCSS, 1993).

There are approximately 117 small businesses in Wanchese, 44 of which are commercial fishing or charter fishing businesses (CNCSS, 1993). Support industries, such as boat builders and seafood packers, are also of great importance to the commercial fisheries and to the North Carolina charter-boat fishery. There are three major seafood dealers/processors in Wanchese and five smaller ones. Of the major dealers, one dealer specializes in scallop and flounder, and has 14 vessels including trawlers, scallop vessels and smaller vessels for gill netting as well as two scallop vessels in Alaska (CNCSS, 1993). They have three packaging and processing houses, a fish-packing house and processing and freezing operations (located in North Carolina, Virginia, and Massachusetts). Seafood is distributed locally and nationally by truck and internationally by air freight. The second dealer, which specializes in hooked fish, is an important seafood distributer. While only operating one vessel, this company buys regularly from 35 local and over 70 non-local vessels. The third dealer, which specializes in bulk fish, packs the fish from its own two vessels. Transportation of their product is set up through an agreement with the Wanchese Fish Company (CNCSS, 1993).

Recent growth in tourism and recreational fishing has sparked competition for finite fishery resources and for dock and harbor-area space. In Wanchese, the east wall of the harbor and more than two/thirds of developed area of the Industrial Seafood Park are now given over to charter and head-boat operations, recreational boat-building and repair and storage. A brewery also operates with the Seafood Industrial Park. However, commercial and recreational fishermen still see themselves as being part of the same fishing-based community and many come from the same families. Members of the non-fishing public are generally supportive of the fishing industry. Unlike the surrounding communities, and in distinct contrast to Hatteras Township, Wanchese has relatively little seasonal variation in employment resulting from tourism; what seasonal fluctuations do exist are caused by the availability of the fisheries resources and are countered by the flexibility and opportunistic nature of the Wanchese fishermen (CNCSS, 1993).

Demographic Profile of Wanchese, NC (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	1,374	1,527
Education:		
High school graduates (25 years or older)	67.0%	76.5%
Employment:		
Labor force (16 years and over)	922	799
Unemployed	10.0%	1.8%
Employment by industry:		
Retail	19.0%	11.7%
Manufacturing	16.1%	13.1%
Education, health & social services	23.1%	22.0%
Arts, recreation, lodging & food services	6.1%	7.2%
Farming, fishing, forestry, & mining	20.0%	8.2%

The population of Wanchese is 98 percent Caucasian, and mostly of European ancestry. There is a strong level of "community stickiness" in Wanchese. In 2000, 75 percent of the population had lived in the same house for five years or more, and 89.7 percent had lived in Dare County for five years or more. There has been a shift in the age structure of the population of Wanchese since the 1990 Census. In 1990, 26 percent of the population were under 15 years of age while, in 2000, 18 percent of the population was under 15. The percentage of those between 15 and 44 years of age remained the same, 46 percent, while in 2000 the population of those 45 years and older had risen nine percent to 36 percent.

In 1990, there were 503 households in Wanchese, with an average of 2.69 persons/household. The number of households had grown to 614 in 2000, with an average of 2.49 persons/household. As in Hatteras, this suggests a population with more "empty-nest" and retiree households than before. Some 87.5% of the households received earnings from an occupation or job, while 12.5 percent of the households received retirement income and 20 percent of the households received Social Security payments.

Wanchese is not a community linked to tourism in the way that most other Outer Banks and Dare County communities are. Of the housing stock, only seven percent were vacation properties in 2000. The marinas and boatyards in Wanchese cater to transient boats and the charter boat fleets, but recreational fishing from Wanchese is more likely to be done by local fishermen in the Albemarle, Currituck, or Pamlico Sounds, than by tourists fishing offshore in private or charter boats. The reason for this is the distance to Oregon Inlet, and the presence of the Oregon Inlet Fishing Center with extensive boat docks, facilities for charter boats, and launching ramps with large parking areas close to the inlet.

A large number of commercially important marine fish are landed in Wanchese, including inshore and offshore species. Many fishermen emphasized that they have to be versatile due to quick changes in water temperature and therefore in availability of species in the area (Wilson *et al*., 1998). The species that pelagic longline fishermen target off the mid-Atlantic coast include swordfish, dolphinfish, and tunas (primarily, yellowfin and bigeye). Although targeting bluefin tuna with longline gear is prohibited, there is an incidental catch allowance of bluefin tuna as part of other fishing operations. Fishermen aboard pelagic longline vessels fish for swordfish, tunas, and dolphin. Because of the weather, tunas and swordfish are accessible to the medium-sized vessels that gillnet for other species and longline in the summer. Respondents explained that they also gillnet for dogfish, bluefish, and Spanish mackerel (in spring and fall), and trout and croaker (in winter). They also bottom fish for bass and grouper. There are a number of vessels that gillnet in some seasons and then switch over to charterboat fishing in the summer. Other fishing activities in Wanchese include trawling trips for squid in the summer, and fishing for weakfish, croaker, and flounder in the winter. Market considerations are crucial in deciding which species should be targeted by longline vessels (Wilson *et al*., 1998).

Researchers found pressure on this sector of the longline fishery to be substantial. Hiring and managing crew for pelagic longline vessels is increasingly difficult, especially for the larger vessels that need people to stay on for longer trips. There is a lot of turnover in fishing crews, particularly when vessels shift to other fisheries and revenue drops. Many of the larger vessels have already left, and experienced fishermen are finding work overseas and other captains and vessel owners are searching for alternatives to commercial fishing. Some have switched to carpentry and building and others have gone into the charter fishing business. Finding alternative permanent work may prove difficult for many fishermen who are highly skilled in their profession but have less formal education than the average worker (Wilson *et al*., 1998).

Traditionally, fishermen on larger longline vessels went shark fishing from January until the closure of the first half of the shark season, and then fished with pelagic longline gear for tunas or swordfish. HMS landed by these vessels supplied the restaurants in the local area with fresh products. Commercial fishermen and dealers did not like the fact that closures of the shark fishery caused all fishermen to shift at the same time from species to species, because it caused prices to drop. Some marginal fishermen are driven out of the market by the low prices associated with these shifts. Shifts in targeted species also required changing gear, which could be expensive (Wilson *et al*., 1998).

9.4.12 South Carolina

Demographic Profile of South Carolina (source: U.S. Census, 2000)

Population:	4,012,012	
Education:		
High school graduates (25 years or older)	1,981,731	76.2%
Employment:		
Labor force (16 years and over)	1,938,195	62.2%
Unemployed	113,495	3.6%
Employment by industry:		
Retail	217,604	11.9%
Manufacturing	354,386	19.4%
Education, health & social services	339,708	18.6%
Arts, recreation, lodging & food services	155,109	8.3%
Farming, fishing, forestry, & mining	20,785	1.1%

The HMS pelagic longline fishery in South Carolina involved two local vessels in 2002, with transient vessels from New Jersey and North Carolina also landing in the state. There were licensed dealers operating in six locations in South Carolina and owners of four permits were resident in the state. Places involved in the pelagic longline fishery were Charleston, Georgetown, Mount Pleasant, and Wadmalaw Island. Because of the small catches and relatively low value of the fishery, no profiles were made of the South Carolina fishing communities. The landings and value of tunas and swordfish in relation to other species landed in South Carolina can be seen in Table 9.9.

Table 9.9 Commercial Fishery Landings in South Carolina, 2002. Source: NOAA Fisheries, 2002.

Species	Landings Pounds	Landings Value $	Percent Weight	Percent Value
All Species	13,458,000	20,760,000	100	100
Tuna/ Swordfish*	51,253	89,994	0.38	0.43

* Tuna/swordfish caught on pelagic longlines. Percentages are rounded.

9.4.13 Georgia

One HMS pelagic longline permit holder was resident in Georgia in 2002, and one pelagic longline vessel had Darien as her hail port. No landings of swordfish or tuna taken on pelagic longlines were reported in Georgia in 2002.

9.4.14 Florida

Demographic Profile of Florida (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	12,937,926	15,982,378
Education:		
High school graduates (25 years or older)	74.0%	79.9%
Employment:		
Labor force (16 years and over)	58.6%	58.1%
Unemployed	6.1%	3.2%
Employment by industry:		
Retail	19.6%	13.5%
Manufacturing	10.5%	7.3%
Education, health & social services	21.4%	18.1%
Arts, recreation, lodging & food services	6.8%	10.5%
Farming, fishing, forestry, & mining	3.1%	1.3%

There were some significant shifts in Florida's economy in the decade between 1990 and 2000. Traditional sectors of the economy, such as retail trade, manufacturing and farming shrank, while employment in the tourist industry, financial and other services grew. In spite of the population growth of nearly 25 percent in the decade, the ratio between those of an age to be in the labor force and those who were active in the labor force did not change significantly. Some 42 percent of those older than 16 years were not in the labor force. This reflects a continuing population of retired persons. In fact Florida has a population with more than 40 percent older than 45, and 19 percent less than 15, years of age. In 2000, 24 percent of Florida's households received retirement income and 33 percent received Social Security income. Households in which income was earned through wages or salary were 74 percent of all households in 2000. Average per capita income in Florida in 1989 was $14,698, and this had increased to $21,557 in 1999.

Florida's fishing industry is one of the largest in the region and it is as diverse as the East and West coasts are different. The pelagic longline fishing fleet consists of 77 vessels with Florida hail ports and HMS permits in 2002. Of these vessels, 39 operated from East Coast ports and 38 from Florida's West Coast ports. Licensed dealers operate in 14 locations in Florida, split evenly between East and West Coast communities. In 2002, the pelagic longline catch of swordfish and tuna was split between the two coasts with 98 percent by weight going to the East Coast ports, and 3 percent by value going to the West Coast ports. The landings and value of tunas and swordfish in relation to other species landed on the East Coast of Florida can be seen in Table 9.10.

Table 9.10 Commercial Fishery Landings in Florida (East Coast), 2002. Source: NOAA Fisheries, 2003.

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	32,221,000	38,878,000	100	100
Tunas/ Swordfish*	102,976	230,117	0.32	0.59

* Tunas/Swordfish caught on pelagic longlines. Percentages are rounded

The East Coast fishery extends from the Georgia state line to Biscayne Bay. The greatest amount (63 percent by weight) of pelagic longline landings on the East Coast in 2002 was in St. Lucie County. The second largest landings in 2002 were in Lee County where 16 percent of the pelagic longline swordfish and tunas, by weight, are landed. Brevard County, in the northeast, had 14 percent of the catch. Fort Pierce (St. Lucie County) had the greatest concentration of vessels and permit owners, with nine HMS pelagic longline boats and the owners of eight permits. Miami (Dade County) was the hail port for 10 pelagic longline vessels, but there were no pelagic longline swordfish or tuna landings in Dade County, and no owners of HMS pelagic longline permits were resident in Dade County in 2002. In 2002, there were 22 Florida East Coast places involved in the HMS pelagic longline fishery through landings, vessel hail ports, or the places of residence of permit owners.

The West Coast pelagic longline fishery included all of the Florida Keys, the West Coast, and the Florida Panhandle. Pinellas County and Monroe County ports each handled 45 percent, by weight of swordfish and tunas taken by pelagic longline gear. Monroe County (the Florida Keys) ports handled 63 percent, by value, of the West Coast catch. Ten vessels were based in Panama City which was also home to owners of eleven HMS pelagic longline permits. Pinellas County places were the hail ports for 12 vessels, of which nine were based in Madeira Beach. Madeira Beach was also the home of owners of four HMS pelagic longline permits. Dealers operated in seven locations on the West Coast of Florida. The landings and value of tunas and swordfish in relation to other species landed on the West Coast of Florida can be seen in Table 9.11.

Table 9.11 Commercial Fishery Landings in West Coast, Florida, Ports; 2002. NOAA Fisheries, 2003.

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	78,975,000	138,968,000	100	100
Tunas/ Swordfish*	2,433	6,994	0.003	0.005

* Tunas/swordfish caught on pelagic longlines. Percentages are rounded.

9.4.14.1 Pompano Beach

Pompano Beach is small city directly adjacent to Ft. Lauderdale. The Ft. Lauderdale area is known as the “Yachting Capital of the World” and the “Venice of America” because of the vast canal system which extends throughout Broward County and creates 165 miles of waterfront in

the region. Recreational fishing is a very important activity in Pompano Beach, mainly targeting billfish. According to Florida's Bureau of Vessel Titling and Registry, in 1996 and 1997 Broward County had 44,151 registered vessels, with 41,393 pleasure and 2,043 commercial vessels. In contrast to many Florida communities, a substantial amount of the recreational industry is supported by local people in addition to tourists; many small fishing tournaments attract about 75 percent local people and 25 percent tourists. Pompano Beach is also a globally important manufacturing center for commercial longlining equipment (Wilson *et al,* 1998).

Since the 1990 Census, there have been shifts in the ethnic and racial population of Pompano Beach. In 1990, the population was 70 percent Caucasian and 29 percent Black-American. Some 20 percent of the population was of Hispanic ancestry. In 2000, the population consisted of 67 percent Caucasians, 25 percent Black-Americans, and 8 percent of people of other ethnicities. The proportion of the population with Hispanic ancestry had dropped to 10 percent.

The age structure of the Pompano Beach population did not, however, change during the decade. Children under 15 years comprise 15 percent of the population, persons between 15 and 44 years of age form 40 percent of the population, and 45 percent are aged 45 years or older.

The number of households increased from 31,891 in 1990 to 35,917 in 2000. The average household size in Pompano Beach decreased from 2.2 persons/household in 1990 to 2.1 persons/household in 2000. Of the households in 2000, some 69 percent were in receipt of earned income. Some 36 percent of the households received Social Security payments, while 16 percent of households were in receipt of retirement income from pensions. This suggests that some 30 percent of households were retired and living on fixed incomes.

Demographic Profile of Pompano Beach (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	72,411	78,191
Education:		
High school graduates (25 years or older)	73.7%	77.2%
Employment:		
Labor force (16 years and over)	55.7%	53.8%
Unemployed	6.3%	3.6%
Employment by industry:		
Retail	18.6%	13.6%
Manufacturing	8.5%	7.1%
Education, health & social services	13.2%	14.9%
Arts, recreation, lodging & food services	8.4%	11.0%
Farming, fishing, forestry, & mining	3.1%	0.5%

The per capita income for Pompano Beach in 1989 was $17,382, and greater than the state

average by $2,684 per annum. In 2000, per capita income in Pompano Beach was $23,938, and greater than the state average income by $2,381.

As a community, Pompano Beach owes its current infrastructure and social and economic lifestyle to the coming of the railroad in 1896 to a small coastal settlement. The proximity of good fishing and other natural resources encouraged the town and region's development as tourism and retirement center. The local chamber of commerce sponsors three marine festivals every year, and describes Pompano Beach as a "haven for boating, fishing and outdoor activities with its beautiful sunny weather...".

Pompano Beach has a proud longlining heritage and there are several successful businesses that are still involved to some degree with the fleet (Wilson *et al*., 1998). This gives the current small vessel fleet and other longline business some networks of support. At the same time, Pompano Beach is now increasingly a recreational fishing community. There is a great deal of tension between the recreational fishermen and the longliners. At the present time, researchers found that the longline fleet is not receiving community support beyond that supplied from within their own industry. Both sides acknowledge a problem with overfished stocks, but each often blames the other side.

Pompano Beach has a small pelagic longline fleet, remnant of a much larger fleet, that mainly targets tunas and swordfish. There is also some shark fishing farther north along the coast. Among the vessels that dock in Pompano Beach are five small (40 to 50 feet), short-trip, year-round longline vessels, and six or seven seasonal longline vessels. There are some larger pelagic longline vessels in the nearby town of Dania. The most intensive local fishing takes place December through April. Vessels in the resident fleet stay and are joined by many vessels that come from the north to fish during the winter. From April through the end of June, fishermen on the larger longline vessels fish in the South Atlantic Bight and land most of their catch in Charleston, South Carolina. The smaller longline vessels fish year round in the Gulf of Florida. The longline fleet conducts business with two seafood dealers in Pompano Beach and one in Dania.

Commercial fishermen in Pompano Beach are proud of the role they have played in the development of the longline industry and report that monofilament longline was created and perfected in Pompano Beach. A group of charter vessel captains, the "Mosquito Fleet," began experimenting with longlines and various fish attraction devices in the 1970s. Three of these people opened a dealer to specialize in pelagic fish. A related company built the first distant water swordfish fleet in the southern United States. By the early 1980s, the fleet was developing and the geographical range of operations was increasing. They sold the smaller vessels and acquired 60 to 80-foot vessels that could move north and follow the fish. They moved from short trips to week long trips. By 1983, they were fishing on George's Bank and would be gone for two to three weeks. The Pompano Beach longliners began to invest in even larger vessels in the mid 1980s. This meant, however, that the best captains were gone for longer and longer times. Family problems, divorces and dislocations became issues in the community (Wilson, *et al*, 1998).

By the late 1980s, the eight largest vessels in the Pompano pelagic longline fleet had gone to Hawaii. The better captains began to get out of the business because they had to travel so much. The mates that took over were less skilled and this increased the amount of time that the home offices had to spend on absentee management. There was increased competition from imported fish and ICCAT catch restrictions for swordfish were becoming tighter. With Bahamian independence, the fleet lost access to waters near the Bahamas which had been very important for the smaller longline vessels, less than 50 feet in length. Researchers also found that the small vessel fishery is vulnerable to price pressure from the swordfish boycott that was organized by a coalition of conservation groups, because their main market niche is the high-end users that are responding to the boycott. The development of the Pompano Beach area for yachting and recreational fishing has made dockage and access to the water more expensive (NMFS, 1999). Swordfish closures have reduced income by shifting effort to less valuable species, such as sharks.

Respondents reported that as recently as 1994, crew used to line up for work. All commercial respondents reported increased difficulty in getting quality crew. The smaller vessels take two crew plus the captain. Owner-operators often try to have at least one crew member with them consistently, and then find anyone they can for particular trips. The end result of all of these factors has been a substantial reduction of the Pompano Beach pelagic longline fleet. Pompano Beach's remaining fleet is considered, by both its owners and suppliers, to be in major trouble (Wilson *et al*., 1998). Skilled captains were found to be seeking employment in the Bahamas, as well as with the growing longline fleets in South Africa and South America, while the longline supply business has shifted its emphasis to supplying foreign fleets. In the urban economy of Pompano Beach, non-fishing alternatives for fishermen exist. However, unemployment is moderately high and the work force is fairly well-educated, so finding employment could be competitive. Snapper, king mackerel, and red crab are all limited entry fisheries. Fishing for dolphin, however, can be a profitable alternative to swordfishing (NMFS, 1999).

9.4.14.2 Fort Pierce

Fort Pierce is located in St. Lucie County, a rapidly developing area in South Florida. St. Lucie County is known as a center for citrus growing, particularly grapefruit. Fort Pierce is on the site of an army fort built in 1838, and remained an isolated outpost until the railroad reached the town in 1900. Fort Pierce was incorporated in 1901, and soon developed as a center for industry and agribusiness, and more recently as a place to retire to. At the junction of the Florida Turnpike and Interstate 95, Fort Pierce is a thriving intermodal transportation center, distribution point, and tourist stop-over point.

Fort Pierce's population is 49 percent White and 40 percent Black-American. No other ethnic or racial groups dominate the remaining 11 percent of the population. People of Hispanic ancestry comprise 15 percent of the population of Fort Pierce. Children under 15 years of age form 23 percent of the population, 40 percent are aged between 15 and 44 years, while 37 percent are aged 45 or older.

There were 14,407 households in Fort Pierce, with an average household size of 2.56 persons, in 2001. The population is relatively mobile, since only 46 percent lived in the same house in 1995 as they did in 2000. It is also a relatively poor community, with median household income of $25,121 in 2000, and 31 percent of the population living below poverty level. Per capita income in Fort Pierce in 2000 was $14,345, compared to the state-wide average per capita income of $21,557, or $9,593 less than the per capita income in Pompano Beach.

Locals refer to Fort Pierce as the "gateway to the Bahamas" because of the number of sport fishing and other vessels which use Fort Pierce as their departure point for the Bahamas and its associated Gulf Stream fisheries for HMS and other species of fish, including swordfish and tuna. The city's marina, in conjunction with other marinas and docks along the Indian River, Indian River Lagoon, and Intracoastal Waterway, provides sufficient dockage for recreational boaters and fishermen and for a commercial fishing fleet, principally longliners. The Fort Pierce pelagic longline fleet landed 62 percent, by weight, and 66 percent, by value, of the Florida East Coast swordfish and tunas in 2002, earning some $153,000 in ex-vessel sales.

Demographic Profile of Fort Pierce, FL (source: U.S. Census, 2000)

Population:	28,485	
Education:		
High school graduates (25 years or older)	14,108	59.7%
Employment:		
Labor force (16 years and over)	15,681	55.1%
Unemployed	1,382	4.9%
Employment by industry:		
Retail	1,784	12.5%
Manufacturing	1,139	8.0%
Education, health & social services	2,419	16.9%
Arts, recreation, lodging & food services	1,545	10.8%
Farming, fishing, forestry, & mining	1,119	7.8%

The commercial fishery is similar to the commercial fishery of Pompano Beach, using both pelagic longlines and bottom longlines, and is principally conducted during the fall and winter seasons. Smaller vessels switch gears and target species throughout the year, while larger vessels move with the fish stocks and retain the same gear configurations.

9.4.14.3 Madeira Beach

Madeira Beach is part of the Tampa Bay urban complex, one of several beach suburbs of St. Petersburg. The area is the central port for the Florida shark bottom longline fleet. Madeira

Beach is also home to a thriving recreational HMS fishery. In terms of revenue, tourism is the number one industry in Pinellas County. Annually, four million visitors contribute about two billion dollars to the economy. The tourism industry also employs almost 60,000 of the residents either directly or indirectly, adding up to $720 million in wages (St. Petersburg/Clearwater Visitors Bureau brochure, 1998). The state of the economy since September 2001 has dampened the tourism industry, and Pinellas County Chamber of Commerce reported that the 2002 visitor and expenditure statistics were similar to those of 1998 (PCCC Report, March, 2003).

The population of Madeira Beach was 99.8 percent Caucasian in 1990 and 97.1 percent Causcasian in 2000. During the decade, the number of people in the population claiming German ancestry rose from 11 percent to 19.7 percent in 2000, although 92 percent of the population of Madeira Beach were born in the United States. The Madeira Beach population aged during the decade. In 1990, seven percent of the population were children aged 14 years or less; this proportion had dropped to 6 percent in 2000. The proportion of persons aged 15 to 44 years also dropped from 39 percent in 1990 to 36 percent in 2000. The proportion of persons aged 45 years or more grew from 54 percent of the population to 58 percent.

Demographic Profile of Madeira Beach (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	4,225	4,511
Education:		
High school graduates (25 years or older)	83.8%	87.3%
Employment:		
Labor force (16 years and over)	63.1%	61.5%
Unemployed	2.8%	2.7%
Employment by industry:		
Retail	12.7%	11.4%
Manufacturing	12.2%	11.3%
Education, health & social services	9.2%	7.9%
Arts, recreation, lodging & food services	20.2%	21.6%
Farming, fishing, forestry, & mining	0.2%	0.0%

The number of households in Madeira Beach increased from 2,230 in 1990 to 2,528 in 2000, but the average number of persons in a household declined from 1.88 persons in 1990 to 1.78 in 2000. In 2000, almost 28 percent of the housing units in Madeira were seasonal or recreational units vacant at the time of the Census.

Per capita income in Madeira Beach in 1989 was $17,301; in 1999, per capita income had risen to $30,097, some $8,000 more than the state average per capita income. Individuals living at or below poverty level comprised 9.8 percent of the Madeira Beach population. Some 72 percent of

Madeira Beach's households received earnings from wages or salaries. Twenty-three percent of the households were in receipt of retirement funds or pensions, while 31 percent of the households received income from Social Security.

The offshore fishing industry in Madeira Beach started as a bandit (reel fixed to transom) fishery before it shifted to bottom longlining. Grouper is the traditional fishery for the community. In the 1960s, there were two dealers supported by charterboats selling fish and a small commercial fleet targeting kingfish and grouper. Many species which are now sold, such as amberjack, were considered junk fish. As demand for seafood began to grow, higher prices accompanied by investment programs lead to substantial investment in commercial fishing within this community.

Pelagic longline vessels began to target swordfish in the 1970s, using cloth and nylon line before monofilament longlining became widely used. Local availability of swordfish declined quickly and a group of vessels went north to look for fish. On their way back they set longline gear in deep water and caught a significant amount of tilefish and yellow edge grouper; this was how the bottom longline fishery in Madeira Beach began (Wilson *et al*., 1998). Marginal swordfish vessels began to experiment with various techniques such as straight hooks, auto-baiters and circle hooks. These vessels were now too small to be successful at swordfishing because of the increased steaming distances required. The fleet at Madeira Beach is currently 95 percent longline vessels. In 1997, there were four seafood dealers in this community, two of which bought and sold pelagic fish. One dealer estimated that before restrictions on shark fishing his business used to be 45 percent grouper, 45 percent shark, and ten percent swordfish and tuna; now it is 75 percent grouper, ten percent shark and 15 percent swordfish and tuna (Wilson, *et al.*, 1998).

Many longline fishermen have multiple permits and a substantial number are grouper fishing. Different gear is used for the different fisheries. Grouper fishing requires a wire cable while the pelagics use mono-filament, although some fishermen fish grouper with a monofilament mainline using weights to sink it. The maximum number of trips they can make is about 15 trips a year, as a grouper trip lasts 18 to 20 days. Mexican grouper fishing has created a lot of competition in the last decade, and U.S. fishermen are upset by the ineffectiveness of Mexican regulations and the lack of import controls. In the United States, grouper are subject to limited access, a minimum size, area restrictions, and a quota.

Yellowfin tuna is an important Gulf of Mexico commercial fishery species but requires use of pelagic longline gear, rather than the bottom longlines used in the grouper and shark fisheries, as well as a larger vessel because of steaming distances. Currently, few vessels land tunas in Madeira Beach and their catches are low. Yellowfin tuna meat has to be kept on board at a high standard of care as it is sold for steak. A good trip can yield 30,000 pounds of yellowfin tuna. Florida fishermen prefer tuna fishing to grouper fishing because of the shorter hours and better prices (NMFS, 1999).

Overall, the Madeira Beach longliners are becoming fewer and more isolated from the rest of the fishing community (Wilson *et al*., 1998). Respondents say that antagonism and competition

among dealers has gotten worse in recent years as vessels drop out of fishing, often being sold outside of the country. Many of these crews are living trip to trip and often need credit for engine repair, ice, fuel and even household and personal items. Both the fishermen and an engine supplier reported that the commercial fleet is spending more on maintaining existing gear and vessels rather than buying new equipment. Traditional patterns of dealers building relationships by extending services and credit to vessels are giving way to price-based competition to gain access to vessels (NMFS, 1999).

Fishermen in this community have experienced restrictions on gear, harvest, and capacity in many of its important fisheries. Researchers found that alternative employment outside of the fishery is available through expanding opportunities in the tourism and recreational fishing industries. However, researchers found that this relatively ready supply of alternative employment threatened the stability of the labor pool for the fishing industry. Some reported that the best captains are leaving the country or moving on to other jobs. Like many other fishing communities, the longline fleet in Madeira Beach is experiencing market competition from imports of their target species. Concerns cited by pelagic longline fishermen were the safety of small vessels during winter openings, and the prospect of small vessels having to pay for observers and VMS (Wilson *et al*., 1998; NMFS, 1999).

In 2002, Madeira Beach was the hail port for nine pelagic longliners actively fishing for HMS species, and the home of the owners of four HMS pelagic longline permits. However most pelagic longline landings were made by Madeira Beach boats in Louisiana and on the East Coast of Florida. The renewal and renovation of the town's waterfront, particularly on John's Pass, removed many of the berths and infrastructure which supported both the charter boat fleet and the commercial fishing fleet. There are, in 2002, licensed dealers operating from two locations in Pinellas County.

9.4.14.4 Panama City

Panama City is one of the Florida Panhandle's top fishing centers. It offers surf fishing, pier fishing, and charter/headboat fishing, according to the Panama City Tour Guide. According to the Florida Bureau of Vessel Titling and Registration, the county had a total of 16,865 registered vessels with 15,359 pleasure and 1,433 commercial vessels in 2002.

During the winter, fishermen target bottom fish and bluefish. In March, the season begins for Spanish mackerel, cobia, snapper, bonito, little tunny, amberjack, snapper, red porgies, rudder fish, blue runner, bluefish, and redfish. By summer, they also fish for king mackerel, dolphin fish, wahoo, little tunny, and barracuda. White marlin, blue marlin and sailfish are caught in late summer. Some charterboats will go shark fishing at night for extra income. In September, the fishery is very mixed, and in October, king mackerel and bonito are popular. Tourists are mainly interested in bottom fishing. Motivations have changed; people used to be interested in catching a lot of fish and taking it home to eat or sell, but now people are satisfied to catch anything (Wilson *et al*., 1998; NMFS, 1999).

Demographic Profile of Panama City, FL (U.S. Census, 1990 & 2000)

	1990	2000
Population:	34,378	36,417
Education:		
High school graduates (25 years or older)	70.0%	79.2%
Employment:		
Labor force (16 years and over)	57.0%	53.9%
Unemployed	8.1%	3.1%
Employment by industry:		
Retail	14.4%	13.8%
Manufacturing	8.0%	7.0%
Education, health & social services	23.6%	22.0%
Arts, recreation, lodging & food services	11.8%	14.2%
Farming, fishing, forestry, & mining	1.5%	0.5%

Panama City saw a big change in its demographics in the decade between 1990 and 2000. In 1990, the age profile was typical of a mature society; by 2000, it reflected significant aging of the population. In 2000, 57 percent of the population of Panama City was 45 years or older, in contrast to 37 percent in 1990. The proportion of the population aged between 15 and 44 years declined from 43 percent in 1990 to 24 percent in 2000. The proportion of the population aged 14 years or younger did not change significantly; it remained at approximately 19 percent of the population.

Panama City had 14,033 households in 1990, and the population grew during the decade to 14,819 households in 2000. The average household size decreased from 2.38 persons in 1990 to 2.30 persons in 2000, indicating that there might be an increase in "empty nesters" and retiree households. Some 12 percent of households (17 percent of individuals) were below the poverty level in 2000. In 1990, the per capita income in Panama City was $12,169 and was significantly lower than the state average per capita income of $14, 698. This situation persisted in 2000, when the Panama City per capita income had increased to $17,830, but continued to be less than the Florida average of $21,557 per capita.

In the early 1980s, yellowfin tuna was the main fishery for Panama City from April through December while bluefin tuna were targeted in the winter. Panama City vessels sold bluefin tuna at regular auctions in Dulac, Venice, and Galveston during the early 1990s. They had a quota of 110 tons and they could bring in two fish per day in trips that lasted four to five days; prices averaged $20 per pound during these peak years. This fishery was considerably reduced by the incidental catch requirement to land 2,500 pounds of target catch in order to take a bluefin tuna. Fishermen say they cannot meet the target catch requirement when the yellowfin season is slow

and that therefore discarding of bluefin and high grading have become a problem. Some of the longline vessels were shifting from yellowfin tuna fishing to grouper fishing in 1998, since the latter requires fewer crew members.

Panama City had nine offshore pelagic longline vessels in 1998 that targeted yellowfin tuna during most of the year, and one distant water swordfish longline vessel (Wilson *et al*., 1998). Some of these vessels targeted dolphin fish in the summer, and swordfish more rarely. Two of these vessels were owner operated, two were owned by a dealer, three were each owned by a single person who hires a captain, and two others were owned by the same person who hires captains. Some pelagic longline fishermen also participated in the reef fish fishery. There were 16 to 19 grouper vessels operating out of Panama City in 1998. One fish trader interviewed by the researchers in 1998 reported that his current business was 87 percent yellowfin tuna and eight percent snapper, with the remainder being a mix of swordfish, bluefin tuna, dolphin, wahoo, and escolar. He bought from about ten vessels in 1998, but had bought from 30 vessels a few years ago. Many of the larger U.S. vessels are reported to have gone to Mexico, where fishing regulations are more lenient and it is easier to find crew members (Wilson, *et al.*, 1998).

While Panama City was developing tourist and recreational fishing industries, the longline fishermen were becoming fewer and more isolated from the rest of the fishing community. The competition among dealers was perceived as becoming more aggressive in 1997-1998. Traditional patterns of dealers building relationships by extending services and credit to vessels were giving way to price-based competition to gain access to vessels. Fishermen in this community had experienced restrictions on gear, harvest, and capacity in many important fisheries. Researchers found in 1998 that alternative employment outside of the fishery was available in the developing tourism and recreational fishing industries. However, researchers concluded that this relatively ready supply of alternative employment threatened the stability of the labor pool for the fishing industry (Wilson *et al*., 1998).

Some of the pelagic longline vessels in Panama City switch their gear to target sharks when the shark fishery was open. The Florida bottom longline fleet primarily targeted sandbar sharks for their valuable fins. Researchers in 1998 questioned fishermen about the possibility of implementing a minimum size for sharks. The main desire in the shark fleet appeared to be avoiding disturbances in supply. Members of the fishing and supply industries reported price fluctuations in the shark fishery, which they attributed to the difficulty in maintaining steady supplies under derby-style quota management. Other concerns cited in 1998 were safety of small vessels during winter openings, and the prospect of small vessels having to pay for observers and VMS.

Researchers concluded that the overall effect of increased restrictions on the bottom longline fleet would be increased pressure on grouper and yellowfin tuna, increased difficulty in finding and retaining employees, and an acceleration in the rate at which the fleet's vessels and experienced fishermen are moving overseas, especially to Mexico. Increased restrictions on commercial fishing would likely accelerate the decline of that sector relative to the recreational fishery in Florida (Wilson *et al*, 1998).

In 2002, the pelagic longline fishery for swordfish and tuna operating from Bay County ports of Panama City, Lynn Haven, Panama City Beach and Southport made no landings in the County. Bay County has the hail ports for 11 HMS pelagic longline vessels and is the home of the owners of 12 active permits. This fleet of vessels made swordfish and tuna landings in Louisiana ports in 2002, and also participated in the grouper and shark fisheries.

9.4.15 Alabama

There were small pelagic longline landings in Mobile County, Alabama in 2002, but, because there was only one dealer involved, the weight and value of the landings are confidential as required under the MSA and NOAA Administrative Orders. Places involved in the pelagic longline fishery were Elba, Elberta and Orange Beach. Alabama is the home of the owners of two HMS pelagic longline permits and has the hail port of one pelagic longline vessel. Because of the smallness of the fishery, no social assessment or profiles of places was undertaken.

9.4.16 Mississippi

Mississippi had no HMS pelagic longline landings in 2002. One pelagic longline vessel had Pascagoula as her hail port, and the owner of an HMS pelagic longline permit lived in the state. No social assessment of impacts or community profiles were undertaken for Mississippi.

9.4.17 Louisiana

Demographic Profile of Louisiana (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	4,219,973	4,468,976
Education:		
High school graduates (25 years or older)	68.0%	74.8%
Employment:		
Labor force (16 years and over)	57.8%	58.9%
Unemployed	9.0%	4.3%
Employment by industry:		
Retail	17.5%	11.9%
Manufacturing	12.5%	10.1%
Education, health & social services	25.3%	21.7%
Arts, recreation, lodging & food services	4.7%	9.1%
Farming, fishing, forestry, & mining	5.7%*	4.2%*

* Mining in Louisiana includes the oil industry; in 1990, mining employed 3.2% of all workers, while in 2000, mining employed 2.6% of all workers.

Louisiana was second only to Alaska in the quantity and value of its commercial fisheries in the United States in 2002. Venice, LA, ranked third in the United States for quantity of commercial landings, while Dulac, LA, ranked fourth in the nation for value of landings. The menhaden fishery is based in Venice, while shrimping is the principal fishery in Dulac. Both of these fisheries have declined during the past two decades, from the peak year of Louisiana commercial landings in 1984 when 1,931,027,000 pounds of fish were landed in the state.

Pelagic longline landings, principally of tunas, were the largest of any state. Landings in 2002, of 2,733,042 pounds, had a value of $8,688,323. In 2002, tuna and swordfish dealers were operating from 11 locations in Louisiana, and the pelagic longline fishing fleet numbered 47 vessels. The communities involved in the pelagic longline fishery in 2002 included Boothville-Venice, Chalmette, Cut-Off, Dulac, Gretna, Harvey, Houma, Kenner, and New Orleans. The largest concentrations of pelagic longline vessels were homeported in New Orleans (68 percent), and Dulac (19 percent). In 2002, Louisiana was the home to the owners of 43 HMS pelagic longline permits. The landings and value of tunas and swordfish in relation to other species landed in Louisiana can be seen in Table 9.12.

Table 9.12 Commercial Fishery Landings in Louisiana, 2002. Source: NOAA Fisheries, 2003.

Species	Landings	Landings	Percent	Percent
	Pounds	Value $	Weight	Value
All Species	1,308,531,000	305,534,000	100	100
Tunas/ Swordfish*	2,733,042	8,688,323	0.21	2.8

* Tunas/swordfish caught on pelagic longlines. Percentages are rounded.

The center of fishing activity is off the Mississippi delta, and ports like Boothville-Venice, Port Fourchon and Grand Isle with good road access to the metropolitan areas of Baton Rouge and New Orleans, benefit from their access to good bottom-fishing areas and to "blue-water" areas offshore.

9.4.17.1 Venice

Boothville-Venice is a "census designated place" following locally agreed boundaries for unincorporated places, and the Census statistics include both small communities. Similarly, NOAA Fisheries links Empire and Venice as a single port. We will refer to both the port and community as Venice.

Venice is located about 30 miles south of the Parish seat, Point à la Hache, which is flanked by eroding wetlands and levees that border the Mississippi River. The unemployment rate is low compared to that of Dulac, perhaps because Venice has been the epicenter of oil industry activity in Louisiana. The main job opportunities in Venice are oil, seafood , and increasingly, recreational fishing. Venice extends into the Gulf of Mexico close to billfish areas that are frequented by recreational fishermen. Recreational fishing increased steadily there during the 1990s. Animosity regarding competition for fish extends to the political arena, as commercial and recreational fishermen oppose each other on regulatory issues. Commercial fishery participants claim that they are harassed by law enforcement agents, while recreational fishery participants claim that regulations are not enforced in Venice because there are simply not enough agents to cover the area. Among local commercial fishermen, there is a sense that recreational fishermen have helped create a regulatory environment that is pushing commercial fishermen out of business (Wilson *et al*., 1998).

Two pelagic longline vessels have Venice as hail port, and one HMS pelagic longline permit owner lives in Venice. Most pelagic longline fishermen who sustain the yellowfin tuna industry in Venice are Vietnamese-Americans who live in New Orleans or a suburb of that city. Shrimp is the largest commercial catch bought and sold in Venice, although this fishery has become less profitable since the late 1980s (Wilson *et al*., 1998). The longline fleet is not well integrated into the Louisiana community of Venice. They are commuters and most of them are from a different ethnic background, including many Vietnamese-Americans. Due to the language barrier, many of these fishermen do not participate in public fisheries meetings (NMFS, 1999).

Venice's population decreased by 24 percent in the decade between 1990 and 2000. In 2000 there were 2,220 residents of the community. The age structure of the population shows, in 2000, that 26 percent of the residents were under 15 years old, 44 percent were between the ages of 15 and 44 years, and 30 percent were 45 years of age or older. In 1990 there were 844 households with an average size of 3.25 people. The number of households had decreased to 746 in 2000 and the average household size had dropped to 2.96 people.

Per capita income in Venice in 1990 was $6,949. This was higher than the per capita income of

Dulac ($4,946) but much lower than the state average ($10,635). Thirty-six percent of the population of Venice lived below the poverty level. The median household income was $16,250. Eighteen percent of the households in Venice in 1990 received Social Security, averaging $5,433 per year, and 11 percent of the households received public assistance income, averaging $3,301 per year. In 2000, the per capita income of Venice residents was $13,123, while the per capita income for the state of Louisiana had increased to $16,912. Of the households in Venice, some 18 percent remained below the poverty level in 2000.

By the late 1980s, the domestic market for fresh tuna developed and prices for yellowfin tuna rose. Locals say some longline vessels from Florida and New Jersey fished for swordfish and bluefin tuna in the area near Venice during the late 1980s and early 1990s. Vietnamese and American fishermen re-rigged their vessels from shrimping to pelagic longlining for tuna. At an estimated cost of $1,000 per mile of line; most outfitted their vessels with 20 to 40 miles of line. The oil industry was also in decline at this time which resulted in the outfitting of some oil vessels with longline gear (Wilson *et al*., 1998). As a result of fluctuating prices for yellowfin

Demographic Profile of Venice (Source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	2,743	2,220
Education:		
High school graduates (25 years or older)	43.5%	48.4%
Employment:		
Labor force (16 years and over)	50.0%	53.0%
Unemployed	6.4%	2.0%
Employment by industry:		
Retail	12.5%	13.1%
Manufacturing	7.1%	4.8%
Education, health & social services	8.9%	14.4%
Arts, recreation, lodging & food services	6.9%	10.4%
Farming, fishing, forestry, & mining	22.5%	22.7%

tuna, some pelagic longline vessels went back to shrimping and others left for the Pacific Ocean. The industry has reached an equilibrium in terms of vessels and in terms of yellowfin tuna price, which fluctuates but is generally $4.00 to $5.00 per pound for the highest grade (Wilson *et al*., 1998).

In 1998, several dealers in Venice drew 40 percent of their business from the longline fleets. Another dealer drew only about 20 percent from longline vessels. A large wholesaler dealt only in longline catches and purchased fish from three of the four local dealers. In 1997, 60 percent of this business was tuna, 30 percent shark, and 10 percent swordfish. The competition between

dealers in 1998 was perceived as becoming more aggressive (Wilson *et al*., 1998). Traditional patterns of dealers building relationships by extending services and credit to vessels are giving way to price-based competition to gain access to vessels.

While pelagic longline fishermen with large vessels work year-round, pelagic longlining in the area tends to intensify in May and ease up during the wintertime. There are four docks in Venice where pelagic longline vessels unload. Docks in Venice employ between five and 15 workers on a seasonal basis for unloading vessels and packing seafood, as well as five to eight people year-round. The docks purchase tuna year round, shrimp from May through December, bottom fish such as drum, catfish, and sheepshead, from January through May, and mullet (for the roe) from October through December (NMFS, 1999).

Researchers in 1998 found that alternative employment outside of the fishery was available. For instance, the oil industry hired unskilled labor from this area in recent years, and employed 3 percent of the civilian labor force in 2000. The agricultural sector also provides employment opportunities during the off-season for fishing, as reported by one Vietnamese-American captain. However, researchers found that this relatively ready supply of alternative employment threatened the stability of the labor pool for the fishing industry. The Vietnamese-American community has avoided such personnel problems to some extent by relying on tight kinship networks in both fishing and fish buying, although they did report some difficulty in finding captains. The Vietnamese-American community was the only one studied which reported recent investment in new longline vessels. Concerns cited by the fishermen in Venice included the safety of small vessels during winter openings, and the prospect of small vessels having to pay for observers and VMS.

Other commercial fisheries in the area that could provide alternative employment include pompano in October, mullet from October to January, shrimp from May to December and oysters from January to May (Wilson *et al*., 1998). Researchers concluded that the overall effect of increased restrictions on this fleet would be increased pressure on grouper and yellowfin tuna, increased difficulty in finding and retaining employees, and an acceleration in the rate at which the fleet's vessels and experienced fishermen are moving overseas, especially to Mexico.

Recreational fishermen fish from Venice year-round, but are affected by inclement weather during the winter. There are 22 charter and headboats with HMS permits operating out of Venice in 2003. The larger vessels can fish for yellowfin tuna year round, in addition to inshore species like redfish, snapper and speckled trout. Bluefin tuna are found too far away (100 miles offshore) and recreational fishermen are prohibited from directing effort on bluefin tuna anyway. They fish for billfish, particularly blue marlin, from May through November. Blacktip shark was once a popular catch, but recreational fishermen say they are now too small to be an enjoyable catch. There is some animosity between recreational and commercial fishermen which seems to arise from competition for particular species.

There are only two marinas in Venice that cater to recreational fishermen, although a third parish-run marina offers vessel slips to both recreational and commercial fishermen. One opened

in the mid-1980s and offers boat slips, launches, a hoist, a couple of condominiums, baitshop, fuel, and ice. It employs 13 people during peak summer months. Most of the marina's business comes from private vessels from New Orleans and border states. Less than one percent of this business consists of charterboats. The other marina opened only a few years ago, offering 120 pre-paid boat slips, a 64-room two-story hotel, condominiums, a dry dock storage facility, fuel and ice. It employs 12 to 15 people in its newly opened hotel and another 15 to 25 in the marina. Eight charterboats operate from the marina, and there is room for ten more.

Researchers in 1998 reported that the catch and release ethic for billfish was strong among recreational fishermen in Venice, but local billfishing tournaments require that trophy fish be brought to the dock and weighed. Sportfishermen prefer to catch and retain tunas, dolphin fish, and wahoo for consumption, although they voiced support for tag and release programs (NMFS, 1999).

9.4.17.2 Dulac

Dulac is located in the center of Terrebonne Parish, about 15 miles south of Houma, LA. Houma lies at the intersection of the Houma Navigational Canal and the Intercoastal Waterway and serves as the parish seat and a locale of employment opportunities in offshore equipment building for Dulac residents. Terrebonne Parish government is a consolidated government so most data are gathered on a parish-wide basis.

According to the Terrebonne Parish Planning Department in 1998, the Parish had not spent much time tracking the importance of the commercial fishing industry, but anecdotal evidence suggested that it is a long-standing and significant part of the community economy. Landings of tunas, swordfish, and sharks indicate that Dulac is among the most important fishing ports in the state. However, many of the fishermen who target highly migratory species are a commuter population; they land fish in Dulac or purchase fish in Dulac, but they live elsewhere. Three dealers purchase fish from longline vessels; two are owned and operated by first-generation Vietnamese immigrants, and the other is run by a New Orleans native whose father operates a large tuna wholesale company in Venice.

In 1990, the population of Dulac was about 50 percent Caucasian and almost half of the population was Native American (Houma Indian), a tribe not recognized by the U.S. government. Less than two percent of the population was African-American or Hispanic, and less than two percent of the population was Asian/Pacific islander, despite the fact that most of the longline captains who sustain the Dulac commercial industry for tunas, swordfish, and sharks were Vietnamese. Many of the Caucasians in Dulac are of French or French-Canadian ancestry. By 2000, the population of Dulac had declined significantly, and was composed of 54 percent Caucasians, 40 percent Native Americans (Houma), less than one percent Asian, and a smattering of people of other ethnic groupings. Some 31 percent of the population claimed French or French-Canadian ancestry in 2000.

At the time of the Census in 2000, 26 percent of the population of Dulac were children under the

age of 15. Some 33 percent of Dulac's population were 45 years of age or older, and 41 percent were between 15 and 44 years of age.

There were 910 households in Dulac in 1990, with an average size of 3.59 persons/household. By 2000 the number of households had decreased to 768 and the average size of each household had dropped to 3.20 persons. At the time of the 1990 Census nearly half of the households in Dulac were living below the poverty level, with a median household income of $12,653. In 2000, median household income in Dulac had increased to $22,900, but more than 30 percent of households continued to live below poverty level.

Per capita income in Dulac in 1990 was $4,946; for the state of Louisiana, average per capita income was $10,635. By 2000, per capita income in Dulac had risen to $8,785, while for the state as a whole, per capita income had risen to $16,912.

Demographic Profile of Dulac, LA (source: U.S. Census, 1990 & 2000)

	1990	2000
Population:	3,273	2,458
Education:		
High school graduates (25 years or older)	27.0%	39.1%
Employment:		
Labor force (16 years and over)	46.0%	44.9%
Unemployed	17.5%	3.0%
Employment by industry:		
Retail	12.0%	10.3%
Manufacturing	14.0%	10.0%
Education, health & social services	9.8%	8.5%
Arts, recreation, lodging & food services	9.9%	10.7%
Farming, fishing, forestry, & mining	23.6%	25.9%

Employment in Dulac was principally in the fisheries in 2000 with approximately 160 persons (21 percent of all those with employment) working full time or seasonally in fishing activities.

Pelagic longline fishermen in Dulac target yellowfin tuna all year. In 1997 there was no established quota or season for yellowfin, but rough winter weather shortened the fishing season slightly. Reported prices for yellowfin tuna landed by longline vessels in Dulac range from $3.50 to $5.00 per pound for the highest grade. Bluefin tuna is caught in this fishery but can only be landed if target catch requirements are met. Swordfish is not targeted by Dulac longline vessels, and incidentally-caught sharks are often discarded (Wilson *et al*., 1998). A typical trip for the pelagic longline vessels in Dulac is two weeks. Vessels range in size from 60 to 100 feet and set between 35 and 40 miles of longline rigging.

The competition between dealers was perceived as becoming more aggressive in 1998. Traditional patterns of dealers building relationships by extending services and credit to vessels were giving way to price-based competition to gain access to vessels. Researchers reported, in 1998, that one dock in Dulac employed three to four people, but laid them all off in 1998. That dealer purchased tuna (50 percent), shark (30 percent), swordfish (20 percent), and dolphin, wahoo, and amber jack (20 percent combined). Another dealer employed six or seven people in 1998, all of whom lived in Dulac. Of this dealer's purchases, 60 percent were tuna, 20 percent were swordfish and 20 percent were divided among other pelagic species like shark, wahoo, and amberjack. A third dealer employed six Mexican workers, supplemented by local residents on a seasonal basis (Wilson *et al*, 1998). The pelagic longline fleet are not well integrated into the Louisiana communities of Dulac and Venice. They are commuters and most of them are from a different ethnic background, including many Vietnamese.

In 2002, Dulac was home to the owners of four HMS pelagic longline permits, and nine pelagic long line vessels had Dulac as their hail port.

Researchers in 1998 found that alternative employment outside of the fishery was available. For instance, while unemployment in Louisiana fishing communities has been high in the past, the oil industry hired unskilled labor from this area in recent years. In 1990, 33 residents of Dulac worked in the oil fields and a similar number were employed by the oil industry in 2000. The agricultural sector also provides employment opportunities, as reported by one Vietnamese-American captain, particularly during the off-season for fishing. However, this supply of alternative employment threatened the stability of the labor pool for the fishing industry (Wilson *et al*., 1998). This was true for both captain and crew positions, particularly among the non-Vietnamese-American population. The Vietnamese-American community avoided such personnel problems to some extent by relying on tight kinship networks in both fishing and fish buying. The Vietnamese-Americans, however, did report some difficulty in finding captains. The Vietnamese-American community was the only one studied which reported recent investment in new pelagic longline vessels. In Louisiana, the impacts of regulation may be felt more intensely by the Vietnamese-American community given the extent of their investment in this fishery (NMFS, 1999).

Almost all vessels that sell in Dulac are owner-operated. Owners are usually their own captains or they hire a close relative to captain their vessel. Good first mates try to acquire their own vessels. At least five longline vessels were built in 1997 and have been added to the fleet in Dulac. Some participants in the longline fishery for sharks also participated in the reef fish fishery. It would be difficult for shark fishermen to switch into the yellowfin tuna fishery (Wilson *et al*., 1998).

9.4.18 Texas

No data is available for swordfish and tuna landings in the NOAA Fisheries data files for 2002. There are 11 vessels with Texas hail ports holding HMS pelagic longline permits and the owners of 10 permits are residents of Texas. Communities involved in the fishery include Channelview,

Corpus Christi, Friendswood, Galveston, Houston, Kemah, La Porte, and Lumberton. The greatest concentration of vessels is in Kemah, which is the homeport for three vessels. Because of the small size of the fishery, no community profiles were undertaken of Texas ports.

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