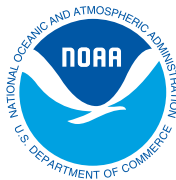




TEXAS SEA GRANT: A Vital Part of Our State and Supporter of Its Marine Industries

Highlights from *The Importance of Gulf of Mexico Marine Dependent Industries and Measuring Sea Grant Programming Benefits on Those Industries*

by Andrew J. Ropicki, Texas Sea Grant
Charles M. Adams, Florida Sea Grant
Rex H. Caffey, Louisiana Sea Grant
Mike Haby, Texas Sea Grant



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Measuring Sea Grant's Contributions to the Economy

The Texas, Louisiana and Florida Sea Grant programs recently released a report, *The Importance of Gulf of Mexico Marine Dependent Industries and Measuring Sea Grant Programming Benefits on those Industries* (https://www.flseagrant.org/wp-content/uploads/GOMT16001_web.pdf), to guide Sea Grant staff in how best to determine how their work affects the local and regional economies. In the process of producing this report, the authors collected valuable data about the economic importance of these industries in Texas and the other four Gulf states.

In this document, we have highlighted the contributions of Texas Sea Grant to these Gulf of Mexico marine industries and their impacts on Texas' economy.

Economic Impacts

Economic impacts refer to measures of economic activity associated with an industry, event, or policy within a regional economy, such as a city, county, or state, or at the national level. An economic impact does not account for how money may have been spent if the industry, event, or policy in question didn't exist, so it does not reflect net changes in economic activity due to the presence of any of these things. Economic impacts can be calculated in terms of:

- employment, or jobs that result from the industry, event, or policy;
- labor income, or wages and salary paid to those employed;
- output, or the effect of direct spending on overall regional activity; and
- value-added, or the contribution to regional gross domestic product.

The first is measured in number of jobs and the other three measured in dollars.



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Measuring the economic impacts of marine-related resources or industries can demonstrate their importance and therefore make a powerful argument for Sea Grant involvement in them.

In addition to these commonly used economic impact metrics, Sea Grant uses additional metrics such as jobs created, jobs sustained, businesses created, and businesses sustained as a direct result of Sea Grant activity.

Generally, economic impacts are created by direct, indirect, or induced effects. Direct effects result from a particular event, industry, or policy; indirect effects come from purchases of goods and services by support industries of an event, industry, or policy; and induced effects are mostly due to spending by employees of an event, industry, or policy.

Measuring the economic impacts of marine-related resources or industries can demonstrate their importance and therefore make a powerful argument for Sea Grant involvement in them. These methods also provide baseline information about industry size and help identify economic trends. But attributing those trends to Sea Grant activities specifically proves more difficult. The collaborative nature of much Sea Grant programming further complicates assigning the economic benefits of a specific project among the different entities involved.

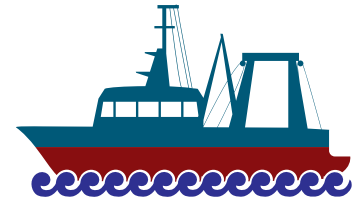


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The broad and varied scope of Sea Grant work also makes it difficult to measure the economic impacts of the program's activities. In addition, many Sea Grant projects involve conservation and restoration of natural resources, and experts still struggle to assign value to the ecosystem services associated with those natural resources. Ecosystem services refer to those aspects that have human benefit, which include supporting, provisioning, regulating, and cultural services. For example, ecosystems provide habitat for wildlife, recreational opportunities, filtering of water run-off, erosion prevention, and food.

Gulf of Mexico-Dependent Industries

The Gulf of Mexico supports multiple industries, including commercial and recreational fishing, tourism, and oil and gas exploration. In 2012, Gulf of Mexico-dependent activities and industries represented approximately \$161 billion of gross domestic product (GDP), \$34 billion in wages, 581,350



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jobs, and 25,185 businesses. Marine-dependent activities and industries in the five Gulf states — Texas, Louisiana, Mississippi, Alabama and Florida — accounted for 5.9 percent of the combined GDP of those five states. In Texas, 8.5 percent of the state’s GDP came from these activities and industries.

FIGURE 1. Percentage of GDP Due to Gulf of Mexico-Dependent Activities and Industries, 2012

	% of GDP from Gulf of Mexico Activities and Industries
Louisiana	10.0%
Texas	8.5%
Mississippi	1.7%
Florida — Gulf	1.6%
Alabama	1.3%
All Gulf States	5.9%

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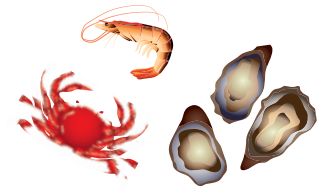
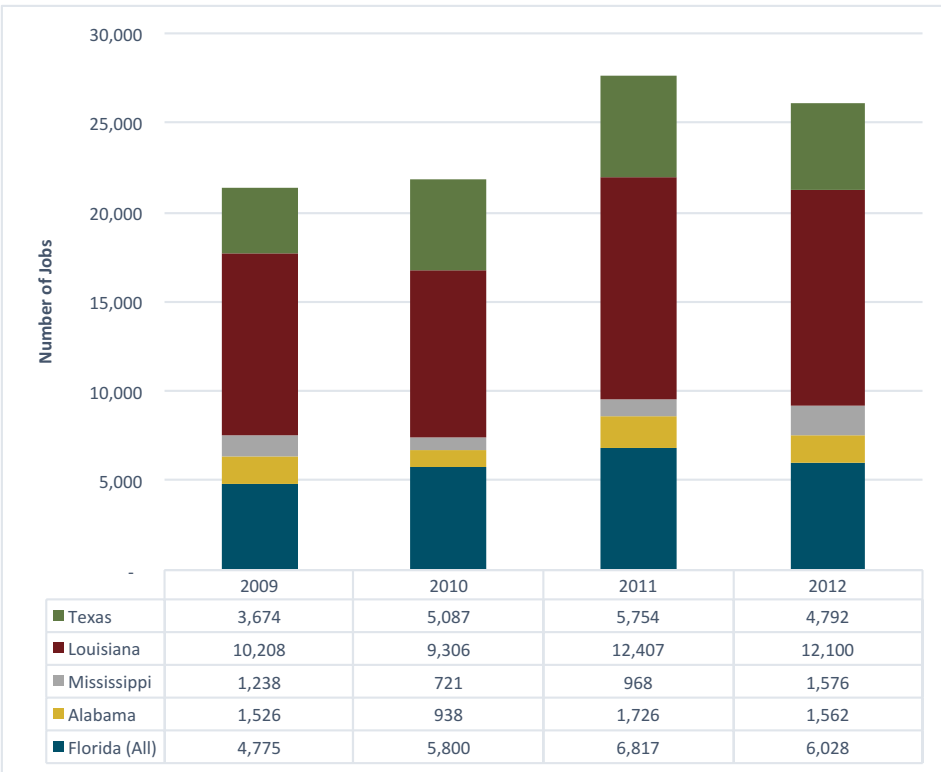
Commercial Fishing

Commercial fishermen in the Gulf of Mexico landed 1.7 billion pounds of fish and shellfish in 2012 with a dockside value of \$763 million. Texas had \$194 million in commercial fisheries landings that year, 25 percent of the Gulf total, second only to Louisiana. Also in 2012, commercial fishing in all five Gulf states accounted for more than 26,000 jobs, \$1.58 billion in output, and \$731 million of GDP.

FIGURE 2. Gulf of Mexico Commercial Fishing Landings Revenue by State, 2012

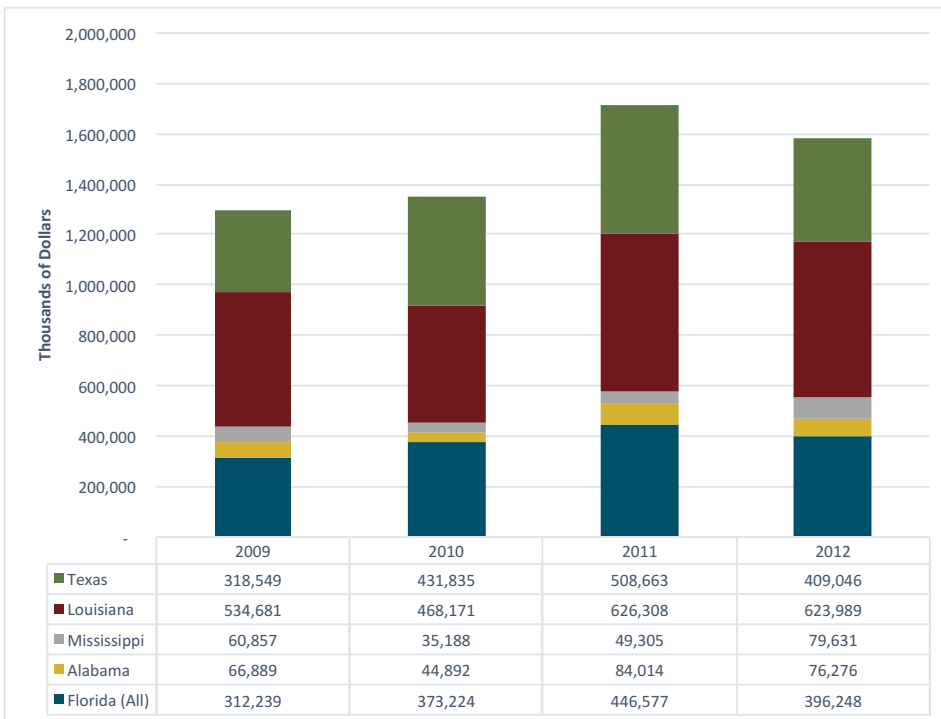
	Landings Revenue (millions of dollars)	Percentages of Gulf Total
Louisiana	331	43%
Texas	194	25%
W. Florida	142	19%
Mississippi	49	7%
Alabama	47	6%
Total	763	100%

FIGURE 3. Number of Jobs in Commercial Fishing-Related Industries by State



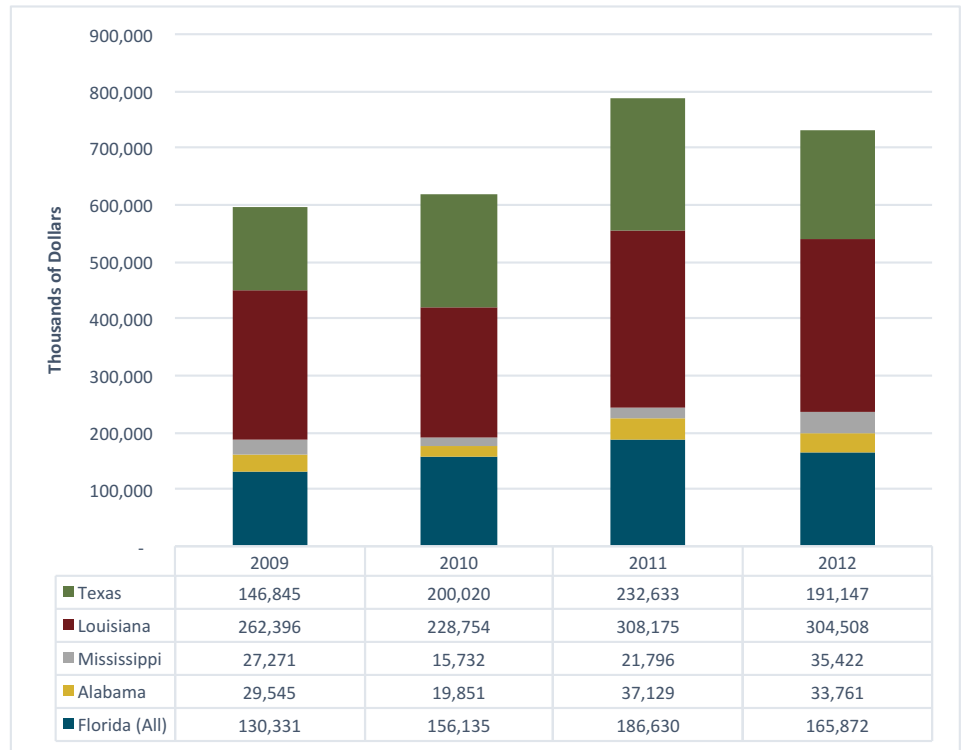
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FIGURE 4. Output Impacts* of Commercial Fishing by State



*Output Impacts are the effects of direct spending on overall regional activity and measure the value of all sales of goods and services.

FIGURE 5. Value-Added Impacts* of Commercial Fishing by State



*Value-Added Impacts are the contribution to regional gross domestic product.



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Seafood Processing

Texas seafood processing establishments accounted for 2,019 jobs in 2011. That year, the 714 seafood processing establishments in all five states employed 6,720 individuals and had a combined payroll of \$190 million. Although both Louisiana and Texas have larger commercial fisheries than Florida in both pounds harvested and dockside revenue, Florida ranks as the largest processor of seafood in the Gulf by far because of the large amount of imported seafood processed there. In Texas, seafood processing accounted for \$167 million in output impacts and \$83 million in value-added impacts in 2011.



Texas seafood processing establishments accounted for 2,019 jobs in 2011.



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In 2012, the Gulf-wide retail seafood industry included more than 1,100 businesses that generated 59,098 jobs, \$3.7 billion in output impacts and \$1.7 billion in value-added impacts.



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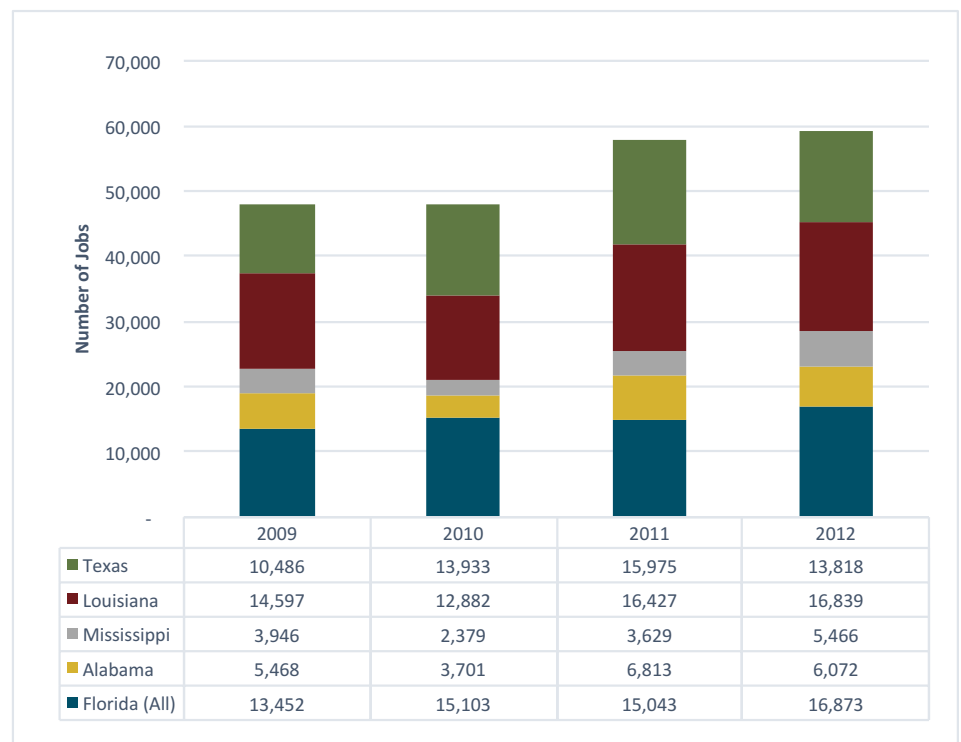
Wholesale Seafood

In 2012, Texas wholesale seafood establishments generated 1,220 of the Gulf's total of 11,459 jobs in that industry, second only to Florida. Texas also accounted for \$163 million out of \$1.3 billion in total Gulf output impacts, and \$75 million of a total \$639 million in value-added impacts. By all of these measures, Texas trailed only Florida out of all Gulf states.

Retail Seafood

The retail industry includes both seafood restaurants and fish and seafood markets. In 2012, the Gulf-wide retail seafood industry included more than 1,100 businesses that generated 59,098 jobs, \$3.7 billion in output impacts and \$1.7 billion in value-added impacts. This included 13,818 jobs, \$596 million in output impacts and \$334 million in value-added impacts in Texas.

FIGURE 6. Number of Jobs in the Seafood Retail Industry by State

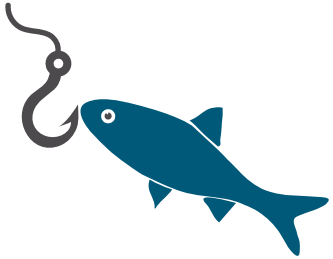




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Recreational Fishing

In 2011, 5.2 million recreational anglers took 22 million Gulf of Mexico fishing trips, during which they spent approximately \$1.5 billion. The economic impacts associated with these fishing trip expenditures — such as ice, bait, fuel, and charter fees — are substantial, but are dwarfed by those generated by spending on durable equipment including items such as fishing tackle, boats, vehicle expenses, and other equipment, which totaled \$9.7 billion in 2011. In Texas, recreational fishing that year generated 15,150 jobs, \$1.85 billion in output impacts, and nearly \$1 billion in value-added impacts.



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FIGURE 7. Number of Jobs in Gulf of Mexico Recreational Fishing by Fishing/Spending Type

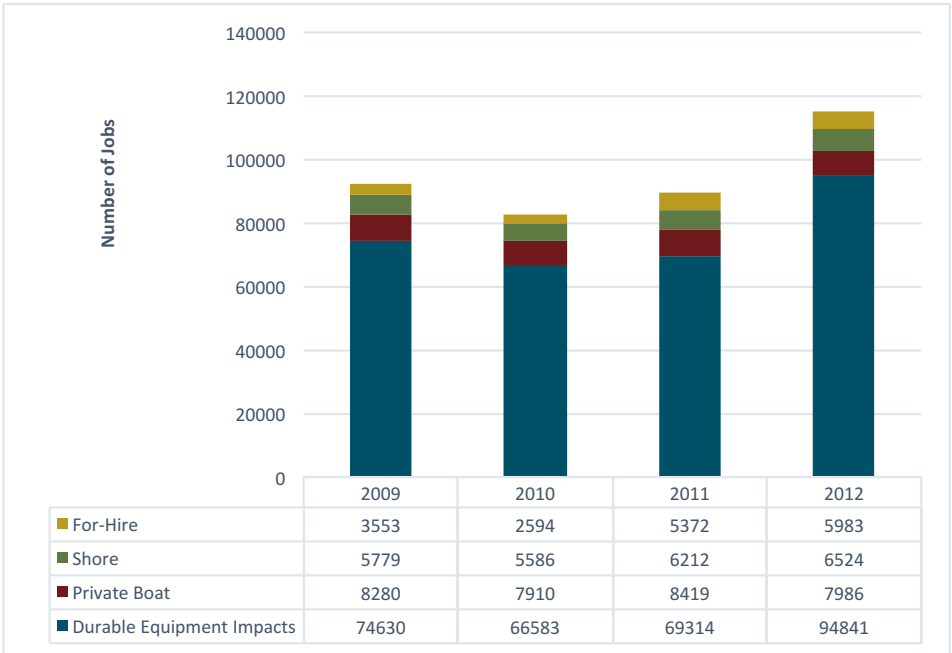
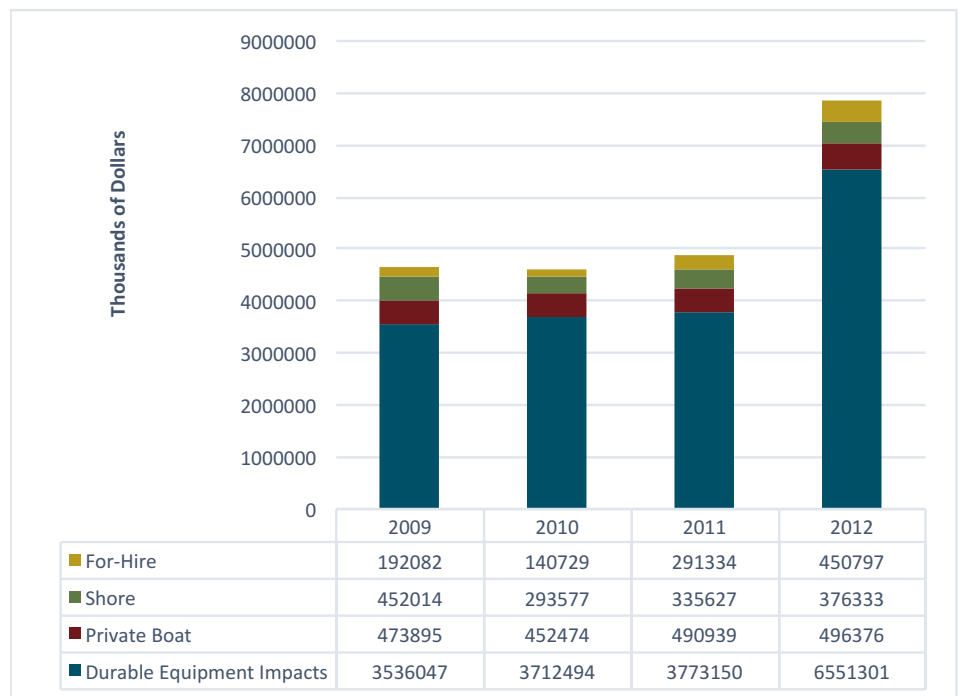


FIGURE 8. Output Impacts* of Gulf of Mexico Recreational Fishing by Fishing/Spending Type



FIGURE 9. Value-Added Impacts* of Gulf of Mexico Recreational Fishing by Fishing/Spending Type



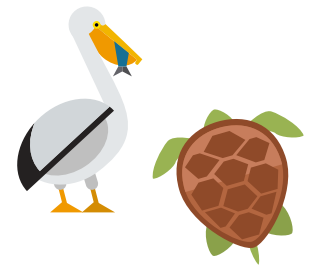
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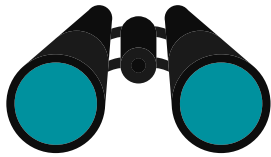


Outdoor Tourism and Recreation

Marine-dependent recreational activities in the Gulf states include wildlife watching (birding, sea turtle watching, dolphin cruises), hiking, recreational boating, and hunting. Wildlife watching specifically draws more participants in the Gulf region than any other wildlife-related activity; wildlife tourism (excluding recreational fishing) accounts for approximately \$11 billion in annual spending across all five states. Texas wildlife watchers spent \$1.8 billion in 2011, second only to Florida. Texas led the region in number of wildlife watching trips (12 million) and participants (4 million).

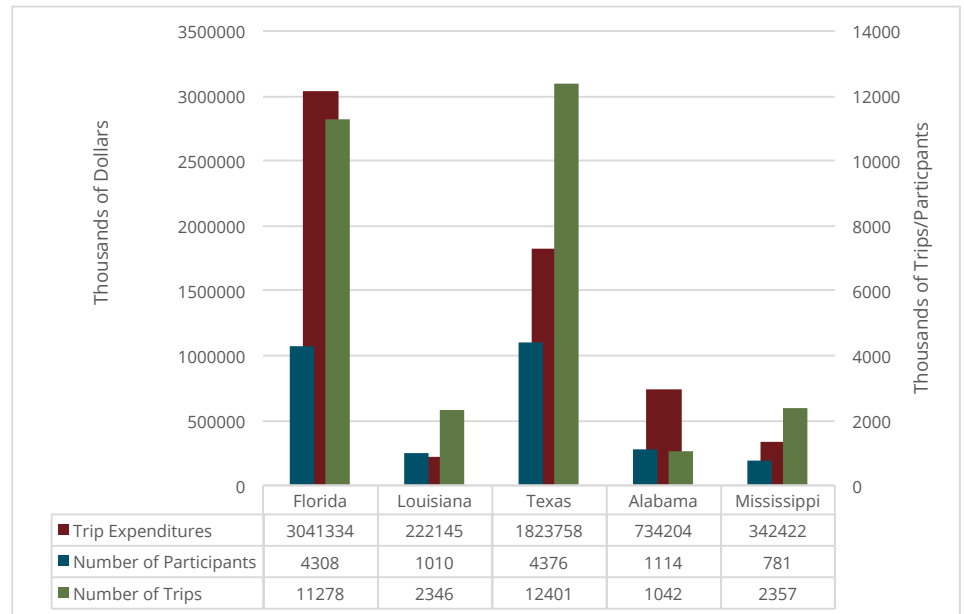


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FIGURE 10. Number of Participants, Trips, and Expenditures for Gulf States Wildlife Watching by State, 2011*



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*Values shown are for the entire state and not just the coastal region.



TEXAS SEA GRANT IMPACT: IMPROVING FUEL EFFICIENCY IN THE TEXAS SHRIMP FISHERY

Shrimp trawling is a fuel-intensive activity. An analysis of the offshore Texas shrimp fleet for the 12 years from 1986 through 1997 revealed that producers used an average of 66,101 gallons of diesel a year. Rapid escalation in diesel prices and reduction in prices paid for shrimp hit this industry hard. By 2006, that 66,101 gallons cost \$140,399 and was, by far, an operator's largest input expense.

Texas Sea Grant collaborated with a fleet operator, Western Seafood, to find ways to make shrimp trawling more fuel efficient. Texas A&M AgriLife Extension Service/Texas Sea Grant faculty developed a research protocol for shrimp fishermen willing to test new trawl net and trawl door designs. The protocol benchmarked fuel use with traditional gear, measured fuel use and savings with the new gear, and documented shrimp production with both traditional and new gear.

Their analysis demonstrated that while fishermen paid a higher price for the new gear initially, its use could save them at least 10 percent and as much as 39 percent in fuel without changing catch amount. That could improve a shrimper's bottom line and allow increased retained earnings, providing a cushion against short-term economic events such as spiking fuel prices, allowing operators to perform deferred maintenance or invest in additional improvements to increase their production capacity, or giving them the ability to fund a personal retirement program.

New trawl net material accounted for 20 percent of fuel savings and new door design for 80 percent of total fuel saved. The new doors and nets also had significantly longer useful lives than traditional equipment.

Fuel savings recognized by adopters of the new technology are attributable in large part to Texas Sea Grant, with important contributions from Western Seafood, shrimpers who participated in the research, and funding organizations The Ocean Conservancy and the Walton Foundation. The economic benefits generated by this Sea Grant program from 2008 through 2014 include savings of 14.86 million gallons of diesel valued at \$41.19 million.



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Texas Sea Grant College Program: Science at Work for Texans

Texas Sea Grant has its headquarters at Texas A&M University in College Station and staff located at Texas A&M University-Corpus Christi and in communities along the Texas coast.

Texas Sea Grant's mission is to improve the understanding, wise use and stewardship of Texas coastal and marine resources. Our activities center on sustainable fisheries and aquaculture, resilient communities and economies, healthy coastal ecosystems, and environmental literacy and workforce development.

Texas Sea Grant operates with the vision of a future where people on our coast live, work and play in harmony with the natural resources that attract and sustain them and use those natural resources in ways that capture their economic, environmental and cultural benefits, while preserving their quality and abundance for future generations.

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