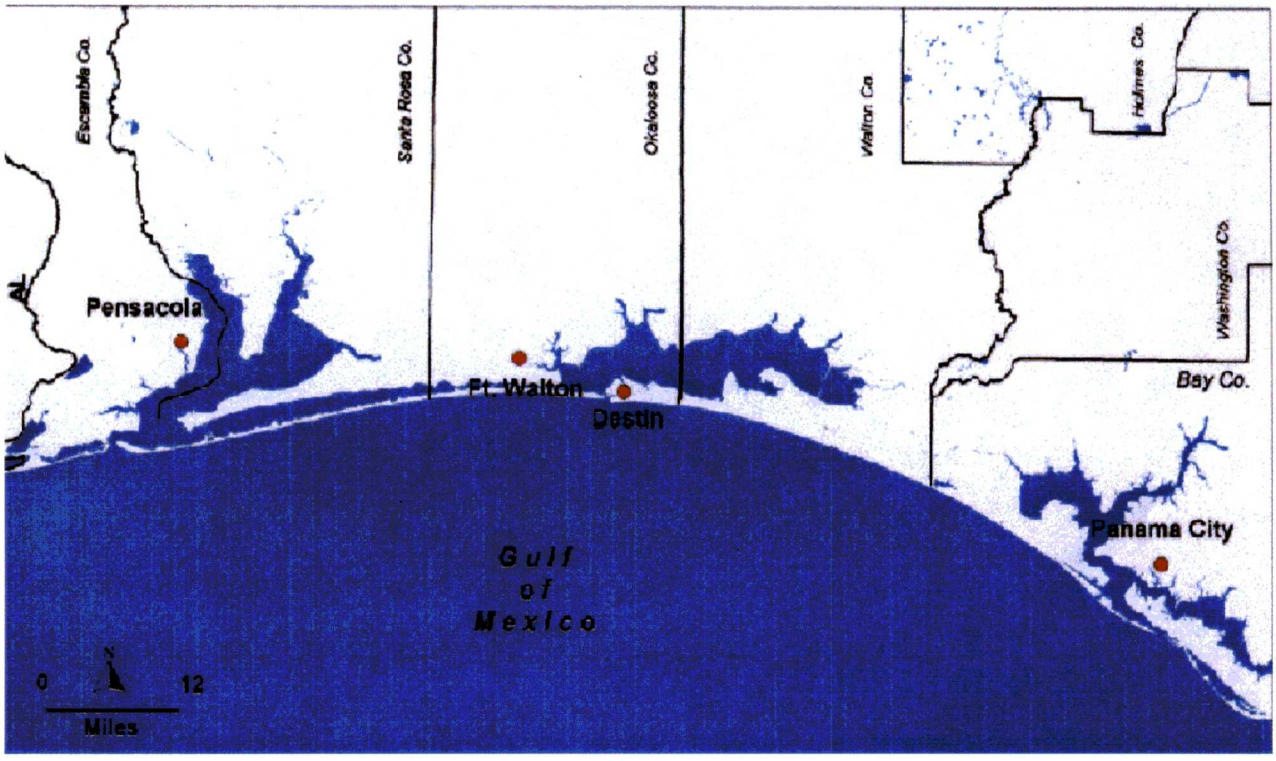
OCS Study
MMS 2002-024

Socioeconomic Baseline and Projections of the Impact of an OCS Onshore Base for Selected Florida Panhandle Communities

Volume I: Final Report



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

OCS Study
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Socioeconomic Baseline and Projections of the Impact of an OCS Onshore Base for Selected Florida Panhandle Communities

Volume I: Final Report

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CHAPTER 1
EXECUTIVE SUMMARY

The MMS, in its most recent Five-Year Plan (1997-2002), stated its intention to lease an area for development in the western edge of the Eastern Planning Area of the Gulf of Mexico in the year 2001. Because the experience of Texas and Louisiana has indicated substantial social and economic impacts onshore from Outer Continental Shelf (OCS) activity are possible, the MMS wanted to investigate the potential impacts on affected communities in the Eastern Gulf of Mexico.

The purpose of this study was to develop a projection of the effects of this potential offshore activity on the Florida Panhandle. The MMS asked the RPC team to develop a baseline socioeconomic description for Panama City, Pensacola, and Ft. Walton Beach and to develop projection models to investigate the possible socioeconomic consequences of various onshore support scenarios on these communities. The project also includes studies on four local industries that could be impacted by the operations of a support base in the Florida Panhandle: fishing, military, ports, and tourism. The project also analyzes possible user-conflicts or benefits that these industries might encounter with the operations of the support base located in the Florida Panhandle.

The RPC team defined the study area in the Florida Panhandle as the five counties of Escambia, Santa Rosa, Okaloosa, Walton, and Bay. Escambia and Santa Rosa comprise the Pensacola metropolitan area, Bay County comprises the Panama City metropolitan area, and Okaloosa and Walton Counties comprise the Fort Walton Beach metropolitan area (see Figure 1.1).

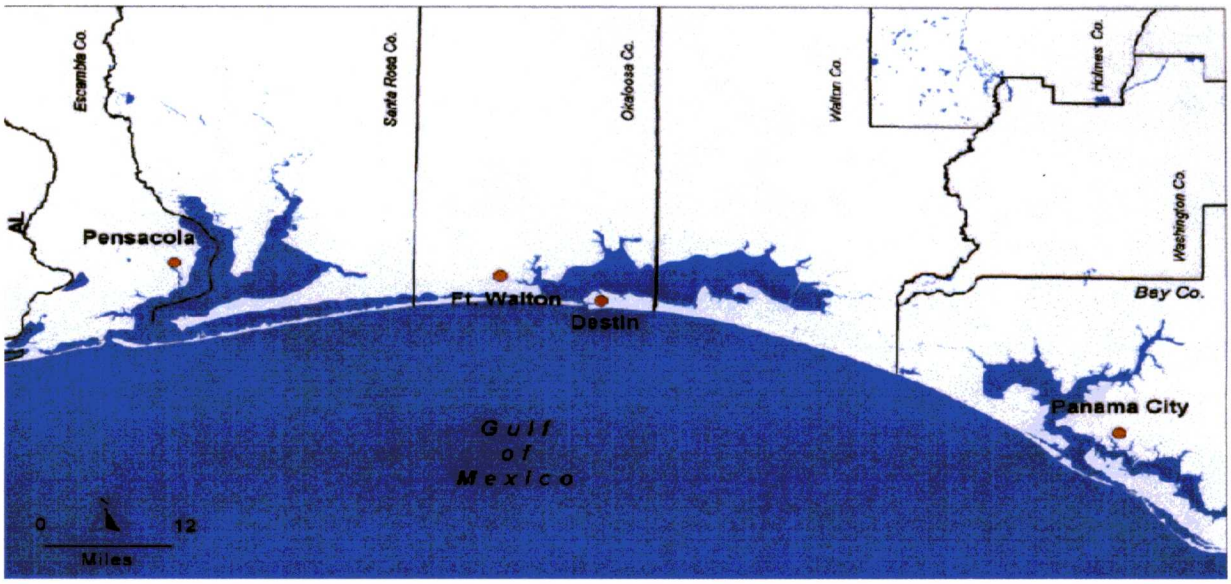

Figure 1.1. **Socioeconomic Baseline and Projections for Selected Panhandle Communities Study Area.**

As part of our investigation, we identified and reviewed the literature relevant to the locales and issues addressed in the study. The literature reviews focused on the four special industries (i.e., fishing, military, ports, and tourism) and the socioeconomic impacts from offshore oil and gas development. The RPC team gathered historical and projected economic baselines from two sources: Bureau of Economic and Business Research at the University of Florida at Gainesville and the U.S. Bureau of Economic Analysis. Using field trips and phone calls, the RPC team collected primary data in the form of selected stakeholder interviews with representatives of the four industries, local, county and state government officials and local community and business leaders. In speaking with stakeholders, we focused on the issue of a support base rather than oil and gas exploration in general.

The RPC team developed an economic-demographic model to project the impacts of OCS activity in the Florida Panhandle. The MMS hopes to distribute this model to stakeholders and government planners in the Florida Panhandle to provide estimates of impacts supported by our research.

The Florida Panhandle will continue to experience the substantial demographic and economic growth that it now faces. The five county area contained 643,000 people in 1990 and is projected to have nearly 876,000 residents by 2010. In an average year in the 1990s, 7,400 people migrated to the Florida Panhandle, which has started to cause strains in the infrastructure, particularly in the Ft. Walton Beach metropolitan area. These infrastructure bottlenecks have the potential of

potential of getting worse, as projected average annual migration will exceed 5,000 people through the year 2010.

The military has had a substantial presence in the Florida Panhandle since World War II. The four main military installations in the study area are the Pensacola Naval Air Station, Eglin Air Force Base (Fort Walton Beach), Tyndall Air Force Base, and the Coastal Systems Station (both in Panama City). The three air bases use the Northern Gulf of Mexico as a weapons testing and training range. The Coastal Systems Station uses St. Andrew's Bay and the nearby waters of the Gulf of Mexico for testing and training in antisubmarine and underwater warfare. The military employs over 30,000 people in the Florida Panhandle economy, accounting for 8.6 percent all nonfarm employment in 1995, compared with only 1.5 percent in the United States as a whole. These bases were largely untouched by the downsizing of the military in the 1990s and are expected to remain an important part of the Florida Panhandle economy for the foreseeable future.

The development of the Florida Panhandle as a major tourist area began in the mid-1930s and grew rapidly after the Second World War, becoming what is now a key industry in the Florida Panhandle. Traditionally a place in the "Old South" to go for swimming and fishing, the Florida Panhandle is often called the "Southern Riviera."

"Sugar-white" beaches, fishing, other water-based activities, and natural habitats are key parts of the tourist experience in the Florida Panhandle, a type of tourism known as ecotourism. In the mid-1990s, the area attracted 10 million visitors annually who generated $1.5 billion of business. Heavily visited by automobile traffic, the Florida Panhandle represents one of the few high quality beach areas available to many visitors in the southeastern U. S., with high proportions coming from Alabama, Arkansas, Louisiana, Mississippi, and Texas. Tourist spending is projected to increase substantially in the study area between 1995 and 2045. In the Fort Walton Beach area, tourist expenditures were projected to more than double over the 50-year study period (i.e., an increase of 103%). During the same period, tourist expenditures were projected to increase 75 percent in the Panama City area and 73 percent in the Pensacola area.

The study area has two major, deep water ports that would make the best locations for an onshore support base in the Florida Panhandle - the Port of Pensacola and the Port of Panama City. While the Port of Pensacola has a history extending back into the nineteenth century, the present-day location of the Port of Panama City opened only after World War II. The ports of Pensacola (ranked 78th) and Panama City (ranked 62nd) in 1995 were among the top 100 U.S. ports in the dollar value of goods exported. They ranked 120th and 100th, respectively, in the value of imports. The Port of Panama City served as an onshore support base for exploratory drilling in the Gulf of Mexico in the early 1980s and in 1990 and has an adjacent industrial park that houses industries associated with the offshore oil and gas industry.
The commercial fishing industry employs around 700 people in the Florida Panhandle. In 1995, fishermen in the area landed 8.9 million pounds of fish and 2.4 million pounds of shellfish.

The projected levels of OCS development and production from the proposed leases in 2001 are small compared to the projected production levels from leases in the Western and Central Gulf of Mexico scheduled for auction in 1997-2002. Because the specialized needs of offshore exploration and production are likely to occur from states with established services such as Texas, Louisiana, and Alabama, expansion of offshore facilities and services into the Florida Panhandle likely would come in the form of an onshore support base that would service offshore platforms during the operation and maintenance portion of any offshore oil and gas development. This means that the potential impacts likely will be of a different form than often associated with oil and gas development and that direct socioeconomic impacts likely will be smaller than those that have occurred in the Western and Central Gulf of Mexico.

Though a small onshore base in the Florida Panhandle would cause few direct user conflicts with the tourist industry, stakeholder views of the impacts of OCS development on tourism will result as much from perceived reality as from the evolution of actual events. Because tourism in the area is largely based on the aesthetics of the environment, environmental issues likely will dominate any debate on the benefits and costs of OCS development. The major threats likely to be perceived from OCS-related activity are environmental. Fear that such development could depreciate the aesthetic or use quality of beaches, of coastal waters, and of fish and other wildlife is widely-held by stakeholders in tourism and related industries in the Florida Panhandle.

The two ports (Panama City and Pensacola) would benefit from housing an onshore support base. The Coastal Systems Station expressed a concern that a high level of supply boat traffic from the Port of Panama City might interfere with its operations. The air bases would have potential conflicts with supply boats and helicopters crossing their testing ranges, but stipulations in any oil leases in the Eastern Gulf of Mexico put the onus of these conflicts on the oil industry. Though the commercial and recreational fishing industry have well-known benefits and conflicts with offshore rigs in the Gulf of Mexico, our research did not uncover any major user-conflicts with onshore bases that would be located in one of the two ports.

Operations and maintenance (O&M) activity from the developed wells in the Eastern Planning Area will generate tens of millions of dollars of sales of goods and services for an onshore base each year. If an onshore service base were located in the Florida Panhandle, however, many O&M supplies would have to be imported from outside the region, limiting the potential economic benefits to the Florida Panhandle.

Even though the level of OCS-related increases in employment would be small given the projected size of an onshore support base, because the Florida Panhandle is projected to be at or near full employment, those jobs not taken by commuters from outside the Florida Panhandle would require additional net inmigration into the area. Our estimates suggest that in the long term, even if both the Lease Sale 181 and the Destin Dome project are supported by a base in the Florida Panhandle, the increase in the population due to this support will be less than two percent of the increase due to inmigration from 2000 to 2035. The peak year is 2020, in term of the number of cumulative persons added to the population due to the sum effect of both projects. At 2020 this increase would be at most between 2.7% and 4.6% of the cumulative baseline

inmigration. This assumes both the OCS activity at a reasonable maximum scenario for Lease Sale 181 and it assumes the Destin Dome scenario. Infrastructure impacts on local communities from OCS development also will be small in comparison to such impacts from projected economic growth in the baseline.

Few economic incentives are present to drive OCS support industries into the Florida Panhandle at the projected levels of OCS development in the Eastern Gulf of Mexico because support bases are most efficient when close to offshore wells. Concerns among stakeholders in the area's tourism industry about the risks of offshore oil and gas production have lent support to the Governor of Florida's public position that the Federal Government should not sell new oil and gas leases in Florida Federal waters within one hundred miles of the Florida coast. If made law by Congress, this restriction would limit future appeal and opportunities for onshore OCS-related industry in the Florida Panhandle.

CHAPTER 2
OCS ACTIVITY IN THE EASTERN GULF OF MEXICO

If the oil industry were to locate an onshore service base in the Florida Panhandle, the projected socioeconomic impacts on the Florida Panhandle would depend on (1) the size of the hydrocarbon potential in the Eastern Gulf of Mexico, (2) the intensity with which the industry could exploit it, and (3) the range of goods and services that an onshore support base in the Florida Panhandle could provide the offshore oil industry.

Projected Hydrocarbon Production in the Eastern Gulf of Mexico

Current Leasing Policy

According to the MMS Gulf of Mexico Region website, the Eastern Gulf of Mexico Planning Area extends along the Gulf's northeastern coast for some 1,120 kilometers (700 miles) from Baldwin County, Alabama, southward to the Florida Keys. Seaward of the State/Federal boundary (three leagues or roughly nine miles off the Florida coast) the area extends southward for more than 480 kilometers (300 miles). The MMS estimates that between 7.5 and 8.7 trillion feet of cubic feet of natural gas and 1.6 and 2.5 trillion barrels of oil and condensate are contained in the Eastern Gulf of Mexico. Since the late 1980s, however, a limited amount of OCS activity has taken place in this planning area because of administrative deferrals and annual Congressional moratoria.

This report will focus on two future offshore oil and gas projects in the Eastern Gulf of Mexico that the Florida Panhandle could service: proposed Lease Sale 181 scheduled for 2002 and Chevron's Destin Dome project, which is undergoing a two-year review by the MMS and the States of Mississippi, Alabama, and Florida that could begin operating in 2000.[1] Map 2.1 shows the general location of both these areas. Current Federal policy will preclude other development of offshore hydrocarbon deposits in the Eastern Gulf of Mexico that might be relevant to this report. Quoting the MMS from a press release on January 25, 1999, announcing the proposed Lease Sale 181:

> The area covered ... is a small portion of the Eastern Gulf of Mexico (EGOM) Planning Area 15 miles or more due south of the coast of Alabama and 100 miles or more due south of the Florida Panhandle. It includes 1,033 blocks covering 5.949 million acres.... This would be the first Federal oil and gas lease sale in the Eastern Gulf of Mexico since 1988.... None of the EGOM outside the Sale 181 area is available for leasing in this Five-Year Program. In addition, in a June 1998 announcement, the President withdrew from leasing until after 2012

[1] MMS website, http://www.gomr.mms.gov/homepg/offshore/egom/eastern.html

numerous areas of the OCS, including all of the EGOM outside the area identified as available for leasing consideration for Sale 181.[2]

Lease Sale 181

According to MMS projections, the levels of OCS production from Lease Sale 181 in the Eastern Planning Area are small compared to the projected production levels from leases in the Western and Central Gulf of Mexico scheduled for auction in 1997-2002.[3] (See Table 2.1) The project will have a life of forty years including its exploration phase. Projected output is 500 to 810 billion cubic feet of natural gas and 30 to 60 millions barrels of oil pumped from five to eight platforms and twenty to thirty wells. The MMS anticipates that the production will not require a new pipeline landfall and that an existing shore base in Mobile, Alabama, will service the production arising from Lease Sale 181. Key informant interviews with contacts in the oil industry confirmed these assertions.

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[2] MMS website, http://www.gomr.mms.gov/homepg/whatsnew/newsreal/990126.html

[3]An attempt was made to discuss the hydrocarbon potential of this sale with contacts in the oil industry. It was indicated that companies would be highly reluctant to reveal their own production projections of the sale area, so the MMS projections were the sole source used for this report.

Table 2.1

The Projected Output of the Proposed Sales in the Gulf of Mexico

Variable	Western	Central	Eastern
Number of sales	5	5	1
Anticipated production of oil (Billions of barrel)	0.03 - 0.43	0.76 - 2.19	0.03 - 0.06
Anticipated production of natural gas (Trillions of cubic feet)	2.83 - 9.67	7.65 - 21.93	0.50 - 0.81
Years of activity	40	40	40
Number of platforms	10 - 40	70 -210	5 - 8
Number of exploration and delineation wells	20 - 115	185 - 540	15 - 30
Number of development and production wells	65 - 355	515 - 1,495	20 - 30
Pipeline miles	550 - 1,150	650 - 1,450	100 - 300
Number of landfalls	5	5	0
Number of shore bases	6	7	0

Source: Minerals Management Service, *Proposed Outer Continental Shelf Oil and Gas Leasing Program for 1997 to 2002, Environmental Impact Statement,* Page IV-74, August 1996.

Based on information that MMS provided to RPC, this report assumes that hydrocarbon production starts in 2010 and ends by 2040.[4] The percent of total production in a given year ranges from 1.0 percent to 5.5 percent. For reasons of confidentiality prior to the actual sale in 2002, the figures in Table 2.2 are a simulation based on the MMS numbers and are presented in five-year intervals to match the presentation in the MMS Florida Panhandle model.

[4] Personal communication with Ms. Katherine Ross of the Minerals Management Service.

Table 2.2

Percent of Total Production Levels
Lease Sale 181

Year	Oil	Gas
1995-2005	0.0%	0.0%
2010	1.0%	1.0%
2015	3.0%	3.5%
2020	5.5%	5.0%
2025	4.5%	4.5%
2030	4.0%	4.0%
2035	2.5%	3.0%
2040-2045	0.0%	0.0%

Source: Based on projections provided by the Minerals Management Service.

Using information from Tables 2.1 and 2.2, RPC made estimates of annual production levels of oil and natural gas from Lease Sale 181 (Tables 2.3.1 and 2.3.2).

Table 2.3.1

Projected Production Levels of Oil from Lease Sale 181
(millions of barrels)

Year	Percent of Total	Range of Total Production	Range of Annual Production
1995-2005	0.0%	30.0 - 60.0	0.00
2010	1.0%	30.0 - 60.0	0.30 - 0.60
2015	3.0%	30.0 - 60.0	0.90 - 1.80
2020	5.5%	30.0 - 60.0	1.65 - 3.30
2025	4.5%	30.0 - 60.0	1.35 - 2.70
2030	4.0%	30.0 - 60.0	1.20 - 2.40
2035	2.5%	30.0 - 60.0	0.75 - 1.50
2040-2045	0.0%	30.0 - 60.0	0.00

Sources: MMS, FEIS, August 1996; personal communication.

Table 2.3.2

Projected Production Levels of Natural Gas from Lease Sale 181 (billions of cubic feet)

Year	Percent of Total	Range of Total Production	Range of Annual Production
1995-2005	0.0%	500 - 810	0.00
2010	1.0%	500 - 810	5.00 - 8.10
2015	3.5%	500 - 810	17.50 - 28.35
2020	5.0%	500 - 810	25.00 - 40.50
2025	4.5%	500 - 810	22.50 - 36.45
2030	4.0%	500 - 810	20.00 - 32.40
2035	3.0%	500 - 810	15.00 - 24.30
2040-2045	0.0%	500 - 810	0.00

Sources: MMS, FEIS, August 1996; personal communication.

Destin Dome

The Destin Dome project consists of eleven leased blocks of water 25 miles off the coast of Pensacola jointly owned by Chevron, Murphy Exploration and Production, and Conoco, Inc. Exploratory wells have confirmed large quantities of natural gas but no oil. The project will have between 12 to 21 active wells. A central processing facility will be installed offshore near the production wells and move by pipelines in Federal waters to existing gas plants in Mobile, Alabama (Chevron 1996). According to Chevron's Development and Production Plan submitted to the MMS, the Destin Dome project is scheduled in production from 2000 to 2020, with production peaking at 109.5 billion cubic feet of natural gas in 2005 (Table 2.4).

The onshore support base for the project will be an existing base located on the Theodore Ship Channel near Mobile, Alabama, or Bayou Cassotte in Pascagoula, Mississippi. Chevron does not anticipate that expansion of any onshore support base will be necessary to support the Destin Dome project. Contacts in the offshore oil and gas industry told RPC that Mobile is the sight for the service base for Destin Dome because it also is servicing a series of projects located west of

Destin Dome. Mobile has more than sufficient capacity to handle current and future natural gas produced from offshore wells near Mobile. (William Wade, Foster Associates, personal communication).

Table 2.4

Projected Natural Gas Production from Destin Dome
(billions of cubic feet)

Year	Natural Gas Production
1995	0.0
2000	54.8
2005	109.5
2010	71.2
2015	42.0
2020	25.6
2025-2045	0.0

Note: Data from Chevron (1996) was converted from millions of cubic feet per day to billions of cubic feet per year.
Source: DPP, Vol. IV. A., Nov. 1996, page 2-31.

Feasible OCS Expenditures in the Florida Panhandle

In order to estimate the impact of locating an onshore support base in the Florida Panhandle that would service production arising from Lease Sale 181 or Destin Dome, RPC reviewed the likely capability of such a base to service offshore oil and gas wells during the entire life cycle of an off-shore project. Such projects include the following phases of the life cycle: exploration and development drilling, platform fabrication and installation, pipelines, and production operations and maintenance (Chevron 1996).

Because the specialized needs of offshore exploration and production are likely to occur from states with established services such as Texas, Louisiana, and Alabama, expansion of offshore facilities and services into the Florida Panhandle likely would come in the form of an onshore support base that would service offshore platforms during the operation and maintenance portion of any offshore oil and gas development. This means that the potential impacts likely will be of

a different form than often associated with oil and gas development and that direct socioeconomic impacts likely will be smaller than those that have occurred in the Western and Central Gulf of Mexico.

One logical source of information to determine what goods and services a service base in Florida would have is a development and production plan (DPP) for hydrocarbon production in the northeast corner of the Gulf of Mexico. The economics of servicing the offshore production should be comparable to a base in the Florida Panhandle.

In November 1996, Chevron submitted a such DPP for its proposed Destin Dome Unit 56 project. In the DPP, Foster Associates, on behalf of Chevron, conducted a socioeconomic study of the impact of the project on Mobile, Alabama, the most likely location of an onshore base that would service the project. As part of its research, Foster Associates reviewed two studies that described the industries associated with offshore oil and gas exploration, development, and production. Foster Associates then translated the distribution of spending on various goods and services for each phase of the life into SIC categories appropriate for estimating socioeconomic impacts of OCS activity in the Mobile area.[5]

In the development and production plan (DPP) for the Destin Dome project, Chevron determined that onshore support bases and industries in coastal Louisiana and Texas would account for 85-90 percent of the project's expenditures in the following phases: exploration and development drilling, platform fabrication, and pipeline construction. This high percentage of work contracted outside Mobile reflects the specialization of these segments of the offshore industry that has developed over the decades. The assumption for this report is that if Mobile, with its history of onshore support for its offshore gas industry, has not developed the infrastructure for these activities, the Florida Panhandle would not. RPC confirmed this assumption in its conversations with contacts in the offshore oil industry.

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[5] Centaur (1986). The DPP looked at only servicing gas production, but review of the Centaur (1986) report revealed that it reported the same mix of goods and services for servicing both oil and gas production.

Table 2.5 lists the SIC categories that comprise onshore service industries associated with offshore exploration and development and which already are present in Pensacola, Panama City, and Fort Walton Beach.[6] The three cities in the Florida do not have a developed industrial infrastructure that supports offshore oil and gas exploration and production. Panama City, does have industries that produce steel pipe and fabricated metal plate work. The Port of Panama City's industrial park includes Berg Steel Pipe and Wellstream, companies that produce material for offshore drilling. These industries, however, could sell pipe to any offshore oil and gas project whether or not an on-shore support base is located in the Florida Panhandle.

[6] The correspondence between SIC and IMPLAN sectors were taken from the DPP. RPC used a 1994 IMPLAN database to determine if each city in the Florida Panhandle had industries in these categories. Please note that this table corrects a small error in the corresponding tables in the DPP. In the DPP, water and air transportation were listed under the same SIC code. A call to Foster Associates confirmed that this was a misprint.

Table 2.5

Industries Associated with Offshore Oil and Gas Exploration, Development, and Production

Code Number			Areas with industries having this SIC code		
SIC	IMPLAN	Description in Destin Dome	Pensacola	Panama City	Ft. Walton Beach
132	39	Oil & gas operations		X	X
1381	57	New well drilling	X	X	X
1382	57	Oil & gas exploration	X	X	X
1389	57	Other oil and gas services	X	X	X
1629	53	Misc. natural resource facilities construction	X	X	X
1629	53	New gas utility facilities	X	X	X
1629	53	Pipeline construction	X	X	X
2899	209	Chemical, not elsewhere classified			
291	210	Petroleum fuel			
324	232	Hydraulic cement			
3317	258	Steel pipe		X	
3443	284	Fabricated plate work		X	
3462	290	Iron & steel forgings			
3511	307	Turbines			
3533	313	Oil & gas field machinery			
3559	331	Special industry machinery, not elsewhere classified	X		
356	332	Pumps and compressors			
3613	356	Switchgear			
3631	361	Construction machinery & equipment			
3731	392	Shipbuilding	X	X	X
3823	403	Instrumentation			
44	436	Water transportation	X	X	X
45	437	Air transportation	X	X	X
58	454	Eating and drinking places	X	X	X
7359	473	Miscellaneous equipment rent / lease	X	X	X
871	506	Environmental and engineering services	X	X	X
872	507	Accounting / miscellaneous business services	X	X	X
873	509	Test / research services	X	X	X

Sources: Centaur, 1986; Foster Associates, 1994; MIG, 1997.

Table 2.6 lists the industries associated with the operation and maintenance portion of the oil and gas well life cycle, comparing which industries are involved in O&M spending in a typical support base and what a Florida Panhandle support base would likely be capable of providing. The Florida Panhandle would receive at most 53 percent of all O&M dollars because the area does not have hydrocarbon processing plants or manufacture specialized equipment.[7] RPC assumes that any service related to O&M could easily be established but that manufacturing capacity would not be established in the area solely based on servicing the Destin Dome or Lease Sale 181 project. Most of the equipment for a base that would be located in the Florida Panhandle would need to come from areas west of the Florida Panhandle.

In Table 2.6, oil and gas operations (SIC 132) refers to oil refining or gas processing, which the MMS assumes would not take place in the Florida Panhandle because the project does assume a new landfall (oil or gas pipeline). Pipelines linked to these two projects would take gas and oil to appropriate locations within the Gulf of Mexico that have established refining and gas processing capacity.

Description of a Support Base in the Florida Panhandle

In addition to using the DPP for information on onshore service bases, RPC contacted a number of firms associated with offshore activity in the Gulf of Mexico to get a description of a theoretical support base located in the Florida Panhandle.

An optimal onshore base would operate vessels, helicopters, and store materials at one location and handle all phases of oil and gas production (drilling an exploratory well, installing a facility, operation and maintenance). For purposes of this study, however, RPC assumes that a base in the Florida Panhandle would only service the operation and maintenance portion of an offshore project's life cycle. Space for storing equipment and supplies is very important. Boat running time is an important consideration, so a base is typically close to where the drilling is located.

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[7] In contrast, a base located in Mobile, Alabama would receive about 85 percent of such expenditures. Chevron, November, 1996, page 7.

Table 2.6

Industries Associated with Operation and Maintenance of Offshore Oil and Gas Platforms

Code Number			Operation and Maintenance Spending			
SIC	IMPLAN	Description in Destin Dome	Typical Supply Base	Percent of Total	Florida Panhandle Supply Base	Percent of Total
132	39	Oil & gas operations	X	36.3%		0.0%
1389	57	Other oil and gas services*	X	18.4%	X	35.0%
2899	209	Chemical, not elsewhere classified	X	0.9%		0.0%
291	210	Petroleum fuel	X	4.4%		0.0%
324	232	Hydraulic cement	X	0.7%		0.0%
3559	331	Special industry machinery, not elsewhere classified	X	5.1%		0.0%
44	436	Water transportation	X	4.0%	X	7.6%
45	437	Air transportation	X	3.8%	X	7.2%
58	454	Eating and drinking places	X	1.7%	X	3.2%
7359	473	Miscellaneous equipment rent / lease	X	1.4%	X	2.7%
871	506	Environmental and engineering services	X	14.7%	X	27.9%
872	507	Accounting / miscellaneous business services	X	4.2%	X	8.0%
873	509	Test / research services	X	4.5%	X	8.6%
		Total for a typical onshore base		100.0%		
		Total for Florida Panhandle onshore base		**52.6%**		**100.0%**

* Assumes all offshore workers are locals. This issue will be discussed further below.
Sources: RPC, 2001; Chevron, *Destin Dome Unit 56, Development and Production Plan*, July 1997.

For onshore support bases that are in the middle of nowhere (such as Venice, Louisiana), the onshore support base has living quarters on the premises. However, if such a base were in the Florida Panhandle, a firm likely would hire its onshore workforce locally and not need to build living quarters.

A port is an optimal location for an onshore support base. As one contact from a offshore drilling company stated:

> A support base typically needs a 100-ton crane, liquid tanks for drilling fluids, ramps that would allow forklifts to board a boat, plenty of warehouse space and a

bulkhead four or five feet high. As such, ports are preferable to shipyards for locating support bases.

The projected production level associated with Lease Sale 181 is five to eight platforms (U.S. Dept. of the Interior, MMS 1996a). A service base associated with Lease Sale 181 would require 3 to 5 acres (130,680 square feet to 217,800 square feet) of space at the port. RPC assumes that the Destin Dome project would need a support base of roughly the same size. Information in literature review suggests that the Ports of Pensacola and Panama City would have the appropriate space available for the expected size of support base. The Port of Pensacola has 710,000 square feet of storage space comprised of 460,000 square feet of warehouse space and 250,000 square feet of open space. The Port of Panama City has 500,000 square feet of warehouse space and X square feet of open space.

Because the factors described above, two deep water ports in the area are the appropriate location for a support base. The Port of Panama City has experience serving as an onshore support base, and both have the capacity available for servicing offshore platforms. Every contact in the offshore industry who was asked stated that Fort Walton Beach, not having a deep-water port, is not appropriate area for an onshore service base.

The projected production from Lease Sale 181 would be serviced by ten onshore personnel (two twelve-hour shifts of five workers) on a seven days on, seven days off rotation. The warehouse manager and one other person might be imported, but the remainder of the crew would be locals. A normal crew complement for an offshore platform would be 10-15 people. A number of offshore workers would live outside the Florida Panhandle and commute to the service base.

According the Destin Dome Production Plan, helicopters will make 24 round trips between the onshore support base and the platforms each week, or 1,248 round trips per year. Supply boats will make 24 round-trips between the onshore base and the platforms each month, or 288 round trips per year. RPC assumes that helicopter and supply activity per well for production from Lease Sale 181 would be comparable to the Destin Dome project. Given that Destin project will have about 20 production wells operating and that Lease Sale 181 would have 20-30 wells operating, production from Lease Sale 181 would have about 1,248 helicopter round trips per year and about 288 supply boat round trips per year.

Levels of Direct Expenditure from OCS Activity

Lease Sale 181

According to background research, RPC found that the operation and maintenance costs of an offshore gas well were on average $0.36 per thousand cubic feet (MCF) of gas produced and that such costs for an offshore oil well were about $2 per barrel. The conversion factor is about 5.6 ($0.36 / MCF * 5.6 = $2 / barrel). The conversion factor is based on assuming that the O&M cost per BTU is the same. This information was confirmed by two sources in the offshore oil and gas industry.

This report assumes that all O&M services that an onshore base in the Florida Panhandle can provide will be provided there (i.e., no services go to Mobile or Pascagoula that could be serviced from the Florida Panhandle).[8] The minimum threshold scenario is assumed to be the minimum projected gas production plus the minimum projected oil production. The maximum likely production is assumed to be the maximum projected gas production plus the maximum projected oil production.

RPC estimated the potential OCS expenditures that would occur in the Florida Panhandle by multiplying the O&M expenditure per barrel or per thousand cubic feet by the volume produced in a given year. Tables 2.7 and 2.8 calculate the potential O&M expenditures related to production from offshore oil (Table 2.7) and natural gas (Table 2.8) wells developed from Lease Sale 181 in the Eastern Gulf of Mexico.

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[8] The MMS Florida Panhandle model makes an adjustment for offshore workers that commute from outside the Florida Panhandle. This report discusses the adjustment in Chapter 8 below.

Table 2.7

Potential Operation and Maintenance (O&M) Expenditures in the Florida Panhandle from Lease Sale 181 in the Eastern Gulf of Mexico Offshore Oil Wells

Year	Range of Annual Production (millions of barrels)	Expenditure per Barrel	O & M Expenditures Total (in millions of dollars)	O&M Expenditures Florida Panhandle (in millions of dollars)
1995-2005	0.00	$2.00	$0.00	$0.00
2010	0.30 - 0.60	$2.00	$0.60 - $1.20	$0.32 - $0.63
2015	0.90 - 1.80	$2.00	$1.80 - $3.60	$0.95 - $1.90
2020	1.65 - 3.30	$2.00	$3.30 - $6.60	$1.74 - $3.48
2025	1.35 - 2.70	$2.00	$2.70 - $5.40	$1.42 - $2.85
2030	1.20 - 2.40	$2.00	$2.40 - $4.80	$1.27 - $2.53
2035	0.75 - 1.50	$2.00	$1.50 - $3.00	$0.79 - $1.58
2040-2045	0.00	$2.00	$0.00	$0.00

Source: RPC, 2001.

Table 2.8

Potential Operation and Maintenance (O&M) Expenditures in the Florida Panhandle from Lease Sale 181 in the Eastern Gulf of Mexico Offshore Natural Gas Wells

Year	Range of Annual Production (billions of cubic feet)	Expenditure per Thousand Cubic Feet	O & M Expenditures Total (in millions of dollars)	O&M Expenditures Florida Panhandle (in millions of dollars)
1995-2005	0.00	$0.36	$0.00	$0.00
2010	5.00 - 8.10	$0.36	$1.80 - $2.92	$0.95 - $1.54
2015	17.50 - 28.35	$0.36	$6.30 - $10.21	$3.32 - $5.38
2020	25.00 - 40.50	$0.36	$9.00 - $14.58	$4.74 - $7.68
2025	22.50 - 36.45	$0.36	$8.10 - $13.12	$4.27 - $6.92
2030	20.00 - 32.40	$0.36	$7.20 - $11.66	$3.79 - $6.15
2035	15.00 - 24.30	$0.36	$5.40 - $8.75	$2.85 - $4.61
2040-2045	0.00	$0.36	$0.00	$0.00

Source: RPC, 2001.

Table 2.9 shows the timing and the range of operation and maintenance expenditures in the Florida Panhandle of the combined production of oil and natural gas production from the Lease Sale 181 in the Eastern Gulf of Mexico. Production begins in the model in 2010 and ends in 2035. Direct O&M expenditures begin about the year 2010 at a low level ($1.3 million to $2.5 million), peak in the year 2020 in both the threshold ($6.5 million) and the reasonable maximum ($11.2 million) scenarios, cease by the year 2040.

Table 2.9

Range of Operation and Maintenance Expenditures in the Florida Panhandle on Oil and Gas Production from Lease Sale 181 in the Eastern Gulf of Mexico (in millions of dollars)

Year	Oil		Natural Gas		Total	
	Minimum Threshold	Reasonable Maximum	Minimum Threshold	Reasonable Maximum	Minimum Threshold	Reasonable Maximum
1995-2005	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	$0.32	$0.63	$0.95	$1.54	$1.26	$2.49
2015	$0.95	$1.90	$3.32	$5.38	$4.27	$7.28
2020	$1.74	$3.48	$4.74	$7.68	$6.48	$11.16
2025	$1.42	$2.85	$4.27	$6.92	$5.69	$9.76
2030	$1.27	$2.53	$3.79	$6.15	$5.06	$8.68
2035	$0.79	$1.58	$2.85	$4.61	$3.64	$6.19
2040-2045	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Source: RPC, 2001.

Destin Dome

Table 2.10 shows the operation and maintenance expenses associated with Destin Dome between 2000 and 2040. Expenditures peak at $20.7 million in 2005 and fall to $4.5 million in 2020 and $0 in 2025. If one were to combine the reasonable maximum for oil and gas production arising from Lease Sale 181 with the projected Destin Dome production, expenditures would peak at $20.7 million in 2005 and average about $15.8 million from 2010 to 2020, then fall below $10 million from 2025 to 2035.

Table 2.10

Potential Operation and Maintenance (O&M) Expenditures in the Florida Panhandle Offshore Natural Gas Wells - Destin Dome (in millions of 1994 dollars)

Year	Range of Annual Production (billions of cubic feet)	O & M Expenditures per Thousand Cubic Feet of Natural Gas	Total O & M Expenditures	Florida Panhandle
1995	0.0	$0.36	$0.0	$0.0
2000	54.8	$0.36	$15.1	$7.9
2005	109.5	$0.36	$39.4	$20.7
2010	71.2	$0.36	$26.9	$14.2
2015	42.0	$0.36	$15.1	$7.9
2020	25.6	$0.36	$8.5	$4.5
2025-2045	0.0	$0.36	$0.0	$0.0

Source: Chevron, November 1996, Table B-30.

CHAPTER 3
TOURISM

It is difficult to overestimate the importance of tourism to the Panhandle area of Florida. It along with the U.S. Military are the mainstays of the regional and local economies of the area. Thus, it is obvious that the tourism industry and the potential impacts of OCS activity on tourism in the region deserve special attention. In this chapter, the characteristics of tourism in the region are described, the major individual tourist areas are described including a discussion of key facilities, the major stakeholders in the industry in the area are delineated, and the areas of potential impacts of OCS development most likely to be of interest to tourism-related stakeholders in the region are noted. A listing of information and literature sources is provided at the end of the report.

The general region of interest for purposes of this examination of tourism in the Panhandle includes the area from Pensacola on the West to Panama City on the East. Specifically, we give special attention to the coastal counties of Escambia and Santa Rosa that make up the Pensacola MSA, Okaloosa County which makes up the Ft. Walton Beach MSA and to Bay County which is the county making up the Panama City MSA. To cover the remainder of the coastal area between Ft. Walton Beach and Panama City, we also include some data for Walton County. Tourism is discussed for this region as a whole and for each of the areas of Pensacola, Fort Walton Beach including Destin, and the Panama City area.

A Brief History and Current State of Tourism in the Panhandle of Florida

The five county area which is the focus of this discussion contained 642,936 persons in 1990 (Bureau of Economic and Business Research 1994) and, as shown in Table 1, is estimated by the Bureau of Economic and Business Research at the University of Florida (1995) to have had more than 714,000 persons in 1995 and is projected to have nearly 890,000 residents by 2010. Its projected growth of more than 38 percent over the 20-year period from 1990 to 2010 is nearly identical to that projected for the State of Florida as a whole (37.7 percent) and indicates an area undergoing substantial demographic and economic expansion.

Although this region was among the first discovered and settled in North America by the explorers Panfilo de Narvaez and Cabeca de Vaca in the 1520s and was twice owned by Spain, as well as by France, England and only formally transferred to the United States by Spain in 1821 (Hutchinson, L. 1961), it remained largely an "undiscovered" agricultural area with recreational uses primarily by local residents and persons from other parts of the Southern United States until well into this century. It was recognized as the place in the "Old South" to go for swimming and fishing and thus came to be referred to as the "Southern Riviera". Its sugar white sand (it is actually finely ground quartz) and turquoise waters were a major attraction, especially to persons in the states immediately adjacent to the Panhandle. Their appreciation of the area earned it the additional nickname of the "Emerald Coast."

The development of the area as a major tourist area, however, did not begin until the mid-1930s when the first casinos were constructed such as those by A.W. Pledger, J.E. Churchwell and others (Strategic Planning Group, Inc. 1995; Hutchinson, L. 1961). Tourist hotels began to be constructed during the same period but it was not until after World War II that the tourism industry began to grow rapidly. In fact, as shown in Table 2, the area's population growth has generally been slower than that in the remainder of Florida except in the 1940s when the growth of military bases substantially impacted the area. Its rate of increase is rapid, however, and will lead to a substantial expansion of its population base.

Table 3.1

Population of Counties in the Florida Panhandle Study Area in 1990, Estimated Population in 1995 and Projected Population in 2000 and 2010

	Year			
County	1990	1995 (Estimated)	2000 (Projected)	2010 (Projected)
Bay	126,994	139,173	150,099	171,302
Escambia	262,798	282,742	302,390	329,699
Okaloosa	143,776	162,707	178,198	208,202
Santa Rosa	81,608	96,091	110,402	135,801
Walton	27,760	33,415	37,296	44,198
Total 5 County Area	642,936	714,128	778,385	889,202

Source: Estimates and Projections by the Bureau of Business Research, University of Florida.

Throughout the years, the industry has grown and by the mid 1990s the area had become among the major tourist regions in Florida and the Nation. Tourism is the major industry of Florida creating roughly 700,000 jobs and more than $2.0 billion in direct sales annually (Strategic Planning Group, Inc. 1995). Florida has more than 41 million visitors annually, and it is estimated that over 7.0 million persons visit the study area annually (Strategic Planning Group, Inc. 1995). Florida has mor than 41 million visitors annually, and it is estimated that over 7.0 million persons visit the study area annually (Florida Department of Commerce 1995). In fact, of the nearly 20.0 million persons estimated to have visited Florida by automobile in 1995 (Florida Department of Commerce 1995), roughly 21 percent were estimated to have visited either Bay county (about 14.0 percent) or Okaloosa County (about 7.0 percent). This is a recurrent pattern that marks the region as one of the key areas for tourism in Florida. Although organizations and agencies in each part of the region complete independent estimates of the number of tourists and their economic impacts, and there is some overlap in impacts across areas, a summation of these estimates of the local economic impact of tourism in the three subareas within the study region suggests that tourism is responsible for more than $1.5 billion annually in total (direct, indirect and induced) economic activity in the study area. Tourism is clearly among the key industries of the Panhandle of Florida.

Table 3.2

Population Growth in Panhandle Study Area Counties and Florida, 1940-1990

County	1940	1950	1960	1970	1980	1990	Percentage Change 1940-1950	1950-1960	1960-1970	1970-1980	1980-1990
Florida	1,897,414	2,771,305	4,951,560	6,791,418	9,746,961	12,937,926	46.1	78.7	37.2	43.5	32.7
Bay	20,686	42,689	67,131	75,283	97,740	126,994	106.4	57.3	12.1	29.8	29.9
Escambia	74,667	112,706	173,829	205,334	233,794	262,798	50.9	54.2	18.1	13.9	12.4
Okaloosa	12,900	27,533	61,175	88,187	109,920	143,776	113.4	122.2	44.2	24.6	30.8
Santa Rosa	16,085	18,554	29,547	37,741	55,988	81,608	15.3	59.2	27.7	48.3	45.8
Walton	14,246	14,725	15,576	16,087	21,300	27,760	3.4	5.8	3.3	32.4	30.3

Source: Decennial Censuses of Population for years indicated.

The tourist base of the region includes an increasingly diverse base of tourists. Although persons from the Southern part of the United States and middle age and older tourists continue to provide the bulk of tourists to the area, it is evident that the tourist base of the area is diversifying both geographically and relative to the sociodemographic characteristics of the tourists visiting the area.

Tables 3-6 provide an indication of the characteristics of visitors coming to the three counties of Escambia (where Pensacola is located), Okaloosa (where Fort Walton Beach and Destin are located) and Bay (where Panama City is located). The data in these tables are derived from Florida Visitor Profile Reports prepared for the Florida Department of Commerce. The data in these tables are for the year for which most complete data were available at the time this report was completed, 1995. Although data for a single year must be used with caution, an examination of data for several years (Coggins 1995; Bell 1991) suggests that the characteristics of visitors shown for 1995 appear to be typical for visitors in the area. Data are shown by the quarter of the year to indicate the variation in tourist populations by time of year. Florida divides its analysis of visitors into two groups, those who arrive by air and those who arrive by automobile. Visitors arriving by air are a relatively small part of the total tourist population of the study area, being a significant group only in the Bay County Area. Both Bay County and Okaloosa appear among the top 10 tourist counties in Florida for visitors arriving by automobile (Florida Department of Commerce 1995), but no county in the study area is among the top 10 for visitors arriving by air. As a result, data provided on visitor characteristics concentrate on automobile visitors for Escambia and Okaloosa Counties with data for both air and automobile visitors only for Bay County.

The data in these tables reveal several important patterns about visitors to the study area. It is evident, for example, that for each of the three areas there are two distinct tourist populations. In the winter months (the fourth and first quarters including the months from October through March) visitors are disproportionately older adults. In Escambia and Okaloosa counties in these months, the proportion of persons over 65 years of age is between 20 and 25 percent with between 35 and 53 percent being 55 years of age or older. The visitors are highly educated with about 25 to 40 percent having completed post-graduate work and are of upper middle income status with median incomes in the mid $50,000 range. During the spring and summer months (April through September), the visitors are younger with the proportion 66 years of age or older dropping to 8 to 20 percent and with around 20 percent being young persons 7 to 17 years of age and another 14 to 25 percent being 18 to 35 years of age. This summer tourist population is also relatively highly educated and from upper middle class income groups. These two areas are also similar in the origins of their visitors. Visitors are primarily from southern states with high proportions being from Alabama, Arkansas, Louisiana, Mississippi, and Texas. The visitors to Escambia and Okaloosa visit primarily for purposes of taking vacations and utilize a variety of attractions. In both areas, however, when asked the major activities that they most enjoyed, visitors cite the use of beaches, the climate and a variety of historical and water-based resources such as

fishing, cruises, etc. They utilize hotels/motels and lodging in rented condominiums and spend $45 to $100 per day per person, staying 2.5 to roughly 5.5 days on average, depending on the season.

The Bay County Area's automobile visitors show seasonal patterns but there are smaller differences in populations between seasons. In the winter months, the percentage of visitors 66 years of age or older varies between 10 and 17 percent and the proportion in the ages of 36 to 55 is higher than in Escambia and Okaloosa Counties. Bay County visitors are similar to those in the other two counties in terms of income and education. In the summer months, the Bay County Area has larger proportions of young adults than in the other two areas. As might be expected given its location, the Bay County Area's visitors also tend to be from somewhat different origins. Although Alabama, Arkansas, Louisiana, Mississippi, and Texas remain major origins, Georgia, Tennessee, and some Midwestern states (e.g., Michigan and Ohio) and some other southern locations (e.g., Kentucky and Virginia) appear with greater frequency. Vacationing and similar attractions tend to be important to visitors in the Bay County area and beaches, climate, and other natural resource-related amenities appear to be equally important as in the Escambia and Okaloosa areas. Expenditures per person per day tend to be lower with levels of $30 to $60 per day reported for Bay County visitors in 1995.

The Bay County Area's air-based visitors are different than its auto visitors. During the winter months, these visitors tend to be middle aged with between 40 and 60 percent being 36 to 55 years of age. They tend to be highly educated with roughly 40 percent having post-graduate degrees and with median incomes in the $60,000 to $70,000 range. These visitors are not only different in age but also in origin. Midwestern and East Coast areas such as Wisconsin, Ohio, Virginia, and Maryland appear as frequent sources. Business as well as vacationing appear as major reasons for visiting the area, attractions remain the same as for automobile visitors, and the importance of the area's beaches and climate remain central to these visitors.

It is evident that beaches and water-related activities are key parts of the tourist experience in the Panhandle. Relative to beaches, the quality of such beaches is attested to by the fact, that five of the top twenty beaches in the United States are located in the region and in both 1994 and 1995 beaches in the study area (namely Grayton Beach in 1994 and St. Andrews Beach in 1995) were rated as the best beach in the Nation (Leatherman 1994 & 1995).

Relative to other water-based resources, an example of the importance of such industries can be seen by examining the party and charter boat industries. Party boats involve boats that charge on a per passenger per trip basis and usually involve relatively large numbers of passengers while charter boats rent by the boat per trip. An article by Ditton et al. (1992) estimated that the Gulf of Mexico had 97 operating party boats with roughly two-thirds operating off Florida Coasts. Of the 62 boats operating in Florida, 14 operated from ports in the Panhandle of Florida. Florida's boats were estimated to make 17,329 trips per year involving 320,587 passengers. If one assumes that the Panhandle had its proportionate share (as indicated by its proportion of all boats in Florida), this would indicate more than 3,900

trips were made by such boats per year involving more than 72,000 passengers. Similarly an article by Holland et al. (1992) suggested that 736 of 971 charter boats in the Gulf were in Florida with 196 in the Panhandle. Florida charter boats were estimated to have made 118,202 trips involving 472,897 passengers. If one again assumes that the Panhandle's proportion of trips and passengers is equal to its proportion of Florida boats, panhandle boats would have made more than 31,000 trips involving nearly 126,000 persons. These same articles plus others (Ditton et al. 1991) point out that party boats tended to charge between $15 and $70 per person and that charter boats charge in excess of $300 per boat with an average of six persons per boat. A more recent analysis of charter boats operating off of the coast of Alabama (Malone 1994) estimated the average charter boat cost at $825 per day. Although the definition of the Panhandle used in these analyses is different than that used in this analysis, and there is a wide range in the estimates of potential charges, it is obvious that the direct expenditures from party and charter boats are substantial. For example, if one assumes the $70.00 per person for party boats with 72,000 participants and $825 per charter boat with 31,000 trips, the combined expenditures would exceed $30.0 million per year and this would not include indirect or induced costs. Although again care must be taken not to extrapolate these results too extensively, the same Alabama study cited above suggested that such direct costs were about 25 percent of the total expenditures of persons involved in charter boat-related visits. This example provides an indication of the economic effects of just one part of the tourist industry in the Florida Panhandle.

The general region (including counties in close proximity to the counties used in this analysis) is also a major site of nature and preservation areas for wildlife and other natural resources. These areas include the Gulf Island National Seashore; the Bradwell Bay and St. Marks Wilderness areas; the Apalachicola National Forest; and the St. Marks, St. Vincent Island, and Pig Island National Refuges. It also includes the Blackwater River State Park; Fort Pickens, Yellow River, St. Joseph Bay, and other preserve areas; as well as the La Floresta, Perdida, St. Regis, Blackwater, Eglin, Point Washington, and Gaskin wildlife management areas. These are areas that are all within, or within driving distance of, the study area and represent major bases for wildlife-based tourism.

What this section suggests, then, is that tourism is among the two major industries in the study region. It is tourism that involves primarily automobile visitors with a predominance of southern origins. It is tourism heavily dependent on the natural resources of the area particularly the beaches and other water-based resources available in the area.

Table 3.3

Characteristics of Visitors Arriving by Automobile by Quarter for the Escambia County Area, 1995 (percents)

Characteristic	1st Quarter (Jan.-March)		2nd Quarter (April-June)		3rd Quarter (July-Sept.)		4th Quarter (Oct.-Dec.)	
				Age				
	Male	Female	Male	Female	Male	Female	Male	Female
Infant to 6 yrs.	3.1	.0	3.4	5.1	6.2	3.2	1.8	4.1
7 to 17	9.4	.0	15.3	19.2	12.5	14.3	1.8	2.0
18 to 25	6.2	.0	6.8	11.5	6.2	7.9	3.6	6.1
26 to 35	12.5	11.5	13.6	14.1	8.3	12.7	7.1	12.2
36 to 45	9.4	30.8	20.3	14.1	25.0	19.0	19.6	6.1
46 to 55	21.9	23.1	13.6	24.4	16.7	11.1	25.0	24.5
56 to 65	12.5	23.1	16.9	9.0	16.7	17.5	16.1	24.5
66 or over	25.0	11.5	10.2	2.6	8.3	14.3	25.0	20.4
				Education				
K-11th Grade		.0		.0		.0		.0
High School Graduate		6.5		3.9		2.4		1.9
Some College		22.6		15.7		19.0		33.3
College Graduate		25.8		29.4		21.4		25.9
Post-Graduate Work		16.1		25.5		40.5		24.1
Advanced Degree		6.5		3.9		4.8		.0
Currently Enrolled (Not High School)		16.1		15.7		9.5		13.0
Vocational-Technical		.0		.0		.0		.0
Other		6.5		5.9		2.4		1.9

Table 3.3 (continued).

Characteristic	1st Quarter (Jan.-March)	2nd Quarter (April-June)	3rd Quarter (July-Sept.)	4th Quarter (Oct.-Dec.)
Household Income				
$ 0 - 9,999	.0	2.0	.0	.0
$ 10,000 - 19,999	7.4	2.0	4.9	8.2
$ 20,000 - 29,999	18.5	15.7	24.4	20.4
$ 30,000 - 39,999	18.5	19.6	17.1	20.4
$ 40,000 - 49,999	3.7	19.6	14.6	20.4
$ 50,000 - 59,999	11.1	15.7	4.9	4.1
$ 60,000 - 69,999	11.1	3.9	17.1	8.2
$ 70,000 - 79,999	11.1	3.9	12.2	4.1
$ 80,000 - 89,999	11.1	2.0	2.4	4.1
$ 90,000 - 99,9999	3.7	2.0	.0	.0
$ 100,000 - 124,999	.0	5.9	2.4	10.2
$ 125,000 - 149,999	.0	3.9	.0	.0
$ 150,000 and above	3.7	3.9	.0	.0
Visitor Expenditures				
Expenditures/Party/Trip	$ 705.11	$ 683.31	$ 509.50	$ 446.37
Number/Party	1.87	2.69	2.64	1.91
Expenditures/Person/Trip	377.06	254.02	192.99	233.70
Average Number of Nights	3.74	2.37	3.31	2.60
Expenditures/Person/Day	100.82	107.18	58.31	89.89
Expenditures/Party/Day	188.53	288.32	153.93	171.68

Table 3.3 (continued).

State	1st Quarter (Jan.-March)	State	2nd Quarter (April-June)	State	3rd Quarter (July-Sept.)	State	4th Quarter (Oct.-Dec.)
Origin Areas for Visitors							
Texas	19.4	Alabama	15.7	Mississippi	14.3	Louisiana	14.5
Alabama	9.7	Louisiana	13.7	Texas	11.9	Georgia	14.5
Pennsylvania	6.5	Mississippi	11.8	Arkansas	11.9	Texas	12.7
Oregon	6.5	Texas	9.8	Missouri	9.5	Tennessee	9.1
Ohio	6.5	Pennsylvania	5.9	Alabama	9.5	Alabama	7.3
Mississippi	6.5	Michigan	5.9	Louisiana	7.1	Oklahoma	5.5
Louisiana	6.5	Missouri	3.9	North Carolina	4.8	Missouri	3.6
Tennessee	6.5	Indiana	3.9	Indiana	4.8	Mississippi	3.6
Rhode Island	3.2	Illinois	3.9	Georgia	4.8	Virginia	3.6
New Hampshire	3.2	Tennessee	3.9	Tennessee	4.8	Washington	3.6
Virginia	3.2			South Carolina	4.8	North Carolina	3.6
Minnesota	3.2						
Michigan	3.2						
Saskatchewan	3.2						
Indiana	3.2						

Table 3.3 (continued).

1st Quarter Characteristic	(Jan.-March)	2nd Quarter Characteristic	(April-June)	3rd Quarter Characteristic	(July-Sept.)	4th Quarter Characteristic	(Oct.-Dec.)
Reason for Trip							
Vacation	61.3	Vacation	54.9	Vacation	59.5	Visit Friends and/or Relatives	56.4
Business (Co., Govt., Personal)	25.8	Visit Friends/ and/or Relatives	21.6	Visit Friends and/or Relatives	31.0	Vacation	27.3
Visit Friends and/or Relatives	9.7	Business (Co., Govt., Personal)	21.6	Business (Co., Govt., Personal)	9.5	Business (Co., Govt., Personal)	16.4
Honeymoon	3.2	Honeymoon	2.0	Convention/Confer- ence/Trade Show	.0	Convention/Confer- ence/Trade Show	.0
Convention/Confer- ence/Trade Show	.0	Convention/Confer- ence/Trade Show	.0	Cruise	.0	Cruise	.0
Cruise	.0	Cruise	.0	Honeymoon	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0
Additional Reasons for Trip							
Visit Friends and/or Relatives	55.6	Visit Friends and/or Relatives	43.5	Vacation	47.6	Vacation	60.0
Vacation	44.4	Vacation	43.5	Visit Friends and/or Relatives	42.9	Visit Friends and/or Relatives	25.0
Business (Co., Govt., Personal)	.0	Convention/Confer- ence/Trade Show	13.0	Honeymoon	4.8	Business (Co. Govt., Personal)	10.0
Convention/Confer- ence/Trade Show	.0	Business (Co., Govt., Personal)	.0	Business (Co., Govt., Personal)	4.8	Convention/Confer- ence/Trade Show	5.0
Cruise	.0	Cruise	.0	Convention/Confer- ence/Trade Show	.0	Cruise	.0
Honeymoon	.0	Honeymoon	.0	Cruise	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0

Table 3, continued

Table 3.3 (continued).

1st Quarter Characteristic	(Jan.-March)	2nd Quarter Characteristic	(April-June)	3rd Quarter Characteristic	(July-Sept.)	4th Quarter Characteristic	(Oct.-Dec.)
			Attractions Visited				
Parks/Preserves	15.4	Walt Disney Resort & Attractions	30.0	Miracle Strip Amusement Park	22.7	Walt Disney Resort & Attractions	23.5
Walt Disney Resort & Attractions	11.5	Parks/Preserves	25.0	Nat'l Museum of Naval Aviation	22.7	Nat'l Museum of Naval Aviation	17.6
Universal Studios	7.7	Nat'l Museum of Naval Aviation	15.0	Gulfarium	13.6	Spaceport USA	5.9
The Pier (St. Petersburg)	7.7	Universal Studios	10.0	Gulf World Aquarium	13.6	King Henry's Feast	5.9
Nat'l Museum of Naval Aviation	7.7	Sea World	10.0	Parks/Preserves	9.1	Busch Gardens	5.9
Cypress Gardens	7.7	St. Augustine Historic District	5.0	Everglades National Park	4.5	State Capitol	5.9
Busch Gardens	3.8			Walt Disney Resort & Attractions	4.5	Universal Studios	5.9
Bok Tower Gardens	3.8					Parks/Preserves	5.9
						St. Augustine Historic District	5.9
						Ripley's Museum (Orlando)	5.9

Table 3.3 (continued).

1st Quarter Characteristic	(Jan.-March)	2nd Quarter Characteristic	(April-June)	3rd Quarter Characteristic	(July-Sept.)	4th Quarter Characteristic	(Oct.-Dec.)
		Major Activity					
Rest and Relaxation	24.0	Shopping/Restaurants	20.6	Shopping/Restaurants	19.2	Shopping/Restaurants	28.7
Shopping/Restaurants	15.4	Rest and Relaxation	18.6	Beaches	18.1	Rest and Relaxation	20.1
Beaches	11.5	Beaches	17.1	Rest and Relaxation	16.4	Climate	12.8
Climate	11.5	Climate	12.1	Climate	6.8	Beaches	12.2
Attractions (and Daily Cruises)	7.7	Pool Activities	7.0	Water Sports	5.6	Attractions (and Daily Cruises)	6.7
Camping/Hiking	7.7	Attractions (and Daily Cruises)	6.0	Attractions (and Daily Cruises)	5.6	Historical Sites	6.1
Historical Sites	5.8	Historical Sites	5.5	Historical Sites	5.1	Golf	3.7
Other	4.8	Golf	2.5	Dancing, Night Life	3.4	Boating/Charter Boating	1.2
Dancing, Night Life	2.9	Dancing, Night Life	2.0	Pool Activities	3.4	Cultural or Special Events	1.2
Cultural or Special Events	2.9	Camping/Hiking	2.0	Pari-Mutuels	2.8	Dancing, Night Life	1.2
Water Sports	1.9	Fishing	1.5	Boating/Charter Boating	2.8	Educational Programs	1.2
Educational Programs	1.0	Other	1.5	Camping/Hiking	2.3	Pool Activities	1.2
Pool Activities	1.0	Water Sports	1.5	Tennis	1.7	Pari-Mutuels	.6
Fishing	1.0	Educational Programs	1.0	Sports to Watch (Baseball, etc.)	1.7	Sports to Watch (Baseball, etc.)	.6
Sports to Watch (Baseball, etc.)	1.0	Cultural or Special Events	.5	Fishing	1.7	Water Sports	.6
Golf	.0	Pari-Mutuels	.5	Golf	1.1	Camping/Hiking	.6
Tennis	.0	Sports to Watch (Baseball, etc.)	.0	Educational Programs	1.1	Fishing	.6
Boating/Charter Boating	.0	Tennis	.0	Other	1.1	Tennis	.6
Pari-Mutuels	.0	Boating/Charter Boating	.0	Cultural or Special Events	.0	Other	.0
		Types of Lodging Facilities Used					
Hotel/Motel	56.2	Hotel/Motel	59.0	Hotel/Motel	48.9	Hotel/Motel	45.1
Campground/RV Park	31.3	Friends and/or Relatives	26.2	Friends and/or Relatives	29.8	Friends and/or Relatives	43.7
Friends and/or Relatives	6.2	Campground/RV Park	6.6	Campground/RV Park	10.6	Condo/Apt./Home (Rent)	4.2
Condo/Apt./Home (Rent)	3.1	Other	4.9	Condo/Apt./Home (Own)	6.4	Other	2.8
Other	3.1	Condo/Apt./Home (Rent)	3.3	Condo/Apt./Home (Rent)	4.3	Campground/RV park	2.8
Timeshare Unit	.0	Timeshare Unit	.0	Timeshare Unit	.0	Condo/Apt./Home (Own)	1.4
Condo/Apt./Home (Own)	.0	Condo/Apt./Home (Own)	.0	Other	.0	Other	.0

Source: Derived from Visitor Profile Reports for the periods indicated from the Florida Department of Commerce, 1995.

Table 3.4

Characteristics of Visitors Arriving by Automobile by Quarter for the Okaloosa County Area, 1995 (percents)

Characteristic	1st Quarter (Jan.-March)		2nd Quarter (April-June)		3rd Quarter (July-Sept.)		4th Quarter (Oct.-Dec.)	
				Age				
	Male	Female	Male	Female	Male	Female	Male	Female
Infant to 6 yrs.	1.6	4.5	2.9	4.7	10.3	7.6	3.0	1.5
7 to 17	4.9	9.0	16.5	20.2	16.2	11.1	4.5	9.0
18 to 25	8.2	7.5	7.2	4.7	3.8	7.1	1.5	3.0
26 to 35	9.8	9.0	9.4	10.9	11.9	18.7	4.5	6.0
36 to 45	9.8	10.4	21.6	19.4	27.6	19.7	14.9	11.9
46 to 55	11.5	16.4	15.1	17.1	10.3	14.6	22.4	22.4
56 to 65	26.2	23.9	17.3	14.0	10.3	11.1	20.9	20.9
66 or over	27.9	19.4	10.1	9.3	9.7	10.1	28.4	25.4
				Education				
K-11th Grade		.0		.0		.0		1.6
High School Graduate		3.4		2.4		.8		.0
Some College		37.9		23.8		24.8		23.8
College Graduate		8.6		17.9		24.0		28.6
Post-Graduate Work		34.5		36.9		35.5		38.1
Advanced Degree		3.4		6.0		3.3		1.6
Currently Enrolled (Not High School)		6.9		11.9		10.7		6.3
Vocational-Technical		0		.0		.0		.0
Other 5.2		1.2		.8		.0		

Table 3.4 (continued).

Characteristic	1st Quarter (Jan.-March)	2nd Quarter (April-June)	3rd Quarter (July-Sept.)	4th Quarter (Oct.-Dec.)
Household Income				
$ 0 - 9,999	2.0	3.8	.0	.0
$ 10,000 - 19,999	5.9	2.5	2.6	3.6
$ 20,000 - 29,999	11.8	6.3	9.6	18.2
$ 30,000 - 39,999	19.6	15.2	13.9	16.4
$ 40,000 - 49,999	13.7	11.4	12.2	5.5
$ 50,000 - 59,999	15.7	13.9	14.8	18.2
$ 60,000 - 69,999	2.0	13.9	8.7	14.5
$ 70,000 - 79,999	9.8	8.9	13.0	1.8
$ 80,000 - 89,999	2.0	7.6	9.6	1.8
$ 90,000 - 99,9999	9.8	2.5	6.1	1.8
$ 100,000 - 124,999	.0	8.9	7.8	10.9
$ 125,000 - 149,999	.0	.0	.0	.0
$ 150,000 and above	7.8	5.1	1.7	7.3
		Visitor Expenditures		
Expenditures/Party/Trip	$ 716.67	$ 853.80	$ 866.85	$ 435.54
Number/Party	2.21	3.18	3.20	2.09
Expenditures/Person/Trip	324.29	268.49	270.89	208.39
Average Number of Nights	5.43	3.72	4.76	4.62
Expenditures/Person/Day	59.72	72.17	56.91	45.11
Expenditures/Party/Day	131.98	229.52	182.11	94.27

Table 3.4 (continued).

State	1st Quarter (Jan.-March)	State	2nd Quarter (April-June)	State	3rd Quarter (July-Sept.)	State	4th Quarter (Oct.-Dec.)
			Origin Areas for Visitors				
Louisiana	13.8	Louisiana	30.6	Texas	21.3	Louisiana	28.1
Mississippi	10.3	Mississippi	15.3	Louisiana	21.3	Texas	15.6
Tennessee	8.6	Texas	11.8	Mississippi	13.9	Georgia	9.4
Michigan	6.9	Georgia	7.1	Arkansas	9.0	Alabama	9.4
Illinois	6.9	Tennessee	3.5	Alabama	6.6	Mississippi	7.8
Alabama	6.9	Michigan	3.5	Tennessee	5.7	Missouri	4.7
Ohio	5.2	Arkansas	3.5	Georgia	4.9	Arkansas	3.1
Texas	5.2	New Jersey	2.4	Missouri	4.1	Illinois	3.1
Missouri	3.4	Alabama	2.4	Illinois	1.6	North Carolina	1.6
Ontario	3.4	New Hampshire	1.2	New York	1.6	New York	1.6
Georgia	3.4	Nevada	1.2	Oklahoma	1.6	Virginia	1.6
Virginia	3.4	Montana	1.2	Kentucky	.0	West Virginia	1.6
		Missouri	1.2			Michigan	1.6
		South Carolina	1.2			South Carolina	1.6
		Minnesota	1.2			Iowa	1.6

Table 3.4 (continued).

Characteristic	1st Quarter (Jan.-March)	2nd Quarter (April-June)	3rd Quarter (July-Sept.)	4th Quarter (Oct.-Dec.)
Reason for Trip				
Vacation	50.4	69.4	65.6	
Visit Friends and/or Relatives	41.4	17.6	23.0	46.9
Business (Co., Govt., Personal)	8.6	12.9	9.8	21.9
Convention/Conference/Trade Show	.0	.0	1.6	.0
Cruise	.0	.0	.0	.0
Honeymoon	.0	.0	.0	.0
Other	.0	.0	.0	.0
Additional Reasons for Trip				
Vacation	52.6	39.3	61.4	53.3
Visit Friends and/or Relatives	42.1	35.7	36.4	40.0
Business (Co., Govt., Personal)	5.3	17.9	2.3	6.7
Convention/Conference/Trade Show	.0	7.1	.0	.0
Cruise	.0	.0	.0	.0
Honeymoon	.0	.0	.0	.0
Other	.0	.0	.0	.0

Table 3.4 (continued).

1st Quarter Characteristic	(Jan.-March)	2nd Quarter Characteristic	(April-June)	3rd Quarter Characteristic	(July-Sept.)	4th Quarter Characteristic	(Oct.-Dec.)
Attractions Visited							
Nat'l Museum of Naval Aviation	10.0	Miracle Strip Amusement Park	17.1	Miracle Strip Amusement Park	25.0	Walt Disney Resort & Attractions	25.0
Spaceport USA	6.7	Walt Disney Resort & Attractions	14.3	Gulfarium	14.3	St. Augustine Alligator Farm	12.5
John Ringling Museum Complex	6.7	Parks/Preserves	11.4	Parks/Preserves	10.7	Spaceport USA	12.5
Gulfarium	6.7	Gulfarium	8.6	Gulf World Aquarium	7.1	Cypress Gardens	12.5
Universal Studios	6.7	Universal Studios	5.7	The Shell Factory	7.1	Parks/Preserves	12.5
Parks/Preserves	6.7	Ernest Hemingway House	5.7	Nat'l Museum of Naval Aviation	7.1	St. Augustine Historic District	12.5
Bok Tower Gardens	3.3	Everglades National Park	5.7	Walt Disney Resort & Attractions	7.1		
The Pier (St. Petersburg)	3.3	Sightseeing Cruise Not At Attractions	2.9	Busch Gardens	3.6		
Wooten's Airboat Tours	3.3	Gulf World Aquarium	2.9	John Ringling Museum Complex	3.6		
The Shell Factory	3.3	Sea World	2.9	Miami Metro Zoo	3.6		

Table 3.4 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Types of Lodging Facilities Used							
Friends and/or Relatives	32.3	Hotel/Motel	45.7	Condo/Apt./Home (Rent)	34.6	Friends and/or Relatives	45.8
Hotel/Motel	30.6	Condo/Apt./Home (Rent)	28.7	Hotel/Motel	28.5	Hotel/Motel	27.8
Condo/Apt./Home (Rent)	14.5	Friends and/or Relatives	17.0	Friends and/or Relatives	23.8	Condo/Apt./Home (Own)	13.9
Campground/RV Park	14.5	Campground/RV Park	5.3	Condo/Apt./Home (Own)	8.5	Condo/Apt./Home (Rent)	6.9
Timeshare Unit	3.2	Other	2.1	Campground/RV Park	3.8	Campground/RV Park	4.2
Condo/Apt./Home (Own)	3.2	Timeshare Unit	1.1	Timeshare Unit	.8	Other	1.4
Other	1.6	Condo/Apt./Home (Own)	.0	Other	.0	Timeshare Unit	.0

Source: Derived from Visitor Profile Reports for the periods indicated from the Florida Department of Commerce, 1995.

Table 3.5

Characteristics of Visitors Arriving by Automobile by Quarter for the Bay County Area, 1995 (percent)

Characteristic	1st Quarter (Jan.-March)		2nd Quarter (April-June)		3rd Quarter (July-Sept.)		4th Quarter (Oct.-Dec.)	
				Age				
	Male	Female	Male	Female	Male	Female	Male	Female
Infant to 6 yrs.	3.9	.7	3.2	7.9	6.5	4.5	.0	1.8
7 to 17	6.5	8.3	15.2	15.8	16.4	19.8	5.8	.0
18 to 25	9.7	16.7	16.0	18.2	9.2	12.1	5.8	10.7
26 to 35	17.4	13.9	16.4	19.0	19.2	19.5	10.9	6.2
36 to 45	16.1	15.3	21.2	13.0	24.3	22.4	17.5	18.8
46 to 55	12.9	16.0	12.4	13.0	11.6	10.9	23.4	19.6
56 to 65	20.0	18.1	9.6	8.7	8.9	8.3	19.7	25.9
66 or over	13.5	11.1	6.0	4.3	3.8	2.6	16.8	17.0
				Education				
K-11th Grade		.0		.0		.0		.0
High School Graduate		1.4		5.8		2.5		8.4
Some College		35.5		26.4		30.7		35.9
College Graduate		28.3		21.4		23.3		20.6
Post-Graduate Work		22.5		24.3		37.6		23.7
Advanced Degree		1.4		3.5		1.0		8.4
Currently Enrolled (Not High School)		10.1		8.1		4.5		3.1
Vocational-Technical		.0		.0		.0		.0
Other		.7		.6		.5		.0

Table 3.5 (continued).

Characteristic	1st Quarter (Jan.-March)	2nd Quarter (April-June)	3rd Quarter (July-Sept.)	4th Quarter (Oct.-Dec.)
		Household Income		
$ 0 - 9,999	4.4	3.2	1.0	.0
$ 10,000 - 19,999	6.1	12.7	6.0	5.5
$ 20,000 - 29,999	12.3	17.2	12.0	18.2
$ 30,000 - 39,999	20.2	14.0	20.0	15.5
$ 40,000 - 49,999	11.4	13.4	18.0	19.1
$ 50,000 - 59,999	15.8	15.3	13.0	16.4
$ 60,000 - 69,999	10.5	10.8	11.5	8.2
$ 70,000 - 79,999	7.0	5.7	8.0	5.5
$ 80,000 - 89,999	7.9	3.2	4.0	5.5
$ 90,000 - 99,9999	1.8	2.5	2.0	1.8
$ 100,000 - 124,999	1.8	.0	2.0	3.6
$ 125,000 - 149,999	.9	.6	.5	.9
$ 150,000 and above	.0	1.3	2.0	.0
		Visitor Expenditures		
Expenditures/Party/Trip	$ 711.22	$ 723.03	$ 654.67	$ 640.54
Number/Party	2.18	2.97	3.00	1.90
Expenditures/Person/Trip	326.25	243.44	218.22	337.13
Average Number of Nights	10.95	4.06	5.58	9.37
Expenditures/Person/Day	29.79	59.96	39.11	35.98
Expenditures/Party/Day	64.95	178.09	117.32	68.36

Table 3.5 (continued).

State	1st Quarter (Jan.-March)	State	2nd Quarter (April-June)	State	3rd Quarter (July-Sept.)	State	4th Quarter (Oct.-Dec.)
			Origin Areas for Visitors				
Georgia	15.2	Georgia	32.6	Georgia	28.7	Georgia	22.9
Alabama	13.0	Texas	9.7	Alabama	24.3	Alabama	12.2
Tennessee	8.0	Alabama	9.1	Tennessee	7.9	Tennessee	8.4
Michigan	5.1	Mississippi	6.3	Arkansas	5.4	Texas	6.1
Texas	5.1	Louisiana	5.1	Louisiana	4.5	Louisiana	3.8
Mississippi	5.1	Tennessee	4.6	Texas	4.5	Kentucky	3.8
Ontario	3.6	Indiana	2.9	South Carolina	3.5	Virginia	3.8
Colorado	3.6	Arkansas	2.9	North Carolina	2.5	Ohio	3.8
Indiana	3.6	Illinois	2.9	Indiana	2.5	North Carolina	3.1
Wisconsin	2.9	Kentucky	2.3	Illinois	2.5	Mississippi	3.1
Ohio	2.9	South Carolina	2.3			Ontario	3.1
North Carolina	2.9						

Table 3.5 (continued).

1st Quarter Characteristic (Jan.-March)		2nd Quarter Characteristic (April-June)		3rd Quarter Characteristic (July-Sept.)		4th Quarter Characteristic (Oct.-Dec.)	
Reason for Trip							
Visit Friends and/or Relatives	44.9	Vacation	73.1	Vacation	72.3	Vacation	41.2
Vacation	43.5	Visit Friends and/or Relatives	20.0	Visit Friends and/or Relatives	22.8	Visit Friends and/or Relatives	35.9
Business (Co., Govt., Personal)	8.0	Business (Co., Govt., Personal)	5.1	Business (Co., Govt., Personal)	4.0	Business (Co., Govt., Personal)	22.9
Honeymoon	3.6	Honeymoon	1.1	Honeymoon	1.0	Convention/Conference/Trade Show	.0
Convention/Conference/Trade Show	.0	Convention/Conference/Trade Show	.6	Convention/Conference/Trade Show	.0	Cruise	.0
Cruise	.0	Cruise	.0	Cruise	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0
Additional Reasons for Trip							
Vacation	52.2	Vacation	52.2	Visit Friends and/or Relatives	59.1	Visit Friends and/or Relatives	43.5
Visit Friends and/or Relatives	43.5	Visit Friends and/or Relatives	43.5	Vacation	36.4	Vacation	39.1
Convention/Conference/Trade Show	4.3	Business (Co., Govt., Personal)	4.3	Business (Co., Govt., Personal)	1.5	Business (Co., Govt., Personal)	17.4
Business (Co., Govt., Personal)	.0	Convention/Conference/Trade Show	.0	Honeymoon	1.5	Convention/Conference/Trade Show	.0
Cruise	.0	Cruise	.0	Convention/Conference/Trade Show	1.5	Cruise	.0
Honeymoon	.0	Honeymoon	.0	Cruise	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0

Table 3.5 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Attractions Visited							
Parks/Preserves	11.1	Miracle Strip Amusement Park	24.3	Miracle Strip Amusement Park	40.3	Walt Disney Resort & Attractions	14.8
Miracle Strip Amusement Park	6.7	Parks/Preserves	13.5	Gulf World Aquarium	11.2	Parks/Preserves	11.1
Wakulla Springs	6.7	Walt Disney Resort & Attractions	13.5	Walt Disney Resort & Attractions	6.7	Cypress Gardens	7.4
Universal Studios	6.7	Wakulla Springs	5.4	Gulfarium	6.0	Gulf World Aquarium	7.4
Sea World	4.4	The Shell Factory	5.4	Sea World	6.0	Wakulla Springs	7.4
Homosassa Springs	4.4	Sea World	5.4	Universal Studios	3.7	Homosassa Springs	7.4
Arabian Nights	4.4	Spaceport USA	2.7	Busch Gardens	3.0	St. Augustine Alligator Farm	3.7
Cypress Gardens	4.4	Everglades Alligator Farm	2.7	Parks/Preserves	3.0	Busch Gardens	3.7
St. Augustine Historic District	4.4	Everglades National Park	2.7	State Capitol	1.5	Marineland	3.7
Walt Disney Resort & Attractions	4.4	Miccosukee Indian Village	2.7	Church Street Station	1.5	Gulfarium	3.7

Table 3.5 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
			Major Activity				
Rest and Relaxation	20.4	Beaches	26.3	Beaches	20.1	Rest and Relaxation	21.6
Beaches	17.4	Rest and Relaxation	25.2	Rest and Relaxation	17.8	Beaches	19.2
Climate	15.4	Climate	18.4	Shopping/Restaurants	12.2	Shopping/Restaurants	18.6
Shopping/Restaurants	14.0	Shopping/Restaurants	8.5	Climate	11.2	Climate	10.0
Golf	5.9	Pool Activities	5.0	Pool Activities	7.4	Golf	6.2
Pool Activities	4.5	Fishing	2.8	Attractions (and Daily Cruises)	5.6	Attractions (and Daily Cruises)	5.2
Attractions (and Daily Cruises)	3.9	Attractions (and Daily Cruises)	2.4	Water Sports	5.2	Fishing	4.5
Other	3.4	Water Sports	2.0	Boating/Charter Boating	4.4	Historical Sites	3.1
Dancing, Night Life	3.1	Boating/Charter Boating	1.8	Fishing	3.6	Boating/Charter Boating	2.1
Camping/Hiking	2.8	Dancing, Night Life	1.8	Golf	3.3	Camping/Hiking	2.1
Fishing	2.8	Golf	1.7	Dancing, Night Life	2.6	Pool Activities	2.1
Historical Sites	2.2	Camping/Hiking	1.1	Historical Sites	1.6	Other	1.7
Water Sports	1.4	Historical Sites	1.1	Camping/Hiking	1.5	Sports to Watch (Baseball, etc.)	1.0
Boating/Charter Boating	.8	Pari-Mutuels	.9	Other	1.2	Dancing, Night Life	1.0
Pari-Mutuels	.6	Educational Programs	.6	Pari-Mutuels	.7	Water Sports	.7
Sports to Watch (Baseball, etc.)	.6	Tennis	.2	Cultural or Special Needs	.6	Tennis	.7
Tennis	.6	Cultural or Special Events	.2	Tennis	.4	Pari-Mutuels	.3
Cultural or Special Events	.3	Other	.2	Sports to Watch (Baseball, etc.)	.4	Cultural or Special Needs	.0
Educational Programs	.0	Sports to Watch (Baseball, etc.)	.0	Educational Programs	.2	Educational Programs	.0

Table 3.5 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Types of Lodging Facilities Used							
Friends and/or Relatives	38.4	Hotel/Motel	52.7	Hotel/Motel	40.3	Friends and/or Relatives	42.0
Hotel/Motel	33.8	Friends and/or Relatives	21.7	Friends and/or Relatives	28.2	Hotel/Motel	32.6
Condo/Apt./Home (Rent)	11.3	Condo/Apt./Home (Rent)	15.2	Condo/Apt./Home (Own)	14.4	Condo/Apt./Home (Rent)	9.4
Campground/RV Park	8.6	Campground/RV Park	5.4	Condo/Apt./Home (Rent)	9.7	Condo/Apt./Home (Own)	8.0
Condo/Apt./Home (Own)	4.6	Condo/Apt./Home (Own)	3.8	Campground/RV Park	6.9	Campground/RV Park	6.5
Timeshare Unit	2.0	Timeshare Unit	.5	Timeshare Unit	.5	Other	1.4
Other	1.3	Other	.5	Other	.0	Timeshare Unit	.0

Source: Derived from Visitor Profile Reports for the periods indicated from the Florida Department of Commerce, 1995.

Table 3.6

Characteristics of Visitors Arriving by Air by Quarter for the Bay County Area, 1995 (percents)

Characteristic	1st Quarter (Jan.-March)		2nd Quarter (April-June)		3rd Quarter (July-Sept.)		4th Quarter (Oct.-Dec.)	
				Age				
	Male	Female	Male	Female	Male	Female	Male	Female
Infant to 6 yrs.	.0	.0	5.9	13.9	2.0	3.4	2.9	4.8
7 to 17	.0	.0	2.9	.0	16.3	.0	.0	.0
18 to 25	8.8	15.4	11.8	2.8	4.1	10.3	2.9	.0
26 to 35	5.9	11.5	17.6	19.4	20.4	24.1	14.7	28.6
36 to 45	41.2	19.2	29.4	19.4	20.4	24.1	44.1	19.0
46 to 55	29.4	19.2	14.7	13.9	26.5	24.1	20.6	23.8
56 to 65	14.7	15.4	17.6	19.4	8.2	10.3	11.8	14.3
66 or over	.0	19.2	.0	11.1	2.0	3.4	2.9	9.5
				Education				
K-11th Grade		2.1		.0		.0		.0
High School Graduate		.0		2.3		.0		4.7
Some College		12.5		22.7		17.8		7.0
College Graduate		22.9		20.5		24.4		14.0
Post-Graduate Work		43.7		31.8		33.3		37.2
Advanced Degree		12.5		11.4		13.3		20.9
Currently Enrolled (Not High School)		6.2		6.8		11.1		14.0
Vocational-Technical		.0		.0		.0		.0
Other		.0		4.5		.0		2.3

Table 3.6 (continued).

Characteristic	1st Quarter (Jan.-March)	2nd Quarter (April-June)	3rd Quarter (July-Sept.)	4th Quarter (Oct.-Dec.)
		Household Income		
$ 0 - 9,999	.0	.0	.0	.0
$ 10,000 - 19,999	2.3	7.1	4.5	2.4
$ 20,000 - 29,999	4.7	9.5	.0	9.8
$ 30,000 - 39,999	14.0	9.5	11.4	9.8
$ 40,000 - 49,999	9.3	23.8	9.1	9.8
$ 50,000 - 59,999	27.9	11.9	20.5	7.3
$ 60,000 - 69,999	14.0	14.3	9.1	26.8
$ 70,000 - 79,999	11.6	4.8	11.4	12.2
$ 80,000 - 89,999	7.0	4.8	4.5	2.4
$ 90,000 - 99,9999	4.7	2.4	4.5	.0
$ 100,000 - 124,999	4.7	4.8	6.8	17.1
$ 125,000 - 149,999	.0	.0	2.3	.0
$ 150,000 and above	.0	7.1	15.9	2.4
		Visitor Expenditures		
Expenditures/Party/Trip	$ 391.21	$ 711.88	$ 894.40	$ 671.75
Number/Party	1.25	1.59	1.73	1.28
Expenditures/Person/Trip	312.97	447.72	516.99	524.80
Average Number of Nights	5.27	7.52	9.18	6.05
Expenditures/Person/Day	59.39	59.54	56.32	86.74
Expenditures/Party/Day	74.23	94.66	97.43	111.03

Table 3.6 (continued).

State	1st Quarter (Jan.-March)	State	2nd Quarter (April-June)	State	3rd Quarter (July-Sept.)	State	4th Quarter (Oct.-Dec.)
Origin Areas for Visitors							
Wisconsin	14.6	Tennessee	11.4	Tennessee	17.8	Virginia	18.6
Virginia	12.5	Ohio	9.1	Virginia	13.3	Maryland	11.6
Texas	8.3	Maryland	9.1	California	11.1	New York	7.0
Pennsylvania	6.2	Missouri	6.8	Georgia	8.9	South Carolina	4.7
Ontario	6.2	California	6.8	New Jersey	4.4	Texas	4.7
New York	6.2	Texas	4.5	Kentucky	4.4	Michigan	4.7
Ohio	4.2	Wisconsin	4.5	Pennsylvania	4.4	Tennessee	4.7
Missouri	4.2	Georgia	4.5	North Carolina	4.4	Georgia	4.7
Michigan	4.2	Virginia	4.5	Ohio	2.2	Colorado	4.7
Maryland	4.2	Arizona	4.5	Texas	2.2	California	4.7
Georgia	4.2			Washington	2.2		
				Missouri	2.2		
				Massachusetts	2.2		
				Louisiana	2.2		
				Rhode Island	2.2		

Table 3.6 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Reason for Trip							
Business (Co., Govt., Personal)	62.5	Business (Co., Govt., Personal)	36.4	Business (Co., Govt., Personal)	53.3	Business (Co., Govt., Personal)	69.8
Visit Friends and/or Relatives	25.0	Vacation	34.1	Vacation	24.4	Visit Friends and/or Relatives	20.9
Vacation	8.3	Visit Friends and/or Relatives	29.5	Visit Friends and/or Relatives	17.8	Vacation	9.3
Convention/Conference/Trade Show	4.2	Convention/Conference/Trade Show	.0	Convention/Conference/Trade Show	4.4	Convention/Conference/Trade Show	.0
Cruise	.0	Cruise	.0	Cruise	.0	Cruise	.0
Honeymoon	.0	Honeymoon	.0	Honeymoon	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0
Additional Reasons for Trip							
Vacation	60.0	Vacation	66.7	Vacation	83.3	Visit Friends and/or Relatives	66.7
Convention/Conference/Trade Show	40.0	Visit Friends and/or Relatives	33.3	Visit Friends and/or Relatives	16.7	Vacation	33.3
Visit Friends and/or Relatives	.0	Business (Co., Govt., Personal)	.0	Business (Co., Govt., Personal)	.0	Business (Co., Govt., Personal)	.0
Business (Co., Govt., Personal)	.0	Convention/Conference/Trade Show	.0	Convention/Conference/Trade Show	.0	Convention/Conference/Trade Show	.0
Cruise	.0	Cruise	.0	Cruise	.0	Cruise	.0
Honeymoon	.0	Honeymoon	.0	Honeymoon	.0	Honeymoon	.0
Other	.0	Other	.0	Other	.0	Other	.0

Table 3.6 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Attractions Visited							
Parks/Preserves	14.3	Parks/Preserves	50.0	Miracle Strip Amusement Park	27.3	None Listed	
Walt Disney Resort & Attractions	14.3	Miracle Strip Amusement Park	10.0	Parks/Preserves	27.3		
Ybor City	7.1	Spaceport USA	10.0	Walt Disney Resort & Attractions	18.2		
Gulf World Aquarium	7.1			Busch Gardens	9.1		
State Capitol	7.1			Florida Sports Hall of Fame	9.1		
The Pier (St. Petersburg)	7.1			Wakulla Springs	9.1		
Bayside Market Place	7.1						
Merritt Island National Wildlife	7.1						
Spaceport USA	7.1						

Table 3.6 (continued).

Characteristic	1st Quarter (Jan--March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
			Major Activity				
Shopping/Restaurants	20.8	Beaches	22.2	Shopping/Restaurants	20.5	Shopping/Restaurants	32.0
Climate	19.8	Shopping/Restaurants	17.4	Beaches	18.5	Climate	14.0
Beaches	19.8	Rest and Relaxation	17.4	Climate	12.6	Rest and Relaxation	14.0
Rest and Relaxation	15.1	Climate	15.3	Pool Activities	12.6	Beaches	12.0
Dancing, Night Life	5.7	Boating/Charter Boating	5.6	Rest and Relaxation	12.6	Golf	12.0
Attractions (and Daily Cruises)	4.7	Pool Activities	5.6	Dancing, Night Life	5.3	Historical Sites	4.0
Water Sports	2.8	Water Sports	4.2	Boating/Charter Boating	4.6	Cultural or Special Events	4.0
Pool Activities	2.8	Dancing, Night Life	4.2	Water Sports	4.0	Water Sports	2.0
Fishing	1.9	Fishing	2.8	Golf	2.6	Pool Activities	2.0
Golf	1.9	Tennis	1.4	Fishing	2.0	Boating/Charter Boating	2.0
Boating/Charter Boating	.9	Golf	1.4	Historical Sites	2.0	Dancing, Night Life	2.0
Historical Sites	.9	Historical Sites	1.4	Attractions (and Daily Cruises)	2.0	Sports to Watch (Baseball, etc.)	.0
Camping/Hiking	.9	Attractions (and Daily Cruises)	.7	Tennis	.7	Tennis	.0
Sports to Watch (Baseball, etc.)	.9	Other	.7	Sports to Watch (Baseball, etc.)	.0	Fishing	.0
Tennis	.9	Sports to Watch (Baseball, etc.)	.0	Pari-Mutuels	.0	Attractions (and Daily Cruises)	.0
Pari-Mutuels	.0	Pari-Mutuels	.0	Camping/Hiking	.0	Pari-Mutuels	.0
Cultural or Special Events	.0	Camping/Hiking	.0	Cultural or Special Events	.0	Camping/Hiking	.0
Educational Programs	.0	Cultural or Special Events	.0	Educational Programs	.0	Educational Programs	.0
Other	.0	Educational Programs	.0	Other	.0	Other	.0

Table 3.6 (continued).

Characteristic	1st Quarter (Jan.-March)	Characteristic	2nd Quarter (April-June)	Characteristic	3rd Quarter (July-Sept.)	Characteristic	4th Quarter (Oct.-Dec.)
Types of Lodging Facilities Used							
Hotel/Motel	55.8	Hotel/Motel	43.5	Hotel/Motel	55.3	Hotel/Motel	60.5
Friends and/or Relatives	30.8	Friends and/or Relatives	28.3	Condo/Apt./Home (Rent)	21.3	Friends and/or Relatives	25.6
Other	9.6	Condo/Apt./Home (Rent)	13.0	Friends and/or Relatives	14.9	Other	4.7
Timeshare Unit	3.8	Condo/Apt./Home (Own)	10.9	Other	4.3	Condo/Apt./Home (Rent)	4.7
Campground/RV Park	.0	Other	4.3	Condo/Apt./Home (Own)	4.3	Condo/Apt./Home (Own)	2.3
Condo/Apt./Home (Own)	.0	Campground/RV Park	.0	Campground/RV Park	.0	Campground/RV Park	2.3
Condo/Apt./Home (Rent)	.0	Timeshare Unit	.0	Timeshare Unit	.0	Timeshare Unit	.0

Source: Derived from Visitor Profile Reports for the periods indicated from the Florida Department of Commerce, 1995.

Description of Tourism Within Individual Subareas of the Region

In this section, each of the three major tourist areas in the study region are examined. These are the Pensacola (Escambia and Santa Rosa Counties), Fort Walton Beach and Destin (Okaloosa County) and Panama City (Bay County) areas. For each, the overall economic impacts of tourism in the area are discussed, some of the major tourist attractions are identified, and the general characteristics of the industry in the area are delineated. Any such list must be selective because the industry is constantly growing and changing. The intent is only to indicate the potential range of tourist activities in subareas within the study area.

The Pensacola Area

Tourism is a major source of employment and economic activity in the Pensacola area. A 1995 study (Huth and Stewart 1995) estimated that the Pensacola Metropolitan Area had roughly 4.0 million visitors in 1994. These visitors were estimated to have had a total economic impact amounting to $380 million, to have generated $150 million in personal income and to have generated nearly 10,000 jobs. Survey data for the area (Martin 1995) indicated that these visitors tended to have similar socioeconomic characteristics as those shown in Table 3. More than 86 percent arrived by automobile with more than 50 percent arriving via Interstate 10 from origin areas that are primarily within the Southern United States. More than 75 percent listed vacationing as the primary reason for their visit and nearly one-half indicated that the area's beaches were the primary factor that attracted them to the area. This proportion was 8 times greater than the proportion mentioned for any other factor. More than 80 percent spent one or more nights in the area, nearly 61 percent stayed in hotel or motels and another 14 percent stayed in condominiums with 84 percent staying in either Pensacola or Pensacola Beach. They are estimated to have spent an average of $288 per day per party (Huth and Stewart 1995) with an average party size of 1.5 to 2.5 people.

Among the area's key attractions is the Gulf Islands National Seashore. Established in 1971, it preserves more than 14 miles of Santa Rosa Island and includes both the old Naval Live Oaks Reservation and historic Fort Pickens. It is highly visited as an area abundant in birds of a variety of species and beautiful beaches. Another central attraction is the Naval Air Station which began in 1825. It provides an overview of U.S. Naval History. It includes the Naval Aviation Museum which recounts the story of naval aviation in the United States. It also includes such historic sites as Fort Barrancas which with Ft. Pickens was built to defend the harbor. Other often visited sites include Old Christ Church, and numerous historic homes and facilities in the Historic District of Pensacola.

Coupled with its beaches, its substantially developed hotel, motel and marina areas, the Pensacola area is a major center for such tourist activities as birding, fishing, swimming, scuba diving, and serves as a locus for those interested in historical tourism, especially that related to the U.S. military.

The Fort Walton Beach and Destin Area

This area is estimated (Okaloosa County Tourist Development Council 1996) to have about 2.6 million visitors annually with an estimated economic impact of roughly $440 million dollars per year. As with the Pensacola area, a variety of the visitors to the area arrive by automobile (nearly 90 percent) and nearly 84 percent come to the area on vacation. The area has appeared as among the top ten destinations of automobile visitors to Florida for several years. Visitors to the area rate beaches as the key attraction of the area, and the area has a variety of tourist facilities including an estimated 11,500 hotel, motel, and townhouse units.

The beaches in the Fort Walton, Destin, and Beaches of South Walton area include beaches, such as Grayton Beach, that are considered among the best in the Nation. It is a major center for charter and party boat traffic and is the home of the huge Eglin Air Force Base, and such attractions as the Air Force Armament Museum, and the Indian Temple Mound Museum. It is the natural resource base of the area, however, that is at the center of its tourism industry.

The Panama City Area

The Panama City Area like the rest of the Florida Panhandle shows a codependency on military installations and tourism. The area's two largest employers are the Tyndall Air Force Base (more than 7,000 employees) and the Coastal System Station (more than 3,300 employees), but the role of tourism in the local economy is also apparent (Strategic Planning Group, Inc. 1995).

The area ranks second only to the Orlando/Disney World area as a destination for visitors to Florida arriving by automobile, and it is estimated that about 3.4 million persons visited the area in 1994 (Strategic Planning Group Inc. 1995). Vacationing is the major reason for such visits as in other areas of the Panhandle, and the general socioeconomic characteristics of tourists tends to be as noted in Tables 5 and 6. The area contains more than 17,000 hotel and motel rooms and condominiums available for rent. Overall, it is estimated that the economic impacts of tourism are more than $730 million per year and that tourism creates more than 11,000 local jobs (Strategic Planning Group, Inc. 1995).

Among the area's often visited attractions are both natural resource and human-constructed facilities. For example, the Miracle Strip Amusement Park is Florida's oldest amusement park. Other constructed amusements include Shipwreck Island, Gulf World, the Museum of Man in the Sea, the Ebro Greyhound Track, and a variety of theaters, restaurants, marinas, and other facilities. The area's beaches are among the best in the Nation and the area is the home for the largest fleet of charter boats in the Southeastern United States. Scuba diving, snorkeling, jetskiing, parasailing are other major activities in the area.

Whether examined relative to the total study region or for each of the three major areas, it is obvious that tourism, and tourism based primarily on the beauty of the natural resources of the area, particularly its beaches, is central to the economy of the Panhandle.

Major Stakeholders in the Tourism Industry in the Panhandle of Florida

The analysis provided above suggests that a number of different groups are likely to be particularly concerned with any form of activity that may impact tourism in the Panhandle of Florida. Although any listing of such groups is likely to omit one or more important groups, it is critical to attempt to identify some of those likely to be particularly concerned. Such a preliminary identification is attempted in this section.

Among those interested in the potential effects of any development on tourism are the public officials of the state and local areas. Tourist-related taxes are a major source of revenue for the state and local areas. Although not discussed above, analysis of the sources noted for each of the three areas suggests that tourism is a major source of local and state tax revenue. Although public officials would always be concerned about any development that might potentially impact a major industry, the financial dependence of their jurisdictions on tourism will likely enhance their interest.

Clearly, those involved in the provision of food and lodging services to tourists will be interested in any potential OCS-related development. This includes all major hotel chains in the Nation as well as thousands of individual condominium owners who rent units privately. This is a substantial source of economic impacts and their stakeholders will be keenly interested in what is likely to happen to the area. Similarly, the restaurant industry is a major employer and is likely to show substantial concern related to any factor affecting the size of tourist populations.

Those involved in the provision of party and charter boat services will also be major stakeholders. As the discussion above noted, this activity is highly dependent on open access to gulf waters and to adequate fisheries' stocks. Stakeholders from this industry are likely to be interested both in what impacts any proposed development will have on the operation of their boats and on the stock of sports-related fish species.

Operators of amusement, theme-park and similar facilities that are dependent on tourists who, as noted above come to the area primarily to utilize the beaches, are important stakeholders. As the data in Tables 5 and 6 suggest, in the eastern part of the area, this includes not only local facilities but those related to the Disney entertainment complexes as well. Such stakeholders will likely view any factor negatively impacting the beaches as likely to decrease their customer base.

Those involved in the management of the area's national and state parks, sanctuaries, preserves, and other natural resource conservation areas are also obvious stakeholders. The area's numerous bird, fish, and other species are both tourist attractions and objects for preservation. This group is likely to be particularly environmentally sensitive and an active stakeholder.

A large tier of service industry representatives will be stakeholders. These include those operating small entertainment-related businesses; persons involved in equipment rental of water-related recreational equipment; real estate developers involved in the selling of beach-related properties; those providing gas, oil and service for marine equipment, and similar groups. These represent the secondary and tertiary service providers who are very dependent on tourism.

The tourists themselves are also stakeholders. Although this is obvious, there are several aspects about tourism in the area that make it likely that such groups could play a more active role than simply that of customers who would desert the area, if its tourist-related attractions were depreciated in any manner. Among these characteristics is the fact that the area represents a region that is heavily visited by automobile visitors from southern states in close proximity to the Panhandle. Unlike areas with large proportions of visitors who arrive by air, this area likely represents one of the few high quality beach areas available to many visitors to the area. They may simply not have the resources to visit alternative sites that require more expensive air travel. As a result, the loss of any beach or other resource in this area means that they would lose their beach access. Under such conditions, it appears likely that they may take a more activistic role as stakeholders. Similarly, the socioeconomic characteristics of the area's tourist may also make them more likely to play an active role. That is, they appear to be age groups for whom time for group-related actions is available, and they appear to have the economic and educational resources necessary to knowledgeably participate in group-related activities.

In sum, the important role of tourism in the Panhandle of Florida, coupled with the nature of such tourism and the characteristics of tourists in the area, make it apparent that any activity that may potentially impact tourism in the area will result in a number of what are likely to be quite active stakeholder groups. Tourism is likely to bring a multitude of stakeholders into any discussion of the effects of other forms of development on the area.

The Potential Impacts of OCS Development on Tourism in The Florida Panhandle

Tourism and its impacts have been extensively examined. The tourism literature is extensive (Seaton et al. 1994; Manfredo 1992) and includes examinations of what the nature of tourism is and of means of both examining its specific forms and their short-term and long-term impacts (Gunn 1994). Its demographic (Philipp 1993); temporal (Hartmann 1986); geographic (Hughes 1992), international (Crick 1989), and socioeconomic dimensions (Cohen 1979) have all been extensively examined from economic (Steele 1995), social (Cohen 1988a), anthropological (Graburn 1983), marketing (Cohen 1988b), political (Britton 1982), and numerous other perspectives (Seaton et al. 1994). It is thus an increasingly complex area that is impossible to examine in all its dimensions as they relate to OCS, or any other form of development, within any single work.

Similarly, tourism has been extensively examined as its relates to OCS and related forms of developments (Dornbusch & Company 1987; A.T. Kearney Inc. 1991; French et al. 1983). However, available analyses do not examine specific OCS impacts for the study region for the most recent patterns of development projected for the area. Therefore, any discussion of the impacts of current or projected OCS development on tourism in the area must be largely speculative.

The general literature on tourism (Gunn 1994; Seaton et al. 1994) and that in impact assessment (Leistritz and Murdock 1981; Murdock et al. 1991), however, suggest that potential OCS development-related impacts can be examined through the categories of factors that are likely to become the focus of interest of the stakeholders noted above. The likely perceptions of stakeholders are examined as they relate to potential environmental, economic, demographic, public service and fiscal, and social impacts.

Before beginning the discussion of each of these areas of potential impacts, it is important to note that OCS development off the Florida Coast is likely to involve primarily gas-related rather than oil-based developments and that the servicing of any developments off the Florida Coast is likely to occur largely from non-Florida sites. This means that the potential impacts will likely be of a different form than often associated with oil development and that direct socioeconomic impacts may be smaller than those which have occurred at other sites in the Gulf. Despite these characteristics, we believe that stakeholders' views of the impacts of OCS development on tourism will result as much from perceived reality as from the evolution of actual events and thus must be carefully delineated.

The major threats likely to be perceived from OCS-related activity are environmental. Fear that such development could depreciate the aesthetic or use quality of beaches, of the coastal waters, and of fish and other wildlife in the area will be the center of attention because of the effects of changes in these factors on tourism. In fact, these environmental resources are so central to the economic base of the area that any perceived threat to them is likely to galvanize stakeholders who often hold very different views on development. Thus, business-related stakeholders as well as environmentalists and preservationists are likely to jointly seek to protect beach habitats, wildlife and other natural resources. Because tourism in the area is largely environmentally-based

tourism, environmental issues will likely dominate any debate on the benefits and costs of OCS development.

The perceived environmental impacts will likely also be manifested as economic concerns, particularly by business-related stakeholders. Given the estimated $1.5 billion impact of tourism in the area, concerns will be raised about the effects of even small risk events, like an oil spill, on tourism. Given that each day of potential disruption in this industry could have a $4.1 million impact, it is likely that few risks will be so small as to not be of interest to stakeholders. Other economic issues may relate to workforces, if OCS related workforces were to locate in the area. Some previous analysis (French et al. 1983) has suggested concern about how such personnel would effect tourist's perceptions of the area. Although this concern appears to be highly speculative given that no negative perceptions have apparently occurred due to the presence of military personnel in the area, the mixing of the oil and tourism cultures will likely be of concern to some stakeholders.

In regard to economic concerns, the paradox is that OCS activity, because the servicing of the industry will likely be from sites in other parts of the Gulf, will likely have small direct impacts. This will reduce such potentially problematic impacts as competition between boating and OCS activity but at the same time reduce potential economic benefits. As a result, the potential economic risks to tourism of OCS development, however small, will likely be evaluated relative to very small economic benefits. This is likely to create a perception of "much to lose and little to gain".

The demographic impacts are likely to be small, particularly if the servicing of the industry occurs from non-Florida sites. The potential differences in the characteristics of OCS workers and tourists noted above is a potential, if unlikely, concern. What is more likely is that some indirect and induced economic activity associated with OCS development will lead to increased levels of population growth. To the extent that OCS-related population growth is seen as promoting general economic growth, it may be seen as a positive impact by business-related stakeholders. If such growth were to be extensive, environmental and related stakeholders may perceive it as unduly increasing pressure on fragile natural ecosystems.

Public service effects will likely be perceived as minimal, except if some small risk event such as an oil spill were to occur. Questions are likely to be raised about the level of services necessary and available to handle any such event in order to minimize the duration and extent of its effects on beaches, habitat and wildlife. Fiscal impacts will be highly interrelated with those of economic impacts on tourism and will be of keen interest to public sector stakeholders. Given the current royalty payment system where payments go to the federal government, state and local government stakeholders are likely to be in a similar situation to the paradox noted above relative to economic stakeholders. If the direct economic benefits are small, oil-based public royalty and other revenues are not available, and even a small risk event could seriously disrupt tourist-based revenue flows, they are likely to express concerns about OCS-related developments.

The social impacts of OCS development may be perceived as extensive. Fear, perceptions of risk, aesthetic and similar concerns will likely play prominent roles in any debate about OCS

development. Similarly, discussions related to OCS development are likely to result in the creation of increased friction between some development-related groups and some tourism and environmental groups. Given the economic importance of tourism in the area and given the extent to which that tourism is based on natural resources and the environment, it is difficult to imagine that substantial social conflict will not occur as a result of OCS development. Whatever the actual technical risks, risks will be perceived to be present and will create concern. It seems highly unlikely that extensive OCS development will occur in the area without substantial social conflict and its resultant complications for the social integration of communities in the siting area.

Conclusions

Overall, this review of available information on tourism in the Florida Panhandle Study Area suggests that tourism must be a major focus of any analysis of OCS-related impacts. It is a major economic force in all parts of the study region and, with expected continued cutbacks in military expenditures in the region, will likely become of increasing importance. It is a tourism based largely on tourists' aesthetic appreciation of natural resource and environmental-based characteristics of the area. Any perceived threat to the beaches, waters, and wildlife habitats of the area will be of concern to nearly all stakeholder groups in the area because of their economic as well as environmental importance. Under such conditions, tourism interests and concerns must be extensively addressed and analyzed in any attempts to assess the impacts of OCS development off the Florida Panhandle.

CHAPTER 4
MAJOR MILITARY BASES

The major military bases in the study area include **Naval Air Station Pensacola** and associated facilities located near Pensacola, the **Eglin Air Force Base** complex near Fort Walton Beach, and the **Coastal Systems Station** and **Tyndall Air Force Base** near Panama City. The nature of these bases is described in the sections that follow.

Naval Air Station Pensacola

Known as "The Cradle of Naval Aviation," the Naval Air Station Pensacola and associated facilities at Saufley Field, Corry Station, and Whiting Field serves as the launching point for the flight training of every Naval Aviator, Naval Flight Officer (NFO), and Enlisted Air crewman. As of January 1996, the Pensacola Naval Complex in Escambia and Santa Rosa Counties had approximately 10,700 military personnel and 6,300 civilian employees (Nichols 1996).

The headquarters of the Naval Education and Training Command, one of the largest Navy shore commands, is located at Naval Air Station (NAS) Pensacola. The Chief of Naval Education and Training (CNET) is a vice admiral. CNET oversees a network of training and education programs and activities that extend from coast to coast and to ships at sea (Navy Pensacola 1996).

CNET is responsible directly to the Chief of Naval Operations for the education and training of officer and enlisted Navy and Marine Corps personnel. This training includes recruit, technical skill, precommissioning for officers, warfare specialty, fleet individual and team, on- and off-duty education programs, and foreign students from many nations. A staff of about 28,000 military and civilian personnel conducts Navy education and training programs for nearly 34,000 students (nationwide) every day. The CNET headquarters staff that manages this huge network from Pensacola consists of over 300 military and civilian personnel.

Training Air Wing SIX (TraWing SIX), with headquarters at NAS Pensacola, encompasses primary, intermediate, and advanced Naval Flight Officer and E2/C2 Pilot Training. The wing commander is overall commander of NAS Pensacola and aviation training squadrons VT-4, VT-10, and VT-86. Supported by the air station, the Wing SIX mission is to plan for, supervise, support, and conduct flight training of quality student Naval Aviators, Naval Flight Officers, Undergraduate Navigators, and International Military to satisfy service requirements. Among a myriad of other responsibilities, TraWing SIX also provides liaison between local operational units and the Chief of Naval Air Training, coordinates training airspace within the Pensacola area, and is the designated command for disaster control and hurricane procedures.

Naval Technical Training Center (NTTC) Corry Station is the site of a number of training programs. These include cryptology, electronic warfare, optical and instrumentation schools, and a joint (multi service) aviation warfare training school.

The Naval Education and Training Program Management Support Activity (NETPMSA) at Saufley Field has the mission of designing, developing, and administering the Navy's Enlisted Advancement System. NETPMSA also provides information systems support, administers the NROTC and NJROTC programs, manages the Navy's Voluntary Education Program, including CAMPUS offices throughout the world, oversees the Navy's General Library Program, and designs and delivers training programs for the Chaplains' Corps (Navy Pensacola 1996).

Eglin Air Force Base

The Eglin Complex is one of the largest Air Force bases in the world, encompassing 724 square miles of land area and 86,500 square miles of water ranges in the Gulf of Mexico. Established in 1935, the military reservation has three active airfields (Eglin Main, Duke Field, and Hurlburt Field), as well as several auxiliary fields. Eglin is the home of the Air Force Materiel Command's Air Force Development Test Center (AFDTC), where the Air Force has developed, tested, and evaluated nearly every non-nuclear munition in its inventory for the past 50 years. Its mission is accomplished through its two component wings, the 46th Test Wing and the 96th Air Base Wing. The base has approximately 16,600 military personnel and 5,800 civilian employees (including non-appropriated fund employees and Army-Air Force Exchange Services employees) (Greater Fort Walton Beach Chamber of Commerce, 1996).

The McKinley Climatic Laboratory is capable of testing military hardware as large as bombers in environments ranging from minus 65 to plus 165 degrees F with 100 mph winds, icing, clouds, rain, and snow.

Other facilities unique to Eglin are the Guided Weapons Evaluation Facility (GWEF) and the Pre-flight Integration of Munitions and Electronic Systems (PRIMES) Facility. The GWEF is the only facility of its kind able to test the complete spectrum of weapon seekers under one roof, including millimeter wave, laser, infrared, radio frequency, and electro-optical. The PRIMES facility provides ground test and evaluation support for aircraft electronic and weapons systems. A fiber-optic data link connects the PRIMES to the GWEF for laboratory simulation tests of weapon seekers.

The AFTDC is host to approximately 50 associate units. These units include the ASAF Air Warfare Systems Center, the 33rd Fighter Wing, the Aeronautical Systems Center, the Air Force Special Operations Command. the U.S. Army with its Ranger Camp, the U.S. Navy Explosive Ordinance Disposal School, and a unit of the Federal Prison System.

The 33rd Fighter Wing "Nomads" is the largest associate unit at Eglin AFB, as well as the premier air-to-air combat unit of the Air Combat Command (Eglin Air Force Base 1996). With

three F-15 squadrons and one air control squadron, the wing's mission is to deploy worldwide and then gain air superiority by engaging and destroying enemy forces (Eglin Air Force Base 1996). Participating in Desert Storm/Shield, the 58th Fighter Squadron became the first Air Force unit to employ the F-15 in combat, achieving 16 aerial victories against Iraqi forces.

Hurlburt Field, home of the 16th Special Operations Wing and the Air Force Special Operations Command, is located five miles west of Fort Walton Beach. The base organizes and equips Air Force Special Operations forces for global deployment. Utilizing specially designed or modified aircraft, including MC-130 E/H Combat Talons, HC-130 P/N Combat Shadows, AC-130H/U Spectre/Spooky gun ships, MH-53J Pave Lows, and MH-60G Pave Hawks, the wing has been active in operations in Grenada, Panama, Iraq, Bosnia, and Haiti.

The 919th Special Operations Wing, located at Eglin's Duke Field (Auxiliary Field 3), is one of the most unique organizations in the U.S. Air Force and Air Force Reserves. Their mission is to maintain and fly the Combat Shadow and MC-130E Combat Talon 1. The wartime mission of the Combat Shadow is refueling of special operations helicopters while the Combat Talon 1 is designed for infiltration, exfiltration, and resupply of special operations forces.

Coastal Systems Station

The Coastal Systems Station is located on St. Andrew Bay near Panama City in Bay County. The Coastal Systems Station (CSS) is one of the major research, development, test, and evaluation laboratories of the U.S. Navy, with a wide base of engineering and scientific expertise. The CSS is the principal Navy research, development, technology, and engineering activity for naval missions that take place in coastal regions. As such, the CSS is responsible for Navy-wide leadership in mine warfare, amphibious warfare, naval special warfare, and diving and salvage (Coastal Systems Station 1995).

Together with its major tenants, the Navy Experimental Diving Unit (NED) and Naval Diving and Salvage Center (NDSTC), the CSS provides the nucleus of all Department of Defense (DOD) diving efforts. In addition, the CSS has recently gained additional capabilities as a result of the Base Realignment and Closing (BRAC) process. These have included Mine Development personnel transferred from White Oak, MD; the In-Service Engineering Activity from Yorktown, VA; and the Naval Medical Research Institute (diving related).

The CSS has nearly 2,000 civilian and military personnel. In FY 1995, the CSS had 1,250 civilian employees and 126 military personnel. Other Navy tenant commands accounted for 77 civilian and 331 military personnel, while non-Naval tenant commands accounted for 144 military personnel and 30 civilians. Of the CSS civilian personnel, about 53 percent are scientists and engineers; 33 percent have advanced degrees (CSS Facts and Figures 1996).

The location of CSS on St. Andrew Bay is advantageous, as wind, weather, and ocean conditions are generally moderate year around (Coastal Systems Station 1995). This location also allows

easy access to many diverse environments, including ocean, enclosed bays, estuaries, rivers, beaches, marshlands, and navigable harbors. Immediately to the south, the Gulf of Mexico offers an oceanic and coastal setting, from deep ocean and wide continental shelf to surf-bound beaches. The Apalachicola River, 60 miles to the east, is a major river complex, with a large main channel and a network of connecting tributaries, swamps, marshes, delta, barrier reefs, and lagoons.

Tyndall Air Force Base

Established in 1941, Tyndall Air Force Base (AFB) encompasses more than 29,000 acres in southeastern Bay County. Home of the 325th Fighter Wing of the Air Combat Command, Tyndall is authorized 77 F-15 Eagle aircraft and two E-9A aircraft. The base also has five watercraft to recover its 142 assigned missiles and drones. The 3245th Fighter Wing is responsible for training F-15 pilots and maintenance personnel before their assignment to other units. The wing also manages the southeastern air combat maneuvering instrumentation range and provides mission-ready F-15 air superiority forces in support of Commander in Chief North American Aerospace Defense Command/1st Air Force contingency plans. The wing's 325th Operations Group is the focal point for all pilot training. The 1st, 2nd, and 95th Fighter Squadrons provide initial F-15 qualification training for pilots, in addition to conversion and recurring checkouts (Bay County Military Installation Guide 1992).

Tenant units at Tyndall AFB include Headquarters 1st Air Force/CONUS NORAD Region, the 475th Weapons Evaluation Group, and the 3625th Technical Training Squadron. The 1st Air Force relocated from Langley AFB (VA) to Tyndall on Sept. 12, 1991, as part of an Air Forcewide reorganization. Assigned to the Air Combat Command, 1st Air Force organizes, trains, and equips air defense forces for the commander in chief of the binational U.S./Canadian North American Aero-space Defense Command. These resources include the control centers, radar warning systems, and fighter aircraft used to conduct peacetime air sovereignty and wartime air defense missions.

The 475th Weapons Evaluation Group (WEG), a unit of the Air Warfare Center at Eglin AFB, is a unique organization whose overall mission is to enhance air combat readiness through evaluation of air-to-air weapon systems, exercises that test air defense capability, and operational testing and evaluation of tactical and strategic air defense radar systems. One of the 475th WEG's responsibilities is the coordination, management, and execution of the Air Combat Command Air-to-Air Weapon System Evaluation Program, code named Combat Archer. This program is designed to measure the effectiveness of air-to-air weapons systems under realistic conditions.

The 3625th Technical Training Squadron is Tyndall's largest Air Training Command associate unit. Its history goes back to 1947, when the U.S. Air Force Air Weapons Controller School was established at Tyndall. The school is the single source for all ground-based air weapon controller training for Air Force and Air National Guard officers.

Tyndall AFB has about 5,550 military personnel and about 2,500 civilian employees (including civilian contract personnel) (Tyndall Air Force Base 1995).

HISTORY OF BASES

The major military bases discussed in the previous section have a substantial history in the Florida Panhandle, as all of them date back to the World War II era or before. The history of each of the installations is briefly outlined in the sections that follow.

NAS Pensacola

The U.S. purchase of the Floridas from Spain in 1821 soon led to interest in Pensacola as a site for a support facility for naval squadrons operating in the Gulf of Mexico and the Caribbean. Realizing the advantages of the Pensacola harbor and the large timber reserves nearby for shipbuilding, President John Quincy Adams and Secretary of the Navy Samuel Southard arranged to build a Navy yard on the southern tip of Escambia County, where the NAS is today. Construction began in 1826, and the Pensacola Navy Yard became one of the best equipped naval stations in the country (Navy Pensacola 1996). In its early years, the base dealt mainly with the suppression of slave trade and piracy in the Gulf and Caribbean.

The Pensacola Navy Yard was occupied by Confederate forces early in the Civil War. In 1862, after New Orleans had been captured and Mobile was under attack, the Confederates evacuated Pensacola, destroying most of the yard facilities before leaving (Parks et al. 1978). After the war, the ruins at the yard were cleared away, and work began to rebuild the base. Many of the present structures on the air station were built during this period. However, in 1906, a severe hurricane and tidal wave destroyed many of the newly rebuilt structures; and an epidemic of yellow fever less than two years later brought reconstruction to a standstill. In 1911, the yard was decommissioned (Navy Pensacola 1996, McKee 1978).

Meanwhile, the Navy began exploring the potential of aviation. In 1913, extensive experiments involving fleet and aerial scouting planes were conducted with gratifying results, and the Secretary of the Navy appointed a Board to make a survey of aeronautical needs and to establish a policy to guide future development. One of the board's recommendations was the establishment of an aviation training station at Pensacola. The first U.S. Naval Air Station was created in 1914 at the site of the abandoned navy yard.

In the early days of the Pensacola NAS, U.S. Naval Aviation consisted of 9 officers, 23 enlisted mechanics, and 8 airplanes. When the U.S. entered World War I, Pensacola was still the only naval air station and had 38 naval aviators, 163 enlisted men trained in aviation, and 54 airplanes. However, by the end of the war, in November 1918, the air station had 438 officers and 5,538 enlisted personnel and had trained 1,000 naval aviators. The expanded activity at the air station contributed to increased prosperity for the Pensacola area, and its influence permeated most aspects of the community's cultural scene (Harden and Ford 1970).

In the years following World War I, aviation training slowed down -- an average of 100 pilots per year were graduated from the 12-month flight course. The majority of the students were Annapolis graduates, and NAS Pensacola became known as the "Annapolis of the Air."

The post-WWI period also saw changes in the NAS facilities. To facilitate training in land planes (as well as seaplanes), the training center's first field was built in 1922. Originally known as Station Field, it is now known as Chevalier Field (Soaring the Centuries 1960). Then, in 1928, the Navy Department ordered the construction of an auxiliary field five miles northwest of NAS, which was named in honor of Lt. Cmdr. W. M. Corry, Pensacola's 23rd flight student. In August 1940, another auxiliary base, Soufley Field, was added to Pensacola's facilities.

As WW II began, training activity at NAS Pensacola increased. By 1940, the number of pilots in training had risen to 1,000 (or 11 times the number being trained in the 1920s). The number of pilots trained by NAS reached an all-time high of 12,010 in 1944. The record of the Navy pilots in WW II attests to the excellence of their training; they shot down 6,444 Japanese planes while losing fewer than 450 of their own -- a 14 to 1 superiority in aerial combat (Navy Pensacola 1996).

In 1948, the Naval Air Basic Training Command (NABTC) headquarters moved to Pensacola from Corpus Christie, Texas. Working with the Naval Air Training Command, also located at Pensacola, the NABTC was instrumental in expanded naval air training, coordinating all basic flight, ground, and specialized training.

War in Korea presented problems as the military was in the midst of transition from propeller planes to jets, and the NAS revised its courses and training techniques. Nevertheless, the NAS produced 6,000 pilots from 1950 to 1953. Pilot training requirements shifted upward again to meet the demands for the Vietnam War, which occupied much of the 1960s and 1970s. Pilot production was as high as 2,522 (1968) and as low as 1,413 (1962) (Navy Pensacola 1996). In 1971, NAS Pensacola was picked as the headquarters site for CNET, a new command that combined direction and control of all Navy education and training.

NAS Pensacola today has a myriad of activities, including the headquarters and staff of CNET; Training Air Wing Six and subordinate squadrons; Naval Aviation Schools Command; and the Blue Angels Flight Demonstration Squadron. A continuing attraction to visitors to the area is the National Museum of Naval Aviation.

Eglin AFB

Eglin AFB dates back to 1935, when it was established as the Valparaiso Bombing and Gunnery Base (VBGB), associated with the U.S. Army Air Corps Tactical School at Maxwell Field, Alabama. The selection of the site, surrounding Valparaiso, FL was based in part on the area's sparsely populated pine barrens and the vast expanse of adjacent water. The early effort to establish the facility was also aided by a local businessman, James E. Plew, who saw the potential of a military payroll to boost the depression-stricken economy of the area (Futrell 1978). In 1935, Maxwell Field leased 1,460 acres from Mr. Plew's Valparaiso Realty Company and activated the VBGB. The leasehold was donated to the War Department in 1937, and the facility was named Eglin Field.

With the outbreak of war in Europe and President Roosevelt's calling for an expansion of the Army Air Corps, General Henry H. "Hap" Arnold ordered the establishment of a proving ground for aircraft armament, which led to the selection of Eglin for the testing mission. On June 27, 1940, the U.S. Forestry Service ceded to the War Department the Choctawhatchee National Forest, consisting of some 800 square miles of forest and shore. In 1941, the Air Corps Proving Ground was activated, and in the months preceding the entry of the U.S. into WW II, Eglin became the site for gunnery training for the Army Air Forces fighter pilots, as well as a major testing center for aircraft, equipment, and tactics.

In addition to the testing of all new aircraft and their serial modifications, the Proving Ground Command, because of the isolation and immensity of the Eglin ranges, was especially well suited for special tasks, In 1944, it developed the tactics and techniques for the destruction of German V-1 rocket installations that were being built for attacks on England. A second test, credited with contributing to the success of the fire raids against Japan, was one in which Eglin personnel constructed a "Little Tokyo" and demonstrated the effectiveness of incendiaries against standing wooden houses of the types targeted for destruction in Japan's urban areas.

By the end of WW II, Eglin had made a recognizable contribution to the effectiveness of the American air operations in Europe and the Pacific and continued to maintain a role in research, development, and testing of air armament. As a pioneer in missile development, Eglin in early 1946 activated the First Experimental Guided Missiles Group, developed the techniques for missile launching and handling, established training programs, and monitored the development of a drone (pilotless) aircraft capability to support the Atomic Energy Commission tests.

Over the next decade, there were a number of redesignations of the proving ground, but the mission of conducting operational suitability testing of aircraft and equipment remained essentially the same. After the start of the Korean War, test teams moved to the combat theater for testing in actual combat. They number among their accomplishments improved air-to-air tactics and improved techniques for close air support.

Both as a reaction to the Soviet atomic explosion in 1949 and in recognition that research and development had lagged, the Air Force in early 1950 established the Air Research and Development Command (later Air Force Systems Command). The following year, the Air Research and Development Command established the Air Force Armament Center at Eglin, which for the first time brought development and testing together. On December 1, 1957, the Air Force combined the Air Proving Ground Command and Air Force Armament Center to form the Air Proving Ground Center. The Center built the highly instrumented Eglin Gulf Test Range and for the next few years was a major missile test center.

As the Southeast Asia conflict increased emphasis on conventional weapons, the responsibilities at Eglin grew. On August 1, 1968, the Air Proving Ground Center was redesignated the Armament Development and Test Center to centralize responsibility for research, development, test and evaluation, and initial acquisition of nonnuclear munitions for the Air Force. On October 1, 1979, the Center was given division status. The Armament Division, redesignated Munitions Systems Division on March 15, 1979, placed into production the precision guided munitions

(laser, television, and infrared guided bombs, two anti armor weapons systems, and an improved hard target weapon) used in Operation Desert Storm. The Division was also responsible for the development of the Advanced Medium Range Air-to-Air Missile (AMRAAM), developed jointly with the U.S. Navy under Air Force leadership.

On July 11, 1990, the Munitions Systems Division was redesignated the Air Force Development Test Center. The Center provides test and evaluation support for development of conventional non-nuclear munitions, electronic combat systems, and navigation/guidance systems.

Coastal Systems Station

The Coastal Systems Station had its origins in the mine countermeasures research conducted during World War II at the U.S. Naval Mine Warfare Test Station, Solomons, Maryland. In 1945, equipment, facilities, and personnel were transferred from Solomons to Panama City, FL to occupy a 373 acre site, in caretaker status. The site had been used as a Naval Section Base in 1942, as the U.S. Naval Amphibious Training Base in 1944, and had been inactivated in June, 1945. It was established as the U.S. Navy Mine Countermeasures Station on July 20, 1945, Over the next 10 years, the station prospered in the warm climate and excellent location. Naval experts from around the world joined to discuss new and vital mine countermeasure strategies and hardware.

Modern equipment changed the face of the station. A transducer test pool, underwater television tank, an instrumentation building in the Gulf beach area, a digital computer for data reduction and analysis, and an analogue computer to analyze and solve specialized problems in a new torpedo countermeasures program were added. Also, medical, photographic, and reproduction equipment came on line (Bay County Military Installation Guide 1992).

So good was the environment that by 1955, the station's mission had expanded to include torpedo countermeasures, helicopter mine countermeasures, minehunting and minewatching study projects and advanced mine countermeasures training. Along with the increase in mission came a new name (U.S. Navy Mine Defense Laboratory) and an increase in size to 648 acres.

Involvement of the laboratory in the Vietnam War began in early 1964 when a mine counter-measures expert was sent to investigate the needs of U.S. forces in Vietnam, both material and procedural, in coping with river mines. This began a major effort to develop equipment for use in Vietnam for mine countermeasures and for protection against swimmers. Much of the work required in-country support; many laboratory employees went to the combat theater.

In November 1968, the base was redesignated Naval Ship Research and Development Laboratory, Panama City. This change resulted from a naval internal reorganization effort to combine several of the closely related research and development laboratories. Annapolis (MD) and Panama City labs were combined with the David Taylor Naval Ship Research and Development Center at Carderock (MD). The laboratory regained separate command status again in February 1972, being designated Naval Coastal Systems Laboratory, and reporting

directly to the Chief of Naval Material. Its mission expanded into special warfare areas including inshore undersea warfare and amphibious operations.

To accurately reflect the broad range of products and services provided and to bring its name into line with other research, development, test and evaluation centers commanded by the Chief of Naval Material, the base once again took on another name. In March 1978, it became the Naval Coastal Systems Center, a name it would retain until 1992. In May 1985, the Navy Material Research and Development Centers, along with the Director of Navy Laboratories, were transferred to the office of Chief of Naval Research.

In line with the Secretary of Defense's recommendations for base closures and realignments (BRAC), Naval Coastal Systems Center was realigned from Space and Naval Warfare Systems Command to Naval Sea Systems Command on Oct.1, 1991. Sonar countermeasures and torpedo countermeasures activities were transferred to the Naval Underseas Warfare Center, Newport, RI. Also, some mine countermeasures and special warfare related efforts were transferred to Dahlgren Division of the Naval Surface Center, Dahlgren, VA.

As a final realignment move, NSCS was renamed Coastal Systems Station on Jan. 1, 1993 and came under the Naval Surface Warfare Systems Command, Dahlgren Division, a move that would bring the major workings of the station in line with similar activities (Bay County Military Installations Guide 1992).

Tyndall AFB

Tyndall AFB began in 1941 as a gunnery school for the U.S. Army Air Corps. The base officially opened on December 8, 1941, and soon became the center for the Air Corps' first flexible gunnery school. Hundreds of officers were trained at Tyndall between 1942 and 1954.

In May 1946, Tyndall became the home of Air University's Air Tactical School, training junior officers in the responsibilities of command at the squadron level. This mission continued until 1950, when the base became responsible for training all-weather interceptor pilots and air weapons controllers. The air weapons controller school remains an important part of the activities at Tyndall.

The base transferred from Air Training Command to Air Defense Command in July 1957. At that time its mission shifted to that of a weapons center. The U.S. Air Force Air Defense Weapons Center was activated Jan. 1, 1968 to provide a single area within the Department of Defense for the centralization of operational and technical expertise on air superiority matters.

Tyndall and the Weapons Center transferred to the Tactical Air Command on Oct. 1, 1979 as part of an Air Force reorganization when TAC picked up the continental air defense mission. On July 1, 1981, the USAF ADWC again reorganized and activated the 325th Fighter Weapons Wing. Under the center and wing concept, the USAF ADWC continued to provide a variety of missions, all tied directly with combat readiness training for Tactical Air Command.

The U.S. Air Force Air-to-Air Weapons Meet, nicknamed William Tell, has been held at Tyndall since 1958. William Tell is a biennial exercise in which competing teams demonstrate their proficiency in air-to-air operations (Bay County Military Installation Guide 1992).

Over the years, Tyndall has gained additional missions as other units were stationed on the base. The Air Force Civil Engineering Support Agency (AFCESA) has been on Tyndall since July 1, 1978, when it moved from Washington, DC as part of a major force realignment. AFCESA is the Air Force worldwide focal point for all processes essential to air base operability in peace and war. In March 1983, Tyndall became the site of TAC's first Region Operations Control Center with the region becoming the Southeast Air Defense Sector of Oct. 1, 1986. The sector is responsible for surveillance of air approaches and identification of aircraft approaching from outside the continent and interception of unknowns.

As Tyndall moved into its 50th year, it once again underwent a major reorganization. In response to Department of Defense efforts to streamline management, the Air Defense Weapons Center was inactivated on Sept. 12, 1991, and 1st Air Force and the Continental United States North American Aerospace Defense Region moved to Tyndall from Langley AFB (VA), as tenant units. With the inactivation of ADWC, the 325th Tactical Training Wing became installation host and was assigned to 1st Air Force. On Oct. 1, 1991, the 325th Tactical Training Wing was redesignated the 325th Fighter Wing, and the base became part of the Air Combat Command when ACC was activated June 1, 1992.

FACTORS AFFECTING THE ECONOMIC IMPACTS OF MILITARY BASES

The economic impacts of military bases are an important issue. Many areas of the U.S. are affected by military installations, and many of the nation's military bases have experienced realignments, closures, expansions, or other changes in their activities in recent years (Glassberg 1995, Tuohy 1997, President's Economic Adjustment Committee 1981). These changes have resulted from a number of factors including changes in national security needs and advances in military technology (Lynch 1987, U.S. Department of the Air Force 1991), as well as other factors. When a substantial change in a base's level of operations is proposed, questions often arise concerning the effects of these changes on the local economy and population (Rowley and Stenberg 1993, President's Economic Adjustment Committee 1981). The economic impacts of military bases are also of interest because these impacts are often seen as local benefits, and thus are one of the bases for local support of such facilities (Hampton 1996, Glassberg 1995), as is often the case with various types of industrial facilities (Eiser et al. 1988).

Military bases and their expansion and contraction can have effects across a broad range of socioeconomic dimensions, including economic, demographic, public service, fiscal, and social aspects. The purpose here is to highlight a few of the characteristics of military bases that may affect their local socioeconomic impacts.

Economic impacts of military bases arise from their local expenditures for goods and services, for salaries and wages, and for construction activities (Parai et al. 1996). As with any facility, the economic impacts of a base can be categorized into direct, indirect, and induced effects. The *direct impacts* of a base can be defined as the net expenditures made to recipients within the host community. The *indirect impacts* include the subsequent expenditures received by intermediary firms and workers within the host community that provide the goods and services purchased by the base workers, as well as by contractors providing goods and services to the base. For example, a local paving company will buy gravel, tools, and equipment, as well as pay its workers, with money it receives from a base to repair a runway. The suppliers (located in the host community) of these materials, equipment, and labor services are included as part of the indirect impact. These suppliers, in turn, also purchase some of their requirements from within the community. These indirect impacts diminish on each following round, particularly in smaller local economies since a larger portion of spending leaves such areas as payments for goods and services from external suppliers (such losses of spending from the local economy are often termed *leakages*). The sum of these successive rounds of local purchases (or net income generated) is the indirect impact. The *induced impacts* of a base consist of the additional spending (and incomes generated) within the host community that is attributable or in response to direct and indirect impacts (Parai et al. 1996).

Factors that may limit the local economic impacts of bases include on-base housing and base or post exchanges. If most of the personnel live in on-base housing, their interaction with the local economy may be less than if they live off the base. Similarly, a base or post exchange may

supply personnel with many items that would otherwise be purchased through the local retail sector (Rowley and Stenberg 1993).

Another factor influencing the extent of local economic impact of bases is military procurement policy. For example, in Australia, initiatives have been undertaken to increase commercial participation in defense support activities. This is expected to lead to increased commercial opportunities in the logistics sector (Barber 1996).

Military retirees add another dimension to the impact of military bases. After retirement, many military personnel continue to reside in communities near major bases (Rowley and Stenberg 1993). Like other retirees, they can contribute substantially to the local economy (Fagan and Longino 1992, Green and Schneider 1989, Cook 1990, Glasgow 1990). For example, the Tyndall AFB Economic Resource Impact Statement *(FY 1995)* lists 8,138 retirees with a total annual military retirement income of $125.7 million.

Demographic impacts of military bases can include effects on the area's population age structure, as military personnel tend to be concentrated in the younger age brackets. At bases where personnel turnover is rapid, demands for rental housing may be high, and schools and other community services may be affected. When base closures or realignments occur, the military personnel are typically transferred to other bases, which can lead to rapid changes in the host area's population and school enrollments. On the other hand, such personnel transfers may alleviate the local unemployment problems that would otherwise be associated with facility closure (Parai et al. 1996).

ECONOMIC CONTRIBUTION OF THE FLORIDA PANHANDLE BASES

The military bases just described have a substantial impact on the area economy. Together, these installations account for nearly 50,000 jobs -- 33,466 military personnel and 16,054 civilian employees (Table 4.1). The base payrolls total about $1.26 billion annually. In addition, base construction, local service contracts, and other local purchases add significantly to the local economic base. Information regarding these other local expenditures was available for only two of the four bases. However, at these facilities, the other local expenditures totaled about 71 percent of the value of the base payrolls (Table 4.1).

Table 4.1

Employment and Expenditures of Major Military Bases in Florida Panhandle Study Area

Base	Employment[1]		Expenditures			
			Payroll		Construction	Other Local Expenditures
	Military	Civilian[2]	Military	Civilian		
			----------$ millions----------			
Coastal Systems Station	601	1,357	22.8	74.7	---	140.7[3]
Eglin AFB	16,612	5,891	600.7	198.8	---	---
NAS Pensacola	10,706	6,305	112.4	58.1	---	---
Tyndall AFB	5,547	2,501	148.6	44.3	26.2	39.6
Total	33,466	16,054	884.5	375.9		

[1]Includes tenant commands
[2]Includes civilian contract employees
[3]Includes construction expenditures

FORCES AFFECTING THE FLORIDA PANHANDLE BASES AND NEAR-TERM OUTLOOK

During the 1990s, the entire U.S. military establishment has been scrutinized in light of the lessening of the Soviet threat. This scrutiny was formalized through a process termed Base Realignment and Closure (BRAC), which was completed in 1995. The purpose of BRAC was to identify opportunities to streamline the nation's system of military bases, consistent with the changing nature of national security needs (Glassberg 1995, Tuohy 1997).

While the BRAC process has led to many bases throughout the world being closed or scaled back, the bases in the Florida Panhandle study area have not been adversely affected. In fact, some have gained positions and functions as a result of realignment or closure of other bases. For example, Tyndall AFB gained 110 positions when a numbered Air Force headquarters moved there, and 130 evacuees from Clark Air Base in the Philippines came to Tyndall (Bay Biz 1992). Similarly, as described earlier, Coastal Systems Station gained capabilities and personnel from the BRAC process; Mine Development personnel from White Oak, MD and the In-Service Engineering Activity from Yorktown, VA were assigned to CSS, along with the Naval Medical Research Institute.

The NAS Pensacola is also adding personnel as a result of the development of a new Naval Air Technical Training Center (NATTC). The NATTC complex is expected to bring an additional 5,000 personnel to Pensacola (Nichols 1996).

The outlook for the bases for the next few years appears to be stable. For example, the Coastal Systems Station expects its staffing to remain stable for the next five to ten years (Applegate 1997). The Eglin and Tyndall Air Force Bases appear to have well-established missions, while NAS Pensacola will have an expanded personnel and activity level associated with the NATTC. With the BRAC process completed, the outlook for the near-term appears to be for relatively stable levels of activity.

RELATIONSHIP OF MILITARY BASES TO OCS ACTIVITY

A potential for conflict exists between military and OCS activities. The Gulf of Mexico Office of the MMS has worked closely with the three major centers of air operations in the Florida Panhandle (Eglin, Tyndall, and Pensacola Naval Air Station) regarding the encroachment of offshore drilling activities on military operations. The central body that addresses these issues for the military is the Southeast Test and Training Area Committee.

Oil companies operating in the Eastern Planning Area of the Gulf of Mexico would have to adjust their operations to the military presence rather than *vice versa*. In the past the military has made an operating agreement with oil drilling companies to address possible user conflicts in the Gulf of Mexico. This agreement has five basic stipulations involving scheduling of air and boat traffic and electronic emissions as well as sheltering and evacuation agreements. (See Table 4.2). Sheltering and evacuation agreements cover situations where falling debris from military operations would pose a danger to oil industry workers. The basis for these stipulation agreements was published in the Federal Register a number of years ago.

The location of a support base in the Florida Panhandle for offshore drilling will pose some user-conflicts with military operations because onshore support operations would have to traverse military test areas to reach offshore rigs and platforms located in the area to be leased in 2001. Figure 4.1 shows the Proposed Lease Area in the Eastern Gulf of Mexico. Figure 4.2 shows the Overwater Airspace Region of Military Influence. The military has conducted more military operations in the test area that is between Destin/Ft. Walton and Panama City and the proposed lease sites, Warning Area 151 (W-151), than in other parts of the Eastern Planning Area of the Gulf of Mexico.

The oil companies would have fewer user conflicts using Mobile as a service base than using a comparable base in the Florida Panhandle. EWTA-1 and W-155B, areas between Mobile and the proposed lease sites, are located on the edge of Eglin's test area and would pose few if any user-conflicts with military operations.

If a service base were located in the Port of Panama City, the CSS's operations are in the shallow regions of the nearby Gulf, up to ten to twelve miles offshore and to a depth of 100 feet (Applegate 1997). Offshore rigs would not be a problem for the CSS, but conflicts could arise if a high volume of ship or helicopter traffic developed in the Panama City area to service the rigs. If pipelines were developed from offshore fields to Panama City, this could pose another potential conflict with the CSS. However, given the present orientation of the Panama City area economy (i.e., largely based on tourism and the two major military bases), it appears unlikely that major OCS support base or refinery facilities would be developed there.

Increased traffic from supply boats destined for offshore rigs could be a serious nuisance to operations, and beyond a certain level would disrupt CSS operations. Comments from people interviewed at the CSS stated that their intuitive sense is that while two or three supply boats going towards off-shore rigs would not be a problem, ten, twenty, or thirty transits per day would complicate what the CSS does (if, indeed, the higher volume is a large percentage increase in current boat traffic of all kinds.)

Table 4.2

Five Stipulations in Oil/Gas Drilling Leases

Schedule all air traffic through test wing scheduling

Schedule all surface/boat traffic through test wing scheduling

Schedule all electronic emissions through test wing scheduling

Sheltering agreement

Evacuation agreement

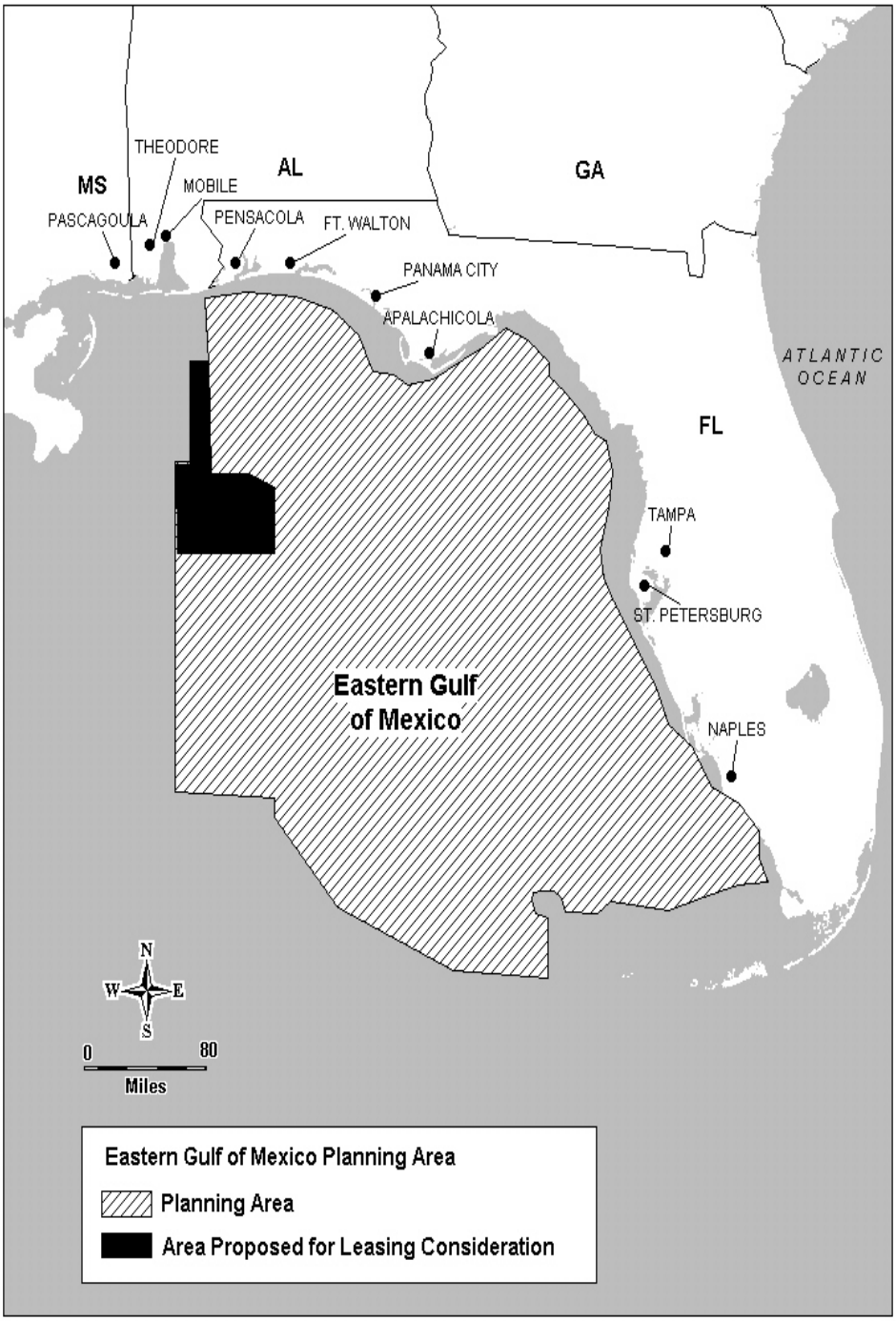

Figure 4.1. Proposed Lease Area in the Eastern Gulf of Mexico.

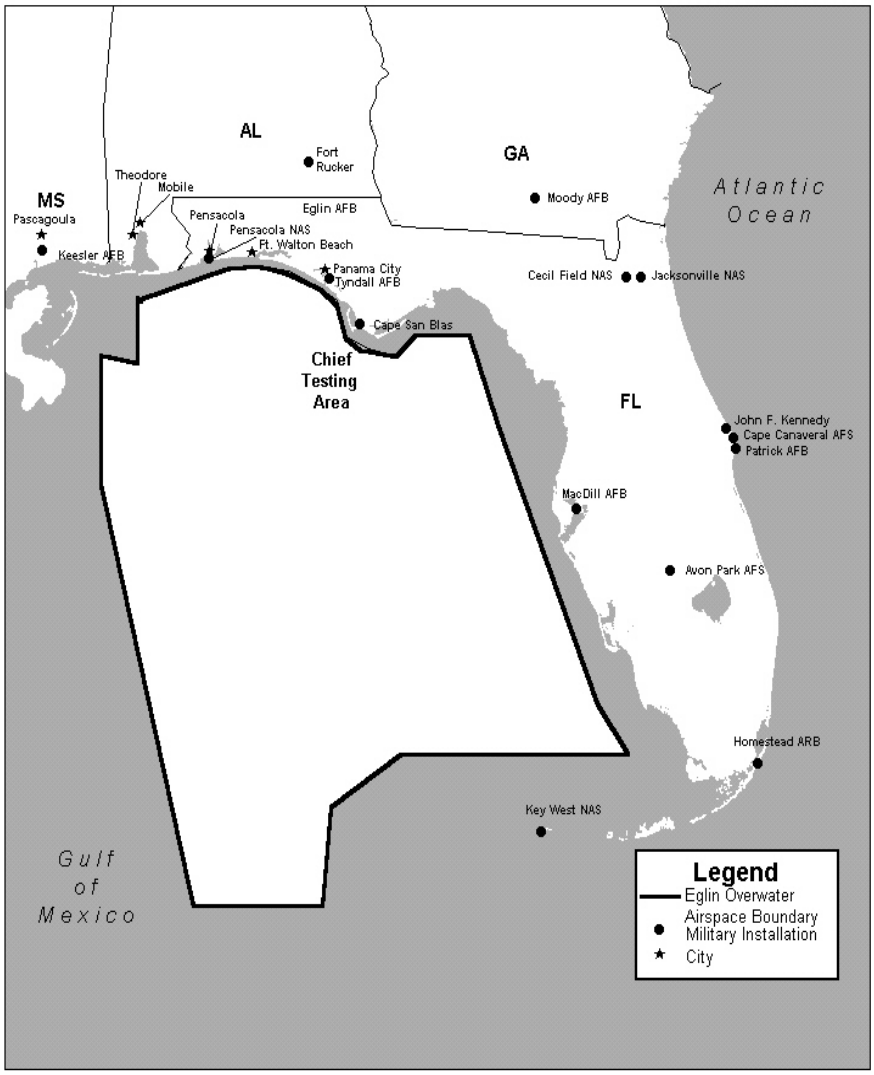

Figure 4.2. Overwater Airspace Region of Military Influence.

CHAPTER 5
FLORIDA PANHANDLE FISHING INDUSTRY: AN OVERVIEW

Geographical Context

The Florida Panhandle area stretches geographically from the Florida line (just west of Pensacola) eastward to Apalachee Bay (just south of the capital, Tallahassee) and encompasses the waters around what is known as the "Miracle Strip"--Panama City, Destin, Ft. Walton, and Pensacola--as well as Gulf Shores, Alabama (Hoskins 1993). The focus of this report will be restricted to Northwest Florida and will include both the Gulf and adjacent inland salt and marine-influenced estuaries and bays of the region.

The eastern most part of the Panhandle is an extension geologically and geographically of the upper west coast peninsula. "From Sarasota to Fort Myers, the Gulf now changes to a great mud puddle, the distance to blue water even further offshore the more northward you venture. The northeastern corner of the Gulf of Mexico is shark and mullet country. Heading westward along the Gulf Coast, blue shores begin once again at about Panama City and continue all the way to Destin..." (Goldstein 1989).

Outdoor recreation is a major industry in Northwest Florida and includes such activities as swimming, surfing, and other beach recreation sports, as well as boating, skin diving, hunting, and nature studies. But fishing is one of the most significant components of the recreation industry. "Sport fishing attracts millions of resident and out-of-state (tourist) saltwater anglers, and is a multimillion dollar a year business" (French et al. 1983).

This is in the context of trends in recent decades for the Florida coastline that have paralleled the rest of the country--accelerating demand for outdoor recreation, but in the face of declining opportunities. This trend has been particularly pronounced in Florida, with only a small part of the state's coastline available to the public, and commercial development taking land for other uses.

> ...Problems caused by water pollution, sedimentation and dredge and fill operations, have reduced the value of coastal waters as recreation areas. As Floridians and tourists increase their mobility, disposable income, and leisure time, their demands for recreation and tourism also increase. The consequences are that many different interest groups are likely to compete for the use of a limited supply of resources. (French et al. 1983)

A key issue resulting from the rapidly shrinking natural coastline is public access to fishing grounds (Hinman 1978). Estuarine and near-shore fisheries have been degraded by sewage disposal and silt-laden runoff from dredge and fill navigation projects. Anglers have had to go farther and farther offshore to find quality fisheries. And they have therefore had to spend more money to get there. Consequently, added offshore oil and gas development and its supporting, in-shore infrastructure are getting close scrutiny by various segments of the fishing industry, both recreational and commercial. This is especially the case in regard to

the sport fishing industry. With increasing demand and dwindling supply, the real value of sport fishing is increasing, along with the stakes for its protection and enhancement.

Nature, Extent and Value of the Fishery

Gulf of Mexico fishery resources constitute one of the largest known fishery biomasses in the world, with the total commercial harvest in 1983 by the five Gulf States amounting to 2.4 billion pounds and with $615 million paid to fishermen for their catch (Perret and Roussel 1984). An economic analysis of the saltwater *recreational* fishery in Florida (Bell 1979) reveals:

$851 million spent by residents and tourists on saltwater fishing;
34,700 retail-level jobs in Florida directly dependent on saltwater fishing;
83,739 jobs indirectly supported by the recreational fishing tourist dollar;
118,000 jobs as a result of total direct and indirect employment attributed to saltwater sports fishing;
$1.16 billion received in user value from the saltwater recreational fishery resource and associated activities.

This same report indicated that for *commercial* fisheries:

- $60 million was generated by retail sales within the state and an additional $100 million out of state;
- 17,000 jobs were directly generated;
- 19,262 jobs were indirectly generated through exports to other states;
- as many as 36,262 jobs could be attributed to direct and indirect employment from commercial fishing.

A report by the National Oceanic and Atmospheric Administration (1985) cites three consecutive years in which the Gulf of Mexico yielded the nation's largest regional commercial fishery. High-lights of this report are:

- Gulf fisheries comprised 39 percent of the nation's total by weight, 28 percent by value.
- In terms of landings by state, Louisiana ranked third nationally by value, followed by Texas and *Florida* in fourth and fifth place respectively.
- The major components of this fishery were shrimp, oysters, blue crabs, and menhaden.

The most valuable segment of the commercial fishery on a per unit basis is the shrimping industry. To illustrate, shrimp accounted for only 7% of the total catch poundage in 1976, while comprising more than 23% of the total dollar value of seafood landed in the U. S. that year (Christmas and Etzold 1977).

In 1991 menhaden was the largest commercial fishery in the Southeastern United States with a yield of 514.6 thousand metric tons, while shrimp was the most valuable fishery with a value of $478.4 million (U.S. Dept. of Commerce 1993). The Southeast Region's recreational

catch constituted about 56% of the total 63,457 metric tons (for all regions of the United States), with 23,797 coming from the Gulf of Mexico.

Other studies (e.g., Goodyear and Phares 1990; Prochaska and Cato 1975; Centaur Associates, Inc. 1984; Cato and Prochaska 1978-1980; Browder et al. 1978; Prochaska and Morris 1978) document the value and extent of Gulf fishery. They all lead to the same conclusion: the extent and economic value of both the commercial and recreational fisheries are significant and large, with the value of the recreational segment trending higher in comparison to the commercial.

Competition, in fact, is intensifying among stakeholders *within* the fishing industry. A 1989 report concerning the seafood industry cites increasing commercial fishing activity in the face of a limited resource base from lack of regulation and population pressures in the Gulf Region (Keithly 1989). Recreational fishing is also cited to be on the increase, due to increases in discretionary income and leisure time. These trends are against the backdrop of competition with foreign imports of seafood.

Non-Charter Sport Fishing

The Panhandle area is known for both its variety of recreational angling opportunities and as a base from which to travel "far-out-into-the-Gulf" for big game fishing (O'Keefe and Larsen 1992). Thus, the primary attraction of the Panhandle region for most anglers is boat fishing in the Gulf, which... "offers access to deeper water and underwater structures that attract bait fish and their inevitable predators (Hoskins 1993). But a wide variety of angling opportunities avail themselves in the Gulf and its feeder estuaries. These opportunities can be described in terms of at least three dimensions: *location* (whether offshore, near shore, onshore, or in rivers and bays), *species* (in terms of "big game"--usually defined not just in terms of size of fish, but fighting qualities as well--or smaller fish, sometimes more valued for food quality than fight), and *technique* (trolling, bottom fishing, fly-fishing, etc.).

Big game fishing: Big game fishing starts in earnest at the beginning of July, with a significant part of the activity cantered around tournaments. At least three competitive events are of note for the Panhandle area: the Bud Light King Mackerel Tournament out of Pensacola in July, the Bay Point Invitational out of Panama City also in July, and the Destin Fishing Rodeo out of Destin in September (Price 1996). The "blue-water" areas of the Gulf are known for their marlin, wahoo, and yellowfin tuna fishing, as well as for dolphin. While these fish can be caught 20 to 30 miles out, a 50 to 100 mile run is required to reach the billfish and yellowfin tuna (O'Keefe and Larsen 1992). Sailfish must be pursued far offshore in the summer but move closer to shore during the fall.

Other important and actively sought game species can be caught much closer to shore as well. Species sought (and their size range) are: king mackerel (8-50 lbs.), Spanish mackerel (2-15 lbs.), trigger fish (1-15 lbs.), amber jack (18-90 lbs.), cobia (10-80 lbs.), tarpon (50-200 lbs.), barracuda (10-50 lbs.), bluefish (2-15 lbs.), bonito (4-20 lbs.), jack crevalle (95-50 lbs.),

wahoo (15-45 lbs.) (Hoskins 1993). The most common techniques for catching these fish include bottom fishing, drift fishing, cast fishing, and trolling.

Bottom Fishing in the Gulf

Bottom fishing is most closely associated with snapper and grouper. Fishing for these species "on the bottom" in 200-250 feet of water is a major activity in the area. A three-decade decline occurred (from about 1960 to 1990) in both the fishery and interest in it and only recently seems to be reversed. It has been surmised that the decline in the fishery resulted from over-harvest, and that the decline in interest by anglers was due to reliance on heavy, "not-so-sporting" tackle. One outdoor writer muses:

> While I caught my first red snapper over 30 years ago, and throughout that time have thoroughly enjoyed eating them, I never cared much about fishing for them. Granted, a very good reason for that could have been I never caught many--and sometimes none--on a trip, and not one of those very few exceeded three pounds in weight. When jerked from bottom some 200 feet below with a winch loaded with 80-pound line atop a pool-cue rod, they were also not especially fun to catch. So I hoarded those few I did capture for special occasions, most often targeted specks and reds, and had them for my weekly fish dinners. (Cooper 1997)

But more refined, lighter tackle and the supplementing of natural reefs with "artificial habitat" have countered the trend toward decline. While productive natural offshore reef areas stretch from Pensacola to Panama City and numerous other locations are described in fishing guide books (e.g., O'Keefe and Larsen 1992), some of the more popular fishing spots listed in the guides are artificial reefs in the form of sunken ships, barges, or bridge rubble (O'Keefe and Larsen 1992; Hoskins 1993). Red snapper from 3-30 pounds and grouper from 10-65 pounds are now once again common (Hoskins 1993). And some anglers are specializing in snapper fishing to an extent unknown in the past. This conclusion is supported by the fact that specialized fishing articles (e.g., Cooper 1997) and even major publications (e.g., Richard 1996) are devoted to recreational snapper fishing.

Near-shore, Shore, and Pier fishing

Near-shore, shore and pier fishing are available for the following species: king mackerel (8-10 lbs.), Spanish mackerel (2-15 lbs.), red fish (5-40 lbs.), sheepshead (2-10 lbs.), flounder (2-10 lbs.), cobia (10-80 lbs.), tarpon (50-200 lbs.), barracuda (10-50 lbs.), bluefish (2-15 lbs.), bonito (4-40 lbs.), jack crevalle (5-50 lbs.), whiting (1-3 lbs.), and pompano (3-8 lbs.) (Hoskins 1993). The most common kinds of fishing for these species are bottom fishing, drift fishing, and cast fishing, with shore and pier anglers often specializing in redfish (Hoskins 1993).

A primary focus of a significant segment of these anglers is on specific, high-profile species of fish, such as tarpon and shark. The Panhandle area is noted for these species. One writer of

popular angling literature writes of the area: "Tarpon are everywhere you find current and water. The northern Gulf of Mexico probably has the largest inshore shark population in the United States" (Goldstein 1989).

Looking at industry segments more specifically in terms of angling methods, techniques can be further specified as *trolling*: drawing a bait through the water by means of a boat (Wulff 1968); *drift fishing*: "...a cross between trolling and stillfishing. The boat is carried only by wind and current, perhaps with a slight assist from the motor to keep the craft's head into the seas (Wulff 1968); c*humming*: using bait or "chum" in the water to attract fish--whether drifting, trolling, or *stillfishing*: staying, usually by means of an anchor, in a particular spot; and *casting*: to "high surf," tidal marshes and flats (with the trend being toward the use of light tackle and artificial lures); from bridges and piers, in tidal rivers, and offshore in deep water.

Another classification system is in terms of *stillwater techniques*, which refers to inshore fishing with a boat to reach bays, estuaries, and saltwater creeks; *bottom fishing* (as the term implies); *off-shore fishing* over sandbars and offshore reefs; *wreck fishing*--whether "at anchor," or "on the drift;" *surfcasting* into and beyond the waves of an ocean beach; *shore fishing* at the edge of a bay, estuary, or canal; and *big-game fishing* for the larger species by means of trolling a lure or bait fishing (The Darling Kindersley Encyclopedia of Fishing 1994).

Inland Waters Fishing

Inland waters of the Panhandle include bays and intracoastal waterways between the "Miracle Strip" barrier islands and the mainland, as well as the backwaters and mud flats westward from Panama City and curving for some distance down the peninsula. These waters typically offer areas protected from the wind and are a favorite for light-tackle anglers. Species sought (and their size range) are as follows: white trout (1-6 lbs.), speckled trout (2-10 lbs.), croaker (1-6 lbs.), Spanish mackerel (2-15 lbs.), redfish (5-40 lbs.), sheepshead (2-10 lbs.), and flounder (2-10 lbs.) (Hoskins 1993).

The most highly sought species in inland waters are the spotted sea trout ("speckled trout") and red drum ("redfish") (NOAA 1985). The most common kind of fishing for inland water species is bottom fishing using shrimp, squid, or cut mullet. Drift and cast fishing using live shrimp or lures are also popular, with many of the inshore anglers specializing in speckled trout (Hoskins 1993; Phillips 1997).

Saltwater Flyfishing

The growing appeal of flyfishing as a specialized fishing technique applied to saltwater settings qualifies its adherents as a particularly significant industry segment. Advocates of this sport can be traced back to the last century and before. But the sport's more recent history and possibilities became explicitly recognized in Sand's popular work, *Salt-Water Fly-Fishing* (1969). In 1969, in the book's jacket, the work was billed as "the only guide now

available to one of the fastest-growing sports today: fly fishing for salt-water game fish." Sand's work is particularly valuable in tracing the history of the sport in Florida. For example, he cites a 1931 book by Stewart Miller, *Florida Fishing*, in which the author writes: "Fly fishing has taken hold in Florida like fire on a sun-baked prairie," describing such fish as "tarpon, barracuda, snook, jack, channel bass, sea trout, bluefish, mackerel, dolphin and grouper" as being "successfully handled on a fly rod" (Sand 1969). Today the sport's appeal as a "light-tackle" approach to saltwater fishing appears to be riding a new wave of popularity as evidenced by the rise of publications solely devoted to the sport and increasing tackle sales of saltwater flyfishing equipment (e.g., Kumiski 1995).

Saltwater flyfishing can be applied to most of the range of the fishery, including offshore, big game species. In fact, one writer about the sport divides his guidebook in terms of places and techniques for inshore wading, inshore boat, from the beach, and offshore (Kumiski 1995). But the real growth segment of the sport appears to be largely in the bays, inland waterways, and "back country" areas. The Florida Panhandle area has a variety of water attractive to back country flyfishermen. Areas considered as especially good include the St. Mark's area south of Tallahassee; St. Joseph's Bay between Panama City and Appalachicola; the Panama City St. Andrew Bay system; the Choctawhatchee Bay area of Destin and Ft. Walton Beach; and the Pensacola Bay, Santa Rosa Sound, and Big Lagoon areas of Pensacola (Kumiski 1995).

Charter Sport Fishing

Commercial Fishing Charters: Two types of fishing charter services are available along the Florida Panhandle. So-called *walk-on charters* or *head boats* (also called *party boats*) get their names from the fact that owners typically do not require reservations far in advance--usually on the morning of the trip, if at all--that tickets are sold on an individual, "per head," basis (Hoskins 1993; Hunn 1997). These vessels usually accommodate from ten to fifty fishermen. This type of angling tends to appeal more to neophyte anglers and, at around $35-$40 per day, is less expensive than the private charter. Trip lengths can range from a half to over-night to reach remote fishing grounds.

Private Charters

These involve smaller and faster boats, usually require advanced reservations, and carry from two to six anglers (Hoskins 1993; Hunn 1997). Therefore, a day on this type of vessel is relatively expensive--around $600 per day for up to six passengers plus $50 per person beyond this number. "These types of charters are more tailored to your individual desires as your part is the only group on board the vessel. They offer trolling (for everything from king mackerel to blue marlin) as well as bottom fishing and more individualized assistance with fishing" (Hoskins 1993). Trip lengths span the same range as for walk-on, head-boat charters.

A study of the charter/party boat industry on the Gulf Coast of Florida (Holland and Milton 1989) reveals:

- Out of a total of 808 boats operating as charter/party boats from the west coast of Florida, 70 were identified as party boats and 738 as charter boats.
- The 221 boats *operating out of the Florida Panhandle* comprised 27% or the total.
- Species targeted most by *charter* boats in the Panhandle were snapper (17%), grouper (15%), amber jack (10%), king mackerel (10%), Spanish mackerel (6%), and shark (6%).
- Species targeted most by *party* boats in the Panhandle were snapper (100%), grouper (100%), amber jack (100%), bonito (100%), dolphin (100%), cobia (67%), shark (67%), and blackfin tuna (67%).
- Both party and charter boats made the majority of their trips to offshore areas (85% and 88% respectively), but a significant proportion of these trips (46% and 45% respectively) were in waters less than nine miles offshore.
- "Party boat operations had higher revenues and expenses than charter boats but a lower rate of return due to a higher level of investment" (p. 3). Net return on investment for party boats was estimated to be only 1.75%, while for charter boats the return was 5.5%.
- The majority of owners in both categories felt that their businesses had improved or remained the same compare to the prior three years.
- Fifty-eight percent of the charter captains had chartered tournaments in 1987, while ten percent of the party boat captains had. (Note: the nature of tournament fishing requires the smaller number of anglers per boat, smaller and more maneuverable vessels typical of charter boats.)
- Fifty-eight percent of the charter boat captains and 75% of the party boat captains in the Panhandle believed that the quality of fishing had decreased in recent years, with "overfishing" being cited most frequently as the reason (33% and 57% respectively).

Non-Charter Snapper / Grouper Fishermen.

This constitutes a "hybrid" category of those who pursue snapper and grouper commercially in the Panhandle area have been estimated to be comprised of one-third full-time snapper / grouper fishermen, one-third part-time commercial fishermen, and one-third strictly sport fishermen (i.e., they fish for sport but have commercial fishing licenses, so as to be able to sell their fish) (Dimitroff 1983).

Observations have been made that differences attend the character of snapper / grouper commercial fishing fleets in the ports on the west end of the Panhandle from those on the east end, with vessels working out of Appalachicola, Carabelle, and Panacea being smaller, more antiquated, less sophisticated electronically, and seemingly not very committed to market fishing as for the western Panhandle area of Panama City, Niceville,
and Pensacola. Speculation for these differences center on the eastern area being over fished for these species and the fact that anglers seemed more apathetic about maximizing their economic returns.

Commercial Fishermen

Shrimping

This industry is based over a wide area including the territorial seas in which shrimp are found, associated bays, inlets, wetlands, and even upland drainage areas. "Consideration of this large area is necessary because of the migratory natures of the exploited species and fishermen, the critical role of estuaries in the life cycles of the dominant shrimp species, and the impacts upland alterations may have on the quality of shrimp habitat" (Gulf of Mexico Fishery Management Council 1981). There are four targeted species of shrimp--brown shrimp, white shrimp, pink shrimp, and royal red shrimp. Two other species are considered as "incidental by catch", seabobs and rock shrimp.

Four segments in the shrimping industry can be identified: harvesters (those directly involved with the taking of shrimp) processors, marketers, and consumers (Gulf of Mexico Fishery Management Council 1981). Of particular relevance to this report are the harvesters and processors. Harvesting is done by recreational fishermen, as well as by commercial bait shrimpers and commercial food shrimpers. Harvesters include owners and employees of vessels-- "...smaller boat operations, which are restricted to inland bay and shallow offshore activities, and the offshore vessels, which range from the territorial seas out to the limits of the FCZ and into foreign waters" (Gulf of Mexico Fishery Management Council 1981). Harvesters are supported by the boatyard and gear industry, and the suppliers of ice to preserve the shrimp and fuel for the vessels.

Processors, at the first level, include the harvester who heads the shrimp and fish houses, which may head, peal, grade, ice, freeze, cook, or dry the shrimp. Additionally, non-shrimper processors handle the shrimp between the fish house and the purchaser. Fifty-nine percent of Gulf processors (in 1974) were producers of "green" (fresh) or frozen shrimp, 29% produced "breaders" (91% of which were accounted for by Florida and Texas), and 7% were for canning (Gulf of Mexico Fishery Management Council 1981).

The history of the industry can be traced from the long haul seines in shallow, inshore areas prior to 1917; the otter trawl, which usually operated about six miles offshore, from 1917 to the late 1940s; then a period of rapid expansion in the 1950s with the discovery of new fishing grounds (Gulf of Mexico Fishery Management Council 1981). But the expansion put additional pressure on the established grounds near shore as well, and vessels began to move further and further offshore in search of unpressured areas.

INTERPLAY BETWEEN OFFSHORE OIL AND GAS DEVELOPMENT AND THE FISHING INDUSTRY

In addition to its prolific fishery, the Gulf coastal region also has the greatest concen-tration of coastal and offshore oil industries in the world (Perret and Roussel 1984).

A number of issues pertain to the interplay between OCS development and the fishing industry. The literature on this topic does not reveal complete consensus, as policy analysts at different periods of OCS development attempt to anticipate effects, as well as interpret what has already occurred. Historically, receptivity to offshore drilling--whether from various segments of the fishing industry or other stakeholders--has been a function of timing and the region's social and geographical circumstances. Thus, analysts' insights into the potential interplay between offshore oil and gas development and the fishing industry in the Gulf of Mexico are frequently framed by comparisons between other geographical regions and their offshore development histories. Much of the literature on this topic is based on the experiences in California and Louisiana, particularly Louisiana.

General Attitudes Toward OCS Development

The literature reveals that early policy studies anticipating OCS development generally characterized impacts as being negative for the fishing industry. Though "energy crisis polls" regarding OCS development in Florida indicated that most Floridians favored offshore drilling in response to the energy crisis, with about 60% being in favor in 1974 and 69% in 1979 (Bell et al. 1980), other studies were not as positive. McGinnis (1983) inferred from a review of one study of OCS development in Texas and Louisiana (Havran and Collins 1980) and projected effects to Florida:

> The production of oil and gas sometimes led to the growth of massive onshore industrial complexes that cause many environmental problems. The most severe offshore environmental impacts are apparent in frontier areas where few of the needs for onshore operations and facilities are available. Since port facilities along the Florida coastline are not geared for OCS oil and gas development, any high or moderate level oil and gas find along the Florida Gulf Coast could cause local economic and community upheaval. (McGinnis 1983)

The U.S. Department of Interior, Minerals Management Service's sponsored studies comparing development histories in California and Louisiana explain key contrasts (Grambling and Fruedenberg 1996). Researchers concluded that attitudes toward offshore oil development were significantly different in the respective states, with the development of the oil industry being welcomed in Louisiana in the 1950s and 1960s and protested in California in the 1970s.

Louisiana was characterized at the time by a low education base and economic difficulties. Thus oil development led to an economic boom... "totally transforming the way of life in Louisiana's central coast...In the boom economy, money was easy, jobs were plentiful, and unemployment was consistently less than 5 percent" (Coleman 1997). But California's economic base was diversified and relatively secure. Furthermore, the positive reception in Louisiana is attributed in part to its coastal and marine topography, defined by vast marshes and with little in the way of access to the state's few defined beaches. "'People in Louisiana don't view the beach in the same way that Californians do--as an important resource--because they don't have beaches to view,' says Gramling. 'And anything that happens offshore is too distant to arouse much concern'" (Coleman 1997). But Californians *do* have a distinct and easily accessible beach, with 60 percent of its population living along it. Californians saw a threat to their scenic beaches and their way of life. But the differences were beyond the people in Louisiana experiencing an economic boom from development and those in California being threatened by risks akin to the Santa Barbara oil spill in their state in 1969. What people really feared was the "boomtown effect" that had been documented for Morgan City, Louisiana and other places with resource dependency.

Gramling found northern Californians more interested in the social and environmental amenities of their region than in any potential for economic prosperity. In fact, many of the people he interviewed did not think of "prosperity" in connection with offshore oil production, but only of the boom-bust quality of the industry, because they were aware of what had happened in Louisiana. (Coleman 1997)

In contrast, the offshore oil industry for all practical purposes was invented and developed in coastal Louisiana. Along with it came the development of an extensive infrastructure to support the industry. This included all the onshore supply and transportation services that provided such diverse elements as drilling mud and helicopters. The support activities were so extensive that direct employment in oil production was less than 15 percent--even at the peak of the boom. But in northern California, little in the way of job growth was anticipated, because it was believed that people already trained in offshore oil production would be brought in from Louisiana.

Credibility of government information was an issue as well in California. By the time of the pro-posed development off California, a history of mistrust concerning the oil industry and the role of government in its growth had developed. In contrast, little was known at the advent of Louisiana's experience. Only about 12 percent of the state's adults had graduated from high school, and many were already involved in such extractive activities as trapping, fishing, and the lumber industry.

With regard to findings specific to segments of the fishing industry, a number of factors come into play. Space is limited along the California coast, and competition for docking space at its few ports can be intense. Thus, fishing and other recreation interests, particularly in the northern part of that state, face environmental risks, competition and possible displacement from oil industry production platforms, pipelines, and supply boats.

Louisiana's broad continental shelf slopes gently for over a hundred miles into the Gulf of Mexico, generously accommodating a wide variety of commercial and recreational pursuits. Fishing, recreational boating, and oil drilling don't have to compete for space; indeed, the presence of oil production platforms is considered an advantage for fishing because the platforms act as artificial reefs around which large numbers of fish congregate.

"In Louisiana," says Grambling, "when fishermen have to detour around oil production platforms, it doesn't matter--they just do it and go on trawling. In California, if a fisherman has to detour off the shelf contour as much as a quarter of a mile, the water depth changes by a hundred feet and it's impossible to trawl." (Coleman 1997:6)

Florida's Panhandle area has some characteristics in common with northern California--easily accessible and well-defined beaches, beach site residential and commercial / tourism development based on the aesthetic attractions of water views, well educated and mobilized stakeholders, large population base, an economic diversity that places less of a premium on new industry and development than was the case in Louisiana, and a timing of oil and gas development that allows examination historically of the risks as well as benefits of this development. But there are significant differences as well. The Florida Panhandle has more coves, inlets, and estuaries than the California coastline, therefore there is less competition for dockage space (see Shepherd 1964); the population is less urban then California's; port facilities are available to accommodate oil and gas development infrastructure; restrictions that place drilling platforms offshore at an established minimum distance will cause less threat to the aesthetic sensibilities of coastal residents and tourists; and well-advertised technological advances in the oil and gas industry that reduce risks of spills and permit horizontal drilling at distance from rigs mediate concern.

West of the Florida Panhandle, preliminary findings regarding attitudes by a variety of stakeholder groups toward OCS development offer further context for interpretation of likely stakeholder concerns in the Panhandle. OCS activities generally found support from most stakeholder groups in Louisiana, with the exception of "several environmental groups" and some shrimpers--the latter contend that some areas cannot be shrimped due to the presence of discarded oilfield trash on the bottom (Gramling 1993).

"Most business interests in coastal Mississippi are not excited about offshore oil, but they are not organized or focused on the issue....the current gambling fiasco has them so focused on gambling as an economic activity that Outer Continental Shelf concerns have shifted into the background" (Gramling 1993). Mobile Bay is where significant opposition to OCS development begins. This opposition is at least correlated with the beginnings of strong beach-oriented tourism.

Drilling Rigs and Fishing

Historically, the literature indicates that the relationship between the oil and gas industry and fishermen has been largely positive on the specific topic of drilling platforms, at least for those anglers who pursue their sport in the open waters of the Gulf. Oil and gas platforms provide "structure" for the fish, something for the fish to relate to--but more. Wrecks, rocks, ledges, and other structures in the Gulf

...are home to numerous food chains, starting with tiny barnacles and krill, and ending with large gamefish. Obstructions draw the small species because they offer a protective lair and an opportunity to trap plankton. Shrimp, crabs, and an array of bivalves are lured to the area, and small fish like grunts, pinfish, and squirrel fish are not far behind. All this activity subsequently draws larger predators, most notably grouper and amber jack. This continuous web of interaction...unequivocally places the angler in an advantageous position. (Feldman 1997)

Other writers on the topic are explicit in their linkage of offshore structure with good fishing.

The most important thing when bottom fishing in the Gulf is to make sure you are over some type of irregularity in the bottom such as a shipwreck or rocks. These types of underwater irregularities provide a platform for the growth of underwater organisms that provide food for small bait fish. As these bait fish collect, they attract larger fish which feed on the bait fish. Since most of the Gulf bottom is barren sand, randomly anchoring over any old spot is a sure way to decrease your odds of catching fish when bottom fishing. (Hoskins 1993)

Scuba divers are able to offer an explicit picture of fish in their underwater habitat:

Fish congregate at certain levels along the vertical and horizontal support members of a rig; however, cruisers search all levels for prey. Barracuda prefer the upper 50 feet of water, although they occasionally swim to deeper depths. Groupers remain at or below the 50 foot depth. Snapper range throughout the water column but avoid the near-surface area. Cobia, which look like sharks to novice divers, congregate three to four feet below the surface at those times of the year when the water is warmer. The slow, cumbersome jewfish remain close to the bottom in muddy water. Amber jack cruise at 180 foot depths. (Caldwell 1982) Recognition of the importance of these underwater structures has led to the building and placing of artificial reefs throughout the Gulf area. These can consist of washing machines, concrete rubble, or even old train boxcars and decommissioned ships.

With the building of oil and gas drilling platforms, not only has fishing activity centered around operating structures, but in a "rigs-to-reefs" program to convert and preserve structures no longer used into fish-holding structures (Reggio 1987). The Texas Coastal and Marine Council is credited with the development of four artificial reefs off the Texas coast in the mid-1970s by sinking U. S. Government Liberty ships. Subsequent development has been extensive in most coastal states.

The value and potential of oil and gas structures as artificial reef development material are the primary focus of research evaluation of the program (Bull and Kendall 1994; Reggio and Kasprzak 1991). The significance of these structures can be inferred from the fact that a 1987 report (Reggio) cited the presence of around 4,000 petroleum structures in the Gulf. These ranged in size and complexity from simple single well jackets supporting small platforms to large and complexly structured production platforms, collectively attracting a large amount of recreational angling activity (Reggio 1987).

Research literature on the topic of drilling rigs and fish confirms popular writing on the subject. A study of offshore platforms and their use by recreational fishermen and scuba divers off the Louisiana Coast revealed that fishing and recreational diving are centered around oil and gas platforms (Stanley and Wilson 1989). Other researchers make the point of the importance of platforms as *de facto* artificial reefs in Louisiana...that sport fishing opportunities in the state would be greatly reduced without them (Dugas et al. 1979). In fact, in one study it was found that in inshore areas the average catch rate for fishing trips taken to sites near oil and gas rigs was two-thirds greater than the average taken at non-rig sites (Witzig 1986). Oil and gas platforms in Louisiana have been estimated to account for the destination of 37% of all saltwater recreational angling trips (Witzig 1986), as well as being the focus of recreational divers in the state (Roberts and Thompson 1983). Part of the reason is the few suitable hard bottom areas or natural reefs off the Louisiana Coast. The nearest natural reefs are located at least 75 miles offshore (Stanley and Wilson 1989). Alabama is another state committed to the value of artificial reefs and advertises its artificial reef program through a pamphlet that provides Loran coordinates and a coastal and offshore features map (Alabama Department of Conservation and Natural Resources date not cited).

The Minerals Management Service conducted a workshop representing key investigators, fishermen, and government and industry representatives to evaluate and document interrelationships between offshore oil and gas development and fishing. Among the conclusions contained in the resulting report were the fish-attracting nature of oil and gas structures and pipelines, that confrontations among and between various fishing groups attempting to access the fishery resource were far more likely than confrontation between industry officials and fishermen, and advocacy for preservation and use of the structures as fish attractors (Minerals Management Service 1983). Within the work-shop framework, a series of reports dealt with specific topics pertaining to fishing and the oil and gas industry. Topics and findings included past and future surveys of the extent of oil and gas plat-form fishing, the desirability of a proposed policy for use as artificial reefs in other areas after their being decommissioned (Scogin 1982; Ditton 1982), and a survey of snapper and grouper fishermen on the Northwest Florida Coast showing a positive relationship between this fishery and oil and gas development (Dimitroff 1982).

In this same document a series of testimonials from representatives of key fishing stakeholder groups is reported. A commercial fisherman (who operated an 80-foot boat rigged for both trawling and long lines) believed that pipeline canals through inland waterways allowed easier and quicker travel but changed the estuarine habitat of shrimp and other sea life dependent on the area's nursery grounds (Tate 1982). Pipelines can be a detriment to net-

dragging fishermen if older pipeline valves are not properly covered. The problem of any objects on the bottom, debris or not, from oil and gas activity is significant, since shrimp are harvested by pulling a trawl across the sea bottom (Rayburn 1984). Thus pipelines can act as bottom obstructions and cause loss of equipment. Additionally, "freshly dug pipelines make passage impossible to conventionally rigged nets" (Tate 1982). Compensation for these perceived ill-effects was that those fishermen willing to add mud-dragging gear to their nets would find abundant harvest of the shrimp which tend to concentrate on each side of the pipelines' muddy bottoms. But spokes people for the shrimping industry would like to see shrimpers having a more active role in decisions about the placement of oil rigs and other structures (Rayburn 1984).

For longline bottom fishermen, older pipelines were seen as having a continuing positive effect on the fishery, because of their artificial reef effect. But it is new pipeline activity that is seen as having the most profound effect. "...The newly broken up bottom tends to cause fish within the area to collect and forage through the disturbed bottom searching out clams and other freshly exposed food sources, " which is cited as the "same principle as birds and other animals flocking to a newly plowed field" (Tate 1982).

A direct correlation was perceived between the amount and size of current-driven debris trapped by valve stems and the amount of fish sustained and concentrated in immediate proximity. World record size fish have been caught proximate oil and gas structures. At the 1982 Gulf of Mexico Information Transfer Meeting, it was reported that "the woman's world record and largest blue marlin ever caught in the Gulf (1,018. lbs.) was caught during the Ladies Tournament in July, 1977, while trolling the anchor buoys around PennRod 72. PennRod radioed an offer to hoist the fish aboard their crewboat for the run the Club's weigh station." (Claverie 1982).

Scuba divers report that rigs attract fish and serve as "cages without walls" for their quarry, though the divers prefer the older production platforms and their clearer water, rather than working plat-forms (Caldwell 1982).

Reliance on the artificial reef effect of offshore oil and gas structures extends to the Florida Panhandle. Snapper and grouper fishing, particularly on the west side of the Panhandle (i.e., out of Panama City, Niceville, and Pensacola), place heavy reliance on fishing man-made structures (Dimitroff 1982). However, some experts have cautioned that artificial structures may merely concentrate fish, rather than increase snapper production, that unexploited fish stocks may exist over soft bottom structures in the Gulf some distance from the structures (Perret and Roussel 1984).

Water Quality and Ecosystem Integrity

Threats to water quality and ecosystem integrity are of particular concern to those who assess the potential effects of OCS development.

The potential for oil pollution is a major issue raised by offshore drilling. Leaks from pipelines and platforms potentially could have some damaging effects on sport and commercial fishing, saltwater beach recreation, and boating. Pipeline construction may disrupt the bottom habitat and destroy benthic organisms. Even buried pipelines may threaten beaches or residential sites. In addition to terminal sites and channels, turning basins may need to be dredged or maintained for deep draft tankers. Loss or alteration of coastal lands and water would reduce recreational potentials. (McGinnis 1983)

This same report mentions concerns about damage from dragging platform anchors and bottom trawls and blowout spillage from producing wells. Reference to the latter is made to a blowout in 1980 in the southern Gulf area off the coast of Mexico, which threatened rich shrimping and fishing grounds. Concerns about spills also relate to weather events, such as hurricanes and other storms. Hurricane Hilda in 1964 caused about 12,000 barrels of oil to be spilled from storage tanks in Louisiana. Accidental spills from tankers and barges are also cited as threats. But the overriding concern is with large spills which "...can kill birds and marine organisms, weaken key links in the food chain necessary to support sport fisheries, and modify coastline habitats" (McGinnis 1983). Scuba divers express concern about offshore pollution as well (Caldwell 1982).

Issues raised in recent focus groups of fishing industry and other stakeholders on the topic of OCS development do not reveal as much concern over spills, with increased technological safeguards being cited. In one focus group report, a big game angler stakeholder representative characterizes the pre-President Nixon era as a time of offshore mineral pollution, while the Nixon era brought in better pollution controls--oil producers now being perceived as "clean neighbors" (Claverie 1982). There is also the perception of a distinction between the perceived lower risks associated with *gas* development, as opposed to oil development.

Pollution problems are complex, and include different effects resulting from chronic and accidental pollution, oil emulsion drilling muds, and dispersants and detergents used in cleaning up accidental oil spills. Accidental pollution can be costly, create great public concern, and cause spectacular short-term local environmental disruption, there is no evidence that accidental oil-pollution has a gross permanent effect on the ecosystem. (Peret and Roussel 1984)

However, the effects of long-term, chronic pollution raise other issues. While in the short-term daily drips and loss of small amounts of oil or other chemicals overboard does not appear to be serious because of their dispersal into a large volume of water, the *cumulative* impact of such sublethal pollution is yet to be determined.

One of the most serious and long-lasting types of pollution associated with the petroleum industry occurs when diesel oil is added to the mud system to enhance the drilling of deep wells. If the excess or used mud cuttings from such an operation are accidentally lost overboard, a serious pollution of the substratum may result, since the oil is absorbed onto the

heavy mud particles and settles to the bottom. With this type of pollution, visible oil slicks may not occur and pollution may go undetected. (Perret and Rousel 1984)

The same authors note that additional problems can be caused by the detergents, dispersants, and other chemicals used to clean up oil spills, as these agents are more toxic to marine life than oil.

In regard to *near* and *in-shore* activities in Louisiana, recent concern has centered on issues related to loss of wetlands / saltwater infusion issues. It is thought that the dredging of navigation channels for OCS activity transport has caused tidal erosion of marsh islands and saltwater encroachment problem (Rogers 1988). Yet if pollutants associated with oil and gas exploration, drilling, and production are sublethal, some authorities maintain that the overall effects only have no significant long-term detrimental effects on marine fauna but, on balance, have been beneficial, due to the "reef effect" of the rigs and other structures (Perett and Rousel 1984).

Other Issues

Other issues are mostly framed in terms of the Louisiana experience with OCS development. Conflicts over navigation rights-of-way (i.e., between fishing and oil and gas industry vessels) have occurred "as a result of two industries competing for space" (Perret and Roussel 1984). The reduction of fishable sea floor from the sheer number of offshore producing platforms and other above water structures has been a continuing concern as well.

Other concerns have been mitigated to various degrees. The problem of underwater obstructions from structures associated with oil and gas activity and materials discarded from rigs was countered somewhat by rules and regulations that require everything to be brought back in (Perret and Roussel 1984). Another problem has been seismic crews detonating explosives in waters historically belonging to fishermen. Regulations and guidelines put into place by the Louisiana Department of Wildlife and Fisheries as a result of this initial conflict have largely resolved this problem.

Not all interrelationships and concerns relate to water quality and rigs. One big game angler characterizes some of the positive effects of offshore oil and gas development on fishing as "passive assistance" (Claverie 1982). This includes the encouragement or development by the oil and gas industry of better radio weather information, navigation aids, protection provided by platforms and drilling rigs as safe havens in rough weather,
and accessibility to fishing areas. "Active help," based on personal anecdotes, included emergency services via company helicopters and boats, as well as direct aid from personnel on the platforms (e.g., provision of emergency fuel).

THEORETICAL PERSPECTIVES

At least two theoretical perspectives are applicable to understanding and predicting the interplay between the oil and gas and fishing industries: specialization theory and the concept of institutional complexity.

Specialization Theory

Specialization theory, originally developed to explain and predict behaviors and preferences of fishermen (Bryan 1977), expanded to apply to outdoor recreationists in general (Bryan 1979), and subsequently applied to broader issues of resource policy (Bryan 1982), has direct application in understanding and predicting how different segments of the fishing industry will respond to OCS development. The primary thesis supported in the original research and confirmed in numerous subsequent studies of specialization is that recreationists and others who use and depend on various natural resources for their enjoyment and livelihood can be arranged on a continuum of behaviors, orientations, and preferences from the general to the specific. These are a product of the nature and extent of people's experience with the activity--specifically how long they have engaged in it and how frequently. Thus, in regard to fishing, it is not so much the category of "being a sports fisherman," "commercial fisherman," or more specifically, being a "big-game angler" or being a "shrimper" that determines how people may respond to and interact with OCS development. Rather it is their level of involvement in and commitment to the activity, their *degree of specialization.*

Findings suggest that the longer, more frequent, and heavily committed user of a resource tends to be not only more knowledgeable about his or her own activity, but to be more sensitive to the specific characteristics of the particular resource on which he or she depends. For example, the commercial shrimper with long experience with and commitment to the vocation (i.e., "the specialist") will be more attuned to the habitat requirements of his quarry than the "occasional for fun and family consumption" shrimper (i.e., "the generalist"). In short the specialist in any activity tends to be more involved with, knowledgeable, and sensitive to the requirements of the activity.

The implications of specialization theory for the interplay between different segments of the fishing industry and OCS development are several. The most vocal and active supporters or critics of OCS development are likely to be specialists who are well aware of the likely impacts of oil and gas activity on their areas of interest. They tend to be well-informed and organized politically, willing to be involved to protect and enhance the resource on which they depend. These specialists will be present in all the different segments of the fishing industry. But they are likely to be disproportionately represented
in segments that have particular appeal to specialists--e.g., saltwater flyfishermen, other in-shore light tackle anglers, big game fishermen who run their own boats. These will be the sentinels for the fishery, the observers of water quality, the state of the fishery, etc.

On a speculative note, one might conclude that those who fish rigs may fall on the less specialized end of the angling continuum. Specialists tend to release their fish, since their orientation is more in the hunt for the fish than their consumption. The specialist is interested in the sport as a vehicle for proving skill, while the generalist angler is into "being lucky enough" to catch some fish and bring them home to the table (or to show off). Indirect support for the contention of rig fishermen tending to be less specialized comes from a study of what anglers did with their catch. One study including the catch disposition near rigs less than three miles from shore vs. away from rigs (but still within three miles of shore concluded that approximately 60% of the fish caught near rigs were kept (Witzig 1985). This compared to only 10% of the catch being kept at non-rig sites. At sites greater than three miles out the respective percentages were 70% and 35%. The significance of this conclusion about less specialization among rig fishermen is that their advocacy of the oil and gas industry as being good for fishing may very well be drowned out by more vocal and committed anglers who do not depend on the reef effect of oil and gas structures for their fishing.

Institutional Complexity

A core theoretical perspective in the literature on social impact assessment (i.e., the science of determining the social effects of environmental change) is that the complexity of a community's infrastructure has a significant bearing on a particular area's capability to cope with change (Taylor et al. 1995). The greater the complexity, the more able people are able to resist change or shape the future to their liking. Though the concept has been applied largely to small communities to be affected by such events as dam building, resort development, and mining, it is applicable in the anticipation of offshore oil and gas development for the Florida Panhandle. Simply put, the diversity of the economy, of goods and services (and the professional and other skilled backgrounds of those providing the goods and services), can be a major factor in the course of events of OCS development. An indication of this theoretical perspective at work can be had from the contrasting experiences of California and Louisiana in regard to offshore oil and gas development. From literature previously cited, the explanation for California's effective resistance to development was in terms of a diverse, healthy economy that did not especially need another industry, as well as concern for protection of a scenic shoreline (with limited docking space for OCS activity). Louisiana's acceptance of the oil and gas industry was explained in terms of a greater need for economic development and little in the way of defined or accessible scenic beaches to protect (but much in the way of relatively inaccessible marshland). But the institutional complexity perspective adds to the explanation of why and how communities or regions can mobilize to deal with change.
From this perspective, California had more resources to bring to bear on determining their own future than Louisiana, a state which at that time could have been considered "less institutionally complex."

The Florida Panhandle can be considered more similar to California than to Louisiana. Hence, one would expect mobilization of more diverse resources to shape the nature of

offshore oil and gas development--and to resist additional development if negative impacts are perceived to occur--whether in regard to the fishing industry (which in itself is diverse and institutionally complex) or to any other segment of the economy.

IMPLICATIONS FOR POLICY

From this selected review of the literature, a number of policy implications can be inferred for ascertaining the interrelationships between offshore oil and gas development and the Florida Panhandle fishing industry.

1. Different segments in the fishing industry (the "stakeholders") will likely respond in different ways to OCS development. These responses will largely be in terms of three basic issues: *general* risks (costs) / benefits, *specific* risks (costs) / benefits to fisheries and aesthetics.
2. Industry stakeholders perceiving the most benefit will be those that depend on near and offshore structures for the enhancement of their targeted fishery--i.e., snapper/ grouper "bottom anglers" and trollers and casters for other gamefish that frequent the rigs.
3. Industry segments perceiving the least benefit will be the near-shore and bays/estuary anglers and big game anglers who do not reap direct benefits from oil and gas structures in the Gulf.
4. Within the fishing industry segments, those who are most specialized will likely be those who are most informed and politically active, regardless of their orientation to oil and gas development in the Gulf.
5. Within the fishing industry segments, those who are least specialized will be the most likely to have opinions about oil and gas development based on interests outside of fishing (e.g., aesthetics, perceived threats to the ecosystem from spills, etc.).
6. Commercial "for-food" fishery segments will continue to lose ground politically in the allocation of the fishery resource as the value of recreationally-based fishing goes up and aquaculture alternatives increase.

These specific inferences are to be interpreted within the larger context of the Florida Panhandle, an area in which promoters point with pride to their "sugar-white" sands as its basic and most essential marketing tool. While the literature points to acceptance and even eagerness by many in the fishing industry to embrace oil and gas development because of the "reef generation effect" of drilling platforms, overlapping concern is high that the aesthetics of the clear water and white-sand beaches not be jeopardized.

Some distrust of the oil and gas industry exists in this regard. Pointing to experiences in other Gulf Coast states, reports of focus group results cite illegal dumping from rigs and service boats as a problem that is not managed well by the industry. Industry officials may be strongly motivated to be good citizens, but the actual on-water operations people may be more concerned about a quick and easy way to get rid of their waste. Thus, issues can range from the possibility of trash and chemicals being illegally jettisoned from service boats and rigs to potential leaks from drilling and pipelines leading to "dirty water and dirty beaches."

A major inference that can be drawn from this review is that anglers' positive attitudes about rigs as artificial reefs to attract fish can quickly be overridden by aesthetic and environmental concerns that go beyond the immediate health of the fishery. These individuals not only will respond in terms of their stake in the fishery, but also in terms of their stake in other activities dependent on clean water and the associated aesthetic qualities of that environment--as beach tourists, Gulf front property owners, and the business people who support these activities. Based on focus group reports, this is in a context of an air of distrust--a distrust that extends not only to the oil and gas industry but to state and federal agencies as well, that these agencies are "in-the-pockets of industry." For this reason, it is particularly important that there is representation by state and federal officials--whether elected or appointed--at such meetings to answer questions, address issues and "clear the air." This should part of an on-going program of monitoring and mediation for the life of the activity.

Finally, any treatment of impacts of OCS activities on the fishing industry in the Panhandle should be in recognition that at the different stages of the life of the development there will be different and distinctive issues, i.e., impacts are temporal in scope (Gramling and Freudenberg 1992). The earliest planning stage of the development will be characterized by "opportunity-threat impacts."

These impacts result, to a large extent, from the efforts of interested parties to identify, define, and to respond to the ongoing and the anticipated implications of development, whether as opportunities (to those who see the changes as positive) and/or threats (to those who feel otherwise). Impacts occur not just when social groups are faced with threats over which they have little effective control, but also when there are conflicts over the extent to which a proposed development represents threats and/or opportunities. (Gramling and Freudenberg 1992)

Experiences specific in this regard to OCS oil and gas development in Northern California and Florida have been contrasted with those in Texas and Louisiana. While the opportunity-threat-impacts in the former states were high, they were relatively low in the latter. The issues were so contentious in California and Florida that they eventually required Presidential intervention. On the other hand, Texas and Louisiana largely embraced the proposed development (for reasons previously stated). Yet it is noteworthy that *fishing* industry anticipations in *Florida*, at least, seem to remain largely positive.

The second type of impacts is classed as "development-stage"--which is where most impact research is focused. This is the projection of effects associated with the actual onset of development. However, since this review of the Florida Panhandle fishing industry and OCS oil and gas development has focused primarily on the opportunity-threat-impact stage, it should be noted that people will continue to respond to opportunities, threats, and the opportunity-threat debates, even during the most intensive part of the implementation stage (Gramling and Freudenberg 1992). It is perhaps too early to determine whether the generally positive reception by fishermen to the proposed oil and gas industry development off the Panhandle coast will carry the debate (and the perceptions) through the development stage, or other stakeholders' more negative perceptions of the industry.

The third type of impacts are characterized as those of the "longer-term: adaptation and over adaptation." These are the effects that continue long after the activity in question has ceased. Adaptation to the activity may lead to over-specialization which results in a loss of flexibility--or to situations where altered behaviors are adaptive in some situations but not in others, over adaptation, in other words. (Grambling and Freudenberg 1992). In the case of oil and gas activities, this could take the form of overbuilding infrastructure to support the industry, over-dependency on associated jobs during the height of the activity, or in the case of the shrimp industry out of Morgan City, Louisiana--cessation of the activity for thirty years until after the oil boom, then an attempted return only to realize that the resident shrimp fleet and processing facility were no longer there (Grambling and Brabant 1986). In the case of the Panhandle Region, this type of impact would be considered un-likely, due to the diversified nature of the economy. It is not a matter of dropping one industry and replacing it with another, rather a matter of co-existence between the oil and gas industry and fishing industry segments. Certainly the "rigs-to-reefs" factor will likely create demand for leaving oil and gas structures in place after their production lives are over--as has been the case in Texas and Louisiana. Decisions in this regard are likely to be balanced against the risk of their being navigation hazards, aesthetically unpleasing, or somehow posing risk to water quality.

CHAPTER 6
PORT FACILITIES

INTRODUCTION

Outer Continental Shelf (OCS) petroleum development requires onshore support facilities, which are usually sited in or near harbors proximate to the sites of offshore exploration, development, and production. During offshore development and production, onshore service bases typically include companies providing mud, cement, drilling tools, well head equipment, catering, helicopter transportation, logging and perforating, rental tools, welding and machine shops, diving services, trucking, labor contracting, inspection and testing, and other supplies. Onshore port facilities provide dock space and loading facilities to transship necessary pipe, mud supplies, and other material to the offshore operation. Ports may also provide sites for equipment and supplies, staging areas for companies, yards to store pipe and steel used offshore, and space for production force headquarters, docking for crew boats, and heliports. Ports themselves may provide additional services such as waste disposal, marine repair, aid to navigation, towage, pilotage, marine police, and fire fighting, among other services.

Outer Continental Shelf development creates the potential for additional uses of vacant land and redevelopment of existing land in ports for OCS-related uses; but it may also result in competition with existing port users (such as commercial shipping companies and the sports and commercial fishing industries) for port facilities, such as docking and turning space, and for port services. The degree that such competition occurs depends on the space and facility needs of OCS-related indus-tries and the capacity of ports (channels, turning space, dock space, land, water, electricity, sewerage, landslide transportation, etc.) to accommodate additional use or, if at or near capacity, to expand to accommodate additional uses.

The ports of Pensacola (ranked 78th) and Panama City (ranked 62nd) in 1995 were among the top 100 U.S. ports in the dollar value of goods exported (Global Trade Information Services, Inc. 1996). They ranked 120th and 100th, respectively, in the value of imports. There is the potential for OCS-related conflicts with the existing operations of both ports, as well as for significant benefits to the ports from additional OCS-related business.

This chapter summarizes the results of an extensive literature review conducted to provide background information that will be useful in exploring the impacts of OCS development on the two ports. It is based on a search for and review of literature related to issues in port development in the U.S. and worldwide, impacts of OCS development on ports, and histories of West Florida and the cities of Pensacola and Panama City and their ports. A complete list of references consulted is provided in the bibliography. Before proceeding, an important caveat should be noted. This study examined issues related to port development, operation, and use rather than the broader topic of the use of the harbors in which ports are located. Typically, harbors will be used by ports and by a variety of commercial enterprises and

residential uses that need or desire access to water. In the case of Outer Continental Shelf activities, support and service bases may be located within and use port facilities, but they may also locate within harbors and operate independently of a port located in the same harbor. When the latter occurs, the impacts of OCS activities on ports are likely to be much lower than when OCS activities are located within the formal boundaries of the port.

Methods used in the literature review included computerized searches of social science and economic/business reference data bases, searches of the catalogs of the libraries of Florida State University, Louisiana State University, University of Florida, University of New Orleans, and University of West Florida, review of the references reported in publications consulted and in specialized bibliographies dealing with port development and operation (e.g., Green 1985; Marr et al. 1987), and direct contacts with port experts and port research centers and institutes. Additional materials were located through site visits to Pensacola and Panama City by RPC staff, which included interviews with port personnel. Reference material identified in the literature searches was either abstracted directly or photocopied.

The literature review is organized in six parts. Part I examines issues in port development and management facing ports in the United States and that will may affect how the ports of Pensacola and Panama City respond to opportunities offered by OCS development. Part II summarizes descriptive information about the ports of Pensacola and Panama City that is available from secondary sources. Part III provides a social and economic history of Pensacola and Panama City, focusing on the past and current roles of the ports in the economic and social life of the communities. Part IV lists stakeholders associated with the ports and the communities that may be affected by OCS-related activity at the ports. Part V summarizes literature on the impacts of OCS development on ports in other areas, while Part VI concludes this report by looking at the potential of the ports of Pensacola and Panama City as OCS service and support bases.

INTRODUCTION TO PORTS AND PORT ISSUES

Ports function to load and discharge ships, receiving cargo from the port city and interior regions and exporting it to other regions or overseas, while unloading and dispatching incoming goods by road, rail or waterway. Port development and operation has been strongly affected by rapidly changing technology in a highly competitive environment, scarcity and high costs of capital, and by changes in the external environment in which ports operate (Hoyle and Hilling 1984; Herschman 1988a). Technological innovation to improve the efficiency of goods movement has required significant investment by ports in new harbor and water- and land-side facilities and equipment to remain competitive. The ability of ports to make such changes, however, is strongly affected by the costs of capital, environmental constraints, and by growing competition among a number of port and harbor users, many of which have little or no relation to traditional port functions (Mayer 1988). Thus, ports have been subjected to wide-ranging demands from shippers and other users of harbors, which have brought about serious conflicts over land uses and port policy (Hershman 1988). In many cases in the past, U.S. ports failed to adapt to changing conditions, which led one national review to conclude that many waterfront areas and harbors were losing their economic significance and rapidly becoming obsolete and largely abandoned (Panel on Future Port Requirements of the United States 1976).

Hershman (1988) characterizes ports in the United States as "...a community of independent enterprises tied together by a common interest in maritime affairs." Public port agencies and authorities are critical institutions in this community of interest, because of their powers and financial resources, in helping ports respond to changing technological, economic, and social demands. Most public ports operate as public enterprises. They are set up by state statute, owned by a city or state, and often subsidized with public funds, but they typically operate independently and are financed, wholly or in part, by operating revenues and borrowed funds. The statutes that establish them typically specify their corporate powers, area of operation, functions, and mode of governance.

According to Hershman (1988), many ports focus on revenue-raising activities, such as improving facilities and management for more efficient handling and movement of cargo and promoting economic development, and pay less attention to "public interest" activities such as environmental enhancement, public access, and redevelopment of obsolete facilities for recreational or educational uses. This focus is required, to some extent, because ports depend on the revenue generated by their operation and receive little direct tax support; thus, they try to keep overhead low and generally "stick to their basic business" (Dowd 1988).

Changing Technology and Economic Conditions and Their Impacts on Ports

Port facilities include berths and equipment for handling general cargo (a mixture of packages containing a variety of commodities other than timber and bulk cargoes) and, frequently, berths and equipment designed to accommodate specialized cargoes. The latter include containers and bulk cargoes (such as oil, coal, and grains). Efficient movement of these cargoes, particularly the prevention of delay, is a key ingredient in successful port operation (Nettle 1988). The most critical factors in efficient operation, beyond adequate depth of channels and space for anchorage and movement, is the availability of space for fast inland clearance of imported cargoes and for reception of cargoes for export through the port and effective integration and coordination of port infrastructure with road and rail facilities for land transport. Problems facing many ports have been shortages of space for handling cargo and inefficiencies in rail and road access. Where rail lines have numerous at-grade crossings to access the port, rail traffic may face serious delays. Similar delays occur if trucks accessing the port must traverse streets that lack access control or are heavily congested. Additional problems can occur if access routes traverse residential areas, since heavy trucks create objectionable noise.

Technological Innovation

Competitive conditions in the transportation of goods has fostered rapid innovation in maritime shipping and related port facilities to improve efficiency. Adapting to these innovations has been critical to the economic health of ports. Innovations include several developments in ship technology and methods of packaging various types of cargo, including larger ships (which require deeper channels and moorage), and rollon-rolloff ships (roros) and container ships (which require specialized berths with ramps for roros, container gantries for container ships, adequate space for parking and container storage, and improved highway access). General cargo also has been subject to changes to improve efficiency (unitization through palletization, banding, bundling, and crating), which have made port facilities such as multi-storied dockside warehouses obsolete, while creating demand for more space at dockside to load and unload and more warehouse space back from the docks for long-term storage.

Providing berths for larger ships can mean additional dredging, with its attendant adverse environmental impacts, or, if funds for channel improvements cannot be secured, simply that ports cannot accommodate the ships (Hedden 1967). Tankers, for example, have increased in size from 60,000 dwt (tons deadweight) and a loaded draft of 40 feet to 100,000 dwt (48-50 foot draft) to supertankers of 200,000 or more dwt (drafts of 60 or more feet), well beyond the depth of most ports. Deep water is also required for roll-on, roll-off vessels (drafts of 30 to 35 feet), along with facilities for clearing the vehicles carried by these ships quickly from the port area (and for assembling them prior to loading on roro vessels). In the case of containers, according to Nettle (1988) "Arguably the most significant development in the movement of goods...."), which were first introduced in 1955, ever larger ships require deep water too (for their loaded drafts of 30 to 35 feet) and facilities (heavy gantry cranes, storage/stacking areas of from three to 40 acres, road/rail access to load/unload and move the

20- and 40-foot container boxes). Handling procedures required are so specialized that many ports cannot handle containers efficiently.

An important factor in a port's ability to take advantage of this new technology has been the availability of adequate land resources for the staging of containers waiting to be loaded on incoming ships. However, according to Mayer (1988), some "... ports are handicapped by inadequate nearby level land, or by existing land uses that are incompatible with port activities....At many ports throughout the world, high-density central development of office buildings, commercial and industrial establishments, recreation and esthetic uses, and even high-rise residential structures, together with insufficient land for rail and highway access to the port terminals have restricted maritime activities."

As a result of the economies of scale that can be achieved with larger operations, so-called "load center" or "superports" for containerized and other forms of intermodalism have emerged, so that mid-size and small ports (such as Pensacola and Panama City), "...will either decrease their maritime activities or become highly specialized" (Hershman 1988a; also see Maritime Administration 1986). This phenomenon was noted as early as 1976 by the Panel on the Future Port Requirements of the United States (1976), which observed that "land bridges" made possible by containerization had led to goods destined for Europe, and once handled by nearer Gulf Coast ports, to be diverted to Charleston, South Carolina, which had greater capacity to handle containers. Since 80 percent or more of general cargo (as distinct from bulk cargoes) is now moved in containers (Mayer 1988), ports that lack the facilities to handle them are severely handicapped in competition with other ports. In addition, they can find themselves "...with a surplus of smaller, obsolete port facilities, such as finger piers.

Economic Conditions

In addition to changes brought about technological innovation to improve competitiveness, ports are also affected by changing economic conditions. Most ports have been adversely affected by the movement of industry from waterfront and other central city locations to the suburbs (Goodwin 1988) Smaller ports and specialized ports often are highly dependent upon business from a narrow sector of industrial firms, which tend to use these ports for bulk cargoes. The fortunes of the port can rise and fall with the fortunes of that industry or of the firms that traditionally have shipped or received goods through the port. In many cases, according to Randall (1988), these industries tend to be highly cyclical in nature, such as the timber industry, oil and gas, and iron and steel. In addition, maritime industries, such as shipbuilding and fish processing, are increasingly moving inland or to other countries, which adds further economic stress to smaller and mid-size ports (Hershman 1988a). This has led some ports to become actively involved in efforts to spur economic development, to find new sources of revenue through diversification of port
activities (such as through the development of port real estate holdings for residential and other non-water-dependent uses), and, to further improve efficiency, to privatize various port operations (Randall 1988; New England River Basins Commission 1981).

Financing Improvements

Urban port authorities have had severe difficulties in financing the major capital improvements that are needed to adjust to technological innovations and changing demands on port land and facilities. Hershman, for example, notes,

> Finding funds for major capital improvements is a key problem facing the industry. The causes of the problem include the higher costs of capital construction, reduction in subsidies from federal, state, and local governments, and greater competition for funds for public works projects, especially at the local level where Port projects may have to compete with social service projects. Further, changes in the tax laws have reduced the benefits available to Ports through tax-exempt borrowing. (Hershman 1988a)

This situation adds to the pressure on ports to generate capital internally, either through retained revenues or generation of revenue streams sufficient to support debt service, and to be more entrepreneurial in seeking out joint ventures. It is further complicated by changes in federal policy regarding funding of navigation projects such as channel improvements. While these were funded completely by the federal Treasury in the past, the trend is now to share costs with beneficiaries, such as ports and shipping companies (Mayer 1988).

Changing Conditions in the Port Environment

Hershman (1988b) notes that in addition to accommodating the needs of traditional marine industries (such as shipping, fishing, boating, shipbuilding), ports must also be managed to reflect the special place of the port in the culture of a city and its people. He writes:

> The harbor is far more than a transportation utility, or a community service like those that provide water, buses, or electricity. It is the place where settlement first occurred and where economic roots are found; where people's memories of welcomes and farewells are relived; where the symbols of the city (skylines, towers, statues) evoke pride, loyalty, honor; where major events celebrate the city and its accomplishments; where trade forms linkages with other cultures....A harbor is for and about people. It is a transport node, but also it is a maritime cultural resource.

Thus, people value ports and harbors for reasons that go far beyond their direct roles in maritime commerce. This special role of the port in the history, economy, and life of cities requires a unified vision and comprehensive planning and management of the shore, water, and submerged land. But, according to Hershman, instead responsibilities are widely dispersed among public and private agencies, which leads to frequent conflicts and decision making in an adversarial environment (e.g., see Fleming 1988; Kenyon 1968).

Typical major issues in port development and operation include:

- Community and environmental impacts from development projects at the water's edge.
- Competition between recreation and industry for scarce shoreline space.
- Pollution of harbors from channel improvements and maintenance, vessels, and shoreline land uses.
- Obsolete, vacant, and decayed port and industrial facilities that are dangerous and unsightly.
- Debates over expenditure of scarce public funds and the expected "return on investment" expected from harbor and port improvement projects (Hershman 1988a).

Resolving these issues can add to the cost of (or may delay or stymie) port improvements designed to take advantage of innovations that will improve the efficiency (and competitiveness) of ports. In addition, in some cases their resolution can actually damage port competitiveness, such as when waterfront land is diverted from industrial to recreational uses (National Academy of Sciences 1980; Wrenn 1983). Marr et al. (1987) observes that "Old waterfronts which have fallen into decay are increasingly being refurbished into attractive recreation, residential, commercial and open-space development...," but he warns, "However, there is a need to accommodate shipping interests in either the rehabilitated zone or elsewhere in the vicinity." This concern is echoed by Goodwin (1988), who has observed "A plea for protection against displacement... particularly from fishermen and the industries that serve them: boatyards, seafood plants, fish brokers, and auctioneers." In fact, Goodwin (1988) reports that "Some maritime community leaders fear that erosion of the 'critical mass' of support industries necessary to retain local fishing fleets and other maritime activity will result in loss of business and jobs to other ports."

According to Hoyle and Hilling (1984), the economic and political environment plays a large role in decision making by port agencies. Economic forces within the region in which a port is located lead the port to develop new facilities to meet the needs of various industries, but the location, timing, and type of facility built depends on the political environment (Hershman 1988a). The political environment, over the past twenty-five years, has been dominated, in many areas, by concerns for environmental quality (what Mayer (1988) terms the "docks or ducks" issue) and by pressures to revitalize central city and downtown economic development through promotion of tourism (Goodwin 1988). These changes in the port economic and political environment have required port authorities and agencies, which previously had a free rein in pursuing economic development objectives (Walsh 1978), to recognize competing interests.

The role of environmental regulations in the costs of port improvement was noted as early as 1976 by the Panel on Future Port Requirements of the United States, which found that responding to environmental issues was increasing costs (1976). Relatively recent public opinion surveys (e.g., DeHaven-Smith 1991) indicate that in the Florida Panhandle there is strong public support for environmental protection and strong public opposition to economic

development that results in environmental harm. In general, ports have found they must revise their goals, which, as noted above have focused largely on port revenue-generating operations and economic development, so that those concerns are "...balanced with public concern for efficient use of existing facilities and the preservation of unexploited natural areas" (Hershman 1988a). As a result of such balancing, Mayer (1988) suggests that "Over the past two or three decades, an abrupt halt to massive reclamation in harbors has occurred in the United States" and to increasing difficulties have been experienced in improving channels because of difficulties in disposing of dredge spoil. One result of failure to expand the land base of ports and the depth of channels, however, can be increasing competition for existing port land resources, but decreasing business for core facilities and services of the port.

Another source of environmental pressure can come from waterside residential uses, which can be adversely affected by the air and water pollution, noise, dust, etc. associated with many traditionally "messy" waterfront industrial activities. Goodwin (1988) notes that industries such as sawmills, pulp and paper manufacturers, oil refineries and petrochemical plants, batch concrete manufacturers, flour mills, marine construction yards, and iron and steel mills are, to varying degrees, water dependent and favor port locations, but they also generate externalities that lead other shoreline uses to lobby for their relocation to land that is less scarce (and less valuable) than harbor sites.

Another set of political factors revolve around the business interests served by port authorities. In some cases, ports can be "captured" by particular industries and, as a result, fail to adjust to changing technology with consequent adverse consequences for the port's competitive position relative to other ports. Kertstein and Omori (1997) note, for example, that the Tampa Port Authority invested heavily in port improvements to serve the bulk-cargo needs of the phosphate industry in the 1950s and 1960s, which caused it to ignore improvements needed to keep pace with the containerization revolution and remain competitive for general cargo with Gulf Coast ports such as New Orleans. Later, this same port authority's activities became highly politicized in the late 1980s as it moved aggressively to expand its general cargo business by purchasing and improving with funds from bond issues, several privately owned port terminals and

stevedore companies, which some in the community viewed as an unwarranted intrusion into the private sector (Kerstein and Omori 1997).

Finally, as noted earlier, ports in many parts of the United States are rapidly diversifying (Hershman and Bittner 1988), "...having become desperate to replace revenue lost through decentralization, deindustrialization, and changing port technologies" (Randall 1988). To some extent, diversification also has been thrust on ports by the communities in which they are located, as port-owned land is increasingly viewed as a community cultural and recreational asset or possible source of jobs and income from tourism (Goodwin 1988). In some cases, ports responded by launching new leisure ventures (such as cruise ship terminals, aquariums, parks, fishing piers, small boat marinas and boat launches) (Fleming 1988), while, in others, ports have ventured into non-maritime activities (such as use of port-owned

land for office and residential real estate ventures). In the case of Tampa, for example, when the port authority found it could not compete effectively for container business, in the 1980s it worked to improve its general cargo business, as noted above, but it also focused its attention on tourist-related projects by building a cruise-boat terminal and aquarium. In part, this also represented an adjustment to the political environment, since Tampa's mayors by then favored tourism as a key element of the city's economic development strategy (Kerstein and Omori 1997). Ports increasingly are also offering an array of new services to their port-related commercial clientele, such as truck consolidation and computerized cargo tracking (Fleming 1988).

The Ports of Pensacola and Panama City

This section summarizes descriptive information on the characteristics of the ports of Pensacola and Panama City obtained from a review of published material and information obtained directly from the ports by RPC. Neither port is a large load center or superport, and both have largely been passed by in the competition among ports for container business. Thus, they appear to have excess capacity and are seeking new business to utilize their facilities.

Port of Pensacola

The Port of Pensacola, which is an enterprise agency administered by the Transportation Department of the City of Pensacola, is located on the north shore of Pensacola Bay, 11 miles from the sea buoy on the Gulf of Mexico (and 68 road miles/87 nautical miles east of Mobile and 103 road miles/100 nautical miles west of Panama City). The port has a deep-water roadstead some 12 miles long and two miles wide, with natural depths of 20 feet to 45 feet, which provides good, well-protected anchorage (Coverdale and Colpitts 1960; Corps of Engineers 1969; Ranelli 1979). The entrance channel across Caucus Shoal to Pensacola Bay is 37-feet deep; deep-water bay channels, 33-feet to 35-feet deep, provide access to the port facilities (Florida International Handbook 1968; Corps of Engineers 1969). No bridges cross the main ship channels between Pensacola and the Gulf of Mexico. The Gulf Intracoastal Waterway crosses the harbor entrance channel in the lower part of Pensacola Bay (Corps of Engineers 1969).

The port site, adjacent to downtown Pensacola, occupies approximately 50 acres. It offers the following major facilities (Port of Pensacola no date, probably 1996):

2,500 linear feet of primary 33-foot MLW berth space
Berth 1 - All Purpose - 540'
Berth 2 - All Purpose - 400'
Berth 3 - All Purpose - 476'
Berth 5 - General Cargo - 476'
Berth 6 - General Cargo - 476'

1,000 linear feet of secondary shallow-draft (16-21 MLW) berth space
Berth 7 - Liquid - 500'
Berth 14 - Dockage - 300'
Berth 15 - Dockage - 300'
Berth 16 - Dockage - 300'
460,000 square feet of covered warehouse space in nine buildings
250,000 square feet of open storage space
A full range of stevedoring and cargo-handling equipment (note, however, that according to the Corps of Engineers (1969) general cargo to and from the port is generally handled by ships' tackle; stevedoring companies at the port had truck cranes with lift capacities ranging up to 45 tons).
Ship-side service from two railroads: Burlington Northern Railroad and CSX Transportation System.
Easy access to the Interstate highway system.

Port assets in property, plant and equipment in 1996 had a book value, prior to depreciation, of $20.8 million. These facilities were damaged by Hurricanes Opal and Erin in 1995, but since have been repaired and upgraded with funds from local option sales taxes, the Florida Seaport Transportation and Economic Development Council, and Federal Emergency Management Agency.

Over the past twenty-six years, a total of over 28 million tons have moved through the port. Bulk tonnage has ranged from a high of 2.1 million tons in 1978 to a low of 0.08 million tons in 1971. General cargo has ranged from a high of 0.6 million tons in 1980 to a low of 0.02 million tons in 1970. In the past, the port has primarily served liquid bulk cargoes and general cargo, including steel, Nitrate soda, grains, fertilizers, foodstuffs, lumber, paper, building materials, Saltcache, chemicals, firewood, fuel oil, and liquid sulfur (Ranelli 1979). In recent years, refrigerated meat products have also been exported through the port.

Tonnage for the past five years has been:

	Bulk	General	Total
1992	798,801	574,078	1,372,879
1993	421,149	595,847	1,016,996
1994	351,452	366,223	717,675
1995	318,194	350,555	668,749
1996	509,161	206,499	715,660

Source: Information received by fax from Port of Pensacola.

Thus, in recent years business at the port has been in gradual decline, due primarily to a sharp decline in bagged cargo, which has shifted to containers and is shipped to South Atlantic ports for export. This is also reflected in operating revenue, which has declined from $3.6 million in 1992-93 to $1.9 million in 1995-96 (information obtained by fax from Pensacola

City Finance Department). The resulting operating deficit is covered by a subsidy from the City of Pensacola; in 1995-96 the subsidy totaled $1.5 million.

An economic impact study of the port, conducted in 1979, noted that at the 2.5 million tons handled in 1978, the port was operating at maximum capacity (Ranelli 1979). Since this is two to three times the tonnage handled in recent years, the Port of Pensacola appears to have significant excess capacity to handle additional cargo. An analysis of the prospects for development of the port conducted for the National Research Council, however, noted that it had the following serious competitive disadvantages relative to Mobile, the port's principal competitor: limited waterfront space (the Pensacola Historic District and Government Center abut the port), poor location of rail lines (which crossed downtown streets at grade and lacked space for marshaling yards), shallower channels (33 feet versus Mobile's 40 feet), lack of mobile cranes to handle containers, lack of other specialized facilities available in Mobile (large grain elevators, cold storage plant, and rotary railroad car for unloading bulk oars), and, importantly, less access to capital (i.e., City of Pensacola versus State of Alabama) (Alexander et al. 1979). The report also noted severe conflicts between truck traffic serving the port and the adjacent residential property, historic district, and general urban traffic (since solved by improvements to I-110), and environmental conflicts that prevented improvements to channel depths (lack of sites to dispose of dredge spoil). But, it concluded there was the potential for the port to handle a much greater volume of trade than it was handling at that time (and which has since declined).

A Port Advisory Committee, created by the Pensacola City Council in 1996, recommended that governance of the port change from its current status as a city agency to an autonomous regional port authority which would buy the port, using state and city funds, from the city, thus retiring the port's $8.7 million mortgage (Jones 1996). (In fact, the port was operated by a port authority from 1945 to 1970). The committee felt this would give the port greater autonomy of operation, allow financial participation by other local governments in the region, and better take advantage of special powers granted by the Florida legislature to ports to help them move cargo, create jobs, and promote international trade. The committee also suggested that the port focus on break-bulk commodities such as bagged goods, wood and paper products, steel, general cargo, and other manufactured goods (*Via Pensacola* 1996). The committee concluded that the port's current facilities are adequate and that room was available at satellite locations to build new facilities when needed. Ideas for new facilities included an inland container depot and barge terminals to serve industries located on the Escambia and Blackwater rivers.

The Port of Pensacola (as of 1969) did not provide facilities for making major repairs or dry-docking large, deep-draft vessels; the nearest facility was at Mobile. Three waterfront, marine repair facilities were equipped to provide repairs to fishing boats, tugs, barges, and small craft (Corps of Engineers 1969).

In addition to the port facilities owned by the City of Pensacola, industries along Pensacola Bay are served by barges using the Intracoastal Waterway, which bring in petrochemicals,

coal, and fuel oil. According to the Florida International Handbook (1968), however, only two towing companies used Pensacola as a home port.

In 1969, the Corps of Engineers tallied 26 piers, wharves, and docks on Pensacola Bay (excluding facilities used solely for recreational craft), 15 on the north side and the remainder along the shores of Bayou Chico. Among these were 7 used for marine services and repairs, 5 used for seafood, and 6 used for petroleum products (Corps of Engineers 1969).

The Corps of Engineers has dredged deep-water channels and a mooring basin for aircraft carriers in the bay opposite the Pensacola U.S. Naval Air Station.

Port of Panama City

The Port of Panama City is located on the northeast side of St. Andrews Bay, approximately 163 nautical miles east of Mobile and 265 nautical miles northwest of Tampa (Corps of Engineers 1969; 1986). From the Gulf of Mexico, deep-draft vessels enter the bay through a 40-feet deep dredged channel at Lands End. St. Andrews Bay, which is naturally deep and nearly landlocked, is 10 miles long and has a maximum width of 3.5 miles between the barrier peninsula (Lands End) and the mainland. Federally maintained channels, 38-feet deep, lead from the main entrance channel to the Port Authority terminal at Dyers Point and eastward to the Bay Harbor terminal. Port authority facilities are approximately 7.5 miles from open water in the Gulf (Shepherd 1964). No bridges cross the main channel between the Gulf of Mexico and Panama City waterfront. The Gulf Intracoastal Waterway passes through St. Andrews Bay. The Corps of Engineers (1986) reports that "Excellent anchorage can be found almost anywhere in St. Andrews Bay where the depth is suitable." Anchorage off of the wharves of Panama City is 35-feet to 40-feet deep at mean low water.

The Port of Panama City is operated by the Panama City Port Authority, which is a city-owned agency created by the Florida legislature in 1945 (Etheredge and Berry 1990). In 1964, the municipally owned docks comprised 17 acres and were available for industrial development (Shepherd 1964). Services available included stevedoring, rail and truck service, warehousing, electric power, natural gas, dockside gantry cranes, and other cargo handling equipment. The port authority facility was subsequently expanded by development of a new ship terminal and adjacent 117 acre industrial park. The terminal had 32-foot water depth for ocean-going vessels. A 44,000 square-foot warehouse was completed in 1967. The facility had 4,600 lineal feet of waterfront and direct access to U.S. Highway 98. The terminal handled 97,000 tons of cargo in that year (Panama City Herald 1968).

In 1969, the Corps of Engineers tallied 33 piers, wharves, and docks (excluding those used exclusively for recreation) on St. Andrews Bay (including 4 for general cargo, 1 for coal for plant consumption, 6 for petroleum products, 6 for shell, and 1 for bulk fertilizer, paper products, and naval stores). The Panama City Port Authority operated two general cargo facilities with 32-feet mean low water depths and Bay Harbor Warehouse Corporation operated two others. Four transit sheds at these facilities had 131,450 square feet of cargo

space (Corps of Engineers 1969). Eight waterfront facilities at the port were equipped to receive petroleum products.

As of 1969, general cargo at the port was generally handled by ships' tackle, but crawler and truck cranes with a capacity of 125 tons were available from a local rental service (Corps of Engineers 1969). The Panama City Port Authority wharves were served by three electric, traveling, revolving, full-portal gantry cranes for making heavy lifts and handling cargo (Corps of Engineers 1969).

A more recent (Etheredge and Berry 1990) listing of the Port Authority facilities at Dyers Point listed:

5 deep-water berths
375,000 square feet of warehousing space
600 foot barge terminal
Several industries located within the Port Complex.

In addition to the development of the port facilities described above, Etheredge and Berry (1990) note that the Port Authority has been very active in promoting economic development in Bay and surrounding counties. One aspect of this was creation of Foreign Trade Zone #65 at the port in January, 1981. The Foreign Trade Zone status allows companies operating within the zone to perform certain activities involving imported goods without paying duty on them until they enter into the commerce of the United States. These activities can include manufacturing, as well as warehousing. The principal tenant in Foreign Trade Zone #65 is Berg Steel Pipe Corporation, which manufactures pipe that is used by oil refineries, oil companies and pipeline transmission operators for the transmission of all types of petroleum products and natural gas. Wellstream, another company in the port free trade zone, manufactures high pressure flexible pipe for offshore oil and gas production, among other uses (Bay Biz 1992a).

Current information on the port's operations, similar to those reported for Pensacola above, were not available in published sources. However, the following annual cargo movement were reported for the port for the 1989-91 era (Etheredge and Berry 1990):

Forestry	400,000 tons
Iron and steel products	150,000 tons
South Atlantic Services	20,000 tons
Alimenta USA	50,000 tons

Like Pensacola, the port saw a sharp decline in bagged cargo as shippers changed to containers, which were shipped to South Atlantic ports for export (Etheredge and Berry 1990).

In 1990, the port authority was to have purchased a 120 ton capacity gantry crane, which would enable it to compete for container cargo (Etheredge and Berry 1990). Facilities were

not available at the port for making major repairs or dry-docking large, deep-draft vessels; the nearest facilities were at Mobile. Four facilities were available for repairs to smaller vessels (Corps of Engineers 1969).

Rail service, as of 1969, was reported to be provided by the Atlanta & St. Andrews Bay Railway. One company, as of 1969, provided towing, docking and undocking services, using two tugs (Corps of Engineers 1969).

In the mid-1980s, a review of alternative sites for onshore OCS facilities noted that Watson Bayou, Panama City, contained possibly the largest refined petroleum products receiving terminal in West Florida (State of Florida, Department of Community Affairs 1984).

Social and Economic History of Pensacola and Panama City

The potential impacts of OCS activities on the ports of Pensacola and Panama City will be mediated by the role of each port in the life of its community. Here we find sharp differences between the two. Pensacola is one of the U.S.'s most historic cities (it claims to the oldest city in America) and the port played a central role through much of its growth and development. Panama City was founded much more recently, and the port in much less intimately associated with its growth and development. Thus, most of the attention here is given to Pensacola and its port (in part, also, because the literature on the history of the cities, West Florida, and Florida in general, is much richer for Pensacola than for Panama City, which has been neglected by most historians).

Pensacola

The city of Pensacola owes its very existence to its port, which for more than two centuries was the mainstay of the local economic base (Ranelli 1979). Pensacola Bay was first explored by the Spanish in the 16th century, and the Spanish attempted to establish a colony there is 1558. The site changed hands between the Spanish, British and French several times before, in 1821, it became a U.S. possession. Between 1821 and the early 1900s, the city flourished as a center of Gulf Coast lumber production, which used the port to ship products to markets throughout the world. As that industry declined, largely because of the failure to provide for reforestation as millions of acres in the surrounding region were harvested, the importance of the port also declined. After World War I, Pensacola's economy became increasingly dependent on the Pensacola Naval Air Station, and on tourism. It, as well as other Florida Panhandle cities, shared only minimally in the economic boom that affected the rest of Florida, and the Port of Pensacola languished behind its chief competitor, the Port of Mobile, as well as other large Gulf Coast ports, such as New Orleans and Houston.

The Colonial Era

Pensacola is the United States' oldest port (Alexander et al. 1979). After glowing reports of the harbor in 1528 by Pamphilio de Navarez, in 1558 Spain sent a large fleet and some 1500 soldiers under Don Tristan de Luna to settle the area. After the colony failed in 1562 (the settlers had trouble finding enough food and a hurricane in 1561 killed 200 people and destroyed the fleet), the Spanish waited for over a century before attempting another settlement there in 1696, when a small village was put in place by Don Andres de Arriola as a military base to stop French expansion from the west (and it was repeatedly harassed by the French, as well as by Indians and the British) (Tebeau 1971). The choice of Pensacola was based on the observations of Gongora, who surveyed the bay in 1693 and wrote, "That bay is the finest jewel possessed by his majesty—may God protect him!--not only here in America but in all his kingdom" (quoted in Leonard 1967).

In 1719, the French defeated the Spanish and burned the town (Appleyard 1976). Nevertheless, the Spanish returned for a third time in 1722 to establish a permanent colony on Pensacola Bay, this time on Santa Rosa Island. This settlement lasted until 1752, when it too was destroyed by a hurricane. The survivors moved to the mainland to the site of present-day Pensacola and established a small village (it had a population of about 100 in 1760), but after the Seven Years War between England and France, in 1763 the town was ceded to the British by the Treaty of Paris. (Tebeau 1971) By 1770, a visitor from Georgia observed that the town contained about 180 timber houses (Romans 1775; reprinted 1961).

The seaport prospered under twenty years of British rule (during this period the Old City area and present-day Historic District were platted), although, as in later years, it never could compete effectively with Mobile and New Orleans as a gulf seaport (Fabel 1988). After the British lost the Revolutionary War, U.S. ally Spain returned and controlled the town until 1821. This final period under the Spanish crown saw the development of an important fur trade, managed by the Scottish firm of Panton, Leslie & Company (who established a trading post-warehouse on the waterfront in Pensacola, when it was under British rule), in which goods were shipped through

Pensacola to London, Havana, and Nassau. Writing in 1948, the editors of the *Nautical Gazette* noted,

> ...the city still retains much of the atmosphere of a Spanish town. The names of the streets— Alcaniz, Zarragossa, Palofox, Taragona, Intendencia, Moreno, and Gonzalez—are a heritage from early Spanish settlers. Many of the descendants of those settlers are prominent in the life of the city today. (Nautical Gazette 1948)

The Port in the Nineteenth Century

When the U.S. acquired Florida by treaty, signed in Pensacola in 1821 (after two expeditions to Pensacola by Andrew Jackson), the government began investing in improvements to make Pensacola harbor a naval base from which to enforce the Monroe Doctrine, which had been

declared in 1823. By this time, the town had some 4,000 citizens and the port was active shipping the two most important local products—bricks and cotton (Cole and Weddell 1952).

However, because it lacked significant rivers, trade through Pensacola fell far behind that of competing cities such as New Orleans and Mobile (Bowden et al. 1989).

In 1824, Pensacola (with a population of about 1400) was incorporated as a city. The previous year the Florida legislature petitioned Congress to invest in fortifications and a naval station. It was successful, and President John Quincy Adams signed legislation authorizing a Gulf naval yard in 1825 (Pearce 1980) . This began Pensacola's long-standing association with the Navy and also led to economic prosperity in the 1830s, spurred by the government's projects and military presence (the West India squadron was stationed in Pensacola) and the growing demand for timber, which also led to plans for the first railroad serving the port (but the Panic of 1837 scuttled the railroad). In subsequent years the naval facility at Pensacola was important in combating the slave trade and piracy in the Caribbean, and the U.S. fleet stationed there played an important role in blockading Mexico during the Mexican war, but the naval yard itself saw little business.

At the start of the Civil War, Pensacola was the largest city in Florida and had significant naval facilities, including the "million dollar" Navy Yard (Bowden et al. 1989). Rail access was finally provided by 1860, but it was destroyed during the war, along with the rest of the city. Union troops recaptured the Navy Yard after retreating Confederate troops had burned the city and destroyed the facility, but it was quickly reconstructed and Pensacola served as base for outfitting the attack by Admiral Faragut on Mobile Bay. However, evacuations of the town by both Confederate and Union forces in 1862 and 1863 resulted in Pensacola being "...a veritable ghost town" (Tebeau 1971). After the war, the naval yard at Pensacola was rehabilitated and named as the headquarters of the West Gulf Squadron, but it saw little use over the coming decades, in spite of efforts by local leaders to spur Congress and the Navy to improve and use the facility (Pearce 1980). It was finally abandoned in 1911 following yet another hurricane and the outbreak of yellow fever.

However, after the war, Pensacolans returned to the city, "...hoping port shippers and the newly organized workingman's association of stevedores will bring a forest of sailing ships into Pensacola's harbor" (Bowden et al. 1989). Their hopes were realized, as during the latter half of the nineteenth century the city and port flourished as a center for the finishing and export of lumber to western Europe (Pensacola was known as the "Yellow Pine Capital of the World") and as a fishing port, as Yankee fisherman worked the Gulf for red snapper. According to Appleyard (1976), "...Pensacola's whole lifestyle was built around the production of lumber...and the city's ability to export it." During this period, the waterfront developed adjacent to the downtown and became an integral part of the city's economic base. In 1880, Pensacola had a population of 6,845, which, in spite of yellow fever epidemics at the turn of the century, increased to 17,747 in 1910 (which ranked it as the number two city in Florida) (Tebeau 1971).

By 1882, the port had a draft of 22 feet and shipped something less than one million tons of timber, red snapper (commercial shipments of fish began in 1872), and other products (Cole and Weddell 1952). It gained permanent rail service in 1882, when a line to Jacksonville was completed by the Pensacola and Atlantic Railroad (later the L&N Railroad). The railroad used the port as a coaling station and also invested heavily in docks, a warehouse, and grain elevator. In fact, by 1885, "...there were 16 wharves along a three mile strip in Pensacola" (Alexander et al. 1979). Thereafter until turn of the century the port did a gradually increasing business in the export of lumber and other goods (Appleyard 1976; Wooley 1906), and experienced brief booms during the Spanish American War and in anticipation of trade through the Panama Canal to the Pacific. After the war, however, it went into decline as its port facilities were eclipsed by those in Jacksonville, Mobile, and New Orleans and as the timber stands that fed the lumber industry were exhausted. This despite the exhortations of local boosters such as Frank L. Mayes, editor of *The Daily News*, who exclaimed, "Pensacola's Watchwords, Boost, Boom and Build—That's all." (cited in Bowden et al. 1989). Mayes called for boosting Pensacola as the best Gulf Coast port and natural terminus of northern railways.

The port and timber shipping at the turn of the century helped build many Pensacola residents' image of the city. Writing about his fifty years in Pensacola, Don McLellan (1945) wrote that his initial reason for coming to the city was the port:

> One of the chief points of my attraction was the great collection of ships in the harbor. There must have been 350 vessels at anchor or moored to the dozen or more docks, to either load cargo or discharge ballast. All of them were sailing vessels, and represented almost all of the North Europe countries...

He went on to observe the decline in business at the port, but its legacy lived on through institutions such as the waterfront saloons, Norwegian Seamen's Church, and in local lore.

The Port and Pensacola in the Twentieth Century

By the start of World War I, Pensacola had again drifted into "..nature-endowed Florida isolation" (Bowden et al. 1989); but, in it woke up in 1914, when the federal government established the U.S. Naval Aeronautical Station at the old Navy Yard in Pensacola. This facility grew over the years so that it became a mainstay of the local economy. The navy, however, has never used the port for ship building or maintenance, and the air station has not resulted in much in the way of port-using spin-off industries. The Port of Pensacola, itself, benefited for a time from docking of an aircraft carrier at port facilities, but the Navy subsequently built its own facilities on the harbor, which it also uses for shipping military supplies and equipment.

Between the world wars, the harbor was dredged from 22 feet to 30 feet, and the St. Louis-San Francisco Railway (Frisco system) provided a second rail service to the port, which opened up markets to the west. However, a devastating hurricane in 1926 destroyed most of the 16 wharves, which were not immediately replaced as the economy went into decline with

the Great Depression. The port languished (one observer noted "the Port of Pensacola became a shadow" (Appleton 1976) until the start of World War II, when it began to be used to ship oil and coal.

As the port declined, another business began to prosper, built around another mode of transportation. Cole and Weddell (1952) wrote:

> Meanwhile development of the coastal area here as a summer resort seems certain to lead to eventual economic prosperity. It began with the advent of the automobile, which led to a road paving program in 1921 and bridges across Pensacola bay and Santa Rosa sound in 1932. In 1937 a municipal advertising authority was created to promote the city's resort and industrial attractions....

In addition to tourists, the 1920s saw a speculative land boom throughout Florida, promoting the state as the place for a winter home (Gannon 1996). Also, some new industry began to be attracted to the Pensacola area as well, including a large paper mill and a plant of the Chemstrand Corporation. Thus, from the 1920s Pensacola saw itself as both a prospective major industrial center *and* as a tourist paradise. As newspaper editor John Perry wrote in the 1920s, Pensacola would be "...a future port and manufacturing center of consequence with the image of a resort metropolis" (Bowden et al. 1989).

With the advent of World War II, the Pensacola Shipyard and Engineering Company expanded to employ 7,000 workers by early 1942, and the government spent $55 million expanding the Naval Air Station and its auxiliary fields. (Gannon 1996). In order to sustain the prosperity brought about by the war, the city established a port authority in 1945. In 1954 the authority built a 6400 square foot warehouse and bulk material conveyor to meet the needs of the nitrate trade from Chile (Alexander et al. 1979). Later in the 1950s, the authority built additional warehouse space and purchased land adjacent to its docks from the Frisco Railroad. But, disaster struck once again in 1955, when a fire destroyed the only coal tipple at the port, which ended coal shipments, since it was never replaced. Another fire in 1958 destroyed several additional warehouses and the bulk conveyor system.

A feasibility study was conducted in 1960 to determine how the port should rebuild from the fires. The report noted that the port was obsolete:

> Its port facilities, however, are in no way comparable to its competing ports. As far as general cargo is concerned, they consisted, at best, of three old piers, two built by the L & N and one by the predecessor of the Frisco in the days when Pensacola was a leading lumber port. (Coverdale and Colepitts 1960)

Although exports through the port were only 150,000 tons, business was increasing and Coverdale and Colepitts recommended that four new berths and two warehouses be constructed. But then a disaster of another sort occurred with the Cuban Revolution and subsequent cessation of U.S. trade with Cuba, since a large portion (over 70 percent in 1954) of the port's exports were to Cuba (Florida Development Commission 1956). As a result of

the loss of business, the port was unable to raise the capital needed, only two berths and one warehouse were actually constructed.

The port's business expanded in the 1970s with the export of rice (Appleton 1976), which led many shippers to complain about delays due to limited dock space. Plans were formulated to expand, but again financing was problematic (Alexander et al. 1979). To overcome this constraint and make it possible to sell bonds for the needed improvements, the Port Authority was integrated into the city government as a division of the Transportation Department (Harris 1969). This strategy was successful, and the city was able to add two berths and a large warehouse, a new fuel oil terminal, barge terminal, and a liquid sulfur transfer facility. These improvements helped the port by the mid-1970s to increase the tonnage exported to over 1 million tons (John Appleyard Agency 1976). Over the following two decades, however, for a variety of reasons business at the port stagnated, as noted in Part II of this report.

Blanchard (1964) observed that Pensacola was said to have the largest red snapper fishing fleet in the world, but that industry has since declined. In 1975, another dimension to the fishing industry was added when Vietnamese fishermen and shrimpers began settling in Pensacola, where they are reported to have "...applied energetic ethnic entrepreneurship to a sleepy Gulf Coast industry" (Gannon 1996).

The 1970s also saw interest in oil expand in Pensacola. The development of the oil field in neighboring Santa Rosa County, according to Appleton (1976), led many Pensacolans to ask hopefully, "HOW ARE THEY GOING TO GET THE OIL AND ITS BY-PRODUCTS OUT?" (caps in original). One alternative evidently was a pipeline to the Pensacola port and out via tankers. Also, during the 1970s oil imports began as a tank farm was built on Bayou Chico, importing over 300,000 tons in 1974, and more storage tanks were built on leased land in the port, but only "after stormy debate with historical and environmental interests" (Appleton 1976).

The historic character of the port and its vicinity was recognized by many citizens, who in 1967 petitioned the legislature to create the Pensacola Historic District and Historic Pensacola Preservation Board. In the 1970s, the city began efforts to revitalize the downtown area adjacent to the port, including the Pitt Slip Marina, 6-story Harborview Office Building, and Baylin Street Slip (Bowden et al. 1989). As noted in Part II of this report, some observers note that the historic and business character of the area adjacent to the port created severe constraints on expansion of the port to respond to the container revolution.

While the Port of Pensacola's business fluctuated up and down during the post-war years, activities associated with the Naval Air Station expanded steadily. In 1965, Chevalier Field became a heliport for West Florida's "...largest industry, the Naval Air Rework Facility... (which by the 1980s)...employs thirty-six hundred civilian technicians in aircraft repair" (Bowden et al. 1989). The Naval Supply Center, established in 1985, "...serves as a vital home porting pipeline as the ship-supply distribution center for naval facilities along the Gulf Coast and throughout the Southeast" (Bowden et al. 1989). In addition, Pensacola became a

retirement center, as former Navy personnel returned to the area for the retirement years (Hutchinson 1961).

Pensacola and the rest of the Florida Panhandle long has been viewed as a "stepchild" in Florida, because the region has lagged far behind the rest of the state in economic growth. Scott (1968) termed it a "backwater area." After a century-long slide, by 1990 Pensacola had slipped from its place as the largest city in Florida in the mid-nineteenth century to tenth place among cities in the state. While the port and industrial development were once viewed as a way of reversing this situation, now tourism seems to be viewed as the best hope for development. As Bowden et al. (1989) have observed, Pensacola's "Ambition...(is) to be a national tourist-destination city!... Saving and preserving its seacoast gifts of nature and historical landmarks, Pensacola looks beyond its substantial U.S. Navy economy." Industrial development and the port are not mentioned as keys to the area's future economic prosperity.

Panama City

The first white settlement on St. Andrews Bay occurred in 1717, when the French, who sacked Pensacola in 1719, erected a fort at what is now Mexico Beach (but the Spanish occupied the site a year later). In contrast with Pensacola, however, Panama City's roots do not lie in the contest between England, France, Spain, and the United States for West Florida. Rather it is the product of real estate speculation.

Founding of the City and Its Early Years

In 1887, the St. Andrew's Railroad, Land and Mining Company platted the land where the Panama City sits today into small lots, many only 25-feet wide, which were sold for $2.00 each. Some 300,000 deeds were recorded! Because the lots were virtually useless, people who came in 1888 (most by boat via Pensacola) to build in the new city (then called New St. Andrew) were forced to homestead other property or settle in the adjacent Town of St. Andrew, which itself had been founded just three years earlier in 1885.

About 1900, when what is now Bay County (it was not formally organized as a county until 1913) had a population of less than 2,000 (Drummond 1928), two of the men who had emigrated to the area in 1888 bought up adjacent homesteads and platted another town site, initially named Harrison. The town was renamed Panama City in 1907. The town's founders intended to bring a railroad to the city and establish a port which could take advantage of the soon-to-be-opened Panama Canal. The railroad company received 25 percent of the stock in the development company plus beach-front property and was to build, maintain, and operate terminal docks. With ice plants constructed by the railroad, the city attracted fishermen from Massachusetts, and a thriving fishing industry developed at the new port (fishing was the mainstay of the local economy until 1930) (Morgan 1957). Several hotels were built near the bay, and stores moved up Harrison Avenue from the waterfront. However, shipping through the port failed to meet expectations, possibly because the channel into St. Andrews Bay was not completed until 1914 (Drummond 1928).

Instead, developers began to turn their attention, once again, to real estate speculation. As Womack (no date) notes,

> Promoters envisioned all routes leading to Panama City. They were convinced, because of its location, that Panama City would become the Gulf's leading port and a direct link to the Panama Canal. But the advertising soon changed, and developers concentrated on attracting tourists to the beaches.

During the 1920s, Panama City shared in the Florida real estate boom, and the population increased to over 7,000 (Drummond 1928). Buildings and hotels mushroomed. To further spur economic growth, in 1926 the Florida legislature approved consolidation of two adjacent towns, Millville (settled by the German-American Lumber Company in 1901) and St. Andrew, into Panama City. In 1930, the International Paper Company built a mill on St. Andrews Bay (which as late as 1970s remained the largest industrial establishment in the county), and the Corps of Engineers, in 1933, began construction of New Pass to provide a deeper channel from the Gulf into St. Andrews Bay and to the Port of Panama City. The natural depth of the entrance to St. Andrews Bay was between twelve and eighteen feet, which put it at a disadvantage in comparison with Pensacola Bay (Morgan 1957). The new channels and related port facilities led the Chamber of Commerce of Panama City (1935) to claim in a promotional brochure, "Panama City is destined to be one of the largest cities in the State, and in two years it has, as a port, become one of the largest and mostly widely discussed ports in the country."

But, with the rest of the nation, the economy gradually slid into the Depression. To provide a source of income during the Depression, the WPA promoted the shrimp industry on St. Andrews Bay along with exploitation of the area's abundant oyster beds (Gannon 1996). This industry grew steadily (and, along with Pensacola, experienced an influx of Vietnamese fishermen and shrimpers in the mid-1970s).

World War II and Post-War Years

Panama City's fortunes took a turn for the better with the onset of World War II. At the start of the war, "Bay County languished in poverty, an isolated wedge supporting 20,000 residents along Florida's Big Bend. The county population more than doubled by 1945" (Gannon 1996). Womack (1984) observed, "World War II changed the Panama City-Bay County area forever by introducing thousands of military personnel and shipyard workers to the "World's Most Beautiful Beaches." The Army established a gunnery school in Bay County (which soon was named Tyndall Field), the Navy established a Naval Section Base, and, at Wainwright Shipyard, 102 liberty ships and 6 tankers were built during the war. (Womack, 1984).

After the war, Tyndall Field continued as an active Air Force installation, and the Navy leased, and then in 1965 sold, the shipyard to the Panama City Port Authority, which converted it into Port Panama City (Spiva 1981). In its early years the port relied heavily on the import of petroleum products for business (90 percent according to Morgan 1957).

Morgan went on to note: "The port is predominantly importing/receiving petroleum products from Louisiana and Texas, nitrogenous fertilizer from mainly Chile, and industrial chemicals from mainly Germany...." He complained of poor port facilities ("...the same piers, wharves and docks which comprise the main facilities for handling waterborne commerce in 1956 are the ones which were used in 1941"). This problem was corrected in the mid-1960s after the city purchased the port site. Reflective of its focus on tourism (and in contrast to Pensacola), port facilities for large ships were never developed at the site of the original port adjacent to the downtown central business district at the foot of Harrison Avenue. Instead, as noted above, the city developed municipal port facilities at the site of the old Wainwright shipyard, which was more suited to industrial development. Instead, the waterfront site of the original port has been used for small boat activities centered on Panama City Marina (Womack 1994). Blanchard (1964), in fact, notes that this "...once sleeping village...(is) now (a) well-known sport-fishing center" (Blanchard 1964).

In the 1980s, the Port of Panama City (St. Andrews Harbor) hosted facilities that supported OCS development in the Gulf of Mexico. Risotto and Collins (1986) state that activity had declined by 1984, but two drilling mud companies—Barold and Imco—were still maintaining a presence in the port. They also noted that Eastern Marine Inc. was planning to develop a supply base at the Bay Harbor Shipyard.

According to one report (Hutchinson 1972), factors contributing to the growth and development of Panama City, have included:

- The manufacturing and shipment of lumber and naval stores, succeeded by the building of a paper mill at Millville with a capacity of 2,000 tons of paper daily.
- The building and operation of a large shipyard.
- The installation of Tyndall Air Force Base.
- The improving of the A & St. A.B. Railroad making the line a first class road (the first in the United States to be operated by diesel power and the first in freight tonnage per mile).
- The co-operation (sic) of progressive and public-spirited businessmen in civic affairs of the town.

However, a number of factors have also stifled development. Those mentioned by Scott (1968) include: geographic isolation, scarcity of mineral deposits, scarcity of high quality agricultural land, lack of skilled labor, lack of cultural amenities, scarcity of local capital for investment, and the conservative outlook and negative attitudes toward industry of local political leaders. However, Scott (1968) observed that "Port-related industry shows perhaps the greatest potential for future expansion" (the main problem being finding industries which would deem it advantageous to locate along the coast of the central Florida Panhandle).

As is evident from the above narrative, the port facilities in Panama City have attracted much less attention than those of Pensacola. The port, which is of relatively recent vintage, is much less intimately involved in the history and identity of the city, and it has not had to

contend with the conflicting interests faced by Pensacola. As a result, while Pensacola's port has gradually declined in business and importance, the Port of Panama City has gradually gained prominence. In fact, the Port of Panama City now ranks somewhat higher than Pensacola in the dollar value of both imports and exports.

KEY STAKEHOLDERS

The literature consulted was neither current nor detailed enough to provide information on the identity of stakeholders who will be affected by the use of the ports as OCS service or support bases. The literature does provide leads, however, on the general types of stakeholders that are likely to be affected in either one or both ports and some (though likely dated) information on the identity of specific stakeholders. That information is provided in this section.

Harbor Users (Other Than Port Users)

Pensacola Bay (and adjoining water bodies):
- American Cyanamid Company
- Armstrong Cork Company
- Chemstrand Corporation
- Barge lines
- Commercial and sports fishing interests
- Escambia Chemical Corporation
- Monsanto Chemical
- Oil company terminals
- Warren Petroleum Corporation, Philips Petroleum Company, LaGloria Oil and Gas Company, Gulf Oil Company, Chevron Oil Company
- Runyan Machine & Boiler Works Shipyard
- St. Regis Paper Company
- Tenneco Chemicals
- U.S. Naval Air Station on Pensacola Bay
- Weis-Fricker Mahogany Company Conveyor

St. Andrews Bay:
- Barge lines
- Bay Harbor Shipyard
- Commercial and sports fishing interests
- International Paper Company
- Oil company terminals
- Tyndall Air Force Base

Port Agencies/Related Establishments

- Bar and pilot services
- Chambers of Commerce
- City of Panama City
- Mayor and city council

City manager
Planning commission
City of Pensacola
Mayor and city council
City manager
Planning commission
Historic District Commission
County governments
Pensacola:
    Escambia County (elected officials, manager, planning commission)
    Santa Rosa County (elected officials, manager, planning commission)
Panama City
    Bay County (elected officials, manager, planning commission)
    Gulf County (elected officials, manager, planning commission)
    Walton County (elected officials, manager, planning commission)
Export packing and crating companies
Freight forwarders
General warehouses
Port of Pensacola, City of Pensacola Department of Transportation
    Pensacola Port Advisory Committee
Panama City Port Authority
Railroads
Burlington Northern and CSX (Pensacola)
Atlanta and St. Andrews Bay Railway (Panama City)
Ship chandlers
Ship repair companies
Steamship lines and agents
Stevedore companies
Tenants of port-owned facilities/port-owned land
    (e.g., Berg Steel Pipe Company in Panama City Trucking companies

Federal Agencies

Corps of Engineers, U.S. Army
U.S. Bureau of Customs
U.S. Coast Guard, Department of Commerce
U.S. Department of Agriculture
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Immigration and Naturalization Service
U.S. Maritime Administration

State and Regional Agencies

Department of Community Affairs
Department of Environmental Regulation (administers state Coastal Zone Management Program)
Department of Natural Resources
Environmental Policy Unit, Office of Planning and Budgeting, Executive Office of the Governor
Florida Seaport Transportation and Economic Development Council
West Florida Regional Planning Council

IMPACTS OF OCS DEVELOPMENT ON PORTS

Literature that has examined the impacts of OCS development on port facilities was consulted to determine whether the ports of Pensacola and Panama City were likely to experience any positive or suffer adverse effects from their use as on-shore service or support bases.

A variety of sources describe the likely onshore port facilities that are required to support OCS exploration and development (American Society of Planning Officials no date; Brower et al. 1981; Clark and Terrell 1978; Council on Environmental Quality 1974; New York State Department of Environmental Conservation 1977; New England River Basins Commission 1978; Research and Planning Consultants 1977; Schneider 1977).

Brower et al. (1981) state that "Existing ports are not always able to readily accommodate OCS service facilities," but they provide no evidence in support of the assertion. In fact, in the research conducted for the present report, very little was found on the impacts of existing OCS development on ports and port facilities. This suggests that such impacts have been minimal, since they apparently have attracted little attention.

The Council on Environmental Quality (Gillman 1977) examined the effects of offshore oil development on port communities in Louisiana and Scotland. In Louisiana, the CEQ study looked at Morgan City, where it found that the town gradually expanded to serve as an offshore oil center. Although there were potential conflicts with deep-water shrimp boats and facilities, since the shrimp fleet had relocated there from other southern ports in the 1930s, no such conflicts are noted.

In Scotland, CEQ (Gillman 1977) examined the two ports most affected by North Sea oil, Aberdeen and Peterhead, both of which were old fishing ports. The study reported adverse effects on housing and problems of job competition, since the offshore work paid more, but found little effect on the fishing industries in the ports ("Fishing is surviving. Aberdeen and Peterhead are still first and second among Scotland's fishing ports...oil has not drawn people away from fishing as an occupation.... Fishing boats and oil rig work boats have been able to share the harbors of Aberdeen and Peterhead too, though overcrowding was a problem until dock space was enlarged.")

The Port O'Connor, Texas was studied for a report by Research and Planning Consultants, Inc. (1977). OCS activity had resulted in some development in the port—helicopter pads, crew boat and service docks, and three mud companies—but, "The OCS activity has apparently not conflicted with commercial fishing activity" (Research and Planning Consultants 1977).

Thus, it appears that to date ports have been able to accommodate OCS-related development with little notable disruption of existing facilities and operations.

OCS DEVELOPMENT AND THE PORTS OF PENSACOLA AND PANAMA CITY

Havran et al. (1982) state that both Pensacola and Panama City have served as onshore service and supply bases for previous exploratory facilities in the northeastern Gulf. However, the literature reviewed in previous sections of this report made virtually no mention of this use of these ports. As reported below, there is some indication that local economic leaders might favor increased port activity in support of OCS development, but a report in the mid-1980s by the State of Florida, which examined possible sites for onshore support facilities, found little interest in accommodating OCS support activities by either the Port of Pensacola or Panama City Port Authority, in both cases because they would have had to develop new facilities to accommodate the additional business. It is possible, however, that downturns in port business in recent years, particularly in Pensacola, may produce a different attitude toward OCS support bases.

Pensacola

As early as 1964, economic development leaders in Pensacola viewed OCS-related development as a potential stimulus to the local economy. In that year, John Hamilton, Industrial Development Manager of the Pensacola Chamber of Commerce, is quoted as saying that Pensacola "has a promising future in the petrochemicals field because of overcrowding elsewhere along the Gulf Coast" (Shepherd 1964).

However, the State of Florida's evaluation of OCS development in the mid-1980s had this to say about Pensacola's potential as an on-shore service base:

> The Port of Pensacola (Escambia County) is an industrial area that has all the facilities to meet the requirements for an onshore service base. However, using this port to support OCS activities would cause two (2) conflicts: the Port of Pensacola is actively using all land available, and accommodating OCS activities would require the City of Pensacola to purchase additional expensive waterfront property. Port of Pensacola officials have stated that they prefer to use all available facilities for the handling of rapid turnover commodities, which produce more revenue than a long-term lease of space to an oil company. According to port officials, as long as needed, suitable waterfront facilities can be found elsewhere in the Pensacola Bay vicinity, the Port of Pensacola will not consider leasing space to an oil company. (State of Florida, Department of Community Affairs 1984)

Panama City

The State of Florida's evaluation of OCS development in the mid-1980s had this to say about Panama City's potential as an on-shore service base:

> The Port of Panama City has one advantage in that oil companies have previously leased space for a service base...Again, officials at the Panama City Port Authority have taken the position that as long as suitable waterfront sites can be found near Panama City, the port will not serve as an onshore service base. (emphasis in original) (State of Florida, Department of Community Affairs 1984)

However, the state did note that on Watson Bayou in Panama City the site of the petroleum products receiving terminal would be suitable. In the words of the state report:

> All requirements for an onshore service base could be met in Watson Bayou, with minimum capital investment. There is a company that builds and operates crew boats in the area. Boat repairs, industrial parts, welding services, or even steel fabrication services would be readily available in this area....This site is about (9) miles from the Gulf of Mexico. (State of Florida, Department of Community Affairs 1984)

CHAPTER 7
SOCIOECONOMIC BASELINE OF THE FLORIDA PANHANDLE

This study will consider the demographic and economic baseline and projections for the five-county (Okaloosa, Escambia, Santa Rosa, Bay and Walton) study area over a fifty period. For the period 1995-2045 the major socioeconomic indicators addressed include population, output, employment, and local government finance.

Population

Population of the study area is expected to grow steadily throughout the period 1995-2045 (Table 7.1), with all counties projected to share in this growth. Over the period 1995-2005, the population of the 5-county area is projected to increase about 18 percent, which is somewhat less than the growth rates recorded during the 1980s and 1990s.

Population growth in the study area is expected to result from a combination of natural increase (i.e., excess of births over deaths) and net inmigration. During the period 2005-2045, the area is projected to have annual net inmigration of 4,600 to 6,500 (Table 7.2). All five counties are expected to experience net inmigration (i.e., more people move into the area than move away).

While the area's population is concentrated around the three major metropolitan centers (Pensacola, Panama City, and Fort Walton Beach-Destin), a substantial proportion of area residents reside outside the incorporated cities. In 1997, about two-thirds of the study area population lived in unincorporated areas (Table 7.3). This percentage ranged from 41 percent in Bay County to 86 percent in Santa Rosa County.

Regarding the educational attainment of study area residents (Table 7.4), the percentage of area residents (age 25 and older) in 1990 who were college graduates ranged from 21 percent in Okaloosa County to 12 percent in Walton County. On the other hand, the percentage who had not completed high school ranged from 16 percent in Okaloosa County to 33.5 percent in Walton County.

Table 7.1

Population in the Florida Panhandle
Baseline Scenario

Area	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Fort Walton Beach	196,122	216,005	235,159	254,195	274,218	292,374	311,399	329,090	343,428	355,713	367,255
Okaloosa County	162,707	178,803	194,199	209,523	225,720	240,693	256,235	270,726	282,836	293,458	303,489
Walton County	33,415	37,202	40,959	44,672	48,498	51,681	55,165	58,364	60,592	62,255	63,766
Panama City	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Bay County	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Pensacola	377,822	410,086	441,204	469,488	502,482	526,239	547,200	567,029	584,973	601,966	618,202
Escambia County	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Santa Rosa County	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Total	713,117	776,368	838,550	898,258	964,236	1,016,954	1,068,653	1,114,957	1,155,434	1,192,217	1,227,456

Sources: RPC; Florida Bureau of Business and Economic Research, personal communication.

Table 7.2

Annual Migration in the Florida Panhandle
Baseline Scenario

Area	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Fort Walton Beach	0	1,677	1,741	1,842	1,914	1,710	1,881	1,938	1,665	1,567	1,628
Okaloosa County	NA	1,174	1,219	1,290	1,340	1,197	1,317	1,356	1,165	1,097	1,140
Walton County	NA	503	522	553	574	513	564	581	499	470	488
Panama City	0	638	1,075	1,233	1,250	944	1,142	825	942	958	1,035
Bay County	NA	638	1,075	1,233	1,250	944	1,142	825	942	958	1,035
Pensacola	0	0	2,760	2,461	3,311	2,033	1,761	2,077	2,200	2,454	2,636
Escambia County	NA	NA	1,518	1,108	1,324	813	704	831	880	982	1,054
Santa Rosa County	NA	NA	1,242	1,354	1,987	1,220	1,056	1,246	1,320	1,472	1,581
Total	0	2,316	5,576	5,536	6,475	4,688		4,840	4,807	4,979	5,299

Source: RPC.

Table 7.3

Population of Florida Panhandle Living in Unincorporated Areas in 1997

County	Unincorporated	Total	Unincorporated as % of Total
Bay	57,925	144,584	40.75%
Escambia	228,576	291,135	78.51%
Okaloosa	100,768	171,038	58.92%
Santa Rosa	88,014	102,338	86.00%
Walton	28,895	36,094	80.05%
Total	504,178	745,189	67.66%

Table 7.4

Educational Attainment for Residents of the Florida Panhandle Ages 25 and Older in 1990 (percentage of total)

County	9th Grade	9th to 12th grade, No Diploma	High School Graduate	Some College, No Degree	Associate Degree	Bachelor's Degree	Graduate or Professional Degree	Total
Bay	9.1%	16.2%	30.6%	21.6%	6.8%	10.4%	5.3%	82,448
Escambia	8.0%	15.8%	28.5%	21.7%	7.8%	12.2%	5.9%	165,094
Okaloosa	5.7%	10.5%	28.8%	26.3%	7.7%	13.4%	7.6%	90,946
Santa Rosa	7.7%	13.8%	28.8%	23.4%	7.6%	13.0%	5.6%	51,922
Walton	13.7%	19.8%	31.1%	17.3%	6.2%	7.4%	4.5%	19,510

Source: U.S. Bureau of the Census. 1990 Census.

Output

Output by Industry

Projections of baseline output for the Fort Walton Beach, Panama City, and Pensacola metropolitan areas are summarized in Table 7.5.1 - 7.5.3 respectively. The dominance of tourism and federal military activity in the Fort Walton Beach area is evident in Table 7.5.1. Hotels, lodging places, and rentals generated a total output of $840 million in 1995 while the services sectors accounted for $1,022 million (i.e., $1.0 billion) and federal government-military generated another $458 million. Thus, these three sector had a combined output of about $2,321,000,000 or 38 percent of the total output for all sectors. In contrast, commercial fishing had a total output of $3.7 million in 1995, or less than 0.1 percent of total output for the area.

In the Panama City area, the military is relatively less important, accounting for 3.5 percent of total output, compared to 7.6 percent for Fort Walton Beach (Table 7.5.2). Hotels, lodging places, and rentals accounted for $611 million in 1995, or 12.6 percent of total output, compared to 13.9 percent for Fort Walton Beach. The combination of hotels, lodging places, and rentals and the services sectors accounted for 26.9 percent of output in Panama City, compared with 30.9 percent in Fort Walton Beach, suggesting that tourism is also somewhat less important to the economy of this area.

The Pensacola area has a substantially larger total output and a more diversified economy that the other two areas (Table 7.5.3). In 1995, total output for the Pensacola area was $14.5 billion, compared to $6.0 billion for Fort Walton Beach and $4.9 billion for Panama City. The manufacturing sectors, primarily nondurable manufacturing, were relatively important in this area, accounting for 16 percent of total output in 195, compared to about 11 percent of total output in the Panama City area and less than 10 percent in the Fort Walton Beach area. Military activity was relatively less important in this area, accounting for only 2.7 percent of total output in 1995.

All three areas are expected to experience substantial growth in (inflation-adjusted) output over the study period. During the period 1995-2005, total output is expected to increase 26 percent in the Fort Walton Beach area, 19 percent in the Pensacola area, and about 13 percent in the Panama City area. Most sectors in all three areas are expected to share in the general growth. Notable exceptions to this pattern are mining and maintenance and repair of oil and gas wells (both projected to be stable or declining in all three areas). In addition, federal military spending is projected to decline slightly in the Panama City area and to be essentially stable in the Fort Walton Beach area, while increasing slightly in the Pensacola area.

Table 7.5.1

Baseline Output by Major Non-Farm Industry for the Florida Panhandle Fort Walton Beach (in millions of 1994 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	60.02	66.24	74.90	77.87	83.62	83.56	83.47	86.52	89.66	92.91	96.26
Commercial Fishing	3.68	4.06	4.60	4.78	5.13	5.13	5.12	5.31	5.50	5.70	5.91
Mining	4.57	3.48	3.46	3.46	3.45	3.45	3.44	3.45	3.46	3.47	3.48
Construction	510.00	565.41	629.80	679.97	719.85	744.01	768.75	796.51	825.15	854.76	885.25
Maintenance and Repair Oil and Gas Wells	0.17	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Non-Durable Manufacturing	172.64	210.43	226.14	234.45	242.12	250.15	258.37	265.05	271.86	278.83	285.92
Durable Manufacturing	406.52	402.42	400.44	400.31	399.15	386.60	374.32	381.14	388.03	395.01	402.04
TCPU	308.76	355.72	388.22	410.93	432.50	443.42	454.48	469.20	484.33	499.91	515.88
Water Transportation	16.38	18.87	20.60	21.80	22.95	23.52	24.11	24.89	25.69	26.52	27.37
Air Transportation	27.81	32.04	34.97	37.01	38.95	39.94	40.94	42.26	43.62	45.03	46.46
Wholesale Trade	202.51	239.99	289.08	301.56	313.21	325.27	337.69	350.41	363.55	377.16	391.20
Retail Trade	417.57	483.91	534.80	580.01	611.77	629.74	648.03	671.15	694.99	719.63	744.99
Eating & Drinking	270.00	312.90	345.80	375.04	395.57	407.19	419.02	433.97	449.38	465.31	481.71
FIRE Excluding Real Estate Rentals	562.25	663.43	755.32	837.69	901.66	943.54	987.12	1,027.99	1,070.41	1,114.55	1,160.28
Hotels, Lodging Places, and Rentals	840.41	991.64	1,129.00	1,252.12	1,347.73	1,410.33	1,475.47	1,536.57	1,599.97	1,665.94	1,734.31
Services	1,022.29	1,206.24	1,373.32	1,523.09	1,639.39	1,715.54	1,794.77	1,869.09	1,946.22	2,026.46	2,109.62
Equipment Rental and Leasing	16.38	19.33	22.01	24.41	26.28	27.50	28.77	29.96	31.19	32.48	33.81
Amusement and Recreation Services, N.E.C.	33.02	38.96	44.36	49.20	52.95	55.41	57.97	60.37	62.87	65.46	68.14
Engineering, Architectural Services	55.50	65.48	74.56	82.69	89.00	93.13	97.44	101.47	105.66	110.01	114.53
Accounting, Auditing and Bookkeeping	19.03	22.45	25.56	28.35	30.51	31.93	33.40	34.78	36.22	37.71	39.26
Research, Development & Testing Services	73.03	86.17	98.11	108.81	117.12	122.56	128.22	133.53	139.04	144.77	150.71
Government	548.55	627.05	660.02	692.27	715.43	725.62	735.74	755.73	776.14	797.07	818.38
Federal Government - Military	458.07	462.00	459.72	459.58	458.25	457.92	457.46	458.58	459.62	460.64	461.57
Total	6,029.15	6,878.38	7,594.91	8,185.52	8,646.71	8,925.60	9,214.25	9,538.07	9,872.68	10,219.46	10,577.20

Source: RPC.

Table 7.5.2

Baseline Output by Major Non-Farm Industry for the Florida Panhandle
Panama City (in millions of 1994 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	13.29	12.95	13.99	15.10	16.15	16.55	17.10	17.34	17.91	18.49	19.10
Commercial Fishing	0.72	0.70	0.76	0.82	0.88	0.90	0.93	0.94	0.97	1.00	1.04
Mining	1.61	1.52	1.52	1.52	1.52	1.51	1.51	1.49	1.49	1.49	1.49
Construction	497.84	442.75	475.13	501.08	525.36	529.40	537.91	545.18	562.88	581.00	599.72
Maintenance and Repair Oil and Gas Wells	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Non-Durable Manufacturing	261.63	276.90	292.55	293.10	292.67	290.35	290.44	289.84	294.65	299.45	304.35
Durable Manufacturing	254.12	198.96	185.29	172.38	172.12	164.06	157.67	155.24	155.69	156.11	156.53
TCPU	326.32	371.15	405.07	429.02	439.96	442.18	448.10	452.08	464.60	477.36	490.47
Water Transportation	67.29	76.54	83.53	88.47	90.73	91.18	92.40	93.22	95.81	98.44	101.14
Air Transportation	21.54	24.50	26.74	28.32	29.05	29.19	29.58	29.85	30.67	31.52	32.38
Wholesale Trade	245.03	274.12	299.17	325.42	342.04	351.83	364.90	369.27	380.68	392.34	404.37
Retail Trade	358.66	358.61	392.91	425.28	445.71	454.20	466.70	473.41	489.19	505.36	522.08
Eating & Drinking	246.41	246.37	269.94	292.18	306.21	312.05	320.63	325.24	336.08	347.19	358.68
FIRE Excluding Real Estate Rentals	469.05	504.15	571.28	628.07	673.17	695.64	724.85	740.40	770.41	801.44	833.75
Hotels, Lodging Places, and Rentals	611.16	656.88	744.35	818.34	877.12	906.38	944.45	964.71	1,003.81	1,044.24	1,086.34
Services	695.18	747.19	846.69	930.85	997.71	1,031.00	1,074.30	1,097.35	1,141.82	1,187.81	1,235.70
Equipment Rental and Leasing	15.56	16.72	18.95	20.83	22.33	23.07	24.04	24.56	25.55	26.58	27.65
Amusement and Recreation Services, N.E.C.	50.77	54.57	61.84	67.98	72.87	75.30	78.46	80.14	83.39	86.75	90.25
Engineering, Architectural Services	42.34	45.51	51.57	56.70	60.77	62.80	65.43	66.84	69.55	72.35	75.26
Accounting, Auditing and Bookkeeping	23.94	25.73	29.16	32.06	34.36	35.51	37.00	37.79	39.33	40.91	42.56
Research, Development & Testing Services	26.83	28.83	32.67	35.92	38.50	39.78	41.46	42.34	44.06	45.84	47.68
Government	460.39	483.61	515.21	541.62	558.97	559.91	565.52	570.45	586.17	602.17	618.62
Federal Government - Military	168.70	163.14	162.78	163.09	162.85	161.56	161.61	159.11	159.57	160.00	160.43
Total	4,858.46	5,011.47	5,481.19	5,868.23	6,161.12	6,274.41	6,445.07	6,536.87	6,754.34	6,977.92	7,209.65

Source: RPC.

Table 7.5.3

Baseline Output by Major Non-Farm Industry for the Florida Panhandle Pensacola (in millions of 1994 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	155.60	184.16	198.07	208.34	217.14	222.37	227.68	233.35	239.15	245.06	251.11
Commercial Fishing	2.92	3.45	3.71	3.91	4.07	4.17	4.27	4.38	4.48	4.60	4.71
Mining	18.05	17.39	17.23	17.22	17.50	17.50	17.50	17.54	17.58	17.62	17.66
Construction	1,489.70	1,641.45	1,757.60	1,875.82	1,980.24	2,022.28	2,064.77	2,130.82	2,198.83	2,268.81	2,340.79
Maintenance & Repair Oil and Gas Wells	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Non-Durable Manufacturing	1,779.63	1,875.19	1,755.84	1,678.29	1,628.93	1,549.39	1,473.43	1,463.80	1,454.12	1,444.39	1,434.58
Durable Manufacturing	581.09	663.75	672.48	671.99	683.29	683.28	683.12	692.23	701.40	710.64	719.93
TCPU	1,140.68	1,133.13	1,166.25	1,209.12	1,244.25	1,244.23	1,243.94	1,265.05	1,286.42	1,308.04	1,329.90
Water Transportation	107.02	106.31	109.42	113.44	116.74	116.73	116.71	118.69	120.69	122.72	124.77
Air Transportation	179.11	177.93	183.13	189.86	195.38	195.38	195.33	198.64	202.00	205.40	208.83
Wholesale Trade	748.19	931.83	986.33	1,048.80	1,104.98	1,117.73	1,130.39	1,161.00	1,192.35	1,224.43	1,257.26
Retail Trade	892.06	1,016.38	1,065.59	1,115.13	1,165.14	1,176.42	1,187.57	1,215.90	1,244.82	1,274.31	1,304.37
Eating & Drinking	450.71	513.52	538.39	563.42	588.68	594.39	600.02	614.33	628.94	643.84	659.03
FIRE Excluding Real Estate Rentals	1,324.12	1,563.09	1,704.24	1,827.06	1,952.09	2,001.81	2,052.40	2,117.58	2,184.68	2,253.72	2,324.72
Hotels, Lodging Places, and Rentals	800.07	944.46	1,029.74	1,103.95	1,179.50	1,209.54	1,240.11	1,279.50	1,320.04	1,361.75	1,404.65
Services	2,711.97	3,201.41	3,490.50	3,742.05	3,998.13	4,099.95	4,203.57	4,337.08	4,474.50	4,615.90	4,761.32
Equipment Rental and Leasing	55.46	65.47	71.38	76.52	81.76	83.84	85.96	88.69	91.50	94.39	97.37
Amusement &Recreation Services,	31.26	36.90	40.24	43.14	46.09	47.26	48.46	49.99	51.58	53.21	54.89
Engineering, Architectural Services	148.22	174.97	190.77	204.52	218.51	224.08	229.74	237.04	244.55	252.28	260.22
Accounting, Auditing and Bookkeeping	62.62	73.92	80.59	86.40	92.32	94.67	97.06	100.14	103.31	106.58	109.94
Research, Development & Testing Serv's	24.80	29.27	31.92	34.22	36.56	37.49	38.44	39.66	40.91	42.21	43.54
Government	1,362.61	1,672.24	1,711.43	1,743.09	1,789.12	1,783.50	1,777.52	1,807.70	1,838.26	1,869.17	1,900.41
Federal Government - Military	385.08	422.51	418.56	418.25	425.29	425.28	425.18	426.19	427.17	428.11	429.02
Total	14,451.24	16,449.00	17,223.67	17,974.80	18,765.98	18,951.55	19,143.43	19,599.57	20,067.56	20,547.44	21,039.27

Source: RPC.

Tourism

Projected expenditures by tourists in the three metropolitan areas are summarized in Tables 7.6.1 through 7.6.3. In 1995, tourist expenditures in the Fort Walton Beach area were estimated to total $481 million, while tourist spending in the Panama City area was estimated at $408 million and that in the Pensacola area at $248 million. Sectors receiving major tourist expenditures in each area included hotels and lodging places (about 40% of total expenditures), retail trade other than eating and drinking (about 30%), and eating and drinking establishments (20%).

Tourist spending is projected to increase substanstially in each of the three areas between 1995 and 2045. In the Fort Walton Beach area, tourist expenditures are projected to more than double over the 50-year study period (i.e., an increase of 103%). During the same period, tourist expenditures are projected to increase 75 percent in the Panama City area and 73 percent in the Pensacola area. While the rates of increase fluctuated somewhat over the 50-year period, tourist expenditures are projected to increase during each five-year increment of the study period in each of the three areas.

Table 7.6.1

Projected Expenditures by Tourists in the Fort Walton Beach Area (in millions of 1995 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Transportation , Communication, Utilities	9.2	10.8	12.3	13.6	14.6	15.2	15.9	16.6	17.2	17.9	18.6
Retail Trade Other than Eating & Drinking	148.9	175.4	199.4	220.8	237.3	248.0	259.0	269.3	280.0	291.1	302.6
Eating & Drinking	92.5	109.0	123.9	137.2	147.5	154.1	161.0	167.4	174.0	180.9	188.1
Hotels & Lodging Places	192.1	226.3	257.3	284.9	306.2	319.9	334.1	347.4	361.2	375.5	390.4
Amusement and Recreation Services, N.E.C.	38.3	45.1	51.3	56.8	61.1	63.8	66.7	69.3	72.1	74.9	77.9
Total	481.0	566.7	644.2	713.3	766.6	801.0	836.7	870.0	904.5	940.4	977.5

Source: RPC.

Table 7.6.2

Projected Expenditures by Tourists in the Panama City Area (in millions of 1995 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Transportation , Communication, Utilities	3.2	3.5	3.9	4.3	4.6	4.7	4.9	5.0	5.2	5.4	5.6
Retail Trade Other than Eating & Drinking	122.0	131.0	148.2	162.7	174.1	179.6	186.9	190.6	198.0	205.7	213.6
Eating & Drinking	80.5	86.4	97.7	107.3	114.8	118.5	123.2	125.7	130.6	135.6	140.9
Hotels & Lodging Places	161.7	173.6	196.4	215.5	230.7	238.0	247.6	252.5	262.4	272.5	283.1
Amusement and Recreation Services, N.E.C.	40.5	43.4	49.2	54.0	57.7	59.6	62.0	63.2	65.7	68.2	70.9
Total	408.0	437.8	495.3	543.7	581.9	600.4	624.6	637.1	661.9	687.5	714.1

Source: RPC.

Table 7.6.3

Projected Expenditures by Tourists in the Pensacola Area (in millions of 1995 dollars)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Transportation , Communication, Utilities	8.4	9.9	10.8	11.6	12.3	12.6	12.9	13.3	13.7	14.1	14.5
Retail Trade Other than Eating & Drinking	74.1	87.3	95.1	101.7	108.5	111.1	113.8	117.2	120.7	124.4	128.1
Eating & Drinking	53.2	62.6	68.2	73.0	77.9	79.7	81.6	84.1	86.6	89.2	91.9
Hotels & Lodging Places	87.1	102.7	111.8	119.6	127.6	130.7	133.8	137.8	141.9	146.2	150.6
Amusement and Recreation Services, N.E.C.	25.3	29.9	32.5	34.8	37.1	38.0	38.9	40.1	41.3	42.5	43.8
Total	248.1	292.4	318.3	340.7	363.5	372.1	381.0	392.5	404.3	416.4	428.9

Source: RPC.

Employment

Baseline employment by economic sector for the period 1995-2045 for the three areas within the Panhandle region is presented in Tables 7.7.1 through 7.7.3. In 1995, the services sector was the largest employer in each region, followed by government (other than military), federal government military, retail trade, eating and driking establishments, and construction. The order of the latter sectors varied somewhat from area to area.

Total employment is projected to increase substantially in each area, with Fort Walton Beach having the greatest percentage growth (66%), followed by Pensacola (49%), and Panama City (45%). Most of the individual sectors are projected to share in the overall growth, with the exception of mining and the maintenance and repair of oil and gas wells, which are stable or declining in all three regions, and federal military, which was projected as essentially stable during the study period. Service sector employment is projected to grow more rapidly than the area average in each of the three areas and is responsible for the largest number of new jobs created in each area. Retail trade, eating and drinking, and hotels, lodging places, and rentals are sectors projected to grow substantially in each region, and will be responsible for substantial job creation in each.

Table 7.7.1

Baseline Employment by Major Non-Farm Industry for the Florida Panhandle
Fort Walton Beach (in thousands of workers)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	1.265	1.394	1.574	1.634	1.752	1.748	1.743	1.804	1.867	1.931	1.998
Commercial Fishing	0.144	0.159	0.179	0.186	0.199	0.199	0.198	0.205	0.212	0.220	0.227
Mining	0.035	0.027	0.027	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026
Construction	6.619	7.327	8.149	8.784	9.285	9.582	9.885	10.227	10.578	10.941	11.314
Maintenance and Repair Oil and Gas Wells	0.015	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Non-Durable Manufacturing	1.686	2.052	2.201	2.279	2.349	2.424	2.499	2.560	2.622	2.685	2.749
Durable Manufacturing	2.740	2.708	2.690	2.685	2.674	2.585	2.499	2.541	2.583	2.626	2.668
TCPU	1.941	2.233	2.433	2.571	2.702	2.766	2.831	2.918	3.007	3.099	3.193
Water Transportation	0.080	0.092	0.101	0.106	0.112	0.114	0.117	0.121	0.124	0.128	0.132
Air Transportation	0.177	0.203	0.221	0.234	0.246	0.252	0.258	0.265	0.274	0.282	0.291
Wholesale Trade	2.260	2.674	3.216	3.349	3.474	3.602	3.733	3.868	4.007	4.151	4.299
Retail Trade	11.510	13.318	14.696	15.914	16.759	17.225	17.698	18.301	18.922	19.563	20.222
Eating & Drinking	6.855	7.931	8.752	9.477	9.980	10.258	10.539	10.899	11.268	11.650	12.042
FIRE Excluding Real Estate Rentals	2.038	2.401	2.730	3.023	3.249	3.394	3.545	3.687	3.833	3.985	4.142
Hotels, Lodging Places, and Rentals	5.716	6.734	7.654	8.476	9.109	9.518	9.942	10.338	10.748	11.174	11.614
Services	20.097	23.676	26.914	29.803	32.029	33.465	34.957	36.348	37.790	39.288	40.838
Equipment Rental and Leasing	0.212	0.250	0.284	0.314	0.338	0.353	0.369	0.384	0.399	0.415	0.431
Amusement and Recreation Services,	0.716	0.843	0.958	1.061	1.141	1.192	1.245	1.294	1.346	1.399	1.454
Engineering, Architectural Services	0.778	0.917	1.042	1.154	1.241	1.296	1.354	1.408	1.464	1.522	1.582
Accounting, Auditing and Bookkeeping	0.338	0.398	0.452	0.501	0.538	0.562	0.587	0.610	0.635	0.660	0.686
Research, Development & Testing Services	0.959	1.129	1.284	1.422	1.528	1.596	1.667	1.734	1.803	1.874	1.948
Government	14.630	16.697	17.548	18.377	18.962	19.203	19.441	19.938	20.445	20.964	21.492
Federal Government - Military	13.039	13.130	13.045	13.021	12.963	12.934	12.901	12.913	12.922	12.931	12.937
Total	93.848	106.305	116.162	124.410	130.667	134.305	138.048	142.400	146.886	151.524	156.295

Source: RPC.

Table 7.7.2

Baseline Employment by Major Non-Farm Industry for the Florida Panhandle
Panama City (in thousands of workers)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	0.50	0.48	0.52	0.56	0.60	0.61	0.63	0.64	0.66	0.68	0.70
Commercial Fishing	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Mining	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Construction	5.56	4.94	5.29	5.57	5.83	5.87	5.96	6.03	6.21	6.40	6.60
Maintenance and Repair Oil and Gas Wells	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Non-Durable Manufacturing	1.28	1.35	1.42	1.42	1.42	1.40	1.40	1.40	1.42	1.44	1.46
Durable Manufacturing	1.52	1.19	1.11	1.03	1.02	0.97	0.94	0.92	0.92	0.92	0.92
TCPU	1.91	2.17	2.36	2.50	2.56	2.57	2.60	2.62	2.69	2.76	2.83
Water Transportation	0.31	0.36	0.39	0.41	0.42	0.42	0.43	0.43	0.44	0.45	0.46
Air Transportation	0.15	0.18	0.19	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.23
Wholesale Trade	2.49	2.78	3.03	3.29	3.45	3.55	3.67	3.71	3.82	3.93	4.05
Retail Trade	9.67	9.65	10.56	11.41	11.94	12.15	12.46	12.62	13.03	13.44	13.86
Eating & Drinking	6.20	6.19	6.77	7.31	7.65	7.79	7.99	8.09	8.35	8.61	8.88
FIRE Excluding Real Estate Rentals	1.85	1.98	2.24	2.46	2.64	2.72	2.83	2.89	3.00	3.12	3.24
Hotels, Lodging Places, and Rentals	5.14	5.52	6.24	6.85	7.33	7.57	7.87	8.03	8.34	8.66	9.00
Services	13.14	14.10	15.95	17.51	18.74	19.33	20.11	20.51	21.31	22.14	22.99
Equipment Rental and Leasing	0.16	0.18	0.20	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29
Amusement and Recreation Services, N.E.C.	1.08	1.15	1.31	1.43	1.53	1.58	1.65	1.68	1.75	1.81	1.88
Engineering, Architectural Services	0.61	0.66	0.74	0.82	0.87	0.90	0.94	0.96	0.99	1.03	1.07
Accounting, Auditing and Bookkeeping	0.37	0.40	0.45	0.50	0.53	0.55	0.57	0.58	0.60	0.63	0.65
Research, Development & Testing Services	0.47	0.51	0.57	0.63	0.67	0.69	0.72	0.74	0.76	0.79	0.82
Government	11.60	12.16	12.94	13.58	13.99	13.99	14.11	14.21	14.58	14.96	15.34
Federal Government - Military	5.00	4.83	4.81	4.81	4.80	4.75	4.75	4.67	4.67	4.68	4.68
Total	69.06	70.81	77.15	82.58	86.51	87.93	90.15	91.25	94.09	97.01	100.03

Source: RPC.

Table 7.7.3

Baseline Employment by Major Non-Farm Industry for the Florida Panhandle
Pensacola (in thousands of workers)

Sector	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Agriculture	2.661	3.145	3.377	3.547	3.691	3.774	3.858	3.948	4.040	4.134	4.229
Commercial Fishing	0.135	0.159	0.171	0.179	0.187	0.191	0.195	0.200	0.204	0.209	0.214
Mining	0.322	0.310	0.307	0.306	0.311	0.310	0.309	0.310	0.310	0.310	0.310
Construction	17.462	19.211	20.539	21.886	23.069	23.522	23.979	24.709	25.458	26.228	27.019
Maintenance and Repair Oil and Gas Wells	0.039	0.038	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.038	0.038
Non-Durable Manufacturing	7.802	8.208	7.674	7.323	7.097	6.740	6.400	6.348	6.297	6.245	6.193
Durable Manufacturing	4.338	4.948	5.005	4.994	5.070	5.062	5.053	5.112	5.172	5.232	5.293
TCPU	5.869	5.821	5.982	6.192	6.362	6.353	6.341	6.439	6.538	6.637	6.738
Water Transportation	0.509	0.505	0.519	0.537	0.552	0.551	0.550	0.559	0.567	0.576	0.585
Air Transportation	1.166	1.156	1.188	1.230	1.264	1.262	1.260	1.279	1.299	1.318	1.338
Wholesale Trade	7.626	9.483	10.022	10.640	11.193	11.305	11.415	11.706	12.004	12.308	12.619
Retail Trade	23.426	26.650	27.897	29.149	30.409	30.656	30.899	31.587	32.289	33.003	33.730
Eating & Drinking	11.589	13.183	13.800	14.419	15.043	15.165	15.285	15.626	15.973	16.326	16.686
FIRE Excluding Real Estate Rentals	5.337	6.291	6.848	7.330	7.820	8.007	8.196	8.444	8.698	8.959	9.227
Hotels, Lodging Places, and Rentals	5.071	5.977	6.506	6.965	7.430	7.607	7.787	8.022	8.264	8.512	8.767
Services	53.877	63.501	69.128	73.995	78.937	80.822	82.737	85.234	87.800	90.435	93.141
Equipment Rental and Leasing	0.575	0.678	0.738	0.790	0.843	0.863	0.884	0.910	0.938	0.966	0.995
Amusement and Recreation Services, N.E.C.	0.789	0.930	1.013	1.084	1.156	1.184	1.212	1.248	1.286	1.325	1.364
Engineering, Architectural Services	2.151	2.535	2.759	2.954	3.151	3.226	3.303	3.402	3.505	3.610	3.718
Accounting, Auditing and Bookkeeping	1.068	1.259	1.371	1.467	1.565	1.603	1.641	1.690	1.741	1.793	1.847
Research, Development & Testing Services	0.545	0.643	0.700	0.749	0.799	0.818	0.838	0.863	0.889	0.916	0.943
Government	30.804	37.745	38.570	39.223	40.196	40.008	39.813	40.426	41.047	41.673	42.305
Federal Government - Military	10.010	10.966	10.846	10.822	10.987	10.969	10.950	10.959	10.967	10.975	10.981
Total	193.173	223.342	234.998	245.820	257.169	260.036	262.943	269.060	275.322	281.728	288.279

Source: RPC.

Local Government Finance

Local government units of special interest are county and municipal governments.

County Government Budgets

County government revenues for FY 1996-97 for the five counties in the study area are summarized in Tables 7.8.1 through 7.8.5. Revenue sources that are important in each county include (1) charges for services (e.g., utilities), (2) *ad valorem* taxes, (3) other taxes, fees, and licenses, and (4) state and other government sources (i.e., intergovernmental transfers). *Ad valorem* taxes account for 15 to 34 percent of county revenue, with Walton County (the county with the smallest population base) having the highest dependence on *ad valorem* taxes. Charges for services range from 12 to 29 percent of total revenues, with Santa Rosa County obtaining the highest proportion of its revenues from these charges while Walton County had the lowest percentage.

Table 7.8.1

County Government Revenues of Bay County
FY 1996 - 1997

Revenue Source	Dollars	Percentage
Ad Valorem taxes	24,774,514	19.80%
Other taxes, fees, and licenses	17,324,516	13.84%
Federal grants	514,368	0.41%
State and other govt sources	15,244,857	12.18%
Charges for services	29,003,403	23.18%
Fines and forfeits	1,477,214	1.18%
Special assessment and impact fees	149,506	0.12%
Other miscellaneous revenues	9,038,192	7.22%
Other sources / Interfund transfers	27,608,135	22.06%
Total	125,134,705	100.00%

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.8.2

County Government Revenues of Escambia County
FY 1996 - 1997

Revenue Source	Dollars	Percentage
Ad Valorem taxes	50,841,280	23.19%
Other taxes, fees, and licenses	46,642,998	21.28%
Federal grants	8,430,148	3.85%
State and other govt sources	35,518,949	16.20%
Charges for services	40,156,659	18.32%
Fines and forfeits	2,402,829	1.10%
Special assessment and impact fees	5,462,213	2.49%
Other miscellaneous revenues	13,733,772	6.26%
Other sources / Interfund transfers	16,039,504	7.32%
Total	219,228,352	100.00%

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.8.3

County Government Revenues of Okaloosa County
FY 1996 - 1997

Revenue Source	Dollars	Percentage
Ad Valorem taxes	21,471,797	14.78%
Other taxes, fees, and licenses	7,057,170	4.86%
Federal grants	4,048,773	2.79%
State and other govt sources	17,632,392	12.14%
Charges for services	40,900,772	28.16%
Fines and forfeits	116,272	0.08%
Special assessment and impact fees	82,200	0.06%
Other miscellaneous revenues	16,826,100	11.58%
Other sources / Interfund transfers	37,108,784	25.55%
Total	145,244,260	100.00%

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.8.4

County Government Revenues of Santa Rosa County
FY 1996 - 1997

Revenue Type	Dollars	Percentage
Ad Valorem taxes	20,143,797	25.85%
Other taxes, fees, and licenses	12,332,627	15.83%
Federal grants	485,989	0.62%
State and other govt sources	10,720,043	13.76%
Charges for services	22,695,672	29.12%
Fines and forfeits	1,057,731	1.36%
Special assessment and impact fees	840,304	1.08%
Other miscellaneous revenues	4,122,335	5.29%
Other sources / Interfund transfers	5,527,789	7.09%
Total	77,926,287	100.00%

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.8.5

County Government Budget of Walton County
FY 1996 - 1997

Revenue Type	Dollars	Percentage
Ad Valorem taxes	14,959,773	33.57%
Other taxes, fees, and licenses	7,589,193	17.03%
Federal grants	3,237,898	7.27%
State and other govt sources	6,668,814	14.96%
Charges for services	5,272,988	11.83%
Fines and forfeits	708,020	1.59%
Special assessment and impact fees	365,313	0.82%
Other miscellaneous revenues	2,256,359	5.06%
Other sources / Interfund transfers	3,506,117	7.87%
Total	44,564,475	100.00%

Source: Florida Department of Banking and Finance, personal communication, November 1998.

County government expenditures in the five counties for FY 1996-97 are summarized in Table 7.9. Total county expenditures ranged from $38 million in Walton County to $208 million in Escambia County. When county expenditures are compared with county population (Table 7.1), the per capita expenditures (based on 1995 population) range from $739 for Escambia County to $1,142 for Walton County.

Table 7.9

County Government Expenditures
FY 1996 - 1997

County	Dollars
Bay	115,386,094
Escambia	207,906,150
Okaloosa	142,661,764
Santa Rosa	76,521,782
Walton	38,144,204

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Municipal Government Budgets

Municipal government revenues for municipalities within each of the five counties for FY 1996-97 are summarized in Tables 7.10.1 through 7.10.5. Each table represents the sum of revenues for all municipalities within the respective county. Charges for services are the largest single revenue source for municipalities in each of the five counties. Other major revenue sources are (1) other taxes (i.e., other than *ad valorem*), fees, and licenses, (2) other miscellaneous revenues, and (3) other sources/interfund transfers. State and other government sources are a substantial revenue source in Okaloosa and Walton Counties (10% of total revenues), but are less important in the other counties.

Table 7.10.1

Combined Municipal Government Revenues of Bay County
FY 1996 - 1997

Revenue Name	Revenue Amount
Ad Valorem taxes	5,458,046
Other taxes, fees and licenses	20,694,195
Federal grants	4,500,556
State and other government sources	9,564,415
Charges for services	42,938,793
Fines and forfeits	1,108,136
Special Assessments and impact fees	400,922
Other Miscellaneous Revenues	13,166,022
Other Sources/Interfund transfers in	12,352,121
Total	110,183,206

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.10.2

Combined Municipal Government Revenues of Escambia County
FY 1996 - 1997

Revenue Name	Revenue Amount
Ad Valorem taxes	8,158,937
Other taxes, fees and licenses	20,053,432
Federal grants	7,351,718
State and other government sources	8,176,547
Charges for services	55,711,991
Fines and forfeits	637,268
Special Assessments and impact fees	90,166
Other Miscellaneous Revenues	49,027,353
Other Sources/Interfund transfers in	51,265,337
Total	200,472,749

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.10.3

Combined Municipal Government Revenues of Okaloosa County
FY 1996 - 1997

Revenue Name	Revenue Amount
Ad Valorem taxes	12,170,540
Other taxes, fees and licenses	18,931,351
Federal grants	2,774,656
State and other government sources	11,513,295
Charges for services	36,930,130
Fines and forfeits	940,874
Special Assessments and impact fees	147,720
Other Miscellaneous Revenues	19,606,591
Other Sources/Interfund transfers in	9,418,708
Total	112,433,865

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.10.4

Combined Municipal Government Revenues of Santa Rosa County
FY 1996 - 1997

Revenue Name	Revenue Amount
Ad Valorem taxes	1,050,604
Other taxes, fees and licenses	1,411,136
Federal grants	130,002
State and other government sources	1,654,614
Charges for services	12,844,891
Fines and forfeits	320,584
Special Assessments and impact fees	20,300
Other Miscellaneous Revenues	4,274,459
Other Sources/Interfund transfers in	3,867,712
Total	25,574,302

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Table 7.10.5

Combined Municipal Government Revenues of Walton County
FY 1996 - 1997

Revenue Name	Revenue Amount
Ad Valorem taxes	489,106
Other taxes, fees and licenses	1,823,892
Federal grants	1,014,119
State and other government sources	1,100,140
Charges for services	4,210,478
Fines and forfeits	159,043
Special Assessments and impact fees	0
Other Miscellaneous Revenues	333,830
Other Sources/Interfund transfers in	1,544,581
Total	10,675,189

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Combined municipal government expenditures for FY 1996-97 for the five counties are summarized in Table 7.11. Combined expenditures, which reflect a summation of expenditures for all municipalities in each county, ranged from $10.4 million in Walton County to $169.6 million in Escambia County. When municipal expenditures are divided by the population of each county that lives in incorporated places (see Table 7.3), the resulting per capita costs ranged from $1,144 in Bay County to $2,872 in Escambia County. However, this measure should be used with caution as some municipalities likely provide services to residents outside their incorporated area.

Table 7.11

Combined Municipal Government Expenditures
FY 1996 - 1997

County	Amount
Bay	93,953,905
Escambia	169,567,112
Okaloosa	94,794,446
Santa Rosa	25,582,052
Walton	10,360,776

Source: Florida Department of Banking and Finance, personal communication, November 1998.

Property Valuation

The average taxable value of residential property in each of the five counties in 1997 is summarized in Table 7.12. Average taxable value ranged from $36,686 in Escambia County to $62,065 in Okaloosa County.

The value of taxable commercial and industrial property in each of the five counties in 1997 is summarized in Table 7.13. The value of taxable commercial and industrial property ranged from $188.5 million in Walton County to $1,210.1 million in Escambia County. Industrial property made up only 8 percent of the total in Walton County, but accounted for almost 21 percent in Escambia County.

Table 7.12

Average Taxable Value of Residential Property in 1997

County	Taxable Value
Bay	47,513
Escambia	36,686
Okaloosa	62,065
Santa Rosa	37,869
Walton	48,689

Source: Florida Department of Revenue, *Florida Property Valuations and Tax Data*, December 1997.

Table 7.13

Value of Taxable Commercial and Industrial Property in 1997
(in Millions of dollars)

County	Commercial	Industrial	Commercial and Industrial
Bay	732.4	90.6	823.0
Escambia	959.2	250.9	1,210.1
Okaloosa	755.6	84.6	840.2
Santa Rosa	225.2	35.5	260.7
Walton	173.3	15.2	188.5

Source: Florida Department of Revenue, *Florida Property Valuations and Tax Data*, December 1997.

Millage Rates

Millage rates for county governments in the study area for 1997 are summarized in Table 7.14. Millage rates ranged from 4.528 in Okaloosa County to 8.260 in Escambia County. None of the counties had a mill levy for debt service.

Millage rates for school districts in the five counties are presented in Table 7.15. The millage rates for school districts ranged from 8.5720 in Okaloosa County to 9.5650 in Escambia County. Only the Bay County school district had a mill levy for debt service.

Municipal taxation of real property (*ad valorem* taxation) in the five Panhandle counties in 1997 is summarized in Table 7.16. Taxable value of all property taxable by municipalities ranged from $3 billion in Okaloosa County to $124.8 million in Walton County. Taxes levied on this property by municipalities ranged from $0.5 million in Walton County to $9.1 million in Okaloosa County. Average millage varied from 2.1058 in Santa Rosa County to 5.0056 in Escambia County.

Table 7.14

Millage Rates for County Governments and Selected Special Districts in the Florida Panhandle

County	County Government Operating	County Government Debt Service	Total
Bay	5.632	0.000	5.632
Escambia	8.260	0.000	8.260
Okaloosa	4.528	0.000	4.528
Santa Rosa	6.972	0.000	6.972
Walton	6.740	0.000	6.740

Source: Florida Department of Revenue, *Florida Property Valuations and Tax Data*, December 1997.

Table 7.15

Millage Rates for School Districts in the Florida Panhandle

County	Operating Budget	Debt Service	Total
Bay	7.3270	2.0000	9.3270
Escambia	9.5650	0.0000	9.5650
Okaloosa	8.5720	0.0000	8.5720
Santa Rosa	8.8460	0.0000	8.8460
Walton	9.3540	0.0000	9.3540

Source: Florida Department of Revenue, *Florida Property Valuations and Tax Data*, December 1997.

Table 7.16

Municipal Taxation in the Florida Panhandle in 1997 (in millions of dollars)

County	Taxable Value of All Property	Taxes Levied	Average Millage
Bay	2,509.6	6.1	2.4189
Escambia	1,663.5	8.3	5.0056
Okaloosa	3,079.8	9.1	2.9512
Santa Rosa	498.9	1.050	2.1058
Walton	124.8	0.5	4.2585

Source: Florida Department of Revenue, *Florida Property Valuations and Tax Data*, December 1997.

School Districts

Selected information concerning the school districts of the five Panhandle counties is summarized in this section. Each of these counties has only one school district.

Attendance and Number of Teachers

The number of teachers and students enrolled in the public schools of the five study counties in 1996 are summarized in Table 7.17. Enrollment ranged from 5,459 in Walton County to 45,692 in Escambia County. The number of teachers ranged from 308 in Walton County to 2,859 in Escambia County. The ratio of teachers to students ranges from 0.056 in Walton County to 0.063 in Escambia County, which corresponds to student-teacher ratios of 17.9 to 15.9, respectively.

Finance

School district expenditures per full-time equivalent (FTE) student in 1997 for the five counties are summarized in Table 7.18. Expenditures per FTE ranged from $4,643 in Okaloosa County to $5,130 in Walton County.

School district revenues per FTE student in 1997 are summarized in Table 7.19. Total revenues per FTE ranged from $5,378 in Santa Rosa County to $6,118 in Walton County. The sources of revenue vary substantially among districts. County revenues (e.g., local property taxes) make up almost 60 percent of total school district revenue in Walton County, with state revenues accounting for 32 percent and federal sources for the remaining 8 percent. On the other hand, revenues from state sources made up 64 percent of total revenues for the Escambia County school district, while county sources accounted for 25 percent and federal sources made up 11 percent.

Table 7.17

Number of Teachers and Public School Enrollment
1996

County	Teachers	Students	Teacher to Student Ratio
Escambia	2,859	45,692	0.063
Bay	1,511	25,665	0.059
Okaloosa	1,730	30,048	0.058
Santa Rosa	1,203	20,668	0.058
Walton	308	5,459	0.056

Source: Bureau of Business and Economic Research, 1997.

Table 7.18

School District Expenditures per Full-Time Equivalent (FTE) Student (in 1997 dollars)

County	Expenditures per FTE
Bay	4,952
Escambia	5,069
Okaloosa	4,643
Santa Rosa	4,657
Walton	5,130

Source: Florida Department of Education, *Profiles of Florida School Districts 1996-1997 Financial Data*, June 1998.

Table 7.19

School District Revenues per Full-Time Equivalent (FTE) by Source (in 1997 dollars)

County	Federal	State	County	Total
Bay	415	3,375	1,747	5,599
Escambia	591	3,594	1,423	5,608
Okaloosa	431	3,224	2,247	5,902
Santa Rosa	399	3,430	1,549	5,378
Walton	516	1,960	3,642	6,118

Source: Florida Department of Education, *Profiles of Florida School Districts 1996-1997 Financial Data*, June 1998.

Public Services

Per capita usage rates for selected community services are summarized in Table 7.20. These rates are expressed as amount of resources used, waste generated, staff employed, etc. per capita or per 1,000 residents. Some service usage rates are quite similar among the five counties. For example, residential water use ranges from 83.64 gallons (per person per day) in Escambia County to 91.45 gallons in Santa Rosa County. On the other hand, residential wastewater varies from 30.11 gallons (per person per day) in Santa Rosa County to 270.02 gallons in Bay County.

Table 7.20

Baseline Community Service Multipliers for Counties in the Florida Panhandle

Item		Bay	Escambia	Okaloosa	Santa Rosa	Walton
Residential Water	Thousands of Gallons per Day	88.46	83.64	81.90	91.45	85.51
Residential Wastewater	Thousands of Gallons per Day	270.02	71.39	106.33	30.11	71.60
Solid Waste	Tons per Year	1.78	1.60	1.41	0.74	0.70
Road & Highway	Miles per 1,000 people	5.68	3.74	4.54	7.09	20.17
Police	per 1,000 residents	2.70	2.43	1.95	2.04	2.22
Crimes	per 1,000 residents	66.76	61.97	30.60	36.56	29.60
Fire Fighters	per 1,000 residents	1.08	0.47	1.04	0.27	0.70
Public Welfare	per 1,000 residents	0.04	0.56	0.03	0.22	0.17
Physicians	per 1,000 residents	1.74	2.51	1.70	1.27	0.44

Sources: Bureau of Business and Economic Research, 1997.

CHAPTER 8
PROJECTED IMPACTS OF OFFSHORE ACTIVITY IN THE FLORIDA PANHANDLE

The projected impacts of OCS activity on Florida Panhandle communities are summarized in this chapter, beginning with RPC's summarization of analysis of stakeholder concerns and user-conflicts. Then, a brief review of relevant literature concerning economic and social effects of OCS development is presented. The results of the MMS Florida Panhandle Model are summarized in the third section of the chapter. The model was used to assess the impacts of alternative OCS development scenarios on population, output, employment, revenues and expenditures of local governments, school enrollments, revenues, and expenditures, and demands on selected public services for the Panama City and Pensacola areas. In the final section, the model results are discussed and compared with recent and projected levels of baseline growth.

Stakeholder Concerns About and User-Conflicts and Benefits of OCS Activity

Objective

An important aspect of the study was an analysis of the possible user-conflicts and benefits of a shore base in the Florida Panhandle. This analysis considered the tourism, fishing, and port industries as well as military interests.

Primary data collection was done through selective interviews of local and community and business leaders. The interviews were designed to identify baseline projection factors and impact issues that were not reflected in the literature review or in secondary data. Interviews with representatives of the port, military, tourism, and fishing industries were conducted to supplement and confirm the findings of the literature review and secondary data collection effort.

Methodology

To facilitate the interview process, RPC attempted to get a letter of introduction from Governor's Office. While this effort was unsuccessful, the Governor's Office was very cooperative in suggesting stakeholders in state government . During its first field trip to the Florida Panhandle, RPC attended a focus group sponsored by another MMS study and incorporated some of the comments expressed and used this group as another source of leads for stakeholders. RPC interviewed stakeholders either in person on field trips to the Florida Panhandle or by phone from Austin. RPC sent all stakeholders interview guides that raised questions for discussion.

RPC conducted stakeholder interviews and contacted a number of stakeholders in two of the key industries in this study (tourism and recreational fishing) as well as municipal, county, and state government officials and business leaders. The status of the stakeholders contacted is summarized in Table 8.1. RPC contacted 50 stakeholders and interviewed 26 of them. Response was excellent among the tourism, port, and military stakeholders but weak among local and county governments and the fishing industry.

Table 8.1

Stakeholder Interviews

Stakeholders or Sources of Information	Contacted	Interviewed
Business Associations / Chambers	3	1
Fishing	3	0
Government	18	7
Federal	2	2
State	6	3
County	5	0
Municipal	4	1
Regional Planning Council	1	1
Military	5	4
Oil	3	2
Ports	2	2
Tourism	16	10
Charter Boats	2	2
Committees / Councils	3	2
Environmental	4	2
Parks	3	2
Resident Associations	3	2
Other	1	0
Total	**50**	**26**

Summary

Tourism

Ecotourism is important to the local economies, and its importance is increasing. Direct user-conflicts between the tourism industry and an onshore support base seem small, given the level of projected drilling activity. A support base in Pensacola would be out of sight of tourist areas.

Perception of the area having "sugar white" beaches and clean water is vital to the ecotourism in the area. Stakeholders are worried that even the perception that the Florida Panhandle has suffered degradation of the environment or the aesthetics of the area could reduce tourism and retiree inmigration. Tourism stakeholders view the benefits of an onshore support base as very small compared to their perceived risks from an oil spill or other environmental degradation. As a result, some tourist stakeholders are extremely hostile to the idea of any offshore oil and gas development and related onshore support bases. Strong peer pressure exists in the Florida Panhandle to oppose anything related to OCS development.

Military

An onshore support base in the Florida Panhandle could cause potential user conflicts with the military. Support boats and helicopters based in the Florida Panhandle would cross the aerial operations area of three military installations, while boats and helicopters based in Mobile would not. The Coastal Systems Station (in Panama City) has some concerns on how additional boat traffic might interfere with operations if the support base grew beyond a certain size. The Department of Defense can put stipulations on any oil leases that the MMS sells, which would put the onus of any user-conflicts on the oil industry rather than the military.

Fishing

RPC had no responses from representatives of the fishing industry in Florida.

Ports

Panama City and Pensacola have ports for ocean going vessels and have in the past had OCS-related business. These ports are currently underutilized. Pensacola and Panama City have at least three locations for support activities: the port, another shipyard or marina, and the airport. Destin does not have a suitable location for either air or water transport. Berg Steel, located at the Port of Panama City, currently produces steel pipes for offshore drilling.

Other

The business sector is favorable to OCS activity, liking the economic benefits. Several business stakeholders believe the industry to be clean. A number of stakeholders expressed concern that even a small base servicing a few platforms could grow over time and transform the aesthetics of the area (e.g., an onshore base would be "the camel's nose under the tent.")

The Governor's Office expressed the opinion that the risks of a support base and offshore drilling are not worth the benefits. Concerns among stakeholders in the area's tourism industry about the risks of offshore oil and gas production have lent support to the Governor of Florida's public position that the Federal Government should not to sell new oil and gas leases in Florida Federal waters within one hundred miles of the Florida coast.
A number of stakeholders voiced the desire that an analysis of alternative energy sources for meeting U.S. energy needs be included as part of this assessment of the socioeconomic impact of OCS activity on the Florida Panhandle. In their view, alternative energy sources, such as windmills and solar panels, are becoming more economical as each year passes, and may, by 2012, when the current moratorium of leasing in the Eastern Gulf of Mexico ends, make the hydrocarbon deposits in the Eastern Gulf of Mexico less important in meeting the energy needs of the United States. A detailed analysis, however, of the need for offshore oil and gas production in light of alternative energy sources was beyond the scope of this study.

Based on the findings from stakeholder interviews and the literature review on tourism, the State of Florida's desire to forbid new offshore oil and gas production in Florida Federal waters within one hundred miles of the Florida shore, and the President's recent extension of the moratorium on lease sales in the Eastern Gulf of Mexico (except for Lease Sale 181) until 2012, this report assumes that the MMS will not lease additional tracts of water during the study period that could be better serviced from the Florida Panhandle than from existing bases in Mobile or Pascagoula.

Literature Review

The purpose of this section is to summarize the findings of relevant literature regarding the socioeconomic impacts of offshore petroleum development. The emphasis is placed on studies that deal with economic and social effects of OCS development in the Gulf of Mexico (GOM) region, but studies dealing with offshore development in other areas (e.g., North Sea, Newfoundland, Alaska, California) also are reviewed. Literature dealing with other types of energy or resource development (e.g., western "boom town" studies) has not been included, unless some aspect of the development context seemed particularly applicable to the OCS situation.

The socioeconomic impacts of development projects and programs have been categorized in a number of ways. One classification of such impacts identifies (1) ***economic*** impacts (including changes in local business sales, employment, earnings, and income), (2) ***demographic*** impacts (changes in the size, distribution, and composition of the population), (3) ***public service*** impacts (changes in the demand for, and availability of, public services and facilities), (4) ***fiscal*** impacts (changes in revenues and costs among local governmental jurisdictions), and (5) ***social*** impacts (changes in patterns of interaction, the formal and informal relationships resulting from such interactions, and the perceptions of such relationships among various groups in a social setting)(Leistritz 1994, Leistritz and Murdock 1981). The review will follow this classification of impacts.

Economic Impacts

A number of studies have addressed the economic impacts of offshore development (see Seydlitz, et al. 1995, Seydlitz and Laska 1994, Brabant 1994, McNicoll 1982, and Manuel 1985, among others). Seydlitz et al. (1995) examined long-term economic effects of petroleum development on Louisiana parishes. Their analysis covered four time periods: Preboom (1969-73), Boom (1974-81), Transition (1982-85), and Bust (1986-90). The parishes were categorized as having ***minimal*** or ***heavy*** involvement with energy development and were further classified according to whether their major involvement was in ***extraction*** or in ***related activities*** (e.g., refining). The study focused on five economic measures: (1) per capita transfer payments, (2) average per capita income, (3) net migration, (4) per capita sales tax collections, and (5) unemployment rates. The findings indicated that the relationships between petroleum industry activity and economic indicators were stronger in the highly involved parishes than in those that were minimally involved. The findings also demonstrated that economic benefits resulting from an increase in petroleum activity tended to be transitory. That is, the communities that were highly involved in offshore petroleum production, particularly extraction, do not permanently experience improved economic situations. Rather, the improvements gained during the boom period tended to be lost during the bust (Seydlitz et al. 1995). The communities that experienced substantial growth in extraction activity tended to be focal points for inmigrants, which exacerbated unemployment and related problems when petroleum activity slowed.

Seydlitz and Laska (1994) report additional findings from the study of effects on Louisiana parishes. They find that per capita income, sales taxes, and net inmigration tended to increase within one year of increases in petroleum activity, while unemployment and transfer payments decreased. However, in the second, third, and fourth years after an increase in petroleum activity, these relationships reversed.

Seydlitz and Laska (1994) also find that a diversified economy, even a diversified involvement in the extractive industry, helps to reduce negative economic effects. One means of ensuring a more diversified involvement in the petroleum industry might be for local officials to require companies that are extracting the resource to locate processing plants in their jurisdiction as well. Another approach that these authors suggest for mitigating some

of the negative impact of downturns would be to set aside money from federal lease sales and from sales and severance taxes collected from extraction companies to use for job training and employment counseling that may be needed during energy downturns. These resources could also be used to mitigate the increase in transfer payments that occurs when unemployment increases.

The petroleum industry has become a very important component of the economy of several states bordering the Gulf of Mexico, particularly Louisiana and Texas (Manuel 1985). The economic importance of the petroleum industry increased during the boom period of the 1970s and early 1980s. By 1982, Louisiana accounted for 34 percent of all U.S. production of natural gas and 13 percent of U.S. production of crude oil while Texas produced 35 percent of the nation's gas and 29 percent of its crude oil. Louisiana had 11 percent of all U.S. drilling rigs working in 1982 while Texas had 32 percent.

During the period 1976-1982, the number of rigs drilling had a major effect on statewide unemployment rates in both Louisiana and Texas, but the effect was substantially greater in Louisiana. Manuel (1985) attributes the difference to Louisiana's higher percentage of offshore drilling activity, which requires a substantially greater number of personnel per rig than drilling onshore.

While many coastal communities experience direct effects of offshore oil and gas extraction and/or processing, Brabant (1994) points out that the ripple effects of offshore oil activity can also be substantial. Using data from Ouachita Parish, Louisiana, Brabant (1994) demonstrates that the decline in the petroleum sector had substantial effects on this parish, even though it is spatially removed from the centers of offshore energy development. These effects were manifested particularly through (1) secondary impacts experienced by construction, transportation, and warehousing firms, (2) loss of earnings by workers who had been commuting from the parish to offshore jobs, and (3) persons who moved back to Ouachita Parish from the coast.

McKenzie et al. (1993) also document the importance of the oil and gas industry to the Gulf Coast economy. They define a study area comprising 49 counties and parishes in Alabama, Mississippi, Louisiana, and Texas. Mining employment (primarily oil and gas extraction) in this region grew from 50,028 jobs in 1960 to 189,262 jobs in 1980. Oil prices and OCS oil and gas production peaked in 1981. Prices weakened steadily from 1982 until early 1985, then in late 1985 the bottom fell out of the market, with the average reported price for 1986 ($12.45) being little more than half that for 1985 ($24.08). The decrease in oil prices was rapidly reflected in employment opportunities and net migration. During a 12-month period from 1982 to 1983, 1 in 8 mining jobs in the study area ceased to exist, and from 1982 to 1986, mining jobs decreased 28.6 percent. In 1981, only 5 of the 49 counties/parishes experienced negative net migration, but by 1984, 35 were experiencing out-migration. The authors also attempted to develop statistical models to describe the relationship between levels of OCS oil and gas activity and various socioeconomic indicators, but concluded that "..based on the analysis performed, no theoretically meaningful models relating OCS oil and gas activities to socioeconomic conditions are possible" (McKenzie et al. 1993, p. 134).

McNicoll (1982) discusses local economic impacts of offshore oil and gas on Scottish communities. He reports that output multipliers for various onshore activities (e.g., supply bases, platform construction, pipecoating yard) ranged from 1.2 to 1.4 while income multipliers ranged from 1.2 to 1.6. The relatively low values of the multipliers are attributable to the high propensities to import exhibited by oil facilities located in these rural areas. For example, in 1976 in Shetland 45 percent of oil supply base requirements and 76 percent of oil construction requirements were directly imported. Also a large percentage of the employees were nonresidents (75 percent in Shetland in 1980), whose local expenditures would be limited to some subsistence and entertainment expenses. However, this author also reports that purchasing patterns do not remain static. The percentage of purchases that the Shetland supply base made locally rose from 15 percent in 1974 to 55 percent in 1976, partly because of increased "awareness" between the oil and indigenous sectors and partly because of adaptation to oil industry requirements by local firms.

Also discussing the experiences of Scottish communities in coping with North Sea oil and gas development, Sewel (1983) points out that offshore petroleum development occurs in three sequential, but often overlapping, phases: ***exploration, development,*** and ***production.*** Each of these phases has its own set of offshore and onshore activities. The major onshore activities are categorized as (1) ***servicing*** -- provision and transport of men and materials from supply centers to activity centers onshore and offshore, (2) ***fabrication*** of production platforms to be used offshore, (3) ***construction*** of onshore terminals and primary processing facilities, and (4) ***operation*** of onshore terminals and primary processing facilities. A unique characteristic of offshore development is that the developer has some flexibility in choosing where to perform certain activities, particularly fabrication of platforms.

Harris et al. (1986) analyze not only the aggregate economic effects of North Sea oil development on Aberdeen, Scotland, but also the distribution of these effects among male vs. female workers, the working class vs. the middle class, and homeowners vs. tenants. They report that the oil sector accounted for about 35,600 jobs (25% of total employment) in Aberdeen in 1984. They estimate the employment multiplier for the oil sector to be 1.78. However, they also report that some firms in other sectors have been adversely affected because of increased demands for labor and for commercial and industrial property. The Aberdeen area experienced a substantial rise in average earnings during the period of oil sector growth, but the increased earnings were largely confined to workers employed directly in the oil sector. As a result, female workers did not share in the increases in average earnings to the same extent as their male counterparts. Also, the net employment effect of oil development was to offer more jobs to the middle class than to the working class. Homeowners who owned their dwellings before development began experienced gains in net worth as a result of increased housing prices. On the other hand, tenants living in public housing were protected from increased housing costs by a low rents policy that prevailed through most of the development period.

Demographic Impacts

As with any type of resource development project, the effects of development on local populations can be expected to be a prime concern to areas facing the prospect of OCS development. The extent to which the new project-related jobs are filled by (a) local residents, (b) workers relocating from other areas, or (c) commuting workers who maintain a permanent residence outside the area, together with the demographic characteristics of the relocating workers and accompanying persons, can be expected to have a substantial influence on the demographic changes experienced by site area communities. A unique feature of OCS development is the prevalence of shift work, particularly for offshore workers (Gramling 1989, Gramling and Brabant 1986). The shift workers reside at the job site for extended periods (i.e., 7 days or more), working shifts of 12 hours on and 12 off. The stay at the job site is followed by a period of time off, generally of the same length.

The prevalence of shift work in the offshore oil and gas industry means that the workers can choose to maintain residences some distance from their work sites. For instance, in the Northern Gulf of Mexico, where the typical work pattern is 7 days on and 7 off, Gramling and Brabant (1986) reported that only 30 percent of the offshore workers in their sample lived within 100 miles of where they met to go offshore, and 11.5 percent lived 500 miles or more from where they worked. Similarly, Centaur Associates (1986) found that, of the estimated 21,847 employees working offshore in waters off Louisiana in 1984, 9.9 percent did not reside in the state of Louisiana.

In addition to the offshore workers, OCS development leads to job opportunities for persons involved in constructing onshore facilities (e.g., terminals or processing plants) and fabricating platforms and in operating supply bases and other onshore facilities, as well as secondary jobs in a variety of local trade and service activities. These jobs appear to be somewhat analogous to the construction, operations, and secondary jobs associated with other types of energy development (Murdock and Leistritz 1979). The proportion of these jobs that will be filled by ***commuting*** workers (whose permanent residence is outside the study area), ***relocating*** workers (who move into the area in response to OCS-related jobs), and ***local*** workers will likely differ by job type. Past studies have generally indicated that the percentage of commuting workers is likely to be significant only for temporary construction jobs (Murdock et al. 1986, Dunning 1981). The percentage of local vs. relocating workers hired for the different jobs will likely depend largely on (1) local labor market conditions and (2) skills of local workers. Generally, the higher the local unemployment rate, the larger the pool of unemployed or underemployed persons, and the greater the similarity of the new jobs to those with which area workers are familiar, the higher will be the rate of local hiring (Gramling and Brabant 1986, Leistritz and Murdock 1986).

Leistritz (1986) assembled information on local hiring rates and worker demographics relevant to GOM-OCS development.

Public Service Impacts

Increasing economic activity and population growth resulting from offshore energy development typically leads to growing demands on a variety of public services. Gramling and Brabant (1986) describe the public service issues associated with petroleum industry expansion in coastal Louisiana, using East St. Mary Parish as an example. From 1940 to 1970, the population of this area increased nearly 200 percent, largely as a result of offshore oil and gas activity and increases in associated trade and service activities. The growing population led to a housing shortage, exacerbated by limited available land and growing competition from the commercial sector for that land. The growth also led to strains on utility systems, roads, recreation facilities, and medical facilities. One of the hardest hit community services was the public schools; public school enrollment in the parish increased by 115 percent from 1950 to 1970.

Another problem involved the influx of transients into Southern Louisiana seeking employment in the oil and gas industry. The influx of transients was believed by local leaders to be associated with an increase in rates of violent crime. From 1974 to 1979, the violent crime rate for Morgan City (largest town in East St. Mary Parish) ranged from two to three times the average rate for cities of comparable size in the U.S. (Gramling and Brabant 1986).

Seydlitz and Laska (1994) also address the impact of OCS activity on education. They found that increases in oil and gas activity lead to increases in the percentage of students completing high school but also to decreases in the percentage of high school graduates entering college. Increased oil and gas activity also led to greater strain on local school systems, evidenced by increased numbers of students and increased per capita education expenditures.

Offshore energy development in Southern California has also raised concerns regarding increased public service demands (Powers 1988). As a result, Santa Barbara County established a program for monitoring and mitigation of such impacts. Emphasis was on estimating impacts on wastewater treatment facilities, water supply, and education, police, and fire protection services. If impacts are deemed significant, mitigation measures may be required of oil companies and service providers.

McNicoll (1982) comments on public service effects of North Sea development on rural Scotland. Service and infrastructure effects fell primarily into two categories: (1) transportation -- new/improved roads, seaports, and airports, and (2) provision of new housing, schools, and related services required by the increased local population.

Fiscal Impacts

Closely related to the public service effects are concerns about fiscal impacts, particularly for local governments. Powers (1988) reports that the guiding principle for the mitigation

program developed in Santa Barbara County is to insure that existing residents and taxpayers do not subsidize any financial impacts to the county, municipalities, and public service providers within the county as a result of oil and gas development.

Seyfrit (1988) reports that Shetland County in Northern Scotland took measures to insure a favorable fiscal outcome for their area. These included (1) the County Council retained 50 percent of the shares in the company building and operating the major oil terminal, (2) taxes were collected on every barrel of oil passing through the terminal, and (3) stockpiling some of the funds to minimize impacts as oil activity declines. However, Seyfrit (1988) also points out that little research has been done to determine how effective these measures actually were.

Leistritz et al. (1985) discuss some of the fiscal effects of oil development in Alaska. Oil development led to substantial increases in the tax base of the North Slope Borough. Oil development also had important implications for state revenues, which allowed increases in state government spending for a variety of purposes.

Social Impacts

Gramling and Brabant (1986) and Seydlitz and Laska (1994) comment on the social impacts of oil and gas development in Southern Louisiana. These impacts are seen to arise in part because (1) the area economy has developed an extreme degree of dependence on the oil and gas industry, which enhanced its vulnerability to industry fluctuations and (2) increases in oil activity led to an influx of migrants hopeful of finding employment in the industry, an influx which often exceeded the number of job opportunities. As a result, the coastal communities were seen as experiencing an economic roller-coaster, or a series of boom-bust cycles. Seydlitz and Laska (1994) found these cycles of energy industry activity to be related to rates of criminal cases, homicides, and suicides. Gramling and Brabant (1986) reported that the influx of transients searching for oil-related jobs was believed to lead to high rates of violent crime in coastal communities.

Freudenberg and Gramling (1993) examine factors affecting opposition and support for offshore petroleum development, examining the very different responses to offshore oil development in Southern Louisiana vs. Northern California. Among key factors they identified as contributing to the difference in response were (1) the time period when offshore activity began, (2) the fact that offshore energy development in Louisiana preceded most other coastal development, (3) the fact that Louisiana offshore development occurred as a progression from onshore drilling, to development in the marshes, to OCS activity, (4) less access to the coast by Louisiana residents, and (5) differences in social factors such as education, social networks, and a tradition of extractive uses of other coastal resources in Louisiana.

Adjustments for Commuting Offshore Workers in the MMS Model

As stated above, Gramling and Brabant (1986) estimate that 70 percent of offshore workers live more than 100 miles from where they meet to go offshore (i.e., an onshore support base). If an onshore base were located in Panama City or Pensacola, these commuting workers and their families would not spend their incomes in the Florida Panhandle. As shown in Table 8.2, RPC adjusted for these commuting workers by lowering projected expenditures in SIC category 1389 "Other Oil and Gas Services" by half when compared to Table 2.6 in Chapter 2.[1]

[1]In its impact study on Destin Dome, Chevron (1997) does not appear to adjust for commuting offshore workers or assumes that all offshore workers are local. This assumption might be consistent with an effort to show the maximum potential economic impact of the project on Mobile, Alabama.

Table 8.2

Industries Associated with Operation and Maintenance of Offshore Oil and Gas Platforms Adjusted for Commuting Patterns of Offshore Workers

Code Number			Operation and Maintenance Spending			
SIC	IMPLAN	Description in Destin Dome	Typical Supply Base	Percent of Total	Florida Panhandle Supply Base	Percent of Total
132	39	Oil & gas operations	X	36.3%		0.0%
1389	57	Other oil and gas services excl. commuting workers	X	9.2%	X	17.5%
1389	57	Other oil and gas services: commuting offshore workers only		9.2%		17.5%
2899	209	Chemical, not elsewhere classified	X	0.9%		0.0%
291	210	Petroleum fuel	X	4.4%		0.0%
324	232	Hydraulic cement	X	0.7%		0.0%
3559	331	Special industry machinery, not elsewhere classified	X	5.1%		0.0%
44	436	Water transportation	X	4.0%	X	7.6%
45	437	Air transportation	X	3.8%	X	7.2%
58	454	Eating and drinking places	X	1.7%	X	3.2%
7359	473	Miscellaneous equipment rent / lease	X	1.4%	X	2.7%
871	506	Environmental and engineering services	X	14.7%	X	27.9%
872	507	Accounting / miscellaneous business services	X	4.2%	X	8.0%
873	509	Test / research services	X	4.5%	X	8.6%
		Total for a typical onshore base		100.0%		
		Total for Florida Panhandle onshore base		**52.6%**		**100.0%**

* Assumes no more than 30 % of offshore workers are locals.
Sources: RPC; Chevron, *Destin Dome Unit 56, Development and Production Plan*, July 1997.

Results of the MMS Florida Panhandle Model

The MMS Florida Panhandle Model was developed by RPC to enable users to prepare plausible quantitative projections of the implications of various OCS development scenarios for selected counties and communities. The model is structured as a set of three economic-demographic submodels, each representing one of the metropolitan areas within the Florida Panhandle (Fort Walton Beach, Panama City, and Pensacola). Each economic-demographic

model projects both baseline and impact-related economic activity, population, and related indicators through the interaction of local output and labor force. An assumption inherent in the model design is that the socioeconomic impacts of OCS activity will occur only in the metro area where the support activity occurs (i.e., where onshore support facilities are located).

Some stakeholders have expressed concerns that locating an onshore support base in the Florida Panhandle could negatively affect the region's military or tourism industries. Findings of RPC's research indicate that the level of proposed OCS activity that might be serviced by an onshore base in the Florida Panhandle probably would not affect the level of military or tourism activity in the region. Nevertheless, the option of quantifying the implications of negative effects on the military and tourism sectors has been incorporated into the model (although the RPC team does not agree with the premise that such negative impacts would occur). For a more detailed description of the model, see ***MMS Socioeconomic .. Model .. User's Guide.***

The model was used to assess the implications of three OCS development scenarios. The first two involve alternative levels of OCS production from Lease Sale 181, a minimum threshold level (i.e., a lower level would not justify development of the field) and a reasonable maximum level. The third scenario assumes that Chevron's Destin Dome project will be supported in part by facilities located in the Panhandle. Each of these scenarios is analyzed assuming that the onshore support base will be located in the Panama City area or, alternatively, in the Pensacola area. (As previously discussed, the Fort Walton Beach area lacks a deep water port and hence was deemed unsuitable as a location for OCS support facilities.) The three scenarios and their underlying rationale are discussed in detail in Chapter 2 of this report. Results of the analyses of these scenarios are summarized in the sections that follow.

Panama City

Lease Sale 181

Key parameters of the minimum threshold scenario and the resulting impacts for the Panama City area are summarized in Table 8.3.1. Under the minimum threshold scenario, oil production from Lease Sale 181 begins in 2010, peaks in 2020 at 1.7 million barrels, and ends by 2040. Natural gas production follows the same time pattern, with a peak production of 25.0 billion cubic feet in 2020 (Table 8.3.1). Under this scenario, OCS expenditures in the impact area peak at $6.5 million annually in 2020. Throughout the period of oil and gas production (2010 through 2035), OCS support is estimated to require 288 boat trips and 1248 helicopter flights annually from the support base. The estimated OCS impact on the population of the Panama City area is projected to peak at 341 persons in the year 2025 (which is only 0.2 percent of the area's projected baseline population for that year). The area would have a net increase of 136 households in the year 2025

as a result of OCS activity (Table 8.3.2). It should be noted that, while OCS production and resulting economic impacts end in 2035, some population impacts and related socioeconomic effects continue through year 2045.

The impacts of the OCS minimum threshold level of development on total output in the Panama City area are estimated to peak at $8.9 million in the year 2020, while the impact on employment peaks at 229 jobs in the same year. The peak impact on area output represents about one seventh of a percent (0.14 percent) of the area's projected baseline output, and a little more than that (0.16 percent) of output excluding government (Table 8.3.3). The peak employment impact represents about one quarter of a percent (.26 of a percent) of projected baseline employment.

The net fiscal impacts of the OCS minimum threshold level of development on Bay County and its municipalities are summarized in Table 8.3.4. Additional expenditures by county government resulting from OCS activity are projected to peak in 2025, at $272,168. Additional *ad valorem* taxes are projected to contribute $44,812 to county revenues, which results in $227,356 being required from other sources to balance the budget. Additional expenditures by municipal governments in Bay County (i.e., all municipal governments combined) are projected to peak at $221,633, also in 2025. Additional *ad valorem* tax revenues were estimated to contribute about $11,404 while other taxes, fees, and licenses would add about $152,721 to municipal revenues, leaving $57,508 required from all other sources to balance the budget.

The estimated impacts of the OCS minimum threshold level of development on school enrollments in Bay County are summarized in Table 8.3.5. The number of school age children peaks at 56 in year 2030. This represents about one seventh of a percent (0.15 of a percent) of the projected baseline population in this age group. The additional expenditures by the Bay County school district are estimated to peak at $259,980 (in 2030), or about $4,640 per additional student. Total additional school district revenues are estimated to total about $257,930, including about $177,200 in added state revenues, $71,100 in additional *ad valorem* taxes, and $21,800 in extra federal revenues.

The projected impacts of the OCS minimum threshold level of development on selected public services in Bay County are summarized in Table 8.3.6. Most impacts peak in 2025, when population impacts are greatest.

Table 8.3.1

MMS Florida Panhandle Model - Panama City
OCS Scenario Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:		PC: Min Threshold	
Report Area	Bay County							Date:		September 18, 2001	
Production Scenario in Lease Sale 181:	Minimum Threshold							Destin Dome :		Not Serviced in Florida	
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.3	0.9	1.7	1.4	1.2	0.8	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	5.0	17.5	25.0	22.5	20.0	15.0	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	0.0	0.0	1.3	4.3	6.5	5.7	5.1	3.6	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	1.3	4.3	6.5	5.7	5.1	3.6	0.0	0.0
Destin Dome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	0	0	288	288	288	288	288	288	0	0
Helicopter Trips from Service Base	0	0	0	1248	1248	1248	1248	1248	1248	0	0

Table 8.3.2

MMS Florida Panhandle Model - Panama City
Population Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:	PC: Min Threshhold		
Report Areas	Bay County							Date:	September 18, 2001		
Bay County											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,277	162,188	174,625	187,729	198,669	210,395	219,170	227,314	234,659	242,076
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	0	0	50	193	328	341	333	281	121	77
Net Change in Households	0	0	0	20	77	131	136	133	112	48	31

Table 8.3.3

MMS Florida Panhandle Model - Panama City
Output and Employment Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:		PC: Min Threshold	
Report Area	Bay County							Date:		September 18, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,858.5	5,011.5	5,481.2	5,869.8	6,166.9	6,283.3	6,452.9	6,543.8	6,759.3	6,977.9	7,209.7
Baseline	4,858.5	5,011.5	5,481.2	5,868.2	6,161.1	6,274.4	6,445.1	6,536.9	6,754.3	6,977.9	7,209.7
Net Impact	0.0	0.0	0.0	1.6	5.8	8.9	7.8	6.9	4.9	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,229.4	4,364.7	4,803.2	5,165.1	5,445.0	5,561.7	5,725.6	5,814.1	6,013.4	6,215.7	6,430.6
Baseline	4,229.4	4,364.7	4,803.2	5,163.5	5,439.3	5,552.9	5,717.9	5,807.3	6,008.6	6,215.7	6,430.6
Net Impact	0.0	0.0	0.0	1.5	5.7	8.8	7.7	6.8	4.9	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	69,060	70,811	77,151	82,617	86,659	88,164	90,350	91,426	94,219	97,009	100,028
Baseline	69,060	70,811	77,151	82,575	86,509	87,935	90,150	91,248	94,092	97,009	100,028
Net Impact	0	0	0	42	150	229	201	178	127	0	0

Table 8.3.4

MMS Florida Panhandle Model - Panama City
Fiscal Balance Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:		PC: Min Threshold	
Report Area	Bay County							Date:		September 18, 2001	
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	139,173	150,277	162,188	174,625	187,729	198,669	210,395	219,170	227,314	234,659	242,076
Baseline Population	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	0	0	50	193	328	341	333	281	121	77
Net Change in Households	0	0	0	20	77	131	136	133	112	48	31
County Government											
Revenues	0	0	0	40,092	153,866	261,838	272,168	265,424	224,432	96,674	61,210
Ad Valorem Taxes	0	0	0	7,037	26,814	44,612	44,812	42,962	35,333	12,966	8,210
Residential	0	0	0	5,377	20,637	35,118	36,504	35,599	30,101	12,966	8,210
Commercial and Industrial	0	0	0	1,660	6,177	9,494	8,308	7,363	5,232	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	0	0	0	0	0	0	0	0
From All Other Sources to Balance Budget	0	0	0	33,055	127,052	217,226	227,356	222,462	189,099	83,708	53,001
Expenditures	0	0	0	40,092	153,866	261,838	272,168	265,424	224,432	96,674	61,210
Municipal Government											
Revenues	0	0	0	32,648	125,297	213,221	221,633	216,141	182,760	78,724	49,845
Ad Valorem Taxes	0	0	0	1,791	6,823	11,353	11,404	10,933	8,991	3,300	2,089
Residential	0	0	0	1,368	5,252	8,937	9,289	9,059	7,660	3,300	2,089
Commercial and Industrial	0	0	0	422	1,572	2,416	2,114	1,874	1,331	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	22,497	86,339	146,925	152,721	148,937	125,935	54,247	34,347
From All Other Sources to Balance Budget	0	0	0	8,360	32,135	54,943	57,508	56,271	47,834	21,178	13,409
Expenditures	0	0	0	32,648	125,297	213,221	221,633	216,141	182,760	78,724	49,845

Table 8.3.5

MMS Florida Panhandle Model - Panama City
Schools Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:		PC: Min Threshold	
Report Area	Bay County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	27,310	29,495	30,868	31,517	32,877	34,626	36,863	38,353	39,419	40,363	41,715
Baseline	27,310	29,495	30,868	31,510	32,851	34,582	36,814	38,298	39,368	40,337	41,698
Net Change	0	0	0	7	26	44	49	56	51	26	17
Net Change in Households	0	0	0	20	77	131	136	133	112	48	31
Fiscal Impact of Net Change											
Total Revenues	0	0	0	34,074	127,164	215,265	235,900	257,930	232,547	114,929	73,911
Local Ad Valorem Taxes	0	0	0	11,654	44,406	73,881	74,212	71,148	58,514	21,473	13,596
Residential Property	0	0	0	8,905	34,176	58,159	60,453	58,955	49,850	21,473	13,596
Commerical Property	0	0	0	2,749	10,230	15,722	13,759	12,193	8,664	0	0
State Revenues	0	0	0	22,413	82,806	139,904	156,235	177,187	162,692	83,222	53,710
Federal Revenues	0	0	0	2,756	10,182	17,203	19,211	21,787	20,005	10,233	6,604
Expenditures	0	0	0	32,886	121,497	205,275	229,238	259,980	238,712	122,109	78,807

Table 8.3.6

MMS Florida Panhandle Model - Panama City
Public Services Report - Minimum Threshold

Impact Area	Panama City							Scenario Name:		PC: Min Threshold	
Report Area	Bay County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,277	162,188	174,625	187,729	198,669	210,395	219,170	227,314	234,659	242,076
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Impact	0	0	0	50	193	328	341	333	281	121	77
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	4.4	17.1	29.0	30.2	29.4	24.9	10.7	6.8
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	13.6	52.1	88.6	92.1	89.8	75.9	32.7	20.7
Solid Waste (tons per year)	0.0	0.0	0.0	89.4	343.2	584.0	607.0	592.0	500.6	215.6	136.5
Road & Highway (miles)	0.0	0.0	0.0	0.3	1.1	1.9	1.9	1.9	1.6	0.7	0.4
Police Protection	0	0	0	0	1	1	1	1	1	0	0
Crimes	0.0	0.0	0.0	3.4	12.9	21.9	22.8	22.2	18.8	8.1	5.1
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	0	1	1	1	0	0	0

Key parameters of the OCS reasonable maximum scenario and the resulting impacts for the Panama City area are summarized in Table 8.4.1. Under the reasonable maximum scenario, oil production from Lease Sale 181 begins in 2010, peaks in 2020 at 3.3 million barrels, and ends by 2040. Natural gas production follows the same time pattern, with a peak production of 40.5 billion cubic feet in 2020 (Table 8.4.1). Under this scenario, OCS expenditures in the impact area peak at $11.2 million annually in 2020. Throughout the period of oil and gas production (2010 through 2035), OCS support is
estimated to require 288 boat trips and 1248 helicopter flights annually from the support base (i.e., the same number of trips as in the minimum threshold scenario).

The estimated OCS impact, assuming a reasonable maximum scenario, on the population of the Panama City area is projected to peak at 589 persons in the year 2025 (which is only about one third of a percent of the area's projected baseline population for that year). The area would have a net increase of 236 households in the year 2025 as a result of OCS activity (Table 8.4.2). It should be noted that, while OCS production and resulting economic impacts end in 2035, some population impacts and related socioeconomic effects continue through year 2045.

The impacts of the OCS reasonable maximum level of development on total output in the Panama City area are estimated to peak at $15.5 million in the year 2020, while the impact on employment peaks at 397 jobs in the same year. The peak impact on area output represents about one quarter of a percent (0.25 percent) of the area's projected baseline output, or little more than that (0.28 percent) of output excluding government (Table 8.4.3). The peak employment impact represents about one half of a percent (0.45 percent) of projected baseline employment.

The net fiscal impacts of the OCS reasonable maximum level of development on Bay County and its municipalities are summarized in Table 8.4.4. Additional expenditures by county government resulting from OCS activity are projected to peak in 2025, at $470,407. Additional *ad valorem* taxes are projected to contribute $77,509 to county revenues, which results in $392,898 being required from other sources to balance the budget. Additional expenditures by municipal governments in Bay County (i.e., all municipal governments combined) are projected to peak at $383,064, also in 2025. Additional *ad valorem* tax revenues were estimated to contribute about $19,724 while other taxes, fees, and licenses would add about $268,959 to municipal revenues, leaving about $99,381 required from all other sources to balance the budget.

The estimated impacts of the OCS reasonable maximum level of development on school enrollments in Bay County are summarized in Table 8.4.5. The number of school age children peaks at 96 in year 2030. This represents about one quarter of a percent (0.25 percent) of the projected baseline population in this age group. The additional expenditures by the Bay County school district are estimated to peak at $449,612 (in 2030), or about $4,650 per additional student. Total additional school district revenues are estimated to total about $446,000, including about $306,400 in added state revenues, $123,100 in additional *ad valorem* taxes, and $37,700 in extra federal revenues.

The projected impacts of the OCS reasonable maximum level of development on selected public services in Bay County are summarized in Table 8.4.6. Most impacts peak in 2025, when population impacts are greatest.

Table 8.4.1

MMS Florida Panhandle Model - Panama City
OCS Scenario Report - Reasonable Maximum

Impact Area	Panama City					Scenario Name:		PC: Reason Max			
Report Area	Bay County					Date:		September 18, 2001			
Production Scenario in Lease Sale 181:	Reasonable Maximum					Destin Dome :		Not Serviced in Florida			
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.6	1.8	3.3	2.7	2.4	1.5	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	8.1	28.4	40.5	36.5	32.4	24.3	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	0.0	0.0	2.2	7.3	11.2	9.8	8.7	6.2	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	2.2	7.3	11.2	9.8	8.7	6.2	0.0	0.0
Destin Dome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	0	0	288	288	288	288	288	288	0	0
Helicopter Trips from Service Base	0	0	0	1248	1248	1248	1248	1248	1248	0	0

Table 8.4.2

MMS Florida Panhandle Model - Panama City
Population Report - Reasonable Maximum

Impact Area	Panama City							Scenario Name:		PC: Reason Max	
Report Areas	Bay County							Date:		September 18, 2001	
Bay County											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,277	162,188	174,665	187,868	198,909	210,644	219,413	227,517	234,747	242,132
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	0	0	89	332	568	589	575	485	209	132
Net Change in Households	0	0	0	36	133	227	236	230	194	84	53

Table 8.4.3

MMS Florida Panhandle Model - Panama City
Output and Employment Report - Reasonable Maximum

Impact Area	Panama City							Scenario Name:		PC: Reason Max	
Report Area	Bay County							Date:		September 18, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,858.5	5,011.5	5,481.2	5,871.1	6,171.2	6,289.9	6,458.6	6,548.9	6,762.9	6,977.9	7,209.7
Baseline	4,858.5	5,011.5	5,481.2	5,868.2	6,161.1	6,274.4	6,445.1	6,536.9	6,754.3	6,977.9	7,209.7
Net Impact	0.0	0.0	0.0	2.8	10.1	15.5	13.6	12.0	8.5	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,229.4	4,364.7	4,803.2	5,166.3	5,449.2	5,568.3	5,731.3	5,819.2	6,017.0	6,215.7	6,430.6
Baseline	4,229.4	4,364.7	4,803.2	5,163.5	5,439.3	5,552.9	5,717.9	5,807.3	6,008.6	6,215.7	6,430.6
Net Impact	0.0	0.0	0.0	2.8	9.9	15.3	13.4	11.9	8.4	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	69,060	70,811	77,151	82,650	86,767	88,332	90,496	91,556	94,310	97,009	100,028
Baseline	69,060	70,811	77,151	82,575	86,509	87,935	90,150	91,248	94,092	97,009	100,028
Net Impact	0	0	0	75	258	397	347	308	219	0	0

Table 8.4.4

MMS Florida Panhandle Model - Panama City
Fiscal Balance Report - Reasonable Maximum

Impact Area	Panama City							Scenario Name:		PC: Reason Max	
Report Area	Bay County							Date:		September 18, 2001	
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	139,173	150,277	162,188	174,665	187,868	198,909	210,644	219,413	227,517	234,747	242,132
Baseline Population	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	0	0	89	332	568	589	575	485	209	132
Net Change in Households	0	0	0	36	133	227	236	230	194	84	53
Net Change in Area Output Excluding Govt (in Millions of Dollars)	0	0	0	3	10	15	13	12	8	0	0
County Government											
Revenues	0	0	0	71,311	265,313	453,422	470,407	458,889	386,769	166,823	105,679
Ad Valorem Taxes	0	0	0	12,590	46,279	77,332	77,509	74,343	60,933	22,375	14,174
Residential	0	0	0	9,564	35,584	60,814	63,092	61,547	51,875	22,375	14,174
Commercial and Industrial	0	0	0	3,025	10,694	16,517	14,416	12,796	9,059	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	0	0	0	0	0	0	0	0
From All Other Sources to Balance Budget	0	0	0	58,721	219,034	376,090	392,899	384,546	325,836	144,448	91,505
Expenditures	0	0	0	71,311	265,313	453,422	470,407	458,889	386,769	166,823	105,679
Municipal Government											
Revenues	0	0	0	58,070	216,050	369,232	383,064	373,684	314,955	135,848	86,057
Ad Valorem Taxes	0	0	0	3,204	11,777	19,679	19,724	18,918	15,506	5,694	3,607
Residential	0	0	0	2,434	9,055	15,476	16,055	15,662	13,201	5,694	3,607
Commercial and Industrial	0	0	0	770	2,721	4,203	3,669	3,256	2,305	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	40,015	148,875	254,428	263,959	257,496	217,027	93,609	59,300
From All Other Sources to Balance Budget	0	0	0	14,852	55,399	95,125	99,381	97,270	82,422	36,545	23,151
Expenditures	0	0	0	58,070	216,050	369,232	383,064	373,684	314,955	135,848	86,057

Table 8.4.5

MMS Florida Panhandle Model - Panama City
Schools Report - Reasonable Maximum

Impact Area	Panama City							Scenario Name:		PC: Reason Max	
Report Area	Bay County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	27,310	29,495	30,868	31,523	32,896	34,658	36,899	38,394	39,456	40,382	41,727
Baseline	27,310	29,495	30,868	31,510	32,851	34,582	36,814	38,298	39,368	40,337	41,698
Net Change	0	0	0	13	45	76	85	96	88	45	29
Net Change in Households	0	0	0	36	133	227	236	230	194	84	53
Fiscal Impact of Net Change											
Total Revenues	0	0	0	60,607	219,074	373,184	407,723	446,036	400,800	198,527	127,527
Local Ad Valorem Taxes	0	0	0	20,850	76,641	128,067	128,360	123,117	100,910	37,054	23,473
Residential Property	0	0	0	15,839	58,930	100,713	104,485	101,927	85,908	37,054	23,473
Commerical Property	0	0	0	5,010	17,711	27,354	23,875	21,190	15,002	0	0
State Revenues	0	0	0	39,866	142,608	242,636	270,034	306,430	280,411	143,792	92,660
Federal Revenues	0	0	0	4,902	17,536	29,835	33,204	37,680	34,480	17,681	11,394
Expenditures	0	0	0	58,493	209,243	356,010	396,210	449,612	411,436	210,980	135,956

Table 8.4.6

MMS Florida Panhandle Model - Panama City
Public Services Report - Reasonable Maximum

Impact Area	Panama City							Scenario Name:		PC: Reason Max	
Report Area	Bay County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,277	162,188	174,665	187,868	198,909	210,644	219,413	227,517	234,747	242,132
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Impact	0	0	0	89	332	568	589	575	485	209	132
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	7.9	29.4	50.3	52.1	50.9	42.9	18.5	11.7
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	24.1	89.8	153.4	159.2	155.3	130.9	56.4	35.8
Solid Waste (tons per year)	0.0	0.0	0.0	159.1	591.8	1,011.3	1,049.2	1,023.5	862.7	372.1	235.7
Road & Highway (miles)	0.0	0.0	0.0	0.5	1.9	3.2	3.4	3.3	2.8	1.2	0.8
Police Protection	0	0	0	0	1	2	2	2	1	1	0
Crimes	0.0	0.0	0.0	6.0	22.2	37.9	39.3	38.4	32.4	14.0	8.8
Fire Protection	0	0	0	0	0	1	1	1	1	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	1	1	1	1	1	0	0

Destin Dome

Key parameters of the scenario in which Destin Dome development is supported by a facility near Panama City and the resulting impacts for the Panama City area are summarized in Table 8.5.1. Under the Destin Dome scenario, natural gas production begins in the year 2000, peaks in 2005 at 109.5 billion cubic feet, and drops to zero by 2025 (Table 8.5.1). Under this scenario, OCS expenditures in the impact area peak at $20.7 million annually in 2005. Throughout the period of oil and gas production (2000 through 2020), OCS support is estimated to require 288 boat trips and 1248 helicopter flights annually from the support base (i.e., the same number of trips as in the other scenarios).

Estimated Destin Dome impact on the population of the Panama City area is projected to peak at 968 persons in the year 2005 (which is only 0.6 percent of the area's projected baseline population for that year). The area would have a net increase of 387 households in the year 2005 as a result of OCS-Destin Dome activity (Table 8.5.2). While OCS production and resulting economic impacts end in 2020, some population impacts and related socioeconomic effects continue through year 2045.

Impacts of the Destin Dome scenario on total output in the Panama City area are estimated to peak at $28.7 million in the year 2005, while the impact on employment peaks at 735 jobs in the same year. The peak impact on area output represents about 0.5 percent of the area's projected baseline output, or 0.6 percent of output excluding government (Table 8.5.3). The peak employment impact represents about 1.0 percent of projected baseline employment.

Net fiscal impacts of the Destin Dome scenario on Bay County and its municipalities are summarized in Table 8.5.4. Additional expenditures by county government resulting from OCS-Destin Dome activity are projected to peak in 2005, at $772,795. Additional *ad valorem* taxes are projected to contribute $134,224 to county revenues, and other taxes, fees, and licenses contribute $320,174, which results in $318,397 being required from other sources to balance the budget. Additional expenditures by municipal governments in Bay County (i.e., all municipal governments combined) are projected to peak at $629,305, also in 2005. Additional *ad valorem* tax revenues were estimated to contribute about $34,160 while other taxes, fees, and licenses would add about $433,600 to municipal revenues, leaving about $161,510 required from all other sources to balance the budget.

Estimated impacts of the Destin Dome scenario on school enrollments in Bay County are summarized in Table 8.5.5. The number of school age children peaks at 129 in year 2005. This represents about 0.4 percent of the projected baseline population in this age group. The additional expenditures by the Bay County school district are estimated to peak at $603,137 (in 2005), or about $4,675 per additional student.

Total additional school district revenues are estimated to total about $663,260, including about $411,060 in added state revenues, $222,285 in additional *ad valorem* taxes, and $50,550 in extra federal revenues.

The projected impacts of the Destin Dome scenario on selected public services in Bay County are summarized in Table 8.5.6. Most impacts peak in 2005, when population impacts are greatest.

Table 8.5.1

MMS Florida Panhandle Model - Panama City
OCS Scenario Report - Destin Dome

Impact Area	Panama City						Scenario Name:		PC: Destin Dome		
Report Area	Bay County						Date:		September 18, 2001		
Production Scenario in Lease Sale 181:	Not Serviced in Florida						Destin Dome:		Serviced in Florida		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	54.8	109.5	71.2	42.0	25.6	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	7.9	20.7	14.2	7.9	4.5	0.0	0.0	0.0	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Destin Dome	0.0	7.9	20.7	14.2	7.9	4.5	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	288	288	288	288	288	0	0	0	0	0
Helicopter Trips from Service Base	0	1248	1248	1248	1248	1248	0	0	0	0	0

Table 8.5.2

MMS Florida Panhandle Model - Panama City
Population Report - Destin Dome

Impact Area	Panama City							Scenario Name:		PC: Destin Dome	
Report Areas	Bay County							Date:		September 18, 2001	
Bay County											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,608	163,156	175,449	188,164	198,790	210,284	218,989	227,133	234,606	242,040
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	331	968	874	629	449	229	151	100	68	41
Net Change in Households	0	133	387	350	251	180	92	60	40	27	16

Table 8.5.3

MMS Florida Panhandle Model - Panama City
Output and Employment Report - Destin Dome

Impact Area	Panama City							Scenario Name:		PC: Destin Dome	
Report Area	Bay County							Date:		September 27, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,858.5	5,022.2	5,509.9	5,887.8	6,171.8	6,280.3	6,445.1	6,536.9	6,754.3	6,977.9	7,209.7
Baseline	4,858.5	5,011.5	5,481.2	5,868.2	6,161.1	6,274.4	6,445.1	6,536.9	6,754.3	6,977.9	7,209.7
Net Impact	0.0	10.7	28.7	19.6	10.7	5.9	0.0	0.0	0.0	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	4,229.4	4,375.3	4,831.5	5,182.8	5,449.8	5,558.7	5,717.9	5,807.3	6,008.6	6,215.7	6,430.6
Baseline	4,229.4	4,364.7	4,803.2	5,163.5	5,439.3	5,552.9	5,717.9	5,807.3	6,008.6	6,215.7	6,430.6
Net Impact	0.0	10.5	28.3	19.3	10.5	5.8	0.0	0.0	0.0	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	69,060	71,547	77,653	82,852	86,664	87,935	90,150	91,248	94,092	97,009	100,028
Baseline	69,060	70,811	77,151	82,575	86,509	87,935	90,150	91,248	94,092	97,009	100,028
Net Impact	0	276	735	502	276	154	0	0	0	0	0

Table 8.5.4

MMS Florida Panhandle Model - Panama City
Fiscal Balance Report - Destin Dome

Impact Area	Panama City						Scenario Name:	PC: Destin Dome			
Report Area	Bay County						Date:	September 18, 2001			
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	139,173	150,608	163,156	175,449	188,164	198,790	210,284	218,989	227,133	234,606	242,040
Baseline Population	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Change in Population	0	331	968	874	629	449	229	151	100	68	41
Net Change in Households	0	133	387	350	251	180	92	60	40	27	16
Net Change in Area Output Excluding Govt (in Millions of Dollars)	0	11	28	19	11	6	0	0	0	0	0
County Government											
Revenues	0	264,361	772,795	697,552	501,611	358,633	182,971	120,366	79,866	54,209	32,498
Ad Valorem Taxes	0	46,822	134,224	114,377	78,642	54,363	24,541	16,144	10,712	7,271	4,359
Residential	0	35,457	103,649	93,557	67,277	48,101	24,541	16,144	10,712	7,271	4,359
Commercial and Industrial	0	11,365	30,575	20,820	11,365	6,262	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	109,526	320,174	109,526	109,526	109,526	109,526	109,526	109,526	109,526	109,526
From All Other Sources to Balance Budget	0	108,013	318,398	473,649	313,443	194,744	48,904	-5,304	-40,372	-62,588	-81,387
Expenditures	0	264,361	772,795	697,552	501,611	358,633	182,971	120,366	79,866	54,209	32,498
Municipal Government											
Revenues	0	215,275	629,305	568,033	408,474	292,043	148,997	98,017	65,037	44,143	26,464
Ad Valorem Taxes	0	11,915	34,157	29,106	20,012	13,834	6,245	4,108	2,726	1,850	1,109
Residential	0	9,023	26,376	23,808	17,120	12,240	6,245	4,108	2,726	1,850	1,109
Commercial and Industrial	0	2,892	7,780	5,298	2,892	1,594	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	148,340	433,638	391,416	281,469	201,239	102,670	67,541	44,815	30,418	18,236
From All Other Sources to Balance Budget	0	55,020	161,511	147,511	106,993	76,970	40,082	26,368	17,496	11,875	7,119
Expenditures	0	215,275	629,305	568,033	408,474	292,043	148,997	98,017	65,037	44,143	26,464

Table 8.5.5

MMS Florida Panhandle Model - Panama City
Schools Report - Destin Dome

Impact Area	Panama City						Scenario Name:		PC: Destin Dome		
Report Area	Bay County						Date:		September 18, 2001		
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	27,310	29,541	30,997	31,625	32,964	34,685	36,873	38,320	39,371	40,348	41,723
Baseline	27,310	29,495	30,868	31,510	32,851	34,582	36,814	38,298	39,368	40,337	41,698
Net Change	0	46	129	115	113	103	59	22	3	11	25
Net Change in Households	0	133	387	350	251	180	92	60	40	27	16
Fiscal Impact of Net Change											
Total Revenues	0	224,680	633,260	567,520	514,687	449,702	252,818	105,258	27,410	51,234	96,868
Local Ad Valorem Taxes	0	77,540	222,285	189,417	130,237	90,029	40,641	26,735	17,740	12,041	7,218
Residential Property	0	58,719	171,651	154,938	111,416	79,658	40,641	26,735	17,740	12,041	7,218
Commerical Property	0	18,821	50,634	34,479	18,821	10,371	0	0	0	0	0
State Revenues	0	147,788	411,064	367,404	359,113	329,524	188,944	69,924	8,611	34,901	79,833
Federal Revenues	0	18,172	50,546	45,177	44,158	40,519	23,233	8,598	1,059	4,292	9,816
Expenditures	0	216,844	603,137	539,078	526,911	483,497	277,229	102,597	12,635	51,209	117,135

Table 8.5.6

MMS Florida Panhandle Model - Panama City
Public Services Report - Destin Dome

Report Area	Panama City Bay County							Scenario Name: Date:		PC: Destin Dome September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	139,173	150,608	163,156	175,449	188,164	198,790	210,284	218,989	227,133	234,606	242,040
Baseline	139,173	150,277	162,188	174,575	187,536	198,341	210,054	218,838	227,033	234,538	241,999
Net Impact	0	331	968	874	629	449	229	151	100	68	41
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	29.3	85.7	77.3	55.6	39.8	20.3	13.3	8.9	6.0	3.6
Residential Wastewater (thousands of gallons per day)	0.0	89.4	261.5	236.0	169.7	121.3	61.9	40.7	27.0	18.3	11.0
Solid Waste (tons per year)	0.0	589.6	1,723.7	1,555.8	1,118.8	799.9	408.1	268.5	178.1	120.9	72.5
Road & Highway (miles)	0.0	1.9	5.5	5.0	3.6	2.6	1.3	0.9	0.6	0.4	0.2
Police Protection	0	1	3	2	2	1	1	0	0	0	0
Crimes	0.0	22.1	64.6	58.3	42.0	30.0	15.3	10.1	6.7	4.5	2.7
Fire Protection	0	0	1	1	1	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	1	2	2	1	1	0	0	0	0	0

Pensacola

Lease Sale 181

Key parameters of the minimum threshold scenario and the resulting impacts for the Pensacola area are summarized in Table 8.6.1. The assumptions of the minimum threshold scenario are the same as were discussed for the Panama City area; oil production from Lease Sale 181 begins in 2010, peaks in 2020 at 1.7 million barrels, and ends by 2040. Natural gas production follows the same time pattern, with a peak production of 25.0 billion cubic feet in 2020 (Table 8.6.1). Under this scenario, OCS expenditures in the impact area peak at $6.5 million annually in 2020. Throughout the period of oil and gas production (2010 through 2035), OCS support is estimated to require 288 boat trips and 1248 helicopter flights annually from the support base .

Estimated OCS impact on the population of the Pensacola area is projected to peak at 499 persons in the year 2025 (which is only 0.1 percent of the area's projected baseline population for that year). The area would have a net increase of 200 households in the year 2025 as a result of OCS activity (Table 8.6.2). While OCS production and resulting economic impacts end in 2035, some population impacts and related socioeconomic effects continue through year 2045. The population impacts are divided between Escambia and Santa Rosa Counties, with Escambia County recording its greatest population impact in 2030 (216 persons) and Santa Rosa reaching its peak impact in 2025 (290 persons).

Impacts of the OCS minimum threshold level of development on total output in the Pensacola area are estimated to peak at $10.1 million in the year 2020, while the impact on employment peaks at 337 jobs in the same year. The peak impact on area output represents about 0.1 percent of the area's projected baseline output, or 0.1 percent of output excluding government (Table 8.6.3). The peak employment impact represents about 0.1 percent of projected baseline employment.

Net fiscal impacts of the OCS minimum threshold level of development on Escambia and Santa Rosa Counties and their municipalities are summarized in Table 8.6.4. Additional expenditures by Escambia County government resulting from OCS activity are projected to peak in 2030, at $154,370. Additional *ad valorem* taxes are projected to contribute $31,882 to county revenues, and other taxes, licenses, and fees add $66,233, which results in $56,255 being required from other sources to balance the budget. Additional expenditures by municipal governments in Escambia County (i.e., all municipal governments combined) are projected to peak at $125,915, also in 2030. Additional *ad valorem* tax revenues were estimated to contribute about $4,150 while other taxes, fees, and licenses would add about $56,700 to municipal revenues, leaving about $65,065 required from all other sources to balance the budget. Fiscal impacts for local governments in Santa Rosa County exhibit similar patterns except the impacts peak in 2025 (Table 8.6.4).

Estimated impacts of the OCS minimum threshold level of development on school enrollments in Escambia and Santa Rosa Counties are summarized in Table 8.6.5. The number of school age children net change in Santa Rosa County peaks at 52 in year 2030. This represents about 0.2 percent of the projected baseline population in this age group. The additional expenditures by the Santa Rosa County school district are estimated to peak at $228,034 (in 2030), or about $4,385 per additional student. Total additional school district revenues are estimated to total about $224,600, including about $167,950 in added state revenues, $38,400 in additional *ad valorem* taxes, and $19,500 in extra federal revenues. Impacts in Escambia County follow a similar pattern, except that the number of school age children net change peaks in 2035.

Projected impacts of the OCS minimum threshold level of development on selected public services in Escambia and Santa Rosa Counties are summarized in Table 8.6.6. Most impacts peak in 2030 in Escambia County and in 2025 in Santa Rosa County, the years when population impacts are greatest.

Table 8.6.1

MMS Florida Panhandle Model - Pensacola
OCS Scenario Report - Minimum Threshold

Impact Area	Pensacola						Scenario Name:		PEN: Min Threshold		
Report Area	Pensacola						Date:		September 18, 2001		
Production Scenario in Lease Sale 181:	Minimum Threshold						Destin Dome :		Not Serviced in Florida		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.3	0.9	1.7	1.4	1.2	0.8	0.0	0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	5.0	17.5	25.0	22.5	20.0	15.0	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	0.0	0.0	1.3	4.3	6.5	5.7	5.1	3.6	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	1.3	4.3	6.5	5.7	5.1	3.6	0.0	0.0
Destin Dome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	0	0	288	288	288	288	288	288	0	0
Helicopter Trips from Service Base	0	0	0	1248	1248	1248	1248	1248	1248	0	0

Table 8.6.2

MMS Florida Panhandle Model - Pensacola, Escambia, Santa Rosa
Population Report - Minimum Threshold

Impact Area	Pensacola, Escambia, Santa Rosa	Scenario Name:	PEN: Min Threshold
Report Areas	Pensacola, Escambia, Santa Rosa	Date:	September 18, 2001

Pensacola Area

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	377,822	410,086	441,204	469,561	502,761	526,715	547,699	567,523	585,392	602,143	618,303
Baseline	377,822	410,086	441,204	469,488	502,482	526,239	547,200	567,029	584,973	601,966	618,202
Net Change in Population	0	0	0	73	279	477	499	493	419	177	102
Net Change in Households	0	0	0	29	112	191	200	197	168	71	41

Escambia

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,578	316,849	334,371	353,006	367,011	379,594	391,036	401,114	410,214	418,506
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	0	0	32	113	192	208	216	194	101	70
Net Change in Households	0	0	0	13	45	77	83	86	77	40	28

Santa Rosa

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	96,660	113,508	124,354	135,190	149,755	159,704	168,104	176,486	184,279	191,928	199,797
Baseline	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Change in Population	0	0	0	41	167	284	290	277	225	76	32
Net Change in Households	0	0	0	16	67	114	116	111	90	30	13

Table 8.6.3

MMS Florida Panhandle Model - Pensacola
Output and Employment Report - Minimum Threshold

Impact Area	Pensacola							Scenario Name:		PEN: Min Threshold	
Report Area	Pensacola							Date:		September 18, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	14,451.2	16,449.0	17,223.7	17976.5	18,772.5	18,961.6	19,152.2	19,607.4	20,073.1	20,547.4	21,039.3
Baseline	14,451.2	16,449.0	17,223.7	17974.8	18,766.0	18,951.6	19,143.4	19,599.6	20,067.6	20,547.4	21,039.3
Net Impact	0.0	0.0	0.0	1.7	6.5	10.1	8.8	7.8	5.5	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	12,703.5	14,354.2	15,093.7	15,815.1	16,558.0	16,752.7	16,949.4	17,373.4	17,807.6	18,250.2	18,709.8
Baseline	12,703.5	14,354.2	15,093.7	15,813.5	16,551.6	16,742.8	16,940.7	17,365.7	17,802.1	18,250.2	18,709.8
Net Impact	0.0	0.0	0.0	1.7	6.4	9.9	8.7	7.7	5.4	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	193,173	223,342	234,998	245,882	257,389	260,374	263,239	269,323	275,509	281,728	288,279
Baseline	193,173	223,342	234,998	245,820	257,169	260,036	262,943	269,060	275,322	281,728	288,279
Net Impact	0	0	0	62	221	337	296	263	188	0	0

Table 8.6.4

MMS Florida Panhandle Model - Pensacola
Fiscal Balance Report- Minimum Threshold

Impact Area	Pensacola							Scenario Name:	PEN: Min Threshold		
Report Area	Escambia County							Date:	September 18, 2001		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	281,162	296,578	316,849	334,371	353,006	367,011	379,594	391,036	401,114	410,214	418,506
Baseline Population	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	0	0	32	113	192	208	216	194	101	70
Net Change in Households	0	0	0	13	45	77	83	86	77	40	28
Net Change in Area Output Excluding Govt (in Millions of Dollars)	0	0	0	2	6	10	9	8	5	0	0
County Government											
Revenues	0	0	0	22,809	80,522	137,279	148,793	154,370	138,300	72,062	49,826
Ad Valorem Taxes	0	0	0	5,122	18,426	30,635	31,669	31,882	27,499	12,231	8,457
Residential	0	0	0	3,871	13,667	23,301	25,255	26,202	23,474	12,231	8457
Commercial and Industrial	0	0	0	1,251	4,759	7,335	6,414	5,680	4,025	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	9,786	34,548	58,900	63,840	66,233	59,338	30,918	21,378
From All Other Sources to Balance Budget	0	0	0	7,900	27,548	47,744	53,284	56,256	51,463	28,912	19,991
Expenditures	0	0	0	22,809	80,522	137,279	148,793	154,370	138,300	72,062	49,826
Municipal Government											
Revenues	0	0	0	18,605	65,679	111,974	121,367	125,915	112,808	58,779	40,642
Ad Valorem Taxes	0	0	0	667	2,400	3,990	4,124	4,152	3,581	1,593	1,101
Residential	0	0	0	504	1,780	3,034	3,289	3,412	3,057	1,593	1,101
Commercial and Industrial	0	0	0	163	620	955	835	740	524	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	8,383	29,593	50,453	54,685	56,734	50,828	26,484	18,312
From All Other Sources to Balance Budget	0	0	0	9,555	33,686	57,532	62,558	65,029	58,398	30,702	21,228
Expenditures	0	0	0	18,605	65,679	111,974	121,367	125,915	112,808	58,779	40,642

Table 8.6.5

MMS Florida Panhandle Model - Pensacola
Schools Report - Minimum Threshold

Impact Area	Pensacola							Scenario Name:		PEN: Min Threshold	
Report Area	Escambia County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	55,401	59,473	57,103	59,505	64,227	67,296	68,557	68,632	68,544	69,699	71,885
Baseline	55,401	59,473	57,103	59,494	64,200	67,264	68,534	68,593	68,496	69,672	71,857
Net Change	0	0	0	10	28	32	23	39	48	27	28
Net Change in Households	0	0	0	13	45	77	83	86	77	40	28
Fiscal Impact of Net Change											
Total Revenues	0	0	0	45,440	124,565	153,244	120,122	186,054	217,823	120,510	120,682
Local Ad Valorem Taxes	0	0	0	5,931	21,337	35,476	36,673	36,918	31,843	14,164	9,793
Residential Property	0	0	0	4,483	15,827	26,982	29,245	30,341	27,183	14164	9,793
Commerical Property	0	0	0	1,448	5,511	8,494	7,427	6,577	4,661	0	0
State Revenues	0	0	0	35,173	93,382	108,431	78,044	133,723	163,718	91,329	95,230
Federal Revenues	0	0	0	5,784	15,356	17,830	12,834	21,990	26,922	15,018	15,660
Expenditures	0	0	0	49,608	131,707	152,932	110,073	188,604	230,910	128,810	134,312

Table 8.6.5 (continued)

MMS Florida Panhandle Model - Pensacola
Schools Report - Minimum Threshold

Impact Area	Pensacola							Scenario Name:		PEN: Min Threshold	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	19,462	21,262	22,059	23,041	24,675	26,046	27155	28,177	29,010	29,927	31,249
Baseline	19,462	21,262	22,059	23,036	24,656	26,008	27,108	28,125	28,969	29,913	31,249
Net Change	0	0	0	5	20	37	47	52	41	14	0
Net Change in Households	0	0	0	16	67	114	116	111	90	30	13
Fiscal Impact of Net Change											
Total Revenues	0	0	0	22,401	93,472	173,644	209,981	224,617	179,856	62,086	4,495
Local Ad Valorem Taxes	0	0	0	5,778	23,426	39,800	40,399	38,438	31,129	10,172	4,269
Residential Property	0	0	0	5,490	22,328	38,108	38,919	37,127	30,200	10,172	4,269
Commerical Property	0	0	0	289	1,098	1,692	1,480	1,310	929	0	0
State Revenues	0	0	0	15,149	63,730	121,412	153,237	167,953	134,061	46,504	202
Federal Revenues	0	0	0	1,762	7,413	14,123	17,825	19,537	15,595	5,410	24
Expenditures	0	0	0	20,568	86,528	164,845	208,053	228,034	182,019	63,140	275

Table 8.6.6

MMS Florida Panhandle Model - Pensacola
Public Services Report - Minimum Threshold

Impact Area	Pensacola							Scenario Name:		PEN: Min Threshold	
Report Area	Escambia County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,578	316,849	334,371	353,006	367,011	379,594	391,036	401,114	410,214	418,506
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Impact	0	0	0	32	113	192	208	216	194	101	70
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	2.7	9.4	16.1	17.4	18.1	16.2	8.4	5.8
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	2.3	8.1	13.7	14.9	15.4	13.8	7.2	5.0
Solid Waste (tons per year)	0.0	0.0	0.0	51.1	180.4	307.6	333.4	345.9	309.9	161.5	111.6
Road & Highway (miles)	0.0	0.0	0.0	0.1	0.4	0.7	0.8	0.8	0.7	0.4	0.3
Police Protection	0	0	0	0	0	0	1	1	0	0	0
Crimes	0.0	0.0	0.0	2.0	7.0	11.9	12.9	13.4	12.0	6.3	4.3
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	0	0	1	1	0	0	0

Table 8.6.6 (continued)

MMS Florida Panhandle Model - Pensacola
Public Services Report - Minimum Threshold

Impact Area	Pensacola							Scenario Name:		PEN: Min Threshold	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	96,660	113,508	124,354	135,190	149,755	159,704	168,104	176,486	184,279	191,928	199,797
Baseline	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Impact	0	0	0	41	167	284	290	277	225	76	32
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	3.7	15.2	26.0	26.6	25.3	20.6	6.9	2.9
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	1.2	5.0	8.6	8.7	8.3	6.8	2.3	1.0
Solid Waste (tons per year)	0	0	0	30	123	210	215	205	167	56	24
Road & Highway (miles)	0.0	0.0	0.0	0.3	1.2	2.0	2.1	2.0	1.6	0.5	0.2
Police Protection	0	0	0	0	0	1	1	1	0	0	0
Crimes	0	0	0	1	6	10	11	10	8	3	1
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	0	0	0	0	0	0	0

Key parameters of the reasonable maximum scenario and the resulting impacts for the Pensacola area are summarized in Table 8.7.1. The assumptions of the reasonable maximum scenario are the same as were discussed for the Panama City area; oil production from Lease Sale 181 begins in 2010, peaks in 2020 at 3.3 million barrels, and ends by 2040. Natural gas production follows the same time pattern, with a peak production of 40.5 billion cubic feet in 2020 (Table 8.7.1). Under this scenario, OCS expenditures in the impact area peak at $11.2 million annually in 2020. Throughout the period of oil and gas production (2010 through 2035), OCS support is estimated to require 288 boat trips and 1248 helicopter flights annually from the support base.

Estimated OCS impact on the population of the Pensacola area is projected to peak at 862 persons in the year 2025 (which is only 0.2 percent of the area's projected baseline population for that year). The area would have a net increase of 345 households in the year 2025 as a result of OCS activity (Table 8.7.2). While OCS production and resulting economic impacts end in 2035, some population impacts and related socioeconomic effects continue through year 2045. The population impacts are divided between Escambia and Santa Rosa Counties, with Escambia County recording its greatest population impact in 2035 (374 persons) and Santa Rosa reaching its peak impact in 2025 (502 persons).

Impacts of the OCS reasonable maximum level of development on total output in the Pensacola area are estimated to peak at $17.5 million in the year 2020, while the impact on employment peaks at 584 jobs in the same year. The peak impact on area output represents about 0.1 percent of the area's projected baseline output, or 0.1 percent of output excluding government (Table 8.7.3). The peak employment impact represents about 0.2 percent of projected baseline employment.

Net fiscal impacts of the OCS reasonable maximum level of development on Escambia and Santa Rosa Counties and their municipalities are summarized in Table 8.7.4. Additional expenditures by Escambia County government resulting from OCS activity are projected to peak in 2030, at $266,923. Additional *ad valorem* taxes are projected to contribute about $55,200 to county revenues, and other taxes, licenses, and fees add $114,500, which results in about $97,194 being required from other sources to balance the budget. Additional expenditures by municipal governments in Escambia County (i.e., all municipal governments combined) are projected to peak at $217,721, also in 2030. Additional *ad valorem* tax revenues were estimated to contribute about $7,200 while other taxes, fees, and licenses would add about $98,100 to municipal revenues, leaving about $112,432 required from all other sources to balance the budget. Fiscal impacts for local governments in Santa Rosa County exhibit similar patterns except the impacts peak in 2025 (Table 8.7.4).

Estimated impacts of the OCS reasonable maximum level of development on school enrollments in Escambia and Santa Rosa Counties are summarized in Table 8.7.5. The number of school age children net change in Santa Rosa County peaks at 90 in year 2030. This represents about 0.3 percent of the projected baseline population in this age group. The additional expenditures by the Santa Rosa County school district are estimated to peak at $393,837 in 2030. Total additional school district revenues are estimated to total about $387,936, including about

$290,100 in added state revenues, $66,400 in additional *ad valorem* taxes, and $33,700 in extra federal revenues. Impacts in Escambia County follow a similar pattern, except that the number of school age children net change peaks in 2035.

Projected impacts of the OCS reasonable maximum level of development on selected public services in Escambia and Santa Rosa Counties are summarized in Table 8.7.6. Most impacts peak in 2030 in Escambia County and in 2025 in Santa Rosa County, the years when population impacts are greatest.

Table 8.7.1

MMS Florida Panhandle Model - Pensacola
OCS Scenario Report - Reasonable Maximum

Impact Area	Pensacola						Scenario Name:	PEN: Reason Max			
Report Area	Pensacola						Date:	September 18, 2001			
Production Scenario in Lease Sale 181:	Reasonable Maximum						Destin Dome :	Not Serviced in Florida			
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.6	1.8	3.3	2.7	2.4	1.5	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	8.1	28.4	40.5	36.5	32.4	24.3	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	0.0	0.0	2.2	7.3	11.2	9.8	8.7	6.2	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	2.2	7.3	11.2	9.8	8.7	6.2	0.0	0.0
Destin Dome	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	0	0	288	288	288	288	288	288	0	0
Helicopter Trips from Service Base	0	0	0	1248	1248	1248	1248	1248	1248	0	0

Table 8.7.2

MMS Florida Panhandle Model - Pensacola, Escambia, Santa Rosa
Population Report - Reasonable Maximum

Impact Area	Pensacola, Escambia, Santa Rosa	Scenario Name:	PEN: Reason Max
Report Areas	Pensacola, Escambia, Santa Rosa	Date:	September 18, 2001

Pensacola Area

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	377,822	410,086	441,204	469,617	502,964	527,064	548,062	567,882	585,695	602,271	618,377
Baseline	377,822	410,086	441,204	469,488	502,482	526,239	547,200	567,029	584,973	601,966	618,202
Net Change in Population	0	0	0	129	481	825	862	852	722	305	175
Net Change in Households	0	0	0	52	193	330	345	341	289	122	70

Escambia

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,578	316,849	334,395	353,088	367,152	379,746	391,194	401,254	410,288	418,557
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	0	0	57	195	333	360	374	334	174	121
Net Change in Households	0	0	0	23	78	133	144	150	134	70	48

Santa Rosa

Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	96,660	113,508	124,354	135,222	149,875	159,912	168,316	176,688	184,441	191,983	199,820
Baseline	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Change in Population	0	0	0	73	287	492	502	479	388	131	55
Net Change in Households	0	0	0	29	115	197	201	191	155	52	22

Table 8.7.3

MMS Florida Panhandle Model - Pensacola
Output and Employment Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Pensacola							Date:		September 18, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	14,451.2	16,449.0	17,223.7	17,978.0	18,777.3	18,969.1	19,158.7	19,613.1	20,077.1	20,547.4	21,039.3
Baseline	14,451.2	16,449.0	17,223.7	17,974.8	18,766.0	18,951.6	19,143.4	19,599.6	20,067.6	20,547.4	21,039.3
Net Impact	0.0	0.0	0.0	3.2	11.3	17.5	15.3	13.6	9.6	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	12,703.5	14,354.2	15,093.7	15,816.6	16,562.8	16,760.1	16,955.8	17,379.1	17,811.6	18,250.2	18,709.8
Baseline	12,703.5	14,354.2	15,093.7	15,813.5	16,551.6	16,742.8	16,940.7	17,365.7	17,802.1	18,250.2	18,709.8
Net Impact	0.0	0.0	0.0	3.1	11.2	17.3	15.1	13.4	9.5	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	193,173	223,342	234,998	245,930	257,548	260,621	263,454	269,514	275,644	281,728	288,279
Baseline	193,173	223,342	234,998	245,820	257,169	260,036	262,943	269,060	275,322	281,728	288,279
Net Impact	0	0	0	110	380	584	511	454	322	0	0

Table 8.7.4

MMS Florida Panhandle Model - Pensacola
Fiscal Balance Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Escambia County							Date:		September 18, 2001	
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	281,162	296,578	316,849	334,395	353,088	367,152	379,746	391,194	401,254	410,288	418,557
Baseline Population	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	0	0	57	195	333	360	374	334	174	121
Net Change in Households	0	0	0	23	78	133	144	150	134	70	48
Net Change in Area Output Excluding Govt (in Millions of Dollars)	0	0	0	3	11	17	15	13	9	0	0
County Government											
Revenues	0	0	0	40,484	138,905	237,812	257,273	266,923	238,500	124,487	86,165
Ad Valorem Taxes	0	0	0	9,183	31,844	53,154	54,825	55,205	47,478	21,130	14,625
Residential	0	0	0	6,871	23,577	40,365	43,668	45,306	40,481	21,130	14,625
Commercial and Industrial	0	0	0	2,311	8,267	12,789	11,158	9,899	6,997	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	17,370	59,598	102,033	110,383	114,524	102,329	53,411	36,969
From All Other Sources to Balance Budget	0	0	0	13,931	47,464	82,624	92,064	97,195	88,693	49,946	34,571
Expenditures	0	0	0	40,484	138,905	237,812	257,273	266,923	238,500	124,487	86,165
Municipal Government											
Revenues	0	0	0	33,021	113,301	193,976	209,850	217,721	194,538	101,541	70,282
Ad Valorem Taxes	0	0	0	1,196	4,147	6,922	7,140	7,189	6,183	2,752	1,905
Residential	0	0	0	895	3,070	5,257	5,687	5,900	5,272	2,752	1,905
Commercial and Industrial	0	0	0	301	1,077	1,666	1,453	1,289	911	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	14,879	51,051	87,401	94,553	98,100	87,654	45,752	31,668
From All Other Sources to Balance Budget	0	0	0	16,947	58,103	99,653	108,157	112,432	100,701	53,037	36,710
Expenditures	0	0	0	33,021	113,301	193,976	209,850	217,721	194,538	101,541	70,282

Table 8.7.4 (continued)

MMS Florida Panhandle Model - Pensacola
Fiscal Balance Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:	PEN: Reason Max		
Report Area	Santa Rosa County							Date:	September 18, 2001		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	96,660	113,508	124,354	135,222	149,875	159,912	168,316	176,688	184441	191,983	199,820
Baseline Population	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Change in Population	0	0	0	73	287	492	502	479	388	131	55
Net Change in Households	0	0	0	29	115	197	201	191	155	52	22
Net Change in Area Output Excluding Govt (in Millions of Dollars)											
County Government											
Revenues	0	0	0	54,374	214,533	367,914	375,045	357,817	289,971	97,608	40,901
Ad Valorem Taxes	0	0	0	8,100	31,804	54,289	55,000	52,338	42,227	13,786	5,777
Residential	0	0	0	7,680	30,300	51,964	52,971	50,538	40,955	13,786	5,777
Commercial and Industrial	0	0	0	420	1,503	2,326	2,029	1,800	1,272	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	25,642	101,169	173,500	176,863	168,739	136,744	46,030	19,288
From All Other Sources to Balance Budget	0	0	0	20,632	81,560	140,124	143,182	136,741	110,999	37,792	15,836
Expenditures	0	0	0	54,374	214,533	367,914	375,045	357,817	289,971	97,608	40,901
Municipal Government											
Revenues	0	0	0	18,182	71,737	123,026	125,411	119,650	96,963	32,639	13,677
Ad Valorem Taxes	0	0	0	343	1,345	2,296	2,326	2,213	1,786	583	244
Residential	0	0	0	325	1,281	2,197	2,240	2,137	1,732	583	244
Commercial and Industrial	0	0	0	18	64	98	86	76	54	0	0
Other Taxes, Fees, Licences, etc.	0	0	0	10,360	40,876	70,100	71,459	68,176	55,249	18,598	7,793
From All Other Sources to Balance Budget	0	0	0	7,479	29,517	50,630	51,626	49,260	39,928	13,458	5,639
Expenditures	0	0	0	18,182	71,737	123,026	125,411	119,650	96,963	32,639	13,677

Table 8.7.5

MMS Florida Panhandle Model - Pensacola
Schools Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Escambia County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	55,401	59,473	57,103	59,513	64,247	67,319	68,574	68,661	68,579	69,718	71,906
Baseline	55,401	59,473	57,103	59,494	64,200	67,264	68,534	68,593	68,496	69,672	71,857
Net Change	0	0	0	18	47	56	40	68	83	47	48
Net Change in Households	0	0	0	23	78	133	144	150	134	70	48
Fiscal Impact of Net Change											
Total Revenues	0	0	0	80,652	213,095	266,657	207,706	322,182	375,211	208,771	208,369
Local Ad Valorem Taxes	0	0	0	10,634	36,875	61,552	63,487	63,926	54,979	24,468	16,936
Residential Property	0	0	0	7,957	27,302	46,742	50,567	52,464	46,877	24,468	16,936
Commerical Property	0	0	0	2,677	9,573	14,810	12,920	11,463	8,102	0	0
State Revenues	0	0	0	62,429	159,556	188,859	134,948	231,629	281,967	158,276	164,399
Federal Revenues	0	0	0	10,266	26,237	31,056	22,191	38,089	46,367	26,027	27,034
Expenditures	0	0	0	88,050	225,038	266,368	190,332	326,692	397,688	223,233	231,870

Table 8.7.5 (continued)

MMS Florida Panhandle Model - Pensacola
Schools Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	19,462	21,262	22,059	23,045	24,690	26,073	27,190	28,215	29,040	29,938	31,249
Baseline	19,462	21,262	22,059	23,036	24,656	26,008	27,108	28,125	28,969	29,913	31,249
Net Change	0	0	0	8	34	65	82	90	71	25	0
Net Change in Households	0	0	0	29	115	197	201	191	155	52	22
Fiscal Impact of Net Change											
Total Revenues	0	0	0	39,759	161,066	300,724	362,498	387,936	309,573	106,932	7,302
Local Ad Valorem Taxes	0	0	0	10,277	40,352	68,882	69,783	66,405	53,578	17,492	7,329
Residential Property	0	0	0	9,744	38,445	65,931	67,209	64,122	51,963	17,492	7,329
Commerical Property	0	0	0	533	1,907	2,951	2,574	2,284	1,614	0	0
State Revenues	0	0	0	26,887	109,843	210,326	264,519	290,071	230,766	80,120	-25
Federal Revenues	0	0	0	3,128	12,778	24,467	30,771	33,743	26,844	9,320	-3
Expenditures	0	0	0	36,506	149,137	285,565	359,144	393,837	313,316	108,782	-34

Table 8.7.6

MMS Florida Panhandle Model - Pensacola
Public Services Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Escambia County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,578	316,849	334,395	353,088	367,152	379,746	391,194	401,254	410,288	418,557
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Impact	0	0	0	57	195	333	360	374	334	174	121
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	4.7	16.3	27.9	30.1	31.3	27.9	14.6	10.1
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	4.0	13.9	23.8	25.7	26.7	23.8	12.4	8.6
Solid Waste (tons per year)	0.0	0.0	0.0	90.7	311.2	532.8	576.4	598.0	534.4	278.9	193.1
Road & Highway (miles)	0.0	0.0	0.0	0.2	0.7	1.2	1.3	1.4	1.2	0.7	0.5
Police Protection	0	0	0	0	0	1	1	1	1	0	0
Crimes	0.0	0.0	0.0	3.5	12.1	20.6	22.3	23.2	20.7	10.8	7.5
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	0	1	1	1	1	0	0

Table 8.7.6 (continued)

MMS Florida Panhandle Model - Pensacola
Public Services Report - Reasonable Maximum

Impact Area	Pensacola							Scenario Name:		PEN: Reason Max	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	96,660	113,508	124,354	135,222	149,875	159,912	168,316	176,688	184,441	191,983	199,820
Baseline	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Impact	0	0	0	73	287	492	502	479	388	131	55
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	0.0	0.0	6.7	26.2	45.0	45.9	43.8	35.5	11.9	5.0
Residential Wastewater (thousands of gallons per day)	0.0	0.0	0.0	2.2	8.6	14.8	15.1	14.4	11.7	3.9	1.6
Solid Waste (tons per year)	0	0	0	54	212	364	371	354	287	97	40
Road & Highway (miles)	0.0	0.0	0.0	0.5	2.0	3.5	3.6	3.4	2.7	0.9	0.4
Police Protection	0	0	0	0	1	1	1	1	1	0	0
Crimes	0	0	0	3	10	18	18	17	14	5	2
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	0	0	0	0	1	1	1	0	0	0

Destin Dome

Key parameters of the Destin Dome scenario and the resulting impacts for the Pensacola area are summarized in Table 8.8.1. The assumptions of this scenario are the same as were discussed for the Panama City area; natural gas production begins in the year 2000, peaks in 2005 at 109.5 billion cubic feet, and drops to zero by 2025 (Table 8.8.1). Under this scenario, OCS expenditures in the impact area peak at $20.7 million annually in 2005. Throughout the period of gas production (2005 through 2020), OCS support is estimated to require 288 boat trips and 1248 helicopter flights annually from the support base.

Estimated OCS impact on the population of the Pensacola area is projected to peak at 1,394 persons in the year 2005 (which is only 0.3 percent of the area's projected baseline population for that year). The area would have a net increase of 558 households in the year 2005 as a result of OCS activity (Table 8.8.2). While OCS production and resulting economic impacts end by 2025, some population impacts and related socioeconomic effects continue through year 2045. The population impacts are divided between Escambia and Santa Rosa Counties, with Escambia County recording its greatest population impact in 2005 (805 persons) and Santa Rosa also reaching its peak impact in 2005 (589 persons).

Impacts of the Destin Dome scenario on total output in the Pensacola area are estimated to peak at $32.7 million in the year 2005, while the impact on employment peaks at 1,087 jobs in the same year. The peak impact on area output represents about 0.2 percent of the area's projected baseline output, or 0.2 percent of output excluding government (Table 8.8.3). The peak employment impact represents about 0.5 percent of projected baseline employment.

Net fiscal impacts of the Destin Dome scenario on Escambia and Santa Rosa Counties and their municipalities are summarized in Table 8.8.4. Additional expenditures by Escambia County government resulting from OCS activity are projected to peak in 2005, at $57,542. Additional *ad valorem* taxes are projected to contribute about $121,388 to county revenues, and other taxes, licenses, and fees add $246,508, which results in about $206,646 being required from other sources to balance the budget. Additional expenditures by municipal governments in Escambia County (i.e., all municipal governments combined) are projected to peak at $468,637, also in 2005. Additional *ad valorem* tax revenues were estimated to contribute about $15,800 while other taxes, fees, and licenses would add about $211,156 to municipal revenues, leaving about $241,673 required from all other sources to balance the budget. Fiscal impacts for local governments in Santa Rosa County exhibit similar patterns with the impacts also peaking in 2005 (Table 8.8.4).

Estimated impacts of the Destin Dome scenario on school enrollments in Escambia and Santa Rosa Counties are summarized in Table 8.8.5. The number of school age children net change in Escambia County peaks at 192 in year 2020. This represents about 0.3 percent of the projected baseline population in this age group. The additional expenditures by the Escambia County school district are estimated to peak at $920,857 in 2020, or about $4,795 per additional student. Total additional school district revenues are estimated to total about $852,352, including about

$652,900 in added state revenues, $97,860 in additional *ad valorem* taxes, and $107,360 in extra federal revenues. Impacts in Santa Rosa County follow a similar pattern, except that the number of school age children net change peaks in 2005.

Projected impacts of the OCS reasonable maximum level of development on selected public services in Escambia and Santa Rosa Counties are summarized in Table 8.8.6. Most impacts peak in 2005 in both counties, coinciding with the years when population impacts are greatest.

Table 8.8.1

MMS Florida Panhandle Model - Pensacola
OCS Scenario Report - Destin Dome

Impact Area	Pensacola							Scenario Name:	PEN: Destin Dome		
Report Area	Pensacola							Date:	September 18, 2001		
Production Scenario in Lease Sale 181:	Not Serviced in Florida							Destin Dome :	Serviced in Florida		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Oil and Gas Production in Eastern Gulf of Mexico											
Lease Sale 181											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Destin Dome											
Oil Production (Millions of Barrels)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Production (Billions of Cubic Feet)	0.0	54.8	109.5	71.2	42.0	25.6	0.0	0.0	0.0	0.0	0.0
OCS Expenditures in Impact Area	0.0	7.9	20.7	14.2	7.9	4.5	0.0	0.0	0.0	0.0	0.0
Lease Sale 181	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Destin Dome	0.0	7.9	20.7	14.2	7.9	4.5	0.0	0.0	0.0	0.0	0.0
Scenario Impact on Key Industries											
Tourism											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage Change in Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Military											
Percentage Change in Level	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OCS-Related Activities											
Boat Trips from Service Base	0	288	288	288	288	288	0	0	0	0	0
Helicopter Trips from Service Base	0	1248	1248	1248	1248	1248	0	0	0	0	0

Table 8.8.2

MMS Florida Panhandle Model - Pensacola, Escambia, Santa Rosa
Population Report - Destin Dome

Impact Area	Pensacola, Escambia, Santa Rosa							Scenario Name:		PEN: Destin Dome	
Report Areas	Pensacola, Escambia, Santa Rosa							Date:		September 18, 2001	
Pensacola Area											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	377,822	410,566	442,598	470,757	503,442	526,974	547,568	567,203	585,017	601,995	618,282
Baseline	377,822	410,086	441,204	469,488	502,482	526,239	547,200	567,029	584,973	601,966	618,202
Net Change in Population	0	480	1,394	1,270	959	736	368	173	43	29	81
Net Change in Households	0	192	558	508	384	294	147	69	17	11	32
Escambia											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,884	317,654	335,120	353,606	367,475	379,896	391,238	401,278	410,472	418,826
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	306	805	782	713	656	511	418	358	358	389
Net Change in Households	0	123	322	313	285	262	204	167	143	143	156
Santa Rosa											
Total Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	96,660	113,681	124,944	135,637	149,835	159,499	167,672	175,965	183,739	191,523	199,457
Baseline	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Change in Population	0	173	589	488	247	79	-142	-245	-314	-330	-309
Net Change in Households	0	69	236	195	99	32	-57	-98	-126	-132	-123

Table 8.8.3

MMS Florida Panhandle Model - Pensacola
Output and Employment Report - Destin Dome

Impact Area	Pensacola							Scenario Name:		PEN: Destin Dome	
Report Area	Pensacola							Date:		September 18, 2001	
Total Output (in $ Millions)	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	14,451.2	16,461.3	17,256.4	17,997.1	18,778.3	18,958.4	19,143.4	19,599.6	20,067.6	20,547.4	21,039.3
Baseline	14,451.2	16,449.0	17,223.7	17,974.8	18,766.0	18,951.6	19,143.4	19,599.6	20,067.6	20,547.4	21,039.3
Net Impact	0.0	12.3	32.7	22.3	12.3	6.8	0.0	0.0	0.0	0.0	0.0
Output Excl. Government	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	12,703.5	14,366.4	15,126.0	15,835.5	16,563.7	16,749.5	16,940.7	17,365.7	17,802.1	18,250.2	18,709.8
Baseline	12,703.5	14,354.2	15,093.7	15,813.5	16,551.6	16,742.8	16,940.7	17,365.7	17,802.1	18,250.2	18,709.8
Net Impact	0.0	12.1	32.3	22.1	12.1	6.8	0.0	0.0	0.0	0.0	0.0
Employment	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	193,173	223,754	236,085	246,564	257,580	260,268	262,943	269,060	275,322	281,728	288,279
Baseline	193,173	223,342	234,998	245,820	257,169	260,036	262,943	269,060	275,322	281,728	288,279
Net Impact	0	412	1,087	744	412	232	0	0	0	0	0

Table 8.8.4

MMS Florida Panhandle Model - Pensacola
Fiscal Balance Report - Destin Dome

Impact Area	Pensacola							Scenario Name:	PEN: Destin Dome		
Report Area	Escambia County							Date:	September 18, 2001		
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	281162	296884	317,654	335,120	353,606	367,475	379,896	391238	401278	410472	418826
Baseline Population	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Change in Population	0	306	805	782	713	656	511	418	358	358	389
Net Change in Households	0	123	322	313	285	262	204	167	143	143	156
Net Change in Area Output Excluding Govt (in Millions of Dollars)	0	12	32	22	12	7	0	0	0	0	0
County Government											
Revenues	0	218,796	574,542	558,243	508,937	468,513	364,574	298,540	255,499	255,861	277,956
Ad Valorem Taxes	0	46,087	121,388	111,045	95,334	84,510	61,880	50,672	43,367	43,428	47,178
Residential	0	37,137	97,519	94,753	86,384	79,522	61,880	50,672	43,367	43,428	47,178
Commercial and Industrial	0	8,950	23,869	16,293	8,950	4,987	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	93,875	246,508	239,515	218,360	201,016	156,421	128,089	109,622	109,778	119,258
FromAll Other Sources to Balance Budget	0	78,834	206,646	207,683	195,243	182,987	146,272	119,779	102,510	102,655	111,520
Expenditures	0	218,796	574,542	558,243	508,937	468,513	364,574	298,540	255,499	255,861	277,956
Municipal Government											
Revenues	0	178,466	468,637	455,343	415,125	382,153	297,372	243,510	208,403	208,698	226,721
Ad Valorem Taxes	0	6,002	15,808	14,461	12,415	11,006	8,059	6,599	5,648	5,656	6,144
Residential	0	4,836	12,700	12,340	11,250	10,356	8,059	6,599	5,648	5,656	6,144
Commercial and Industrial	0	1,166	3,108	2,122	1,166	650	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	80,412	211,156	205,166	187,045	172,189	133,989	109,720	93,901	94,034	102,155
From All Other Sources to Balance Budget	0	92,052	241,673	235,715	215,665	198,959	155,325	127,192	108,854	109,008	118,422
Expenditures	0	178,466	468,637	455,343	415,125	382,153	297,372	243,510	208,403	208,698	226,721

Table 8.8.4 (continued)

MMS Florida Panhandle Model - Pensacola
Fiscal Balance Report - Destin Dome

Impact Area	Pensacola							Scenario Name:		PEN: Destin Dome	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Item	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario Population	96,660	113,681	124,944	135,637	149,835	159,499	167,672	175,965	183,739	191,523	199,457
Baseline Population	96,660	113,508	124,354	135,149	149,589	159,420	167,814	176,209	184,053	191,853	199,765
Net Change in Population	0	173	589	488	247	79	-142	-245	-314	-330	-309
Net Change in Households	0	69	236	195	99	32	-57	-98	-126	-132	-123
Net Change in Area Output Excluding Govt (in Millions of Dollars)											
County Government											
Revenues	0	129,466	440,764	364,780	184,499	59,398	-106,237	-183,001	-235,106	-246,510	-230,728
Ad Valorem Taxes	0	19,913	66,593	54,484	27,686	9,296	-15,005	-25,847	-33,206	-34,817	-32,588
Residential	0	18,286	62,253	51,521	26,058	8,389	-15,005	-25,847	-33,206	-34,817	-32,588
Commercial and Industrial	0	1,628	4,340	2,963	1,628	907	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	61,053	207,855	172,022	87,006	28,011	-50,099	-86,299	-110,871	-116,249	-108,806
From All Other Sources to Balance Budget	0	48,500	166,316	138,274	69,807	22,091	-41,133	-70,855	-91,029	-95,444	-89,334
Expenditures	0	129,466	440,764	364,780	184,499	59,398	-106,237	-183,001	-235,106	-246,510	-230,728
Municipal Government											
Revenues	0	43,292	147,386	121,978	61,694	19,862	-35,524	-61,193	-78,617	-82,430	-77,153
Ad Valorem Taxes	0	842	2,816	2,304	1,171	393	-634	-1,093	-1,404	-1,472	-1,378
Residential	0	773	2,632	2,179	1,102	355	-634	-1,093	-1,404	-1,472	-1,378
Commercial and Industrial	0	69	184	125	69	38	0	0	0	0	0
Other Taxes, Fees, Licences, etc.	0	24,668	83,981	69,503	35,153	11,317	-20,242	-34,868	-44,796	-46,968	-43,962
From All Other Sources to Balance Budget	0	17,782	60,590	50,171	25,370	8,152	-14,648	-25,233	-32,417	-33,989	-31,813
Expenditures	0	43,292	147,386	121,978	61,694	19,862	-35,524	-61,193	-78,617	-82,430	-77,153

Table 8.8.5

MMS Florida Panhandle Model - Pensacola
Schools Report - Destin Dome

Impact Area	Pensacola							Scenario Name:	PEN: Destin Dome		
Report Area	Escambia County							Date:	September 18, 2001		
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	55,401	59,573	57,277	59,535	64,292	67,456	68,723	68,713	68,518	69,663	71,883
Baseline	55,401	59,473	57,103	59,494	64,200	67,264	68,534	68,593	68,496	69,672	71,857
Net Change	0	99	174	41	92	192	189	120	22	-9	26
Net Change in Households	0	123	322	313	285	262	204	167	143	143	156
Fiscal Impact of Net Change											
Total Revenues	0	435,889	801,144	270,897	462,997	852,352	817,353	534,695	138,480	14,656	158,088
Local Ad Valorem Taxes	0	53,368	140,566	128,589	110,396	97,862	71,657	58,678	50,218	50,289	54,632
Residential Property	0	43,004	112,926	109,722	100,031	92,086	71,657	58,678	50,218	50,289	54,632
Commerical Property	0	10,364	27,640	18,867	10,364	5,775	0	0	0	0	0
State Revenues	0	337,402	591,028	138,414	311,708	652,902	640,390	408,795	75,797	-30,601	88,846
Federal Revenues	0	55,483	97,189	22,761	51,258	107,364	105,306	67,223	12,464	-5,032	14,610
Expenditures	0	475,873	833,590	195,219	439,635	920,857	903,210	576,567	106,905	-43,160	125,309

Table 8.8.5 (continued)

MMS Florida Panhandle Model - Pensacola
Schools Report - Destin Dome

Impact Area	Pensacola							Scenario Name:		PEN: Destin Dome	
Report Area	Santa Rosa County							Date:		September 18, 2001	
Number of School-Age Children	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	19,462	21,282	22,129	23,112	24,726	26,046	27,086	28,062	28,900	29,866	31,218
Baseline	19,462	21,262	22,059	23,036	24,656	26,008	27,108	28,125	28,969	29,913	31,249
Net Change	0	20	70	75	70	38	-22	-63	-69	-47	-30
Net Change in Households	0	69	236	195	99	32	-57	-98	-126	-132	-123
Fiscal Impact of Net Change											
Total Revenues	0	94,667	332,360	337,090	286,850	148,064	-97,299	-260,070	-290,350	-215,281	-151,462
Local Ad Valorem Taxes	0	25,266	84,493	69,128	35,128	11,795	-19,038	-32,794	-42,132	-44,175	-41,347
Residential Property	0	23,201	78,986	65,369	33,063	10,644	-19,038	-32,794	-42,132	-44,175	-41,347
Commerical Property	0	2,065	5,507	3,759	2,065	1,151	0	0	0	0	0
State Revenues	0	64,019	226,971	243,406	227,341	123,100	-70,106	-203,593	-222,353	-153,276	-98,641
Federal Revenues	0	7,447	26,403	28,315	26,446	14,320	-8,155	-23,683	-25,866	-17,830	-11,475
Expenditures	0	86,921	308,164	330,479	308,667	167,136	-95,185	-276,423	-301,894	-208,107	-133,927

Table 8.8.6

MMS Florida Panhandle Model - Pensacola
Public Services Report - Destin Dome

Impact Area	Pensacola							Scenario Name:		PEN: Destin Dome	
Report Area	Escambia County							Date:		September 18, 2001	
Population	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Scenario	281,162	296,884	317,654	335,120	353,606	367,475	379,896	391,238	401,278	410,472	418,826
Baseline	281,162	296,578	316,849	334,339	352,894	366,819	379,386	390,820	400,920	410,113	418,437
Net Impact	0	306	805	782	713	656	511	418	358	358	389
Public Services Impact											
Residential Water (thousands of gallons per day)	0.0	25.6	67.3	65.4	59.6	54.9	42.7	35.0	29.9	30.0	32.6
Residential Wastewater (thousands of gallons per day)	0.0	21.9	57.4	55.8	50.9	46.8	36.4	29.8	25.5	25.6	27.8
Solid Waste (tons per year)	0.0	490.2	1,287.3	1,250.7	1,140.3	1,049.7	816.8	668.9	572.4	573.3	622.8
Road & Highway (miles)	0.0	1.1	3.0	2.9	2.7	2.5	1.9	1.6	1.3	1.3	1.5
Police Protection	0	1	2	2	2	2	1	1	1	1	1
Crimes	0.0	19.0	49.9	48.4	44.2	40.7	31.6	25.9	22.2	22.2	24.1
Fire Protection	0	0	0	0	0	0	0	0	0	0	0
Public Welfare	0	0	0	0	0	0	0	0	0	0	0
Physicians	0	1	2	2	2	2	1	1	1	1	1

Impact Significance

While the magnitude of economic and demographic impacts resulting from the different scenarios was projected to differ somewhat over time and between areas, the impacts resulting from each of the scenarios were quite small relative to baseline levels of the respective indicators. For example, the employment impacts of the three scenarios never exceeded 1 percent of the forecasted baseline employment levels in the Panama City area, while in the Pensacola area the largest relative employment impact amounted to about 0.5 percent (i.e., one-half of one percent) of the baseline employment level (Table 8.9).

Another perspective on the significance of OCS impacts can be gained by comparing the projected employment effects associated with the OCS scenarios to the employment associated with the tourism and military sectors. In the Panama City area, the largest employment impact associated with OCS development is 735 jobs in 2005 under the Destin Dome scenario. By comparison, tourism is estimated to generate 10,617 jobs and military activity is expected to create 4,810 jobs. Thus, the maximum OCS impact would amount to only about 15 percent of the impact of military activity or 7 percent of the impact of tourism. In the Pensacola area, the maximum OCS impact is 1,087 jobs in 2005 under the Destin Dome scenario. Tourism is estimated to create 6,756 jobs and military activity is projected to generate 10,846 jobs in the Pensacola area in 2005. Thus, the maximum OCS impact would amount to about 16 percent of the impact of tourism or 10 percent of the impact of military activity.

Table 8.9

Employment Impacts of OCS Scenarios, Compared to Baseline Levels

Area/Scenario	Year 2000	2005	2010	2015	2020	2025	2030	2035
	percent of baseline							
Panama City:								
Minimum threshold	0	0	0.1	0.2	0.3	0.2	0.2	0.1
Maximum reasonable	0	0	0.1	0.3	0.5	0.4	0.3	0.2
Destin Dome	0.4	1.0	0.6	0.3	0.2	0	0	0
Pensacola:								
Minimum threshold	0	0	0.0	0.1	0.1	0.1	0.1	0.1
Maximum reasonable	0	0	0.0	0.1	0.2	0.2	0.2	0.1
Destin Dome	0.2	0.5	0.3	0.2	0.1	0	0	0

Given the projected size of an onshore support base in the Florida Panhandle, the level of OCS-related increases in employment would be small. Because the economy of the Florida Panhandle is projected to be at or near full-employment, however, those jobs not taken by commuters from outside the region would require additional net inmigration into the Florida Panhandle. This inmigration would, however, be only a fraction of the annual population growth projected for the area under baseline conditions. For example, the maximum population impact from OCS development in the Panama City area (Destin Dome scenario, 2005) is 968 persons. This is 23 percent of the baseline inmigration population growth projected for the Panama City area for the period 2000-2005. In the Pensacola area, the maximum population impact is 1,394 persons (Destin Dome, 2005), which represents only 8 percent of the projected baseline inmigration population growth for the area.

Our estimates suggest that in the long term, even if both the Lease Sale 181 and the Destin Dome project are supported by a base in the Florida Panhandle, the increase in the population due to this support will be less than two percent of the increase due to inmigration from 2000 to 2035. During the period 2010 to 2035 the Lease Sale 181 project would increase the population of the area by less then one third of a percent of the baseline population of Panama City, or up to one sixth of a percent of the baseline population of Pensacola.

The peak year is 2020, in term of the number of cumulative persons added to the population due to the sum effect of both projects. In that year we estimate that the reasonable maximum effect would be that a cumulation between 1,018 and 1,561 persons because of both projects. The cumulation would start in 2000. At 2020 this increase would be at most between 2.7% and 4.6% of the cumulative baseline inmigration. By 2035, the cumulative effect of additional persons would be less than 2% of the cumulative baseline inmigration. This assumes both the OCS activity at a reasonable maximum scenario for Lease Sale 181 and it assumes the Destin Dome scenario. Impacts on public services and infrastructure of Florida Panhandle communities resulting from OCS development also will be small relative to the increases in demands associated with projected baseline growth in the regions's economy and population.

CHAPTER 9
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The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.