Monroe County Marine Management Strategic Plan

Appendix 4

Demographic and Economic Analysis of Monroe County and the Marine Industry

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Introduction

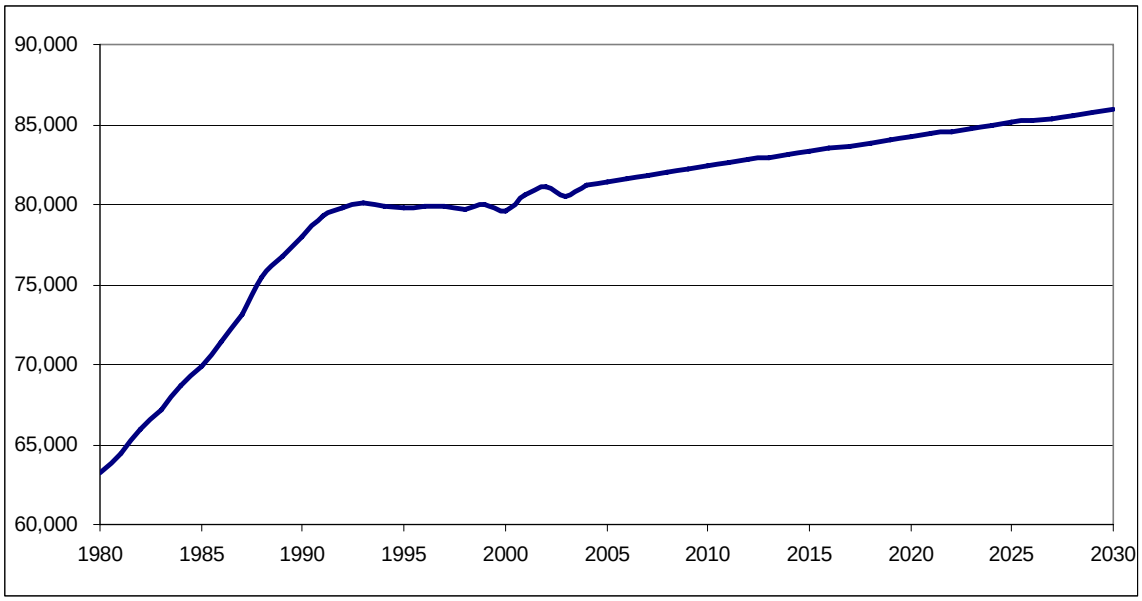
This overview of the Monroe County economy will cover such indicators as population, income, employment, and tax revenue. Specific industries will be highlighted and the results of possible scenarios involving marine-related activities will be reported. The County's economy has been relatively stable in terms of total employment in recent years, in line with the county's relatively constant population. In contrast, the rest of the South Florida region has been growing at a rapid rate. The composition of Monroe County's employment within the constant total has been changing, with some sectors expanding while others contract. Although total income from wages and salaries has been stable, reflecting the constant total employment, personal income has been increasing. Income from dividends, interest and rent has been rising.

Population

The official estimate of Monroe County's resident population on April 1, 2005 was 82,413, up from 79,589 at the Census in 2000. The rate of population growth in Monroe County, after steady increases in the 1980's, flattened out in the 1990's, and overall population is projected to rise at a relatively slow pace over the next three decades (see Figure 1).

In comparison to the average annual rates of growth of other South Florida counties, Monroe's population is expanding at a very low rate. During the 1980-90 period, Monroe's resident population growth rate averaged 2.1% per year, while the 7-county region grew at an annual rate of 2.5% (see Table 1). Since then the pace of growth in the County has been a fraction of what it is in the rest of the region. At least two factors have contributed to this reduction. First, growth control measures have been put in place in the Florida Keys as a result of strains on natural resources and concern with hurricane evacuation clearance times. In addition, more recently there has been an increase in the ownership of residential properties by non-residents.

Figure 1. Population of Monroe County, 1980-2030



Source: Office of Economic and Demographic Research (July 2005)

Table 1. Average Annual Population Growth Rates, 1970-2030

County	1970/1980	1980/1990	1990/2000	2000/2010	2010/2020	2020/2030
Monroe	**1.85%**	**2.13%**	**0.20%**	**0.35%**	**0.22%**	**0.20%**
Miami-Dade	2.52%	1.77%	1.53%	1.35%	1.10%	0.92%
Broward	5.08%	2.12%	2.60%	1.69%	1.45%	1.17%
Palm Beach	5.16%	4.12%	2.74%	2.25%	1.71%	1.37%
Martin	8.61%	4.66%	2.31%	1.97%	1.51%	1.22%
St. Lucie	5.54%	5.59%	2.52%	3.22%	2.03%	1.57%
Indian River	5.23%	4.18%	2.27%	2.55%	1.77%	1.39%
Region	3.81%	2.50%	2.12%	1.73%	1.39%	1.13%
Florida	3.68%	2.87%	2.14%	2.09%	1.54%	1.24%

Source: Office of Economic and Demographic Research (July 2005)

In 2000, almost 15% of the resident population in the Florida Keys was foreign-born, up from just under 9% in 1980 and 10% in 1990. Cubans represent the largest single group of foreign-born residents (40% in 2000). This influx of new residents from abroad reflects a similar growth of the foreign-born population in all of South Florida, although Monroe County continues to have a smaller proportion of foreign-born than the rest of the region. Foreign-born residents represent over half of the population in neighboring Miami-Dade County, and fully a third of the population of the entire 7-county region.

Monroe County's population is older than the population in much of the rest of South Florida. The median age in 2000 was 42.6 years, up from 38.8 in 1990. By comparison, median ages in Miami-Dade (35.6) and Broward (37.8) in 2000 were much lower, and were rising much more slowly. Monroe County's median age also was higher than the

state average (38.7) and the national average (35.3) in the year 2000. Approximately 15% of the population in Monroe County was 65 years or older. In the 2000 Census, Monroe County had the distinction of being the only county in all of South Florida with more males (42,379) than females (37,210) in the population.

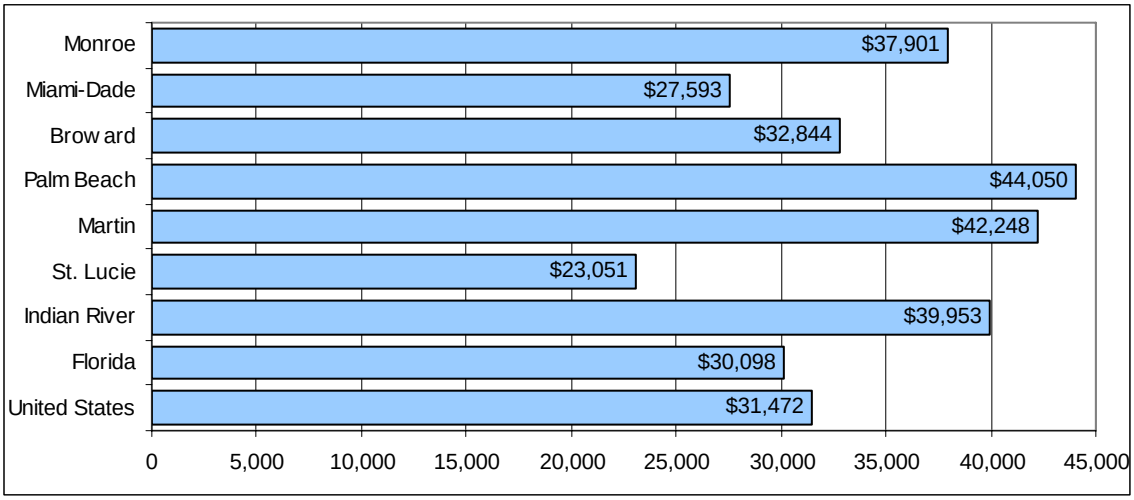
The racial and ethnic composition of the population in Monroe County also is different from that in neighboring counties. People of Hispanic origin (independent of race) made up 16% of residents in 2000, and non-Hispanic whites accounted for another 77%. The remaining 7% of Monroe County residents were of other non-Hispanic races, including Black and African American (4%). This contrasts with Miami-Dade and Broward counties where the Hispanic population was 40% of the total, and the non-Hispanic Black or African American population was almost 20% in 2000.

Personal Income

According to the US Bureau of Economic Analysis, in 2003 per capita personal income in Monroe County ($37,901) was 20% higher than the national average ($31,472) and 26% higher than the State of Florida average ($30,098). In South Florida Palm Beach, Martin and Indian River Counties all had higher per capita incomes, but Miami-Dade, Broward and St. Lucie Counties had lower income levels (see Figure 2).

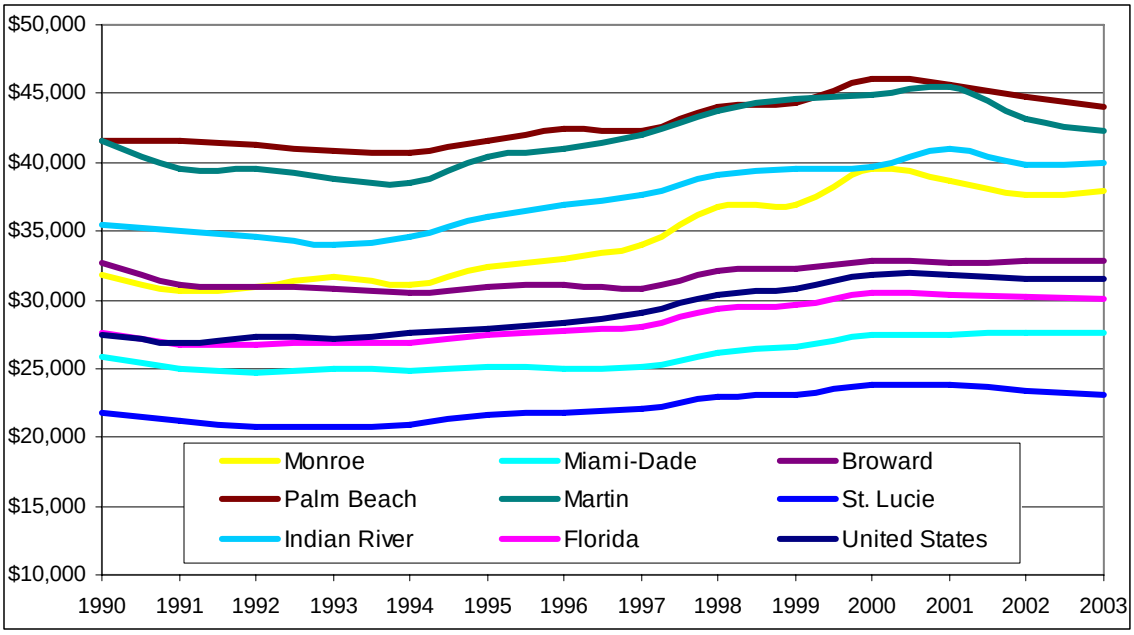
Monroe County's per capita incomes also have increased more rapidly since 1990 than any other part of South Florida. In 2003 inflation-adjusted dollars, per capita incomes rose from $31,867 in 1990 to $37,901 in 2003, an increase of 19%. Among South Florida counties, only Indian River County had double-digit growth in inflation-adjusted per capital incomes in the same period. Incomes in the State of Florida grew by less than 10%, while the national average grew by almost 15% during that 13-year period (see Figure 3).

Figure 2. Per Capita Personal Income, 2003



Source: US Bureau of Economic Analysis, Regional Economic Information System (April, 2005)

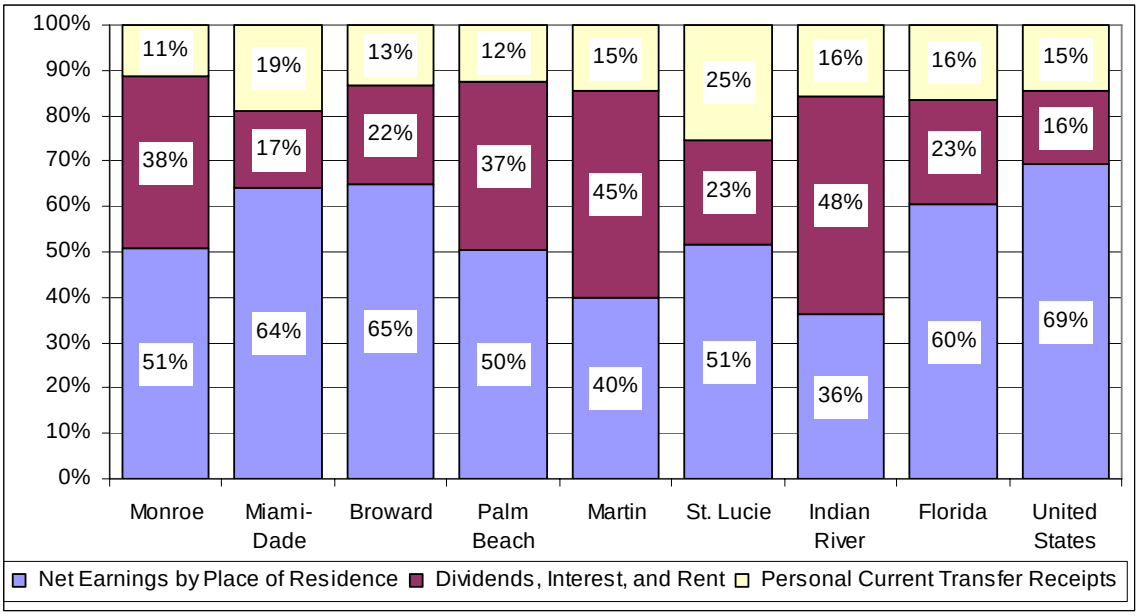
Figure 3. Inflation-Adjusted Per Capita Personal Income, 1990-2003 (2003 $)



Source: US Bureau of Economic Analysis, Regional Economic Information System (April, 2005)

The distribution of total personal income between net earnings (salaries and wages), transfer receipts (retirement income, unemployment insurance and assistance payments), and investment income (dividends, interest and rent) in 2003 is presented in Figure 4. Monroe County has the lowest percentage of income from transfer payments (11%) and the third highest percentage (38%) from dividends, interest and rental income. Personal incomes in Monroe County, therefore, are based to a larger extent on income from assets and wealth than on wages and salaries or income assistance from the public sector when compared to other areas in the region. For example, in 2003 the portion of income from dividends, interest and rent was much lower in Miami-Dade County (17%) and Broward County (22%). The proportion of personal income from assets in Monroe County grew steadily from a low of 17% in the early 1970s, stabilizing at current levels from the early 1990s forward. Thus the significant growth in personal income is attributed to an increase in the wealth position of the residents in Monroe County.

Figure 4. Components of Personal Income, 2003



Source: US Bureau of Economic Analysis, Regional Economic Information System (April, 2005)

Table 2 shows the breakdown of personal income by source (industry sector). The most significant private source of earnings is in the Leisure and Hospitality sector (22%), reflecting the county's tourism-based economy. Still, the largest single source of income is the public sector (25%), due at least in part to the significant presence of the federal and state governments. On the other hand, Education and Health Service (8%) in Monroe County represents a much lower proportion of personal income when compared with other counties in the region.

Marine-related activities are not easily separated for the purpose of analysis – instead, they are spread across several of the sectors used here. The small overall size of the Monroe County economy, and the small number of establishments in each of the marine-related sub-sectors make it especially difficult to obtain data from public sources, due to the need to avoid the disclosure of confidential information for individual firms.

For example, commercial fishing is the primary activity within the Natural Resources and Mining sector – the Bureau of Economic Analysis (BEA) did not disclose the personal income of this sector in its published data for 2003, but we estimate it represented approximately 1.4% of the county total that year. Boat dealers, fish and seafood markets, marine service stations, fishing supply stores and tackle shops all are found in the Retail Trade sector, which accounts for about 10% of the county's personal income in the aggregate – however, specific data for each of these sub-sectors is not available in the BEA estimates for 2003. We estimate that the marine-related components of the retail sector account for about a tenth of the total employment and

payroll of the sector, and less than 1% of the county's personal income. Ship and boat building and seafood preparation and packaging are included in the Manufacturing sector; charter boat operations are included in the Transportation and Utilities sector; marinas are included in the Leisure and Hospitality sector; and boat repair is included in Other Services – in each case, the marine-related activities are but a small portion of the larger sector within which they are classified. These observations are relevant also to the employment by sector presented in Table 4.

Table 2. Personal Income by Source (Industry Sector), 2003

Industry Sector	Monroe	Miami-Dade	Broward	Palm Beach	Martin	St. Lucie	Indian River
Farm	**0.0%**	0.3%	0.1%	0.6%	0.9%	0.4%	1.1%
Natural Resources and Mining	**1.4%**	0.2%	0.1%	0.5%	1.5%	4.8%	5.9%
Construction	**5.7%**	5.3%	7.2%	7.5%	9.8%	8.2%	8.9%
Manufacturing	**0.8%**	4.9%	5.4%	5.1%	6.9%	5.4%	5.6%
Wholesale Trade	**1.8%**	8.2%	7.3%	5.3%	3.4%	6.1%	2.9%
Retail Trade	**10.1%**	7.0%	9.6%	7.6%	12.2%	10.4%	10.9%
Transportation and Utilities	**2.9%**	6.9%	2.9%	4.6%	3.1%	4.6%	1.2%
Information	**1.5%**	5.4%	3.6%	3.6%	2.1%	1.4%	1.7%
Financial Activities	**7.9%**	9.8%	12.2%	11.8%	7.7%	6.3%	8.4%
Professional and Business Services	**8.7%**	16.1%	18.3%	20.8%	14.3%	8.9%	11.2%
Education and Health Service	**8.4%**	11.5%	10.6%	12.0%	15.1%	14.9%	17.6%
Leisure and Hospitality	**22.0%**	5.1%	4.8%	5.5%	6.4%	3.7%	7.5%
Other Services	**3.9%**	3.3%	3.8%	3.9%	5.4%	4.2%	4.1%
Government	**24.8%**	16.1%	14.3%	11.2%	11.3%	20.7%	13.0%

Source: US Bureau of Economic Analysis, Regional Economic Information System (April, 2005)

Residence adjustment measures the amount of personal income earned in another county by resident commuters (see Table 3). The negative 9.6% for Miami-Dade County in 2003 indicates that there are commuters who work in Miami-Dade County and take their earnings back to their county of residence. A reasonable assumption is that a significant portion of those commuters resides in Broward County, which derives a comparable proportion of its income from residents who work in other counties. Monroe County, by contrast, has among the lowest levels of inter-county commuting in the region, with a residence adjustment of less than 1%.

Table 3. Residence Adjustment, 2003

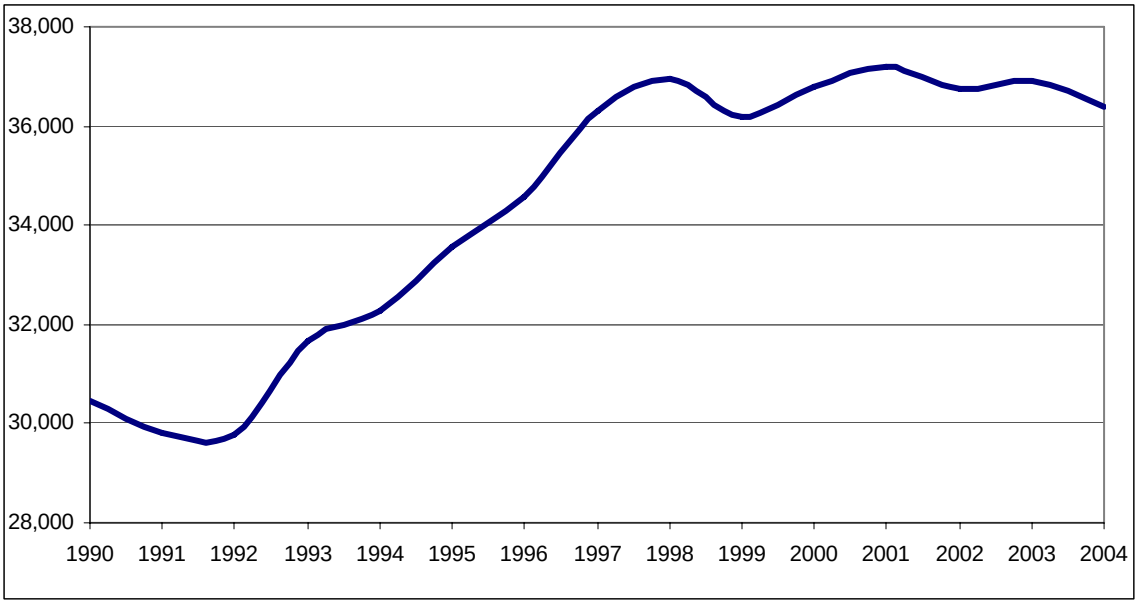
Monroe	Miami-Dade	Broward	Palm Beach	Martin	St. Lucie	Indian River
0.8%	-9.6%	9.2%	1.3%	3.4%	8.0%	0.1%

Source: US Bureau of Economic Analysis, Regional Economic Information System (April, 2005)

Employment

Total employment in Monroe County increased by about 20% between 1992 and 1998. After a small dip in 2000, employment has remained relatively constant, around 37,000, consistent with the relatively stable population in Monroe County (see Figure 5). At the same time, the number of new jobs has increased rapidly in the rest of the region. On the other hand, unemployment rates in Monroe County have consistently been the lowest in the region, ranging from a low of 2.3% in 1999 to an unusual high of 4.8% at the peak of a nationwide recession in 1992.

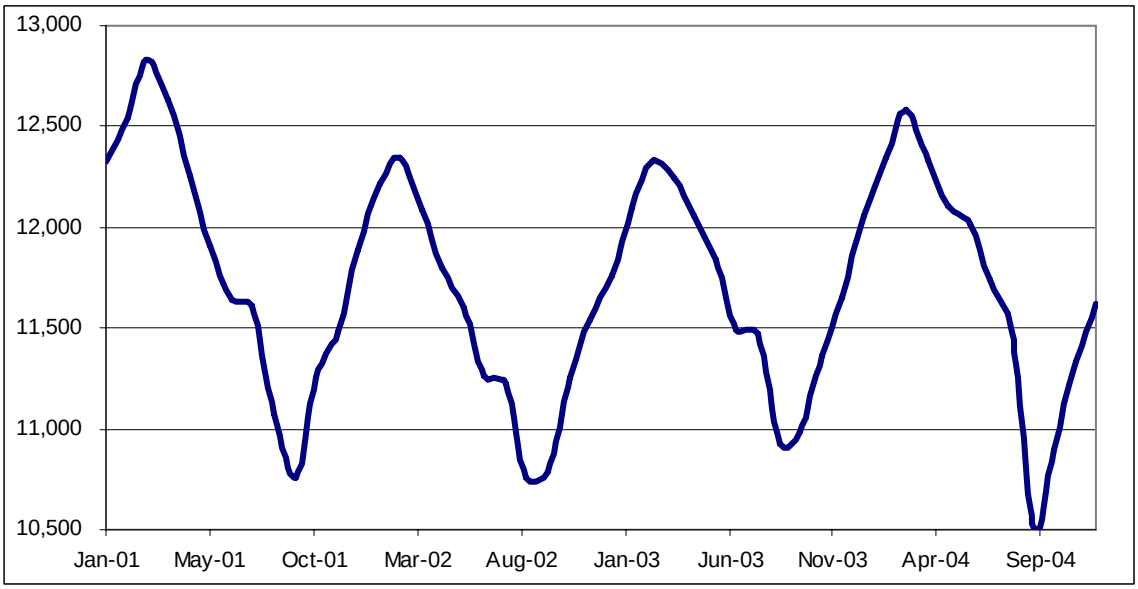
Figure 5. Average Annual Employment, Monroe County, 1990-2004



Source: Florida Agency for Workforce Innovation, Quarterly Census of Employment and Wages

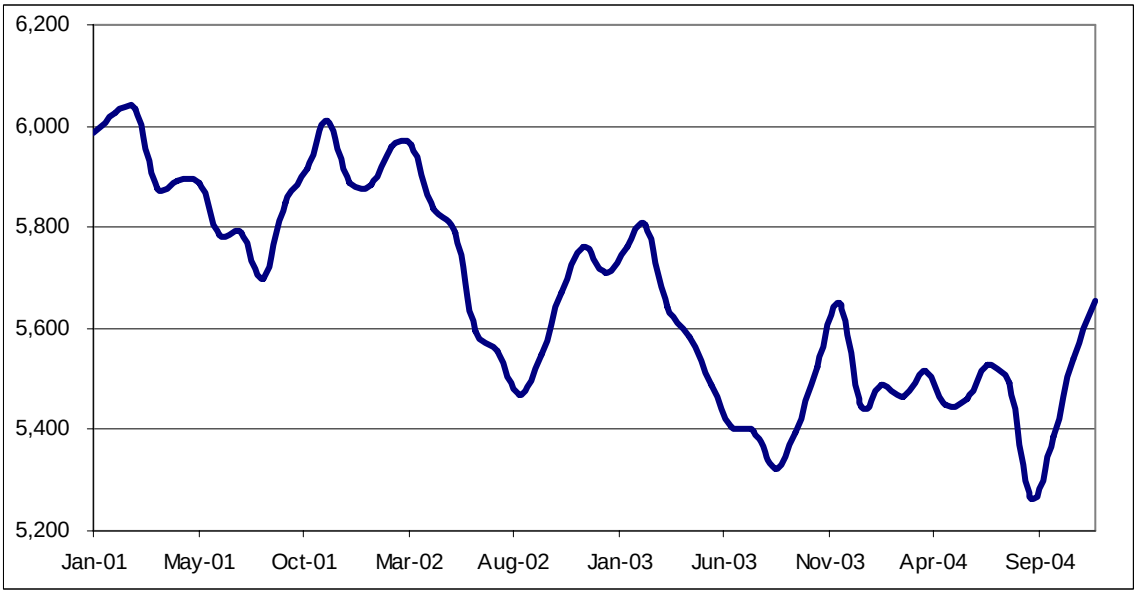
Monthly employment of selected industry sectors demonstrates the obvious seasonality of economic activity in Monroe County. This is best illustrated by the two most significant sectors in the county economy: Leisure and Hospitality (Figure 6) and Retail Trade (Figure 7). The seasonal pattern consists of an increase in employment during late autumn, winter and early spring seasons, with a decline in employment in late spring, summer and early autumn.

Figure 6. Monthly Employment in Leisure and Hospitality Services, 2001-2004



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (ES-202).

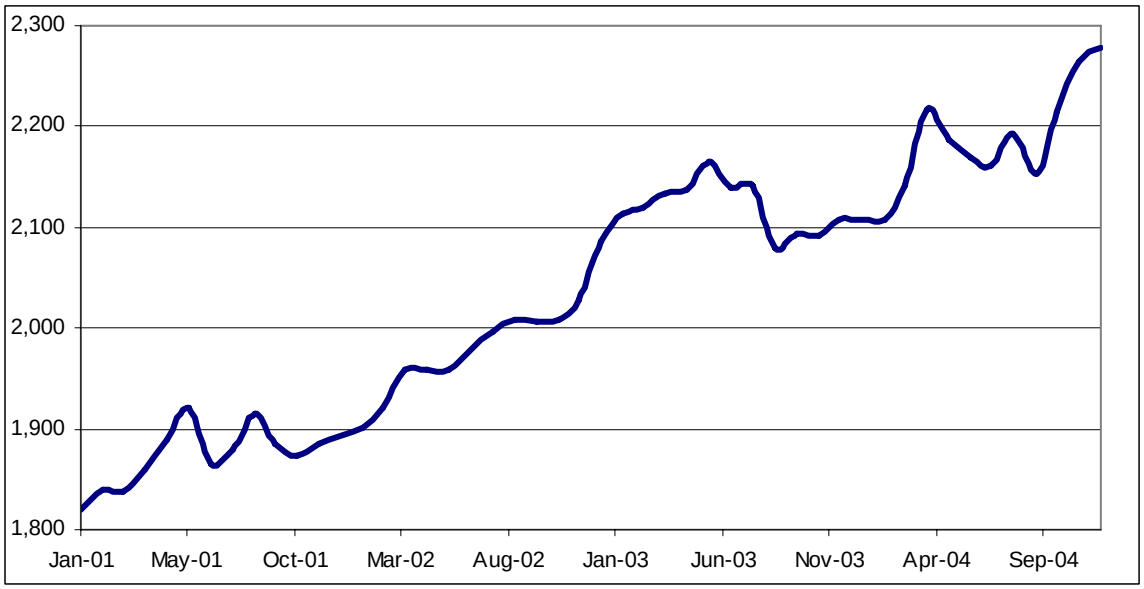
Figure 7. Monthly Employment in Retail Trade, 2001-2004



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (ES-202).

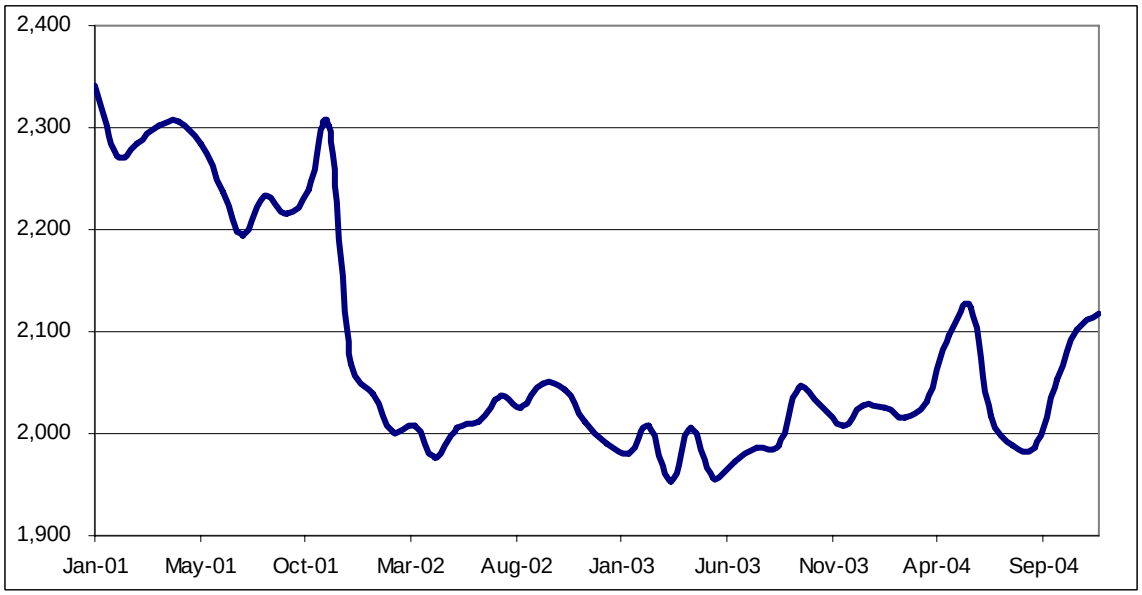
An example of an expanding industry is represented by the Financial Activities sector, which includes insurance and real estate (Figure 8). A declining industry is represented by the Construction sector (Figure 9).

Figure 8. Monthly Employment in Financial Activities, 2001-2004



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (ES-202).

Figure 9. Monthly Employment in Construction, 2001-2004



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (ES-202).

Table 4 presents the distribution of 2004 average annual employment in Monroe County by industrial sector. As with the sources of earned income, the major employers are Leisure and Hospitality Services (32%) and Retail Trade (15%). Three out of every 10 jobs in the county in 2004 were in the sector of Accommodation and Food Services.

Table 4. Average Annual Firms and Employment in Monroe County by Sector, 2004

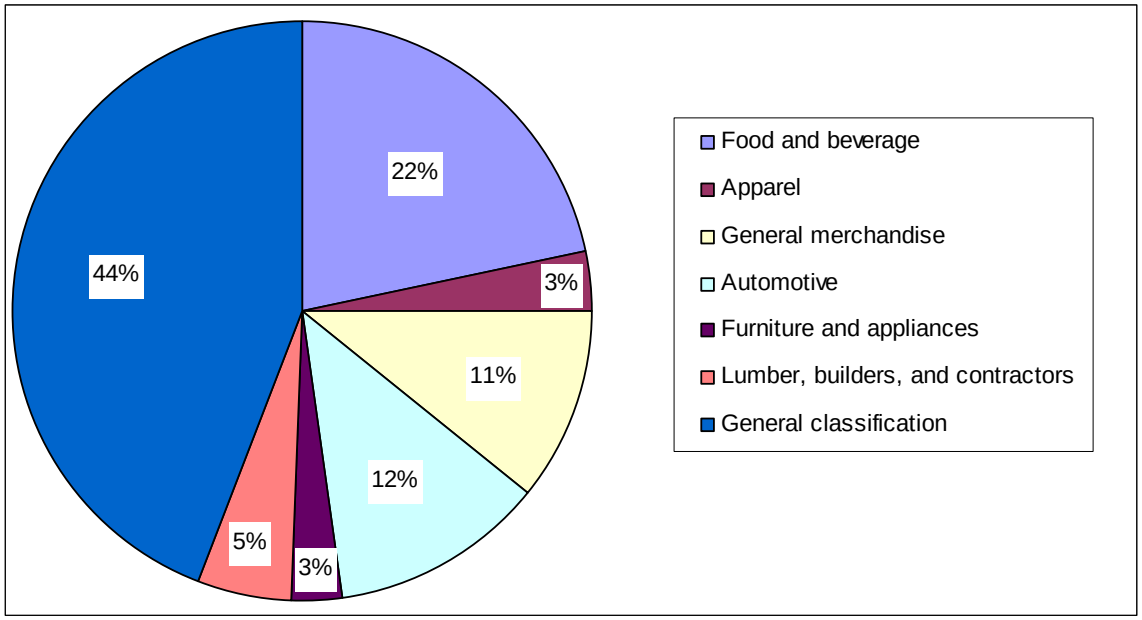
Sector	Firms	Employment	Percent
Natural Resources and Mining	26	108	0.3%
Fishing, hunting and trapping	22	92	0.3%
Construction	446	2,049	5.6%
Manufacturing	74	299	0.8%
Trade, Transportation, and Utilities	974	6,933	19.0%
Retail trade	691	5,474	15.0%
Transportation and warehousing	136	798	2.2%
Information	47	451	1.2%
Financial Activities	442	2,183	6.0%
Professional and Business Services	651	2,661	7.3%
Education and Health Services	239	2,629	7.2%
Leisure and Hospitality	705	11,753	32.3%
Arts, entertainment, and recreation	150	1,067	2.9%
Accommodation and food services	555	10,686	29.3%
Other Services and Unclassified	381	1,332	3.5%
Government	95	6,026	16.5%

Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (ES-202).

Taxable Sales

Another measure of a local economy is the sales tax generated by its commercial activity. Compared to the State of Florida figures, Monroe has a higher proportion of taxable sales originating in the Food and Beverage group and in the Automotive group. The Automotive group contains sales by motorboat and yacht dealers, as well as motor vehicle dealers, filling and service stations, garages and repair shops, and auto accessories shops. In Monroe County in 2004, taxable sales of $127 million by motorboat and yacht dealers represented 45% of the category, and exceeded taxable sales by motor vehicle dealers ($102 million).

Figure 10. Monroe County Taxable Sales, 2004



Source: Florida Department of Revenue

Table 5. Taxable Sales, Monroe County and the State of Florida, 2004 ($ millions)

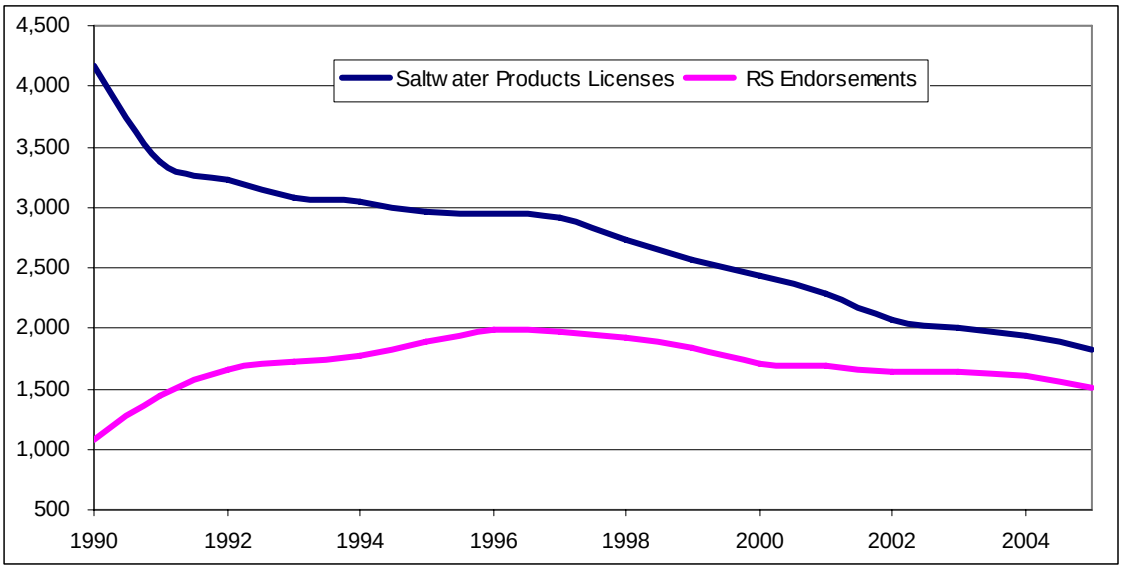
Taxable Sales Groups	Florida		Monroe	
Food and beverage	40,328	13.4%	505	21.7%
Apparel	9,348	3.1%	79	3.4%
General merchandise	43,388	14.4%	248	10.7%
Automotive	55,770	18.5%	283	12.1%
Furniture and appliances	21,298	7.1%	59	2.5%
Lumber, builders, and contractors	20,044	6.6%	124	5.3%
General classification	111,359	36.9%	1,033	44.3%
Total	**301,535**	**100.0%**	**2,330**	**100.0%**

Source: Florida Department of Revenue

Economic Simulation of the Loss of Marine-related Activities

There are a number of important business sectors in Monroe County that depend on access to the water. A major concern of the consequences of changes in the working waterfront in the Florida Keys is the loss of commercial fishing, due to its historical and cultural importance. Commercial fishing has been in decline for a number of years. For example, the commercial saltwater licenses and selected endorsements for licenses, also issued by the Florida Fish and Wildlife Conservation Commission, have been decreasing for a decade (see Figure 11).

Figure 11. Monroe County, Commercial Saltwater Licenses, 1990-2004

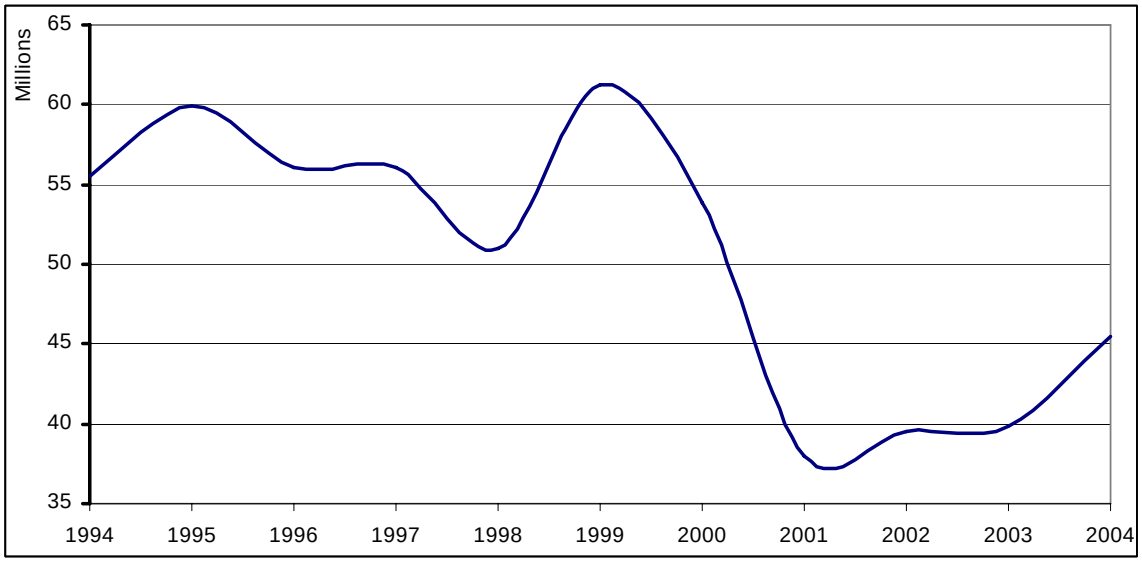


Source: Fish and Wildlife Research Institute

Similarly, the dockside value of commercial fish landings has been decreasing, falling from a high of $61 million in 1999 to a low of $38 million in 2001, with a modest rebound to $45 million in 2004 (see Figure 12). A directly related economic activity is fish houses. There currently are 85 retail and wholesale fish dealers licensed by the Florida Department of Agriculture. Some establishments have multiple licenses, such as major supermarkets. If the downward trend continues, a critical point or threshold will be reached where the continuity of the commercial fishing industry will become economically unfeasible.

Other significant water-dependent activities include diving and charter boats. The Florida Fish and Wildlife Conservation Commission (FWC) issues licenses for both charter boats and charter boat captains. Currently FWC has issued 710 charter boat captain licenses for Monroe County, although this number contains some duplicates. FWC also has issued 279 charter boat (vessel) licenses. In addition, the National Marine Fishery Service within the National Oceanic and Atmospheric Administration (NOAA) has identified 374 charter boats in Monroe County for the purpose of surveys.

Figure 12. Dockside Value of Commercial Fish Landings, 1994-2004



Source: Fish and Wildlife Research Institute

As with the loss of any viable economic activity there will be a cost to the overall economy. The economic implications of the eventual loss of the commercial fishing industry in Monroe County can be estimated using a simulation model.

Policy Insight is an economic and demographic forecasting and policy analysis model developed by Regional Economic Models, Inc. (REMI). The model is calibrated for each of the seven counties in the South Florida region (Monroe to Indian River), and includes a "Rest of Florida" component to enable measurement of the interaction of the regional economy with the rest of the state. It uses a large amount of detailed economic and demographic data to establish a "baseline" forecast for each county out to the year 2050. This forecast, which comes built into the model, projects past trends into the future under a "no change" scenario. The baseline forecast includes expected growth in the population and the economy of the Florida Keys. The user can then choose from a wide array of policy variables to ask "what if" questions about the local economy.

For example, the impact of a large project or a change in tax policy could be evaluated. The most important feature of the model is its ability to capture the "linkages" between the direct changes resulting from a project or a policy and the indirect effects on the rest of the economy. If a new manufacturing facility is built, it generates not only new output to sell, but also employment income and a demand for raw materials, both of which increase the overall impact of the initial change. Indirect and induced impacts are captured by the model and reflected in the overall results.

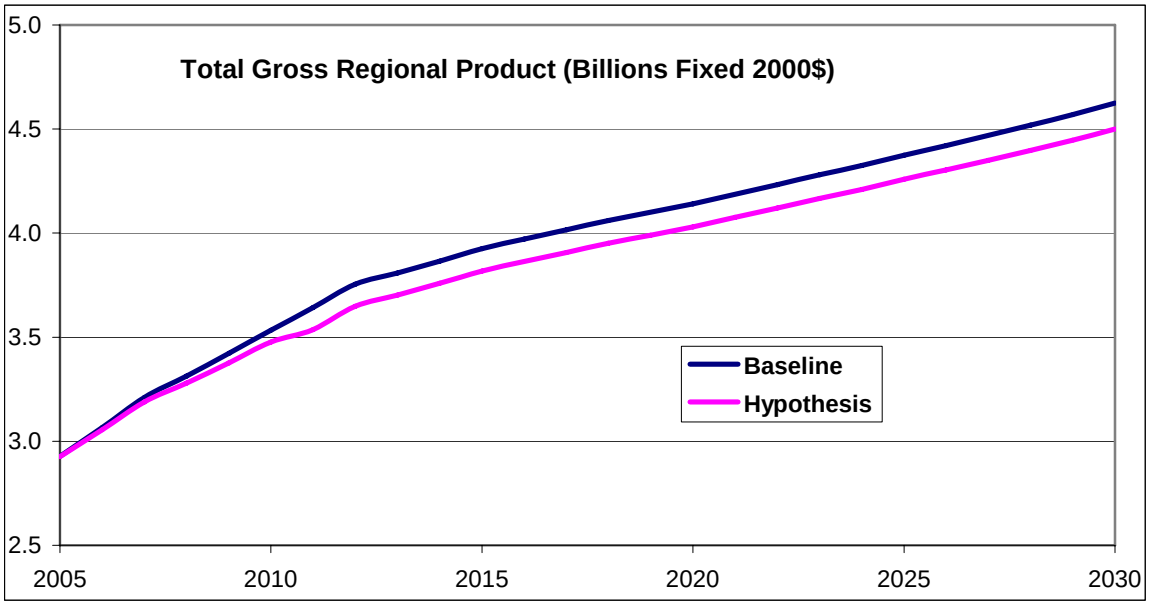
The model includes employment as a policy variable so that the outcome of changes in the number of jobs associated with the working waterfront can be evaluated in terms of

the predicted economic and demographic effects. Policy Insight can therefore generate annual estimates of the total impact or costs associated with a loss of specific marine-related activities. It does this by comparing the baseline regional forecast with the revised forecast based on hypothesized changes in specific economic policy variables.

Scenario 1

The first scenario we evaluated is based on a steady decline of employment in the commercial fishing industry from 2005 to 2010 to half of its original size, at which point a critical lower threshold would be reached, beyond which the industry would go out of business. By 2010, existing fish houses would also go out of business. The results of the commercial fishing scenario (see Table 6) suggest that the cost to the local economy would reach less than three percent of the gross county product, less than one percent of total personal income and less than two percent of total employment over time. Stated differently, these results say that, when compared to the baseline forecast, the economy of Monroe County would produce almost $15 million less in output (gross county product) in 2005, at the beginning of the decline in the commercial fishing industry.

Figure 13. Scenario 1 - Loss of Commercial Fishing



Source: South Florida Regional Planning Council, REMI Policy Insight 7.0

By the year 2010, when the scenario poses the complete disappearance of commercial fishing, the overall production of goods and services in the Monroe County economy would be $56 million less than in the baseline forecast. This reduction in the gross county product would represent approximately 1.6% of the total product in 2010. Over time, although the absolute value of the loss of the commercial fishing industry would

continue to rise, to about $125 million in 2030, it would represent a roughly constant share of the overall economy, which is projected to continue growing despite the loss of the commercial fishing industry.

Table 6. Scenario 1 - Loss of Commercial Fishing

Variable	2005	2010	2015	2020	2025	2030
Gross County Product (millions)	-$1	-$56	-$108	-$110	-$116	-$125
As % of County Total	0.0%	1.6%	2.8%	2.7%	2.7%	2.7%
Personal Income (millions)	-$1	-$19	-$47	-$55	-$61	-$72
As % of County Total	0.0%	0.4%	0.8%	0.7%	0.7%	0.7%
Total Employment (jobs)	-18	-747	-1,166	-983	-859	-779
As % of County Total	0.0%	1.2%	1.9%	1.6%	1.5%	1.4%

Source: South Florida Regional Planning Council, REMI Policy Insight 7.0

Similar reductions would occur in the level of personal income and employment in the overall economy as a result of the direct and indirect impact of the loss of commercial fishing.

It is important to keep several things in mind. First, commercial fishing is only one of the components of water-related activities in the Florida Keys. Others such as charter boats and dive boats are not included in Scenario 1. On the other hand, the scenario also makes no assumption about alternative activities that might emerge if commercial fishing were to disappear. In other words, if another economic activity were to take the place of facilities and places of business previously dedicated to commercial fishing, some of the decline shown in the table would be offset by the additional output of substitute economic activity. The scenario as presented presumes the loss of commercial fishing without replacing it with any other activity.

Scenario 2

For a second scenario we assumed that approximately half of the estimated 150 marinas and boat yards in the Florida Keys would be replaced by residential development. The additional assumptions include a loss of related jobs numbering approximately 400, and the building of 750 residential units above and beyond those that are otherwise projected in the baseline scenario on the sites of the converted facilities. These residential units would accommodate an additional 1,275 residents, and these, it is assumed, would find employment in other activities in the Florida Keys.

Table 7. Scenario 2 - Loss of Marinas and Boat Yards

Variable	2005	2010	2015	2020	2025	2030
Gross County Product (millions)	$0.0	$4.0	$18.0	$38.0	$63.0	$85.0
As % of County Total	0.0%	0.1%	0.5%	0.9%	1.4%	1.8%
Personal Income (millions)	$0.0	$19.0	$71.0	$160.0	$272.0	$408.0
As % of County Total	0.0%	0.4%	1.2%	2.2%	3.0%	3.8%
Total Employment (jobs)	-1	46	304	668	1,104	1,488
As % of County Total	0.0%	0.1%	0.5%	1.1%	1.9%	2.6%

Source: South Florida Regional Planning Council, REMI Policy Insight 7.0

The results suggest that there would be a long-term increase in the gross regional product, personal income and overall employment in such a scenario, mostly as a result of the new residents and jobs, and the income and demand for goods and services that would result. Almost 1,500 new jobs would generate an additional $408 million in personal income in the year 2030, contributing to almost 2% increase in the value of output in Monroe County.

Scenario 2 illustrates the fact that when one economic activity is replaced by another, often the new activity competes successfully with the one it replaces. Although some aspects of this scenario could be refined to reflect unique characteristics of the Florida Keys (for example, the likelihood that some of the residential units would be occupied by seasonal residents), the general outcome of the scenario would not change significantly.

In summary, the loss of the entire commercial fishing industry and associated fish houses without any replacement economic activities is estimated to lead to a reduction of approximately 3% in economic output for the Florida Keys over a 25-year horizon. The conversion of half of the marinas and boat yards into residential units, with the corresponding increase of the resident population, could lead to almost 2% in additional economic output for Monroe County. These impacts, while modest when viewed from a strictly economic perspective, do not consider the exceptional historical and cultural value of the "working waterfront" in Monroe County, which is documented elsewhere in this study (see Appendix 2).