Economic Contributions of Marine Industries in Southwest Florida

Sponsored Project Report to the West Coast Inland Navigation District

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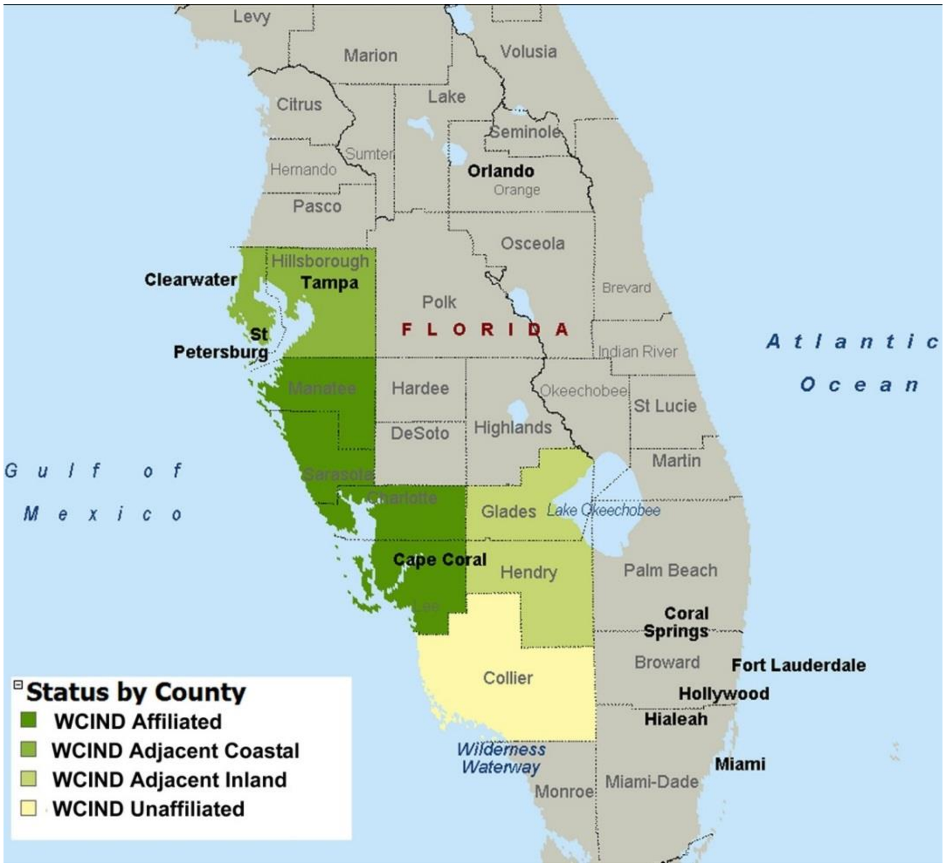
Image of Port Manatee (www.portmanateecommercecenter.com)

Introduction

The results of an economic evaluation of marine-related activities for nine counties in southwest Florida are presented in this report, which was sponsored by the West Coast Inland Navigation District (WCIND). These counties include: Manatee, Sarasota, Charlotte, and Lee Counties (that are members of the WCIND), and adjacent coastal counties Pinellas and Hillsborough (to the north) that are also part of the federal Gulf Intra-Coastal Waterway, and, the inland counties of Hendry and Glades, which are connected through the Waterway to Lake Okeechobee (Figure 1). Some data for Collier County was included in this analysis since it is also adjacent to the WCIND from the south, but is not affiliated with the District.

The WCIND is a multi-county special taxing body enabled by federal, state, and local regulations and revenues, with a mission, "to preserve and enhance the commercial, recreational, and ecological values of District waterways" (West Coast Inland Navigation District). The WCIND engages in waterway projects that support safe navigation for both commercial and recreational boating, fishing, and beach related activities. This includes the open coastal waters of the Gulf of Mexico, the Gulf Intracoastal Waterway (GIWW), and its secondary inland waterways. Waterway projects include the maintenance and development of facilities or infrastructures such as public navigation channels and inlets, boating access facilities, waterfront parks, piers, and other special water-front and navigational structures. The purpose of this study was to assess the overall economic value of commercial and recreational marine-related activities in the WCIND region in order to better appreciate and understand its role and importance within the region's overall economy.

Figure 1. Map of southwest Florida study area



Previous Studies

The overall contributions of marine-related economic activity for the eight counties affiliated with the West Coast Inland Navigation District have not been addressed specifically in previous research. A previous study by Hodges, Stevens, Rahmani and Swett (2012) investigated marine-related economic contributions for all coastal counties in the U.S. using 2009 data from the National Ocean Economics Program (NOEP), IMPLAN (IMPLAN Group, LLC), and other sources. It found that Florida had the third largest GDP (value-added) contributions for these activities in the U.S., at $64 billion, and that three of the four largest counties in the State for marine contributions were located in southwest Florida, with Pinellas County being the largest.

A 2011 study by Swett, Adams, Larkin, Hodges, and Stevens assessed the usage and economic contributions of artificial reefs located off the coast of six counties in Southwest Florida, all of which are included in this study. Using telephone, mail, and email mediums, the authors surveyed 4,701 private boat owners, and 449 for-hire boat operators, collecting data on visitor days and expenditures in 2009. They estimated total value-added impacts to the six county region in 2009 at $138.31 million and employment impacts at 2,595 fulltime and part-time jobs.

Adams, Lindberg, and Stevely published a review of studies, up to 2011, on the economic costs and benefits of artificial reefs off Florida's coasts. This included an inventory of reefs for each coastal county. In 2011, Florida had a total of 2,276 off-shore reefs. The four WCIND counties had 388 artificial reefs combined, and the seven WCIND and adjoining coastal counties had 944 reefs. Thus over 40 percent of the artificial reefs along Florida's coasts were in Counties belonging or adjacent to the WCIND. Cost-benefit studies of artificial reefs were mixed. Overall, benefits exceeded costs, but among different users, anglers appeared to benefit at the expense of divers.

In a most recent 2014 study, Savolainen, Fannin, and Caffey examined the economic impacts of the Recreation For-Hire (RFH) fishing/diving industry in the U.S. Gulf of Mexico in 2009. The authors used IMPLAN to estimate economic impacts from headboat, charter and guideboat activities on Florida's west coast. For the State, total employment impacts for RFH operations in 2009 were estimated at 1,354 fulltime and part-time jobs. Total output or revenue impacts were calculated to be $181.4 million (in 2013 dollars), and total Labor Income impacts were estimated at $61.5 million.

Huth, Morgan, and Burkart estimated the economic impacts of fishing and diving on artificial reefs for the state of Florida in 2014 using a 2011 REMI model. Saltwater fishing impacts were based on surveys of both resident and nonresident saltwater-fishing license holders. Economic impacts from artificial reef diving were based on surveys of scuba divers. The output impacts from artificial reef related activities in 2013 for Florida as a whole were estimated at over $3 billion, and included over $1 billion of labor income, 39,000 jobs for Florida residents, and $250 million in annual State government revenues.

Murray & Associates recently estimated the economic impacts of the marine boating industry for Palm Beach, Broward, and Miami-Dade Counties in southeast Florida. This included manufacturing, wholesale, retail, dockage, and marine service-related activities. The authors estimated that gross marine sales in the tri-county area totaled $2.38 billion in 2014, and as a result of multiplier effects, generated $11.5 billion in total output impacts to the region. The estimated total employment impacts from these sales were 136,465 jobs and the total labor income impacts were $4.05 billion.

Sources and Methods

Scope of Marine Industries

The scope of marine activities evaluated in this study includes those prescribed by the National Ocean Economics Program (NOEP) as constituting the "Ocean Economy". In their most aggregated form these activities are divided into six "super-sectors" which include: <u>Construction</u> of marine related infrastructure and facilities; <u>Living Resources</u> represented by: fishing, aquaculture, seafood processing, and seafood markets; <u>Offshore Minerals</u> - consisting of limestone, sand, and gravel mining, and, oil and gas exploration and production; <u>Ship and Boat Building</u>, which includes boat building and repair, and ship building and repair; <u>Tourism and Recreation</u>, which includes a variety of accommodations and services associated with recreation in coastal areas, such as marinas, boat dealers, amusement and recreational facilities, hotels, restaurants, and sporting goods retailers, and, finally; <u>Transportation</u>, which includes marine passenger and cargo transportation services, and, search and navigation equipment.

County-level data on marine construction, and, tourism and recreation were not available for this study. However, in place of tourism and recreation generally, this study used data on recreational fishing expenditures within the WCIND. These activities include numerous economic sectors that are identified in a list of marine NAICS and IMPLAN industry groups and component sectors provided below in Table 1.

Table 1. Marine-related economic sectors within the North American Industry Classification System and IMPLAN					
Marine Industry Group	Marine Industry Sector	NAICS Code	NAICS Industry Name (2012 NAICS)	IMPLAN Code	IMPLAN Sector Name
Marine Living Resources	Fish Hatcheries & Aquaculture	1125	Finfish & shellfish farming & hatcheries	14	Animal prod., except cattle, poultry & eggs
	Fishing	1141	Finfish & shellfish fishing	17	Commercial fishing
	Seafood Processing	3117	Seafood product preparation & packaging	93	Seafood product preparation & packaging
	Seafood Markets	445220	Fish & seafood markets	400	Food & beverage stores
Ship & Boat Building & Repair	Boat Building & Repair	336612	Boat building	364	Boat building
	Ship Building & Repair	336611	Ship building & repairing	363	Ship building & repairing
Marine Transportation	Deep Sea Freight Transportation	483111	Deep sea freight transp.	410	Water transportation
		483113	Coastal & Great Lakes freight transportation	410	Water transportation
	Marine Passenger Transportation	483112	Deep sea passenger transp.	410	Water transportation
		483114	Coastal & Great Lakes passenger transportation	410	Water transportation
	Marinas	713930	Marinas	496	Other amusement & recreation industries
	Marine Transportation Services	4883	Support activities for water transportation	414	Scenic & sightseeing transp., & support activities for transp.
	Search & Navigation Equipment	334511	Search, Nav., & Guidance nautical systems, & instr. manufacturing	315	Search, detection, & navigation instruments manufacturing
	Boat Dealers	441222	Boat dealers	396	Motor vehicle & parts dealers
Tourism & Recreation, Coastal	Eating & Drinking Places	722511	Full-Service restaurants	501	Full-service restaurants
		722513	Limited-service restaurants	502	Limited-service restaurants
		722514	Cafeterias, gill buffets, & buffets	503	All other food & drinking places
		722515	Snack & nonalcoholic beverage bars	503	All other food & drinking places
	Hotels & Lodging Places	721110	Hotels (except casino hotels) & motels	499	Hotels & motels, including casino hotels
		721191	Bed-&-Breakfast Inns	500	Other accommodations
	RV Parks & Campsites	721211	RV (recreational vehicle) parks & campgrounds	500	Other accommodations
	Scenic Water Tours	487210	Scenic & sightseeing transp., water	414	Scenic & sightseeing transp. & support act. for transp.
	Amusement & Recreation Services	487990	Scenic & sightseeing transp., other	414	Scenic & sightseeing transp. & support act. for transp.
		611620	Sports & recreation instruction	474	Other educational services
		532292	Recreational goods rental	443	General & consumer goods rental except video tapes & discs
		713990	All Other Amusement & Recreation Industries	496	Other amusement & recreation industry.
	Zoos and Aquaria	712130	Zoos & botanical gardens	493	Museums, historical sites, zoos, & parks
		712190	Nature parks & other similar institutions	493	Museums, historical sites, zoos, & parks

Continued, on next page.

Table 1, continued. Marine-related economic sectors within the North American Industry Classification System and IMPLAN					
Recreational Fishing	Marine Related Construction	23	Residential maintenance & repair	63	Remodeling and renovating, residential building
	Seafood Processing	3117	Seafood product preparation & packaging	93	Seafood product preparation & packaging
	Retail Stores	445	Food & beverage stores	400	Food & beverage stores
		447	Gasoline stations	402	Gasoline stations
		448	Clothing stores	403	Clothing stores
		451	Sporting goods stores	404	Sporting goods stores
		453	Miscellaneous stores	406	Miscellaneous stores
	Transportation	441	Motor vehicle (boat) and parts dealers	396	Motor vehicle and parts dealers
		485	Transit & Ground Passenger Transp.	412	Transit & ground passenger transp.
		487, 488	Scenic & sightseeing transp. & support activities	414	Scenic & sightseeing transportation & support activities for transportation
		81111-2, 811191, 811198	Automotive repair & maintenance	504	Automotive repair & maintenance, except car washes
	Periodicals	51112	Periodical publishers	418	Periodical publishers
	Insurance & Real estate	5241	Insurance carriers	437	Insurance carriers
		5242	Agencies, brokerages, and other insurance related activities	438	Insurance agencies, brokerages, & related activities
		531	Real estate	440	Real estate
	Rental Equipment	5321	Automotive equipment rental & leasing	442	Automotive equipment rental & leasing
		532221-2, 53229, 5323	General & consumer goods rental	443	General & consumer goods rental except video tapes & discs
	Miscellaneous	7113-4	Promoters, managers & agents of performing arts, sports, & public figures	491	Promoters of performing arts & sports & agents for public figures
		7115	Independent artists, writers, & performers	492	Independent artists, writers, & performers
		71391-3, 71399	Golf, marinas, & other amusement & recreation industries	496	Other amusement & recreation industries
		722511	Full-service restaurants	501	Full-service restaurants
		8129	Other personal services	512	Other personal services
	Employment & Payroll	NA		531	Employment & payroll of state govt., non-education
		NA		533	Employment & payroll of local govt., non-education

Source: USDOC-Census Bureau and IMPLAN Group, LLC.

Data Analysis Procedures

Estimating the regional economic contributions or impacts of a particular set of industries or activities requires data on the number of jobs and the magnitude of revenues directly generated by the activities being examined within the region of interest. Once these data are acquired, impacts can be estimated by applying the appropriate economic multipliers for those industries. These multipliers represent the secondary (indirect and induced) impacts that occur as the revenues and earnings created by the initial direct activity are respent by businesses for inputs and supplies, and by employees or proprietors for household living expenses, and by local, state and federal government institutions through tax and fee collections. The most recent data for ocean related activity in the region was 2013, and the geographic units for those data are the counties affiliated or adjacent with the WCIND. . A glossary of economic impact terms and concepts is provided in Appendex A, at the end of this report.

Regional I-O/SAM Modeling

Economic multipliers for the nine counties in the expanded WCIND region were estimated using the IMPLAN input-output analysis software (version 3.1) and county datasets for 2013 (IMPLAN Group LLC.), and are given in Table 2. The IMPLAN models built using this software and data were constructed using the Regional Purchase Coefficients methodology. Social accounts for households, local/state and federal governments that were included and treated as endogenous to the models. Economic multipliers from these models not only capture the direct effects of industry activities, but also the input purchases associated with supply chain activities (known as "indirect" effects), the induced effects from employee and proprietor household spending of earning and profits, and, government spending. The total regional economic contributions represent the sum of these direct, indirect and induced effects. Economic multipliers were applied for employment (fulltime and part-time jobs), wages (labor income, including employee compensation and business proprietor or owner income), and Gross Domestic Product (value added). Ocean sector economic activity was assumed to represent new final demand to the respective regions by virtue of its proximity to the coastal resource. Total output and employment multipliers for the relevant marine sectors in each of the nine counties in the region are presented in Table 2.

A complicating factor in isolating marine related activities from the rest of the WCIND county economies is that the six-sector, county-level Ocean Economy data is much more aggregated than the 536 sector set of IMPLAN multipliers. Fortunately, the 23-industry state-level Ocean economy dataset in the NOEP database is very similar to the IMPLAN multiplier scheme, and a bridge-table between these schemes and the North American Industry Classification Scheme (NAICS) is available in the NOEP "Data Guide" (Colgan, 2007). This bridge table allows one to subdivide or disaggregate economic data into a more refined set of economic sectors for impact analysis. Table 1 represents an adaptation of Colgan's bridge table that includes an additional bridge between the 23 sector NAICS designations and the IMPLAN 536 sector scheme. By using this bridge table, disaggregated industry data was imputed for coastal counties so that it could then be applied to the IMPLAN multipliers to estimate the county-level contributions of ocean industries.

Table 2. Summary of IMPLAN output and employment multipliers for southwest Florida counties (2013)

Sector Code	Industry Sector	Char-lotte	Collier	Glades	Hendry	Hills-borough	Lee	Man-atee	Pinellas	Sarasota
	Output Total Effects									
14	Animal prod., except cattle & poultry & eggs	1.823	1.989	1.457	1.734	2.250	1.979	2.037	2.285	2.102
17	Commercial fishing	1.800	2.057	0.000	1.805	2.387	2.105	2.005	2.362	2.190
63	Maintenance & repair construction of residential structures	1.918	2.043	1.443	1.727	2.350	2.120	2.181	2.449	2.282
93	Seafood product preparation & packaging	0.000	0.000	0.000	0.000	1.844	1.620	0.000	1.833	0.000
315	Search, detection, & navigation instruments manufacturing	0.000	0.000	0.000	0.000	2.030	0.000	0.000	2.272	1.983
363	Ship building & repairing	0.000	1.815	0.000	0.000	2.061	1.996	1.934	2.244	1.995
364	Boat building	1.649	0.000	0.000	1.509	1.949	1.922	1.835	2.197	1.852
396	Retail - Motor vehicle & parts dealers	2.031	2.204	1.517	1.868	2.452	2.268	2.289	2.618	2.411
400	Retail - Food & beverage stores	1.987	2.178	1.530	1.842	2.398	2.258	2.276	2.538	2.386
402	Retail - Gasoline stores	2.043	2.236	1.552	1.881	2.501	2.322	2.328	2.640	2.438
403	Retail - Clothing & clothing accessories. stores	2.004	2.194	1.527	1.868	2.456	2.277	2.290	2.583	2.392
404	Retail - Sporting goods, hobby, musical instrument & book stores	2.023	2.212	1.523	1.882	2.465	2.291	2.305	2.612	2.414
406	Retail - Miscellaneous store retailers	2.067	2.257	1.568	1.901	2.482	2.332	2.359	2.674	2.468
410	Water transp.	1.738	1.875	0.000	0.000	2.140	1.957	1.919	2.159	2.127
412	Transit & ground passenger transp.	1.973	2.152	0.000	1.697	2.428	2.189	2.182	2.536	2.353
414	Scenic & sightseeing transp. & support activities for transp.	1.938	2.104	0.000	1.777	2.364	2.160	2.212	2.437	2.269
418	Periodical publishers	1.886	2.051	0.000	0.000	2.335	2.141	2.127	2.463	2.255
437	Insurance carriers	2.082	2.205	0.000	1.923	2.497	2.257	2.253	2.651	2.404
438	Insurance agencies, brokerages, & related activities	2.161	2.282	1.797	1.993	2.462	2.320	2.329	2.636	2.439
440	Real estate	1.943	2.081	1.501	1.782	2.357	2.154	2.160	2.438	2.274
442	Automotive equipment rental & leasing	1.958	2.151	0.000	0.000	2.424	2.168	2.165	2.498	2.318
443	Gen. & consumer goods rental except video tapes & discs	2.036	2.271	1.530	1.868	2.458	2.313	2.318	2.674	2.430
491	Promoters of perf. arts & sports & agents for public figures	1.951	2.240	0.000	0.000	2.427	2.187	2.200	2.589	2.323
492	Independent artists, writers, & performers	1.824	2.203	1.395	1.724	2.481	2.118	2.176	2.550	2.208
496	Other amusement & recreation industries	1.928	2.126	1.474	1.746	2.329	2.175	2.175	2.487	2.296
501	Full-service restaurants	1.870	2.096	1.431	1.764	2.286	2.142	2.156	2.446	2.236
504	Automotive repair & maintenance, except car washes	1.998	2.186	1.489	1.823	2.363	2.205	2.231	2.571	2.335
512	Other personal services	1.984	2.161	0.000	1.788	2.403	2.209	2.211	2.542	2.330
531	* Employment & payroll of state govt., non-education	1.991	2.166	1.478	1.812	2.308	2.158	2.222	2.509	2.346
533	* Employment & payroll of local govt., non-education	1.997	2.175	1.478	1.812	2.307	2.174	2.223	2.578	2.352
	Employment Total Effects									
14	Animal prod., except cattle & poultry & eggs	15.892	23.579	6.925	11.124	30.102	19.947	22.657	35.818	20.983
17	Commercial fishing	32.369	24.103	0.000	14.479	17.957	21.308	32.574	28.952	32.724
63	Maintenance & repair construction of residential structures	15.309	13.987	11.130	13.388	16.066	15.350	16.324	17.838	16.529
93	Seafood product preparation & packaging	0.000	0.000	0.000	0.000	9.347	7.859	0.000	9.749	0.000
315	Search, detection, & navigation instruments manufacturing	0.000	0.000	0.000	0.000	10.398	0.000	0.000	12.210	10.346
363	Ship building & repairing	0.000	10.883	0.000	0.000	12.336	11.715	12.216	14.328	12.819
364	Boat building	9.397	0.000	0.000	8.667	10.708	10.414	10.539	12.602	10.669
396	Retail - Motor vehicle & parts dealers	18.064	17.101	11.175	17.794	18.808	18.410	19.064	21.244	19.163

Table 2. Summary of IMPLAN output and employment multipliers for southwest Florida counties (2013)

Sector Code	Industry Sector	Char-lotte	Collier	Glades	Hendry	Hills-borough	Lee	Man-atee	Pinellas	Sarasota
400	Retail - Food & beverage stores	24.878	23.836	18.131	24.152	26.037	25.317	26.466	28.100	26.577
402	Retail - Gasoline stores	24.882	24.055	23.856	22.073	23.018	26.056	25.295	26.086	25.066
403	Retail - Clothing & clothing accessories stores	23.229	20.482	18.216	22.086	23.653	22.835	24.272	25.612	23.747
404	Retail - Sporting goods, hobby, musical instrument & book stores	28.424	25.260	21.210	30.299	27.441	27.752	27.882	30.137	28.513
406	Retail - Miscellaneous store retailers	39.331	34.901	48.831	40.921	34.991	36.733	40.254	40.200	38.113
410	Water transp.	8.350	8.111	0.000	0.000	9.690	8.992	9.078	10.591	9.826
412	Transit & ground passenger transp.	26.650	24.275	0.000	26.337	26.967	25.611	25.381	27.097	26.818
414	Scenic & sightseeing transp. & support activities for transp.	17.654	15.760	0.000	17.081	17.207	15.385	16.303	19.523	18.289
418	Periodical publishers	11.797	11.255	0.000	0.000	13.410	12.646	13.100	14.757	13.511
437	Insurance carriers	13.709	13.353	0.000	12.632	14.304	13.974	14.313	16.371	14.661
438	Insurance agencies, brokerages, & related activities	17.281	16.481	15.711	15.844	16.014	17.031	17.503	18.634	17.000
440	Real estate	17.143	16.237	12.018	15.665	17.872	17.327	17.692	19.499	18.324
442	Automotive equipment rental & leasing	12.775	13.191	0.000	0.000	16.016	15.002	14.961	17.523	15.223
443	General & consumer goods rental except video tapes & discs	15.191	22.988	12.144	15.760	22.192	23.899	23.193	27.013	20.725
491	Promoters of performing arts & sports & agents for public figures	33.322	21.894	0.000	0.000	26.132	27.940	28.060	32.440	30.509
492	Independent artists, writers, & performers	17.516	11.234	18.081	15.077	17.973	16.081	16.727	20.507	17.871
496	Other amusement & recreation industries	25.309	21.623	18.744	29.371	27.314	24.058	26.018	28.989	26.861
501	Full-service restaurants	28.726	26.531	22.961	29.772	28.688	28.450	29.306	31.507	29.080
504	Automotive repair & maintenance, except car washes	21.208	21.634	19.687	22.130	23.548	22.429	23.872	25.935	23.766
512	Other personal services	24.034	25.434	0.000	24.269	28.585	24.923	24.257	27.951	28.277
531	* Employment & payroll of state govt., non-education	24.532	24.481	20.259	23.023	22.700	27.693	25.248	42.081	26.007
533	* Employment & payroll of local govt., non-education	21.211	20.277	18.022	21.251	21.859	21.300	23.415	25.360	23.156

Employment multipliers are denominated in fulltime and part-time jobs per million dollars final demand (output).

Source: IMPLAN Group, LLC (2015)

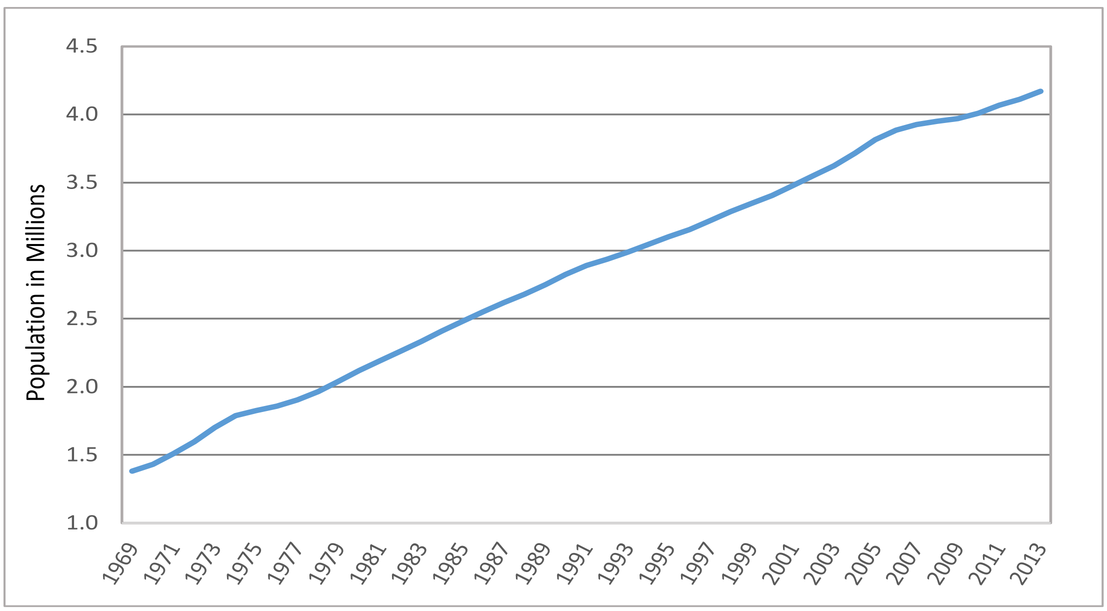
Results

Regional profile

Population

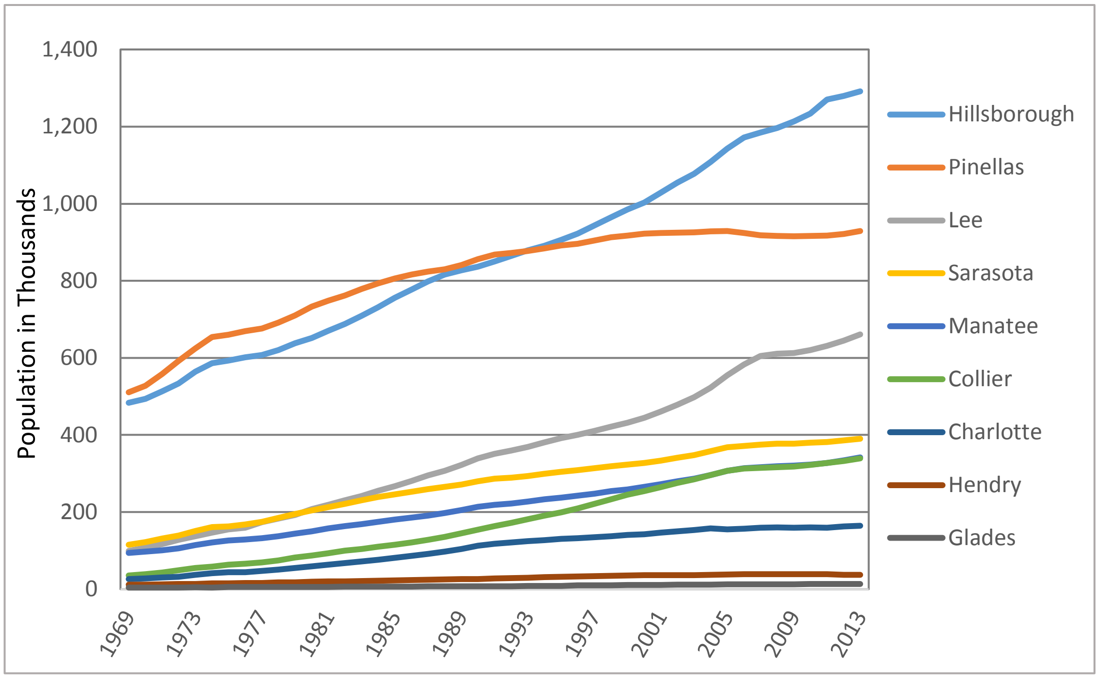
Over the 45 year period between 1969 and 2013, the expanded WCIND region of Southwest Florida (including Collier County) has experienced population growth very similar to that of Florida as a whole. As a result, the region has consistently represented about 21 percent of the State's population. The region's average annual population growth rate between 1969 and 2013 was 2.49 percent, but has varied from as high as 6.52 percent in 1973 to as low as 0.52 percent in 2009. The consequence of this growth is that the region's population has more than tripled since 1969, to 4.17 million in 2013 (Figure 2). As with the State, the region's average annual rate of growth slowed to 1.16 percent between 2004 and 2013. But even at this reduced rate, it is gaining over 50,000 new residents each year. Lee County (Ft. Myers), Hillsborough County (Tampa) and Manatee County (Bradenton) have experienced the fastest growth in the region since 2004, while Pinellas, Hendry and Charlotte counties have seen the slowest growth (Figure 3).

Figure 2. Population trend in southwest Florida, 1969–2013



Source: USDOC-BEA, http://www.bea.gov/.

Figure 3. Population trends for individual southwest Florida Counties, 1969–2013

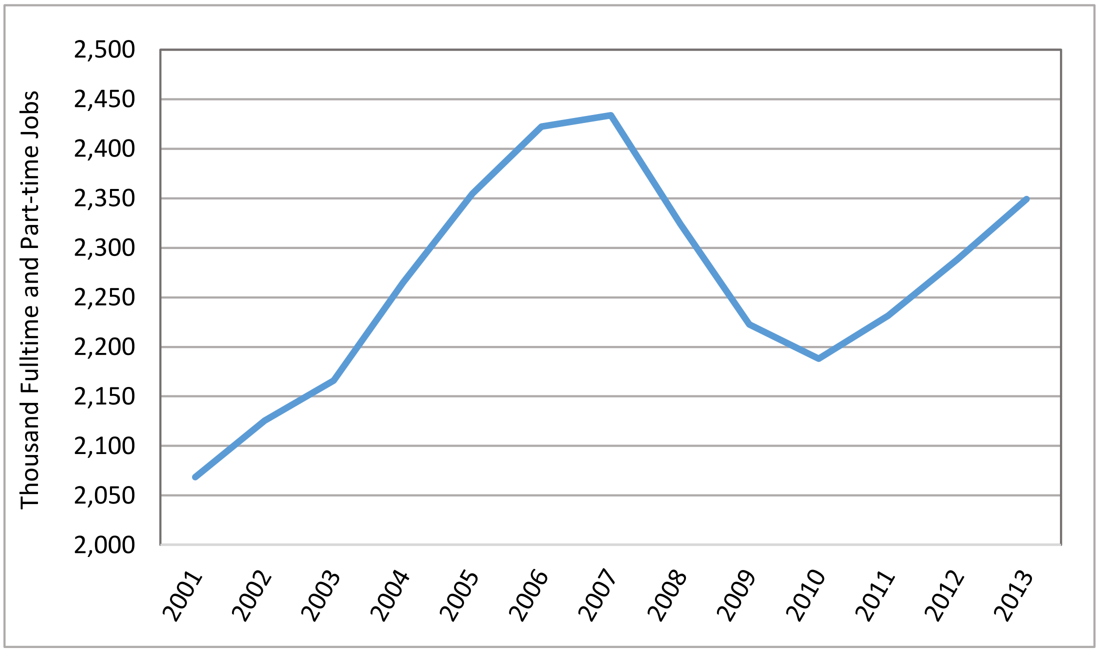


Source: USDOC-BEA.

<u>Employment</u>

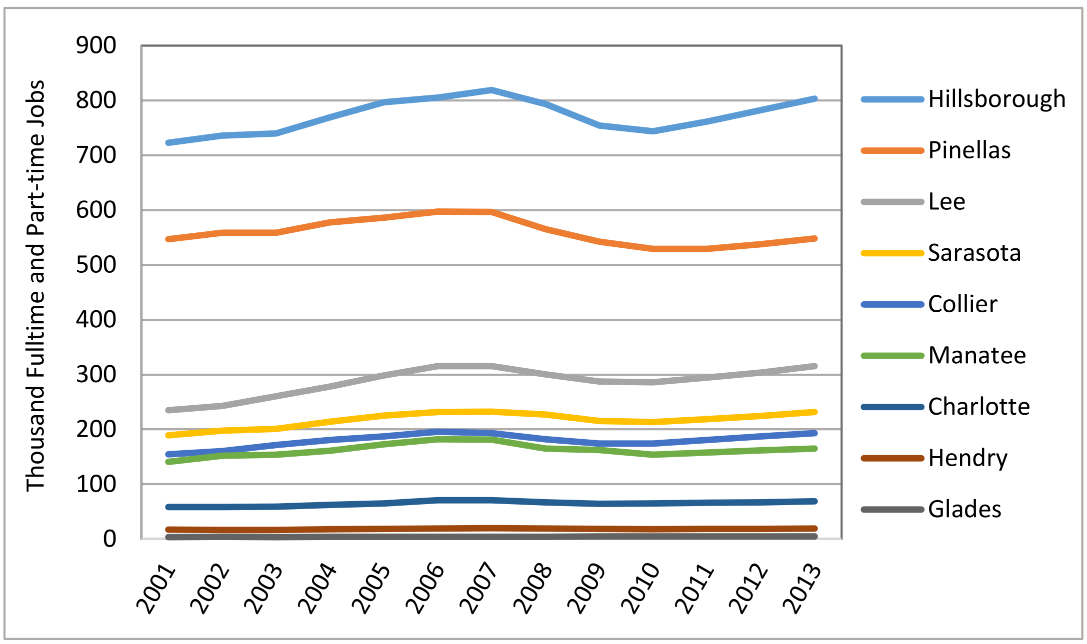
Employment trends in the expanded WCIND region (including Collier County) have been more volatile than population. From 2001 through 2013, annual growth in employment for the region averaged 0.98 percent per year, but ranged from a high of 4.57 percent in 2004, to a low of -4.50 percent in 2008 (Figure 4). The total number of jobs in the region during 2013 (2,349,209) was still below the peak of 2,433,698 jobs in 2007. The same is true for all of the individual counties, except for Glades, which is relatively small and has a substantial share of its economy and employment in agriculture. The biggest declines in employment since 2007 have occurred in Pinellas and Manatee counties where job levels in 2013 were 8.13 and 9.15 percent below their 2007 peak, respectively (Figure 5).

Figure 4. Employment trend for southwest Florida, 2001–13



Source: USDOC-BEA.

Figure 5. Employment trends for individual southwest Florida counties, 2001–13



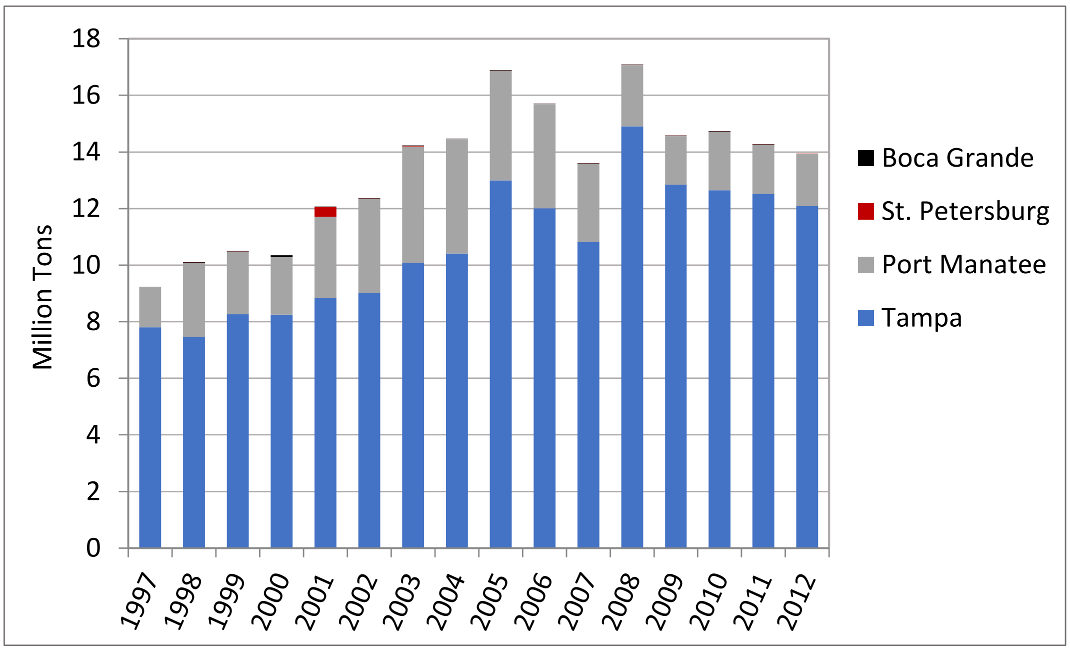
Source: USDOC-BEA.

Port Cargo Shipping

Marine shipping and associated activities are the most important marine-related industry group in the expanded WCIND region, representing over three-quarters of the total marine economy for the region and more than 70 percent of this activity in each of the individual counties, except Manatee. Geographically, Marine Transportation in the region is dominated by the port facilities around Tamp Bay, including Pinellas, Hillsborough and Manatee Counties. Volumes and values for marine cargo ports in southwest Florida between 1997 and 2012 are shown in Figures 6 and 7. Cargo volume and value peaked for the region in 2008, at 17.1 million tons and $7.95 billion. In 2012, 13.9 million tons and $5.26 billion in cargo were shipped through WCIND ports.

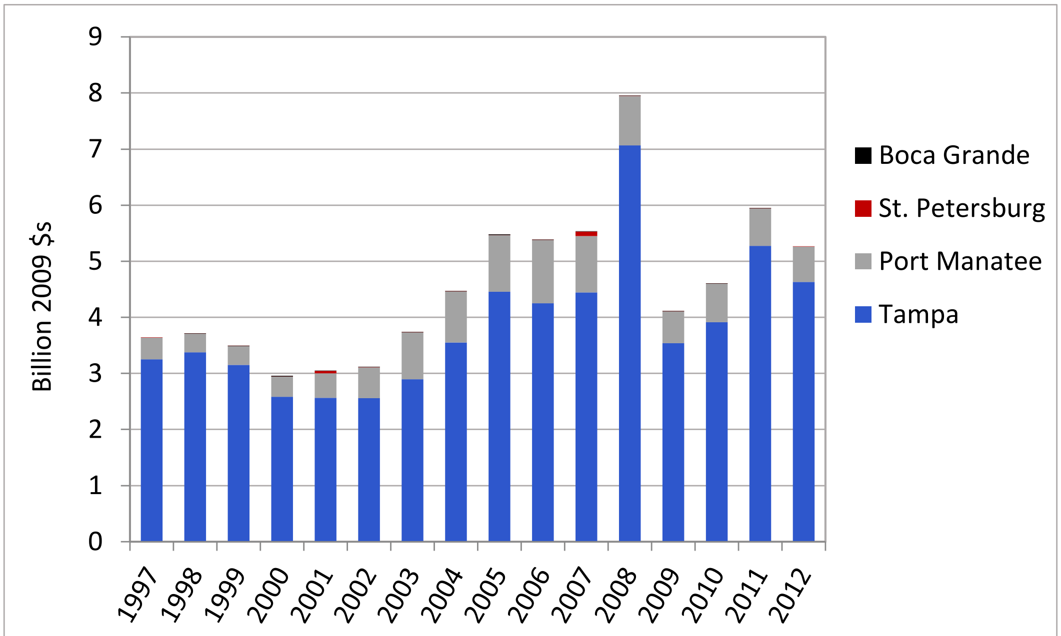
The latest 2014 volume and value data for Southwest Florida ports are given in Table 3 and are broken out by imports and exports, and, for container shipments versus cargo. The Port of Tampa dominates the volume and value shipped to and from the region; however, the Ports of Manatee and St. Petersburg had a greater share of their total volume and value from container shipments. The total volume and value of marine shipments for all ports in 2014 were 14.53 million tons and $5.21 billion respectively.

Figure 6. Shipping cargo volume for southwest Florida ports, 1997–2012



Source: National Ocean Economics Program, derived from import-export reports published by the Foreign Trade Division of the US Census Bureau.

Figure 7. Shipping cargo value for southwest Florida ports, 1997–2012



Source: National Ocean Economics Program, derived from import-export reports by the Foreign Trade Division of the US Census Bureau.

Table 3. Summary of marine cargo volume and value for southwest Florida ports, 2014

Port – Import/Export	Shipping Weight (tons)	Shipping Value (dollars)	Container Weight (tons)	Container Value (dollars)
Boca Grande (imports)	**6**	**37,994**	**5**	**34,362**
Port Manatee	**1,765,062**	**695,460,668**	**360,561**	**174,246,131**
Exports	158,787	102,338,477	3,635	6,145,031
Imports	1,606,275	593,122,191	356,926	168,101,100
St. Petersburg	**164**	**477,057**	**144**	**422,742**
Exports	13	122,099	13	122,099
Imports	151	354,958	131	300,643
Tampa	**12,766,568**	**4,509,227,930**	**449,440**	**613,582,543**
Exports	6,004,282	2,389,894,450	95,050	76,980,802
Imports	6,762,286	2,119,333,480	354,390	536,601,741
Total	**14,531,800**	**$5,205,203,649**	**810,150**	**$788,285,778**

Commercial Fisheries Landings

The volume and value of commercial fishery landings in southwest Florida are charted in Figures 8 and 9 for the years 2000 through 2013. Both volume and value declined substantially in 2007 and had not completely recovered by 2013. Fishing ports in Tampa-St. Petersburg (Hillsborough and Pinellas Counties) and Fort Myers (Lee County) earned the majority of economic activity for fisheries in southwest Florida. The ports in Naples (Collier County) and Cortez (Manatee County) have seen increased activity since 2008. In general, commercial fisheries in Florida and worldwide are facing reduced harvests due to declining wild fish stocks and competition from commercial aquaculture.

Figure 8. Commercial fishery landing volumes at southwest Florida ports, 2000–13

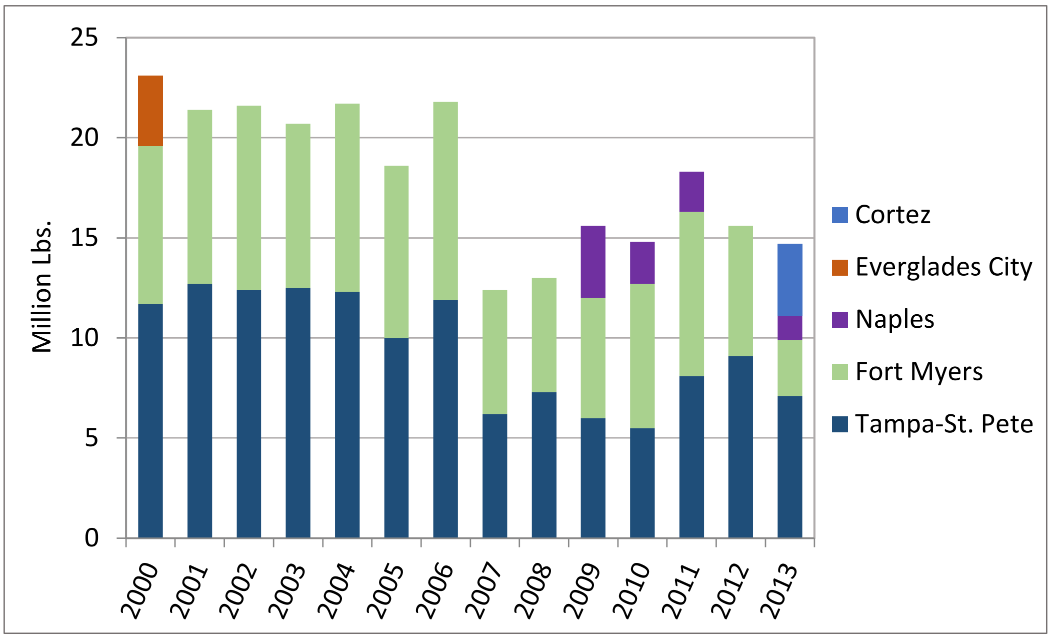
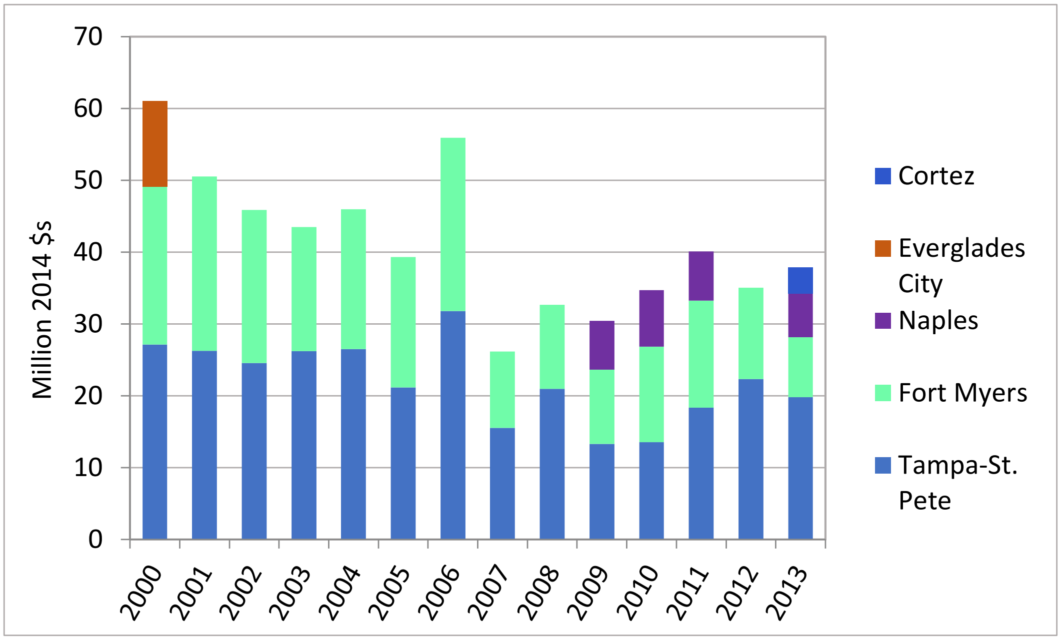


Figure 9. Commercial fishery landing values at southwest Florida ports, 2000–13



Recreational Fishing

Detailed data was obtained on recreational fishing trips and expenditures in southwest Florida Counties for 2012 and 2014 in order to evaluate the importance of this activity for the expanded WCIND region. Recreational fishing trips altogether accounted for about 55 percent of all fishing trips in the southwestern Florida coastal area of the Gulf of Mexico during 2014, with Pinellas, Manatee, and Hillsborough counties capturing the largest shares of these (Table 4). Total recreational fishing trip expenditures for the southwest Florida region in 2012 were estimated at $371 million, and related durable equipment spending was estimated at $3.02 billion.

Non-resident anglers were responsible for $195 million, or 52 percent, of fishing trip expenditures in 2012, with the remaining $176 million made by local residents (Table 5). Pinellas, Manatee and Hillsborough counties had the largest shares of these non-resident trip expenditures, with Pinellas capturing more than one-third of this economic activity in 2012. The largest resident trip-expenditure items were for boat rentals (15.1%), auto fuel (10.8%), bait (6.4%) and groceries (6.0%). The largest non-resident trip-expenditures were for charter fees (11.9%), auto fuel (11.4%), lodging (7.7%), and restaurants (5.8%). Fishing trip expenditures for retail store purchases were margined to accurately account for the local value of these sales. Pinellas, Manatee and Hillsborough counties captured the largest shares of durable equipment expenditures (Table 6). Only non-resident recreational fishing expenditures were used in the analysis of economic contributions, since spending by local residents represents a transfer rather than new final demand.

Table 4. Recreational angler share of total region trips (2014), and estimated trip & durable equipment expenditures (2012) in southwest Florida counties

County	Shore trips	For hire trips	Private boat trips	All trips	Estimated Trip Spending ($1000)	Estimated Durable Goods Spending ($1000)

Charlotte	2.6%	0.0%	3.9%	3.2%	16,587	174,847
Collier	6.0%	12.0%	3.7%	5.1%	51,891	278,538
Hillsborough	3.5%	1.5%	12.0%	8.0%	46,912	437,106
Lee	3.7%	5.2%	7.1%	5.6%	41,318	307,041
Manatee	16.1%	3.1%	2.9%	8.4%	44,264	463,754
Pinellas	23.2%	17.3%	15.8%	19.0%	132,222	1,044,905
Sarasota	4.7%	4.0%	6.5%	5.6%	38,231	309,149
Total	60.0%	43.1%	51.8%	54.9%	371,425	3,015,340

Source: NOAA, National Marine Fisheries Services

Table 5. Recreational fishing trip expenditures and output distribution by type and county, 2012

Expenditure category	Percent of Total (from 2011 data for W. Fla.-Gulf of Mexico)		Total Expenditures for Southwest Florida 2012 ($1000)			Margin	Total non-resident output (margined) by county 2012 ($1000)							
	Resident	Non-Resident	Resident	Non-Resident	All Anglers		Charlotte	Collier	Hills-borough	Lee	Manatee	Pinellas	Sarasota	Total
Auto fuel	10.8%	11.4%	40,271	42,458	82,729	10.8%	266	424	665	467	705	1,589	470	4,585
Auto rental	0.0%	1.6%	0	6,054	6,054	100.0%	351	559	878	616	931	2,098	621	6,054
Bait	6.4%	1.8%	23,784	6,860	30,645	41.6%	165	264	414	291	439	989	293	2,854
Boat rental	15.1%	2.1%	56,057	7,963	64,019	100.0%	462	736	1,154	811	1,225	2,759	816	7,963
Charter fees	3.5%	11.9%	12,973	44,087	57,060	100.0%	2,556	4,072	6,391	4,489	6,780	15,277	4,520	44,087
Crew tips	0.3%	1.4%	1,042	5,205	6,247	100.0%	302	481	755	530	801	1,804	534	5,205
Fish processing	0.0%	0.0%	0	30	30	100.0%	2	3	4	3	5	10	3	30
Grocery stores	6.0%	3.4%	22,444	12,621	35,065	27.9%	204	325	510	359	542	1,220	361	3,521
Restaurants	1.9%	5.8%	7,014	21,614	28,629	100.0%	1,253	1,997	3,133	2,201	3,324	7,490	2,216	21,614
Gifts & Souvenirs	0.0%	1.2%	46	4,471	4,517	45.4%	118	187	294	207	312	703	208	2,030
Ice	1.0%	0.2%	3,744	725	4,468	27.9%	12	19	29	21	31	70	21	202
Lodging	0.2%	7.7%	702	28,470	29,173	27.9%	461	734	1,151	809	1,222	2,753	814	7,943
Parking/access fees	2.2%	0.6%	8,340	2,376	10,717	100.0%	138	219	344	242	365	823	244	2,376
Public transportation	0.0%	3.2%	29	11,927	11,955	100.0%	692	1,102	1,729	1,214	1,834	4,133	1,223	11,927
Tournament fees	0.0%	0.0%	0	0	0	100.0%	0	0	0	0	0	0	0	0
Total	47.5%	52.5%	176,447	194,860	371,308		6,981	11,121	17,452	12,259	18,516	41,719	12,343	120,391

Table 6. Recreational fishing durable equipment expenditures and output distribution by type and county, 2012

Expenditure category	Percent of Total (from 2011 data for W. Fla)		Total Expenditures for Southwest Florida 2012 ($1000)			Margin	Total non-resident output (margined) by county 2012 ($1000)							
	Resident	Non-Resident	Resident	Non-Resident	All Anglers		Charlotte	Collier	Hills-borough	Lee	Manatee	Pinellas	Sarasota	Total
Tackle	4.7%	1.4%	142,158	42,958	185,116	41.6%	1,036	1,651	2,591	1,820	2,748	6,193	1,832	17,871
Rods & reels	6.1%	1.3%	184,667	38,926	223,593	41.6%	939	1,496	2,347	1,649	2,490	5,611	1,660	16,193
Binoculars	0.3%	0.0%	7,661	903	8,564	41.6%	22	35	54	38	58	130	38	375
Camping equip.	1.1%	0.0%	32,988	621	33,610	41.6%	15	24	37	26	40	90	26	258
Clothing	1.4%	0.4%	41,725	13,165	54,891	45.8%	350	557	874	614	927	2,089	618	6,030
Club dues	0.2%	0.0%	4,869	339	5,208	100.0%	20	31	49	35	52	118	35	339
License fees	0.9%	1.0%	28,236	31,399	59,635	100.0%	1,821	2,900	4,552	3,197	4,829	10,881	3,219	31,399
Magazine subscriptions	0.4%	0.1%	12,880	1,549	14,429	100.0%	90	143	224	158	238	537	159	1,549
Taxidermy	0.0%	0.0%	0	16	16	100.0%	1	2	2	2	3	6	2	16
New boats	27.3%	1.9%	823,069	57,490	880,559	20.6%	687	1,094	1,717	1,206	1,821	4,104	1,214	11,843
Used boats	1.1%	1.7%	34,664	52,248	86,913	20.6%	624	994	1,560	1,096	1,655	3,730	1,103	10,763
New canoes	0.1%	0.0%	3,168	0	3,168	41.6%	0	0	0	0	0	0	0	0
New accessories	5.0%	0.3%	152,195	10,044	162,239	41.6%	242	386	606	425	643	1,448	428	4,178
Used accessories	0.0%	0.0%	33	0	33	41.6%	0	0	0	0	0	0	0	0
Boat insurance	3.9%	0.2%	119,007	6,426	125,432	100.0%	373	594	931	654	988	2,227	659	6,426
Boat maintenance	11.7%	0.2%	351,935	6,301	358,236	20.6%	75	120	188	132	200	450	133	1,298
Boat registration	1.5%	0.0%	46,319	1,168	47,487	100.0%	68	108	169	119	180	405	120	1,168
Boat storage	2.9%	0.2%	88,086	5,283	93,369	100.0%	306	488	766	538	812	1,831	542	5,283
Boat purchase fees	0.9%	0.6%	28,262	17,264	45,526	20.6%	206	329	516	362	547	1,232	365	3,556
New vehicles	5.9%	0.0%	176,555	0	176,555	20.6%	0	0	0	0	0	0	0	0
Used vehicles	0.7%	0.0%	21,008	0	21,008	20.6%	0	0	0	0	0	0	0	0
Vehicle insurance	1.4%	0.1%	41,359	1,747	43,106	100.0%	101	161	253	178	269	605	179	1,747
Vehicle maintenance	0.8%	0.0%	22,985	1,027	24,011	100.0%	60	95	149	105	158	356	105	1,027
Vehicle registration	0.2%	0.0%	6,086	877	6,963	100.0%	51	81	127	89	135	304	90	877
Vehicle fees	0.4%	0.0%	11,438	0	11,438	100.0%	0	0	0	0	0	0	0	0
New homes	9.4%	0.0%	284,099	0	284,099	5.0%	0	0	0	0	0	0	0	0
home insurance	0.0%	0.4%	0	10,707	10,707	100.0%	621	989	1,552	1,090	1,647	3,710	1,098	10,707
2nd home maint.	0.0%	0.4%	0	11,369	11,369	100.0%	659	1,050	1,648	1,158	1,749	3,940	1,166	11,369
2nd home taxes	0.2%	0.1%	6,036	3,809	9,845	100.0%	221	352	552	388	586	1,320	391	3,809
2nd home fees	0.6%	0.4%	17,190	11,021	28,211	100.0%	639	1,018	1,598	1,122	1,695	3,819	1,130	11,021
Total	89.2%	10.8%	2,688,679	326,657	3,015,336		9,226	14,697	23,064	16,201	24,470	55,134	16,312	159,102
Total Trip & Durable Equipment Expenditures			2,865,127	521,517	3,386,644		16,207	25,818	40,516	28,460	42,986	96,853	28,655	279,494

Marine-Related Establishments

The number of marine-related establishments by county and NAICS industry types are shown in Tables 7 and 8 for the expanded nine-county WCIND region. Pinellas, Lee and Hillsborough counties are home to almost two-thirds of the marine related businesses in the region with 260, 167, and 138 establishments respectively. Collier, Manatee, Sarasota, have 89, 79 and 66 respectively. Only a handful of establishments are based in Hendry and Glades counties. Boat dealers are the most numerous type of marine related business in the expanded WCIND region with 214 establishments (Table 8). Marinas are the second most frequent (170), followed by Water-based scenic and sightseeing transportation (118). These three types of businesses constitute over 58 percent of the total number of marine establishments in the expanded navigation district.

Table 7. Establishments for marine-related industry jobs in southwest Florida by County

County	Establishments
Charlotte	54
Collier	89
Glades	1
Hendry	7
Hillsborough	138
Lee	167
Manatee	79
Pinellas	260
Sarasota	66
Total	861

Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics

Table 8. Establishments in southwest Florida by NAICS industry sector.

Industry	NAICS code	Establishments
Aquaculture	1125	18
Fishing	1141	51
Seafood product preparation & packaging	3117	10
Sea, coastal, & great lakes transportation	4831	26
Support activities for water transportation	4883	91
Search, detection, & navigation instruments	334511	13
Ship building & repairing	336611	37
Boat building	336612	58
Boat dealers	441222	214
Fish & seafood markets	445220	55
Scenic & sightseeing transportation, water	487210	118
Marinas	713930	170
Total		861

Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics

Regional Economic Impacts

The total regional economic contributions or impacts, including indirect and induced multiplier effects, for marine-related activities in WCIND counties were estimated using sector employment and revenue data multiplied by the appropriate sector-specific regional multipliers, as discussed in the Methods section. Economic contribution results for employment (jobs), industry output (revenues), value-added or Gross Domestic Product (GDP), labor income, other property income, and business taxes for industry groups/sectors and counties are summarized in Tables 9 through 11.

The estimated contributions or impacts of marine-related activities in the WCIND originate from a total of $5.53 billion in direct revenues and 23,252 direct jobs across the eight affiliated southwest Florida counties. The resulting economic impacts of these initial or direct activities include: $12.21 billion in total industry Output or revenues, 79,000 fulltime and part-time Jobs, $6.10 billion in Value-added (GDP), $3.92 billion in Labor income, $1.77 billion in Other Property Type Income, and $407 million in Business Taxes on Production and Imports (Tables 9 - 11). These total contributions represent implied multiplier effects 3.20 for employment and 2.21 for output. In other words, for every one direct marine-related job in the region, 3.2 jobs are ultimately generated. This employment impact is equivalent to 14.29 jobs for every million dollars in direct marine-related spending or revenues in the region. For every initial dollar of marine-related spending in the region, $2.21 dollars of revenues are ultimately generated through that initial dollar and subsequent re-spending.

Looking across industry groups and sectors in Table 9, these impacts were dominated by activities in the Marine Transportation Group, which generated from 68 to nearly 81 percent of the total contributions, depending on type. The largest contributing sectors (which are in this group) were: Support Activities for Water Transportation with $3.79 billion (31.0%) of total output impacts, and 29,099 jobs (36.8%) total employment; Search, Detection, and Navigation Instruments ($3.00 billion (24.6%) total output impacts and 16,107 (20.4%) jobs, and; Sea, Coastal and Great Lakes Transportation ($2.60 billion (21.3%) in output impacts, and 11,968 (15.5%) jobs.

Across Counties in the region, Pinellas was the largest contributor to total regional impacts, responsible for more than 42 percent of the total for all types (Table 10). This included just over 45 percent of total Output and Employment contributions ($5.51 billion and 35,806 jobs), and, over 44 percent of Value-added and Labor income contributions ($2.71 billion and $1.73 billion respectively). Hillsborough County was responsible for between 23 and 32 percent of the total marine contributions to the region, across all types. Notably, it generated $3.76 billion or 30.8 percent of Output impacts, $1.83 billion or 29.9 percent of Value-added impacts, and 21,086 Jobs, or 26.7 percent of total Employment impacts, within the eight county region. The third most significant county for marine related impacts in the region was Lee. It garnered 10.4 percent, or $1.27 billion of total Output impacts, 11.4 percent or 9,014 Jobs in employment impacts, and 11.9 percent or $725 million in Value-added impacts. Sarasota County generated the fourth largest impacts for the region with $814 million in total Output impacts or 6.7 percent of the region’s total, 6,168 jobs or 7.8 percent of the region’s total Employment impacts, and $416 million (6.8%) of the Value-added impacts. Nearly 4.5 percent or $545 million of the region’s Output impacts were generated by marine activities in Manatee County, as well as 4,078 jobs (4.5%), and $273 million (4.5%) in Value added. Contributions by Hendry County included $28.3 million in Output, 267 jobs, and $12.3 million in Value added impacts. Glades County contributed $100,000 in Output impacts, one Job, and $60,000 in Value-added.

Economic impacts of marine related activities are detailed by industry groups within counties in Table 11. Marine Transportation captured at least 60 percent of total marine contributions in all of the counties, except for Manatee. In Manatee County, Ship and Boat Building and Repair had the largest share of contributions, generating $257 million (47.1%) and 1,595 (39.1%) of total Output and Employment marine-related contributions respectively. Ship and boat building also represented more than ten percent of total marine contributions in Lee, Charlotte and Hillsborough Counties. Across the region, recreational fishing generated just over $595 million in output, 6,059 jobs, and $368 million Value added impacts. Pinellas County generated the largest share of regional impacts from recreational fishing at $243 million (41%) in output and 2,558 (42%) jobs. Recreational fishing represented a significant share of marine-related contributions in Manatee (17.5% output and 23.7% jobs), Lee (11.7% output and 13.8% jobs), and Sarasota (8.2% output and 10.7% jobs) counties.

Table 9. Summary of marine industry economic contributions in southwest Florida*, by industry groups and sectors, 2013

Marine Industry Group / Sector	Marine Sector Direct Employment (Jobs)	Marine Sector Direct Industry Output (M$)	Industry Output Impacts (M$)	Employ-ment Impacts (Jobs)	Value Added Impacts (M$)	Labor Income Impacts (M$)	Other Property Income Impacts (M$)	Business Tax Impacts (M$)
Living Resources	**2,082**	**343.33**	**656.72**	**4,494**	**286.06**	**181.77**	**80.60**	**23.69**
Commercial fishing	892	48.12	102.63	1,344	58.83	37.32	12.22	9.29
Aquaculture	103	5.52	12.10	155	8.81	4.23	4.18	0.39
Seafood product preparation & packaging	849	274.14	504.22	2,576	194.93	125.39	58.19	11.35
Fish & seafood markets	238	15.55	37.77	419	23.50	14.83	6.01	2.66
Ship & Boat Bldg. & Repair	**3,256**	**629.58**	**1,341.63**	**8,781**	**674.96**	**432.93**	**168.50**	**73.52**
Ship building & repair	610	139.68	288.54	1,749	134.42	95.84	29.42	9.15
Boat building & repair	1,261	311.44	621.84	3,526	253.30	166.57	65.21	21.52
Boat dealers	1,386	178.45	431.26	3,505	287.24	170.52	73.87	42.85
Marine Transportation	**17,914**	**4,302.88**	**9,614.91**	**59,666**	**4,774.48**	**3,068.41**	**1,428.20**	**277.87**
Sea, coastal & Great Lakes transportation	1,611	1,229.13	2,603.15	11,968	1,139.03	652.78	420.08	66.17
Support activities for water transportation	11,327	1,639.23	3,788.92	29,099	2,097.30	1,423.24	556.11	117.94
Marinas	1,357	84.19	191.03	2,238	112.80	73.57	31.84	7.39
Scenic & sightseeing transportation-water	136	14.86	26.40	254	11.32	6.12	4.53	0.67
Search, detection & navigation instrument manufacturing	3,483	1,335.47	3,005.40	16,107	1,414.03	912.70	415.64	85.70
Recreational Fishing		250.98	595.34	6,059	368.00	239.80	95.91	32.29
Grand Total	**23,252**	**5,526.77**	**12,208.60**	**79,000**	**6,103.50**	**3,922.91**	**1,773.22**	**407.37**

Source: IMPLAN Group, LLC (2015).
*Does not include Collier County.

Table 10. Summary of marine industry economic contributions for southwest Florida counties, 2013

Marine Industry Group / Sector	Marine Sector Direct Employment (Jobs)	Marine Sector Direct Industry Output (M$)	Industry Output Impacts (M$)	Employment Impacts (Jobs)	Value Added Impacts (M$)	Labor Income Impacts (M$)	Other Property Income Impacts (M$)	Business Tax Impacts (M$)
Charlotte	1,136	142.26	271.71	2,579	135.95	77.41	45.27	13.27
Glades	1	0.07	0.10	1	0.06	0.04	0.02	0.00
Hendry	142	16.02	28.29	267	12.34	6.61	5.00	0.73
Hillsborough	5,497	1,750.94	3,763.31	21,086	1,826.19	1,181.64	542.47	102.08
Lee	3,123	600.29	1,272.70	9,014	725.40	485.99	188.28	51.14
Manatee	1,285	268.80	545.09	4,078	272.72	174.34	73.33	25.06
Pinellas	9,910	2,380.25	5,513.58	35,806	2,714.86	1,733.86	796.27	184.72
Sarasota	2,158	368.15	813.83	6,168	415.98	263.02	122.59	30.37
Total	**23,252**	**5,526.77**	**12,208.60**	**79,000**	**6,103.50**	**3,922.91**	**1,773.22**	**407.37**

Source: IMPLAN Group, LLC (2015).

Table 11. Economic contributions of marine industries in southwest Florida counties, by industry group, 2013

County / Marine Industry Group	Marine Sector Direct Employment (Jobs)	Marine Sector Direct Industry Output (M$)	Industry Output Impacts (M$)	Employment Impacts (Jobs)	Value Added Impacts (M$)	Labor Income Impacts (M$)	Other Property Income Impacts (M$)	Business Tax Impacts (M$)
Charlotte	**1,136**	**142.26**	**271.71**	**2,579**	**135.95**	**77.41**	**45.27**	**13.27**
Living Resources	220	9.19	16.71	291	8.14	4.04	2.11	1.99
Ship & Boat Bldg. & Repair	125	15.45	31.21	275	20.72	11.51	5.65	3.56
Transportation - Marine	792	101.59	191.94	1,657	87.90	49.86	32.20	5.84
Recreational Fishing		16.03	31.86	356	19.19	11.99	5.32	1.88
Glades	**1**	**0.07**	**0.10**	**1**	**0.06**	**0.04**	**0.02**	**0.00**
Transportation - Marine	1	0.07	0.10	1	0.06	0.04	0.02	0.00
Recreational Fishing	0	0.00	0.00		0.00	0.00	0.00	0.00
Hendry	**142**	**16.02**	**28.29**	**267**	**12.34**	**6.61**	**5.00**	**0.73**
Living Resources	2	0.47	0.82	5	0.62	0.24	0.35	0.02
Ship & Boat Bldg. & Repair	2	0.60	0.91	5	0.33	0.21	0.09	0.03
Transportation - Marine	138	14.95	26.56	256	11.39	6.16	4.56	0.68
Recreational Fishing		0.00	0.00		0.00	0.00	0.00	0.00
Hillsborough	**5,497**	**1,750.94**	**3,763.31**	**21,086**	**1,826.19**	**1,181.64**	**542.47**	**102.08**
Living Resources	880	237.04	443.86	2,421	182.92	118.53	53.86	10.53
Ship & Boat Bldg. & Repair	725	158.66	330.34	2,019	163.14	114.30	35.95	12.89
Transportation - Marine	3,892	1,315.15	2,893.29	15,753	1,419.29	906.89	438.45	73.94
Recreational Fishing		40.09	95.83	893	60.84	41.93	14.20	4.72
Lee	**3,123**	**600.29**	**1,272.70**	**9,014**	**725.40**	**485.99**	**188.28**	**51.14**
Living Resources	152	14.79	29.63	273	17.66	12.04	3.73	1.88
Ship & Boat Bldg. & Repair	476	87.37	181.81	1,229	102.93	64.84	25.37	12.72
Transportation - Marine	2,494	469.97	998.91	6,882	565.44	383.51	149.02	32.90
Recreational Fishing		28.16	62.35	630	39.37	25.59	10.15	3.64
Manatee	**1,285**	**268.80**	**545.09**	**4,078**	**272.72**	**174.34**	**73.33**	**25.06**
Living Resources	281	11.69	23.47	378	11.93	6.38	2.91	2.63
Ship & Boat Bldg. & Repair	630	134.72	256.61	1,595	112.13	70.73	29.50	11.90
Transportation - Marine	373	79.86	169.67	1,140	89.46	58.62	25.67	5.17
Recreational Fishing		42.53	95.33	965	59.20	38.60	15.24	5.36
Pinellas	**9,910**	**2,380.25**	**5,513.58**	**35,806**	**2,714.86**	**1,733.86**	**796.27**	**184.72**
Living Resources	529	69.26	140.18	1,098	63.69	39.88	17.35	6.45
Ship & Boat Bldg. & Repair	1,084	198.60	465.17	3,106	232.86	145.10	61.00	26.76
Transportation - Marine	8,297	2,016.57	4,664.86	29,044	2,269.48	1,453.69	677.35	138.45
Recreational Fishing		95.82	243.37	2,558	148.83	95.19	40.57	13.07
Sarasota	**2,158**	**368.15**	**813.83**	**6,168**	**415.98**	**263.02**	**122.59**	**30.37**
Living Resources	18	0.90	2.05	27	1.11	0.65	0.28	0.18
Ship & Boat Bldg. & Repair	213	34.18	75.59	551	42.85	26.24	10.94	5.67
Transportation - Marine	1,927	304.72	669.59	4,932	331.46	209.64	100.93	20.88
Recreational Fishing		28.35	66.60	658	40.56	26.50	10.43	3.63
Total	**23,252**	**5,526.8**	**12,208.6**	**79,000**	**6,103.5**	**3,922.9**	**1,773.2**	**407.4**

The relative share of marine-related GDP and employment in relation to total economic activity in WCIND counties for 2013 is shown in Table 12. Pinellas County had the greatest share of marine-related GDP and employment contributions relative to its total economy at 6.61 and 6.49 percent respectively. Manatee county had the second largest share of marine-related activities, but its total economy is only a quarter as large as Pinellas, such that in absolute terms its marine-related activity ranks behind Hillsborough, Sarasota and Lee. Charlotte County had the third largest marine-related industry in percentage terms, but that was considerably smaller than in Manatee County.

Table 12. Marine industry share of total Gross Domestic Product (GDP) and employment in southwest Florida counties, 2013

County	County GDP (M$)	Total County Employment (Jobs)	Marine Industry Share of County GDP	Marine Industry Share of County Employment
Charlotte	4,253.11	68,520	3.21%	3.78%
Glades	303.18	3,958	0.02%	0.03%
Hendry	1,262.66	18,575	0.98%	1.44%
Hillsborough	70,665.68	806,343	2.59%	2.62%
Lee	22,419.45	312,148	3.24%	2.90%
Manatee	11,397.58	164,922	3.62%	3.84%
Pinellas	41,136.05	553,214	6.61%	6.49%
Sarasota	16,201.15	231,209	2.58%	2.68%
Region Total	181,695.98	2,350,889	3.79%	3.83%

Source: IMPLAN Group, LLC (2015)

Conclusions

Southwest Florida has experienced rapid growth and development over the last 50 years and this will likely continue into the future. Marine-related activities in the West Coast Inland Navigation District are, and will continue to be, important to southwest Florida's overall economy, having generated nearly 80,000 jobs, $12.2 billion in revenues, and $6.1 billion in Value-added or GDP for the region in 2013. Marine Transportation, and, Ship and Boat Building and Repair, are the most important marine industry sectors regionally, while Living Resources and Recreational Fishing are also important for some individual counties in the region. Maintaining and improving the value and function of the region's marine infrastructure and ecology will be necessary and beneficial to its continued ability to attract and facilitate future business and tourism, and, maintain a desirable quality of life for all residents and visitors to the region.

References

Adams, Chuck, Bill Lindberg, and John Stevely. The Economic Benefits Associated with Florida's Artificial Reefs. Extension Publication FE649, Food and Resource Economics Department, University of Florida https://edis.ifas.ufl.edu/fe649.

Coastal Economy Market Data, http://www.oceaneconomics.org/Market/coastal/coastalEcon.asp.

Colgan, Charles S. A Guide to the Measurement of the Market Data for the Ocean and Coastal Economy in the National Ocean Economics Program. National Ocean Economics Program, January 2007. http://www.oceaneconomics.org/Download/Market_Guide.asp

Hodges, Alan, W., Thomas J. Stevens, Mohammad Rahmani, and Robert Swett. Economic Analysis of Working Waterfronts in the United States. Technical Report to U.S. Economic Development Administration, Sponsored Project 99-07-13873: Creating Community and Economic Development Tools for Preserving Working Waterfronts and Waterways, December, 2012. http://www2.vims.edu/bridge/wateraccess/docs/EconReport.pdf.

Huth, Bill, Ash Morgan, and Chris Burkart, Measuring Florida Artificial Reef Economic Benefits: A Synthesis 2015 Florida Artificial Reef Summit, January 13, 2015, Clearwater Beach, FL. http://flseagrant.ifas.ufl.edu/artificialreefs/Huth.pdf.

IMPLAN Group, LLC. IMPLAN System software and state/county data, 2013, Huntersville, NC, www.IMPLAN.com.

Miller, R. E., and Blair, P. D. (2009). Input-output analysis: Foundations and extensions, 2nd ed. Cambridge, UK: Cambridge University Press.

Murray, Thomas J. and Associates, Inc., "Economic Impact of the Recreational Marine Industry, Broward, Dade, and Palm Beach Counties, Florida – 2014", for Marine Industries Association of South Florida. Oct. 2014. https://mlsvc01-prod.s3.amazonaws.com/bd373c16001/037871fe-351d-422d-bbc1-146c06bc6521.pdf.

National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NMFS-NOAA), 2011. Annual Commercial Landing Statistics. st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html.

National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NMFS-NOAA), 2010. Fisheries Economics of the United States, 2009. U.S. Dept. Commerce, NOAA, Tech. Memo. NMFS-F/SPO-118, st.nmfs.noaa.gov/st5/publication/index.html.

National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NMFS-NOAA), 2011. Fisheries of the United States 2010. Current Fishery Statistics No. 2010 st.nmfs.noaa.gov/st1/fus/fus10/FUS_2010.pdf.

National Ocean Economics Program (NOEP). Ocean and coastal economic activity interactive website, 2012. Ocean economy market data for living resources, Commercial fisheries landings, Port cargo shipping. Available at www.oceaneconomics.org/Market/ocean.

National Oceanic and Atmospheric Administration. Economics: National Ocean Watch (ENOW) program and web database, csc.noaa.gov/digitalcoast/data/enow.

Savolainen, M.A., J.M. Fannin, and R.H. Caffey. 2014. Economic Impacts of the U.S. Gulf of Mexico Recreational For-Hire Fishing Industry. Human Dimensions of Wildlife 19(1):72-87, doi: 10.1080/10871209.2014.843220. http://www.tandfonline.com/doi/abs/10.1080/10871209.2014.843220?journalCode=uhdw20#.VG4vM5DF-FM

U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Economic Accounts, Local Area Personal Income and Employment, economic profiles, http://www.bea.gov.

U.S. Dept. of Labor, Bureau of Labor Statistics, Quarterly Census of Employment and Wages, http://www.bls.gov/cew/data.htm.

West Coast Inland Navigation District, 200 E. Miami Ave., Venice, FL 34285, http://wcind.net/about/.

Appendix A: Glossary of Regional Economic Terminology

Contribution (economic) represents the gross change in economic activity associated with an industry, event, or policy in an existing regional economy.

Employee compensation is comprised of wages, salaries, commissions, and benefits such as health and life insurance, retirement and other forms of cash or non-cash compensation.

Employment is a measure of the number of jobs involved, including fulltime, part-time and seasonal positions. It is not a measure of fulltime equivalents (FTE).

Exports are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of goods and services to customers visiting from other regions.

Final Demand represents sales to final consumers, including households, governments, and exports from the region.

Gross Regional Product is a measure of total economic activity in a region, or total income generated by all goods and services. It equals the total value added by all industries in that region, and is equivalent to Gross Domestic Product for the nation.

IMPLAN is a computer-based input-output modeling system that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the U.S. The current version of the *IMPLAN* software, version 3, accounts for commodity production and consumption for 536 industry sectors, 10 household income levels, taxes to local/state and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

Impact or total impact is the net change in total regional economic activity (e.g. output or employment) resulting from a change in final demand, direct industry output, or direct employment, estimated based on regional economic multipliers.

Imports are purchases of goods and services originating outside the region of analysis.

Income is the money earned within the region from production and sales. Total income includes labor income such as wages, salaries, employee benefits and business proprietor income, plus other property income.

Taxes on Production and Imports are taxes paid to governments by individuals or businesses for property, excise and sales taxes, but do not include income taxes.

Input-Output (I-O) model and Social Accounting Matrix (SAM) is a representation of the transactions between industry sectors within a regional economy that captures what each sector purchases from every other sector in order to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending or employment may be traced backwards through the supply chain.

Local refers to good and services that are sourced from within the region, which may be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

Margins represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/manufacturer, in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Multipliers capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change**.** Multipliers are derived from an I-O model of the regional economy. Multipliers may be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors. A **sector-specific multiplier** gives the total changes to the economy associated with a unit change in output or employment in a given sector (i.e. the **direct or initial economic effect)** being evaluated. **Indirect effects multipliers** represent the changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses (e.g., increased sales in input supply firms resulting from more nursery industry sales). **Induced effects multipliers** represent the increased sales within the region from household spending of the income earned in the direct and supporting industries for housing, utilities, food, etc. An **imputed multiplier** is calculated as the ratio of the total impact divided by direct effect for any given measure (e.g. output, employment).

Other property income represents income received from investments, such as corporate dividends, royalties, property rentals, or interest on loans.

Output is the dollar value of a good or service produced or sold, and is equivalent to sales revenues plus changes in business inventories.

Producer prices are the prices paid for goods at the factory or point of production. For manufactured goods the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, the producer and purchaser prices are equivalent.

Proprietor income is income received by non-incorporated private business owners or self-employed individuals.

Purchaser prices are the prices paid by the final consumer of a good or service.

Region or Regional Economy is the geographic area and the economic activity it contains for which impacts are estimated. It may consist of an individual county, an aggregation of several counties, a state, or aggregation of states. These aggregations are sometimes defined on the basis of worker commuting patterns.

Sector is an individual industry or group of industries that produce similar products or services, or have similar production processes. Sectors are classified according to the North American Industrial Classification System (NAICS).

Value Added is a broad measure of income, representing the sum of employee compensation, proprietor income, other property income, indirect business taxes and capital consumption (depreciation). Value added is a commonly used measure of the contribution of an industry to regional economy because it avoids double counting of intermediate sales.